A SOCIO-ECONOMIC PROFILE OF ATLANTIC CANADA: CHARACTERISTICS OF RURAL AND URBAN REGIONS, WITH IMPLICATIONS FOR PUBLIC POLICY

Pierre-Marcel Desjardins

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To conclude, the views expressed in this study are those of the author, who assumes full responsibility for any errors it may contain.

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EXECUTIVE SUMMARY

This study presents a socio-economic profile of Atlantic Canada that relies, with one exception, on census data. It is divided into four parts and includes a brief discussion of various definitions of *rural*. The first part, which focuses on demographics and migration, describes population dynamics. The second part presents labour market dynamics, with chapters on educational achievement, income, and employment. Industrial sector dynamics are analysed in part three. The topic of the last part is public policy, which examines the impact of the public sector and discusses the policy implications of our results.

Our study has two broad objectives. The first is to present a socio-economic analysis of Atlantic Canada focusing on varying degrees of urbanization and rurality. The second is to provide a reference document for practitioners and students of Atlantic Canada's economy.

Definition of *Rural*

In a recent Statistics Canada paper, du Plessis et al. (2002) presented six different definitions of *rural*. We decided to use the Ehrensaft codes (non-metropolitan regions) in our study for two principal reasons. First, we wanted a definition that was more than simply urban/rural: we wanted a typology. Second, we wanted the building blocks to be as user friendly as possible to allow others to use our results and thus further the analysis. The Ehrensaft codes present ten categories; these categories allow us to develop a more precise analysis. The building block is the census division (CD), a unit more easily accessible to researchers than other units of analysis.

Population Dynamics

Relatively more rural, relatively less individuals, relatively older

Based on the Ehrensaft codes typology, for the year 2001 barely half (51.97 percent) of Atlantic Canada's population lived in a metropolitan, or urban, region. This compares to 50.72 percent in 1996 (du Plessis et al. 2002, app. D) and indicates a slight urbanization of the region. In that same year, 1996, 73.29 percent of all Canadians lived in metropolitan, or urban, regions. We should point out here the absence of a very large urban centre in Atlantic Canada. Halifax, the region's largest, is ranked thirteenth in Canada; St. John's, the region's second largest, is nineteenth (Statistics Canada, 2001 census).

Between 1996 and 2001, Canada's population grew by 4 percent, while three of Atlantic Canada's four provinces experienced a population decline. Only Prince Edward Island bucked the regional trend, with a growth rate of 0.5 percent for the period. The steepest decline was experienced by Newfoundland and Labrador, where population declined by 7 percent. Population growth between 1996 and 2001 was highly concentrated in a few CDs, while population decline was rather widespread. It is clear that Atlantic Canada's rural regions are under pressure from population decline and that in general the relative extent of this population decline is proportional to their distance from metropolitan regions.

Finally, we found that the population of Atlantic Canada is generally older than that of Canada as a whole.

More population decreases over the next generation, but not necessarily during the next ten years

Our study makes projections of future labour market conditions in ten and twenty-five years. Everything else being equal, we subtract from the working age population the number of people in the age group which should retire during the period in question and add those that should enter the labour market during the same period. We found that most CDs in Atlantic Canada will experience an increase in their working age population during the ten-year period 2001–11. However, we also found that most CDs will experience a net decline during the following fifteen years. The challenge is proportionally greater in rural areas, especially those not adjacent to an urban region.

Migration: Exacerbating the demographic challenge

As a percentage of population, Atlantic Canada attracts a relatively high proportion of interprovincial immigrants but relatively few international immigrants. On the other hand, and again as a percentage of population, Atlantic Canada registers a high proportion of interprovincial emigrants. Generally, Atlantic Canada's rural areas are losing population to the region's urban centres. At the same time, not only rural areas but even most of the region's urban centres are losing population to other provinces. For some urban centres, net intraprovincial migration compensates for the losses from interprovincial migration; for other centres, however, it does not.

An examination of interprovincial and intraprovincial migration, using information from our statistical appendix (Desjardins 2005) will illustrate this. For the period 1996–2001, we had for NS-Halifax, for example, an emigration ratio[1] of 11.25 percent and an immigration ratio[2] of 13.38 percent. For NS-Cape Breton, the respective ratios were 9.08 and 4.93 percent; for NS-Yarmouth, 8.68 and 6.37 percent. In New Brunswick, NB-Westmorland had an emigration ratio of 11.40 percent and an immigration ratio of 11.90 percent. For NB-Gloucester, the respective ratios were 8.21 and 4.28 percent; for NB-Madawaska, 7.72 and 5.18 percent. We thus see that in general, larger metropolitan CDs had a higher emigration ratio than more rural CDs.

Atlantic Canadian migrants are generally better educated than the region's population as a whole. If we make the assumption that emigrants have a similar profile to the region's migrants, we can conclude that there is in fact a brain drain taking place, which is defined as emigrants having a relatively better education than the remaining population. This trend is stronger in rural than in urban regions, particularly in rural regions not adjacent to a metropolitan region. In 2000, Atlantic Canadians having migrated between

1. We define emigration ratio as the number of individual having left the CD for other regions of the country, divided by the 2001 population, multiplied by 100.

2. In this case, we define immigration ratio as the number of individuals having moved in the CD from other regions of the country (thus excluding international immigration), divided by the 2001 poulation, multiplied by 100.

1996 and 2001 received a higher than average income — both total and employment income — compared to the situation in 2000 in their CD of residence in 1996. This suggests that those who move from one place to another usually increase their income. When we isolated the migrants who worked full-year and full-time and compared this subgroup's income in 2000 with the equivalent subgroup's income in 2000 in their province and CD of residence in 1996, the income gains were not as significant. This suggests that in the bid to improve one's income, seasonal employment may be an important factor in the decision to move.

Labour Market Dynamics

Educational achievements are improving, but not fast enough

Atlantic Canada's levels of educational achievements improved between 1986 and 2001. Unfortunately, the education gap between the region's population and the Canadian average also increased during the same period. In general, Atlantic Canada's urban population is better educated than its rural counterpart. Time may help improve the situation: our analysis based on age revealed that individuals with less than a high school diploma tended to be older than the national average, while those with a high school diploma tended to be younger, which leads one to conclude that the statistics should improve. On the other hand, the university-related category pointed to a brain drain, perhaps partly explaining the growing gap.

Income: Improvement with relatively less dependency on government transfers

Between 1985 and 2000, dependence on government transfers to individuals (measured as a percentage of total income) decreased in the two provinces of Prince Edward Island and New Brunswick and did not change in Newfoundland and Labrador. It increased in the seven other provinces. Focusing on average employment income, we find that the four Atlantic provinces fall below the national average. What is striking is that Atlantic Canada's performance is much closer to the national average if we restrict our analysis of employment income to full-year and full-time workers. This is especially true for Newfoundland and Labrador, which jumps a full eleven percentage points closer to the national average.

An examination of the growth in average total income between 1985 and 2000 yields some interesting results. Between 1985 and 2000, Prince Edward Island of all the Canadian provinces experienced the strongest growth. New Brunswick ranked third and Newfoundland and Labrador fourth. Growth in average employment income during the period 1985 to 2000 was nearly as positive for Atlantic Canada. Newfoundland and Labrador ranked second, Prince Edward Island third, and New Brunswick fifth. Prince Edward Island actually led the country for the period 1985 to 1990, while Newfoundland and Labrador led from 1990 to 1995.

Turning our attention to Atlantic Canada's CDs, we find only two with a share of employment income that is higher than the Canadian average. On the other hand, only two CDs have a percentage of income from government transfers that is lower than the Canadian average. With the notable exceptions of NL10 and Cape Breton, urban re-

gions derive a larger share of total income from employment than rural regions. The reverse is the case for income from government transfers, where rural regions, especially in Newfoundland and Labrador, have the larger share.

Improvement on the employment front, but not enough to significantly close the gap

While Atlantic Canada's provincial unemployment rates decreased between 1986 and 2001, they remain the highest in Canada. While unemployment rates are higher in rural regions, they decreased in most CDs between 1986 and 2001. Furthermore, compared with 1986, Atlantic Canada's participation rates increased in 2001 in New Brunswick, Prince Edward Island, and Nova Scotia. Atlantic Canada's urban regions usually have much higher participation rates than rural regions. As for employment creation in the Maritime provinces, though it was solid between 1986 and 2001, it was still below the national average. Between 1986 and 2001, fifteen CDs in Atlantic Canada lost employment, mostly in rural regions. Employment growth was much stronger in urban regions and in rural regions adjacent to a metropolitan area.

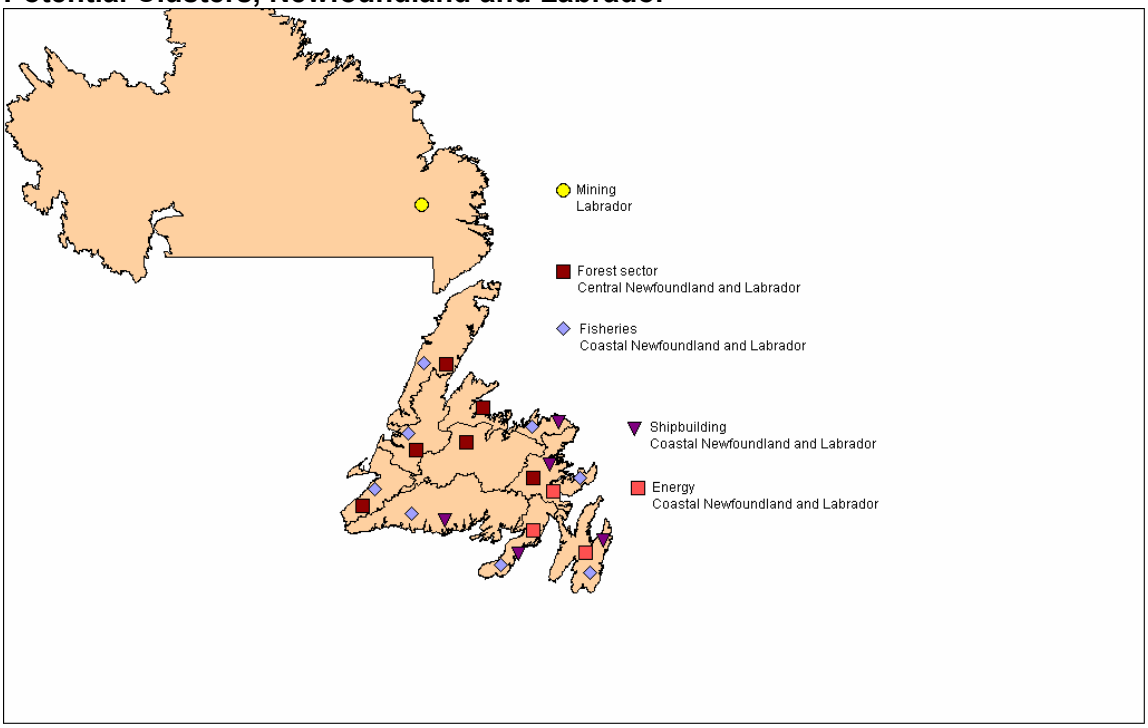
Atlantic Canada's economy is quite seasonal (defined as employment for less than twenty-seven weeks), especially in Prince Edward Island and in Newfoundland and Labrador. This in part, but not exclusively, is the result of the relatively strong presence of the fisheries.

Industrial Sector Dynamics

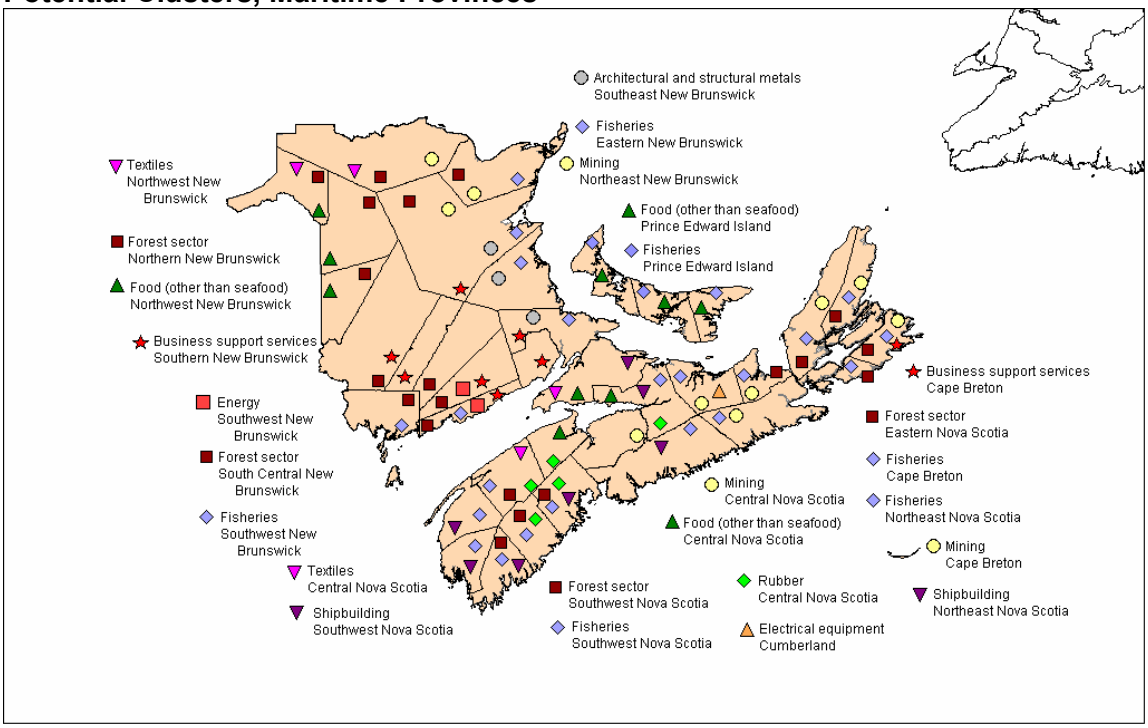
Location quotients: Identifying relatively important sectors

The location quotient measures the relative importance of a sector in a given territory compared to the relative importance of the same sector in a reference territory. In the four provinces, the fisheries industry generates the highest location quotients. In Newfoundland and Labrador and in New Brunswick, fish processing leads followed by fish harvesting. In Prince Edward Island and Nova Scotia, it is the reverse. Newfoundland and Labrador has high location quotients in resource-based sectors and in sectors supporting resource-based sectors. In addition to the fisheries, for example, we have ship and boat building and mining. Leading sectors also include some manufacturing subsectors as well as public administration, both federal and provincial. In Prince Edward Island, the sector of fruit and vegetable preserving and specialty yields a very high location quotient and is ranked third. In fact, with the exception of public administration (federal and provincial) and construction, the top-ten list contains only sectors directly or indirectly related to the fisheries and agriculture. The situation in Nova Scotia is somewhat different. Rubber product manufacturing ranks third, the result of Michelin's relative importance to the provincial economy. Sectors outside resources also include textile mills; administrative and support, waste management, and remediation services; and health care and social assistance. Finally, for New Brunswick we find fruit and vegetable preserving and specialty (e.g., McCain), petroleum and coal products manufacturing (e.g., Irving Oil refinery), and several forestry-related sectors. Not surprisingly, rural regions more than urban regions tend to have economies that are concentrated in only a few sectors.

Map 1
Potential Clusters, Newfoundland and Labrador



Map 2
Potential Clusters, Maritime Provinces



From location quotients to clusters

We used the results from our analysis of location quotients to identify potential clusters in Atlantic Canada. Keeping in mind that high location quotients do not necessarily denote the presence of clusters, we identified the following thirty-one *potential* clusters in the region, most of them resource-based:

- forest sector (central NL, eastern NS, southwest NS, south-central NB, northern NB)
- fisheries sector (coastal NL, PEI, Cape Breton, northeast NS, southwest NS, southwest NB, eastern NB)
- mining sector (Labrador, Cape Breton, central NS, northeast NB)
- food (other than seafood) (PEI, central NS, northwest NB)
- textile (central NS, northwest NB)
- energy (coastal NL, southwest NB)
- rubber (central NS)
- architectural and structural metals manufacturing (southeast NB)
- electrical equipment manufacturing (central NS)
- shipbuilding (coastal NL, northeast NS, southwest NS)
- business support services (including call centres) (Cape Breton, southern NB)

The knowledge economy and cyclical sectors: Some surprising results

We borrowed, and slightly modified, APEC's methodology to analyse employment based on the degree of knowledge intensity. Newfoundland and Labrador has a higher proportion of employment in high-knowledge-intensity sectors than Canada as a whole. It also has more low-knowledge-intensity employment. All other Atlantic provinces have lower levels of employment in high- and medium-knowledge-intensity sectors and higher levels in low-knowledge-intensity sectors. Urban regions often, but not always, have more higher-knowledge-intensity employment.

We followed with an analysis of the proportion of employment in cyclical and non-cyclical industries in the various provinces and regions. We adopted a methodology used in a Statistics Canada study, with one modification: we combined the sector sea-food product preparation and packaging with cyclical industries, not necessarily to reflect its vulnerability to business cycles but to indicate the cyclical nature of the sector as a result of variable landings. We found that, from an employment perspective, cyclical sectors do not play as big a role in Atlantic Canada's economy as they do in Canada's as a whole. Cyclical sectors are usually more prevalent in rural regions.

Policy Implications of Our Results

The important role of urban centres

Compared to Canada's other main regions (western Canada, Ontario, Atlantic Canada, and Quebec), Atlantic Canada is the only one without a very large metropolitan centre (type 0). To what extent does this influence the region's development? Although answering this question was not one of this study's initial objectives, it became clear early on in our analysis that the relative performance of urban centres is of paramount importance to a region's development. Studies have shown that in today's knowledge-based economy, the general trend is for economic growth to be stronger in larger urban centres (e.g., Polèse and Shearmur 2002). Furthermore, rural areas adjacent to an urban centre tend to perform better than those farther away (e.g., Polèse and Shearmur 2002; Porter et al. 2004). In fact, Porter et al. (2004, 17) specifically identify the "analysis of the relationship between the prosperity of rural regions and the characteristics and prosperity of the metro areas to which they are adjacent" as an area warranting further research. In the context of Atlantic Canada, we might also ask if the absence of a very large urban centre in the region is indeed a barrier to growth. In fact, on several occasions we found that a corridor along the Trans-Canada Highway in Nova Scotia and New Brunswick was performing better than the rest of the region. An interesting working assumption would be that this corridor could eventually play, or may already be playing, the role of a very large urban centre. The existing specificities and linkages along this corridor also warrant further research.

Economic growth will most likely favour urban regions

Other studies have suggested that economic growth will be greater in urban regions (e.g., Polèse and Shearmur 2002). The results of this report support this conclusion. However, this does not mean that economic development cannot take place in rural regions — quite the opposite. It does mean, though, that public policy makers should be cognizant of the particular challenges faced by rural regions. And it also means that this dual development — to borrow a term from economic development theory — must be managed properly. The needs of rural regions are not the same as those of urban regions. In several rural regions, it will be a case of managing demographic stagnation or even decline, with all its implications. Public policy must reflect this.

But some rural regions have growth potential

It is clear from our analysis that there are significant disparities between the urban and rural regions of Atlantic Canada. It is also clear that rural Atlantic Canada is far from homogeneous. There is a grouping of essentially rural areas in Atlantic Canada whose economies have performed relatively well over the fifteen-year period from 1986 to 2001. This means that policy prescriptions for one rural region are probably not pertinent to others. Relevant differences include distance from a metropolitan area, the nature of the region's industrial structure, the seasonality of its employment, etc. Public policy initiatives should not take the form of one-size-fits-all programs. Even for a region as small as Atlantic Canada, diversity requires that public policy be developed that

takes into account each region's characteristics. This calls for a more community-driven approach to economic development that builds upon existing structures and approaches. And it may have to go even further.

A demographic challenge on Atlantic Canada's horizon

Atlantic Canada's share of the Canadian population has been declining for some time. The region attracts relatively few international immigrants and overall is losing more population to migration than it is gaining. We estimate that other things being equal, the region will be facing an acute labour shortage in the next ten to twenty-five years. This shortage could happen more rapidly as emigration accelerates the process.

Government must introduce measures to address this demographic challenge. In a few years, it will not only have a significant impact on labour market supply; it will also affect government revenues, demand for local goods and services, demand for public sector services, etc.

The challenge is greater in rural regions, which are losing population at a faster pace. Interestingly, this is not so much a result of an overwhelming exodus of its population — the emigration rates are not extremely high — but rather a lack of immigration. Public policy in this case should thus focus on immigration and the factors which could increase it.

The current challenge of seasonality

On several occasions, seasonality emerged as a characteristic which influenced several other factors. These included migrants, employment, and income. Although it may be difficult to significantly reduce the seasonality — i.e., to increase the duration of employment — of many sectors, it should nevertheless be a policy objective. We should strive to extend work in seasonal sectors as well as increase the proportion of employment in sectors which offer year-long employment. Even government employment should be analysed in this light.

An educational gap that is growing

The region has made significant progress in improving the education of its population, but it has not been enough: the gap between the region and Canada as a whole has widened! The goal should be not only to increase the number of individuals with a post-secondary education but also to reduce the number with less than a grade 9 or a grades 9 to 13 education. This challenge is especially important for several rural regions where educational achievements are often greater than in urban regions. Our analysis based on age revealed that individuals with less than a high school diploma tended to be older than the national average, while those with a high school diploma tended to be younger, leading one to conclude that the statistics should improve. On the other hand, the university-related category pointed to a brain drain, possibly explaining in part the growing gap.

An initiative to boost educational achievement levels cannot succeed if it is pursued in isolation. Relevant employment opportunities must exist for individuals who improve

their education, a significant challenge given that we noted a relative brain drain when we analysed the profile of migrants.

Embracing the new economy

We found that with the notable exception of Newfoundland and Labrador, the region had a low proportion of employment in high-knowledge-intensity sectors. For the four Atlantic provinces overall, we found a lower percentage of employment in medium-knowledge-intensity sectors and a higher percentage in low-knowledge-intensity sectors. To fully embrace the new economy, we need to increase our presence in higher-knowledge-intensity sectors. In light of these results, the importance of improving educational achievement becomes all the more obvious. From a public policy perspective, all our efforts should probably not be focused exclusively on increasing high-knowledge-intensity employment. Concentrating, although not exclusively, on medium-knowledge-intensity employment could generate very positive results and be a better match for our labour supply.

Based on APEC's methodology, examples of high-knowledge sectors are scientific and professional equipment, electrical power, and other business services; medium-knowledge sectors include paper and allied products, textiles, and plastics; and among low-knowledge sectors are fishing and trapping, retail trade, and personal services.

The question of clusters

Although our analysis did not allow us to identify actual or potential clusters based on a series of specific characteristics, we were able to identify, using location quotient results, sectors which may fall into either of these two categories. Most of these sectors are resource-based (e.g., forest, fisheries, mining sector, food – other than seafood). Others are the result, at least in part, of specific government initiatives (e.g., rubber [Michelin], business support services [call centres]). We think that Atlantic Canada may actually have several dynamic clusters. The region may also have several potential clusters which may mature given the right government policies. Further analysis of this issue should yield very important information and lessons for public policy.

The important contribution of public sector employment

Public sector employment is relatively higher in Atlantic Canada. This is important not only because the public sector is a key actor in the region's economic development but because the mere presence of public sector employment contributes to the economy. Initiatives which use public sector employment to contribute to the development of regions (e.g., the federal government deconcentration policy of the 1970s) could thus be extremely positive. A note of caution on this front: policy makers should be careful not to create an intrusive rentier's problem. This exists when high-paying jobs create a distortion in local labour markets and thereby thwart development by, for example, raising expectations of higher incomes. The end result is that small businesses have difficulty competing on such labour markets, which stymies their development. Consequently, the conditions of local labour markets should be taken into account, especially when those labour markets are small.

INTRODUCTION

General Introduction

This study presents a socio-economic profile of Atlantic Canada that relies, with one exception,[3] on census data. It is divided into four parts, and includes a brief discussion of various definitions of *rural*. The first part, which focuses on demographics and migration, describes population dynamics. The second part presents labour market dynamics, with chapters on educational achievement, income, and employment. Industrial sector dynamics are analysed in part three. The topic of the last part is public policy, which examines the impact of the public sector and discusses the policy implications of our results.

Our study has two broad objectives. The first is to present a socio-economic analysis of Atlantic Canada focusing on varying degrees of urbanization and rurality. The second is to provide a reference document for practitioners and students of Atlantic Canada's economy.

Unless otherwise indicated, all data used in this study are taken from Statistics Canada census data. Reference is always made to the four Atlantic provinces and to the region's census divisions (CDs). When available, we also present data for the other Canadian provinces and Canada, occasionally making reference to Atlantic Canada's larger agglomerations. Several figures used in our analysis are included in the present document. All figures can be found in Desjardins (2005).

A few caveats should be made with respect to the data. One is that census data are based on where an individual resides, not on the location of his or her employment, which means that all the information we present is linked to the former, not to the latter.

One should also be reminded that care must be taken when dealing with small units, which in our case concerns some of the variables in some of the regions. There are two census forms: the first is a long one with a few questions that are answered by all individuals covered by the census; the second, which is much more detailed, is answered by 20 percent of individuals. Statistics Canada technicians then extrapolate to produce representative data for the population as a whole. As our units become smaller, the statistical precision of the data diminishes. The data still remain an extremely valuable source of information; however, the reader should keep in mind that the degree of precision is less for smaller units.

A final caveat is that because the census is taken every five years (the last one was in 2001), the information gathered reflects the situation in the year of the census, but less so in the years leading up to the next one. Also, for some variables such as annual income, the data are for the year preceding the census.

Keeping in mind those caveats, we will now present several approaches to studying urban/rural issues.

3. The exception is the Labour Force Survey (LFS) used for a multi-year analysis of educational achievement by age groups.

Urban and Rural Atlantic Canada

Various Definitions of Rural

In a recent Statistics Canada paper, du Plessis et al. (2002) presented six different definitions of *rural*. Concerning a suitable definition they said, "We strongly suggest that the appropriate definition be determined by the question being addressed; however, if we were to recommend one definition as a starting-point or benchmark for understanding Canada's rural population, it would be the 'rural and small town' definition" (du Plessis et al. 2002, 1).

For the six definitions of rural presented by the Statistics Canada authors, see table 1. This is followed, in table 2, by the presentation of the typology developed by Beale and modified by Ehrensaft, with the inclusion of the corresponding CDs for Atlantic Canada.

Table 1

Alternative Definitions of Rural

Definition	Main Criteria, Thresholds, and Building Blocks
Census "rural areas"	**Population size:** Population living *outside* places of 1,000 people or more; *or* **Population density:** Population living *outside* places with densities of 400 or more people per square kilometre. **Building blocks:** Enumeration areas (EAs).
"Rural and small town" (RST) **Metropolitan area and census agglomeration Influence zones (MIZ)**	**Labour market context:** Population living *outside* the commuting zone of larger urban centres (of 10,000 or more). **Population size/density:** Urban areas with populations less than 10,000 are included in RST together with rural areas if they are outside the main commuting zones of larger urban centres. **Labour market context:** MIZ disaggregates the RST population into four subgroups based on the size of commuting flows to *any* larger urban centre (of 10,000 or more). **Building blocks:** census subdivisions (CSDs) (for RST and MIZ).
OECD "rural communities"	**Population density:** Population in communities with densities less than 150 people per square kilometre. **Building blocks:** census consolidated subdivisions (CCSs).
OECD "predominantly rural regions"	**Settlement context:** Population in regions where more than 50 percent of the people live in an OECD "rural community." **Building blocks:** census divisions (CDs).
"Non-metropolitan regions" (Ehrensaft's "Beale codes")	**Settlement context:** Population living outside of regions with major urban settlement of 50,000 or more people. Non-metropolitan regions are subdivided into three groups based on settlement type, and a fourth based on location in the North. The groups based on settlement type are further divided into "metropolitan adjacent" and "not adjacent" categories. **Population size:** Non-metropolitan regions include urban settlements with a population of less than 50,000 people and areas with no urban settlements (where "urban settlements" are defined as places with a population of 2,500 or more). **Building blocks:** CDs.
"Rural" postal codes	**Rural route delivery area:** Areas serviced by rural route mail delivery from a post office or postal station. A 0 in the second position of a postal code denotes a "rural" postal code (also referred to as a "rural" forward sortation area [rural FSA]). **Building blocks:** Canada Post geography.

Source: du Plessis et al. 2002, 17.

Table 2
Ehrensaft Codes/"Modified Beale Codes" for Canadian Non-Metropolitain Analysis and Corresponding Atlantic Canadian Census Divisions

Metropolitan Regions

Major metropolitan:

Code 0 – Central CDs of urban settlements of 1 million or more people

Code 1 – Fringe CDs of urban settlements of 1 million or more people

Mid-sized metropolitan:

Code 2 – CDs containing urban settlements of 250,000 to 999,999 people

1209[4]	Halifax (NS)

Smaller metropolitan:

Code 3 – CDs containing urban settlements of 50,000 to 249,999 people

1001	Division No. 1 (NL)	1102	Queens (PEI)
1217	Cape Breton (NS)	1301	Saint John (NB)
1303	Sunbury (NB)	1305	Kings (NB)
1306	Albert (NB)	1307	Westmorland (NB)
1310	York (NB)		

Non-Metropolitan Regions

Non-metropolitan small city zone: Non-metropolitan CDs containing urban settlements of 20,000 to 49,999 people

Code 4 – adjacent to a metropolitan area

Code 5 – not adjacent to a metropolitan area

1005	Division No. 5 (NL)	1006	Division No. 6 (NL)
1207	Kings (NS)	1212	Pictou (NS)
1315	Gloucester (NB)		

Small town zone: Non-metropolitan CDs containing urban settlements of 2,500 to 19,999 people

Code 6 – adjacent to a metropolitan area

1206	Lunenburg (NS)	1208	Hants (NS)
1210	Colchester (NS)	1302	Charlotte (NB)

Code 7 – not adjacent to a metropolitan area

1002	Division No. 2 (NL)	1003	Division No. 3 (NL)
1004	Division No. 4 (NL)	1007	Division No. 7 (NL)
1008	Division No. 8 (NL)	1103	Prince (PEI)
1202	Yarmouth (NS)	1204	Queens (NS)
1211	Cumberland (NS)	1214	Antigonish (NS)
1215	Inverness (NS)	1309	Northumberland (NB)
1311	Carleton (NB)	1312	Victoria (NB)
1313	Madawaska (NB)	1314	Restigouche (NB)

Predominantly rural: Non-metropolitan CDs containing no urban settlements (i.e., no places of 2,500 or more people)

Code 8 – adjacent to a metropolitan area

1216	Richmond (NS)	1218	Victoria (NS)
1308	Kent (NB)		

Code 9 – not adjacent to a metropolitan area

1101	Kings (PEI)	1201	Shelburne (NS)
1203	Digby (NS)	1205	Annapolis (NS)
1213	Guysborough (NS)	1304	Queens (NB)

Northern hinterland:

Code 10 – CDs that are entirely or mostly 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

1009	Division No. 9 (NL)	1010	Division No. 10 (NL)

Source: du Plessis et al. 2002, 13 and app. I; www.statcan.ca/english/Subjects/Standard/sgc/2001/2001-sgc-classmenu.htm

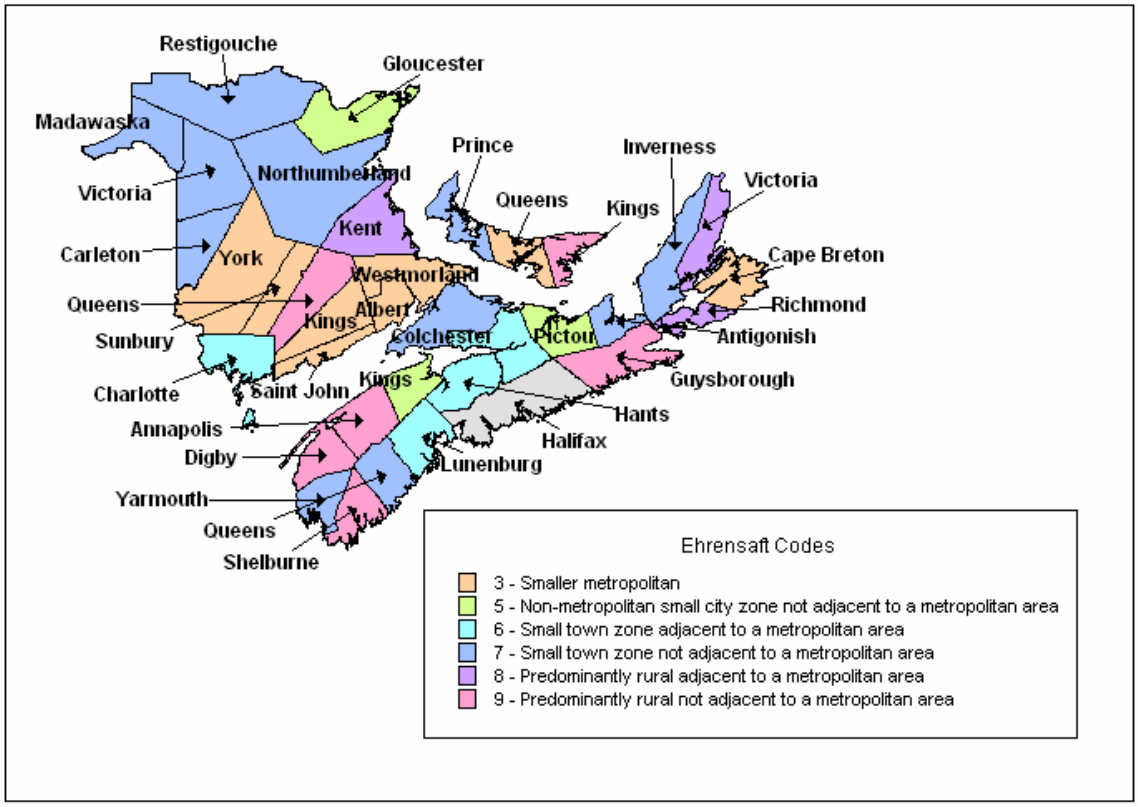
4. The four-digit numbers refer to the Standard Geographical Classification (SGC) 2001 for each census division.

We decided to use the Ehrensaft codes (non-metropolitan regions) in our study for two principal reasons. First, we wanted a definition that was more than simply urban/rural: we wanted a typology. Second, we wanted the building blocks to be as user friendly as possible to allow others to use our results and thus further the analysis. As shown in table 2, the Ehrensaft codes present ten categories; these categories allow us to develop a more precise analysis. The building block is the census division (CD), a unit more easily accessible to researchers than other units of analysis.

Each Atlantic CD is thus associated with an Ehrensaft code, as described in table 2 and in maps 1 and 2. The rural population based on the six different definitions is then presented in table 3.

Map 1

Maritime Provinces' Census Divisions, Based on Ehrensaft Codes



Map 2

Newfoundland and Labrador's Census Divisions, Based on Ehrensaft Codes

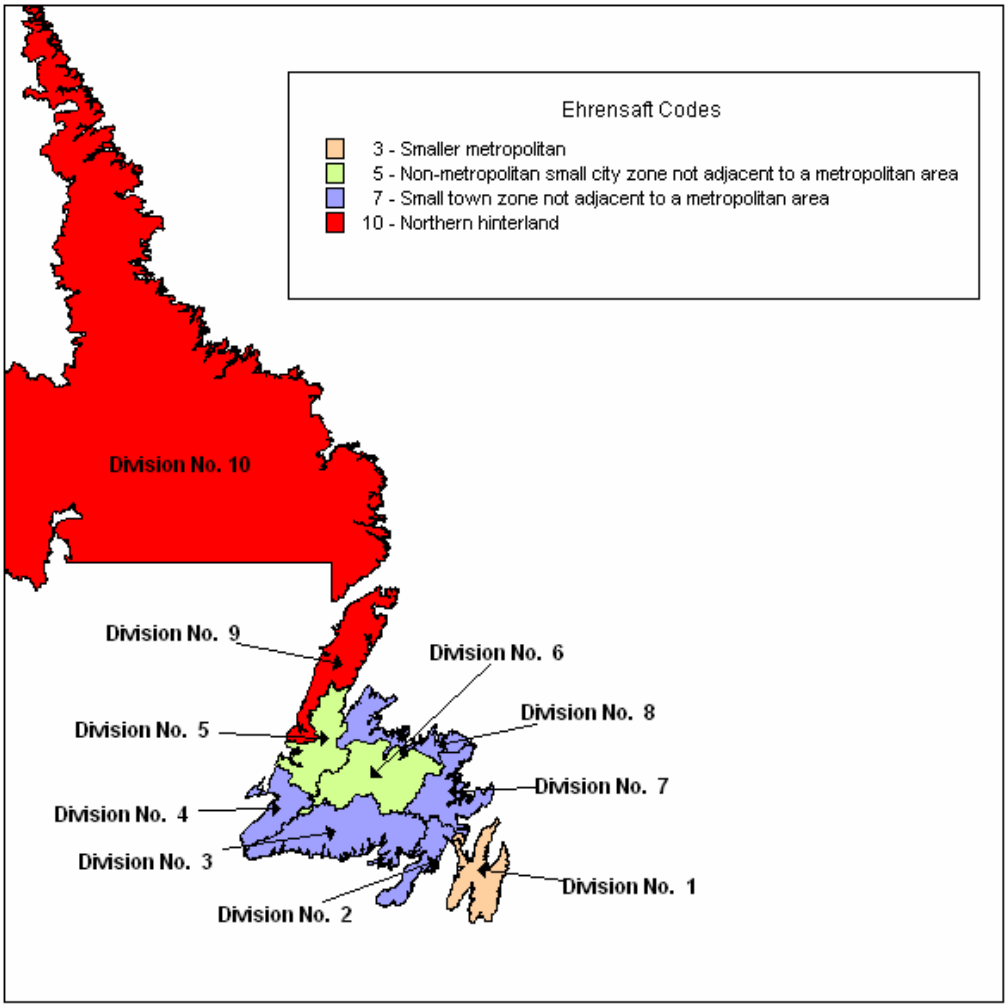


Table 3

Distribution of the "Rural" Private Household Population under Alternative Definitions, Atlantic Canada, 1996

	Census Rural	Rural and Small Town	OECD Rural Communities	OECD Predominantly Rural Regions	Beale/Ehrensaft Non-Metropolitan Regions	Rural Postal Codes
NL	236,215	304,245	374,400	297,845	297,845	317,550
PEI	74,200	60,425	82,990	131,800	63,210	72,060
NS	408,155	346,540	667,650	558,295	442,030	378,250
NB	374,400	353,120	584,670	564,775	331,210	342,670

Source: du Plessis et al. 2002, app.D.

PART 1
POPULATION DYNAMICS

1

DEMOGRAPHICS

Population

In 2001, Atlantic Canada's population of nearly 2.3 million people represented 7.5 percent of Canada's total population (see table 1.1).[5] Two of every five Atlantic Canadians lived in Nova Scotia and nearly an additional third in New Brunswick. The region's two most populated CDs, NL1 (St. John's) and Halifax, accounted for a full quarter of the population. Of the region's forty-six CDs, each of fifteen accounted for less than 1 percent of the region's population and each of thirty-two for less than 2 percent (see map 1.1).

Table 1.1

Population and Share of Atlantic Canada's Population, Provinces and Census Divisions, 2001

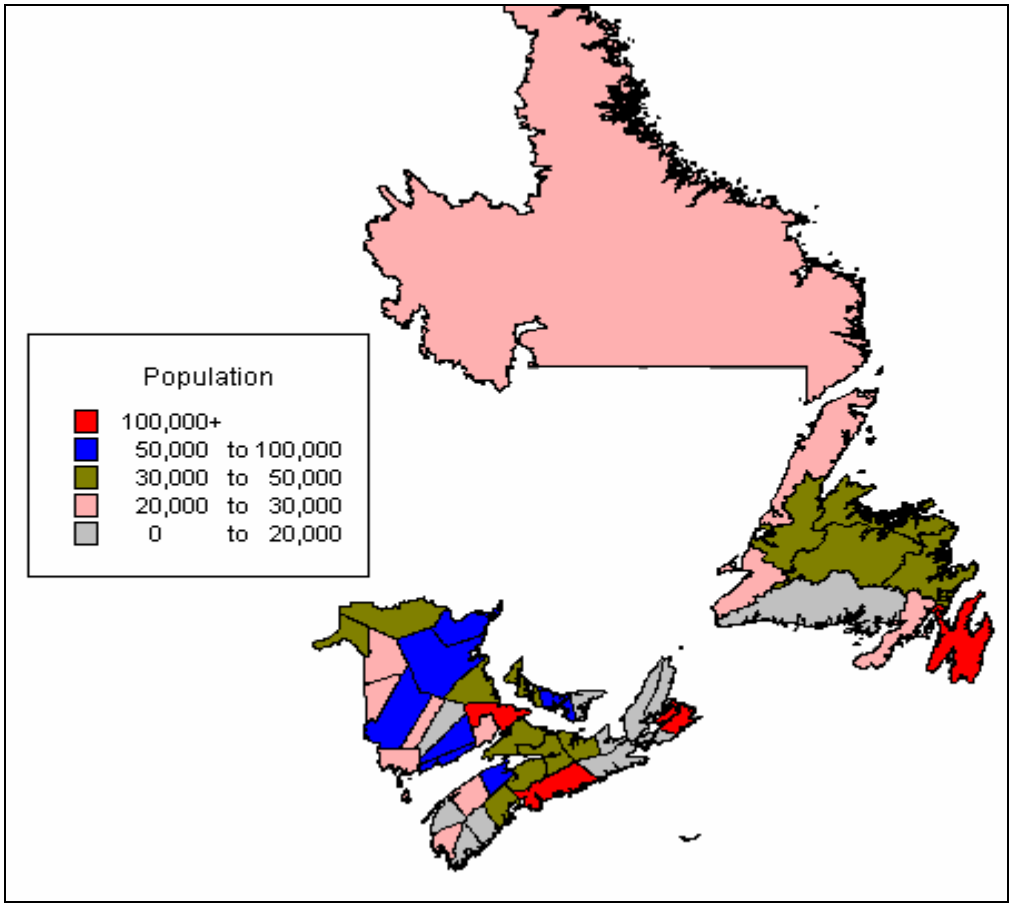
	Population	Share of Atlantic Canada (%)
Newfoundland 1	242,875	10.63
Newfoundland 2	24,371	1.07
Newfoundland 3	19,370	0.85
Newfoundland 4	22,162	0.97
Newfoundland 5	40,466	1.77
Newfoundland 6	36,208	1.58
Newfoundland 7	37,335	1.63
Newfoundland 8	42,188	1.85
Newfoundland 9	20,091	0.88
Newfoundland 10	27,864	1.22
Newfoundland, total	**512,930**	**22.44**
PEI-Kings	19,180	0.84
PEI-Queens	71,619	3.13
PEI-Prince	44,495	1.95
Prince Edward Island, total	**135,294**	**5.92**
NS-Shelburne	16,231	0.71
NS-Yarmouth	26,843	1.17
NS-Digby	19,548	0.86
NS-Queens	11,723	0.51
NS-Annapolis	21,773	0.95
NS-Lunenburg	47,591	2.08
NS-Kings	58,866	2.58
NS-Hants	40,513	1.77
NS-Halifax	359,183	15.71
NS-Colchester	49,307	2.16
NS-Cumberland	32,605	1.43
NS-Pictou	46,965	2.05
NS-Guysborough	9,827	0.43
NS-Antigonish	19,578	0.86

5. Atlantic provinces' individual share of the Canadian population: NL: 1.7 percent; PEI: 0.5 percent; NS: 3.0 percent; NB: 2.4 percent.

NS-Inverness	19,937	0.87
NS-Richmond	10,225	0.45
NS-Cape Breton	109,330	4.78
NS-Victoria	7,962	0.35
Nova Scotia, total	**908,007**	**39.73**
NB-Saint John	76,407	3.34
NB-Charlotte	27,366	1.20
NB-Sunbury	25,776	1.13
NB-Queens	11,862	0.52
NB-Kings	64,208	2.81
NB-Albert	26,749	1.17
NB-Westmorland	124,688	5.46
NB-Kent	31,383	1.37
NB-Northumberland	50,817	2.22
NB-York	87,212	3.82
NB-Carleton	27,184	1.19
NB-Victoria	21,172	0.93
NB-Madawaska	35,611	1.56
NB-Restigouche	36,134	1.58
NB-Gloucester	82,929	3.63
New Brunswick, total	**729,498**	**31.92**

Map 1.1

Population of Atlantic Canada's Census Divisions, 2001



It is interesting to note that based on the Ehrensaft codes typology, for the year 2001 barely half (51.97 percent) of Atlantic Canada's population lived in a metropolitan, or urban, region (see table 1.2). This compares to 50.72 percent in 1996 (du Plessis et al. 2002, app. D) and indicates a slight urbanization of the region. In that same year, 1996, 73.29 percent of all Canadians lived in metropolitan, or urban, regions. This means that in 1996 Atlantic Canada as a whole was approximately 44 percent less urban than Canada as a whole. Ironically, on a provincial basis, three Atlantic provinces (PEI, NS, NB) are ranked among the top four Canadian provinces with the highest population density (OECD 2002, 27). However, as map 1.2 shows, this high population density is not a characteristic shared by all CDs, especially by those in Newfoundland and Labrador.

A final characteristic which needs to be highlighted is the absence of a very large urban centre in Atlantic Canada. Halifax, the region's largest, is ranked thirteenth in Canada, St. John's, the region's second largest, is nineteenth (Statistics Canada 2001 census).

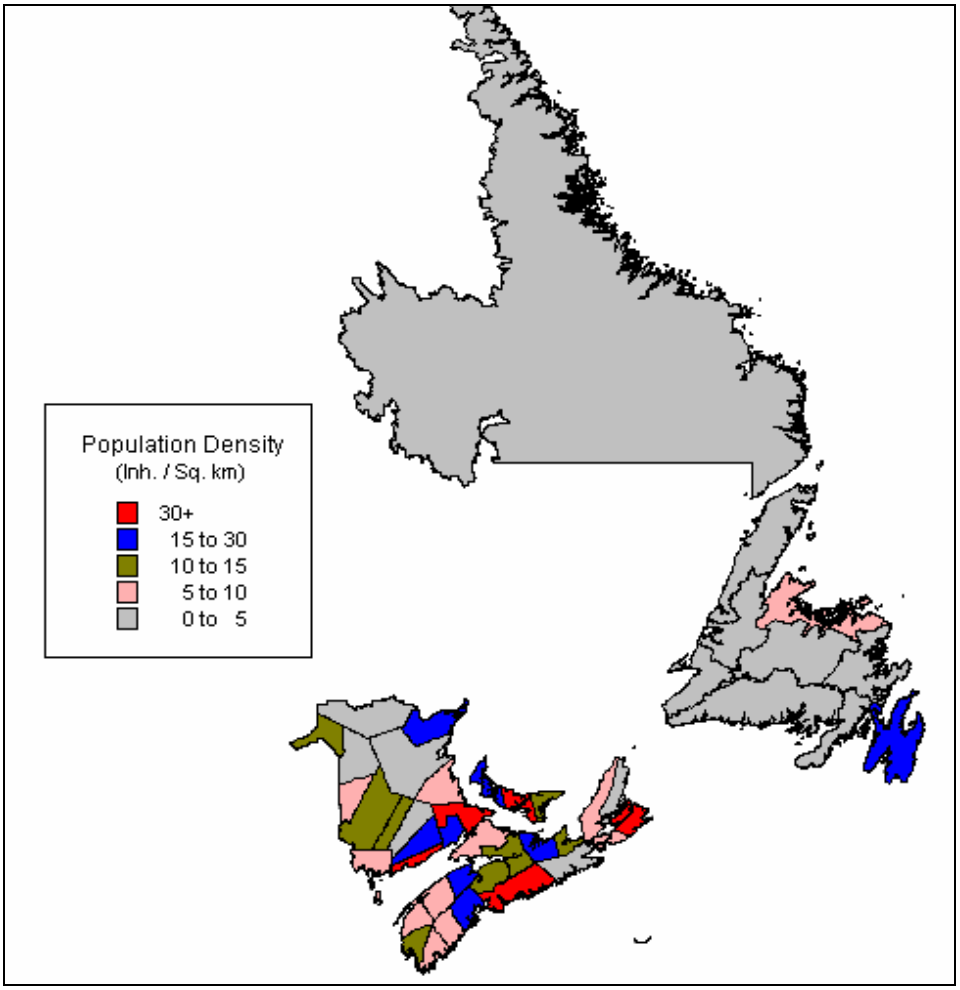
Table 1.2

Some Demographic Statistics Based on Ehrensaft Codes, Atlantic Canada, 2001

Code	Description	Number of CDs	Population	Share of Atlantic Canada (%)
2	Mid-sized metropolitan	1	359,183	15.71
3	Smaller metropolitan	9	828,864	36.26
5	Non-metropolitan small city zone not adjacent to a metropolitan area	5	265,434	11.61
6	Small town zone adjacent to a metropolitan area	4	164,777	7.21
7	Small town zone not adjacent to a metropolitan area	16	471,525	20.63
8	Predominantly rural adjacent to a metropolitan area	3	49,570	2.17
9	Predominantly rural not adjacent to a metropolitan area	6	98,421	4.31
10	Northern hinterland	2	47,955	2.10

Map 1.2

Population Density of Atlantic Canada's Census Divisions, 2001



Let us now turn to recent population changes.

Population Changes

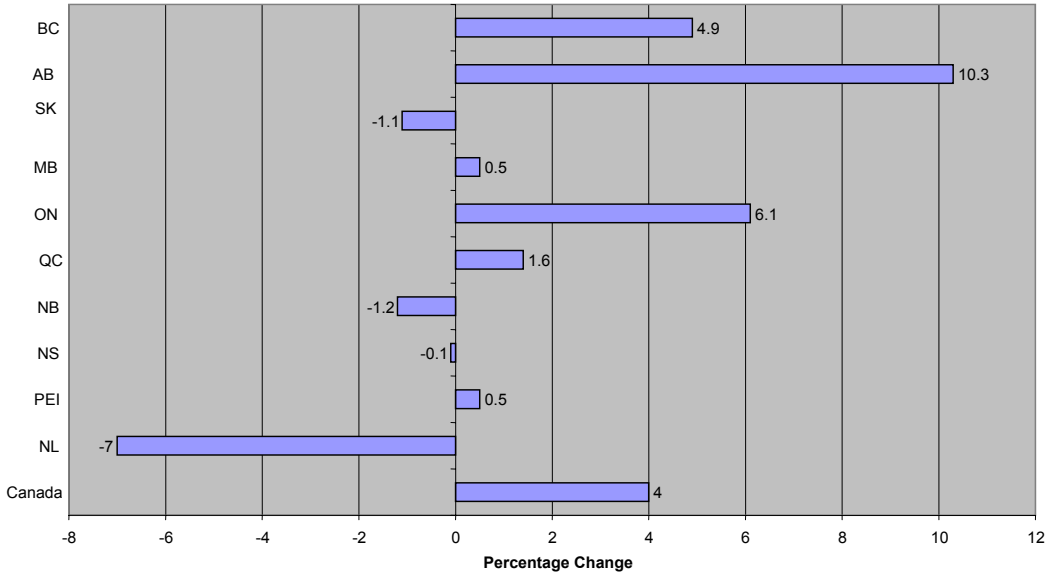
Between 1996 and 2001, Canada's population grew by 4 percent, while three of Atlantic Canada's four provinces experienced a population decline (see figure 1.1).[6] Only Prince Edward Island bucked the regional trend, with a growth rate of 0.5 percent for the pe-

6. As indicated earlier, while some figures are included in the present text, all can be found in Pierre-Marcel Desjardins, *A Socio-Economic Profile of Atlantic Canada: Characteristics of Rural and Urban Regions, with Implications for Public Policy – A Statistical Appendix* (2005).

riod. The steepest decline was experienced by Newfoundland and Labrador: a 7 percent decline in its population.

Figure 1.1

Population Variations Between 1996 and 2001, Canada and Provinces



Focusing our analysis on the region's CDs, we quickly find that population growth between 1996 and 2001 was highly concentrated in a few CDs, while population decline was rather widespread (see map 1.3). Generally speaking, either being a metropolitan area or being adjacent to one was a condition for population growth. The only exceptions to this trend were Antigonish and Carleton. However, even metropolitan regions were not immune to population decreases, namely, NB-King, NL1 (St. John's), NB-Saint John, and Cape Breton. Notwithstanding this caveat, it is clear that Atlantic Canada's rural regions are under pressure from population decline and that in general the relative extent of this population decline is proportional to their distance from metropolitan regions.

We further note that Newfoundland and Labrador's ten CDs suffered a population loss during this period. In fact, the six — and eight of the nine — CDs which lost the highest percentage of their population were from that province.

Is population decline a recent phenomenon? During the twenty-year period between 1981 and 2001, Newfoundland and Labrador is the only Canadian province which experienced a population decline, although all of the Atlantic provinces fell short of Canada's overall performance (see figure 1.2).

The overall trend in the population growth of urban centres and in the population decline of rural regions was also present during the twenty-year period from 1981 to 2001 (see map 1.4). With the exception of the industrial centres of Cape Breton and NB-Saint John, all metropolitan regions saw their populations increase. At the same

time, most non-metropolitan regions, especially those not adjacent to a metropolitan region, saw their populations diminish. From map 1.4, we can clearly see how acute the challenge is for Newfoundland and Labrador, and, to a lesser extent, for what we might characterize as peripheral New Brunswick (northern NB) and peripheral Nova Scotia (western and eastern NS).

Map 1.3

Population Variations Between 1996 and 2001, Atlantic Canada's Census Divisions

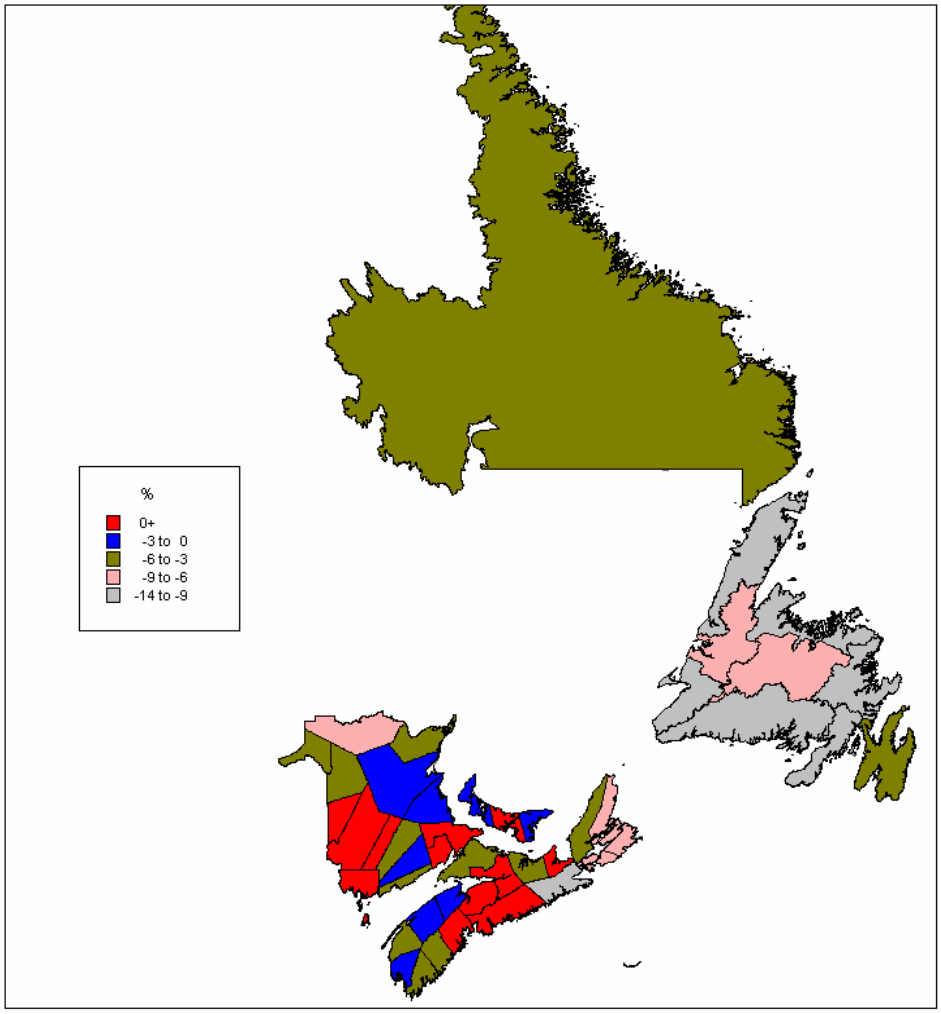
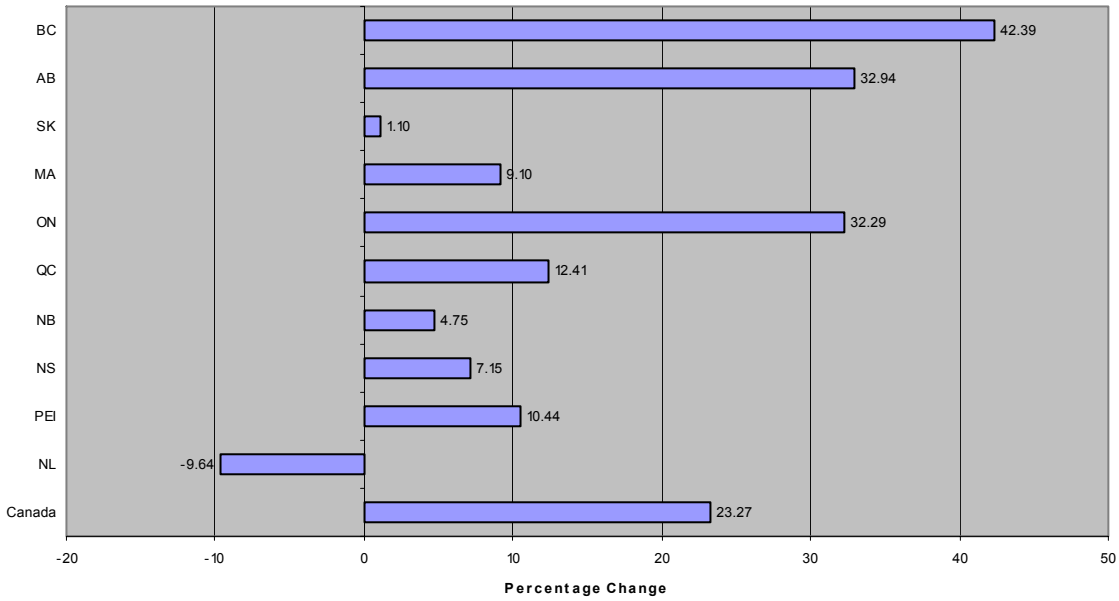
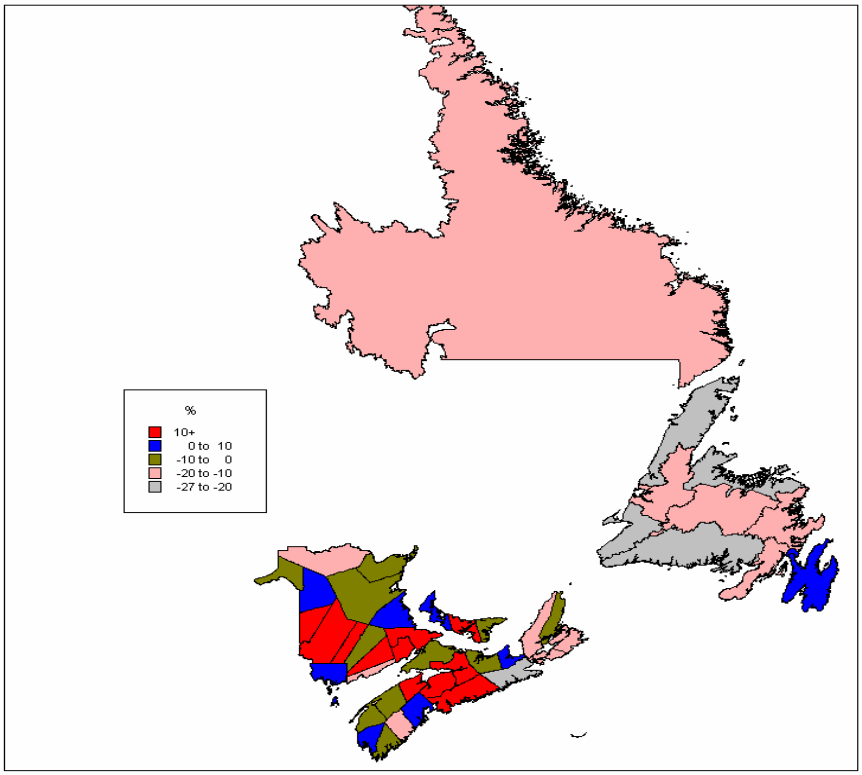


Figure 1.2
Population Variations Between 1981 and 2001, Canada and Provinces



Map 1.4

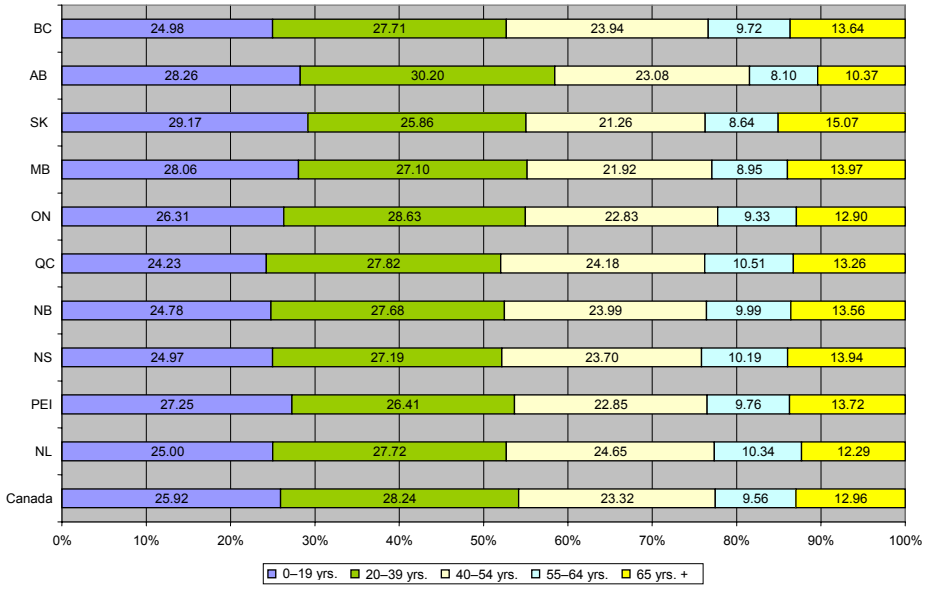
Population Variations Between 1981 and 2001, Atlantic Canada's Census Divisions



Age Structure

The population of Atlantic Canada is generally older than that of Canada as a whole (see figure 1.3). For example, in 2001 the region's four provinces had a smaller proportion of their population in the age category of 20–39 when compared to the national average. For the age category 0–19, only Prince Edward Island had a proportion above the national average. For the older age categories of 40–54, 55–64, and over 65, there were only two instances (NL, 65+; PEI, 40–54) where provinces were below the national average.

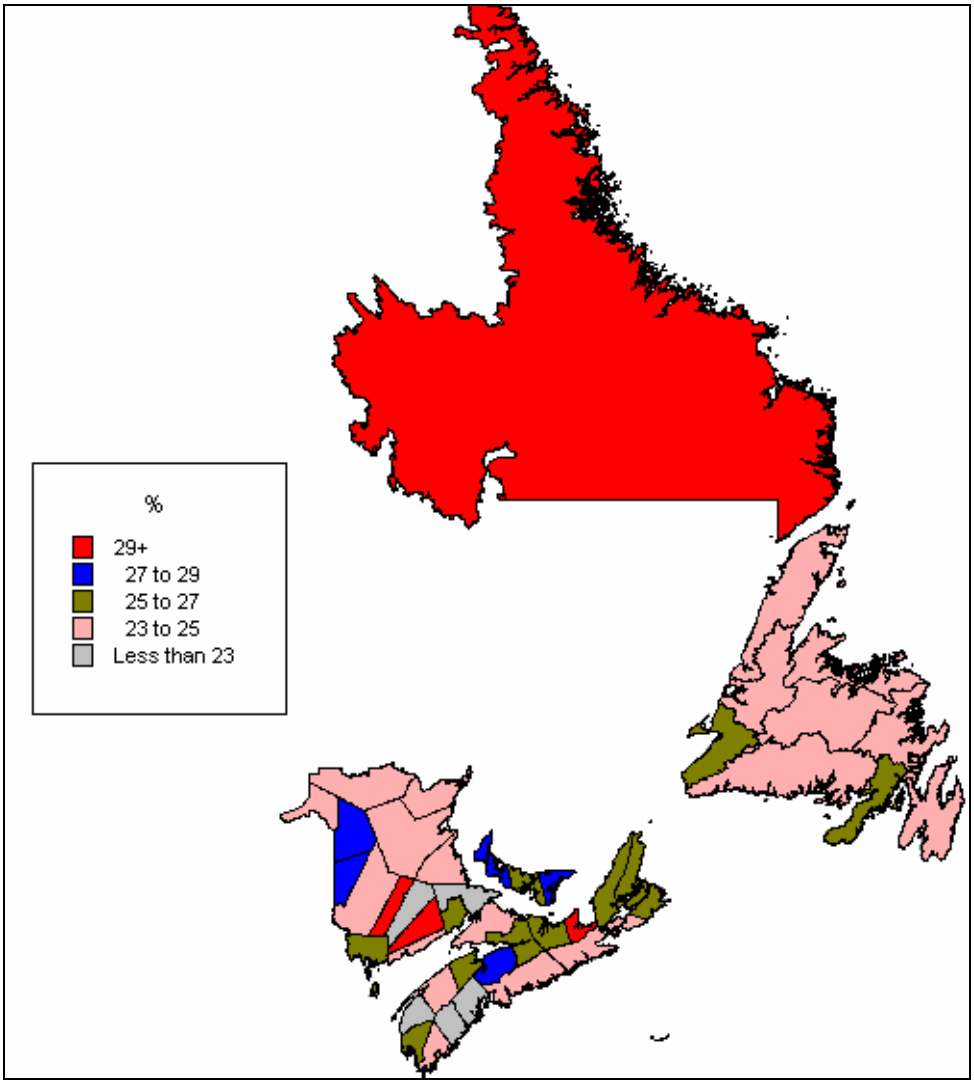
Figure 1.3
Distribution of Population by Age Groups, Canada and Provinces, 2001



The analysis of the region's CDs reinforces our previous findings of an "older" region: very few CDs are above the national average in the younger age categories of 0–19 and 20–39 (see maps 1.5 and 1.6). At the same time, most are above the national average for the age categories 55–64 and 65+ (see map 1.7). Metropolitan regions are generally slightly "younger" than rural regions.

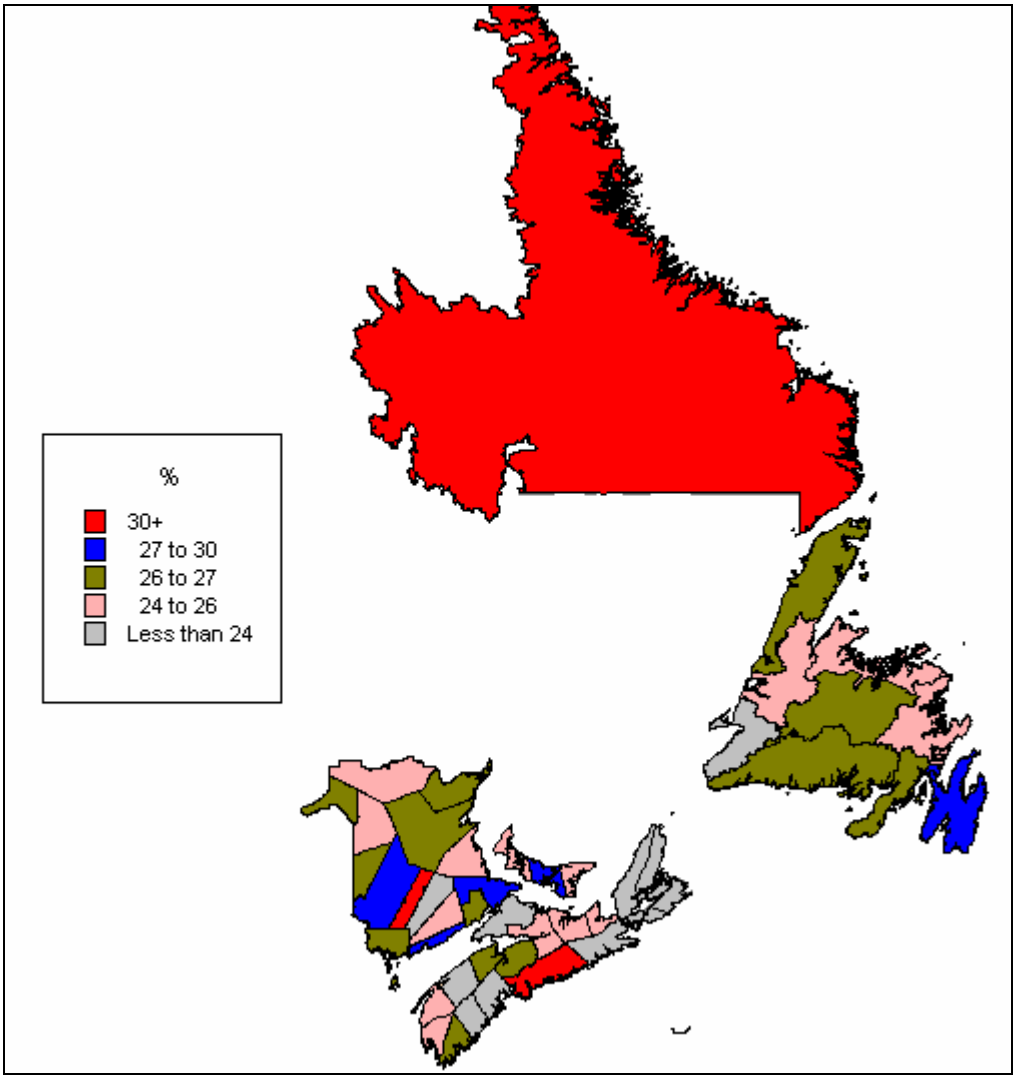
Map 1.5

Population Between 0 and 19 Years of Age, Atlantic Canada's Census Divisions, 2001



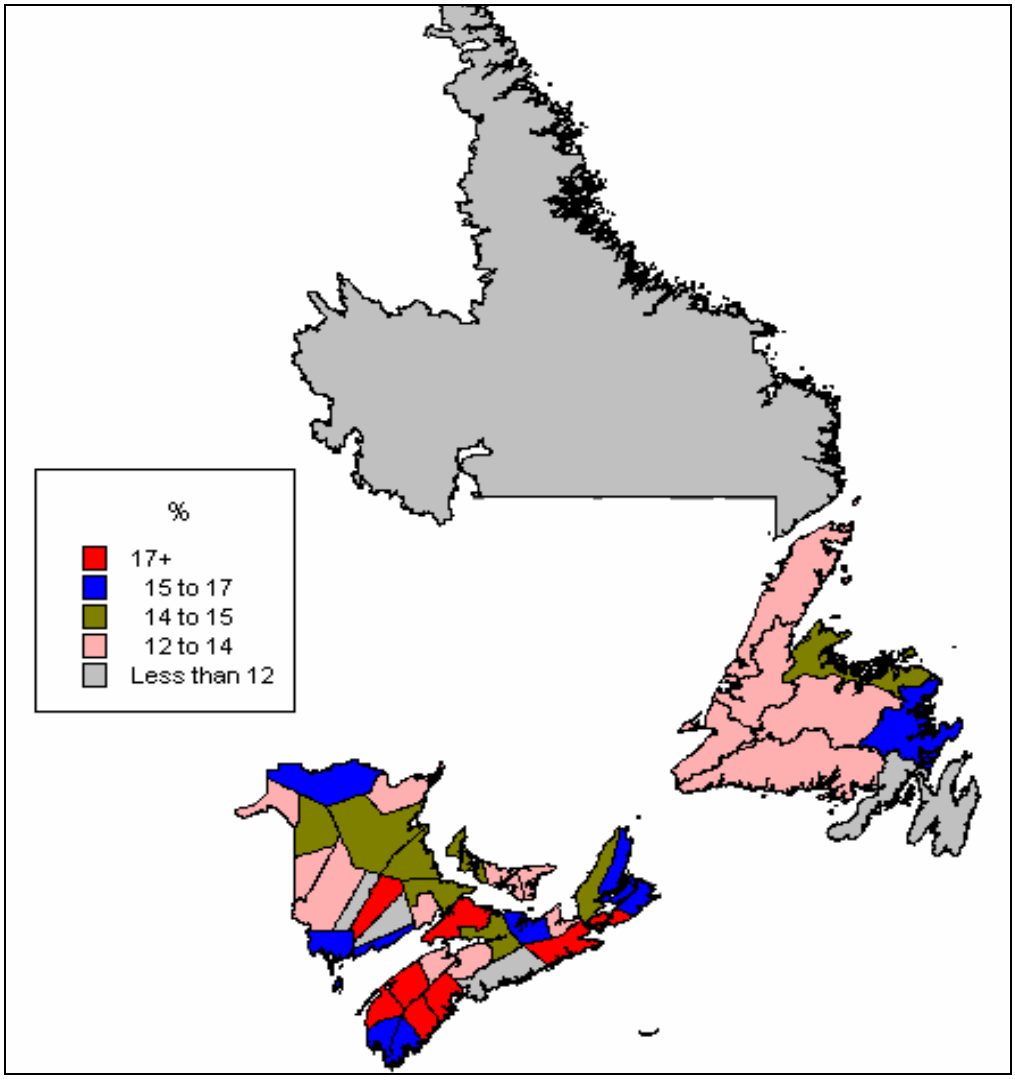
Map 1.6

Population Between 20 and 39 Years of Age, Atlantic Canada's Census Divisions, 2001



Map 1.7

Population 65 Years of Age and Over, Atlantic Canada's Census Divisions, 2001



Projections

We have seen earlier that overall, Atlantic Canada is experiencing a population decline while also having a population age structure which is relatively older than Canada's as a whole. This begs the question, what can we expect in the future? Will the region soon be facing a crisis in the supply of labour? Of the various factors which influence labour supply, we will highlight four: the inflow of young people reaching working age, the outflow of older workers retiring, and both the immigration and emigration of the working-age population. Leaving migration for the next chapter, we will now concentrate on the first two factors: the inflow of local young people reaching working age and the outflow of older workers retiring. We are also making the very strong assumption that

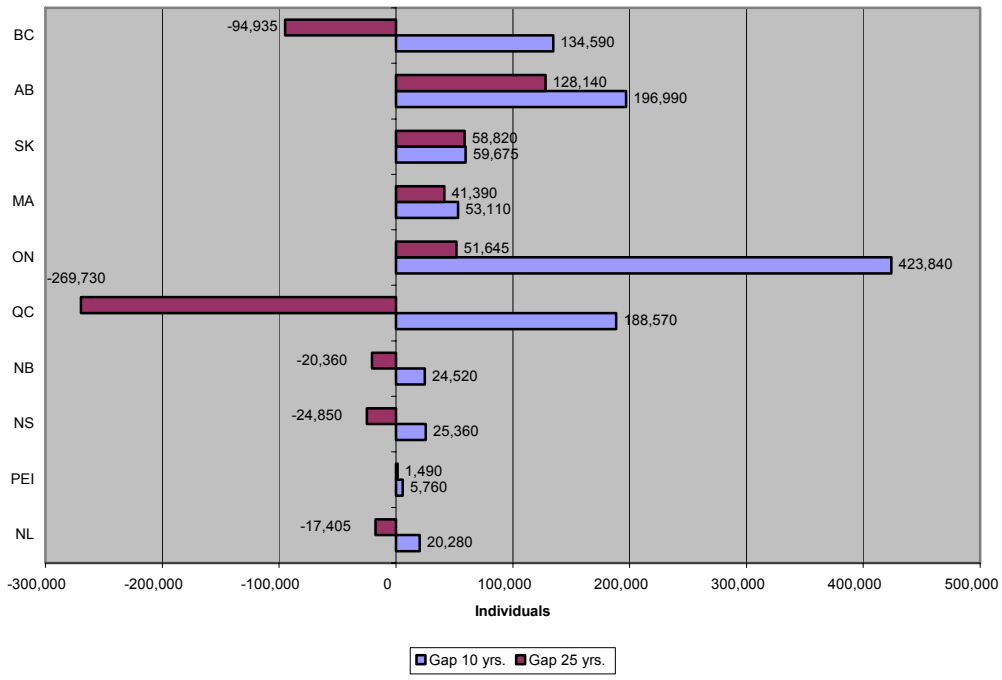
migration[7] is in a state of equilibrium, i.e., that immigration equals emigration. As we will see in the next chapter, this assumption about equilibrium is not realistic for many of the region's CDs. We also make implicit assumptions such as a constant participation rate. Making these strong assumptions allows us to focus on the internal population dynamics of the relevant regions, a very useful exercise.

We will thus present two scenarios. The first focuses on a ten-year period comparing the age group which should retire over that period (55–64, assuming retirement at age 65) with the one which should enter the labour market over that ten-year span (15–24), making the strong assumption of entry on the labour market at age 25, an assumption dictated in part by the data available. Other things being equal, this gives us a crude perspective on the potential overall labour shortage. The second scenario focuses on a twenty-five-year period, this time comparing the group of future retirees (40–64 years of age) with the group of future entrants (0–24 years of age).

Figure 1.4 indicates that other things being equal, no province will see a decline in our ten-year scenario (2001–11). The second scenario, for the twenty-five-year period 2001–26, yields very different results, with five provinces, including three from Atlantic Canada, experiencing a net decline.

Figure 1.4

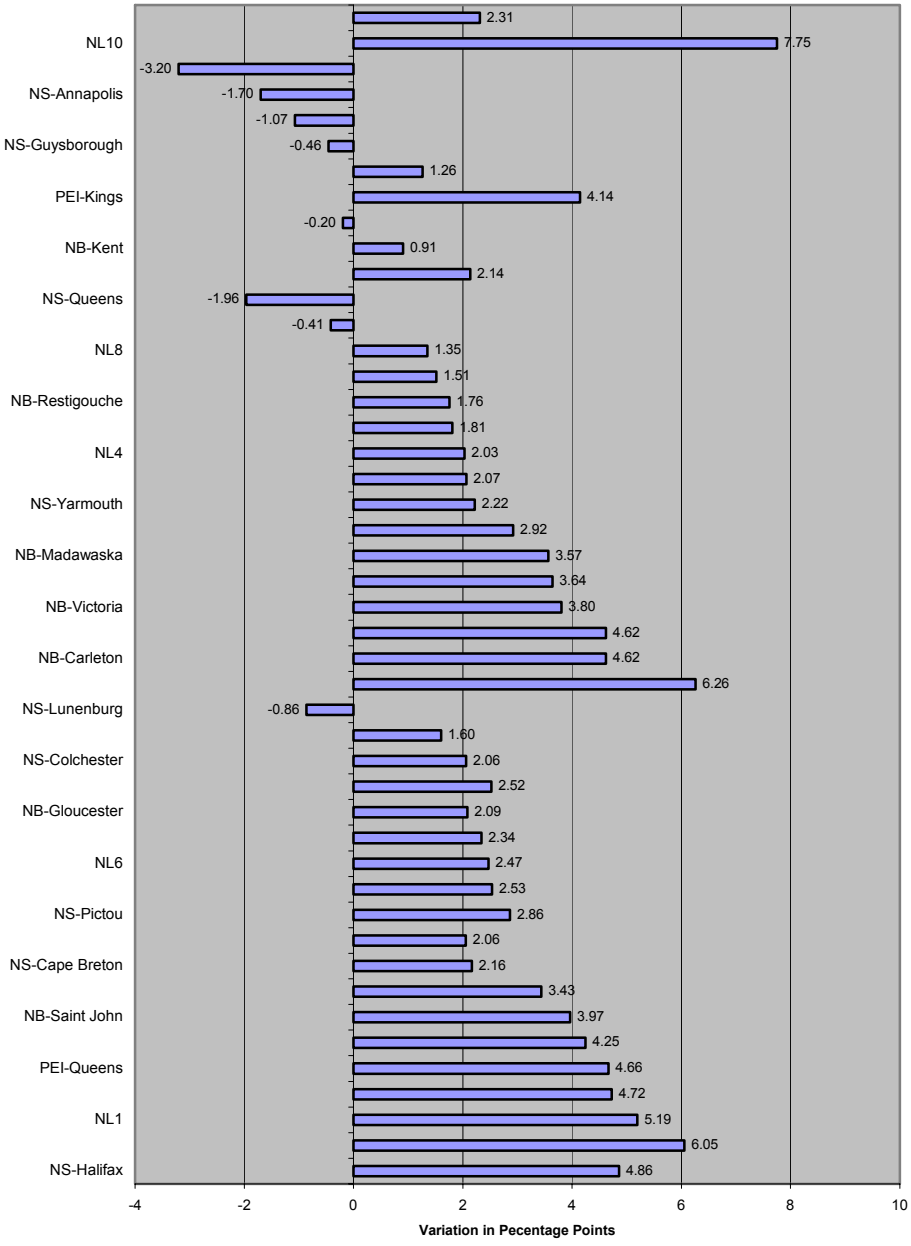
Differences Between Age Groups 15–24 and 55–64 (10 Years) and Between Age Groups 0–24 and 40–64 (25 Years), Canadian Provinces, 2001



7. Note that the term *migration* signifies movements into or out of a region, a province, a country. Unless otherwise stated, migration in our case comprises intraprovincial migration, interprovincial migration, and international migration.

Turning to the region's CDs, we note that other things being equal, most will experience a net increase in the ten-year period (2001–11) of scenario 1 (see figure 1.5 and map 1.8). As was the case for the provinces, scenario 2 yields very different results: other things being equal, most CDs will experience a net population decline during the period 2001–26 (see figure 1.6 and map 1.9). Not surprisingly given our earlier results, the trend is stronger, especially in terms of percentage in Atlantic Canada's rural regions compared to its urban regions.

Figure 1.5
Differences Between Age Groups 15–24 and 55–64 (10 Years), Atlantic Canada's Census Divisions, Ehrensaft Grouping, Percentage of Total Population, 2001



Map 1.8

Differences Between Age Groups 15–24 and 54–64 (10 Years) as a Percentage of Total Population, Atlantic Canada's Census Divisions, 2001

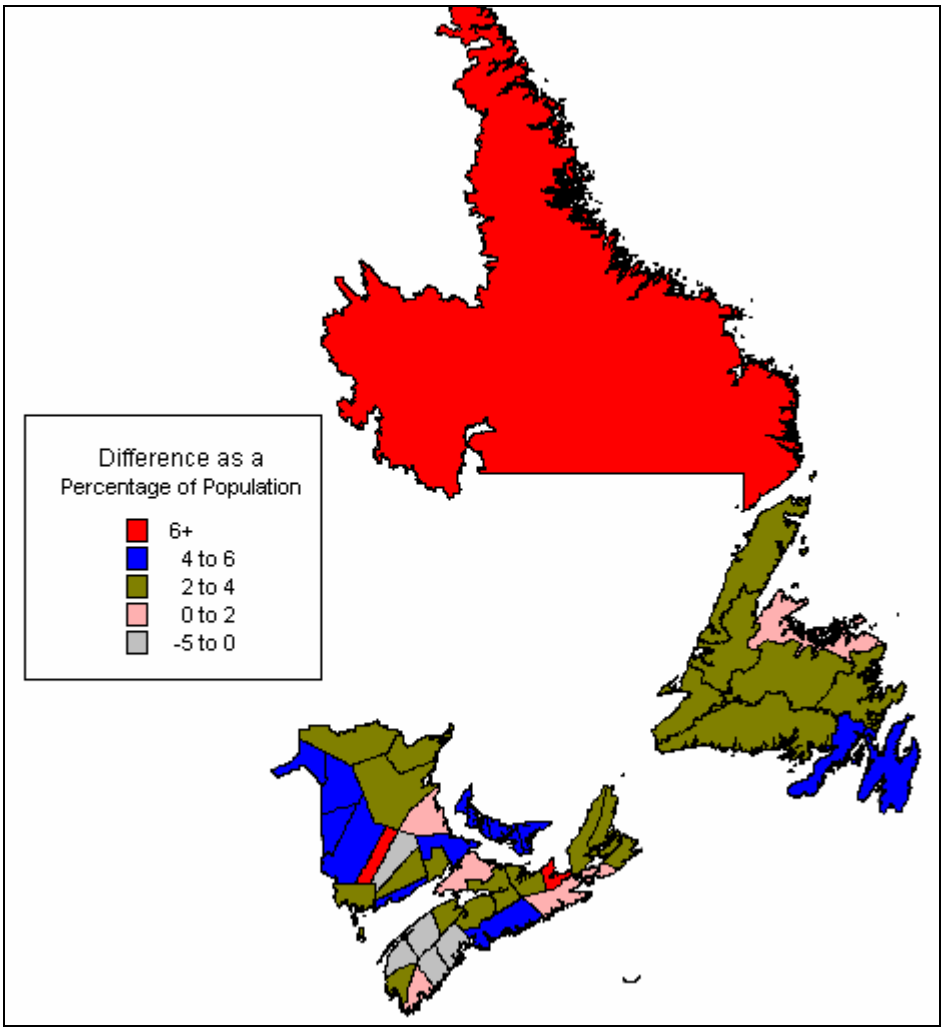
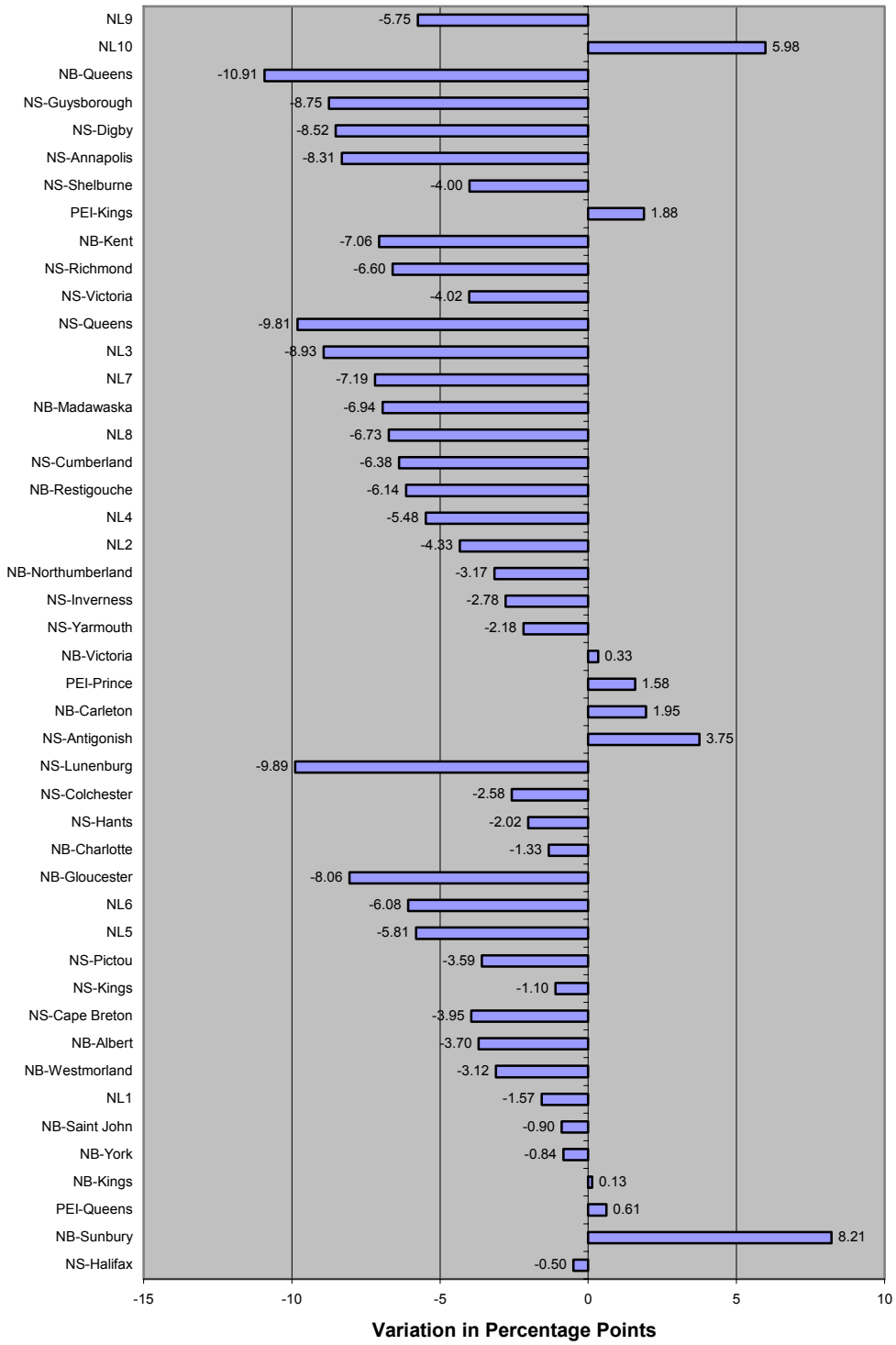


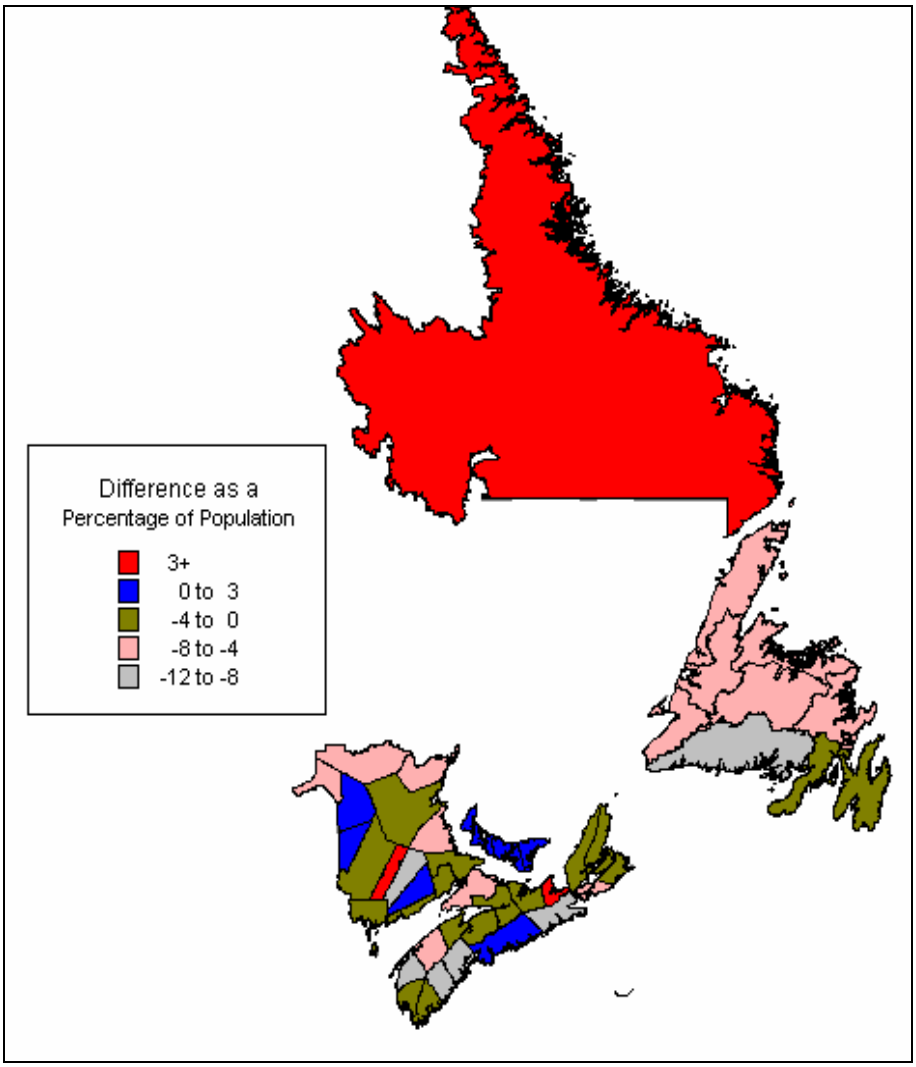
Figure 1.6

Differences Between Age Groups 0–24 and 40–64 (25 Years), Atlantic Canada's Census Divisions, Ehrensaft Grouping, Percentage of Total Population, 2001



Map 1.9

Differences Between Age Groups 0–24 and 40–64 (25 Years) as a Percentage of Total Population, Atlantic Canada's Census Divisions, 2001



Only nine CDs have positive projections in the twenty-five-year scenario, compared to thirty-seven with negative projections. Of the CDs with positive projections, we should point out that two have characteristics not shared by most other CDs. NL10, which represents Labrador, has a significant Aboriginal community (nearly 35 percent identified themselves as Aboriginal in the 2001 survey). NB-Sunbury is home to CFB-Gagetown, giving the CD a very high ratio of soldiers as we will see later. In both cases, this could explain — if not totally, at least partially — the very high positive results.

What can we conclude from our results? First, we must not interpret them as a prediction of inevitable labour shortages: there are too many other factors in play. These include migration, variation of participation rates, retirement age, productivity, etc. Nevertheless, our results highlight a very important fact: what could be described as the natural aging of the population — baby boomers approaching retirement age without sufficient replacements coming from the younger age groups — will put increasing pressure on the region's labour markets.

From a public policy perspective, the difference between our two scenarios is one of bad news versus not so bad news. The bad news is that the medium- to long-term prospects are relatively somber, involving what will most likely be, if nothing changes, significant challenges. The not so bad news is that the region has some time — but not a lot of time — before the situation deteriorates, time which should be spent on implementing measures to mitigate the extent of future challenges, assuming that these demographic trends may be influenced but not overturned. Here we might refer to the Polèse and Shearmur (2002) study and ask if this is not the predicted movement to a new demographic equilibrium in most rural regions. They indeed predicted that the economies of most rural-peripheral areas will only be able to sustain a smaller labour force than was the case in the past.

We must also recognize that the situation is far from homogeneous. For Prince Edward Island, all three CDs produce positive results for both the ten-year and twenty-five year projections. In Newfoundland and Labrador, with the previously mentioned exception of Labrador, all CDs experience a decline. The situation is similar in Nova Scotia, where the exception is Antigonish, and to a lesser extent in New Brunswick, where we have four CDs with positive results for the twenty-five-year projections.

Leaping ahead to the next chapter, where we will see that larger urban centres fare much better than rural regions with respect to net migration, and combining those results with the results of our two scenarios, where larger urban centres also generally fare better, we are led to conclude that the trend of rural regions facing ever more important demographic challenges, compared to the larger urban centres, will continue. From a public policy perspective, which we will discuss further, this presents major challenges not only from the perspective of labour markets but also — and maybe even more — from the perspective of the supply of public goods and services.

2

MIGRATION

We found in chapter 1 that demographic pressures presented important challenges for Atlantic Canada, especially in rural regions. In this chapter we focus on an additional component of population dynamics, migration. To begin with, we paint a profile of immigrants and emigrants. The data we utilize are from the 2001 Statistics Canada census, which covers migrants for the period 1996 to 2001. Note that we have no information on international emigrants: they would have had to be in Canada in 2001 to fill out the census, which by definition was not the case.

Later in the chapter we present a profile of migrants. Our data include all individuals who moved during the period 1996 to 2001 regardless of their destination, with the exception of international emigrants. Unfortunately, this means that we cannot isolate individuals who left a census division, for example, from those who moved but remained in the same census division. While we must remain cautious in our analysis, it nevertheless allows us to have a very good general idea of the characteristics of emigrants as defined by those who left their census division. As an indication, the percentage of migrants who left their census division during the period 1996 to 2001 was 74.4 percent for Newfoundland and Labrador, 58.1 percent for Prince Edward Island, 88.7 percent for Nova Scotia and 76.2 percent for New Brunswick. Having said this, however, we will refer to the characteristics of migrants instead of the characteristics of emigrants.

Immigrants and Emigrants

We begin by presenting a quantitative analysis of the number and proportion of migrants. Focusing first on interprovincial migration on a provincial basis (see table 2.1), we found that between 1996 and 2001, only three Canadian provinces had more immigrants than emigrants, and one, Prince Edward Island, was from Atlantic Canada. The two other leading provinces were Alberta and Ontario. Nova Scotia ranked fourth with over ninety-seven immigrants for every one hundred emigrants. New Brunswick was sixth with a ratio of nearly seventy-nine. Newfoundland and Labrador had the worst performance with a ratio of nearly thirty-four.

Table 2.1

Net Interprovincial Migration and Ratios, Canadian Provinces, 1996 to 2001

	Interprovincial Migration	
	Net	**Ratio: Immigrants/ 100 Emigrants**
Newfoundland	-30,415	33.96
Prince Edward Island	50	100.65
Nova Scotia	-1,265	97.64
New Brunswick	-8,585	78.97
Quebec	-57,245	51.92
Ontario	51,215	127.14
Manitoba	-18,755	69.04
Saskatchewan	-25,225	62.27
Alberta	115,130	195.61
British Columbia	-24,905	85.58

In figures 2.1 and 2.2, we analyse immigration and emigration separately. International immigration, which was not included in table 2.1, is included in these figures; however, as noted before, we lack comparable data for international emigration.

Atlantic Canada does not attract many international immigrants. The four Atlantic provinces are at the tail end of the provincial ranking in this regard, as measured by the ratio of international immigrants to population. On the other hand, most Atlantic provinces fare relatively well in attracting interprovincial immigrants: as a percentage of population, Nova Scotia and Prince Edward Island were tied for second, and New Brunswick followed in fourth place. The region's immigration challenge, therefore, has more to do with attracting immigrants from abroad than from other provinces.

Ontario is the principal origin of interprovincial immigrants for the four Atlantic provinces. In second place, again for the four Atlantic provinces, we find a neighbouring province: for Nova Scotia it is New Brunswick; for the three other provinces it is Nova Scotia.

Intraprovincial immigration is relatively less important for Atlantic Canada than for other Canadian provinces (see figures 2.1 and 2.2). New Brunswick is ranked the highest (sixth), followed by Newfoundland and Labrador (seventh), Prince Edward Island (eighth), and Nova Scotia (tenth). Is this the result of relatively better economic prospects in other provinces as compared to other regions of one's province? Can the relatively smaller size of the Atlantic provinces at least partially explain this phenomenon? Finally, we note the very small percentage of interprovincial immigrants to Quebec.

Figure 2.1

Origin of Individuals Having Immigrated Between 1996 and 2001

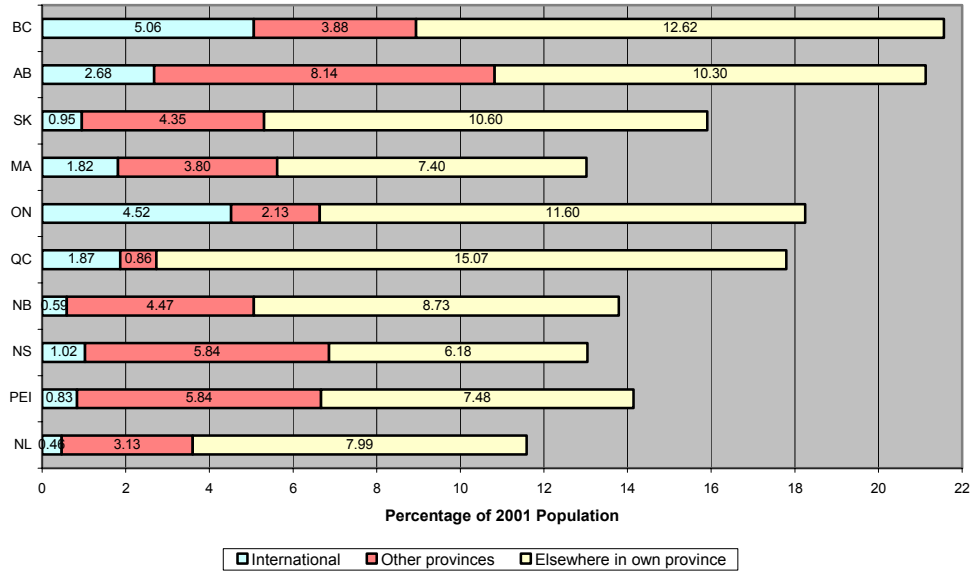
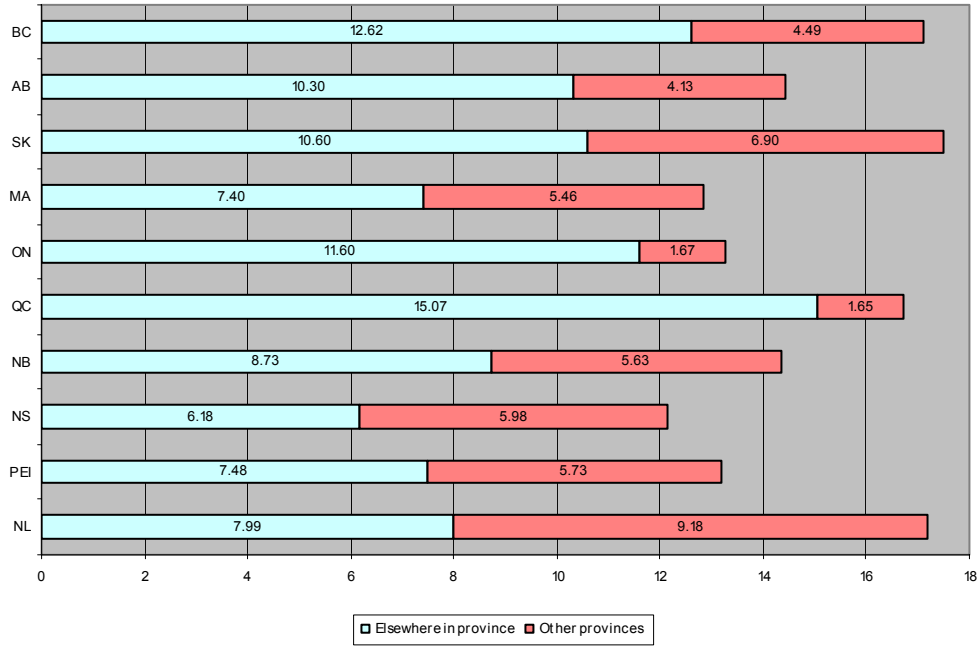


Figure 2.2

Canadian Destination of Emigrants, Canadian Provinces, 1996 to 2001



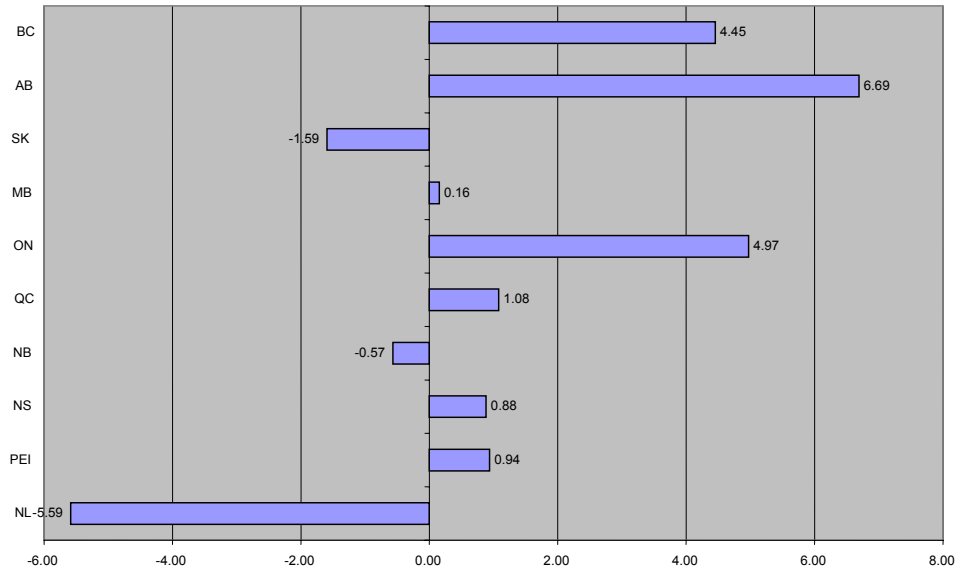
Interprovincial emigration, as a percentage of population, has the Atlantic provinces at the top of the rankings. Newfoundland and Labrador is first, Nova Scotia third, Prince Edward Island fourth, and New Brunswick fifth (see figure 2.2).

Ontario is the principal Canadian destination for Atlantic Canadian emigrants. And while Nova Scotia is the second preferred destination for interprovincial emigrants from New Brunswick and Prince Edward Island, for Newfoundland and Labrador and for Nova Scotia, Alberta is ranked second.

Combining all these elements (interprovincial emigration and immigration and international immigration), we find that of the three Canadian provinces with negative net results, two (Newfoundland and Labrador and New Brunswick) are from Atlantic Canada (see figure 2.3). Nova Scotia is ranked sixth and Prince Edward Island fifth.

Figure 2.3

Net Migration*, Canadian Provinces, 1996 to 2001, Percentage of 2001 Population

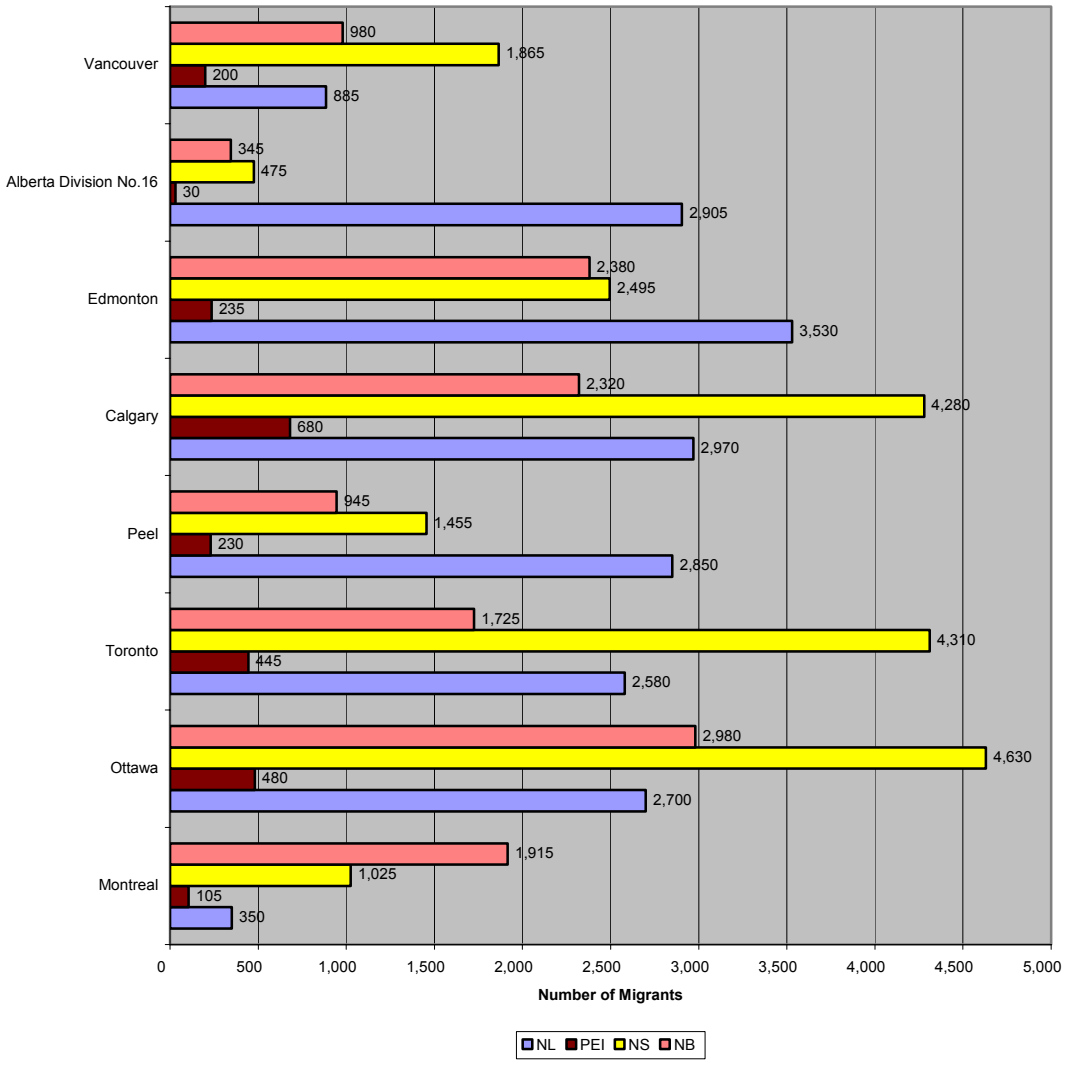


* Does not include international emigration.

Before turning our attention to the region's CDs, we present in figure 2.4 a selection of the principal CDs of destination for Atlantic Canadian emigrants. Ottawa, the nation's capital, is attracting many Atlantic Canadians. It is the principal destination amongst the selected CDs for Nova Scotians and New Brunswickers. Alberta is also attracting many of the region's emigrants, including CD No. 16 for emigrants from Newfoundland and Labrador.

Figure 2.4

Some Canadian Destinations for Atlantic Canadian Emigrants, Between 1996 and 2001, Based on 2001 Residence



Analyses of CDs (see table 2.2) offer striking results. Between 1996 and 2001, only sixteen of the region's forty-six CDs experienced positive, net intraprovincial migration, and only ten experienced positive, net interprovincial migration. Focusing first on intra-provincial migration, we find that in general, the larger urban centres are attracting population at the expense of rural regions. There are two exceptions for urban regions: Cape Breton in Nova Scotia and the Saint John/Kings region of New Brunswick, two relatively industrialized regions. What is clear from table 2.2 is that the farther a region is on the Ehrensaft typological scale, the greater the probability of having negative, net intraprovincial migration.

Table 2.2

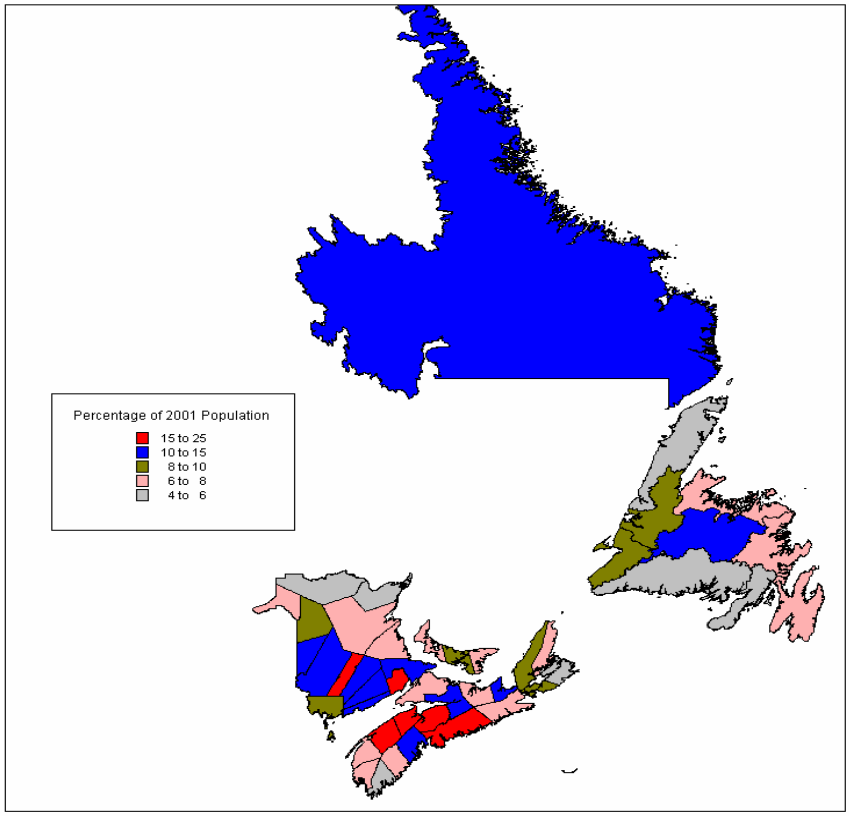
Net Migration and Ratios Between 1996 and 2001, Atlantic Canada's Census Divisions

	Intraprovincial Migration		Interprovincial Migration	
	Net	Ratio: Immigrants/ 100 Emigrants	Net	Ratio: Immigrants/ 100 Emigrants
Mid-sized metropolitan (2)				
NS-Halifax	5,130	145.02	2,570	108.94
Smaller metropolitan (3)				
NL1	3,715	189.4	-12,925	35.58
PEI-Queens	750	186.21	-265	94.39
NS-Cape Breton	-2,320	48.04	-2,205	59.01
NB-Saint John	-680	86.56	-1,655	63.38
NB-Sunbury	365	124.58	360	109.24
NB-Kings	-5	99.89	-145	95.54
NB-Albert	795	152.13	330	124.63
NB-Westmorland	2,290	138.81	-1,735	79.07
NB-York	1,450	130.40	-2,365	66.85
Non-metropolitan small city zone not adjacent to a metropolitan area (5)				
NL5	110	105.77	-2,655	36.56
NL6	310	115.42	-2,915	29.59
NS-Kings	10	100.23	-500	89.67
NS-Pictou	-430	80.45	-235	86.18
NB-Gloucester	-2,055	40.69	-1,190	64.16
Small town zone adjacent to a metropolitan area (6)				
NS-Lunenburg	70	102.73	390	127.46
NS-Hants	480	112.87	95	105.83
NS-Colchester	685	123.03	-365	83.22
NB-Charlotte	-265	81.97	90	110.78
Small town zone not adjacent to a metropolitan area (7)				
NL2	-895	40.53	-1,405	27.76
NL3	-710	44.53	-1,420	20.00
NL4	165	126.19	-1,225	46.74
NL7	-515	76.21	-1,420	43.43
NL8	-1,005	59.72	-2,860	26.10
PEI-Prince	-660	48.84	70	103.22
NS-Yarmouth	-440	69.01	-175	80.34
NS-Queens	-290	66.47	-80	76.12
NS-Cumberland	-485	69.97	-365	76.14
NS-Antigonish	-70	94.55	-630	60.38
NS-Inverness	-525	66.56	-160	78.08
NB-Northumberland	-670	74.43	-375	78.26
NB-Carleton	400	135.40	-380	69.23
NB-Victoria	-470	69.87	-35	96.24
NB-Madawaska	-500	65.99	-395	69.26
NB-Restigouche	-495	67.75	-840	2.27
Predominantly rural adjacent to a metropolitan area (8)				
NS-Richmond	-540	41.94	-10	97.33
NS-Victoria	-255	54.46	25	109.09
NB-Kent	-130	92.05	-25	96.09
Predominantly rural not adjacent to a metropolitan area (9)				
PEI-Kings	-90	82.35	235	128.48
NS-Shelburne	-505	46.84	-190	57.30
NS-Digby	-455	63.60	10	101.71
NS-Annapolis	450	134.09	580	179.45
NS-Guysborough	-510	46.60	-70	76.27
NB-Queens	-30	96.45	-215	66.92
Northern hinterland (10)				
NL9	-650	50.00	-1,605	19.14
NL10	-525	73.95	-2,030	38.39

Combining all origins of immigrants (see map 2.1), it is clear that urban Atlantic Canada attracts proportionally more immigrants than rural Atlantic Canada. Turning our attention to emigrants (see map 2.2), the trend is not as clear. Although one soon finds that most rural regions of Newfoundland and Labrador are experiencing a massive exodus, it is interesting to note that many rural CDs in other regions of Atlantic Canada have lower rates of emigration than urban ones. In Nova Scotia, for example, Halifax is ranked seventh out of eighteen CDs. In New Brunswick, urban CDs such as York (second), Saint John (fourth), and Westmorland (seventh) are ranked higher than most rural CDs such as Kent (fifteenth), Madawaska (fourteenth), Gloucester (thirteenth), Charlotte (twelfth), and Northumberland (eleventh). A dogmatic advocate of market forces might argue that the problem is that not enough individuals are leaving these regions; however, we would reply that the population challenge facing rural Atlantic Canada, again with the notable exception of rural Newfoundland and Labrador, may have less to do with too much emigration and more to do with not enough immigration. The solution — and here Newfoundland and Labrador may be included — would involve finding mechanisms for making the region more attractive to immigrants.

Map 2.1

Total Immigrants to Atlantic Canada's Census Divisions (International, Interprovincial, and Intraprovincial), 1996 to 2001, Percentage of 2001 Population

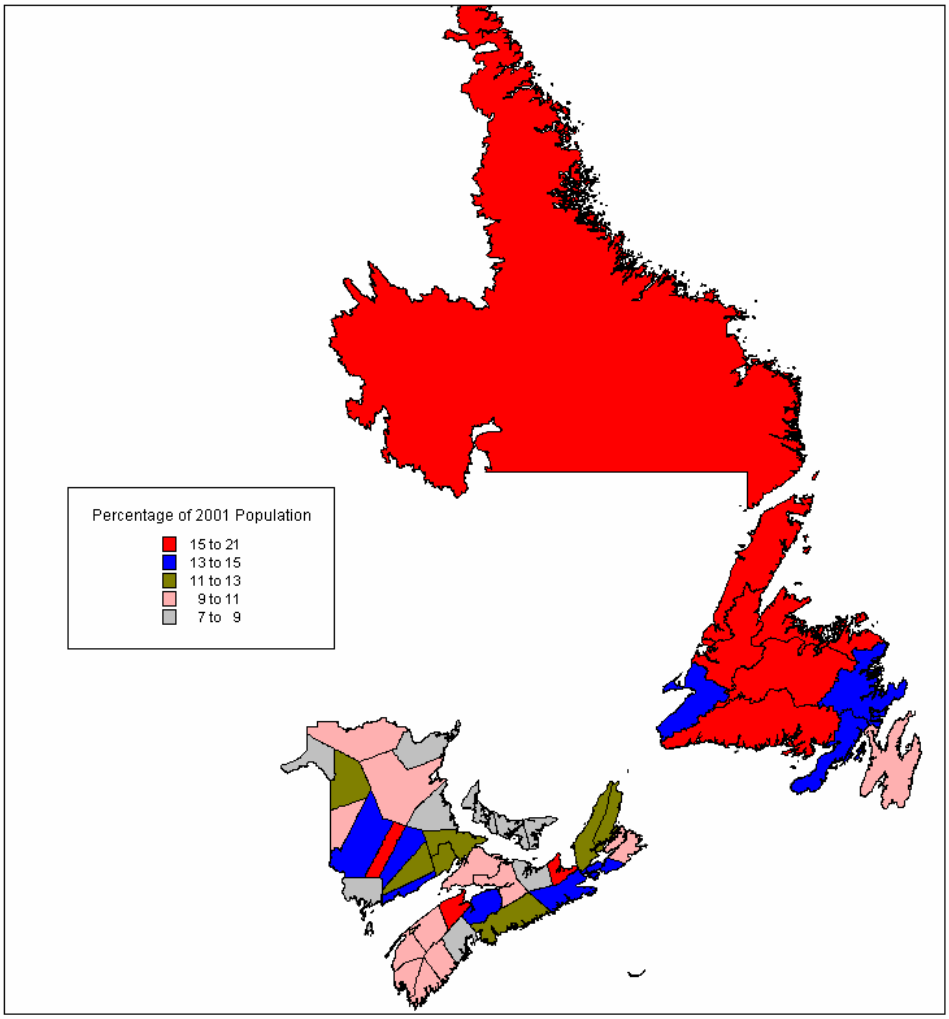


The situation is even more problematic for interprovincial migration. Here, even the majority of smaller metropolitan regions experience negative net migration. While for some, intraprovincial migration compensates for these negative results (e.g., PEI-Queens, NB-Westmorland), for others it does not (NL1 [St. John's], NB-York).

What becomes clearer is that the region, in this regard, is experiencing two general trends. First, the region's rural regions are losing population to the region's larger urban centres, especially rural regions not adjacent to a metropolitan area. Second, most of the regions CDs, both urban and rural, are losing population to other provinces.

Map 2.2

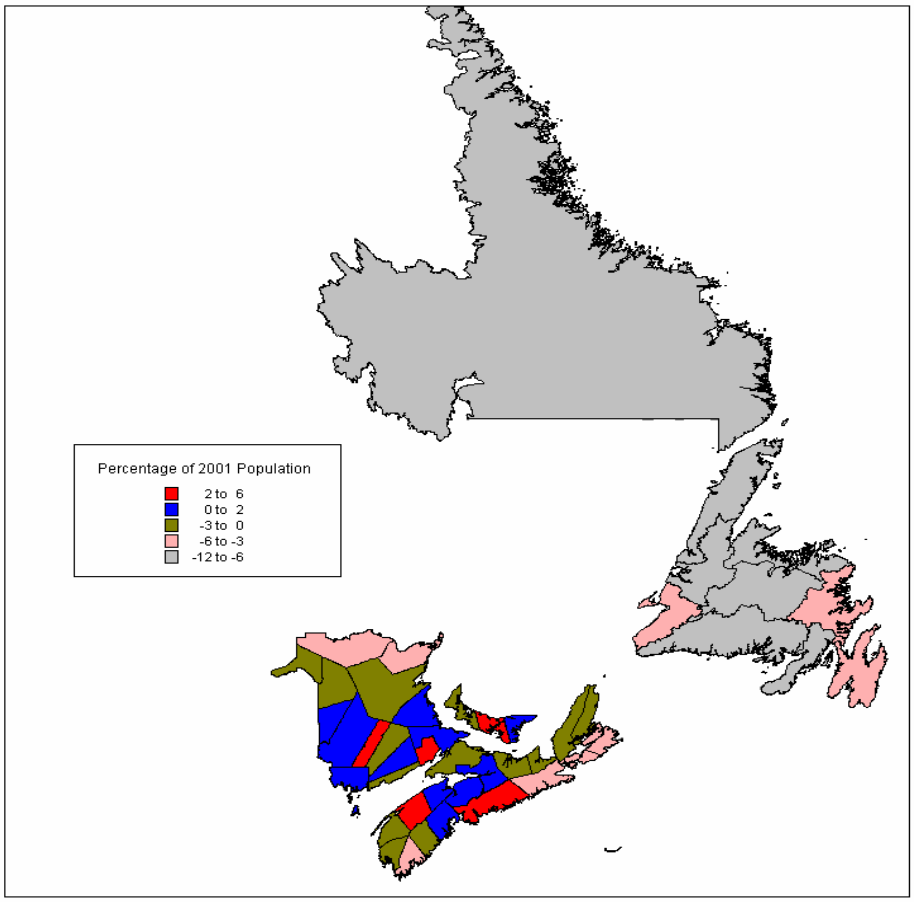
Emigrants from Atlantic Canada's Census Divisions (Interprovincial and Intra-provincial), 1996 to 2001, Percentage of 2001 Population



Combining emigration and immigration data (see map 2.3), the results for most urban regions are indeed positive, while the results for most rural regions are negative. The situation in Newfoundland, however, is striking: all regions, including urban Newfoundland, experienced net emigration.

Map 2.3

Net Migration*, Atlantic Canada's Census Divisions, 1996 to 2001, Percentage of Total Population



* Does not include international emigration.

We present emigration and immigration statistics for the region's eighteen agglomerations in figures 4.9 and 4.10, which can be found in our statistical appendix (Desjardins 2005). By restricting our analysis to these urban agglomerations instead of the larger CDs, we reinforce our previous results and are even able to expand them. We compare the performance of agglomerations with that of their own CDs. First focusing on immigration, we find that for international, intraprovincial, and interprovincial immigration, in only eight of a possible fifty-four cases is the performance of agglomerations worse (smaller immigration rate) than that of their CDs (Edmundston, international;

Saint John, international and intraprovincial; Kentville, interprovincial; Labrador City, interprovincial; Corner Brook, interprovincial; and Grand Falls–Windsor, international and interprovincial). Turning to emigration, we find similar results. Here in only four of the possible thirty-six cases do agglomerations have a lower emigration rate than their own CDs (Campbellton, intraprovincial; Saint John, intraprovincial; Kentville, interprovincial; Grand Falls–Windsor, interprovincial). Combining both immigration and emigration, we see that in four of the eighteen agglomerations, the net migration rate is lower than that of their own CDs (Cape Breton, Labrador City, Corner Brook, and Gander). We can thus conclude that in general, all agglomerations, whether they are large or small urban centres, are performing better than even their own periphery. The urbanization of Atlantic Canada is truly under way.

The next question one might ask is, what are the consequences of the migration we just described? Neo-classical theory suggests that it may be a good thing, that a smaller labour pool will produce lower unemployment rates and higher wages. Others may argue the contrary, that many regions may lose critical masse for building key infrastructures or for attracting important economic activity. It may also be in fact a brain drain that will have negative repercussions for years to come. Let us now analyse the profile of the people moving about the region in order to answer some of those questions as well as others.

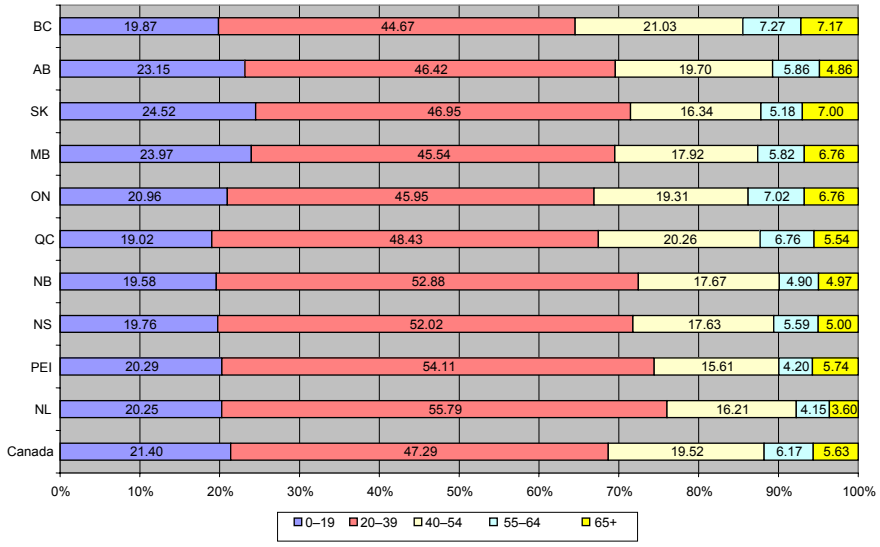
Profile of Migrants

Let us begin by reiterating the point that in this section we are presenting the profile of individuals who moved between 1996 and 2001, whether they moved within their original CD, to another CD, or to another province. Our analysis will first examine their age distribution.

An initial striking characteristic is that the majority of Atlantic Canadians on the move for the period 1996 and 2001 were between the ages of twenty and thirty-nine in 2001, a characteristic shared by no other Canadian province. Can we conclude from this that the region is losing its youth? Analysing the age structure of migrants compared to the age structure of the population in their province of residence in 1996 (see figure 2.5), we may indeed lean in the direction of such a conclusion. For example, in the age category of twenty to thirty-nine, Newfoundland and Labrador had the highest Canadian percentage of migrants in age category/2001 population in age category. New Brunswick and Prince Edward Island also exceeded the national average. As for the three older categories of 40–54, 55–64, and 65+, all of the Atlantic provinces were consistantly below the national average.

Figure 2.5

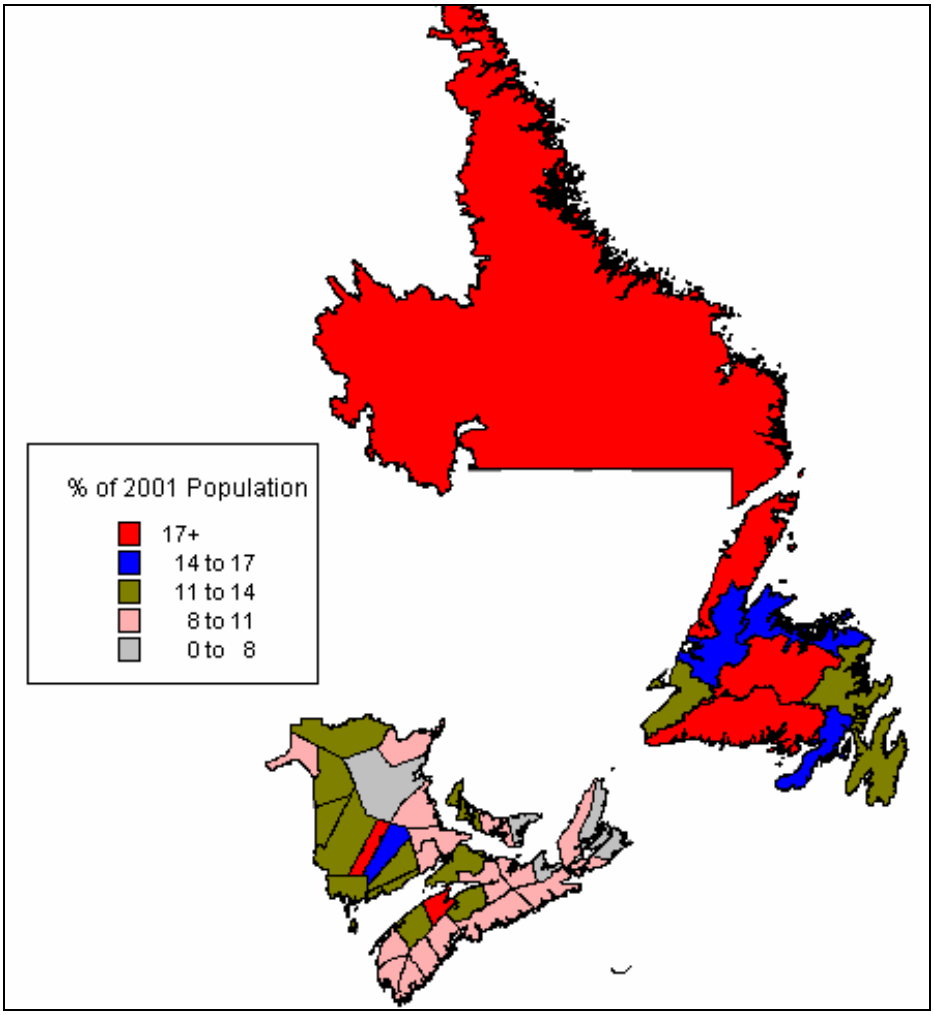
Distribution of Migrants Between 1996 and 2001 by Age Groups: Based on Province of Residence in 1996, Canada and Provinces



What is the situation in the region's CDs? Focusing on the proportion of migrants in relation to the population in each age category (see maps 2.4 and 2.5 and figure 4.20 in Desjardins 2005), we immediately notice very high rates for NB-Sunbury, most probably the result of the presence of CFB-Gagetown and its highly mobile soldiers and their families. We also have a relatively high rate of movement for the age categories of 55–64 and 65+ in NL10 (Labrador). We assume that this reflects the phenomenon of workers from outside the region reaching retirement age and choosing to spend their retirement years in other regions.

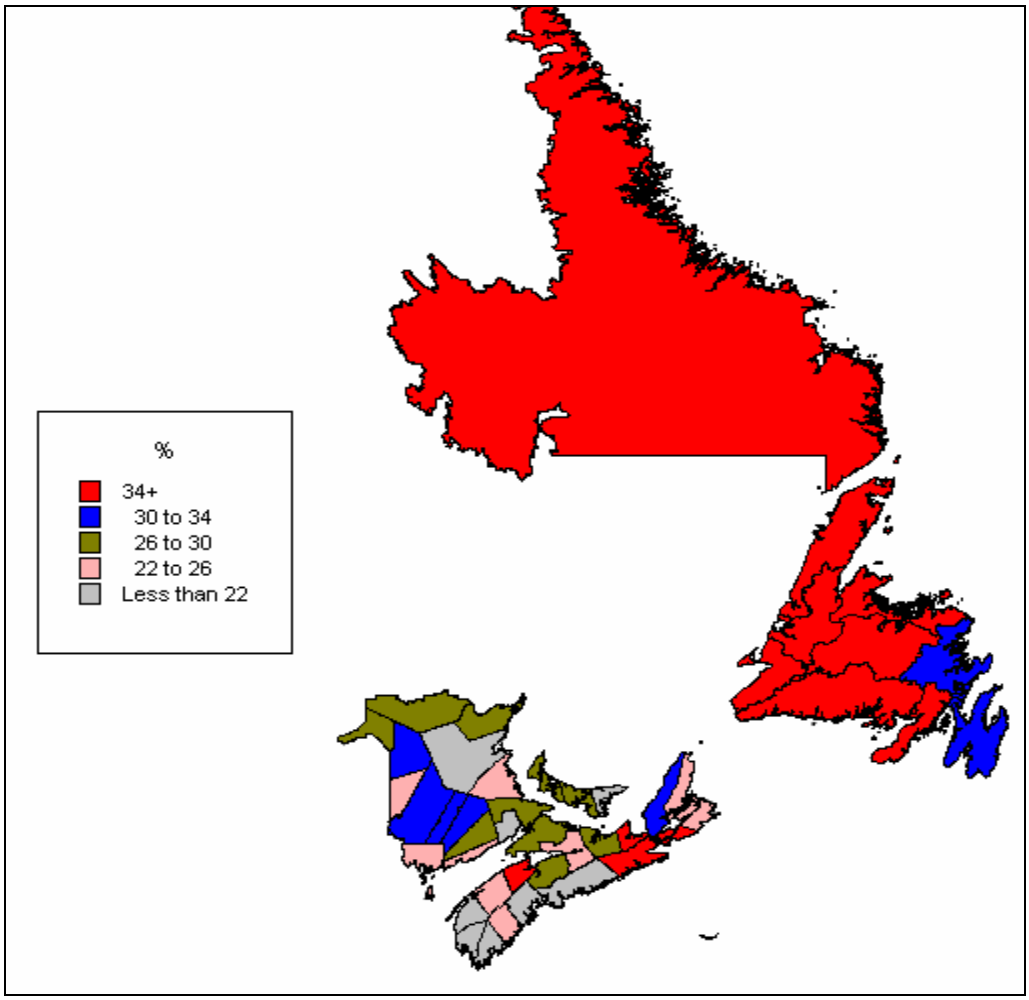
Map 2.4

Migrants Between 1996 and 2001 Aged 0–19 in 2001 as a Percentage of 2001 Population in Age Category in Census Division of Residence in 1996, Atlantic Canada's Census Divisions



Map 2.5

Migrants Between 1996 and 2001 Aged 20–39 in 2001 as a Percentage of 2001 Population in Age Category in Census Division of Residence in 1996, Atlantic Canada's Census Divisions



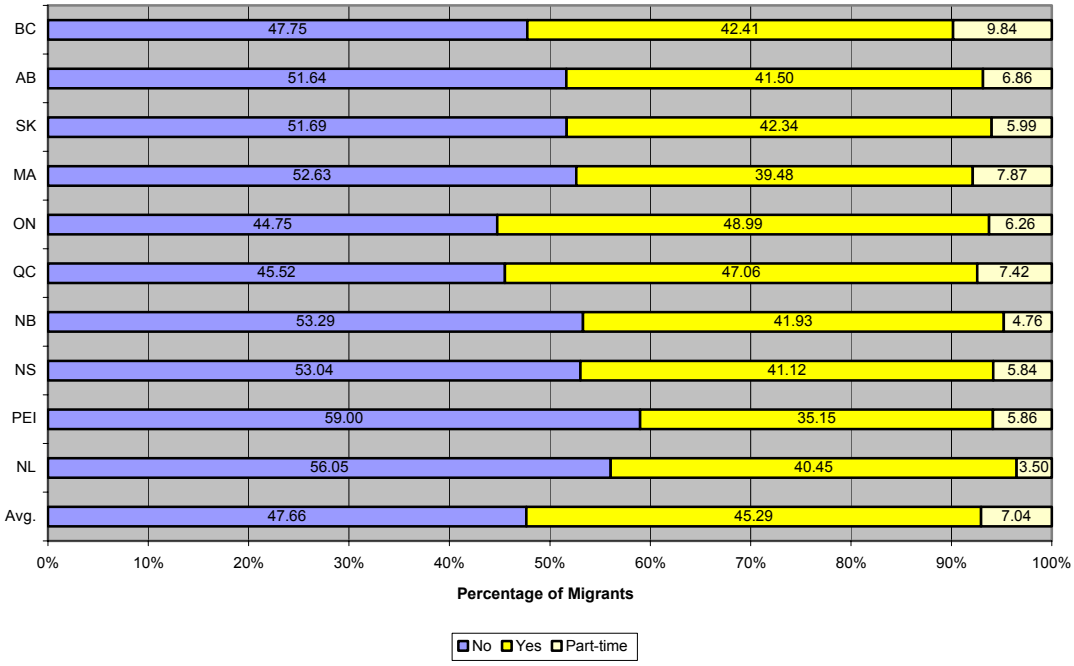
Our data do not reveal obvious trends between the various Ehrensaft groupings, often yielding important variations within a given typological category.

One may ask whether the mobility of young people is explained by their pursuit of an education. On a provincial basis, we find that the proportion of migrants in the age category 15–24 attending educational institutions was low for the Atlantic provinces (see figure 2.6). For the four provinces, it is systematically below the national average. In fact, the Atlantic provinces ranked one to four for migrants aged fifteen to twenty-four in the category "not attending school." Consequently, we cannot conclude that Atlantic Canadians move principally to better their education.

Turning to Atlantic Canada's CDs, it is interesting to note that only five of the forty-six CDs exceed the national average for the proportion of migrants aged fifteen to twenty-four attending school (see map 2.6).

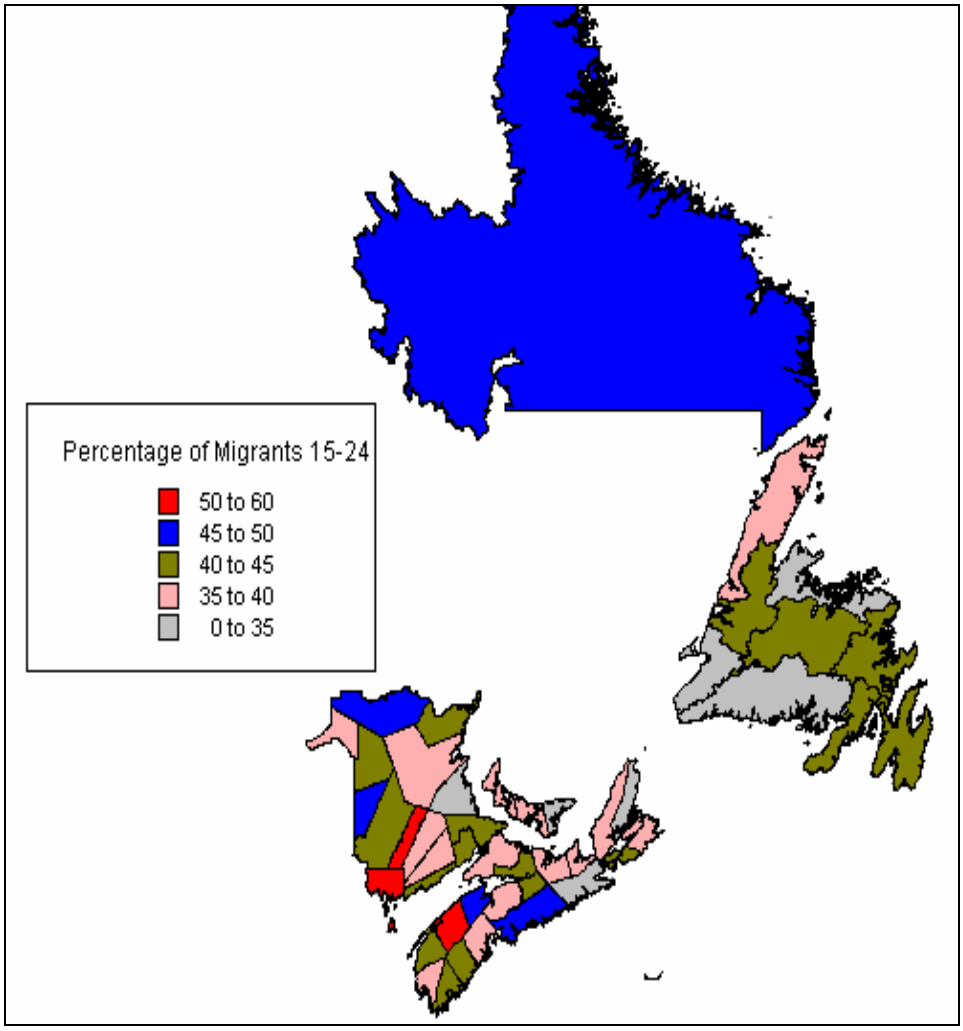
Figure 2.6

School Attendance of Migrants Between 1996 and 2001 in Age Category 15–24: Based on Province of Residence in 1996, Canadian Provinces and Average



Map 2.6

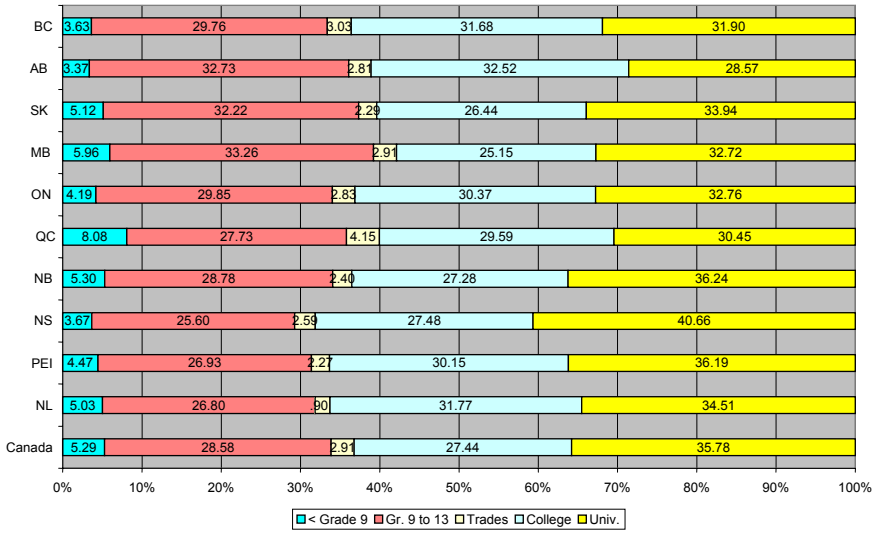
School Attendance of Migrants Between 1996 and 2001 in Age Category 15–24: Based on Census Division of Residence in 1996, Atlantic Canada's Census Divisions



Another important question is whether the region is experiencing a brain drain, one defined by the emigration of a relatively high proportion of individuals with higher educational achievements. It is clear from figure 2.7 that the Atlantic provinces have a relatively higher proportion of migrants with a university education and relatively fewer with a high school degree or less. As for college education, it varies within the region: Newfoundland and Labrador is ranked second nationally, while Nova Scotia (seventh) and New Brunswick (eighth) are close to the bottom.

Figure 2.7

Distribution of Migrants Between 1996 and 2001 Based on Educational Achievement: Based on Province of Residence in 1996, Canada and Provinces

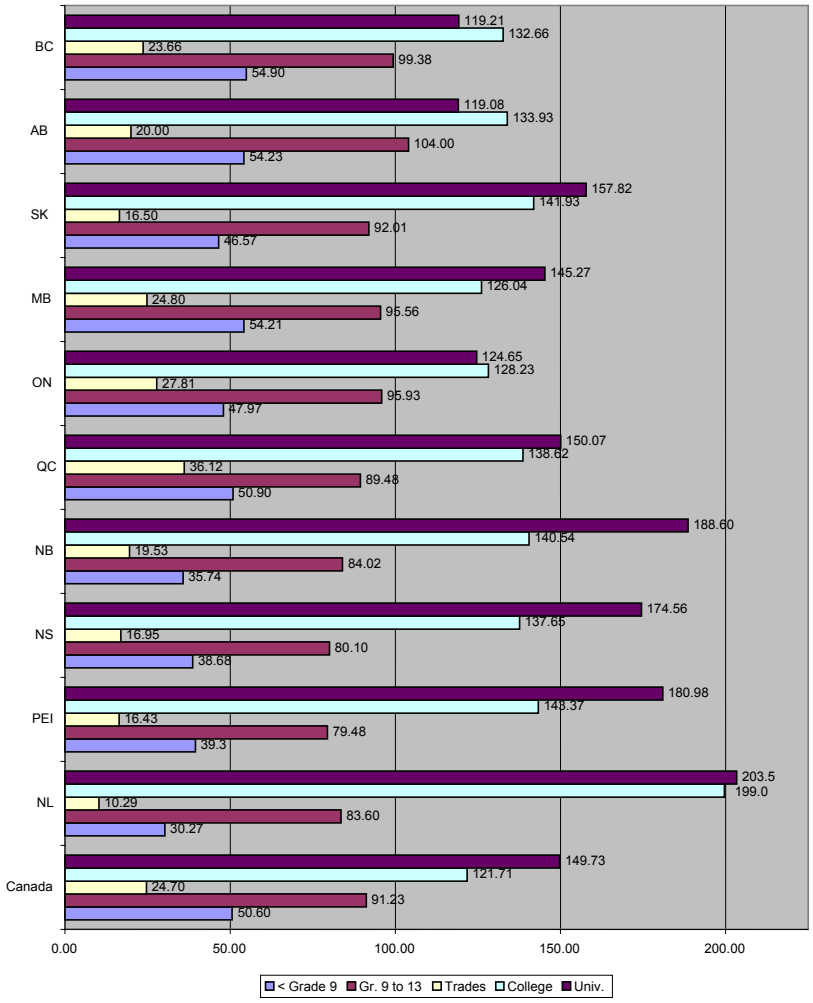


Using the results presented in figure 2.8 we can be even more precise. If we take the cohorts of migrants and compare it to the population of the relevant provinces, we find that in all cases, the Atlantic provinces register the movement of a relatively higher proportion of their university educated population compared to the other Canadian provinces. The trend is similar for college-educated migrants, although in this case Saskatchewan is ranked third and Quebec fifth. At the other end of the spectrum, the four Atlantic provinces have the lowest ratios of migrants with less than a grade 9 education or with grades 9 to 13 education.

From these results, we can arrive at two conclusions. First, there is a direct correlation between educational achievement and mobility. Second, Atlantic Canada's migrants are generally relatively better educated than migrants from other provinces. Furthermore, if we make the assumption that the profile of emigrants and migrants is the same, we can also conclude that there is indeed a brain drain of Atlantic Canadians, defining *brain drain* as having emigrants relatively better educated than the remaining population. Note that we cannot include immigrants in our analysis, which prevents us from concluding that net migration yields such a result.

Figure 2.8

Ratio of Educational Achievement of Migrants Between 1996 and 2001 to Population in Province of Residence in 1996, Canada and Provinces, 2001



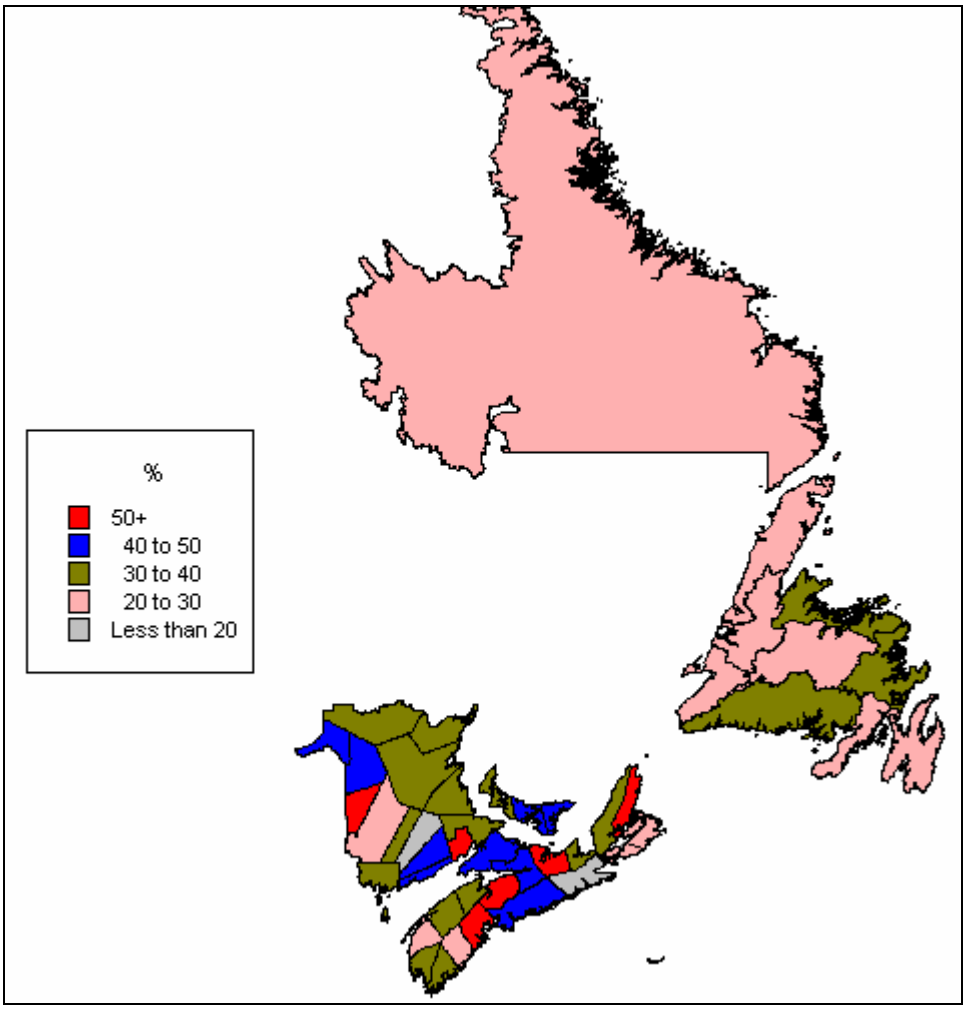
For Atlantic Canada's CDs, we should first consider the probable impact of the presence of universities: there are a relatively high proportion of university migrants in CDs such as NS-Antigonish, NB-York, NS-Halifax, etc. This is probably partly the result of university graduates leaving university to join the labour market in other regions. Overall, we also find more "urban" migrants with a university education and generally more "rural" migrants in the categories college education, grades 9 to 13, and less than grade 9.

As was the case for the provinces, we find that migrants of the CDs are generally better educated than the population as a whole (see maps 2.7 to 2.10). In the category of less than grade 9 education (see map 2.7), we do find a relatively small proportion of

migrants, particularly in Newfoundland and Labrador. In the grades 9 to 13 category, (see map 2.8), results also show migrants as relatively less represented than in the general population. Furthermore, we see a certain trend, although not generalized, of relatively low proportions of migrants in this category in urban regions. The trades category is not well represented amongst migrants. The same cannot be said of the college and university categories.

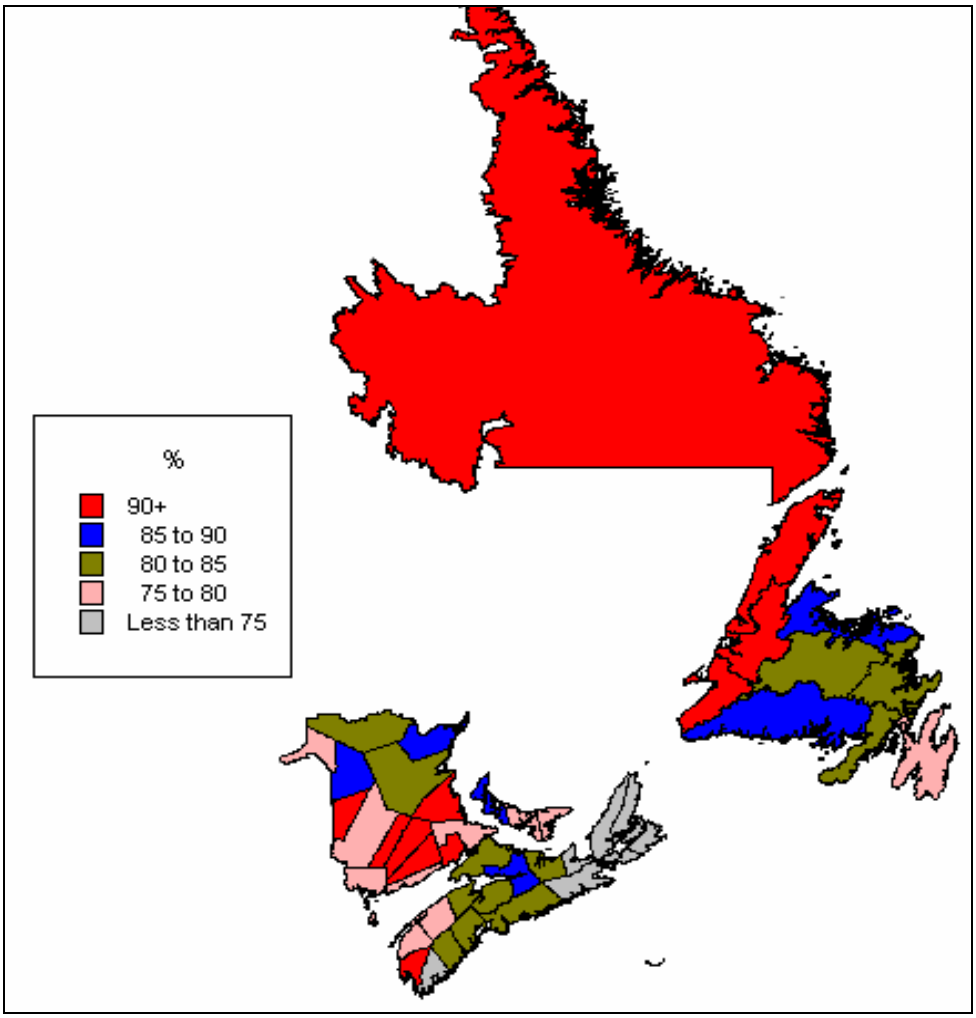
Map 2.7

Ratio of Percentage of Migrants Between 1996 and 2001 with Less Than Grade 9 to Percentage of 2001 Population with Less Than Grade 9 in Census Division of Residence in 1996, Atlantic Canada's Census Divisions



Map 2.8

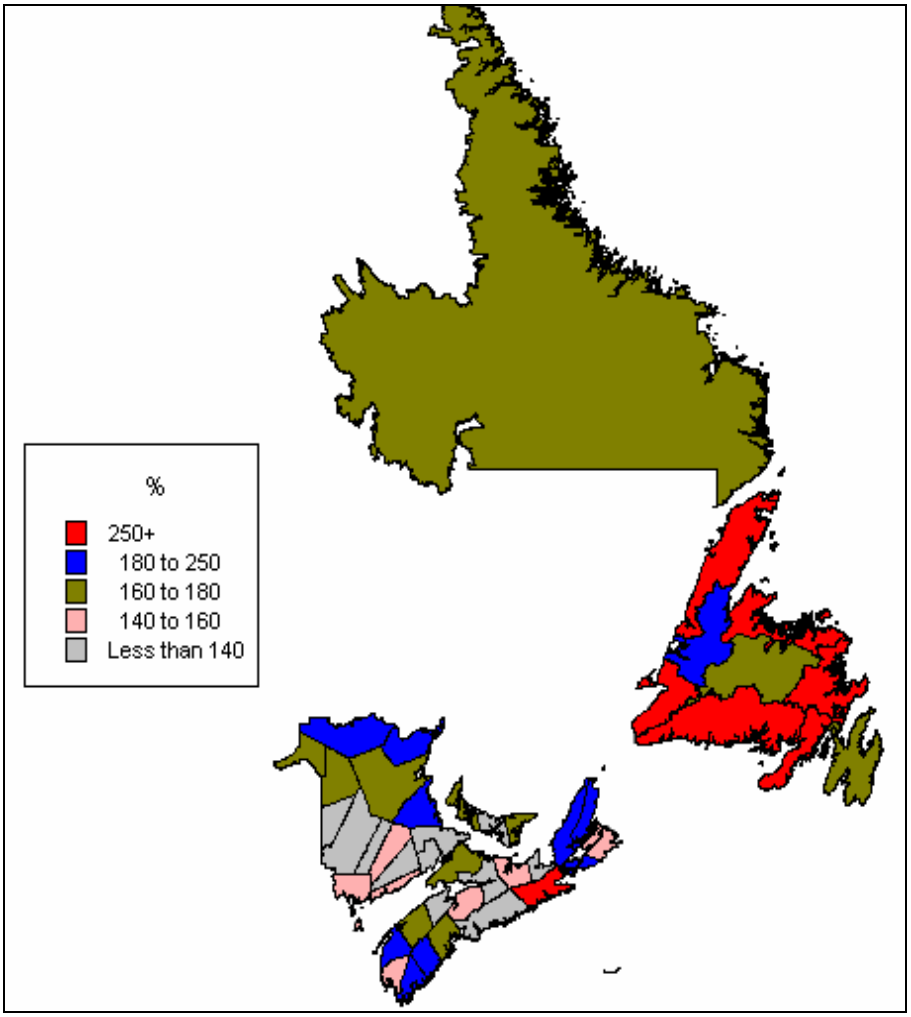
Ratio of Percentage of Migrants Between 1996 and 2001 with Grades 9–13 to Percentage of 2001 Population with Grades 9–13 in Census Division of Residence in 1996, Atlantic Canada's Census Divisions



A relatively high proportion of migrants have a university or college education (see maps 2.9 and 2.10). The ratio of these categories of migrants to the general population with the same educational achievement exceeds 3 to 1 in four cases and is above 2 to 1 in thirty-eight of the possible ninety-two cases. On the other hand, the ratio is below 1 to 1 in only one case. This confirms our brain drain conclusion. We can also add that this brain drain is generally more significant in rural regions than in urban ones, even more so in rural regions not adjacent to a metropolitan region.

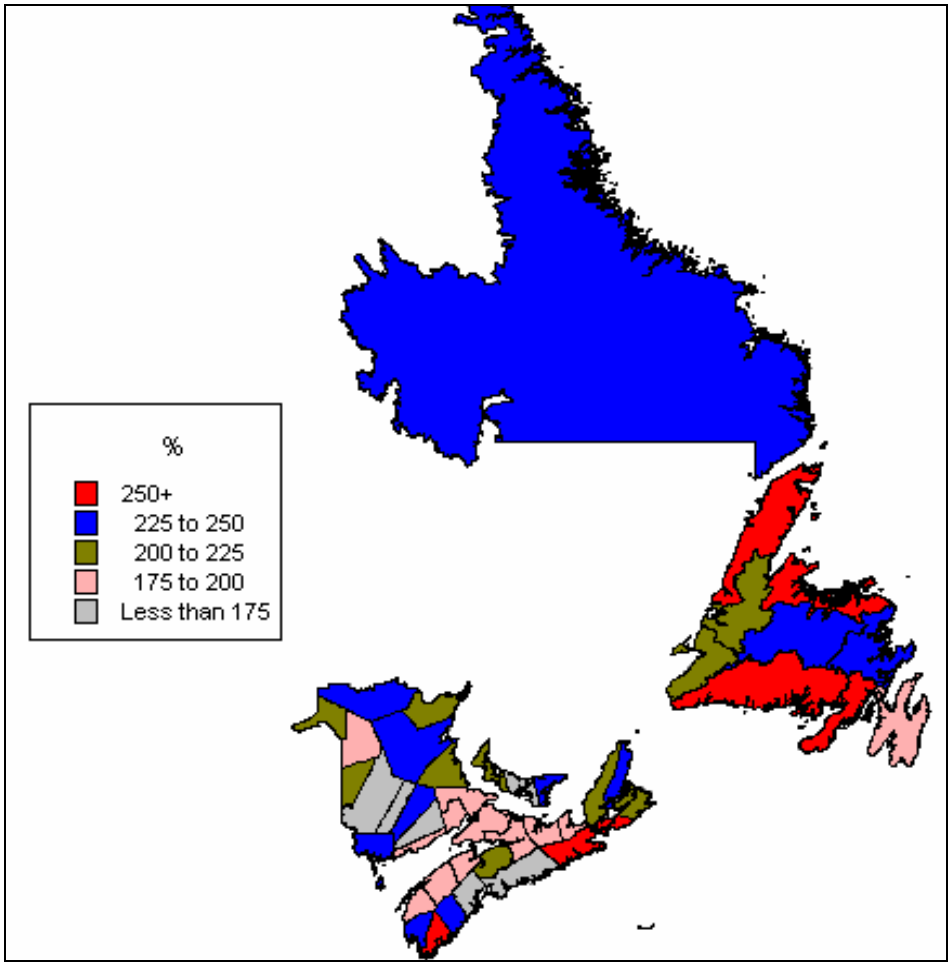
Map 2.9

Ratio of Percentage of Migrants Between 1996 and 2001 with College Education to Percentage of 2001 Population with College Education in Census Division of Residence in 1996, Atlantic Canada's Census Divisions



Map 2.10

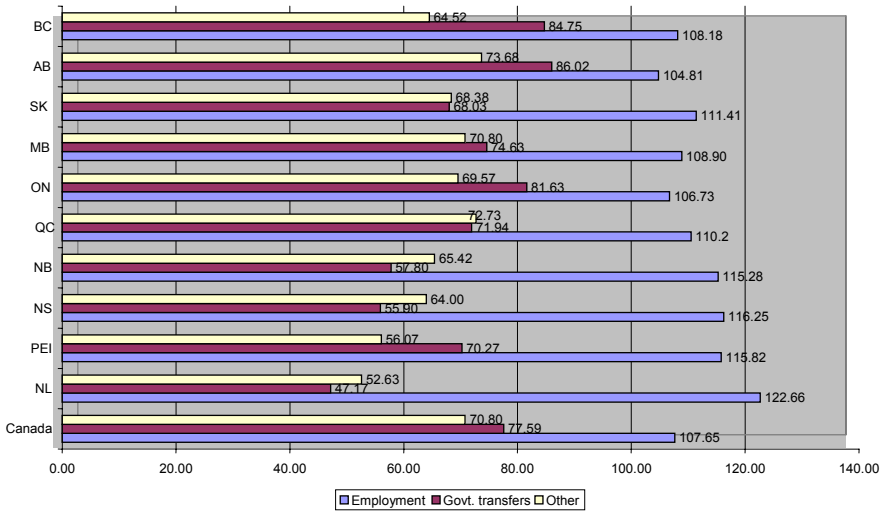
Ratio of Percentage of Migrants Between 1996 and 2001 with University Education to Percentage of 2001 Population with University Education in Census Division of Residence in 1996, Atlantic Canada's Census Divisions



Theory suggests that the quest for a better quality of life — using income as a proxy — is often the motivator for moving. This leads us to an analysis of income-related variables. Starting with the distribution of sources of income (employment income, government transfers, and other sources), it is striking, but perhaps not surprising, that the Atlantic provinces are where migrants had the highest ratio of employment income compared to the population in general in the province of residence in 1996 (see figure 2.9). They also had the smallest ratio of government transfers, with the exception that Saskatchewan outranked Prince Edward Island.

Figure 2.9

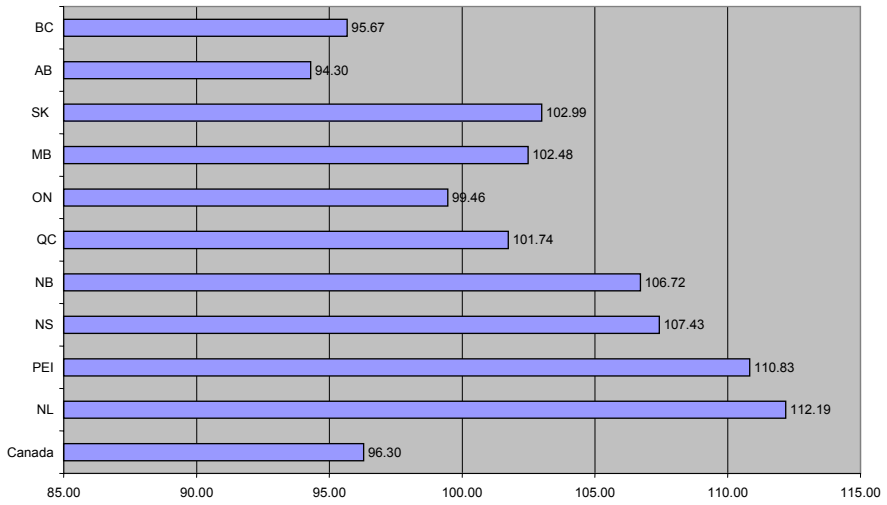
Ratio of Distribution of Sources of Income of Migrants Between 1996 and 2001 to the Equivalent Distribution for the Population in Province of Residence in 1996: Based on Province of Residence in 1996, Canada and Provinces, 2000



This trend continues when we consider both average total income and average employment income (see figure 2.10). In both of these cases, the four Atlantic provinces are again leaders with respect to the ratio of average income of migrants to average income of the population in general. Note that Atlantic Canadian migrants are leaders not in average income, but more specifically in the ratio of average income of migrants to average income of population in province of residence in 1996. That is to say that although they do not on average receive the highest income, they are as a group the ones improving their income the most when compared to the population in their province of residence in 1996.

Figure 2.10

Ratio of Average Employment Income: Migrants Between 1996 and 2001 to Population in Province of Residence in 1996, Canada and Provinces, 2000



Concerning the subgroup of individuals who worked full-year and full-time, the results are not as clear (see figures 2.11 and 2.12). Migrants in this category still perform better than the equivalent category for the population as a whole in their province of residence in 1996, but the gap is not as significant, especially for Newfoundland and Labrador. Interestingly, approximately half of Atlantic Canadian migrants worked full-year, full-time (between 48.5 and 51.8 percent). This is a greater proportion than for the overall population, especially in Newfoundland and Labrador, Prince Edward Island, and New Brunswick.

Figure 2.11

Ratio of Average Employment Income of Full-Year, Full-Time Workers: Migrants Between 1996 and 2001 to Population in Province of Residence in 1996, Canada and Provinces, 2000

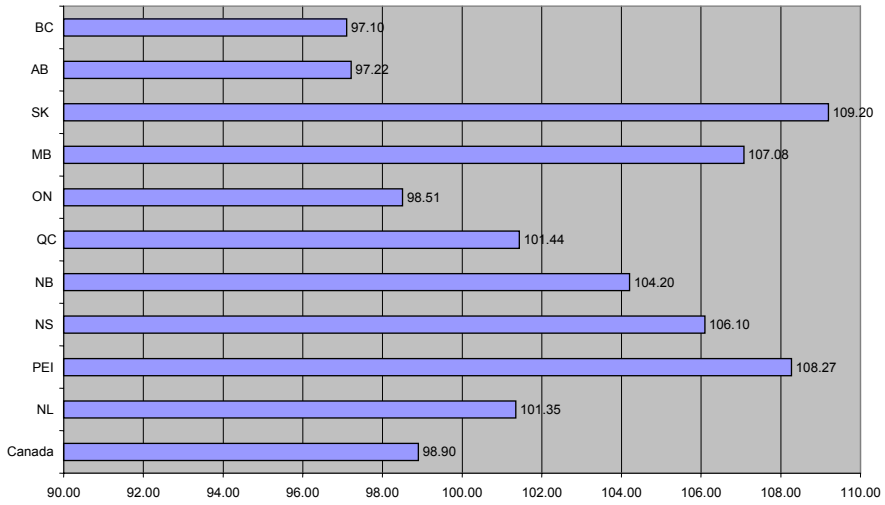
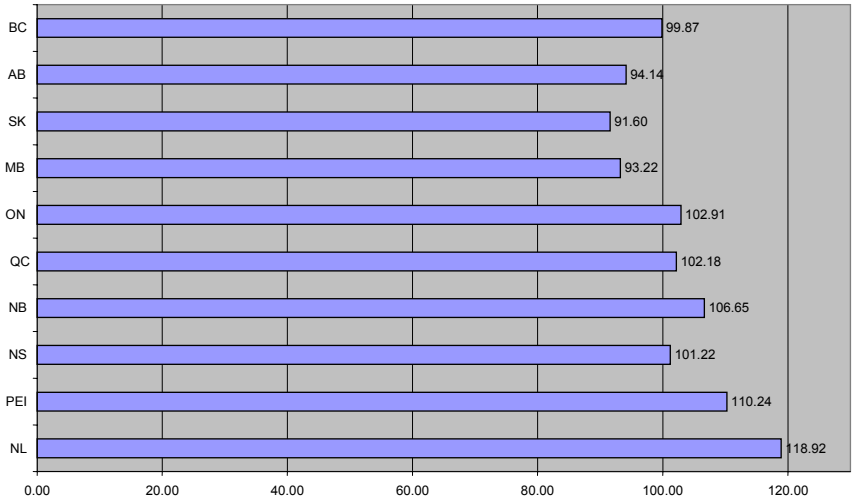


Figure 2.12

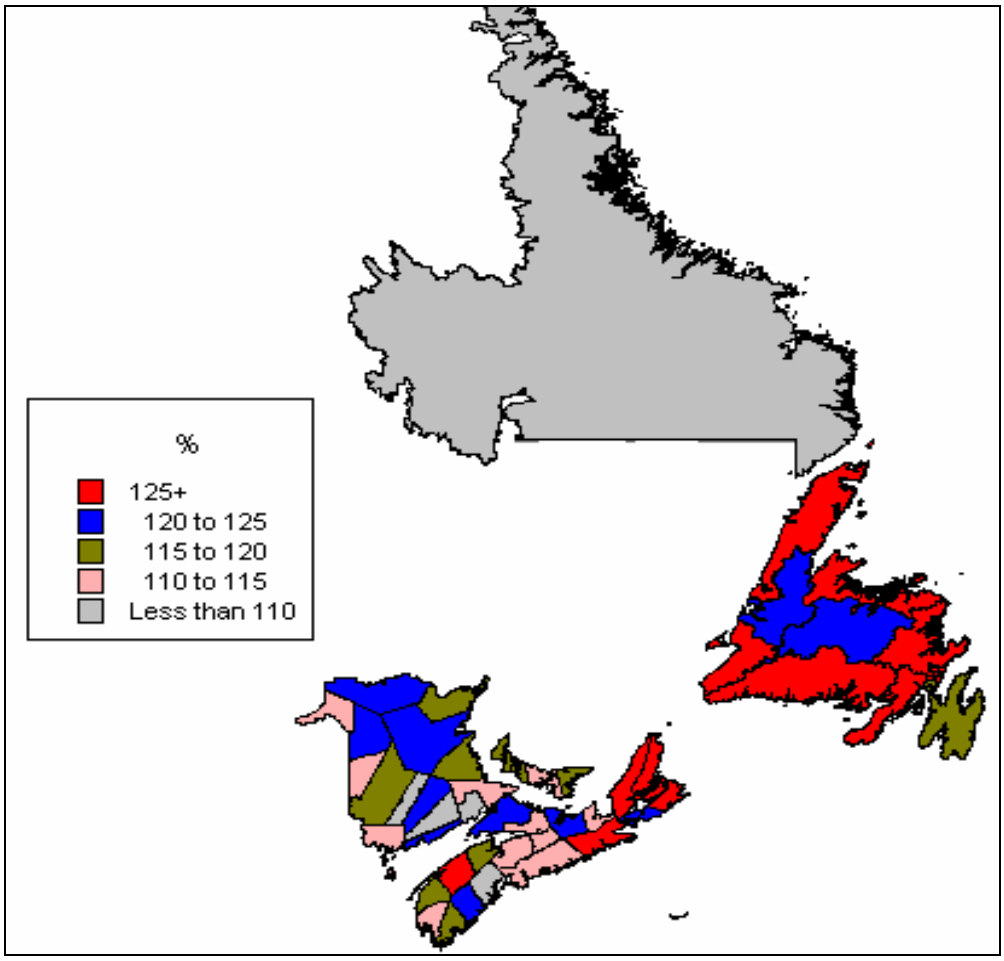
Ratio of Percentage of Employment of Full-Year, Full-Time Workers: Migrants Between 1996 and 2001 to Population in Province of Residence in 1996, Canada and Provinces, 2000



Turning our attention to Atlantic Canada's CDs, we find that in all but one case, migrants had on average a higher proportion of income from employment than the population of their CD of residence in 1996 (see maps 2.11 and 2.12). The exception was NL10 (Labrador), and we assume that that was because a significant portion of emigrants from this CD are retirees, something that is also reflected in the relatively high proportion for the "other" category. Income from government transfers is, for its part, relatively lower for migrants than for the overall population.

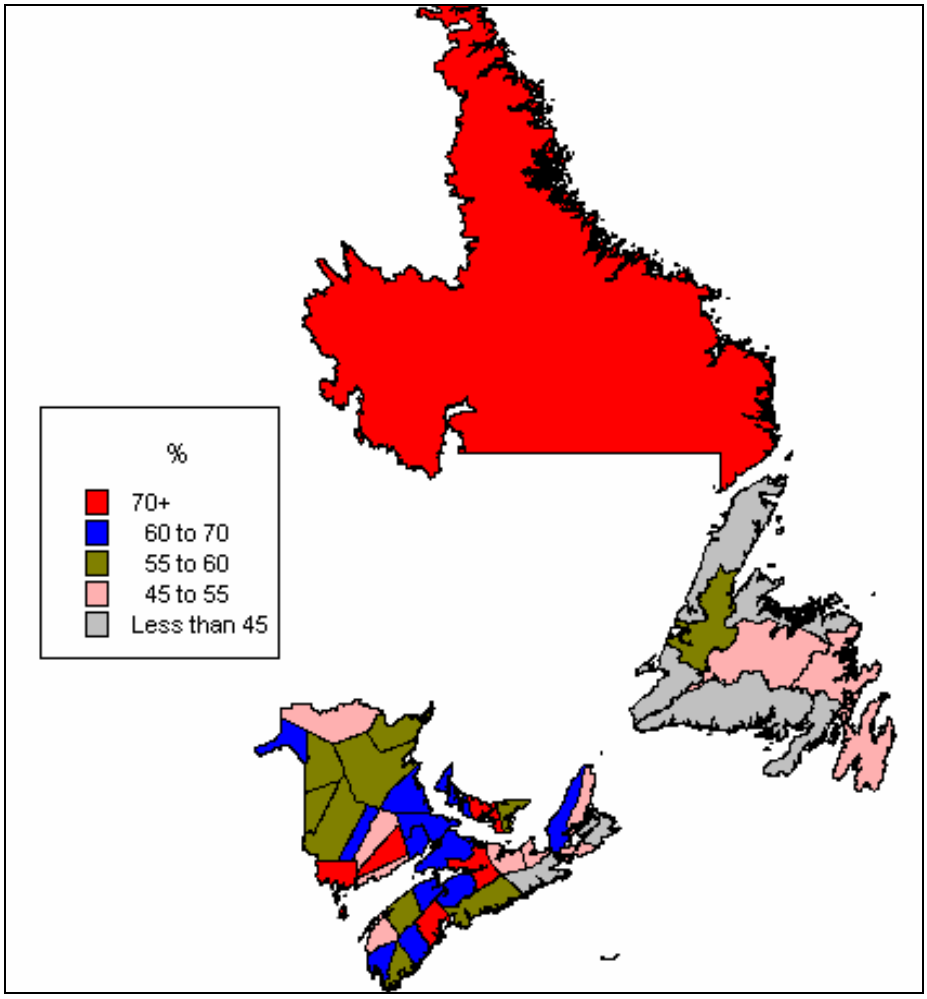
Map 2.11

Ratio of Share of Income from Employment: Migrants Between 1996 and 2001 to Population in Census Division of Residence in 1996, Atlantic Canada's Census Divisions, 2000



Map 2.12

Ratio of Share of Income from Government Transfers: Migrants Between 1996 and 2001 to Population in Census Division of Residence in 1996, Atlantic Canada's Census Divisions, 2000

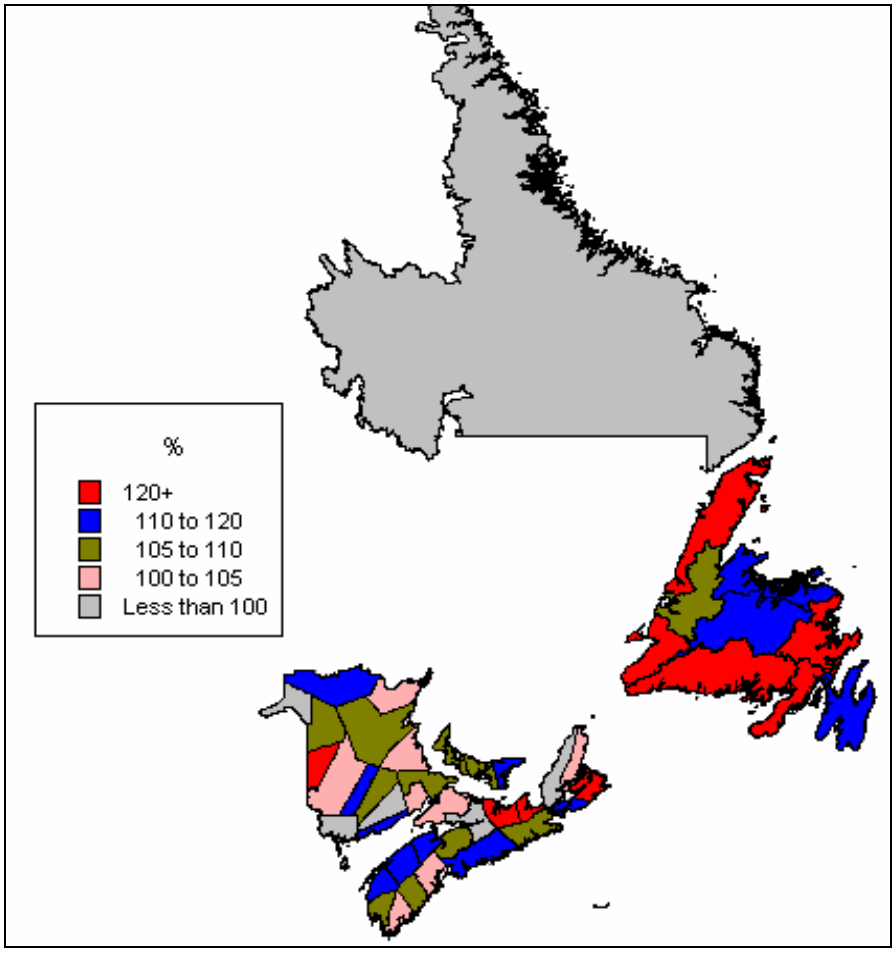


Both for employment income and government transfers, the difference between migrants and the overall population is generally more important in Newfoundland and Labrador, with the aforementioned exception of NL10. For employment income, the gap is also generally smaller for urban regions of the Maritimes and, to a lesser extent, for government transfers.

Migrants from urban regions tended to have a higher average total income than migrants from rural regions. CDs where the ratio of average total income of migrants to the overall population was the greatest were generally rural CDs (see map 2.13). The situation is very similar for average employment income (see map 2.14).

Map 2.13

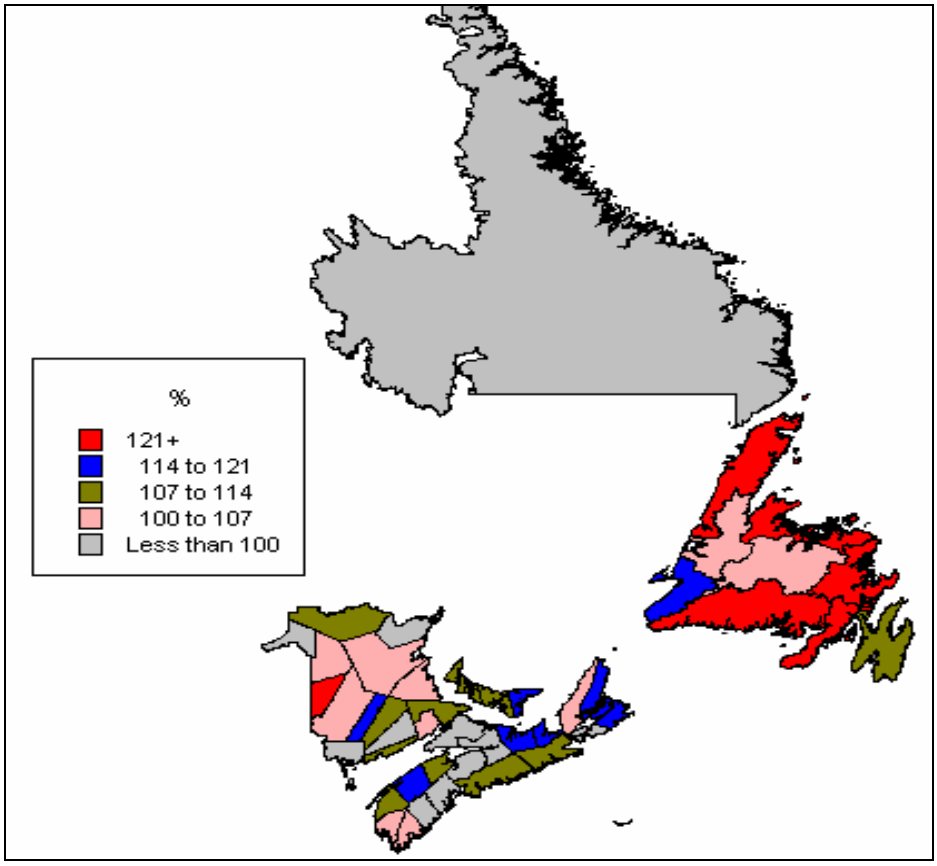
Ratio of Average Total Income: Migrants Between 1996 and 2001 to Population in Census Division of Residence in 1996, Atlantic Canada's Census Divisions, 2000



Focusing on the income of migrants who worked full-year and full-time, we find that in general the more urban is the CD on the Ehrensaft typology ladder, the higher the wages. Comparing the average for migrants with the population in general (see map 2.14), we find that in fifteen cases, mostly in rural regions, the ratio is below 100. This suggests that the mobility of migrants may have been motivated by a lack of opportunity in their own communities rather than the lure of a better paying job somewhere else.

Map 2.14

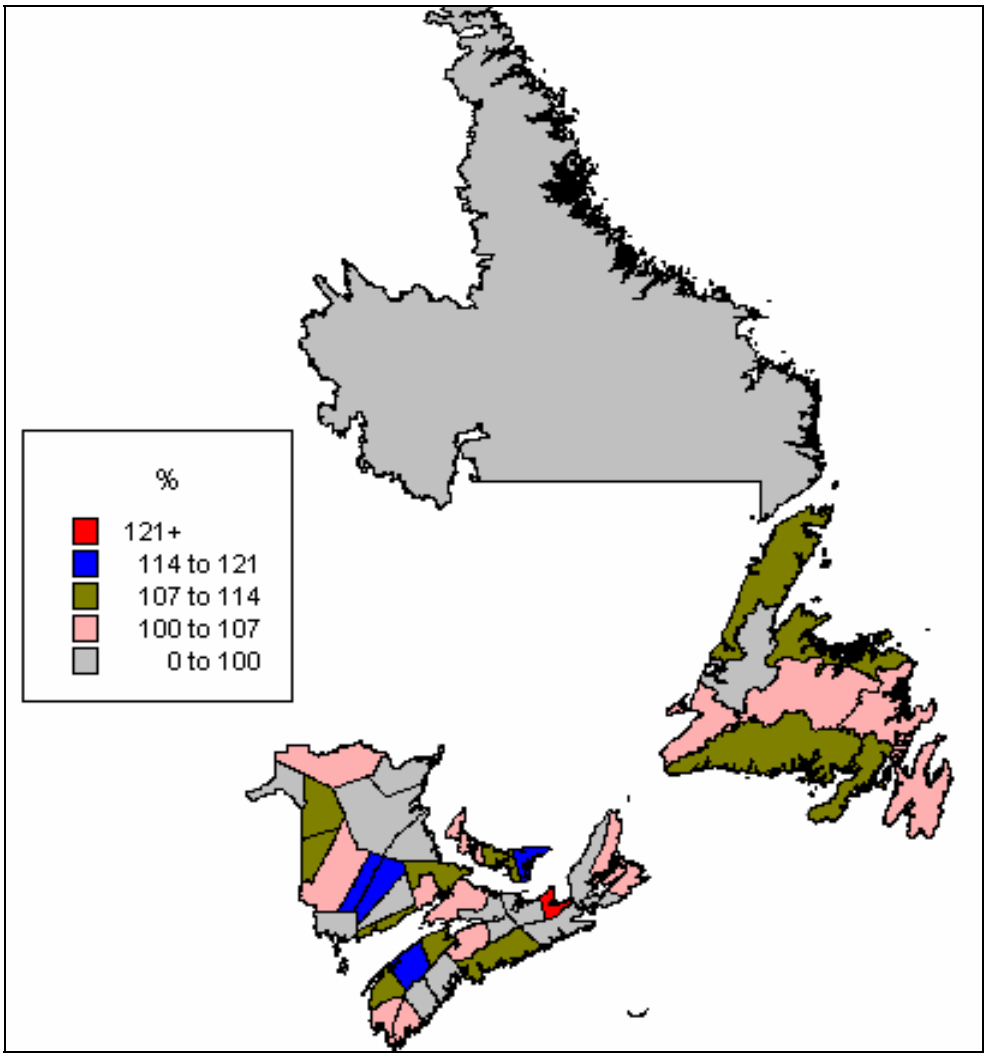
Ratio of Average Employment Income: Migrants Between 1996 and 2001 to Population in Census Division of Residence in 1996, Atlantic Canada's Census Divisions, 2000



In map 2.15, we used the same legend as in map 2.14 to illustrate just how different the situation is for this full-year, full-time category as opposed to the situation for the category of average employment income. Seasonality — and the corresponding lack of full-year employment — is invariably an important factor, especially in rural Atlantic Canada. Map 2.16 confirms this assumption. Although urban migrants generally have a higher rate of full-year, full-time employment, the ratio of migrants to population is generally much higher in rural regions, especially in Newfoundland and Labrador.

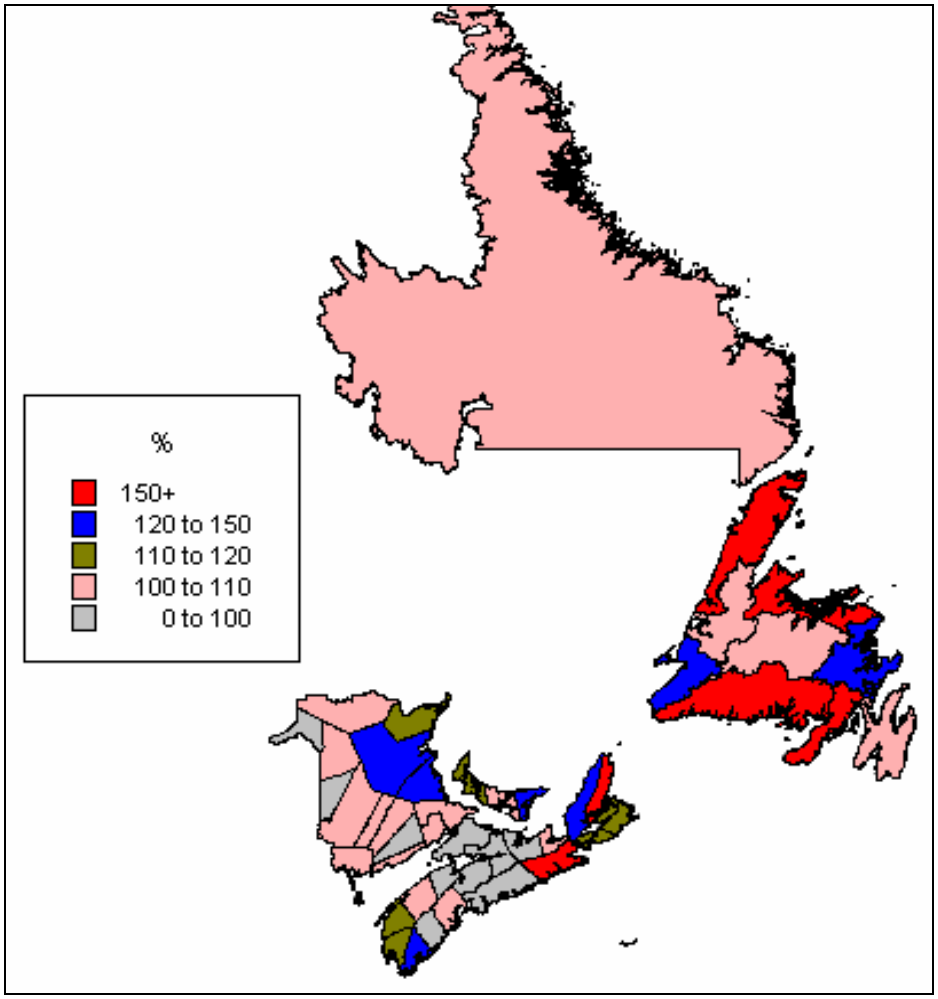
Map 2.15

Ratio of Average Employment Income of Migrants Working Full-Year, Full-Time Between 1996 and 2001 to Average Employment Income of Full-Year, Full-Time Workers in Census Division of Residence in 1996, Atlantic Canada's Census Divisions, 2000



Map 2.16

Ratio of Percentage of Employment of Full-Year, Full-Time Workers: Migrants Between 1996 and 2001 to Population in Census Division of Residence in 1996, Atlantic Canada's Census Divisions, 2000



In our statistical appendix (Desjardins 2005), we present the economic sectors where migrants are most active (see figures 4.56 to 4.75 for provinces and figures 4.76 to 4.95 for CDs). Here are some cases which warrant special attention; provinces are followed by CDs:

- agriculture, forestry, fishing, and hunting (11) – Prince Edward Island ranked first nationally; 5.82 percent of the active population are migrants.
- mining and oil and gas extraction (21) – Newfoundland and Labrador ranked third nationally; 3.16 percent of the active population are migrants.

- construction (23) – Newfoundland and Labrador ranked second nationally; 7.25 percent of the active population are migrants.
- manufacturing (31–33) – Atlantic Provinces are ranked below Quebec and Ontario, but above the four Western provinces.
- professional, scientific, and technical services (54) – Atlantic Provinces are ranked below every other province except Saskatchewan and Manitoba.
- administration and support, waste management, and remediation services (56) – Atlantic Provinces are the top four provinces (NS, first; NB, second; PEI and NL, tied for third).
- health care and social assistance (62) – Newfoundland and Labrador ranked second nationally; 11.27 percent of the active population are migrants.
- arts, entertainment, and recreation (71) – Prince Edward Island ranked first nationally; 3.08 percent of the active population are migrants.
- public administration (91) – Atlantic Provinces are the top four provinces (NS, first; NB and PEI, tied for second; NL, fourth).
- agriculture, forestry, fishing, and hunting (11) – CDs more important in rural regions, notably PEI-Kings and PEI-Prince.
- mining and oil and gas extraction (21) – CDs more important in rural regions and in Newfoundland and Labrador.
- construction (23) – CDs usually much more important in rural regions.
- manufacturing (31–33) – CDs more important in rural regions, especially in small town zones, both adjacent and not adjacent to a metropolitan area.
- professional, scientific, and technical services (54) – CDs more important in urban and rural regions with universities (e.g., NS-Antigonish).
- public administration (91) – CDs extremely important in NB-Sunbury, home of CFB-Gagetown; also relatively more important in urban areas, but the trend is neither generalized nor overwhelming.

PART 2
LABOUR MARKET DYNAMICS

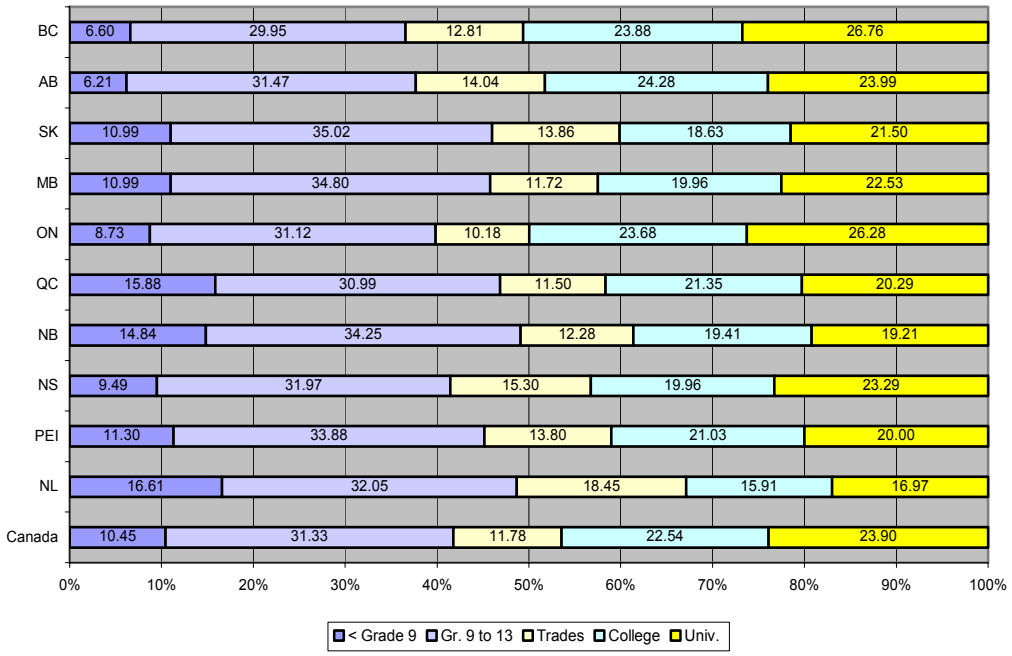
3

EDUCATIONAL ACHIEVEMENTS

Provincial educational achievement for individuals twenty years of age and over is presented in figure 3.1. For Atlantic Canada, a trend emerges: for college and university education, the four provinces are below the national average; for grades 9 to 13 and for trades, the four provinces are above the national average. And for the less than grade 9 category, only Nova Scotia is above the national average.

Figure 3.1

Educational Achievement, Percentage of Population 20 Years+, Canada and Provinces, 2001

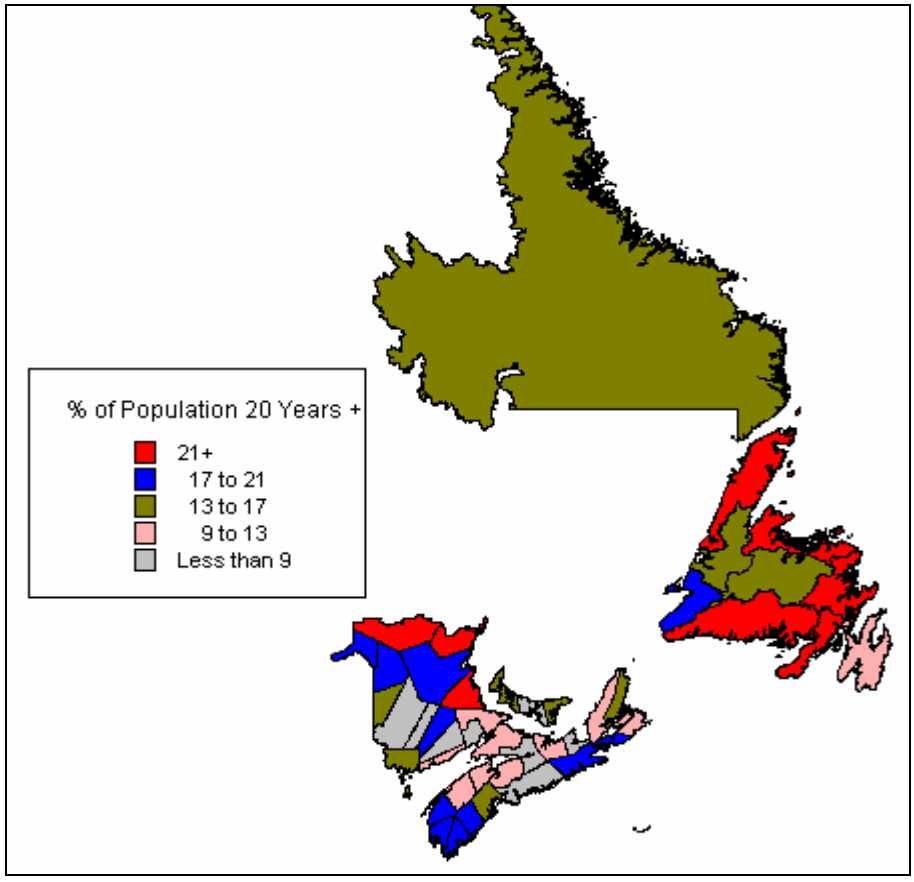


Turning to Atlantic Canada's CDs, we are first struck by the relatively high proportion of individuals with less than a grade 9 education, most of them in rural regions (see map 3.1). In only eleven CDs is the proportion lower than the national average, seven of these being metropolitan regions. Again, in eleven CDs more than 20 percent of the adult population have less than a grade 9 education.

The picture does not improve with the grades 9 to 13 category (see map 3.2). In this case, seven CDs have a proportion below the national average. Urban regions have relatively fewer individuals in this category. The situation is very different for trades (see map 3.3). Here, only five CDs are below the national average: Atlantic Canadians are thus relatively better represented in this category. This is particularly true for Newfoundland and Labrador and for rural Nova Scotia.

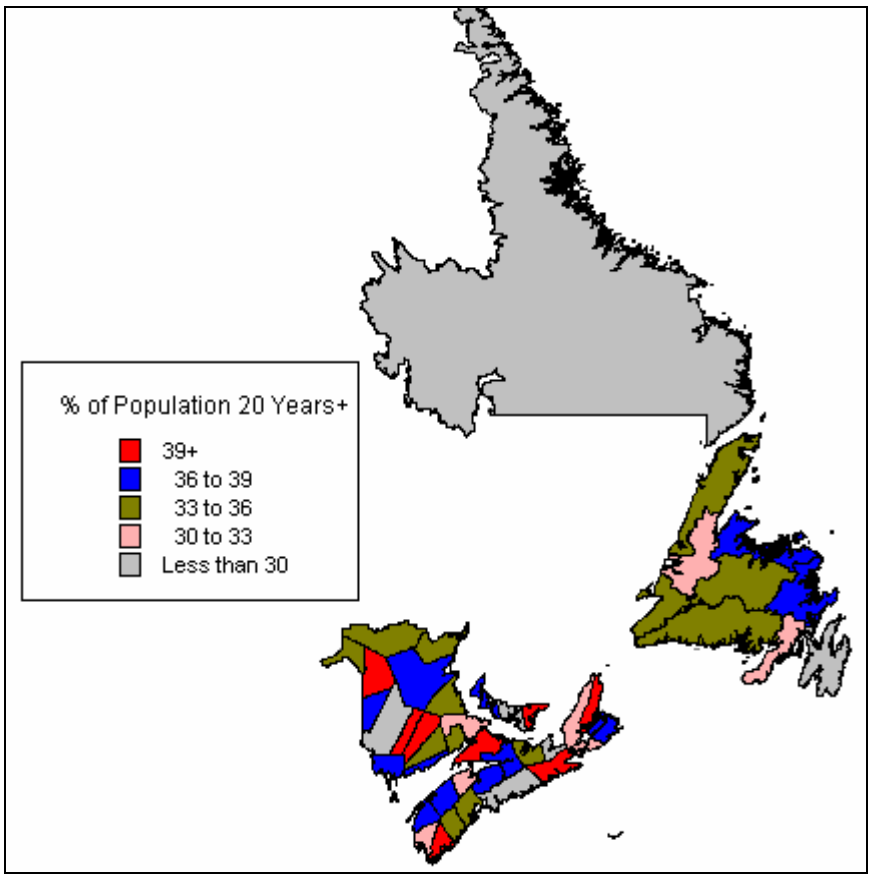
Map 3.1

Educational Achievement of Population 20 Years+, Less Than Grade 9, Atlantic Canada's Census Divisions, 2001



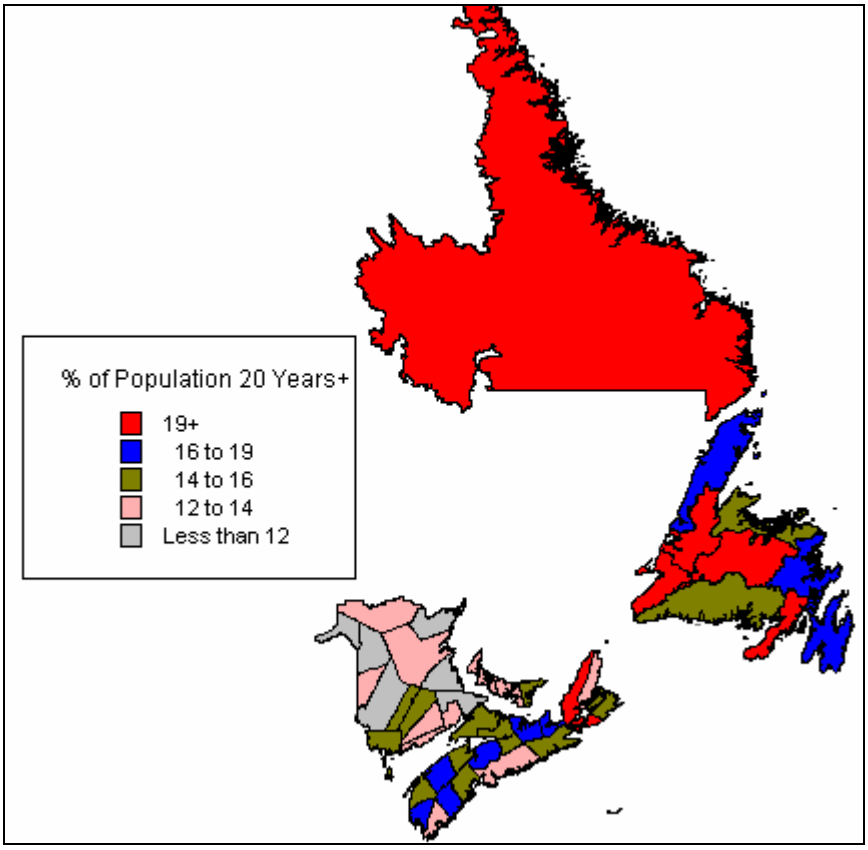
Map 3.2

Educational Achievement of Population 20 Years+, Grades 9–13, Atlantic Canada's Census Divisions, 2001



Map 3.3

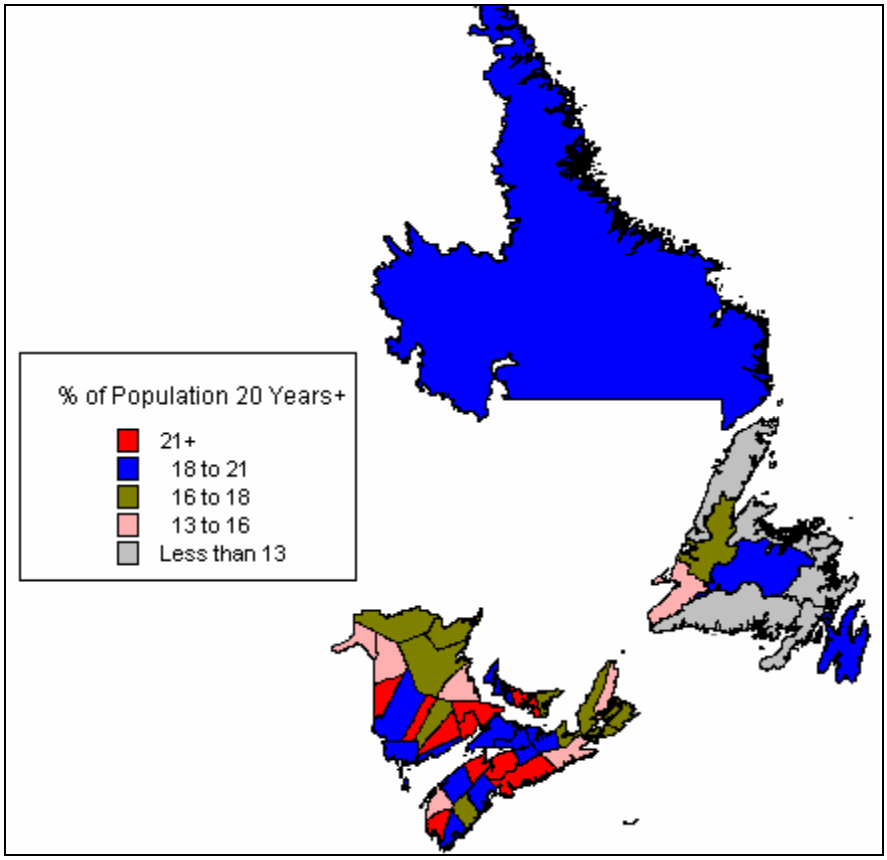
Educational Achievement of Population 20 Years+, Trade, Atlantic Canada's Census Divisions, 2001



The college and university categories are also presenting rather negative results. For college education (see map 3.4), only two CDs have a proportion above the national average (NB-Albert and PEI-Queens). With some exceptions, urban regions are performing better than rural regions. The situation is not much better for university education where only four CDs — all with at least one university within their boundaries — have a proportion above the national average (see map 3.5). Here again, urban regions are usually performing better than rural regions.

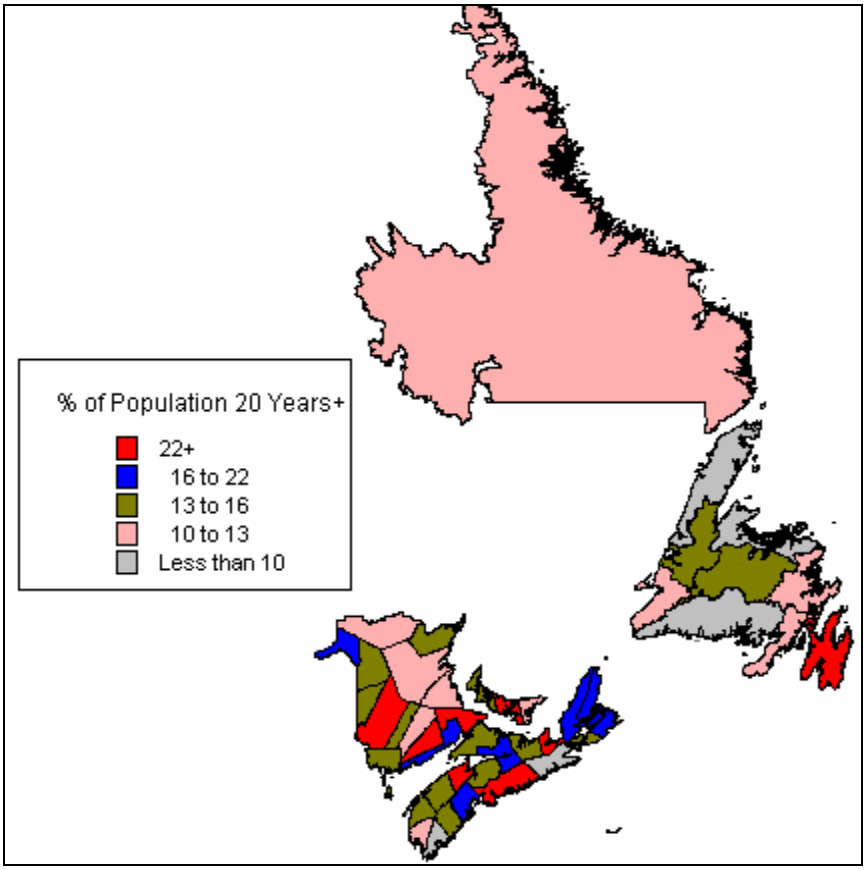
Map 3.4

Educational Achievement of Population 20 Years+, College, Atlantic Canada's Census Divisions, 2001



Map 3.5

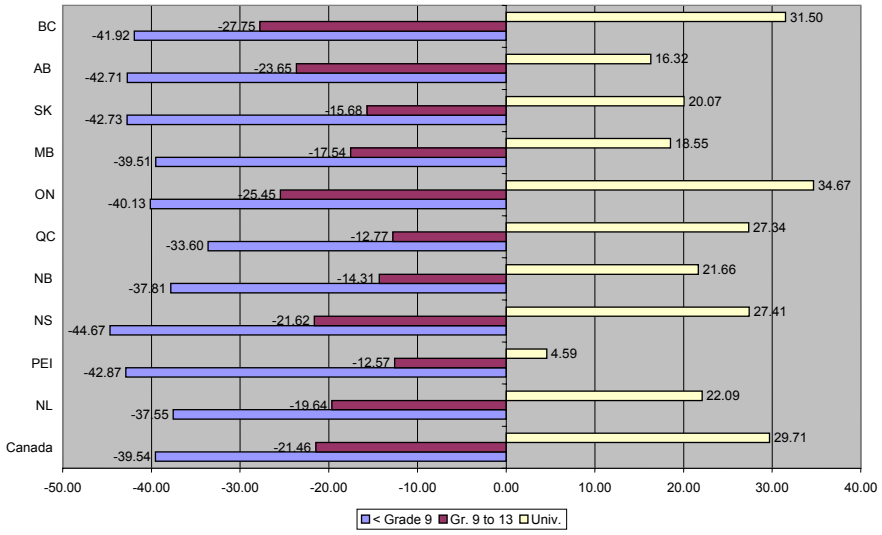
Educational Achievement of Population 20 Years+, University, Atlantic Canada's Census Divisions, 2001



As we have seen, Atlantic Canada's educational achievement is worse than Canada's as a whole. However, let us examine some recent trends. Figure 3.2 presents variations for three categories for a fifteen-year period from 1986 to 2001, which show that all Canadian provinces, including those from Atlantic Canada, improved their education levels. For the Atlantic provinces, however, the extent of the improvement has often fallen below the Canadian average. One exception was Nova Scotia, which managed to decrease its proportion in the categories of less than grade 9 and of grades 9 to 13 by more than the national average. Prince Edward Island was similarly successful in the category of less than grade 9. Although Atlantic Canada is having some success at improving its education levels, it has not been good enough. The gap between the region and the Canadian average is widening.

Figure 3.2

Variation of Educational Achievement Between 1986 and 2001: Population 20 Years+ Variation in the Proportion of Selected Categories, Canada and Provinces

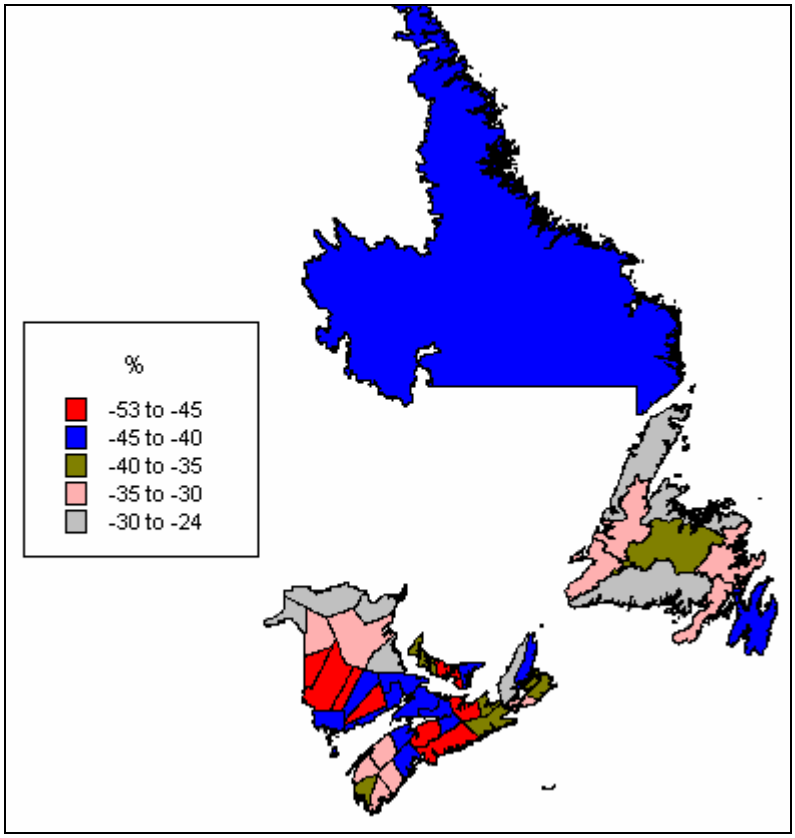


This improvement in educational achievement has also been generally better in more urban than rural regions (see maps 3.6 to 3.8). In fact, in the less than grade 9 category, twenty-three CDs saw an improvement which exceeded the national average. Most of these were either metropolitan regions or adjacent to a metropolitan region, thus strengthening the general trend. Note that these results are consistent with our migration results from chapter 2, where we found that mobility increased with education and that more rural regions experienced net emigration.

Improvement in the grades 9 to 13 category has followed a pattern similar to the one for the less than grade 9 category, but its extent has not been as great: only nine CDs exceeded the national rate. The story is a little different for university education. This time, none of the metropolitan regions exceeded the growth in the national average: the seven CDs which exceeded the national growth rate were all non-metropolitan regions. Atlantic Canada's urban regions did perform well in general, but the regional leaders were rural regions. Finally, it should be noted that three CDs — PEI-Kings, PEI-Prince, and NL10 — suffered a decline in the share of its adult population with a university education.

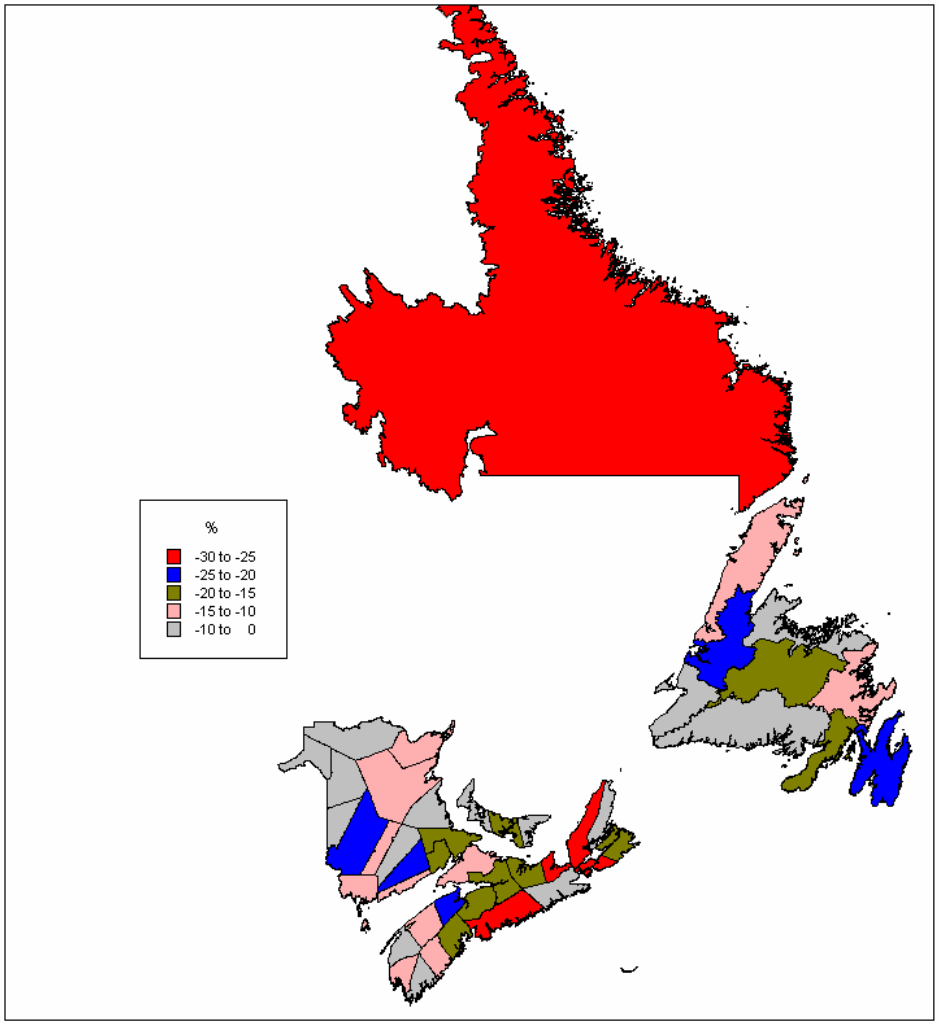
Map 3.6

Variation of Educational Achievement of Population 20 Years+, Less Than Grade 9, Atlantic Canada's Census Divisions, Between 1986 and 2001



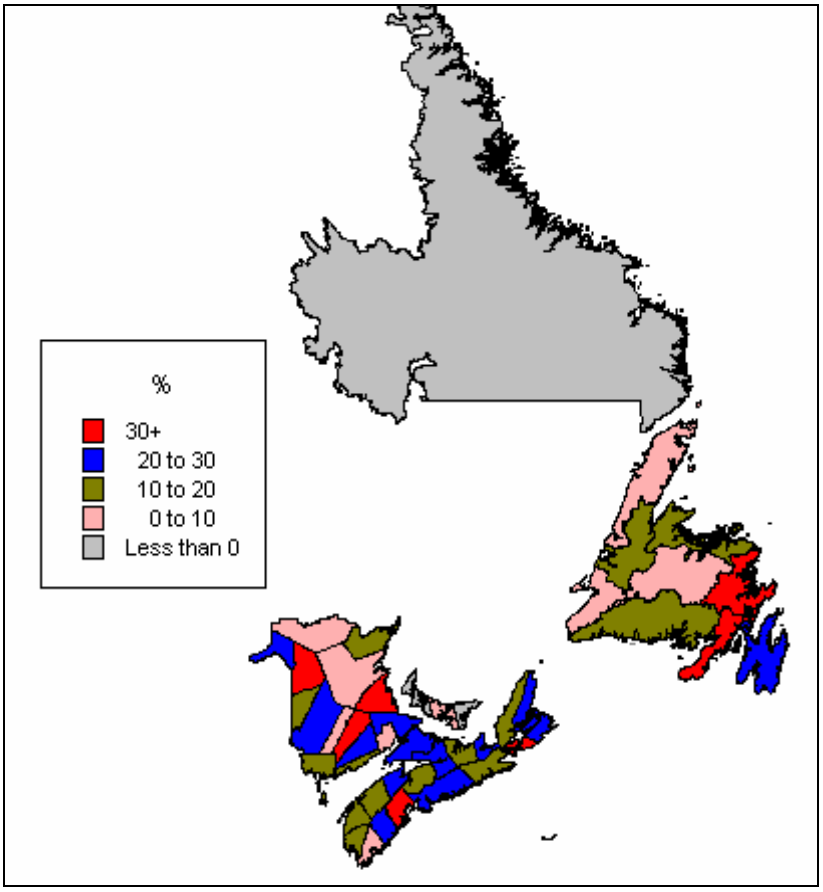
Map 3.7

Variation of Educational Achievement of Population 20 Years+, Grades 9–13, Atlantic Canada's Census Divisions, Between 1986 and 2001



Map 3.8

Variation of Educational Achievement of Population 20 Years+, University, Atlantic Canada's Census Divisions, Between 1986 and 2001

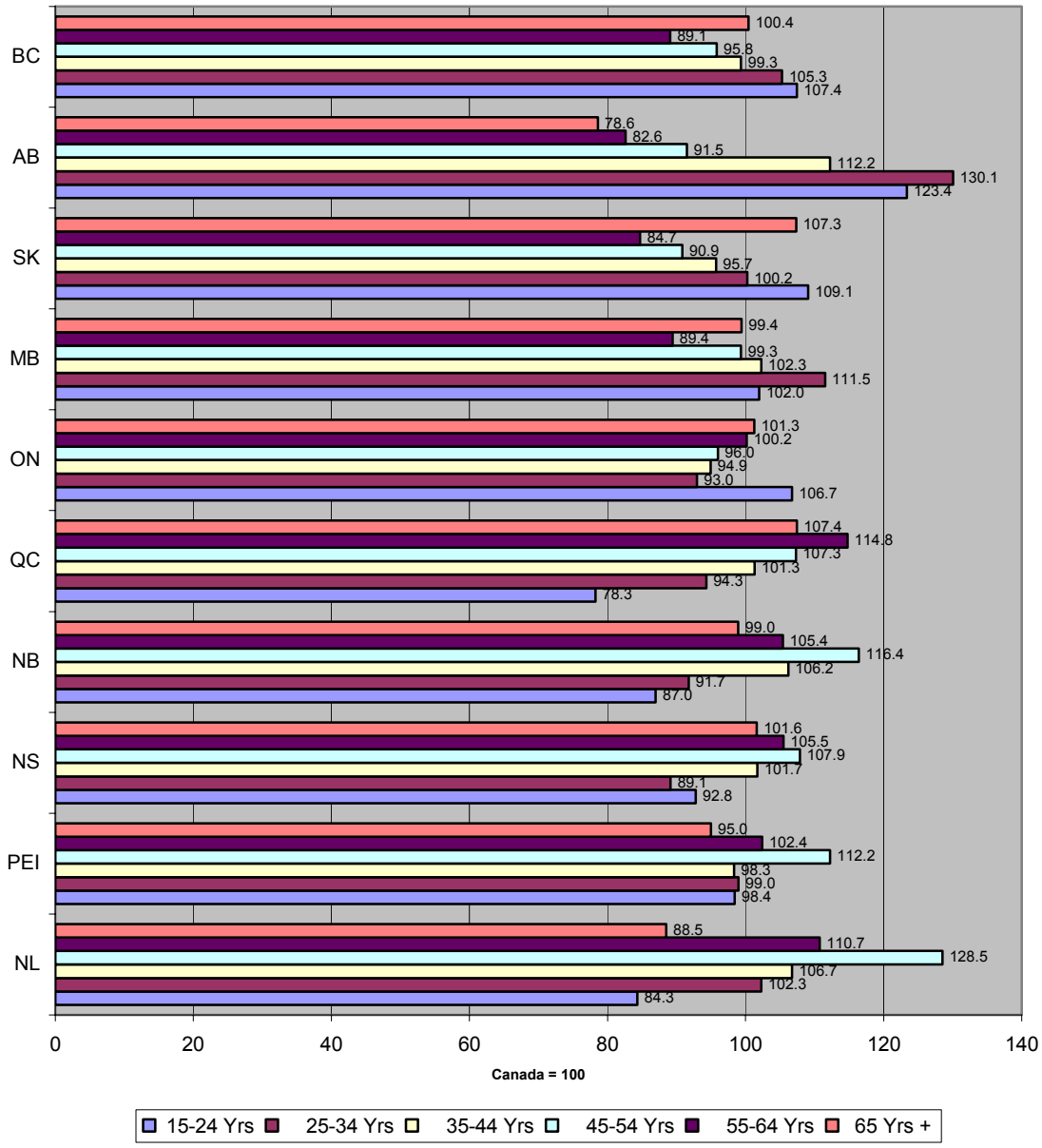


After analysing these results, one may wonder whether these are homogeneously distributed among age groups. We will now turn to a specific analysis of educational achievement by age groups. The data set, although still from the 2001 census, is from a distinct source and has slightly different achievement groupings than the previous data. To facilitate the analysis, all data are compared to the national average (i.e., Canada = 100). Furthermore, as a result of Canada's diverse education system, results will vary from one province to the next (e.g., CEGEP in Quebec), especially in the age group 15–24. Also, we should remind the reader to be wary of any analysis based on small units.

Provincial results vary significantly. Focusing first on individuals without a high school diploma (see figure 3.3), we find that other things being equal, Atlantic Canada should see an improvement in the future since the younger cohorts usually have a weight below the national average. Interestingly, the trend is generally the reverse in western Canada, especially in Alberta.

Figure 3.3

Highest Educational Achievement (No High School Diploma), Distribution by Age Groups, Canadian Provinces, 2001



For those in Atlantic Canada who have their high school diploma (see figure 3.4), the trend may be for younger cohorts to have weights generally above the national average. The situation is not as clear for trades (see figure 3.5), although for Newfoundland and Labrador, the groups up to age forty-four are above the national average, while those above age forty-four are significantly below the Canadian average.

Figure 3.4

Highest Educational Achievement (High School Diploma), Distribution by Age Groups, Canadian Provinces, 2001

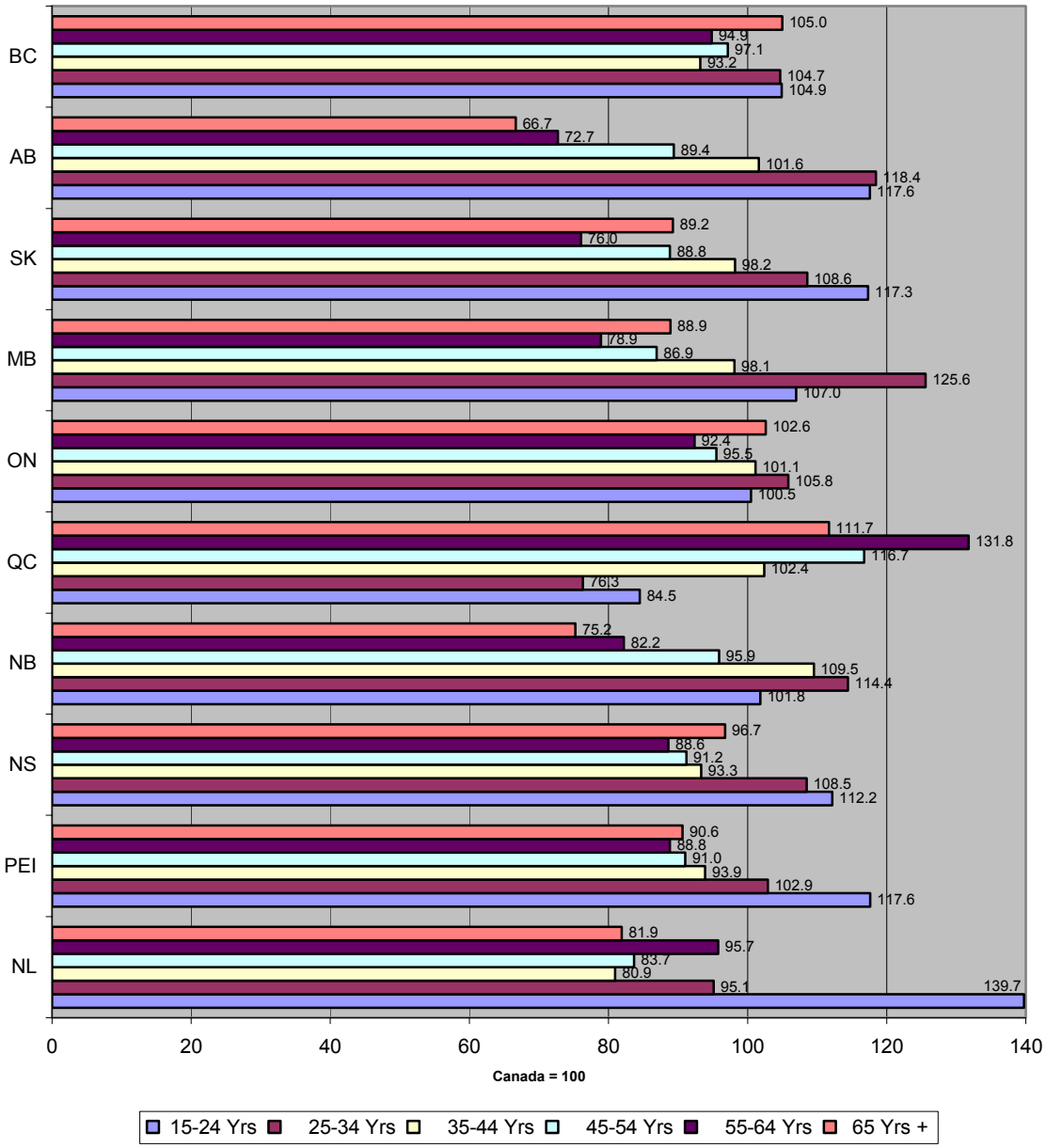
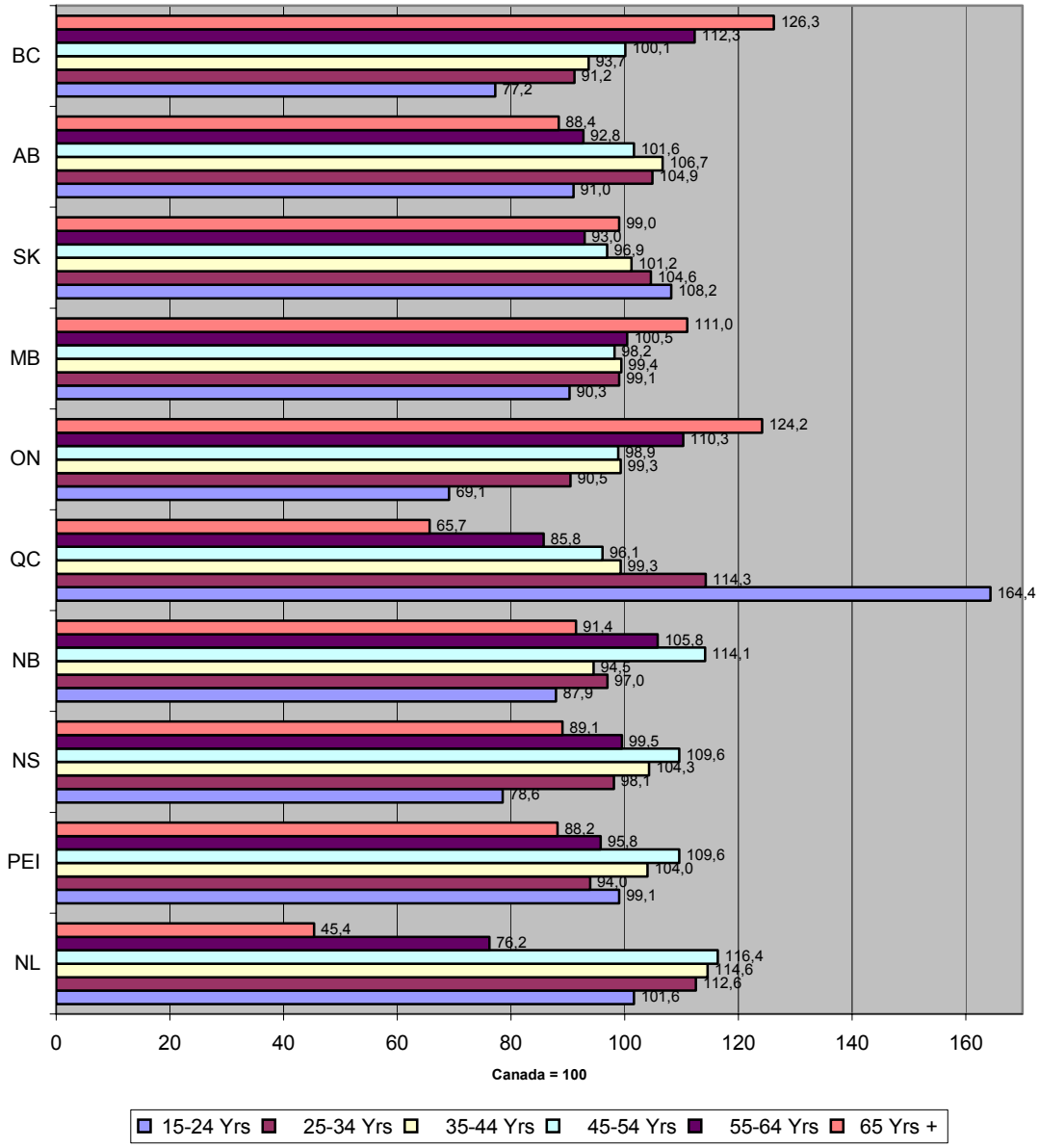


Figure 3.5

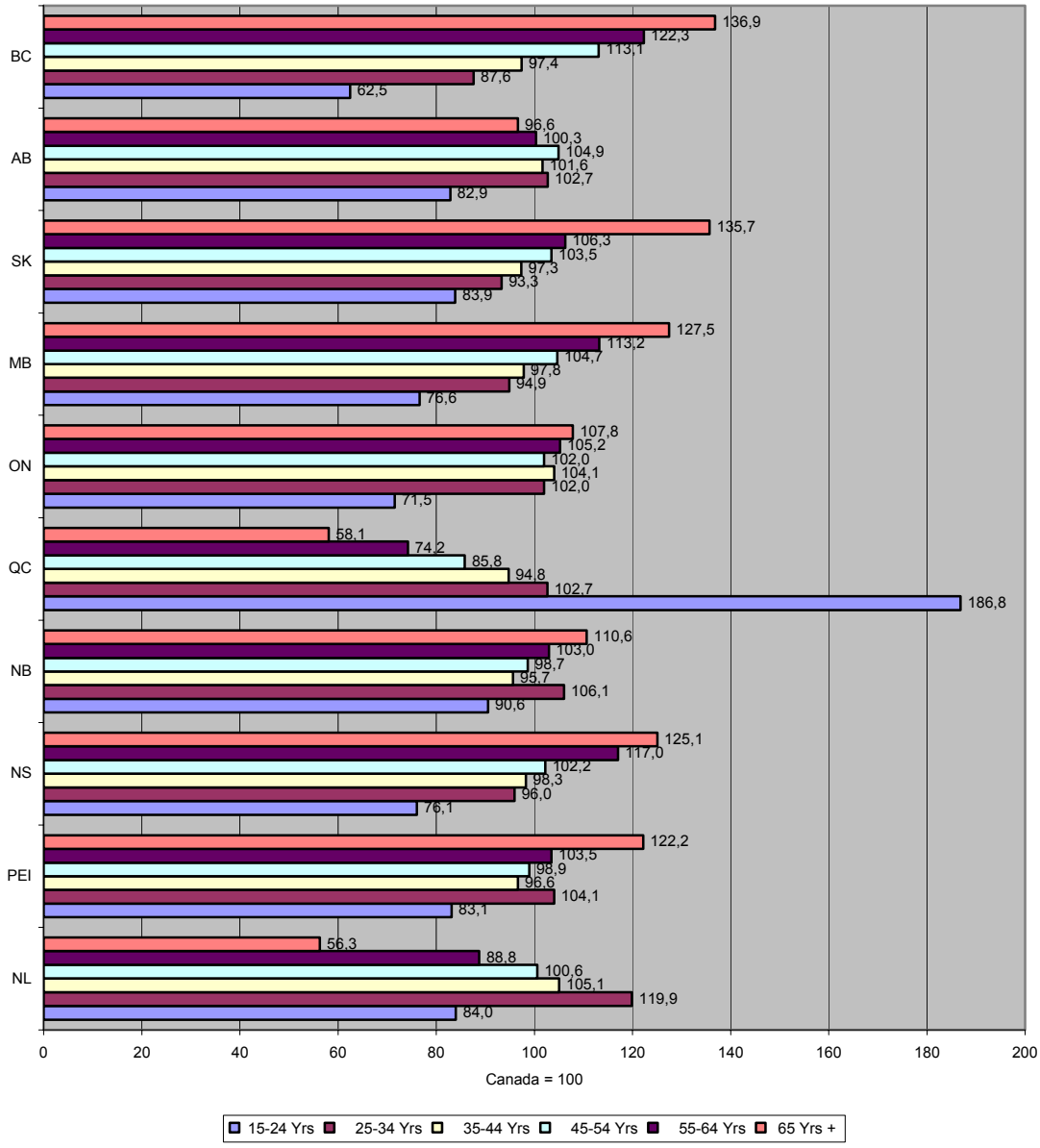
Highest Educational Achievement (Trade Diploma), Distribution by Age Groups, Canadian Provinces, 2001



With the exception of Newfoundland and Labrador, older cohorts from Atlantic Canada who have their college diploma generally have a weight above the national average (see figure 3.6), while the opposite is the case for younger cohorts.

Figure 3.6

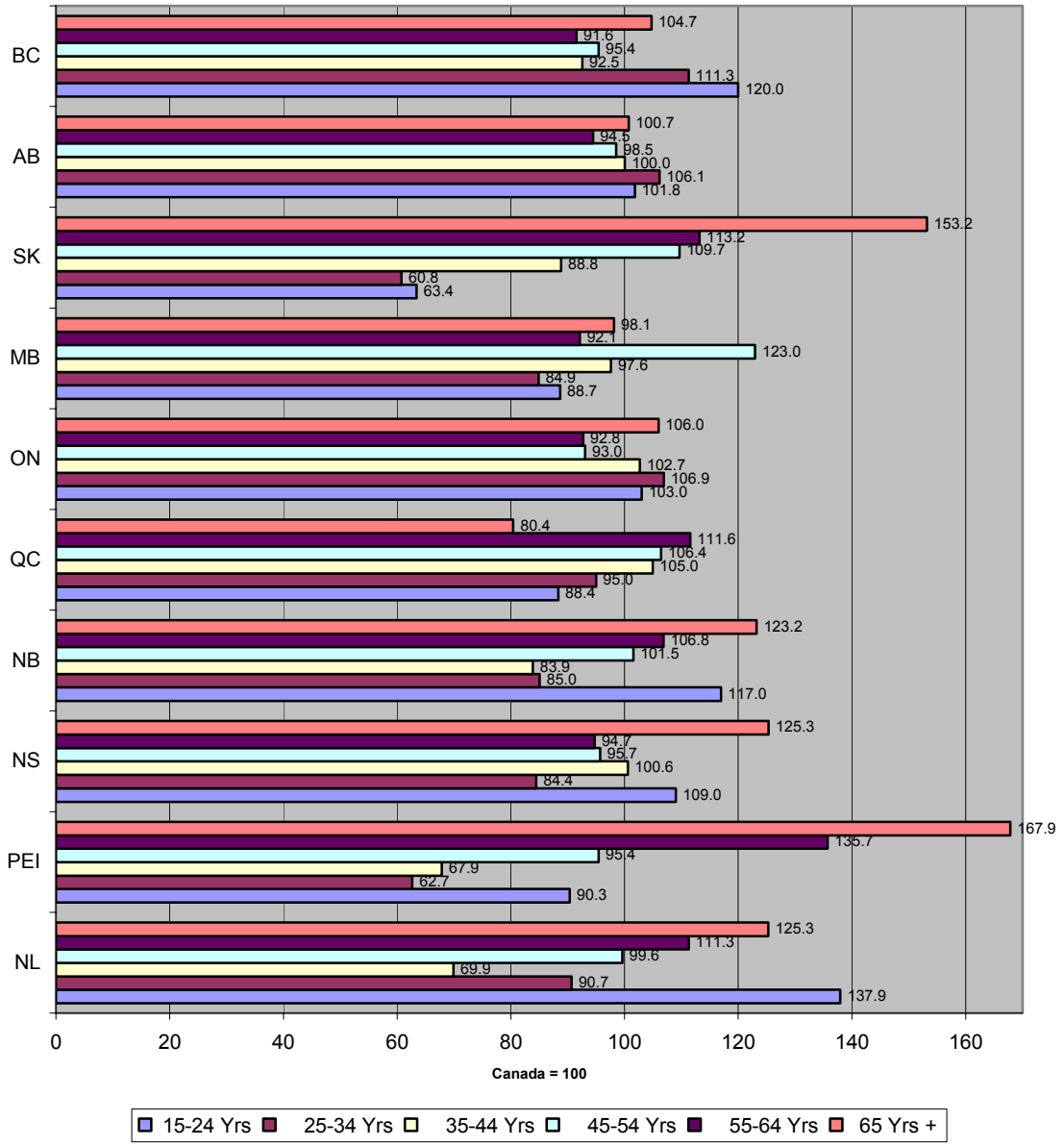
Highest Educational Achievement (College Diploma), Distribution by Age Groups, Canadian Provinces, 2001



For university students from Atlantic Canada with less than a bachelor's degree, we have a U shape (see figure 3.7). In the case of the age group 15–24, this is probably the result of students still attending university.

Figure 3.7

Highest Educational Achievement (University with Less Than Bachelor's Degree), Distribution by Age Groups, Canadian Provinces, 2001

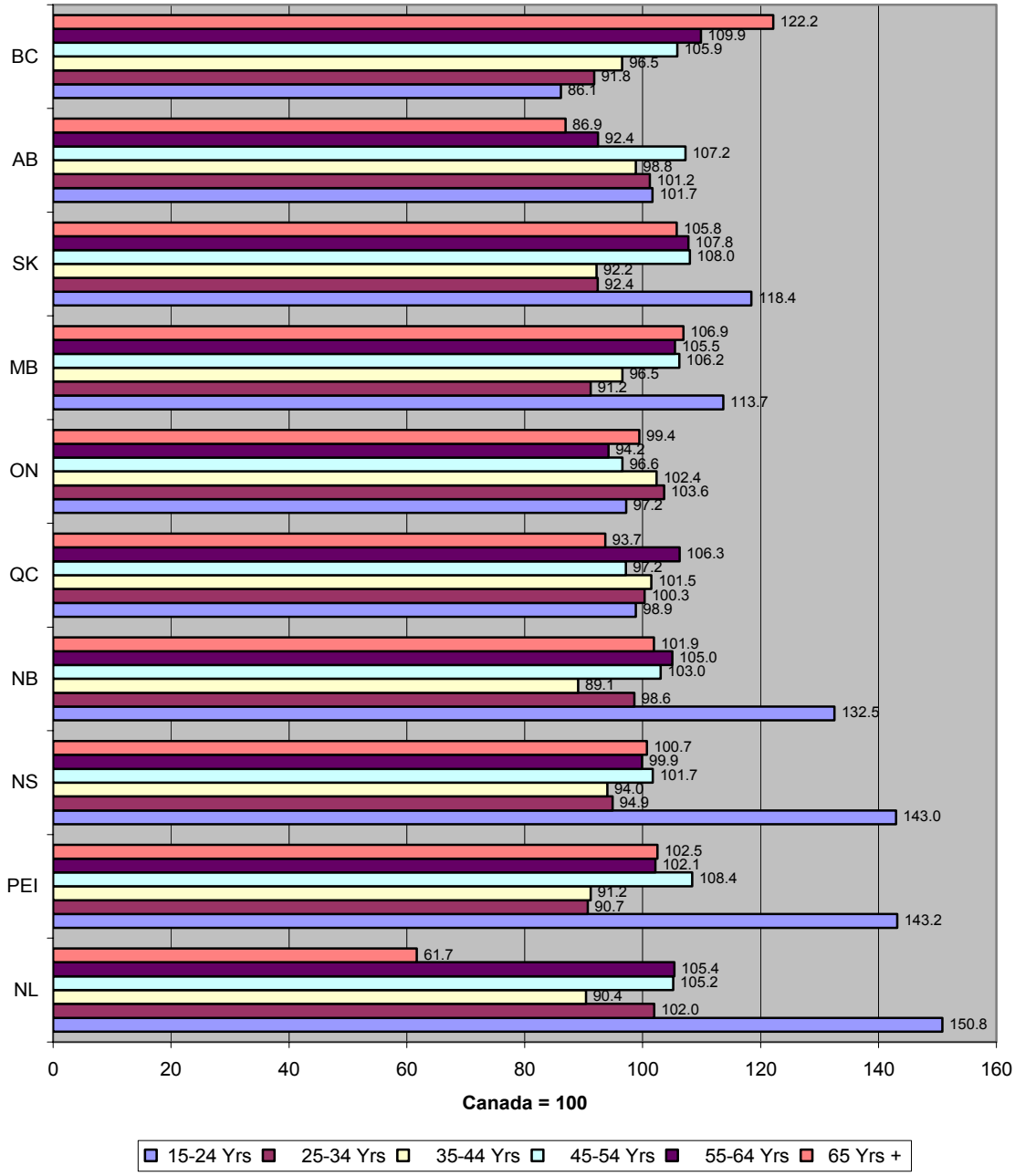


Finally, figure 3.8, which focuses on individuals with a university degree, reveals some interesting facts about Atlantic Canada. The very large weight for the cohort aged fifteen to twenty-four and the relatively low weights for the cohorts aged between

twenty-five and forty-four may be further evidence of a brain drain. Consequently, we cannot assume that in time, even with a very high weight for the youngest cohort, overall statistics for university graduates will improve for the region compared to the national average. In this respect, the region may be swimming against a very strong current.

Figure 3.8

Highest Educational Achievement (University Degree), Distribution by Age Groups, Canadian Provinces, 2001



An analysis of Atlantic Canada's census divisions also produces some interesting results, although in most cases no clear trend emerges. First, for the category of individuals without a high school diploma, we find that larger urban centres have a distribution closer to the Canadian average than more rural regions (see table 3.1). In more rural regions, older cohorts are generally above the national average. Interestingly, the trend is much less clear for the oldest category of above sixty-five years of age.

The situation is different for individuals with high school diplomas, where younger cohorts, both for urban and rural CDs, are often above the national average and older cohorts below (see table 3.2). The distribution of individuals with trade diplomas is generally relatively similar to the Canadian average, with no clear pattern based on the Ehrensaft typology (see table 3.3). The same is true of the college diploma category (see table 3.4).

In the case of individuals with a university education but with less than a bachelor's degree (see table 3.5), we find that for the two cohorts aged 25–34 and 35–44, Atlantic Canada's CDs generally have smaller weights than the Canadian average, while older cohorts generally have higher weights.

Finally, for individuals with a university degree (see table 3.6), we find that for most CDs the cohort aged 15–24 is above the national average. The same is generally true for the cohort aged 45–54. On the other hand, the opposite is generally true for the cohorts aged 25–34 and 35–44; these results may be explained by the aforementioned brain drain.

To conclude this section, we see that in general, compared to the national average, individuals with no high school diploma tend to be older, while those with a high school diploma tend to be younger. For the other categories, there are no clear trends, with the exception of the cohorts aged 25–34 and 35–44 with a university education, both with less than a bachelor's degree and with a degree. This strengthens our suspicion that a brain drain is taking place.

Table 3.1

Highest Educational Achievement (No High School Diploma), Distribution by Age Groups, Canada = 100, Atlantic Canada's Census Divisions, Based on Ehrensaft Groupings, 2001

CD	15–24 Yrs.	25–34 Yrs.	35–44 Yrs.	45–54 Yrs.	55–64 Yrs.	65 Yrs. +
NL9	68.7	105.5	116.6	135.1	125.5	84.0
NL10	118.7	129.9	116.9	140.5	101.6	45.2
NS-Guysborough	60.1	70.9	107.4	133.1	126.4	107.4
NS-Digby	67.1	107.3	105.8	103.9	111.0	114.1
NB-Queens	67.5	72.6	100.9	104.7	114.0	125.1
NS-Shelburne	68.7	125.3	112.5	122.5	108.4	94.8
NS-Annapolis	82.9	91.1	96.0	103.6	110.5	111.7
PEI-Kings	97.0	105.1	92.5	117.4	107.1	91.8
NB-Kent	63.2	98.8	103.3	142.1	115.1	99.4
NS-Richmond	70.0	63.4	68.5	110.1	131.0	130.2
NS-Victoria	90.2	119.4	112.0	99.1	100.1	95.7
NL3	58.6	110.4	128.5	155.5	119.6	77.7
NL8	65.4	112.5	111.3	138.2	116.2	90.6
NS-Queens	68.1	89.9	103.6	134.5	114.1	102.0
NB-Restigouche	68.5	92.8	113.9	130.6	115.9	97.3
NL7	69.0	102.9	112.0	125.2	110.1	100.2
NL4	75.5	117.9	123.8	121.8	113.5	84.2
NL2	77.6	118.6	108.8	142.4	108.1	81.6
NB-Madawaska	77.9	88.0	113.7	133.7	110.1	92.2
NS-Cumberland	78.4	91.0	93.1	100.6	111.4	117.9
NB-Northumberland	78.7	89.5	114.4	121.8	102.2	101.1
NS-Yarmouth	85.3	121.2	100.7	102.6	96.2	105.9
NB-Victoria	86.9	109.8	100.0	117.2	93.2	102.1
PEI-Prince	87.3	106.9	112.2	114.0	100.8	94.5
NS-Inverness	89.3	59.3	87.9	112.4	118.1	111.4
NB-Carleton	96.4	120.1	97.0	102.9	91.5	100.5
NS-Antigonish	116.0	52.5	89.1	118.8	110.8	92.3
NS-Lunenburg	75.2	78.5	105.9	107.2	110.2	115.2
NB-Charlotte	91.0	120.5	101.5	87.8	105.6	103.3
NS-Hants	91.5	77.5	116.2	118.1	115.2	88.9
NS-Colchester	93.4	94.0	113.3	105.0	103.4	95.9
NB-Gloucester	69.2	94.4	122.5	141.7	113.2	87.5
NL5	81.6	84.0	94.6	126.8	119.4	99.1
NL6	82.8	91.7	105.4	117.8	113.6	97.6
NS-Pictou	94.5	81.8	91.9	119.7	100.5	103.7
NS-Kings	99.5	102.9	101.9	97.7	104.3	97.4
NS-Cape Breton	83.7	69.8	89.1	114.0	113.4	114.4
NB-Saint John	87.8	91.7	106.6	100.0	98.9	109.7
NB-Westmorland	92.7	80.6	97.2	110.4	100.8	107.8
NL1	97.8	95.5	98.8	121.7	105.1	90.1
NB-Sunbury	103.6	131.0	139.2	90.1	94.5	75.6
NB-York	106.8	79.9	96.9	98.0	102.6	102.1
PEI-Queens	108.5	89.4	88.6	108.7	102.1	96.5
NB-Albert	114.6	70.9	77.2	115.0	109.2	96.7
NB-Kings	117.9	81.9	92.2	107.7	107.9	87.0
NS-Halifax	110.8	95.9	107.1	101.5	95.8	90.3

Table 3.2

Highest Educational Achievement (High School Diploma), Distribution by Age Groups, Canada = 100, Atlantic Canada's Census Divisions, Based on Ehrensaft Groupings, 2001

CD	15–24 Yrs.	25–34 Yrs.	35–44 Yrs.	45–54 Yrs.	55–64 Yrs.	65 Yrs. +
NL10	129.7	130.6	85.9	105.8	63.8	26.9
NL9	142.5	113.1	110.5	80.3	49.5	35.1
NS-Digby	73.0	117.3	94.4	104.8	113.6	122.5
NS-Annapolis	82.3	74.0	95.1	122.8	122.4	133.1
NB-Queens	83.8	103.6	114.9	89.0	137.5	90.2
NS-Shelburne	97.1	122.2	105.1	80.2	70.4	128.2
PEI-Kings	104.9	116.2	99.5	97.8	87.9	77.2
NS-Guysborough	118.7	89.1	105.3	61.2	87.7	139.4
NS-Victoria	91.0	116.9	87.7	93.4	116.6	119.1
NB-Kent	105.4	126.4	128.3	84.6	62.1	44.2
NS-Richmond	109.1	77.6	94.3	130.6	91.5	75.8
NB-Victoria	84.6	111.7	131.2	91.8	78.9	89.1
NS-Queens	86.2	135.3	91.2	82.0	100.5	130.7
NS-Cumberland	87.4	116.6	97.4	96.5	93.5	125.2
NB-Carleton	90.6	116.8	120.5	96.9	74.9	82.5
NB-Madawaska	93.3	106.6	119.7	108.0	78.8	68.8
NB-Northumberland	93.6	125.8	107.5	98.7	91.9	66.9
PEI-Prince	106.2	113.1	99.9	87.0	97.9	88.3
NS-Yarmouth	113.7	89.2	91.1	94.7	108.4	103.9
NL7	115.8	113.8	87.8	97.0	105.0	63.6
NB-Restigouche	116.7	103.0	117.3	84.8	70.0	70.2
NS-Inverness	122.5	93.3	81.9	103.2	99.2	87.2
NL8	124.0	128.8	96.6	78.8	86.0	50.9
NL3	132.4	125.9	93.3	77.8	72.5	58.5
NS-Antigonish	151.3	87.7	80.7	82.6	62.0	99.4
NL4	154.1	73.7	71.8	83.5	108.3	84.1
NL2	174.6	65.0	82.7	75.9	85.3	58.0
NB-Charlotte	83.0	134.5	104.6	92.9	96.8	95.4
NS-Hants	93.3	125.9	93.5	107.7	80.7	92.8
NS-Colchester	95.8	115.4	93.4	101.1	99.5	100.2
NS-Lunenburg	97.9	101.9	97.1	92.3	101.0	123.9
NS-Pictou	99.5	103.4	86.6	105.3	100.0	116.0
NS-Kings	103.7	96.3	106.3	87.4	100.5	106.0
NB-Gloucester	114.1	109.0	116.2	91.5	74.8	53.0
NL6	124.7	87.0	77.4	89.5	121.0	109.0
NL5	133.2	80.8	80.7	85.4	107.1	108.2
NB-Albert	88.6	106.1	108.1	108.6	105.5	79.8
NB-Sunbury	97.5	153.0	113.9	85.9	65.9	47.5
NB-Saint John	97.8	125.3	98.7	93.3	82.1	96.3
NB-Kings	99.1	101.0	114.9	99.5	91.0	77.3
NB-Westmorland	100.5	114.9	111.0	97.7	77.3	76.0
NS-Cape Breton	119.4	101.1	93.2	97.0	88.7	79.3
NB-York	122.3	101.7	89.8	97.9	83.9	81.5
PEI-Queens	127.8	93.3	88.9	91.6	83.3	95.7
NL1	146.0	88.2	75.6	80.4	97.7	92.8
NS-Halifax	122.3	114.1	92.1	83.4	80.2	86.7

Table 3.3

Highest Educational Achievement (Trade Diploma), Distribution by Age Groups, Canada = 100, Atlantic Canada's Census Divisions, Based on Ehrensaft Groupings, 2001

CD	15–24 Yrs.	25–34 Yrs.	35–44 Yrs.	45–54 Yrs.	55–64 Yrs.	65 Yrs. +
NL9	89.7	141.3	124.3	105.8	67.7	16.7
NL10	122.0	143.5	103.6	125.8	59.6	13.6
NS-Annapolis	42.4	94.7	112.4	105.3	100.5	105.6
NB-Queens	55.5	46.9	92.7	137.0	126.9	118.5
NS-Digby	79.9	104.7	101.2	112.9	115.4	63.2
NS-Shelburne	94.0	99.8	105.6	112.0	95.4	77.6
PEI-Kings	99.3	99.5	99.6	104.6	108.7	83.9
NS-Guysborough	101.9	108.3	101.7	101.9	99.7	76.2
NB-Kent	75.6	99.2	105.7	119.5	104.3	63.2
NS-Victoria	79.6	47.6	98.5	147.4	114.9	81.7
NS-Richmond	111.7	94.8	104.9	108.9	94.3	80.6
NS-Queens	37.6	110.2	102.2	76.9	122.1	130.3
NS-Yarmouth	45.4	89.0	106.7	109.6	114.7	102.4
NS-Cumberland	60.5	71.3	90.8	124.9	131.7	105.9
NB-Victoria	76.3	104.2	104.4	105.9	105.7	83.2
NL4	76.7	93.5	102.8	124.3	104.7	70.8
NB-Northumberland	78.7	112.5	92.2	117.7	100.4	78.1
NS-Inverness	80.0	123.9	104.0	108.0	93.2	61.5
NB-Restigouche	86.6	76.1	99.5	129.6	97.5	94.1
NL2	93.9	106.1	115.8	131.9	73.1	29.2
PEI-Prince	102.8	92.0	109.8	108.7	85.1	89.9
NB-Carleton	104.0	97.8	84.9	131.6	74.0	109.0
NS-Antigonish	104.5	110.2	109.2	102.4	79.1	84.5
NL7	109.7	104.2	117.9	116.2	73.6	50.1
NL8	126.9	124.8	107.5	117.3	74.4	29.8
NB-Madawaska	143.5	78.9	114.7	120.6	72.0	70.0
NL3	163.0	112.8	121.8	116.0	59.3	13.2
NS-Lunenburg	62.1	93.5	87.8	113.4	127.7	102.5
NS-Hants	62.8	106.1	119.9	101.5	95.1	72.5
NS-Colchester	79.7	89.4	101.9	118.7	92.2	100.2
NB-Charlotte	105.8	103.0	88.5	113.0	89.2	107.2
NS-Kings	72.0	106.3	115.7	107.0	73.2	90.5
NL5	81.7	105.5	110.9	125.9	82.4	52.1
NS-Pictou	83.5	92.8	100.5	109.6	105.5	95.1
NB-Gloucester	87.0	83.4	93.8	136.1	122.5	55.9
NL6	102.7	108.8	106.4	117.3	88.9	53.2
NB-Albert	60.2	107.6	85.3	101.5	122.3	116.3
NB-Kings	61.3	94.6	99.6	116.4	116.7	83.9
NB-Saint John	80.1	93.9	91.2	105.6	114.2	113.4
NB-Sunbury	87.5	122.2	133.4	89.2	73.0	47.4
NB-Westmorland	94.6	106.4	85.5	107.7	109.2	100.8
PEI-Queens	96.6	93.5	101.3	111.6	98.8	88.3
NL1	97.5	110.1	118.6	111.3	75.7	52.6
NS-Cape Breton	99.2	88.8	103.4	112.6	101.9	84.9
NB-York	105.9	97.1	87.8	99.5	108.4	118.6
NS-Halifax	80.6	102.7	104.7	108.1	95.0	88.0

Table 3.4

Highest Educational Achievement (College Diploma), Distribution by Age Groups, Canada = 100, Atlantic Canada's Census Divisions, Based on Ehrensaft Groupings, 2001

CD	15–24 Yrs.	25–34 Yrs.	35–44 Yrs.	45–54 Yrs.	55–64 Yrs.	65 Yrs. +
NL9	107.3	117.5	122.4	97.1	61.3	11.4
NL10	111.7	142.7	109.9	76.7	66.3	17.3
NB-Queens	61.5	111.7	97.3	87.8	144.0	99.6
NS-Annapolis	74.8	75.0	94.8	84.9	142.5	215.4
PEI-Kings	75.8	95.7	119.3	101.4	80.8	97.9
NS-Digby	90.1	101.7	102.1	86.8	90.0	141.9
NS-Shelburne	91.0	103.7	115.6	98.1	106.1	33.7
NS-Guysborough	131.1	82.9	82.2	93.9	94.3	180.6
NS-Victoria	87.7	82.3	100.0	118.4	96.8	106.9
NS-Richmond	94.0	121.8	103.0	88.0	103.7	64.5
NB-Kent	138.5	127.0	91.0	93.4	84.1	35.8
NB-Carleton	72.4	95.4	80.4	121.4	126.0	138.4
NS-Cumberland	76.3	89.2	83.9	99.0	139.3	178.3
NL4	83.5	105.3	117.8	111.6	63.5	58.0
NS-Queens	83.8	84.6	94.8	98.0	138.7	144.9
NB-Restigouche	86.7	99.6	115.1	93.6	104.2	78.3
NL8	91.6	121.9	117.1	83.7	96.3	36.8
NB-Victoria	96.5	85.4	105.3	117.2	109.4	71.5
NL7	98.7	124.9	77.0	115.8	108.8	53.6
NL3	99.1	163.8	97.5	80.1	47.5	37.2
PEI-Prince	99.3	111.9	89.6	99.8	96.6	106.5
NS-Yarmouth	102.2	97.8	94.4	107.8	94.1	114.9
NL2	105.2	118.5	105.6	113.2	69.6	26.5
NS-Inverness	108.9	77.2	93.1	112.1	135.5	106.8
NB-Northumberland	112.5	128.8	88.8	78.4	90.3	107.6
NB-Madawaska	114.5	107.5	107.1	91.7	86.5	67.8
NS-Antigonish	119.4	97.8	85.8	98.3	90.4	138.3
NS-Lunenburg	64.1	92.4	104.0	102.6	129.2	115.1
NS-Colchester	72.0	88.9	92.2	98.1	132.1	165.5
NB-Charlotte	72.2	87.3	94.5	98.9	104.4	196.4
NS-Hants	74.2	112.7	98.4	101.7	99.4	98.7
NL6	63.1	110.3	108.5	123.0	81.2	47.2
NS-Kings	68.9	93.9	99.3	98.0	126.1	137.5
NL5	74.7	108.3	111.1	107.4	100.1	52.9
NS-Pictou	104.1	90.7	83.4	101.9	122.0	148.7
NB-Gloucester	107.2	123.8	101.2	86.0	81.8	72.9
NB-Kings	53.1	87.1	95.6	129.9	108.1	130.3
NS-Cape Breton	58.4	78.0	105.9	118.7	124.1	123.1
NB-Sunbury	69.4	121.6	120.3	76.2	85.1	82.2
NB-Albert	70.1	85.1	88.9	119.4	142.3	121.8
PEI-Queens	76.3	101.5	96.2	98.3	111.7	134.6
NB-York	76.4	101.2	88.5	99.5	124.7	141.5
NL1	81.1	119.2	103.5	98.0	93.7	69.6
NB-Saint John	86.8	104.9	91.4	98.0	101.6	138.9
NB-Westmorland	109.8	110.2	96.1	92.3	92.1	99.5
NS-Halifax	72.2	102.4	99.9	100.9	112.3	114.4

Table 3.5

Highest Educational Achievement (University with Less Than Bachelor's Degree), Distribution by Age Groups, Canada = 100, Atlantic Canada's Census Divisions, Based on Ehrensaft Groupings, 2001

CD	15–24 Yrs.	25–34 Yrs.	35–44 Yrs.	45–54 Yrs.	55–64 Yrs.	65 Yrs. +
NL9	136.8	138.4	19.7	113.5	97.8	160.3
NL10	148.6	118.2	84.1	110.0	108.4	37.3
NS-Annapolis	48.0	40.5	51.8	82.9	130.6	252.9
NB-Queens	91.2	0.0	0.0	94.5	256.1	160.3
NS-Shelburne	94.7	95.8	68.2	130.9	72.5	249.7
NS-Guysborough	94.7	95.8	68.2	130.9	96.7	138.7
PEI-Kings	96.6	61.1	43.5	83.4	74.0	297.0
NS-Digby	146.6	103.8	52.8	126.6	82.3	128.8
NS-Richmond	68.4	121.1	86.2	130.0	69.8	60.1
NB-Kent	156.1	87.7	62.5	95.9	141.7	101.6
NS-Victoria	158.9	80.4	128.7	82.3	81.1	162.9
NS-Yarmouth	45.0	68.4	124.4	109.0	130.3	79.2
NS-Inverness	53.5	72.2	83.6	104.8	154.9	115.0
NL7	74.2	45.0	64.1	123.0	113.6	173.8
NS-Cumberland	80.1	50.6	79.3	96.8	122.7	170.1
NS-Queens	80.3	27.1	86.8	92.5	68.3	282.3
PEI-Prince	89.7	57.8	64.6	78.9	162.4	176.7
NB-Carleton	98.5	99.7	106.4	102.1	92.2	96.2
NL8	106.4	30.8	54.7	120.8	170.7	151.4
NS-Antigonish	110.5	71.9	45.5	125.5	96.7	166.5
NB-Restigouche	123.1	54.5	105.3	85.1	102.1	144.3
NL4	124.9	72.2	70.7	98.7	145.8	125.4
NB-Victoria	155.9	86.7	112.3	59.2	87.5	155.2
NB-Madawaska	159.1	59.5	109.6	107.6	88.3	93.2
NB-Northumberland	169.4	97.2	69.2	89.8	109.6	125.7
NL3	295.5	49.8	0.0	85.1	100.6	173.1
NL2	328.3	93.4	29.6	127.6	83.8	72.1
NS-Hants	55.5	98.4	106.7	112.0	89.8	108.5
NS-Lunenburg	69.5	54.3	100.1	93.8	112.8	170.2
NB-Charlotte	91.2	61.5	49.3	115.6	131.9	178.1
NS-Colchester	111.4	65.3	103.5	109.4	86.8	130.5
NB-Gloucester	105.5	135.7	110.9	92.7	89.8	67.0
NS-Pictou	110.6	41.0	119.5	66.2	120.5	164.1
NS-Kings	114.4	63.4	78.5	105.4	105.7	156.4
NL5	138.1	104.8	70.5	91.4	123.4	101.1
NL6	171.4	39.4	101.0	91.6	95.5	155.2
NB-Sunbury	68.4	138.4	123.2	82.7	104.8	50.1
NB-Albert	69.7	99.9	79.5	116.4	94.9	136.1
PEI-Queens	85.1	63.4	74.2	108.3	130.3	141.6
NB-Westmorland	100.2	89.4	73.2	105.9	103.8	141.5
NB-Kings	108.2	54.8	90.2	123.9	120.9	103.0
NB-Saint John	120.1	69.9	64.9	107.9	98.1	168.9
NL1	128.4	101.7	75.4	94.5	105.5	124.3
NS-Cape Breton	131.8	111.5	93.3	95.8	95.1	90.5
NB-York	140.7	64.5	68.1	98.8	128.0	141.7
NS-Halifax	121.0	96.0	114.6	88.8	82.1	107.8

Table 3.6

Highest Educational Achievement (University Degree), Distribution by Age Groups, Canada = 100, Atlantic Canada's Census Divisions, Based on Ehrensaft Groupings, 2001

CD	15–24 Yrs.	25–34 Yrs.	35–44 Yrs.	45–54 Yrs.	55–64 Yrs.	65 Yrs. +
NL10	125.8	114.8	117.4	105.1	55.2	9.9
NL9	166.4	90.6	92.6	125.3	84.6	34.5
NS-Annapolis	90.8	48.8	74.1	107.9	239.6	160.5
NB-Queens	96.5	63.0	30.7	151.7	216.7	148.4
NS-Shelburne	110.2	87.0	70.6	101.1	149.4	182.7
PEI-Kings	115.6	73.4	107.2	113.6	104.4	111.7
NS-Digby	132.5	66.8	83.9	127.9	132.4	127.1
NS-Guysborough	188.3	61.5	83.9	111.0	127.6	117.0
NB-Kent	110.1	75.1	82.1	121.7	153.2	103.1
NS-Victoria	152.5	48.0	67.9	177.7	156.2	70.2
NS-Richmond	155.5	101.6	62.3	114.1	109.6	141.7
NL7	84.0	128.1	77.0	97.9	119.0	65.8
NL8	87.4	78.7	98.6	129.7	132.6	48.3
NS-Cumberland	90.6	70.1	82.8	116.4	135.1	187.7
NS-Queens	103.5	28.2	60.5	156.0	196.4	160.8
NB-Madawaska	104.7	104.8	71.4	102.0	138.4	124.7
NB-Restigouche	108.8	97.5	96.9	107.5	95.3	90.1
NS-Yarmouth	114.8	77.4	101.1	116.0	100.8	122.3
NS-Inverness	136.6	92.0	58.1	128.5	148.1	92.6
NL4	140.6	71.5	85.2	155.6	88.9	64.7
NS-Antigonish	144.7	80.1	79.9	104.3	122.6	162.4
PEI-Prince	145.4	107.4	84.5	105.9	98.0	73.4
NB-Northumberland	152.5	87.4	74.2	117.7	125.6	103.0
NB-Carleton	156.3	113.8	104.4	80.6	71.5	85.0
NB-Victoria	160.2	116.8	64.5	111.4	100.2	76.6
NL2	223.2	91.8	77.3	123.5	103.1	34.2
NL3	238.9	91.7	81.1	140.1	67.8	28.3
NS-Lunenburg	88.8	52.0	89.9	136.8	126.0	171.6
NB-Charlotte	94.4	64.8	89.4	134.9	120.3	136.9
NS-Hants	107.9	108.2	104.2	94.3	83.9	92.4
NS-Colchester	127.6	84.7	94.7	102.4	116.4	122.5
NS-Kings	104.3	78.4	106.7	101.0	115.3	128.6
NB-Gloucester	123.1	99.8	84.7	113.9	104.7	83.9
NL6	140.3	107.8	88.0	98.7	122.1	52.0
NS-Pictou	155.2	88.5	92.8	107.8	95.4	111.5
NL5	184.0	82.8	98.1	115.4	94.8	62.5
NB-Kings	91.4	83.3	114.4	107.2	86.7	115.6
NB-Albert	122.1	97.5	103.0	101.8	98.3	73.6
NB-York	141.7	95.5	87.3	102.7	113.8	99.5
PEI-Queens	144.4	88.2	91.6	108.8	102.5	108.6
NB-Westmorland	146.0	101.4	88.0	97.5	104.2	103.4
NB-Saint John	148.9	113.1	86.5	89.2	85.6	116.9
NB-Sunbury	151.5	167.5	88.7	63.2	39.6	46.5
NL1	151.9	104.5	89.6	99.5	107.9	68.4
NS-Cape Breton	187.0	83.0	81.0	106.7	121.0	109.9
NS-Halifax	150.8	106.5	97.6	95.2	84.3	80.9

4

INCOME

In chapter 3, we saw that although Atlantic Canada has made progress in the field of educational achievement, the gap between the region and the rest of the country not only persists but has increased during the past fifteen years. In this chapter we will see if the situation is the same for income.

Atlantic Canada derived on average a relatively smaller portion of its total income from employment and a larger portion from government transfers (see figure 4.1). Furthermore, the four Atlantic provinces were at the tail end of Canada's total-income ladder. What may be more surprising, however, is that for all Canadian provinces, the relative weight of employment income in total income declined between 1985 and 2000 (see table 4.1). This is true even though in all cases the relative weight increased between 1995 and 2000. The smallest decline for the period 1985 to 2000 was in Prince Edward Island and the largest in Newfoundland and Labrador.

Figure 4.1

Composition of Total Income, Canada and Provinces, 2000

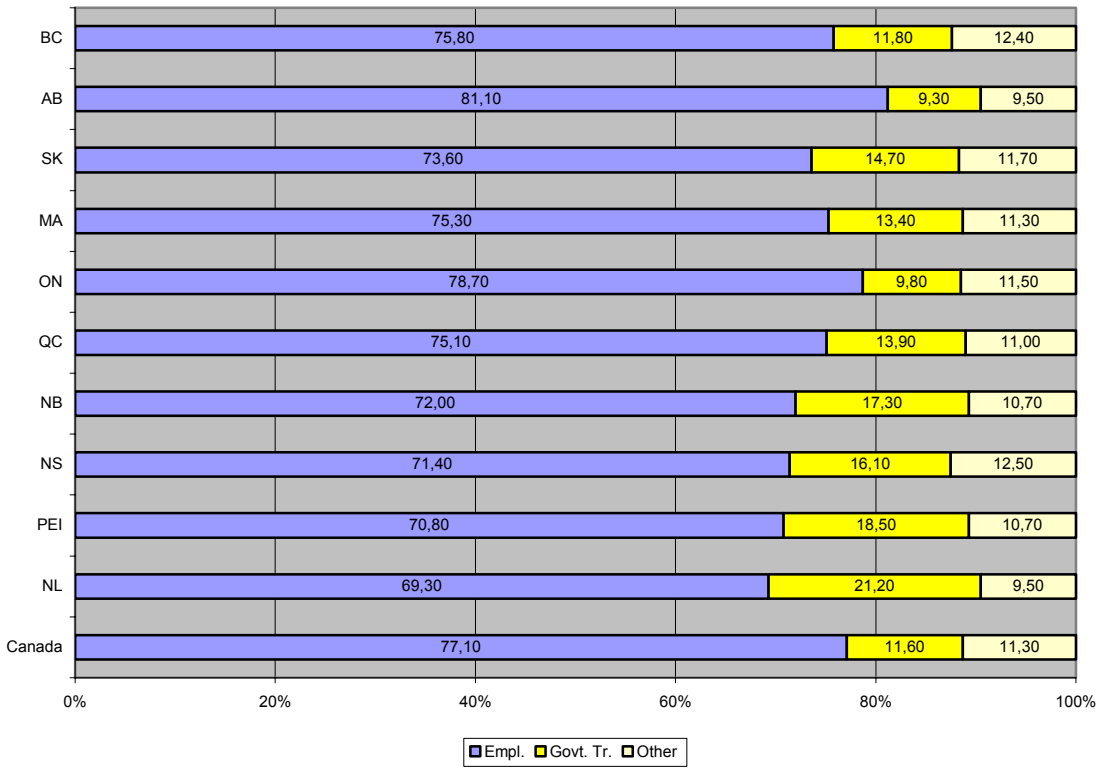


Table 4.1

Evolution (in Percentage Points) in the Distribution of Sources of Income Between 1985 and 2000, Canadian Provinces

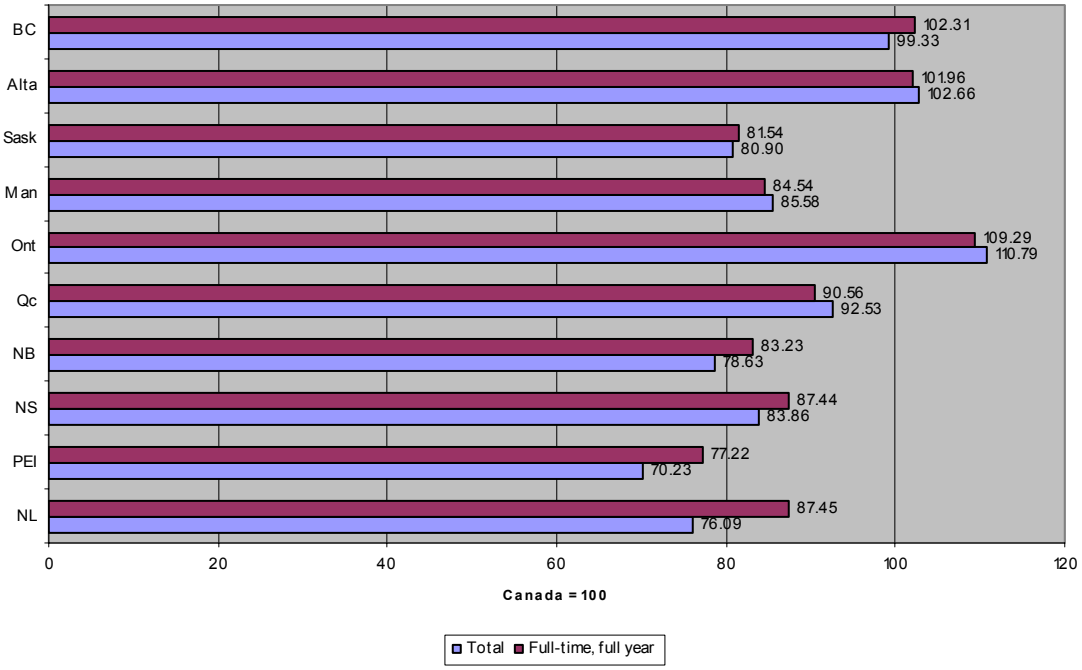
	Employment Income	Government Transfers	Other Income
Newfoundland	-4.1	0.0	4.1
Prince Edward Island	-0.3	-2.1	2.4
Nova Scotia	-3.8	0.8	3.0
New Brunswick	-1.2	-1.1	2.3
Quebec	-3.0	0.7	2.3
Ontario	-1.2	0.9	0.3
Manitoba	-2.5	1.6	0.4
Saskatchewan	-1.8	2.2	-0.4
Alberta	-1.2	0.7	0.4
British Columbia	-0.7	0.1	0.6

The evolution of government transfers may also be surprising to some. Seven provinces had a higher relative reliance on government transfers in 2000 compared to 1985. The three other provinces, all from Atlantic Canada, had either the same degree of relative dependence (Newfoundland and Labrador) or a smaller degree (New Brunswick and Prince Edward Island). The relative share of other sources of income grew in all provinces but Saskatchewan, and the Atlantic provinces experienced the highest growth over the period 1985 to 2000 of all Canadian provinces.

Turning to average employment income, we find that the four Atlantic provinces are below the national average, although Nova Scotia is ahead of Saskatchewan (see figure 4.2). What is striking is that Atlantic Canada's performance is much closer to the national average for the subcategory of average employment income — full-year and full-time. This is especially true for Newfoundland and Labrador, which jumps a full eleven percentage points closer to the national average if we restrict our analysis of employment income to full-year and full-time. It is therefore not surprising to find that Newfoundland and Labrador had the lowest percentage of individuals of wage earners working full-year and full-time, slightly below Prince Edward Island. What may be more surprising to some is that New Brunswick is barely trailing British Columbia in this regard, a province which in fact is lagging behind Nova Scotia.

Figure 4.2

Average Employment Income, Total and Full-Year, Full-Time, Canadian Provinces, 2000



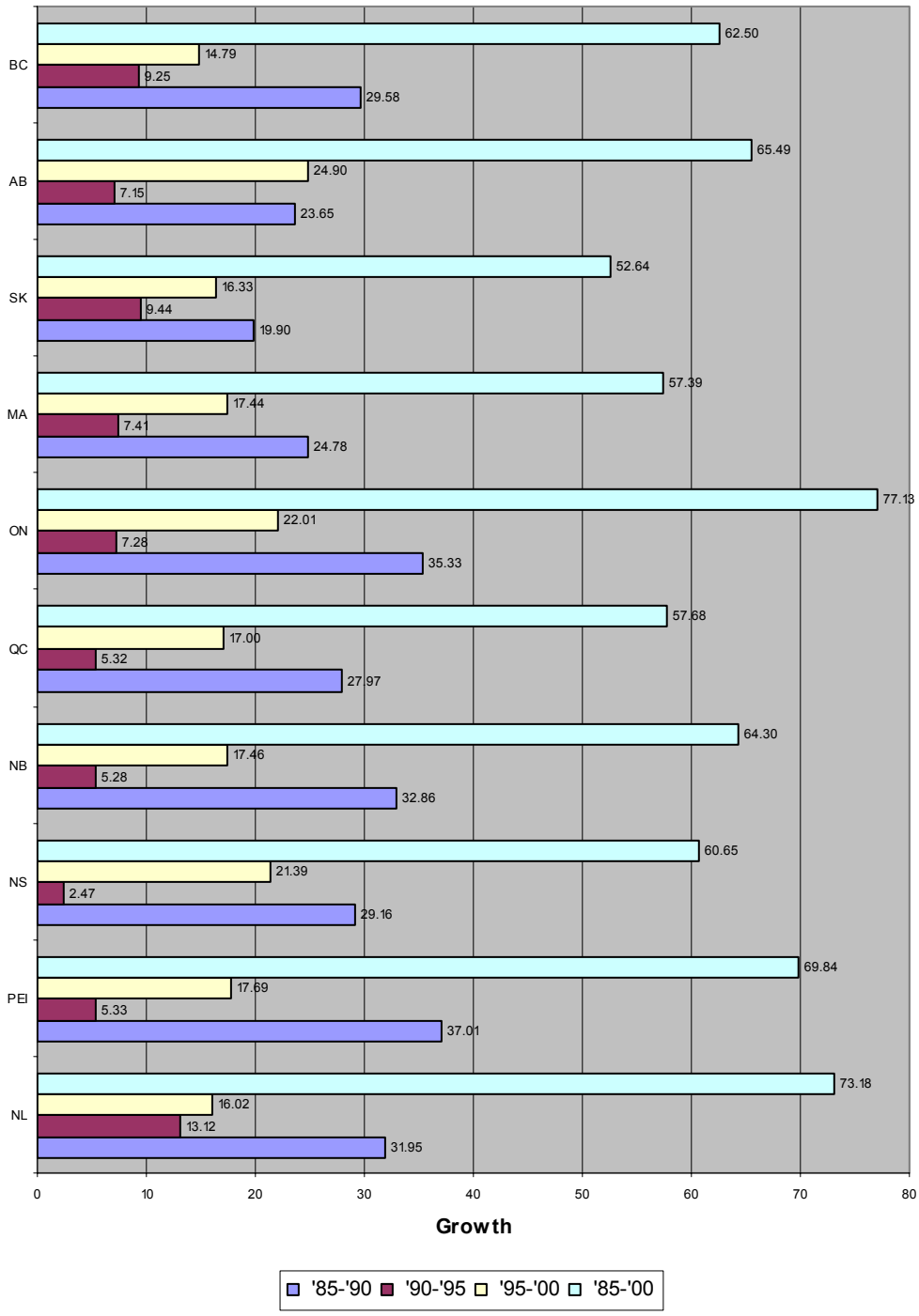
Growth of average total income between 1985 and 2000 also yields some interesting results. Between 1985 and 2000, Prince Edward Island was the Canadian province which experienced the strongest growth. New Brunswick was ranked third and Newfoundland and Labrador fourth.

Growth of average employment income during the period 1985 to 2000 was nearly as positive for Atlantic Canada (see figure 4.3). Newfoundland and Labrador ranked second, Prince Edward Island third, and New Brunswick fifth. Prince Edward Island actually led the country for the period 1985 to 1990, while Newfoundland and Labrador led from 1990 to 1995.

If we concentrate our analysis on the growth of employment full-year and full-time, the region's performance is solid but not as stellar, with Newfoundland and Labrador leading the region's provinces with a fourth place ranking.

Figure 4.3

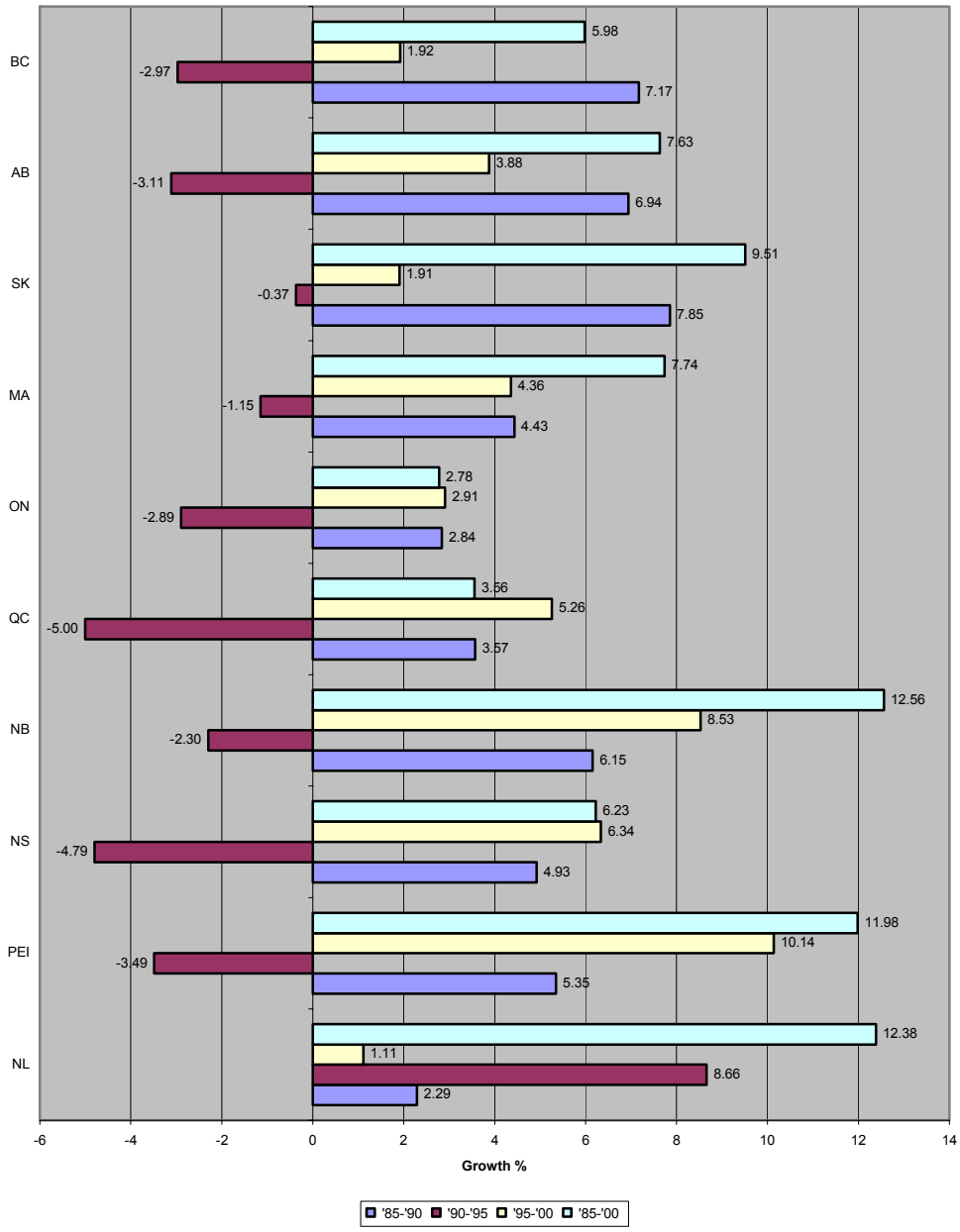
Growth of Employment Income Between 1985 and 2000, 5-Year Segments and Full Period, Canadian Provinces



For the period 1985 to 2000, New Brunswick experienced the highest increase in the proportion of wage earners working full-year and full-time; it was followed by Newfoundland and Labrador and by Prince Edward Island. Nova Scotia ranked seventh (see figure 4.4).

Figure 4.4

Growth in Percentage of Full-Year, Full-Time Workers Between 1985 and 2000, 5-Year Segments and Full Period, Canadian Provinces

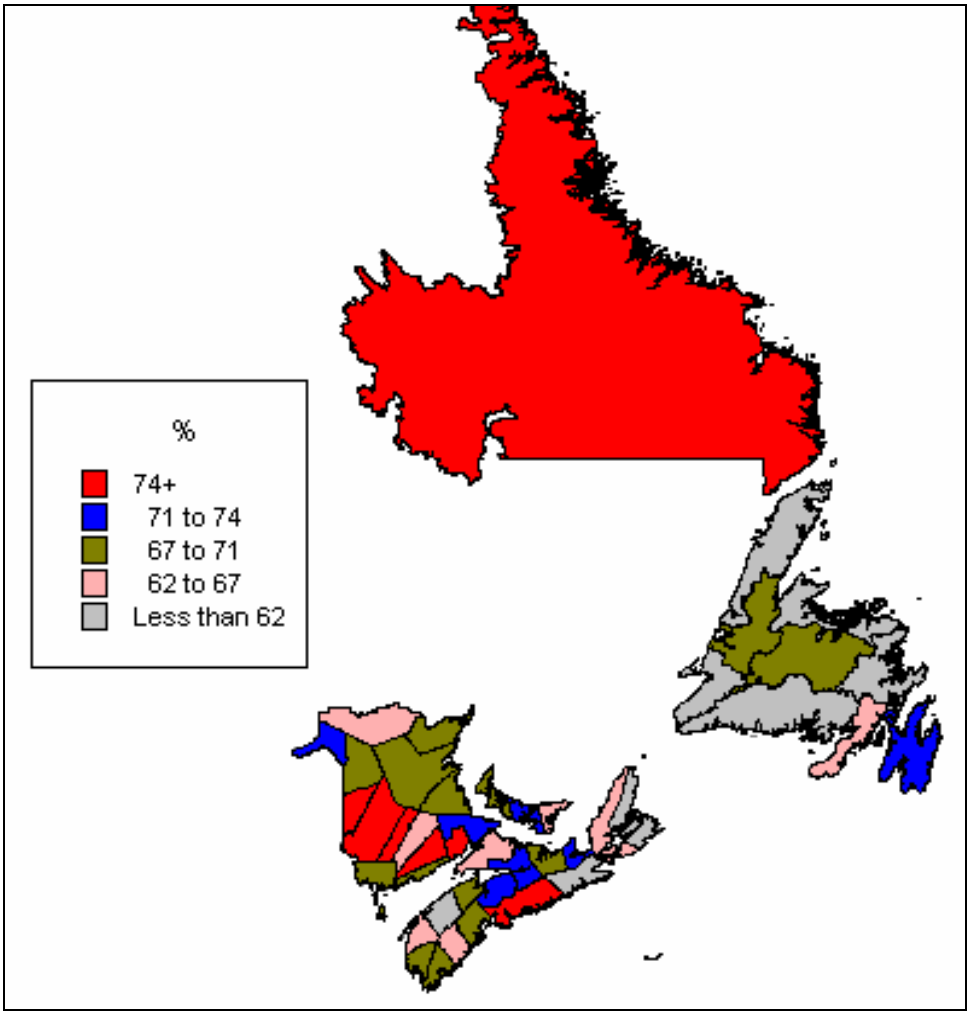


Turning our attention to Atlantic Canada's CDs, we find that only two have a share of income from employment higher than the Canadian average. Furthermore, only two CDs have a percentage of income from government transfers lower than the Canadian average.

With the notable exceptions of NL10 and Cape Breton, urban regions derive a larger share of total income from employment than rural regions (see map 4.1). The reverse is the case for income from government transfers, where rural regions, especially in Newfoundland and Labrador, have the larger share (see map 4.2).

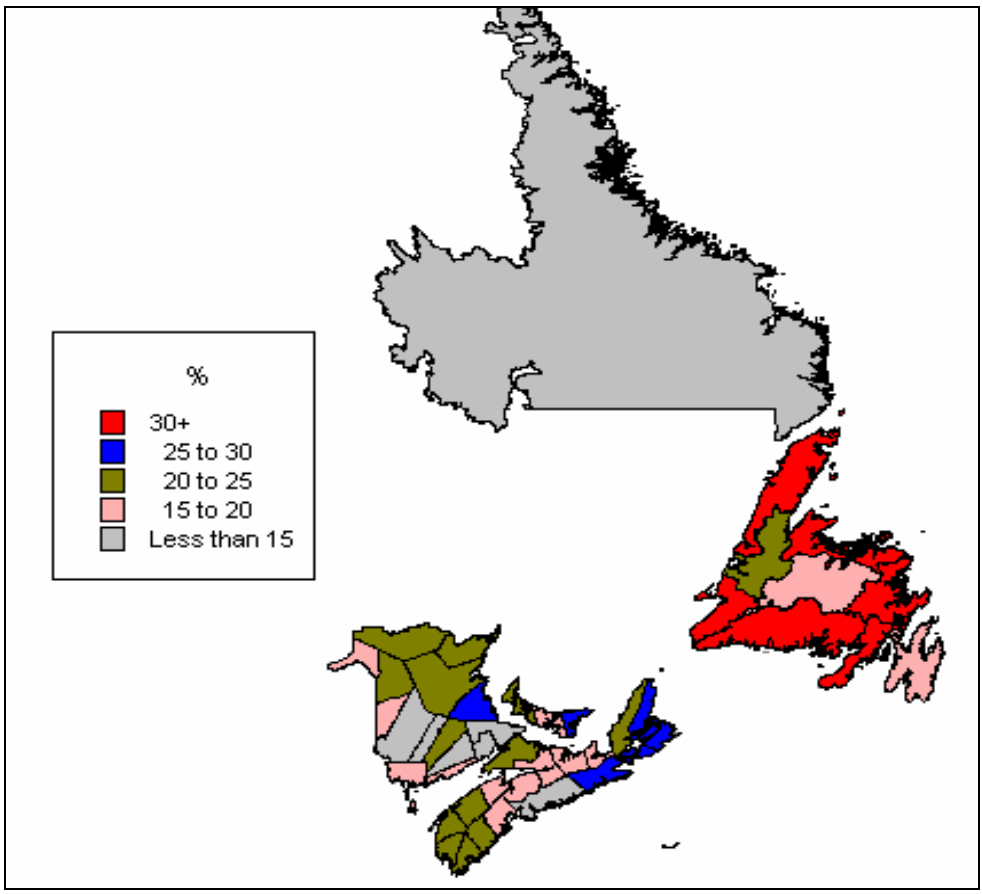
Map 4.1

Share of Total Income from Employment, Atlantic Canada's Census Divisions, 2000



Map 4.2

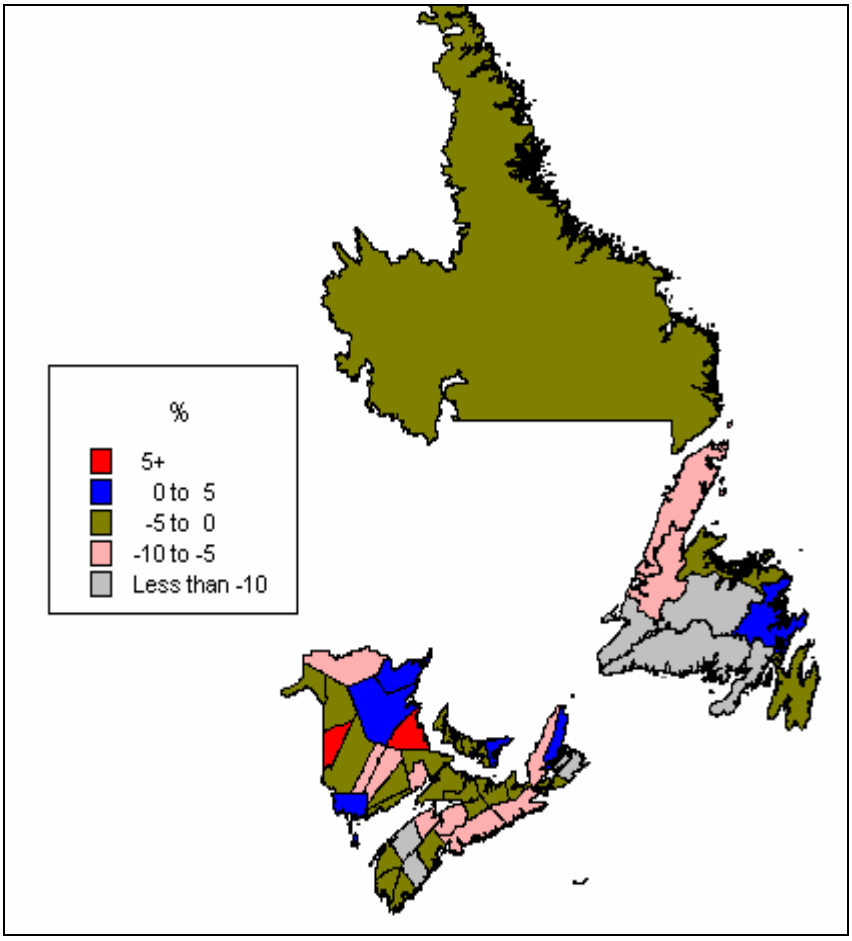
Share of Total Income from Government Transfers, Atlantic Canada's Census Divisions, 2000



Very few CDs registered an increase in their share of income from employment (see map 4.3). In fact, most, including urban regions, followed the national trend identified earlier and experienced a decline.

Map 4.3

Variation of Share of Total Income from Employment Between 1985 and 2000, Percentage Change, Atlantic Canada's Census Divisions

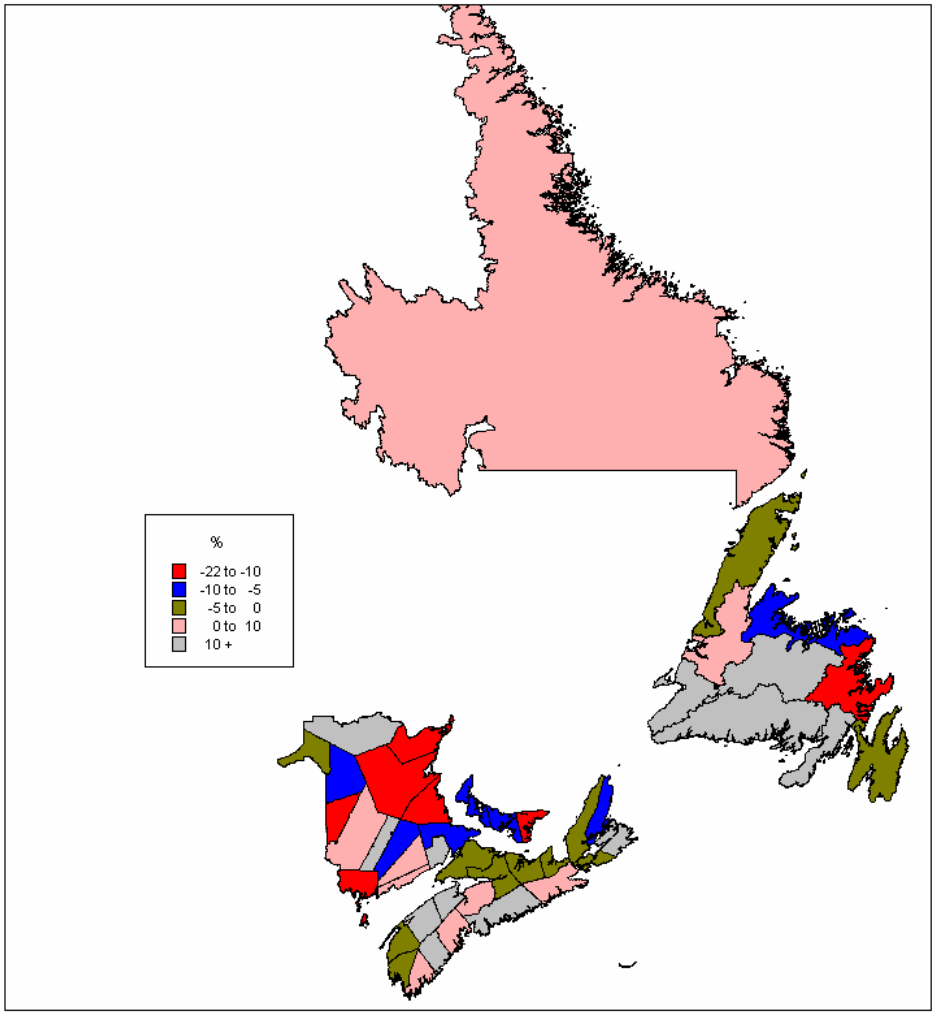


The evolution in the share of income from government transfers has produced some interesting results (see map 4.4). We see that in many coastal CDs, which arguably were targeted by employment insurance reform during the period, the dependency on government transfers declined significantly. This explains, at least in part, why Atlantic Canada bucked the aforementioned trend of increased relative dependency on government transfers.

No Atlantic Canadian CD had an average income above the national average (see map 4.5). Again, with the exception of NL10 and NS–Cape Breton, urban regions had an average income above that of rural regions. On the other hand, regions which experienced the largest growth in income over the period 1985 to 2000 were often rural regions, although in general urban regions did experience solid growth (see map 4.6).

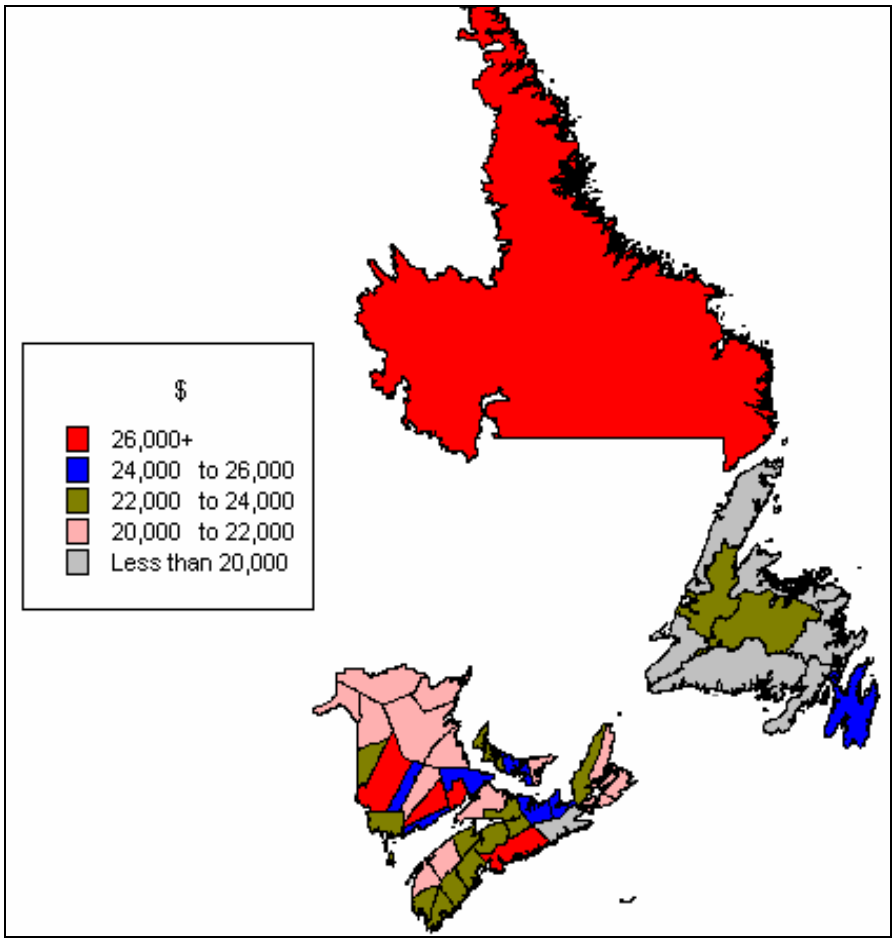
Map 4.4

Variation of Share of Total Income from Government Transfers Between 1985 and 2000, Percentage Change, Atlantic Canada's Census Divisions



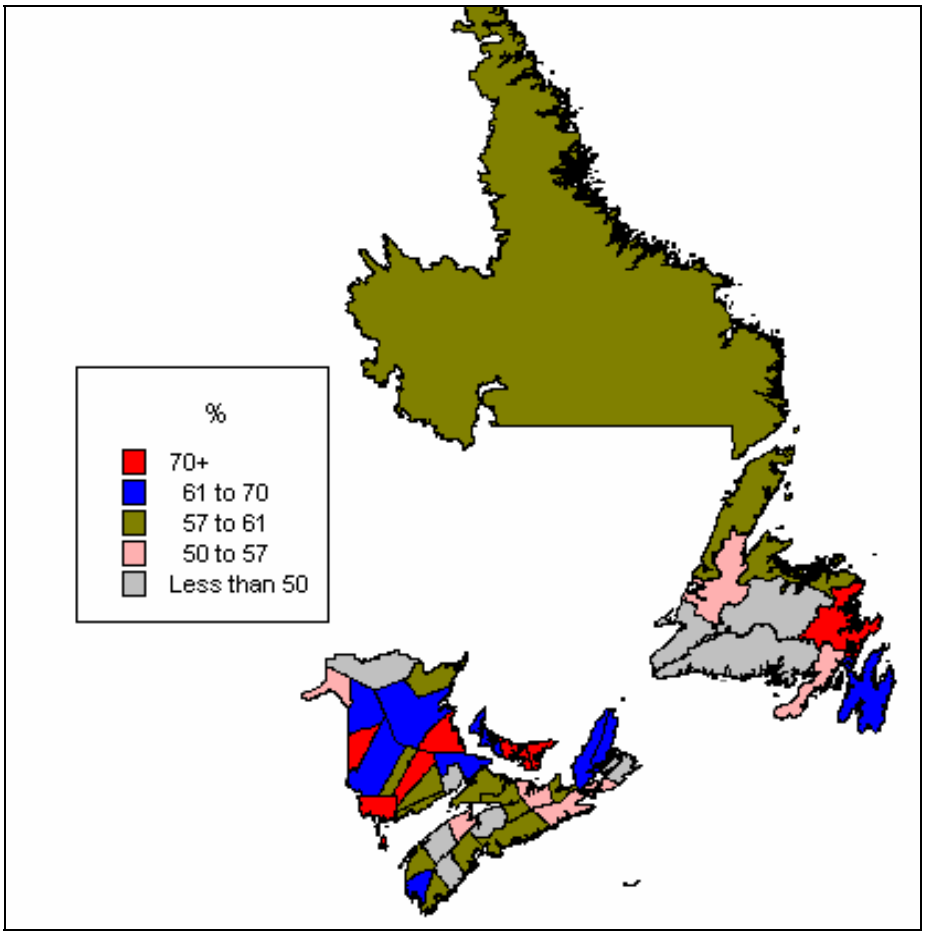
Map 4.5

Average Income, Atlantic Canada's Census Divisions, 2000



Map 4.6

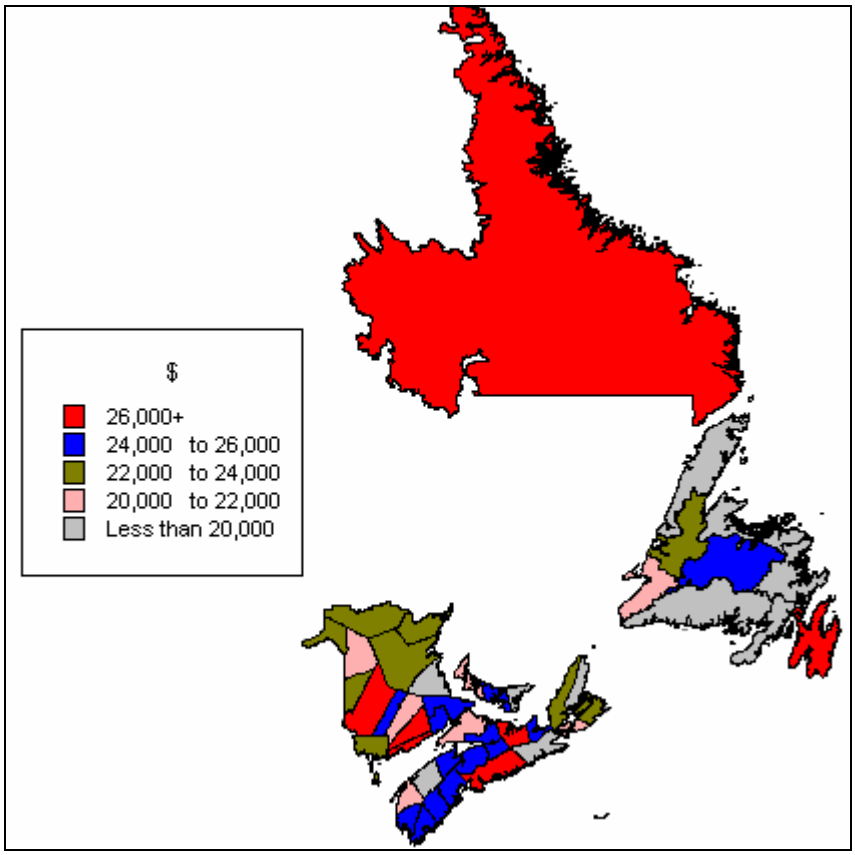
Growth of Average Income, Atlantic Canada's Census Divisions, 1985–2000



The case for employment income is not much different. No CD had an average employment income above the national average (see map 4.7). Highest average employment income is found in urban regions and generally decreases, with a few exceptions, as one moves through the Ehrensaft typology ladder. Note the strong performance of NL10 (Labrador), which ranked third in the region. As was the case for average total income, urban regions did not have the highest growth of average employment income, although most did experience solid growth (see map 4.8). Interestingly, some of Newfoundland and Labrador's rural regions are found amongst the leaders.

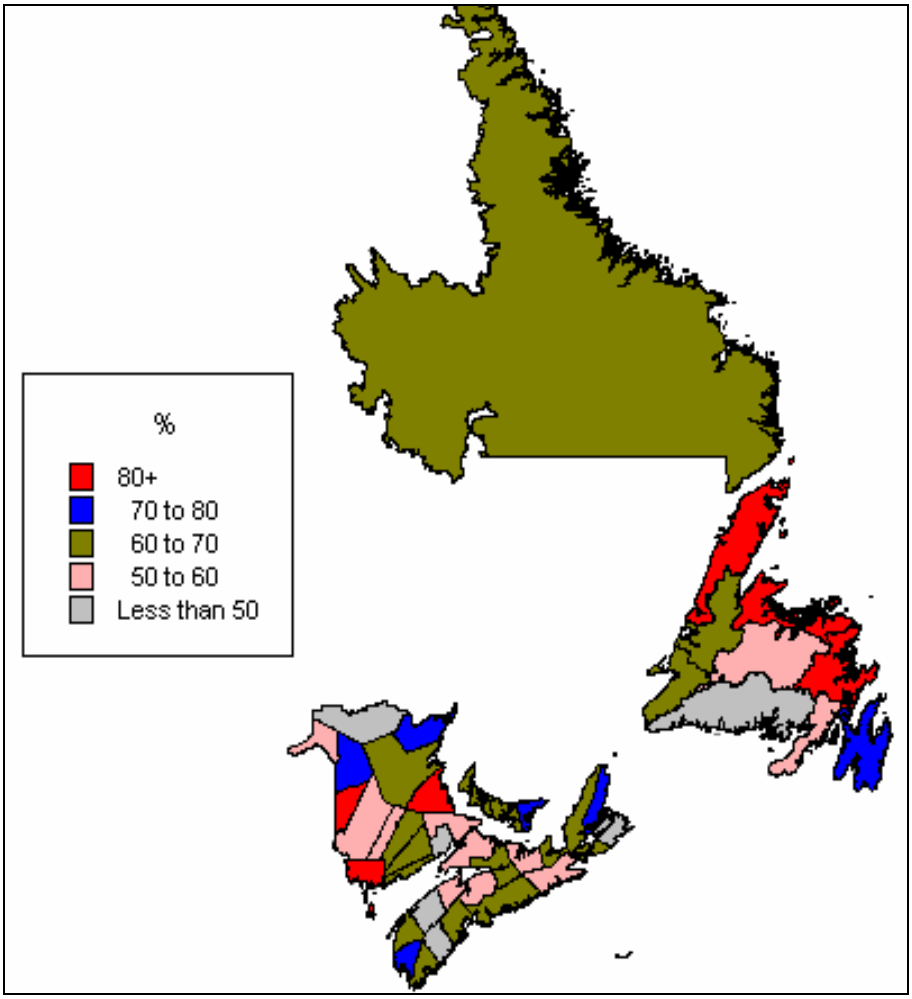
Map 4.7

Average Employment Income, Atlantic Canada's Census Divisions, 2000



Map 4.8

Growth of Average Employment Income Between 1985 and 2000, Atlantic Canada's Census Divisions



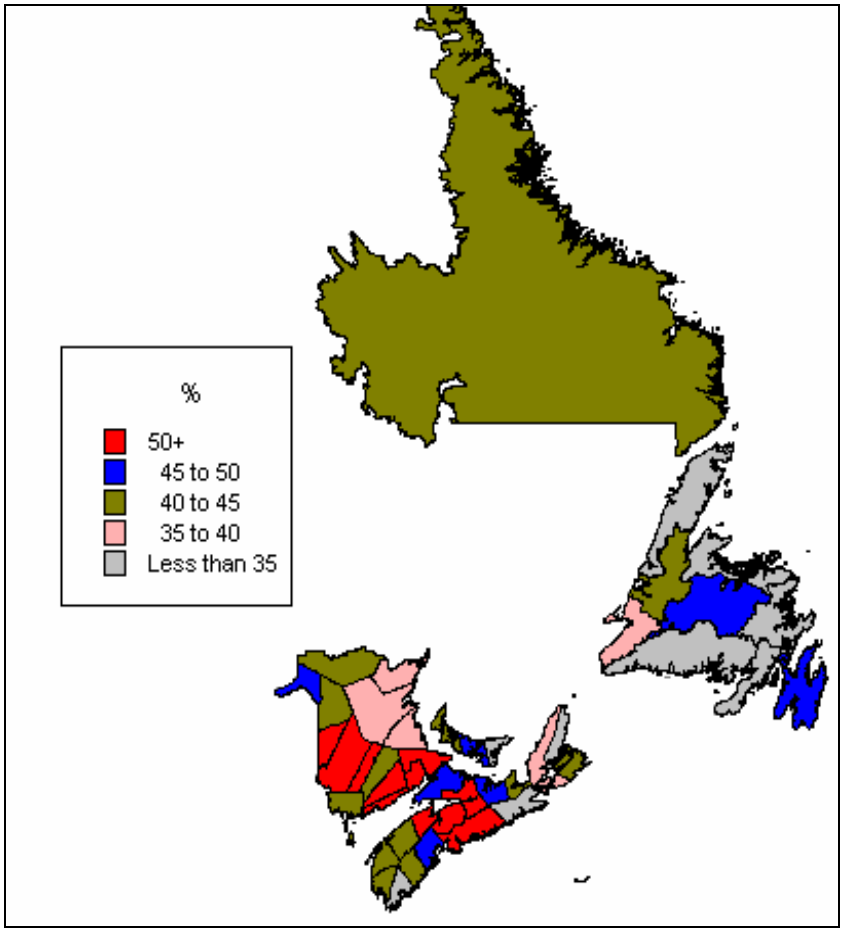
Isolating average employment income for full-year and full-time workers, we find that the difference between urban and rural Atlantic Canada, although it still exists, is not as clearly defined. On the other hand, the relative advantage that we found in the growth of rural regions between 1985 and 2000, when we considered average total income and average employment income, does not seem to be present.

These results warrant further analysis, but they may reflect a situation where a nucleus of full-year and full-time jobs in rural regions, though relatively well paid, have not seen a significant growth in wages in recent years.

We will now conclude our chapter with an analysis of the percentage of full-year and full-time workers receiving employment income (see map 4.9), a topic which we will analyse in greater depth in chapter 5. Urban regions are clearly at an advantage in this regard, although the relative increase in this category of income earners between 1985 and 2000 was generally stronger in rural regions (see map 4.10).

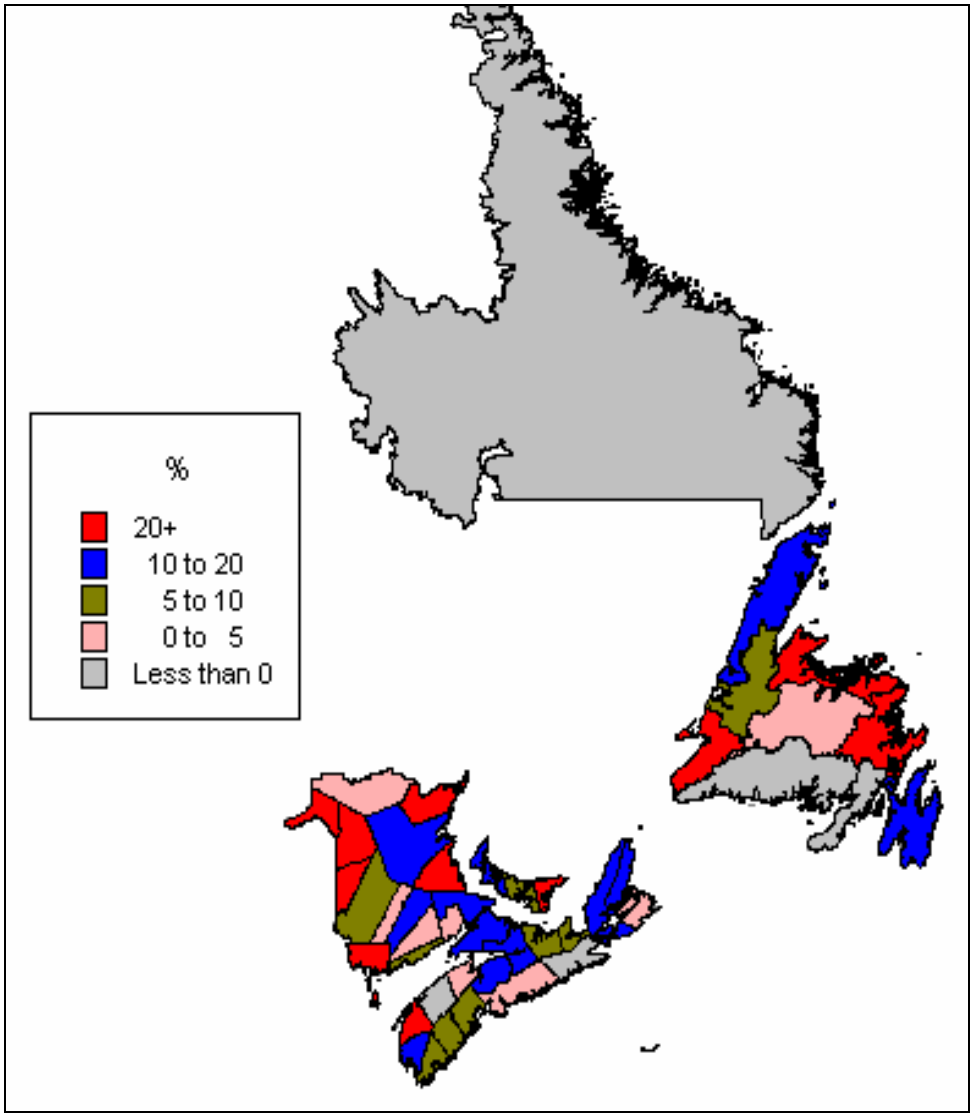
Map 4.9

Percentage of Workers with Employment Income Working Full-Year, Full-Time, Atlantic Canada's Census Divisions, 2000



Map 4.10

Growth of Percentage of Workers with Employment Income Working Full-Year, Full-Time Between 1985 and 2000, Atlantic Canada's Census Divisions



5

EMPLOYMENT STRUCTURE

In this chapter, we analyse the employment structure, focusing on characteristics such as unemployment rate, participation rate, employment creation, and seasonality.

Unemployment Rate

Unemployment rate is a measure of the adult population who are unemployed and actively seeking a job as a proportion of the adult population active on the labour market (employed or actively seeking a job). The story of the provincial unemployment rate for Atlantic Canada is both good and bad (see figure 5.1). The good news is that the unemployment rate decreased during the period 1986 to 2001; the bad news is that the Atlantic provinces have the highest unemployment rate in Canada.

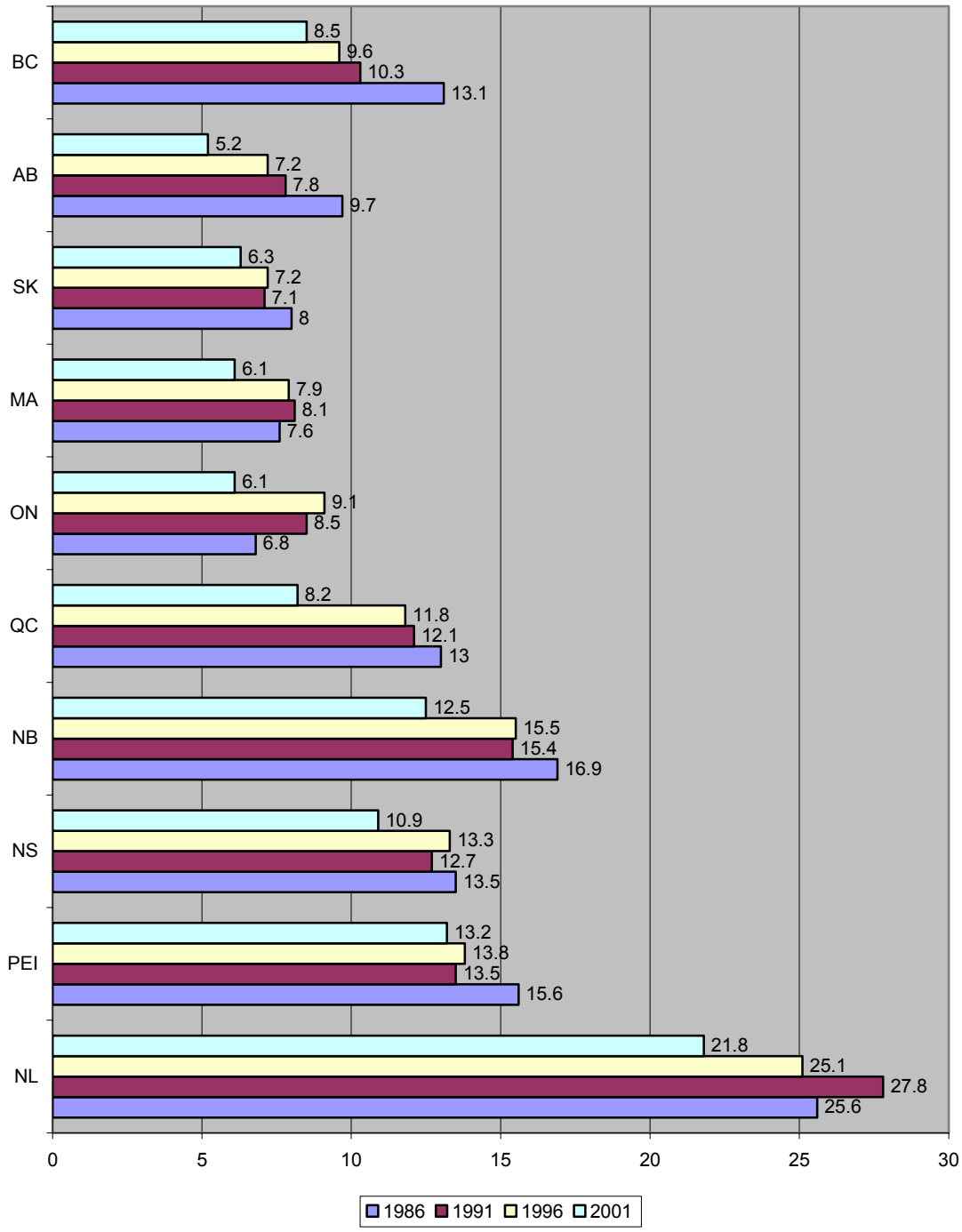
Within Atlantic Canada, unemployment rates are lower in central and western Nova Scotia, in southern New Brunswick, and in central Prince Edward Island (see map 5.1), and particularly high in most regions of Newfoundland and Labrador and on Cape Breton Island. Through the period 1986 to 2001, most of Atlantic Canada's CDs experienced an improvement in their unemployment rate (see map 5.2). The improvement was often the greatest in CDs with the highest unemployment rates (e.g., northern New Brunswick and some regions of Newfoundland and Labrador – NL1, NL4). Six CDs saw an increase in their unemployment rate.

Participation Rate

The participation rate is the proportion of the adult population active in the labour market that is either employed or actively seeking a job. The participation rate peaked in all but one of the Canadian provinces in 1991 (see figure 5.2). The exception was New Brunswick, where the rate in 2001 exceeded that of 1991. Overall, the rate increased between 1986 and 2001 in seven of the ten provinces. In Atlantic Canada, an exception to this trend was Newfoundland and Labrador.

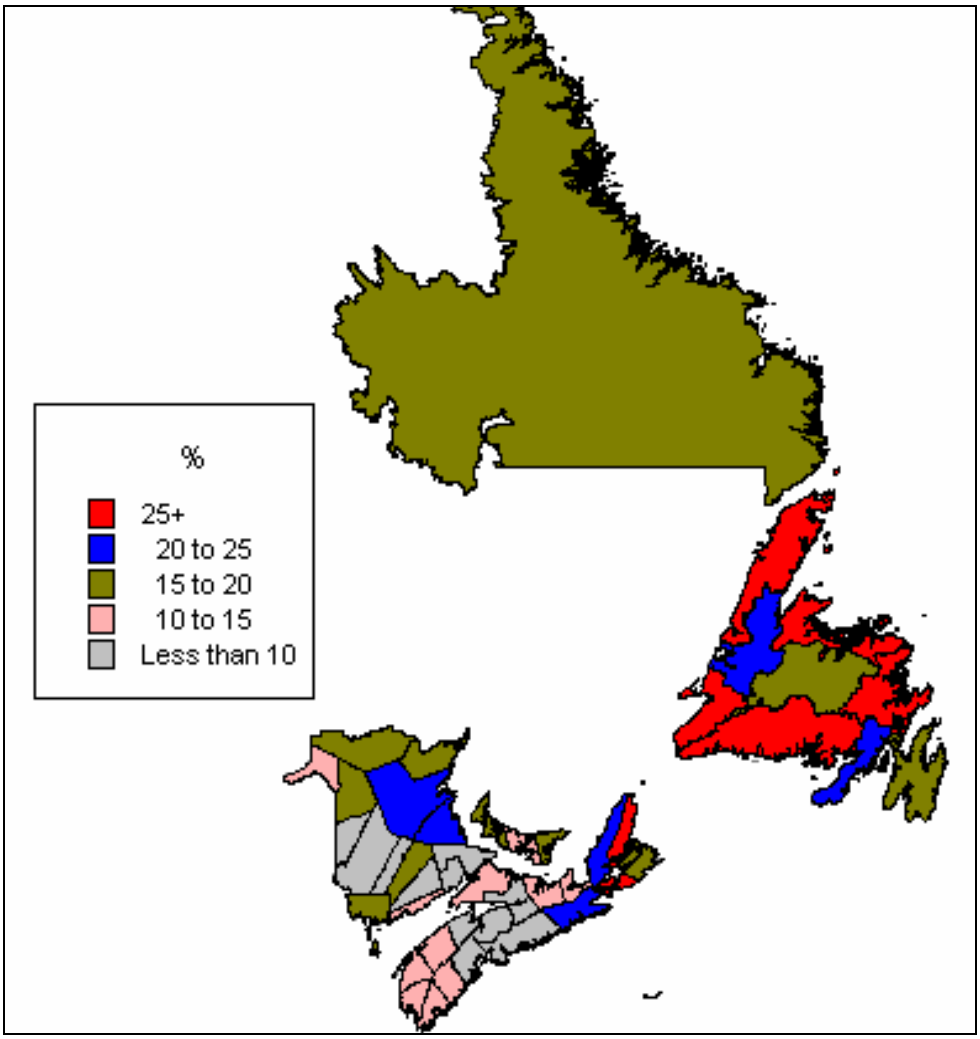
Figure 5.1

Unemployment Rate, Canadian Provinces, 1986–2001



Map 5.1

Unemployment Rate, Atlantic Canada's Census Divisions, 2001



Map 5.2

Variation in Unemployment Rate in Percentage Points Between 1986 and 2001, Atlantic Canada's Census Divisions

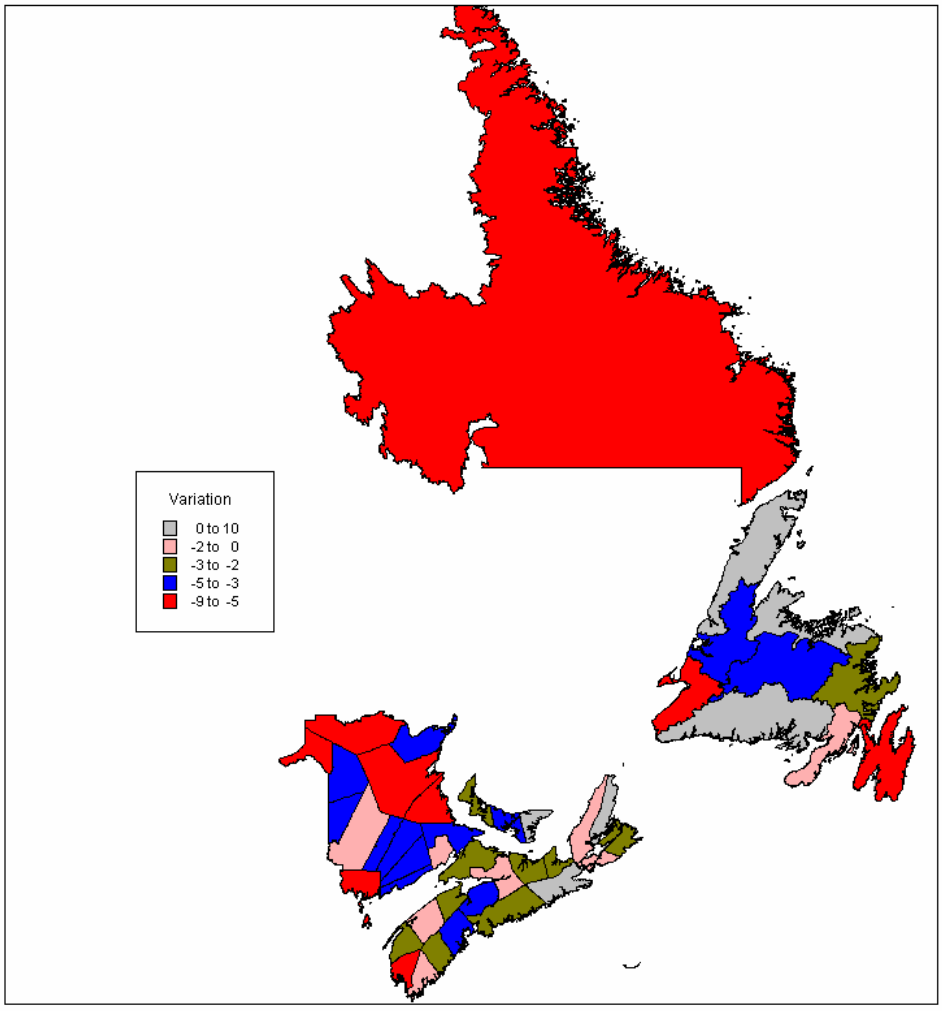
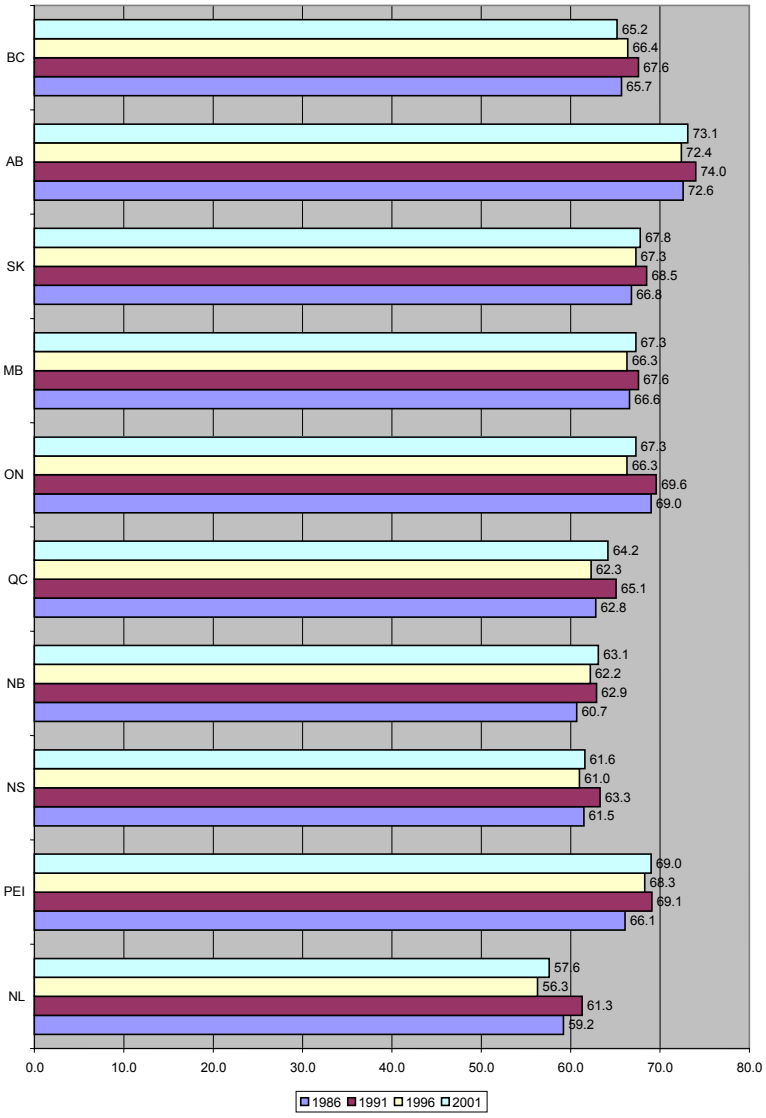


Figure 5.2

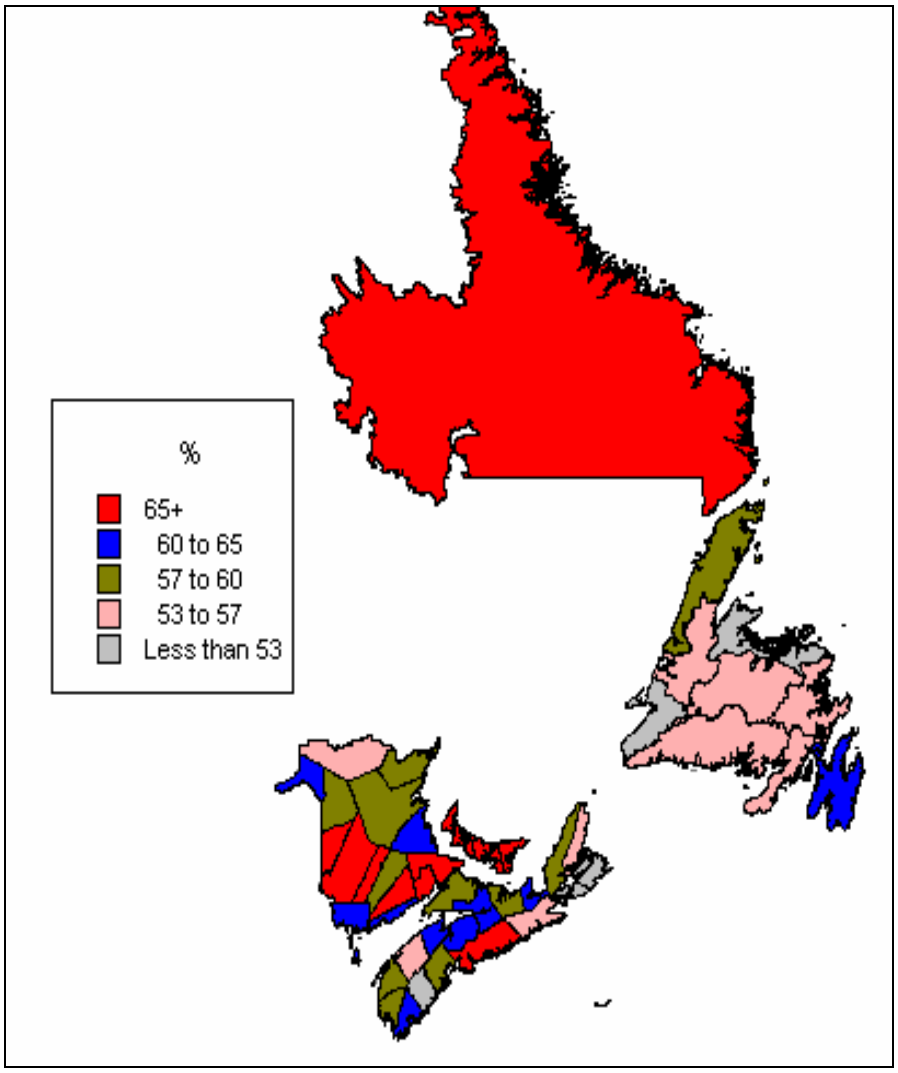
Participation Rate, Canadian Provinces, 1986–2001



Turning our attention to Atlantic Canada's CDs, we soon find that with a few exceptions (e.g., NL9, PEI-Kings, PEI-Prince, NS–Cape Breton), the participation rate was greater in urban regions and declined as we move on the Ehrensaft typological ladder (see map 5.3). The results are not clearly defined on a geographical basis if we focus on the variation of the participation rate during the period 1986 to 2001 (see map 5.4). It actually declined in seventeen of Atlantic Canada's forty-six CDs, including in urban centres like Halifax and in seven CDs in Newfoundland and Labrador. Most of the CDs that experienced the biggest improvements in their participation rates were located in southern New Brunswick.

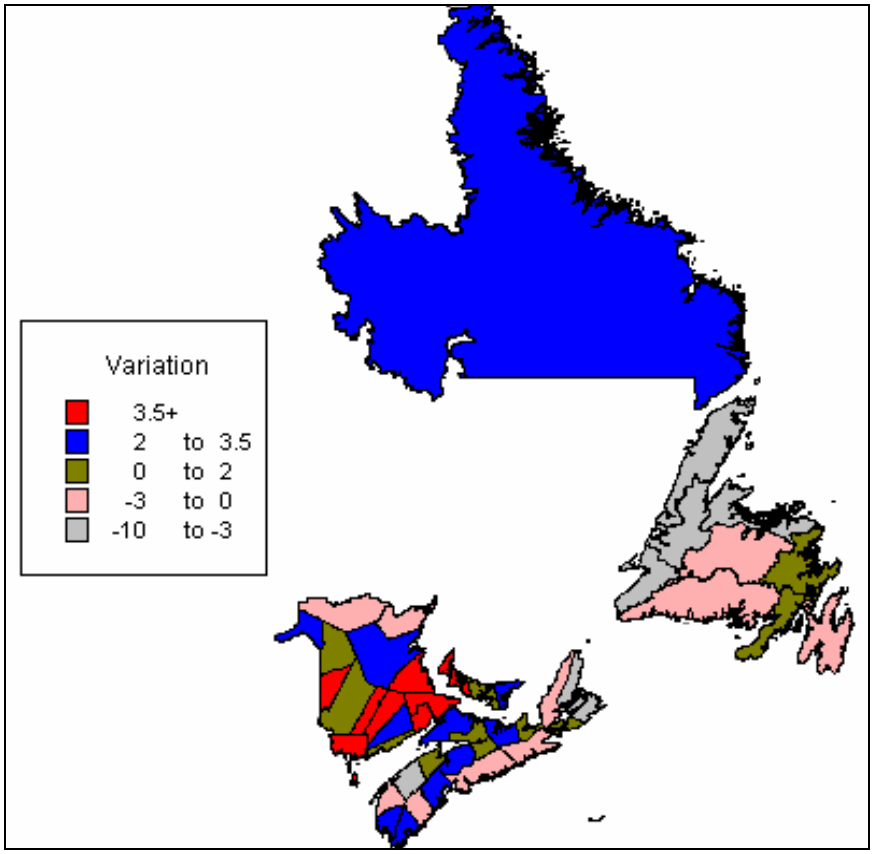
Map 5.3

Participation Rate, Atlantic Canada's Census Divisions, 2001



Map 5.4

Variation of Participation Rate in Percentage Points Between 1986 and 2001, Atlantic Canada's Census Divisions



Employment

Employment creation can be divided into three five-year periods between 1986 to 2001, for the purposes of analysing census data. Nationally, the economy prospered between 1986 and 1991 and between 1996 and 2001, with employment growth for the two periods of 11.14 percent and 10.33 percent respectively (see table 5.1). It struggled, however, between 1991 and 1996, with a slim 2.41 percent increase in employment.

Table 5.1

Variation in Employment, Canada and Provinces, 1986 to 2001

	Variation (%)			
	1986–1991	**1991–1996**	**1996–2001**	**1986–2001**
Canada	11.14	2.41	10.33	25.58
Newfoundland	4.95	-4.44	2.43	2.73
Prince Edward Island	10.64	3.37	4.71	19.75
Nova Scotia	8.50	-2.56	5.65	11.70
New Brunswick	10.39	2.28	5.68	19.33
Quebec	11.26	0.27	10.10	22.83
Ontario	9.96	0.71	12.53	24.62
Manitoba	4.14	0.33	5.12	9.84
Saskatchewan	1.94	-0.68	2.66	3.95
Alberta	12.20	5.42	16.61	37.92
British Columbia	21.66	13.04	6.24	46.11

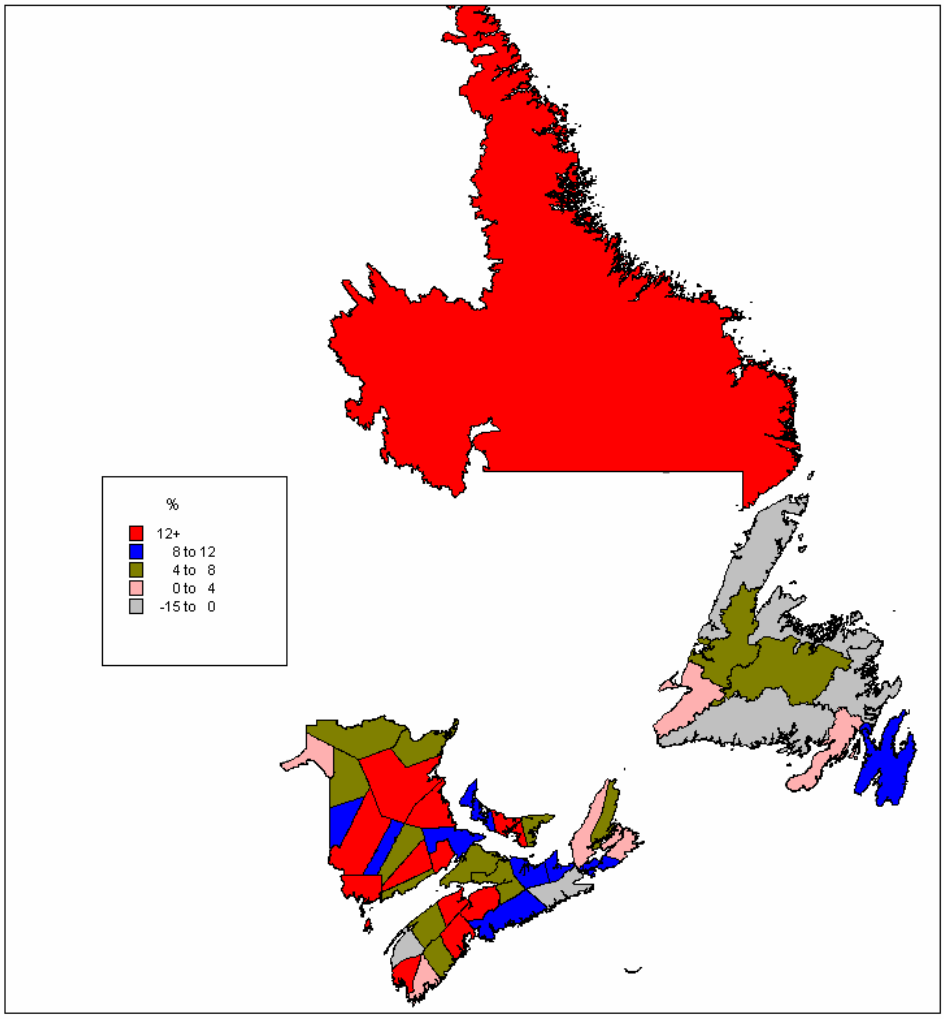
Atlantic Canada experienced similar cycles, but with results which varied from one province to the next. For the fifteen-year period 1986 to 2001, all four provinces were below the national growth rate, with Prince Edward Island and New Brunswick closer to the national average, especially between 1986 and 1996. Nova Scotia's performance lagged behind the two leaders for the first ten years and then surpassed Prince Edward Island and nearly matched New Brunswick between 1996 and 2001. The province was nevertheless at less than half the national growth rate for the fifteen-year period. Newfoundland and Labrador's performance was the least productive, with only 2.73 percent more jobs in 2001 than in 1986.

For the period 1986 to 1991, thirteen of Atlantic Canada's CDs outperformed the national average, six of them in New Brunswick (see map 5.5). By contrast, six CDs suffered a loss of employment, four of them in Newfoundland and Labrador. In urban regions, employment creation for the same period was generally relatively stronger.

Between 1991 and 1996, most CDs (thirty) lost employment (see map 5.6). The majority of these were rural regions. At the same time, however, fourteen CDs managed to outperform the national average. Again, most of these were in New Brunswick (nine) as well as two of the three in Prince Edward Island. The greatest proportional loss of employment occurred in rural Nova Scotia and in rural Newfoundland and Labrador.

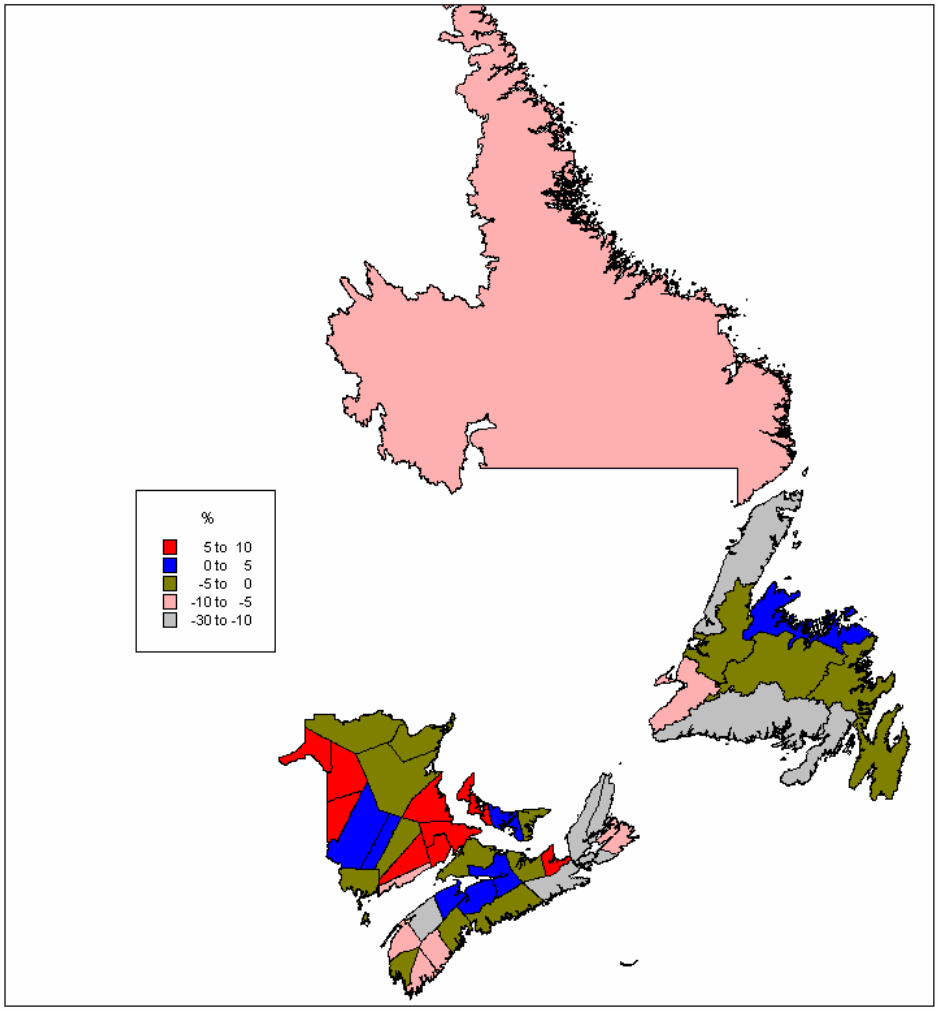
Map 5.5

Employment Growth Between 1986 and 1991, Atlantic Canada's Census Divisions



Map 5.6

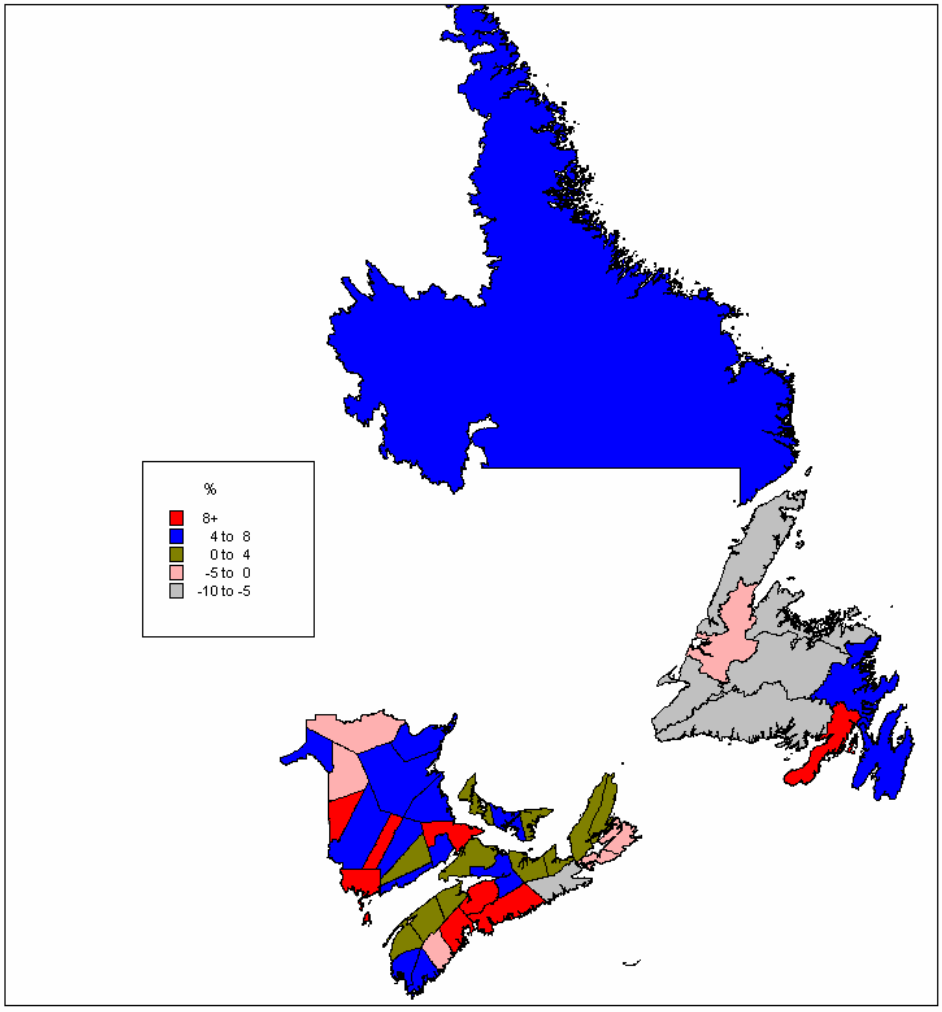
Employment Growth Between 1991 and 1996, Atlantic Canada's Census Divisions



Between 1996 and 2001, only two Atlantic Canadian CDs exceeded the national average (see map 5.7). Twelve CDs lost employment, half of them in Nova Scotia. While some rural regions outperformed urban ones, the vast majority that lost employment or where employment creation was relatively weak were rural regions.

Map 5.7

Employment Growth Between 1996 and 2001, Atlantic Canada's Census Divisions



Focusing on the fifteen-year period 1986 to 2001 (see map 5.8), it is clear that job creation varied significantly in Atlantic Canada. Of the fifteen CDs that lost employment, most were in rural Newfoundland and Labrador or in rural Nova Scotia. The five CDs that outperformed the national average were all in New Brunswick. When we look at the raw data on employment creation instead of the employment growth rate (see figure

5.3), it becomes even more evident that the bulk of job creation took place in the larger urban centres of Atlantic Canada.

Map 5.8

Employment Growth Between 1991 and 2001, Atlantic Canada's Census Divisions

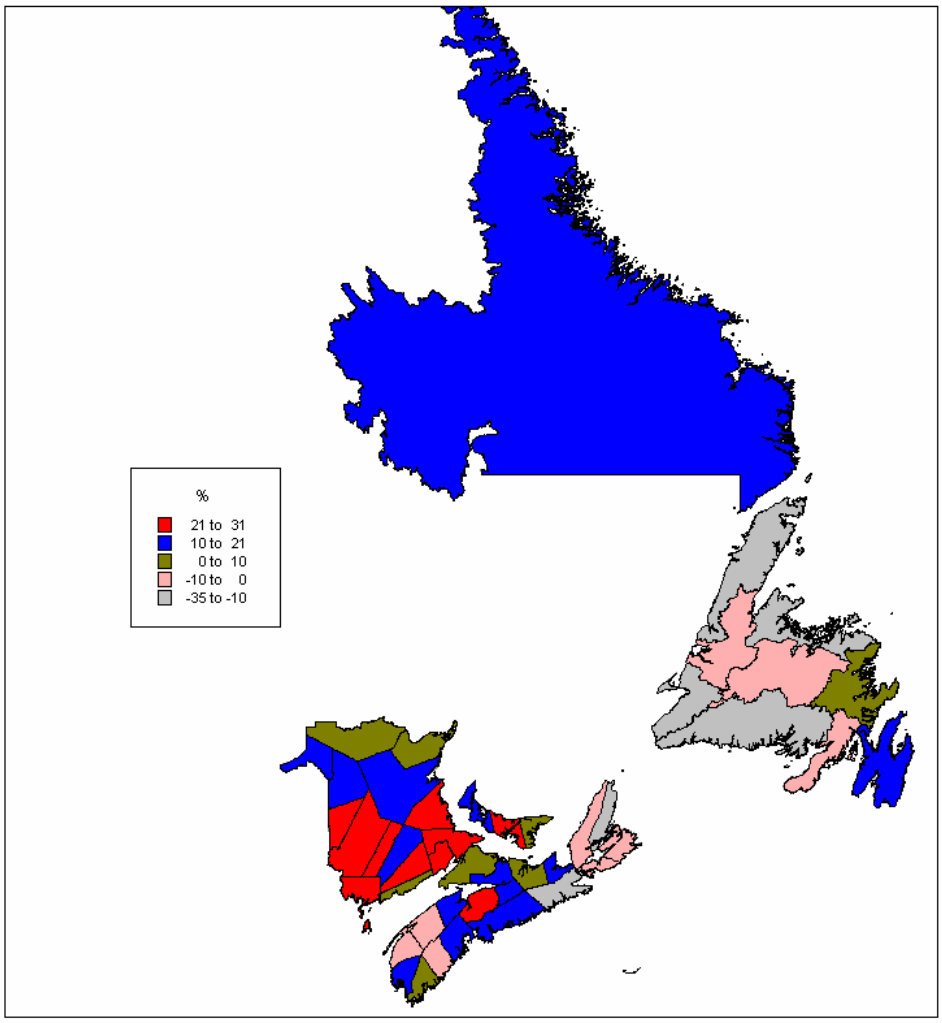
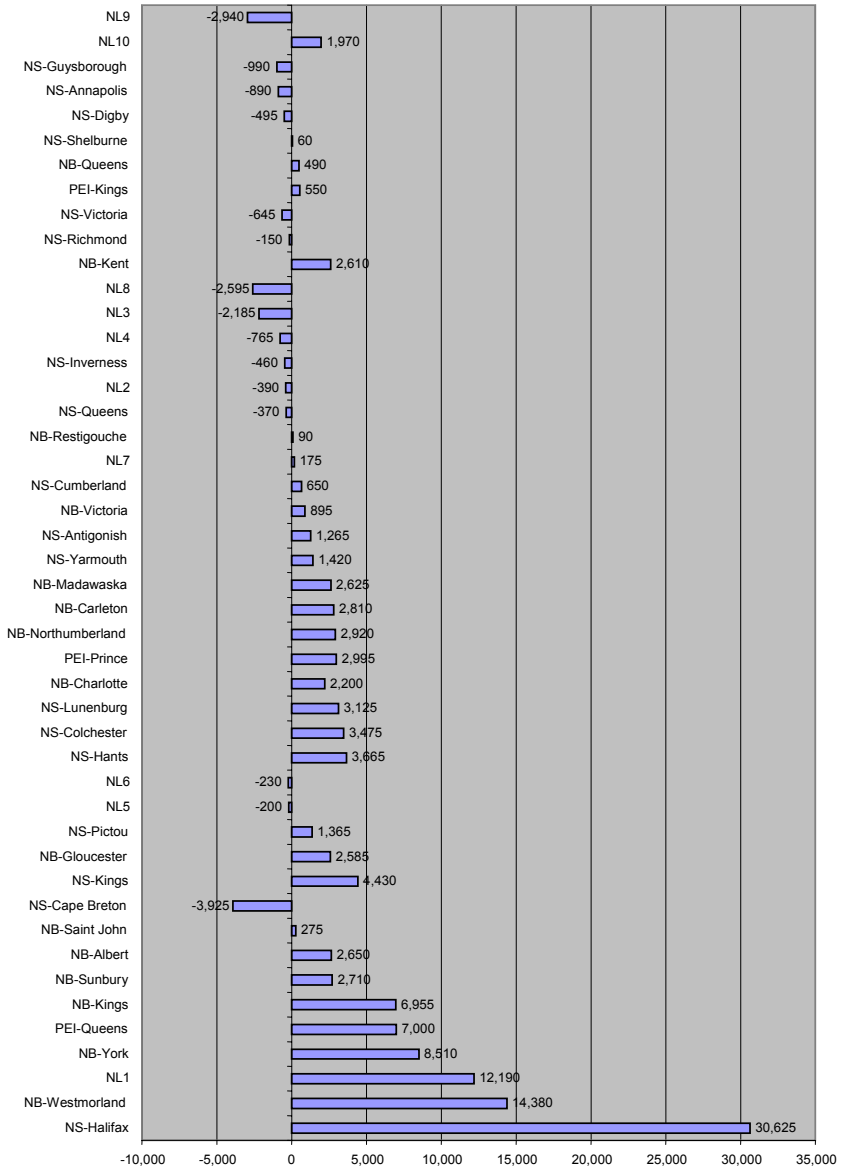


Figure 5.3

Variation in Employment (Number) Between 1986 and 2001, Atlantic Canada's Census Divisions, Ehrensaft Grouping



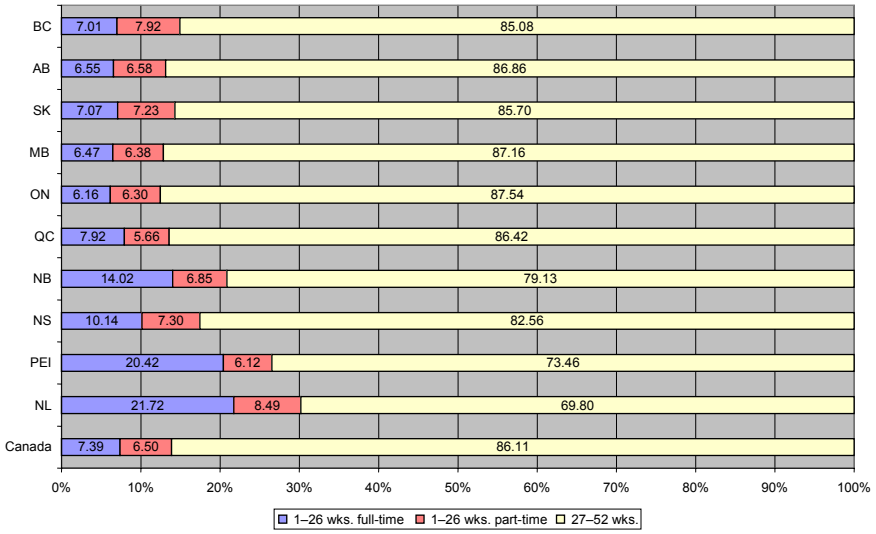
Seasonality

We have referred to seasonality on several occasions and will now focus on it. Availability of data leads us to define seasonal employment as employment of less than twenty-seven weeks during the year prior to the census. This may not be the ideal definition of seasonal employment, but for the purposes of our analysis, it is an acceptable proxy for seasonal employment or, by extension, for full-year employment. We thus define full-year employment as employment for more than twenty-six weeks during the year prior to the census.

Atlantic Canada's economy is indeed quite seasonal, especially in Newfoundland and Labrador and in Prince Edward Island (see figure 5.4). In fact, only one of Atlantic Canada's CDs, Halifax, has a percentage of full-year employment above the national average. From map 5.9, we can see a pattern: the regions with the lowest proportion of full-year employment are not only rural but generally also coastal regions. Data for the fishing industry, both for harvesting and processing, which will be presented later indeed confirm the relatively high level of seasonality in this industry. The regions with the highest level of full-year employment are generally urban.

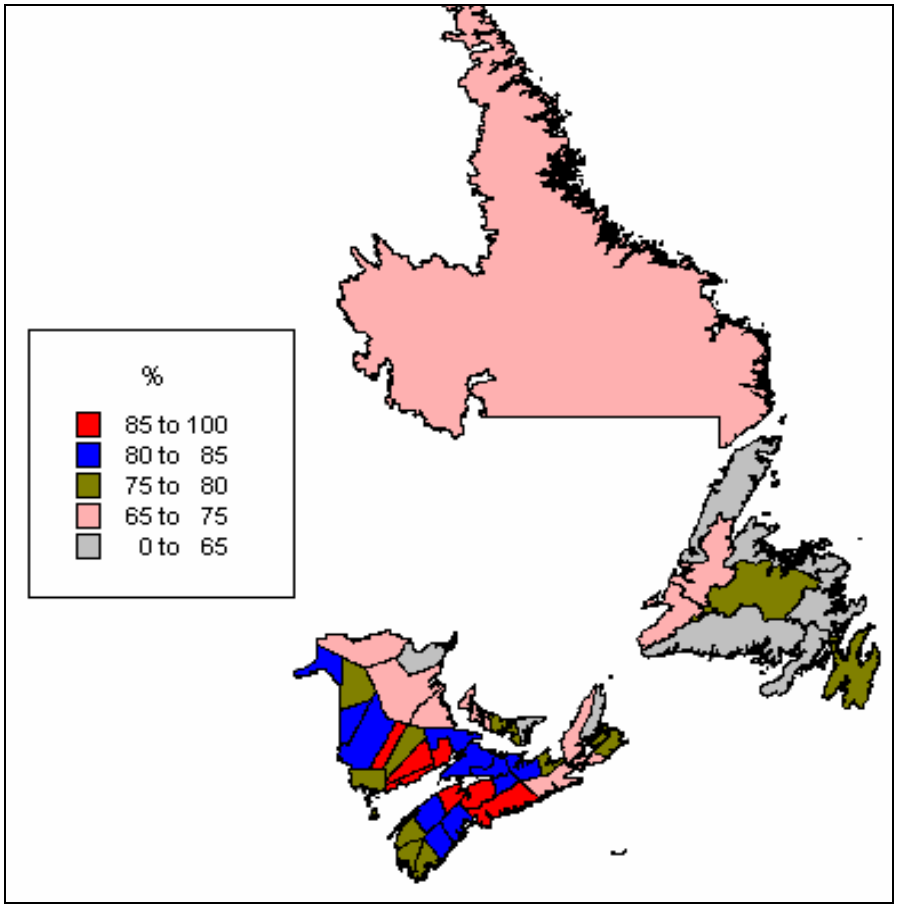
Figure 5.4

Distribution of Employment, 1 to 26 Weeks (Full-Time and Part-Time) and Over 26 Weeks per Year, Canada and Provinces, 2000



Map 5.9

Percentage of Employment More Than 26 Weeks per Year, All Sectors, Atlantic Canada's Census Divisions, 2000



Before turning to an analysis based on sectors, we will examine the relative performance of Atlantic Canada's urban centres as opposed to their CDs. Keeping in mind that the territory covered by urban centres is more limited than the territory in urban CDs — with a few exceptions where they are essentially equivalent (e.g., Halifax, Cape Breton) — we can highlight even more the potential disparities between urban and rural regions.

Not surprisingly, we can confirm that rural regions have relatively more seasonal employment than urban regions. In all but three cases, the percentage of full-year employment in urban regions is either equal to (Halifax, Cape Breton) or greater than that in the relevant CD. In fact, for some the gap is huge. For example, the gap between Bathurst and Gloucester is 13.18 percentage points, between Summerside and Prince it

is 12.37 percentage points, and between Labrador City and NL10 it is 8.67 percentage points. The three urban centres with a negative gap — and the gaps are small — are Campbellton, Kentville, and Grand-Falls–Windsor.

We will now analyse on a sectoral basis the seasonality of employment. Our approach will not be to focus on the relative importance of given sectors, i.e., whether they employ a lot or only a few individuals: that will be the subject of chapter 6. Instead, we will study the variability of seasonality within sectors, but between provinces and regions.

We begin by considering the importance of using the relevant level of aggregation for data analysis. In figure 5.5, where we have (aggregated) the proportion of full-year employment for the primary sectors of agriculture, forestry, fishing, and hunting, we may be tempted to conclude that within this broad aggregate of sectors, Atlantic Canada's employment is much more seasonal than the Canadian average, especially in Newfoundland and Labrador. Although it is indeed the case that employment in this broad sector is not only relatively more seasonal than in other sectors but also more seasonal in the region compared to the Canadian average, a closer look at the disaggregated data in figure 5.6 tells us that the gap is smaller than figure 5.5 would lead us to believe. In fact, in two categories — fishing, hunting, and trapping, and forestry — Nova Scotia is above the national average.

Figure 5.5

Percentage of Employment Over 26 Weeks per Year: Agriculture, Forestry, Fishing, and Hunting (11), Canada and Provinces, 2000

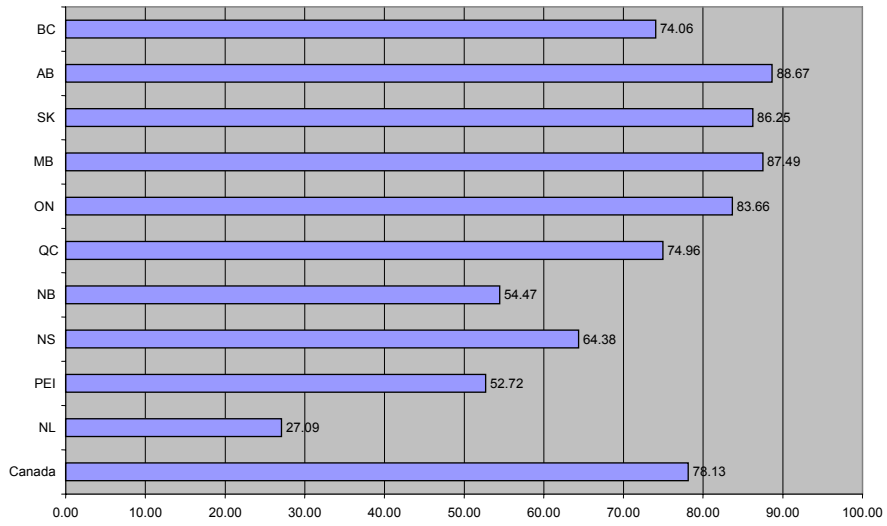
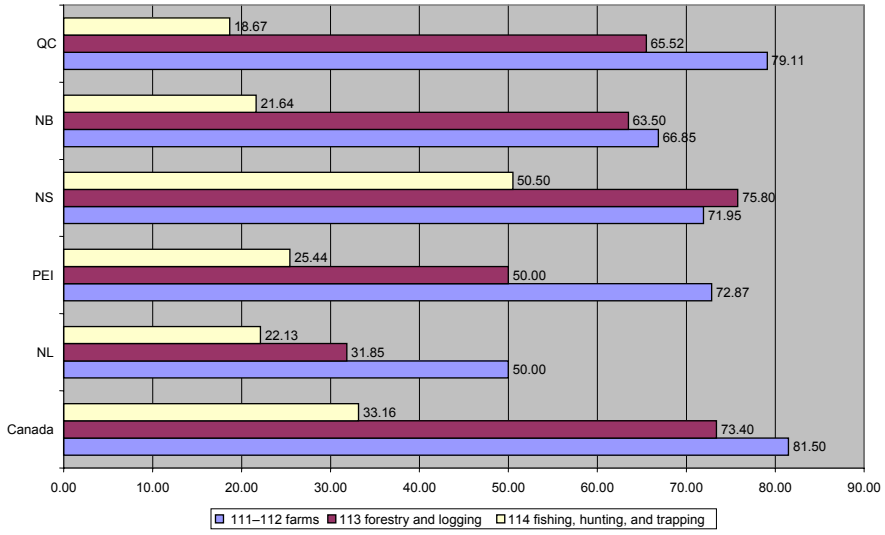


Figure 5.6

Percentage of Employment Over 26 Weeks per Year: Farms (111), Forestry and Logging (113), and Fishing, Hunting, and Trapping (114), Canada, Atlantic Provinces, and Quebec, 2000



Other sectors where the Atlantic provinces are relatively far from the national average with respect to seasonality, focusing arbitrarily on gaps of ten percentage points or more, include the following:

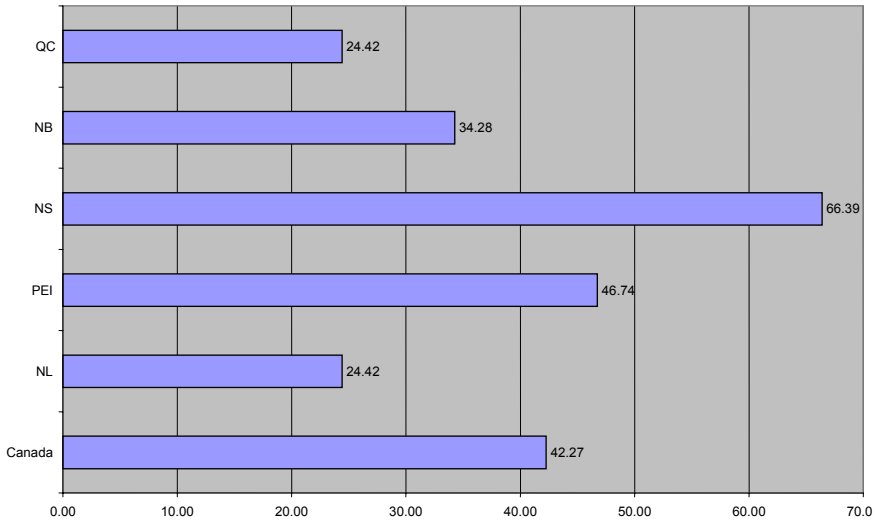
- mining and oil and gas extraction (21) – Prince Edward Island, New Brunswick, and Newfoundland and Labrador
- construction (23) – Newfoundland and Labrador, Prince Edward Island, and New Brunswick
- manufacturing (31–33) –Newfoundland and Labrador, Prince Edward Island, and New Brunswick
- transportation and warehousing (48–49) – Newfoundland and Labrador and Prince Edward Island
- administration and support, waste management, and remediation services (56) – Newfoundland and Labrador
- arts, entertainment, and recreation (71) – Prince Edward Island, Newfoundland and Labrador, and New Brunswick
- accommodation and food services (72) – Prince Edward Island and Newfoundland and Labrador
- other services (except public administration) (81) – Newfoundland and Labrador
- public administration (91) – Newfoundland and Labrador

For the other sectors the gap was smaller and often negligible. That is to say that seasonality is not generalized but rather a characteristic of certain specific sectors.

We have also highlighted five subcategories to better understand some of the dynamics of seasonality. The first is seafood product preparation and packaging (3117), a manufacturing subcategory often called fish plants (see figure 5.7). It is indeed a very seasonal sector, but the degree of seasonality varies substantially between provinces, reaching a high in Nova Scotia that is much more than double the level of Newfoundland and Labrador and Quebec.

Figure 5.7

Percentage of Employment Over 26 Weeks per Year: Seafood Product Preparation and Packaging (3117), Canada, Atlantic Provinces, and Quebec, 2000

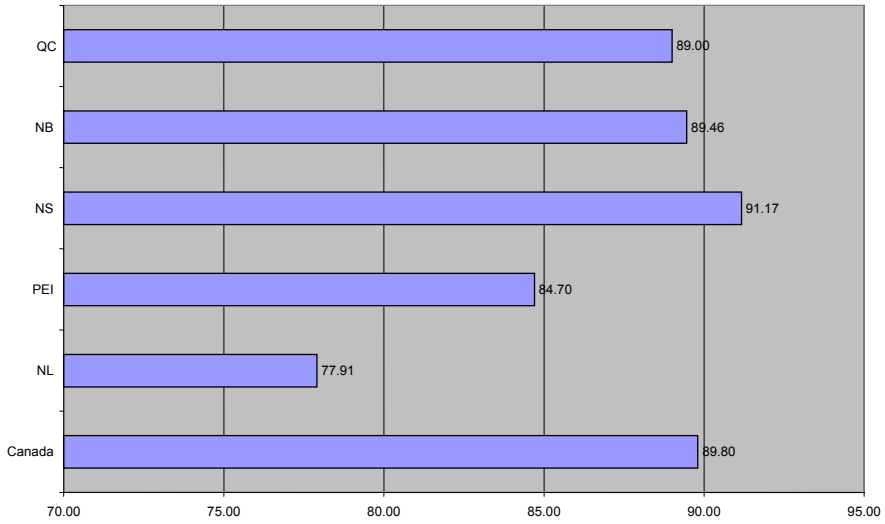


We now turn to four subcategories of public administration (91). An interesting characteristic of this case is that the duration of employment — although often greatly influenced by seasonal factors — is ultimately, by definition, a public policy decision.

We find that in Prince Edward Island and especially in Newfoundland and Labrador, federal government employment is relatively more seasonal than the Canadian average (see figure 5.8). Results for employment in defence services (9111) mirror those of figure 5.8.

Figure 5.8

Percentage of Employment Over 26 Weeks per Year: Federal Government Public Administration (911), Canada, Atlantic Provinces, and Quebec, 2000



The picture is somewhat different for provincial and territorial employment (see figure 5.9). Here, Nova Scotia and Newfoundland and Labrador are closer to the national average for the category than New Brunswick and Prince Edward Island. Finally, local, municipal, and regional government employment in public sector administration tends to be relatively more seasonal in Atlantic Canada, especially in Newfoundland and Labrador and in Prince Edward Island (see figure 5.10).

These last four categories have added importance in the context of public policy, which will be the focus of our final chapter. If any initiative is taken to reduce seasonality of employment in Atlantic Canada, this may be a good place to start since it is under the direct control of policy makers.

Figure 5.9

Percentage of Employment Over 26 Weeks per Year: Provincial and Territorial Public Administration (912), Canada, Atlantic Provinces, and Quebec, 2000

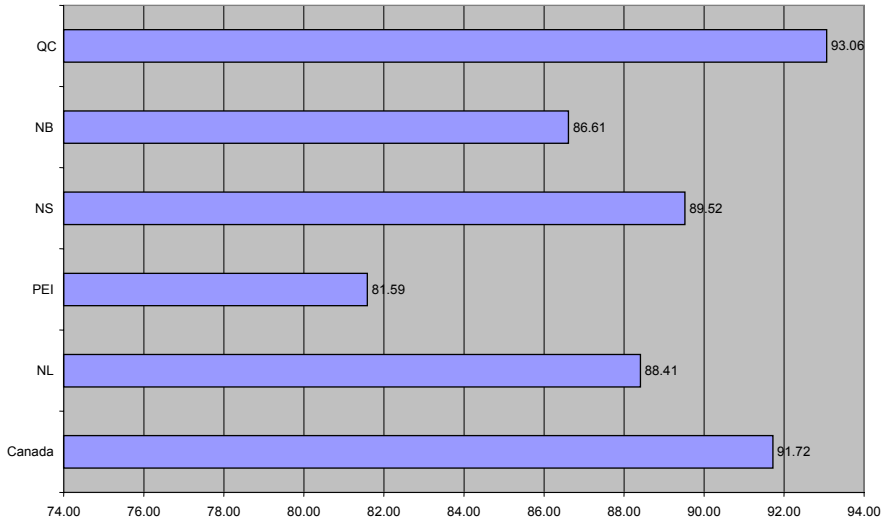
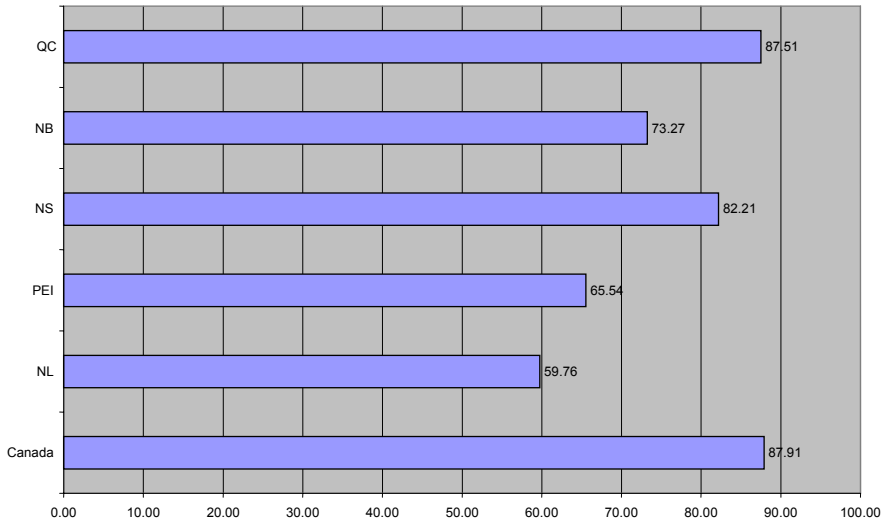


Figure 5.10

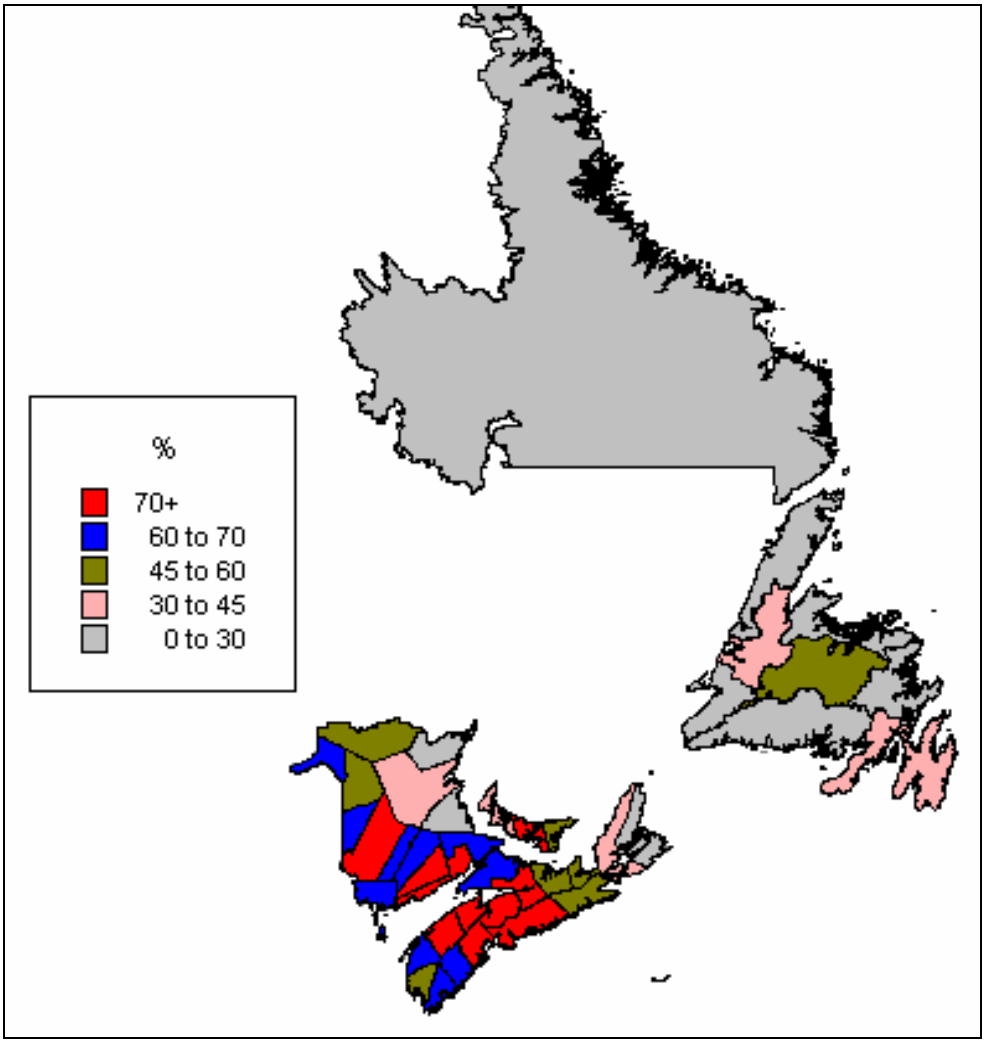
Percentage of Employment Over 26 Weeks per Year: Local, Municipal, and Regional Public Administration (913), Canada, Atlantic Provinces, and Quebec , 2000



We will conclude this chapter by analysing on a regional basis the seasonality of employment of the various sectors in Atlantic Canada. Seasonality in the primary sectors of agriculture, forestry, fishing, and hunting (see map 5.10) varies significantly in the region, with coastal regions generally having a lower percentage of full-year employment. As was the case with the provincial analysis, we need to go to a more disaggregated level to get the full picture.

Map 5.10

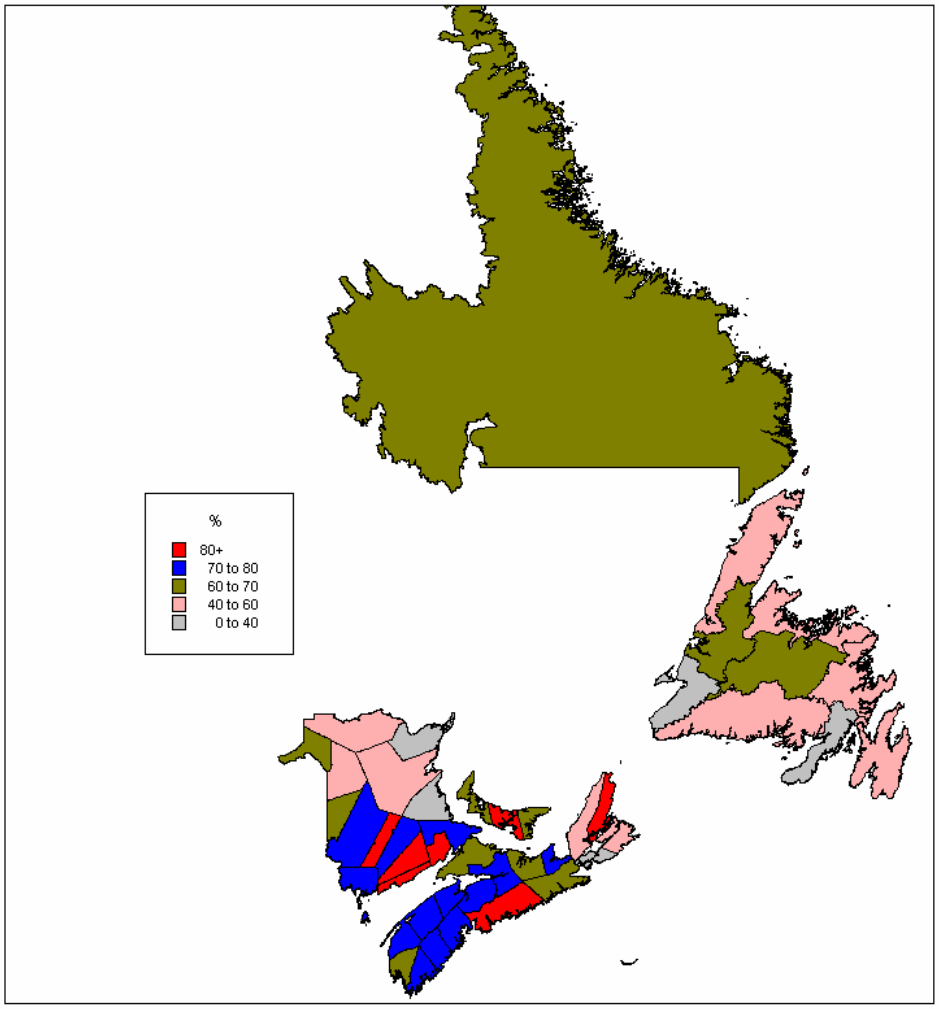
Percentage of Employment More Than 26 Weeks per Year: Agriculture, Forestry, Fishing, and Hunting (11), Atlantic Canada's Census Divisions, 2000



Employment on farms (see map 5.11) tends to be very seasonal in some rural regions, but the majority of jobs are full-year in most regions, including rural ones. The picture is similar for forestry and logging. A variant in this case is that most regions with high seasonal employment are located in Newfoundland and Labrador.

Map 5.11

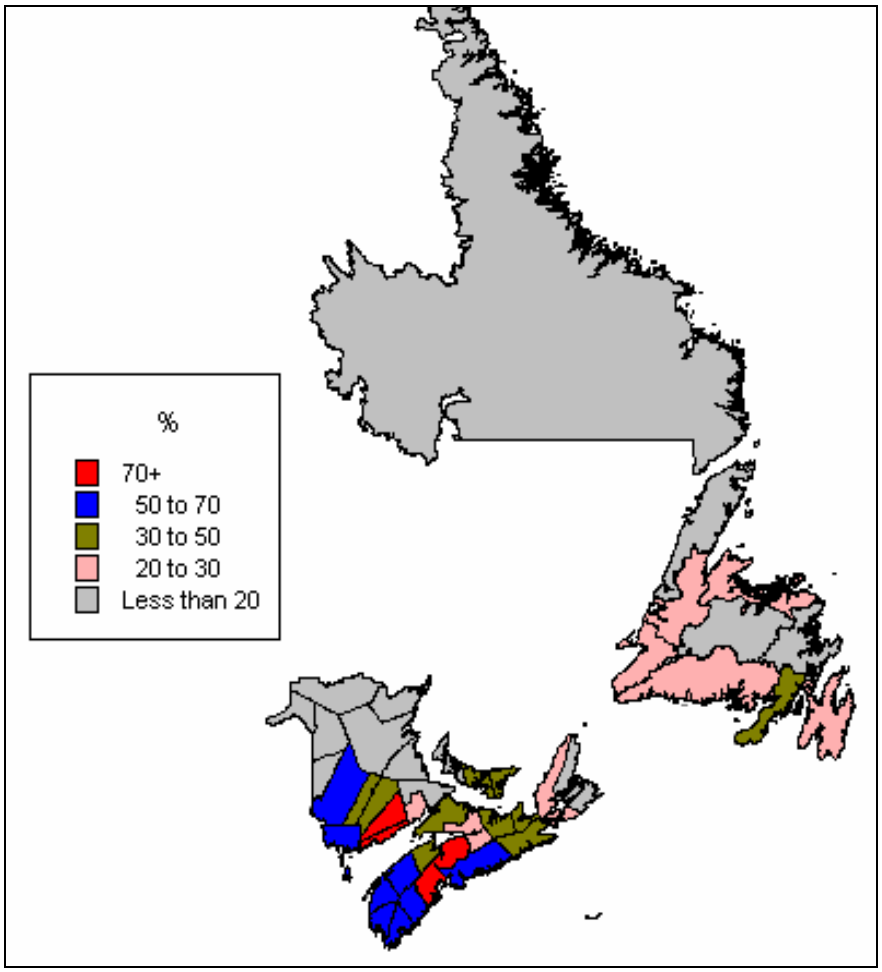
Percentage of Employment More Than 26 Weeks per Year: Farms (111–112), Atlantic Canada's Census Divisions, 2000



Finally, fishing, hunting, and trapping is the subcategory with the highest proportion of seasonal employment (see map 5.12). The proportion is highest in Newfoundland and Labrador, and in most regions with access to the Gulf of St. Lawrence fishing grounds. On the other hand, regions with access to fishing grounds in the Bay of Fundy and the Atlantic Ocean have a lower proportion of seasonal employment. Some natural factors such as the presence of ice in the Gulf of St. Lawrence during winter may explain at least some of these differences, but a full explanation remains a subject for students of regional development in Atlantic Canada.

Map 5.12

Percentage of Employment More Than 26 Weeks per Year: Fishing, Hunting, and Trapping (114), Atlantic Canada's Census Divisions, 2000

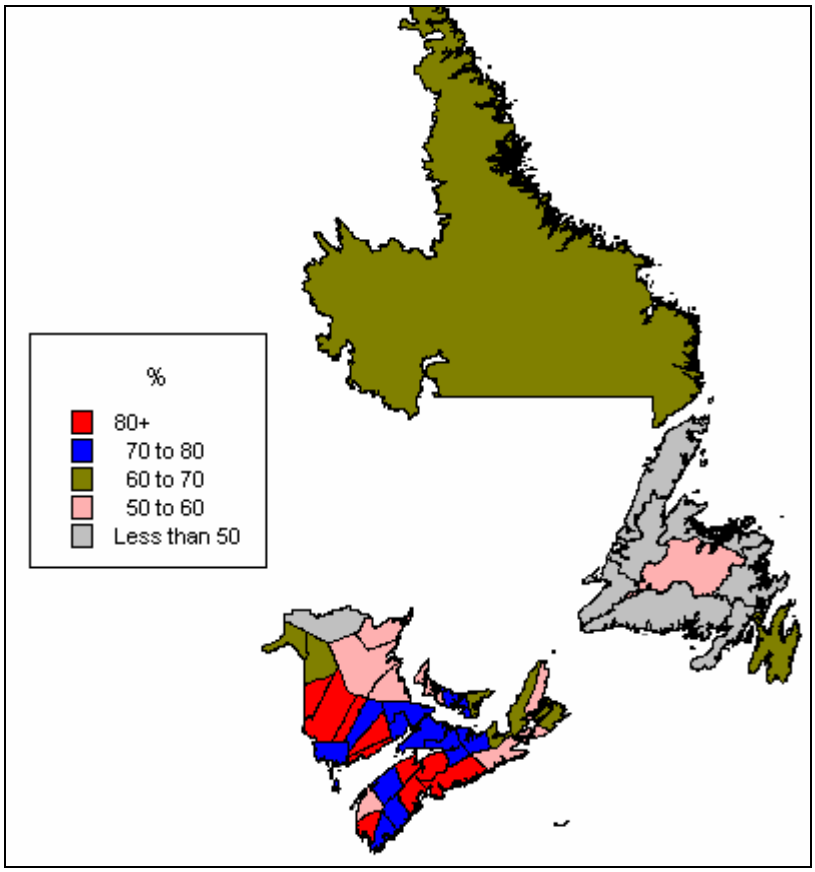


All other two-digit economic sectors have their share of full-year employment presented in figures 7.47 to 7.65 in our statistical appendix (Desjardins 2005). We will now highlight a few of these sectors.

Construction (see map 5.13) is one sector where important regional variations exist. Regions in Newfoundland and Labrador, northern New Brunswick, eastern Nova Scotia, and rural Prince Edward Island tend to have more seasonal employment.

Map 5.13

Percentage of Employment More Than 26 Weeks per Year: Construction (23), Atlantic Canada's Census Divisions, 2000

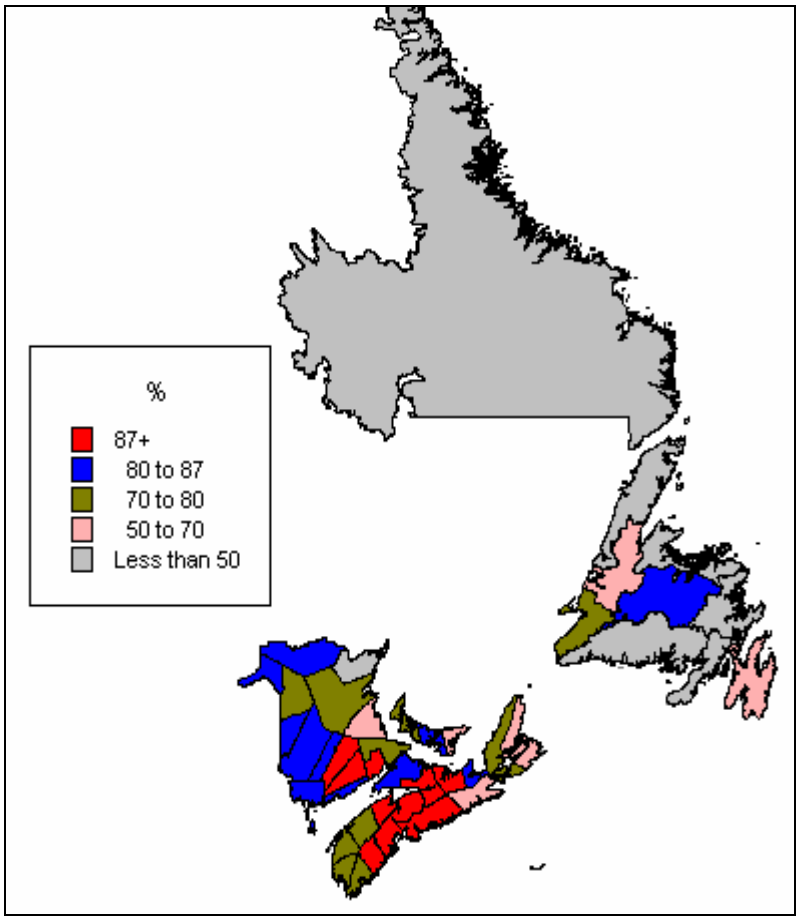


Manufacturing also presents an interesting profile (see map 5.14). We find huge differences (more than a 2 to 1 ratio) between some regions in Newfoundland and Labrador and the New Brunswick CD of Gloucester and most of the other regions. Seasonality is also relatively high in other regions of the eastern part of the Maritime provinces. For fish plants (seafood product preparation and packaging), a subcategory of manufacturing (see map 5.15), we have two significant results that will help us better understand the results for manufacturing as a whole. First, seasonality is high in this subsector in

Newfoundland and Labrador and in most regions with access to the Gulf of St. Lawrence fishing grounds. This would explain, at least in part, the relatively high seasonality of manufacturing in these regions. Second, and here we have similar results for the fishing, hunting, and trapping subcategory, regions closer to fishing grounds in the Bay of Fundy and the Atlantic Ocean tend to have relatively lower proportions of seasonal employment. It only makes sense that the harvesting and processing components of fishing would have similar patterns, but it is nevertheless an interesting characteristic.

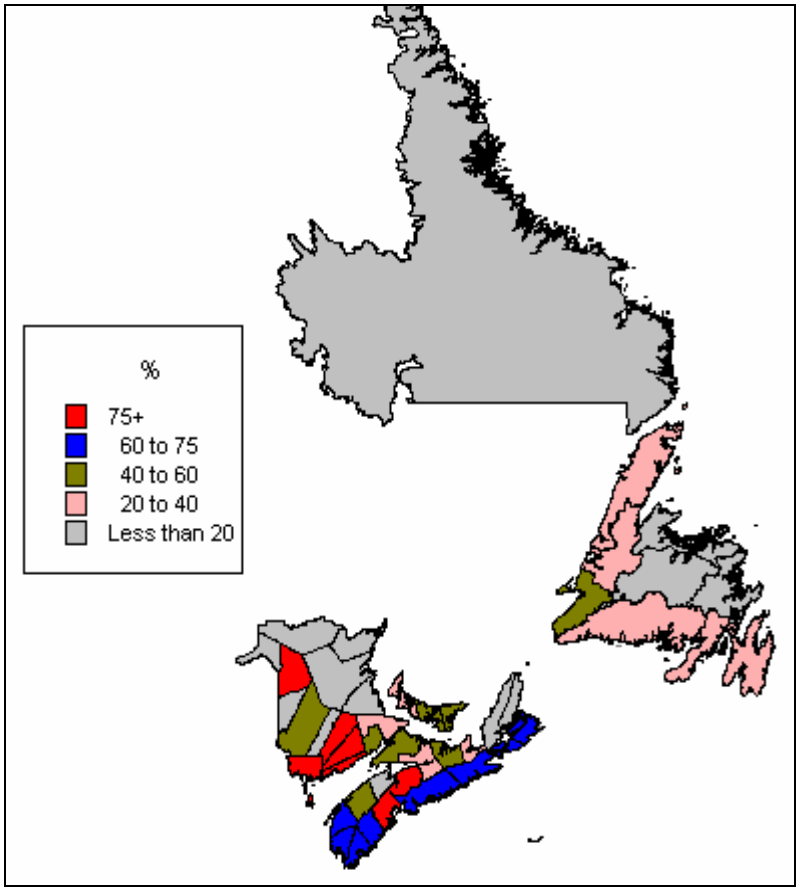
Map 5.14

Percentage of Employment More Than 26 Weeks per Year: Manufacturing (31–33), Atlantic Canada's Census Divisions, 2000



Map 5.15

Percentage of Employment More Than 26 Weeks per Year: Seafood Product Preparation and Packaging (3117), Atlantic Canada's Census Divisions, 2000

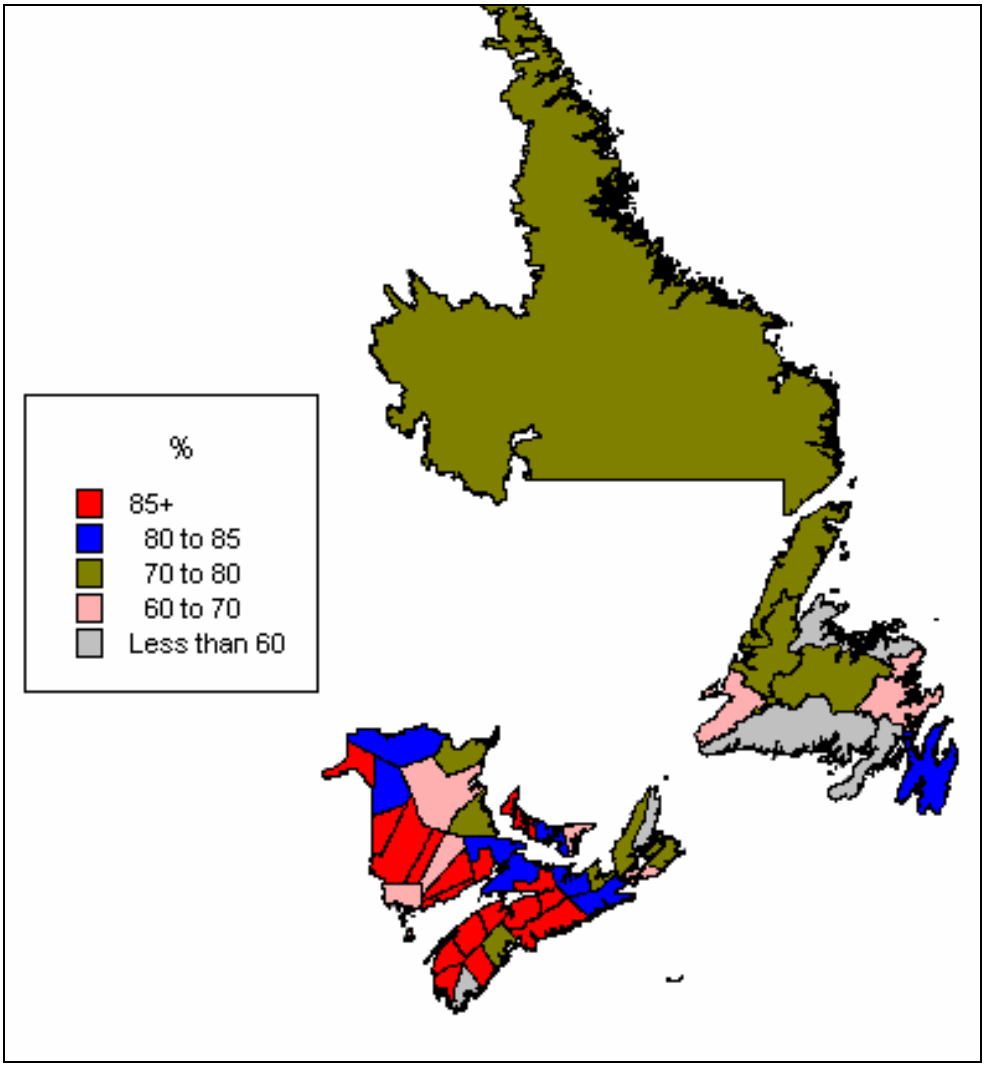


A sector which is often emblematic of the new economy is professional, scientific, and technical services (see map 5.16). While rural regions tend to have slightly higher proportions of seasonal employment compared to urban regions, it is generally a more positive picture which emerges here if one values full-year employment. Policies aiming at supporting this sector consequently have the double advantage of focusing on a new economic sector — if this is a chosen policy objective — and on a sector offering relatively more full-year employment than several other sectors. This is the case for both rural and urban regions.

Another key sector for the region in recent years has been administrative and support, waste management, and remediation, a sector which includes call centres (see map 5.17). Employment here tends to be somewhat more seasonal than for the previous sector of professional, scientific, and technical services. Furthermore, disparities in this sector between urban and rural are more important. Nevertheless, seasonality remains lower than in several other sectors.

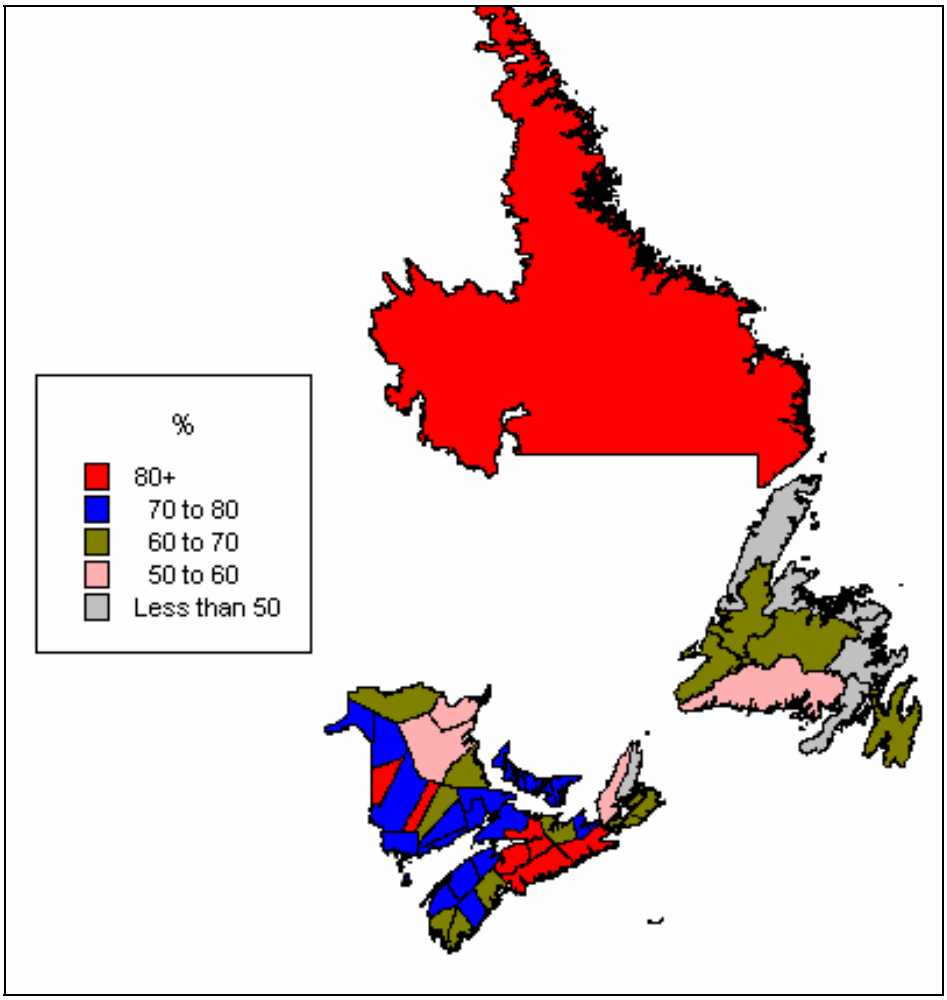
Map 5.16

Percentage of Employment More Than 26 Weeks per Year: Professional, Scientific, and Technical Services (54), Atlantic Canada's Census Divisions, 2000



Map 5.17

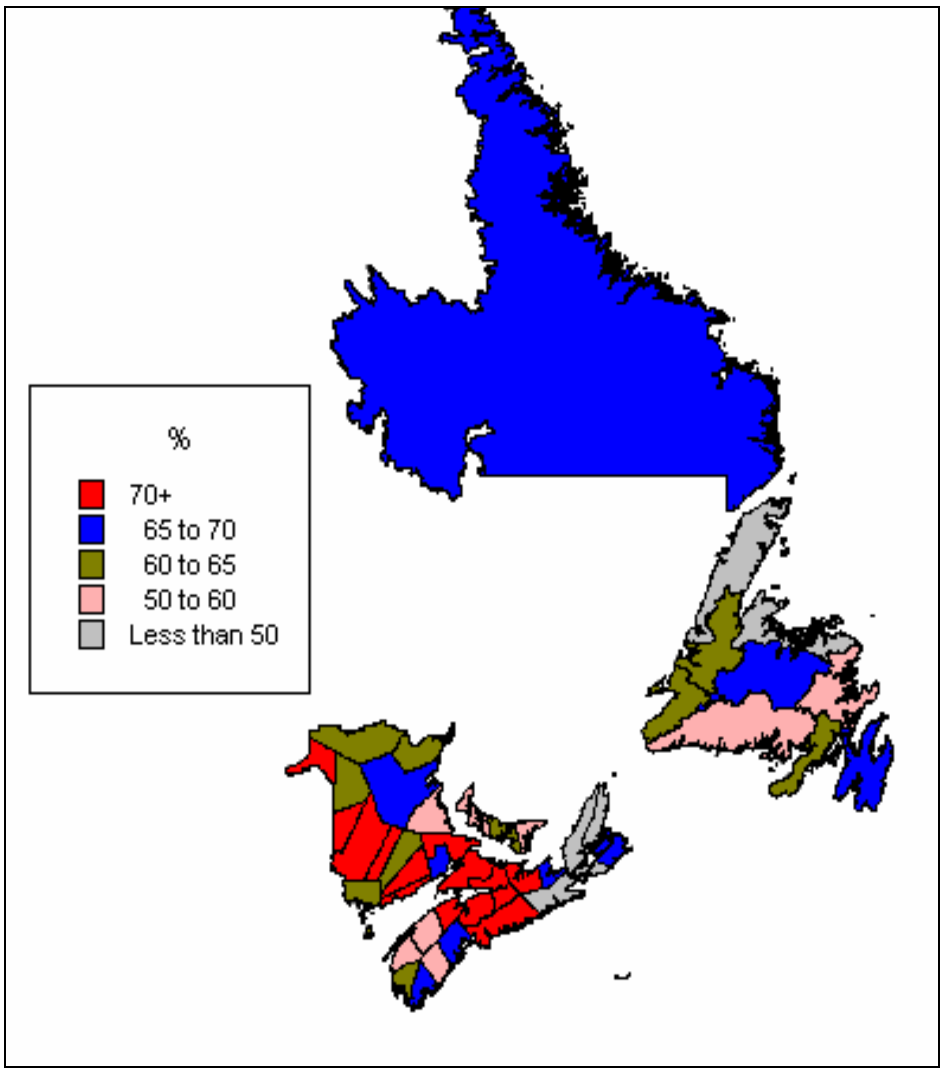
Percentage of Employment More Than 26 Weeks per Year: Administrative and Support, Waste Management, and Remediation Services (56), Atlantic Canada's Census Divisions, 2000



Finally, we come to accommodation and food services, which can be considered a proxy for tourism (see map 5.18). Employment is, for the sector as a whole, generally more seasonal. Furthermore, seasonality increases as one moves on the Ehrensaft typology ladder. Efforts to extend the tourism season are thus justified from an employment standpoint. Still, one must keep in mind that a development strategy focusing on tourism may end up creating more seasonal jobs when compared to other sectors such as the previous two.

Map 5.18

Percentage of Employment More Than 26 Weeks per Year: Accommodation and Food Services (72), Atlantic Canada's Census Divisions, 2000



PART 3
INDUSTRIAL SECTOR DYNAMICS

6

ECONOMIC SECTORS

In previous chapters, we have often referred to industrial or economic sectors when analysing seasonality, income, education, etc. Here, we focus on them specifically. First, applying the location quotient technique, we compare the relative importance of various economic sectors, using Canada as a reference. We then focus on clusters. This is followed by an analysis of the concentration of economic activity in specific sectors. The fourth section of the chapter focuses on the knowledge economy. We conclude with an analysis of the cyclical nature of economic sectors.

Location Quotients

The location quotient measures the relative importance of a sector in a given territory compared to the relative importance of the same sector in a reference territory (Polèse 1994, 128–29).

$$LQ_{ij} = (E_{lj}/E_j) / (E_l/E_n)$$

Where LQ_{ij} = location quotient for sector i in region j

E_{lj} = employment in economic sector l in region j

E_j = total employment in region j

E_l = employment in economic sector l in reference region

E_n = total employment in reference region

The location quotient is thus a relative measure comparing the concentration of employment in a given sector with the concentration of employment in the same sector in a reference territory. In our case the reference territory is Canada as a whole.

A location quotient of 1 means that the relative importance of a given sector is equivalent in the region in question to the reference region. A location quotient of more than 1 means that its relative importance is greater in the region in question than in the reference region; the higher the number, the greater the difference in relative importance. The opposite is true for values less than 1.

In table 6.1, we present the ten sectors with the highest location quotients for each of the Atlantic provinces. The sectors are based on NAICS (the North American industrial classification system). We have used various levels of aggregation, depending on the sector, to maximize the usefulness of the information.

Table 6.1

Selected Sectors (NAICS) with the Highest Location Quotients, Atlantic Provinces, 2001

Newfoundland		Prince Edward Island		Nova Scotia		New Brunswick	
Sector	**LQ**	**Sector**	**LQ**	**Sector**	**LQ**	**Sector**	**LQ**
3117	18.33	114	25.59	114	10.12	3117	9.32
114	15.68	3117	15.91	3117	6.79	114	5.60
3366	9.32	3114	14.71	3262	5.37	3114	4.55
212	3.61	31	3.57	3366	3.68	324	3.18
324	3.59	3366	3.35	911	2.38	113	2.75
31	2.39	3115	3.22	113	2.16	322	2.34
912	2.11	911	2.53	31	1.55	321	2.26
911	1.71	111–112	2.48	313	1.18	31	2.02
213	1.51	912	1.84	56	1.18	911	1.75
322	1.42	23	1.14	62	1.18	212	1.66

Definition of the NAICS Sectors			
111–112	Farms	313	Textile mills
113	Forestry and logging	321	Wood product manufacturing
114	Fishing, hunting, and trapping	322	Paper manufacturing
212	Mining (except oil and gas)	324	Petroleum and coal products manufacturing
213	Support activities for mining and oil and gas extraction	3262	Rubber product manufacturing
23	Construction	3366	Ship and boat building
31	Manufacturing (food, beverages, and textile)	56	Administrative and support, waste management, and remediation services
3114	Fruit and vegetable preserving and specialty foods	62	Health care and social assistance
3115	Dairy product manufacturing	911	Federal government public administration
3117	Seafood product preparation and packaging	912	Provincial and territorial public administration

In the four provinces, the fisheries industry generates the highest location quotients (see table 6.1). In Newfoundland and Labrador and in New Brunswick, fish processing leads followed by fish harvesting. In Prince Edward Island and in Nova Scotia, it is the reverse.

Newfoundland and Labrador has high location quotients in resource-based sectors and in sectors supporting resource-based sectors. In addition to the fisheries, for example, we have ship and boat building and mining. Leading sectors also include some manufacturing subsectors as well as public administration, both federal and provincial.

In Prince Edward Island, the sector of fruit and vegetable preserving and specialty food yields a very high location quotient and is ranked third. In fact, with the exception of public administration, federal and provincial, and construction, the top-ten list contains only sectors directly or indirectly related to the fisheries and agriculture.

The situation in Nova Scotia is somewhat different. Rubber product manufacturing ranks third, the result of the relatively large presence of Michelin in the province. Sectors outside resources also include textile mills; administrative and support, waste management, and remediation services; and health care and social assistance.

Finally, for New Brunswick we find fruit and vegetable preserving and specialty food (e.g., McCain); Petroleum and coal products manufacturing (e.g., Irving Oil refinery); and several forestry related sectors.

Figures 8.1 to 8.26 in our statistical appendix (Desjardins 2005) present the location quotients for several sectors in the four Atlantic provinces. A striking result of our analysis is the relative importance of the fishery. And while Atlantic Canada has a relatively small manufacturing sector, the subcategory of food manufacturing generates a high location quotient, especially in Prince Edward Island.

Retail trade is relatively well represented in the region, wholesale trade less so. This could be an indication that distribution centres are relatively centralized and that Atlantic Canada is served in part by centres outside its boundaries.

Other sectors relatively less represented in the region include finance and insurance; professional, scientific, and technical services; and arts, entertainment, and recreation. On the other hand, the region is relatively well represented in government-related sectors, including health care and social assistance and public administration.

Administrative and support, waste management, and remediation services is an interesting sector. We have already seen that it ranks in Nova Scotia's top ten. It has an even higher location quotient in New Brunswick, although it is not among the province's top-ten sectors. In the other two provinces, its location quotient is below 1. What makes this sector interesting is that it includes call centres, a niche market which has attracted a lot of attention in the region in recent years.

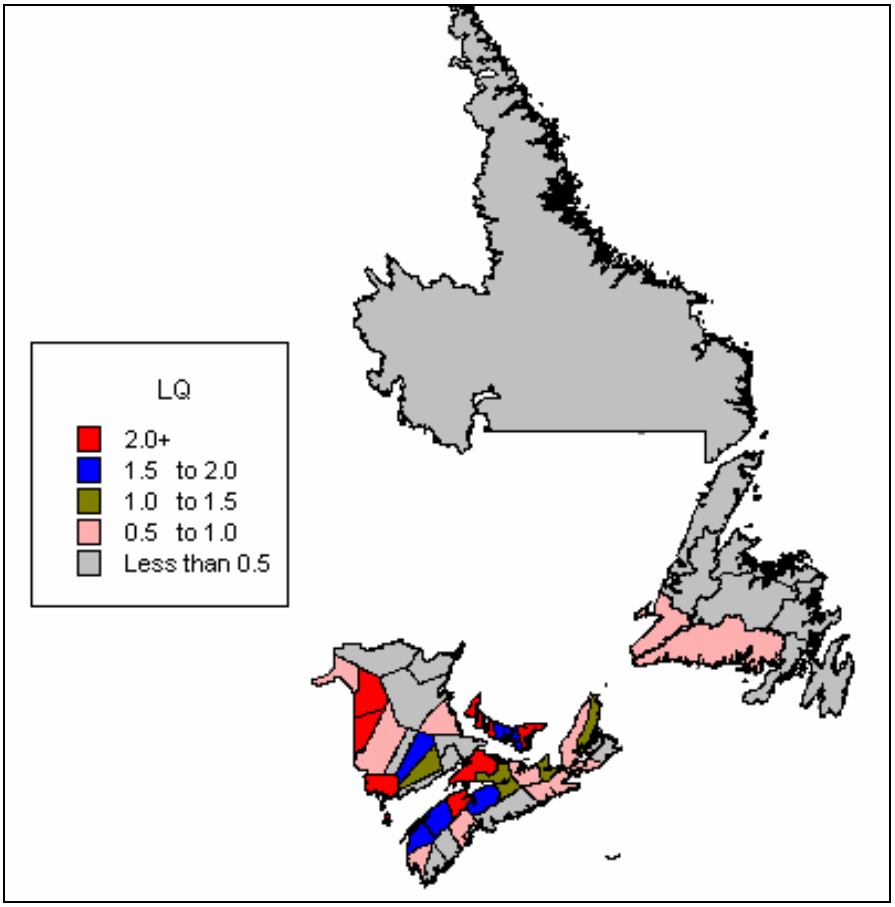
Figures 8.18 to 8.26 in our statistical appendix (Desjardins 2005) present subcategories of sectors previously presented. We see, for example, that metal ore mining is relatively important in Newfoundland and Labrador, coal mining in Nova Scotia, and non-metallic mining in New Brunswick. In construction, it is interesting to note the relative importance of engineering construction in Prince Edward Island. In food manufacturing, as already discussed, seafood and fruit and vegetables dominate. New Brunswick has a relatively strong presence in the three wood product manufacturing subsectors, led by sawmills. As for paper manufacturing, pulp, paper, and paperboard mills are generally more important. We finally present all major manufacturing subcategories (at the three-digit level) for all four Atlantic provinces.

In our statistical appendix (Desjardins 2005), we present the location quotients of a multitude of sectors — at the two-, three-, and four-digit levels — for Atlantic Canada's CDs. We will now analyse some of these.

Farm employment is relatively important — *important* being defined in this subsection as a location quotient above 1 — in sixteen CDs (see map 6.1). These CDs are concentrated in Prince Edward Island, western New Brunswick, and northwestern Nova Scotia. None of Newfoundland and Labrador's regions has a location quotient above 1. The same is true of eastern New Brunswick and of the regions on the Atlantic coastline of Nova Scotia. It hardly needs saying that farming activities are generally concentrated in rural regions.

Map 6.1

Location Quotients: Farms (111–112), Atlantic Canada's Census Divisions, 2001

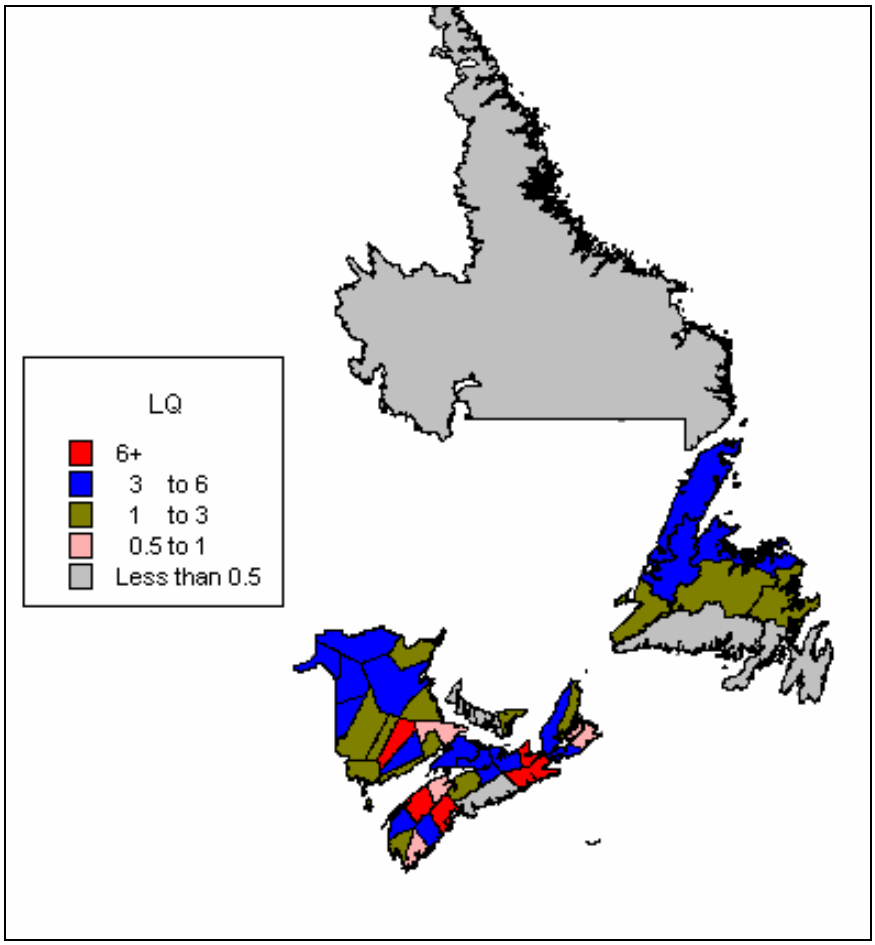


Forestry and logging employment is relatively important in most of rural Atlantic Canada (see map 6.2). Urban regions, on the other hand, often have relatively lower location quotients. Fishing employment, for its part, has a different distribution (see map 6.3). This sector's relative importance is astonishingly high in some regions. In fact, seven CDs have a location quotient above 50. An additional ten CDs have a location

quotient between 20 and 50. The regions with low location quotients are those with limited or no access to the coastline. Location quotients in urban regions are also usually high, although much lower than those in rural regions with coastlines.

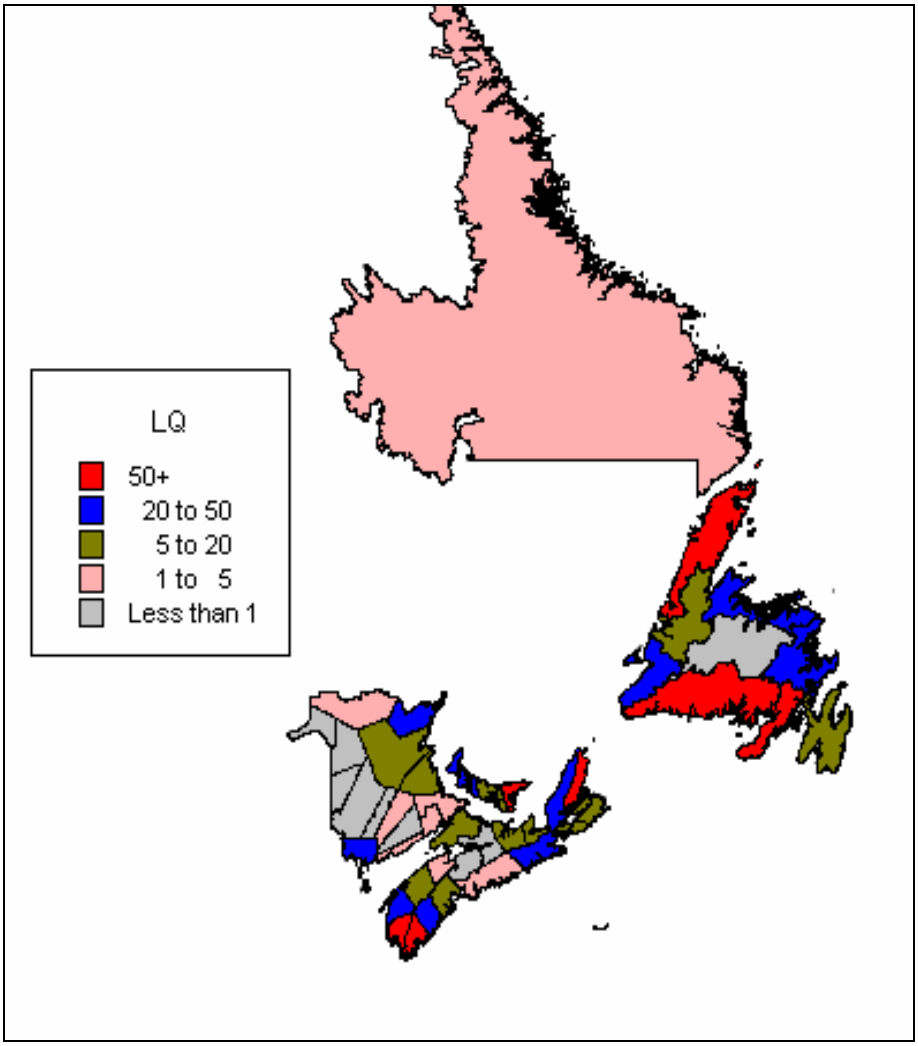
Map 6.2

Location Quotients: Forestry and Logging (113), Atlantic Canada's Census Divisions, 2001



Map 6.3

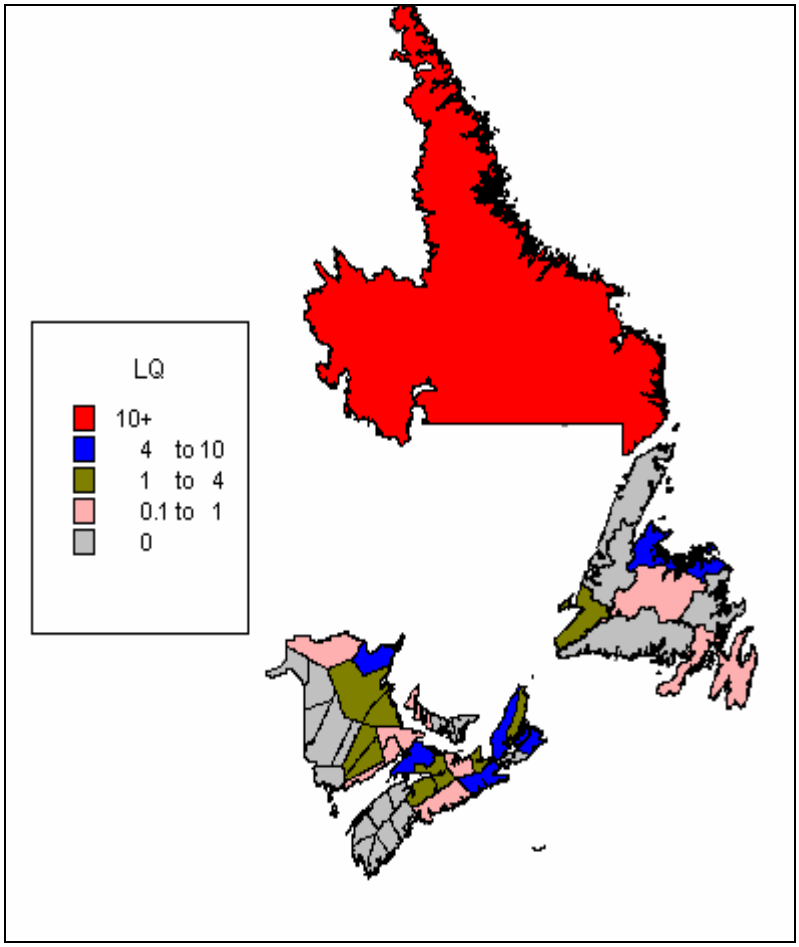
Location Quotients: Fishing (1141), Atlantic Canada's Census Divisions, 2001



Mining (except oil and gas) is concentrated in a few regions: northeastern and central New Brunswick, north and eastern Cape Breton, northern Newfoundland, and especially Labrador. Labrador has a location quotient in this case of nearly 50, by far the highest in the region (see map 6.4).

Map 6.4

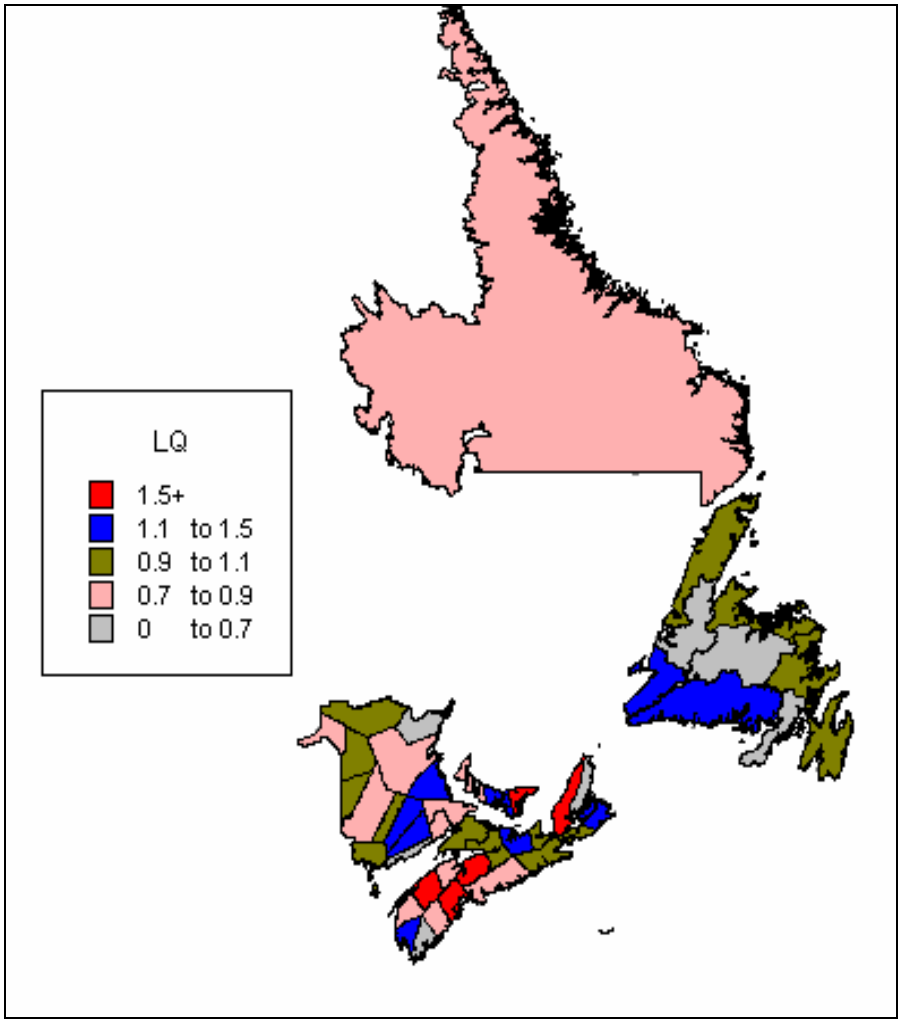
Location Quotients: Mining (Except Oil and Gas) (212), Atlantic Canada's Census Divisions, 2001



On average, building construction is not relatively important in Atlantic Canada: again, relative importance is measured as having a location quotient above 1 (see map 6.5). In only fifteen of the region's CDs are the location quotients for building construction above 1. Regions with relatively high location quotients are often rural regions adjacent to a metropolitan area (e.g., NS-Hants, NB-Kent, NS-Lunenburg). Engineering construction, on the other hand, generally produces higher location quotients (see map 6.6). It has relatively higher location quotients in Newfoundland and Labrador, in Prince Edward Island, and in central New Brunswick.

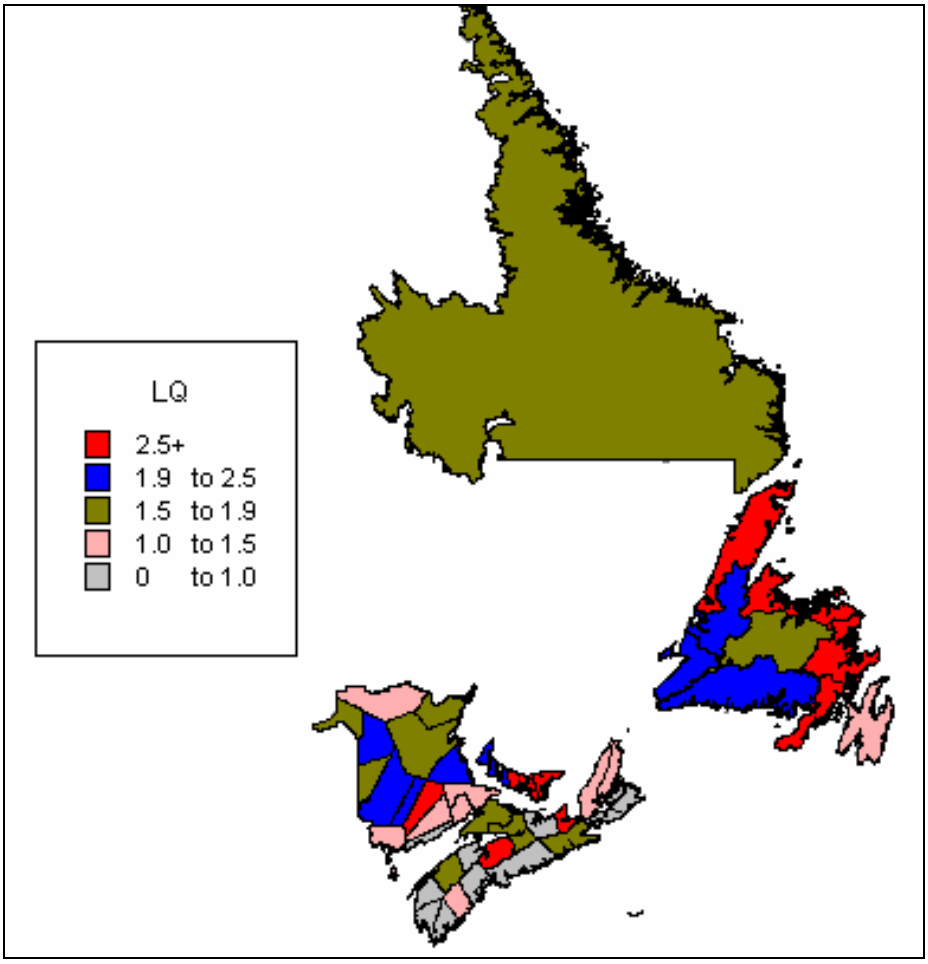
Map 6.5

Location Quotients: Building Construction (2312), Atlantic Canada's Census Divisions, 2001



Map 6.6

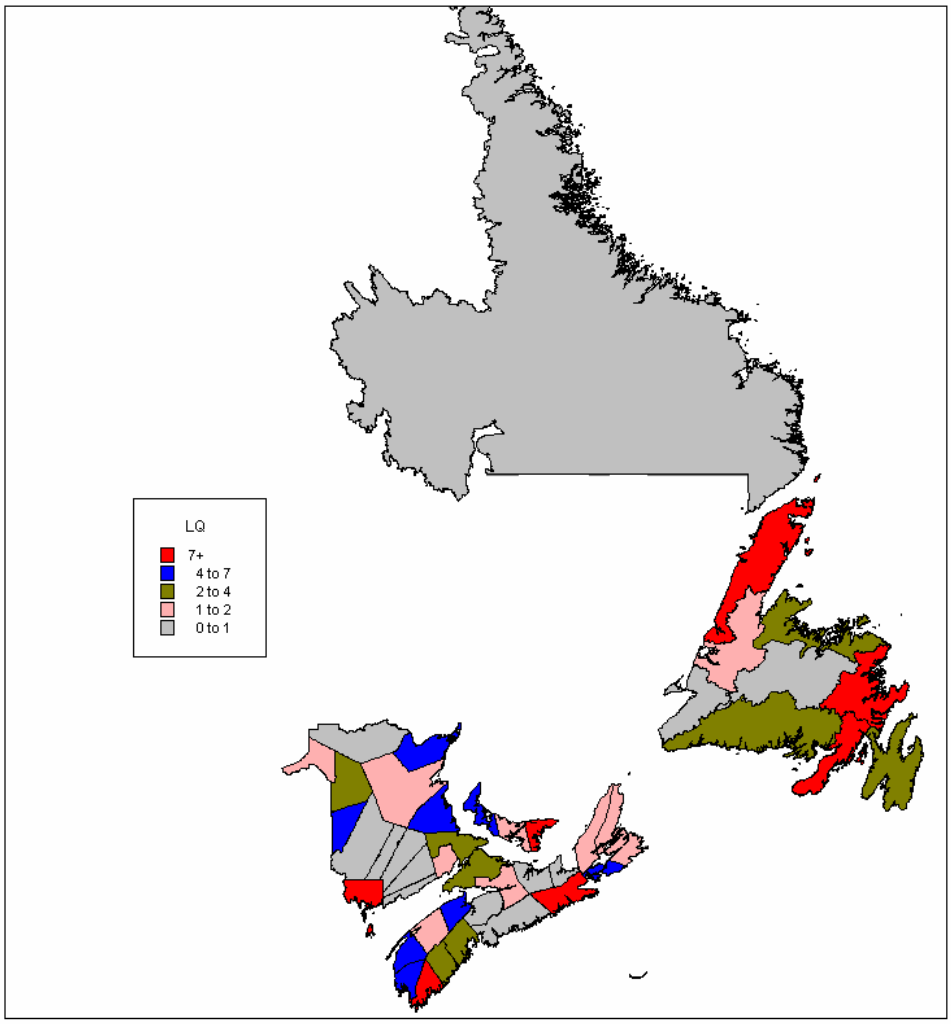
Location Quotients: Engineering Construction (2313), Atlantic Canada's Census Divisions, 2001



Food manufacturing is also interesting for distribution of high location quotients (see map 6.7). Small town zones not adjacent to a metropolitan area and predominantly rural regions not adjacent to a metropolitan area are where location quotients for food manufacturing are the highest.

Map 6.7

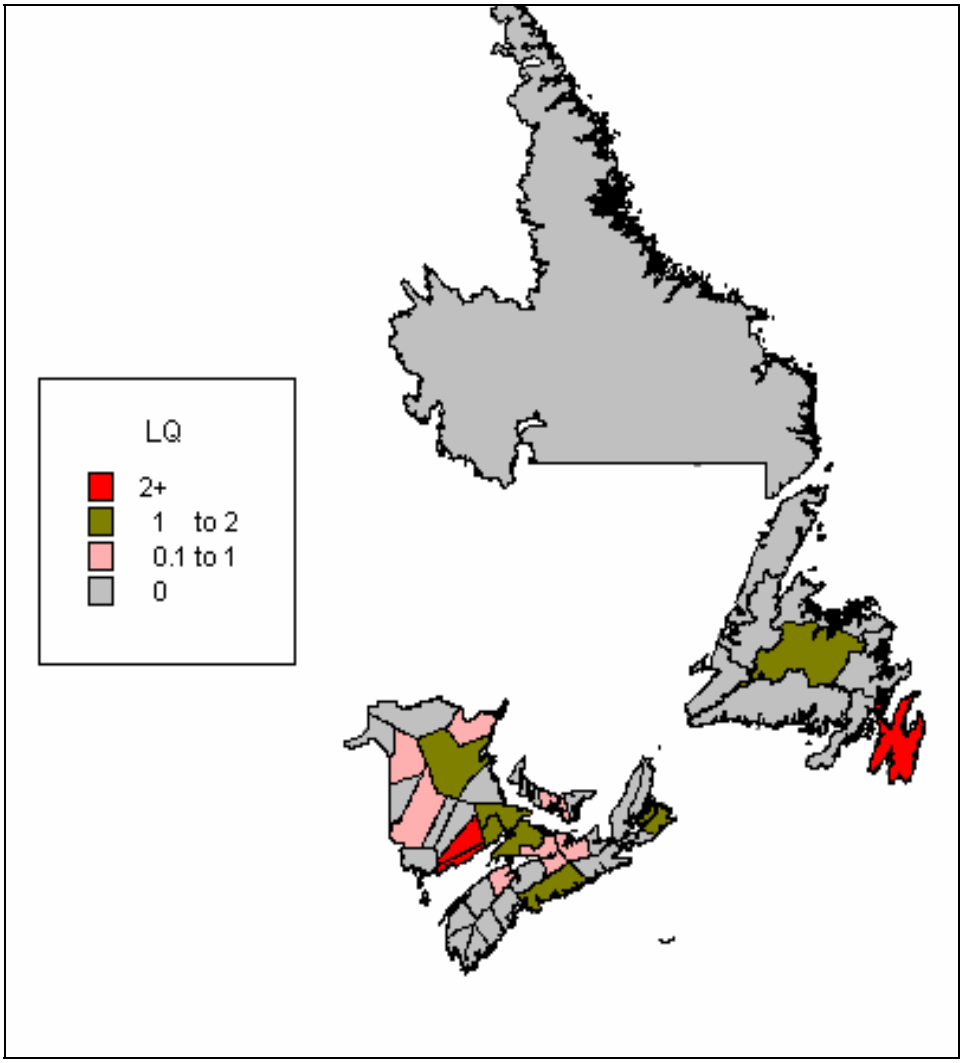
Location Quotients: Food Manufacturing (311), Atlantic Canada's Census Divisions, 2001



Turning to the food-manufacturing subcategory of beverages and tobacco, we find high location quotients in only a few mostly urban regions (see map 6.8). With only ten CDs with a location quotient above 1 and only seventeen with a location quotient above 0, it has all the signs of a very concentrated production structure, even though its main focus is in large part to service the regional sector.

Map 6.8

Location Quotients: Beverage and Tobacco Product Manufacturing (312), Atlantic Canada's Census Divisions, 2001

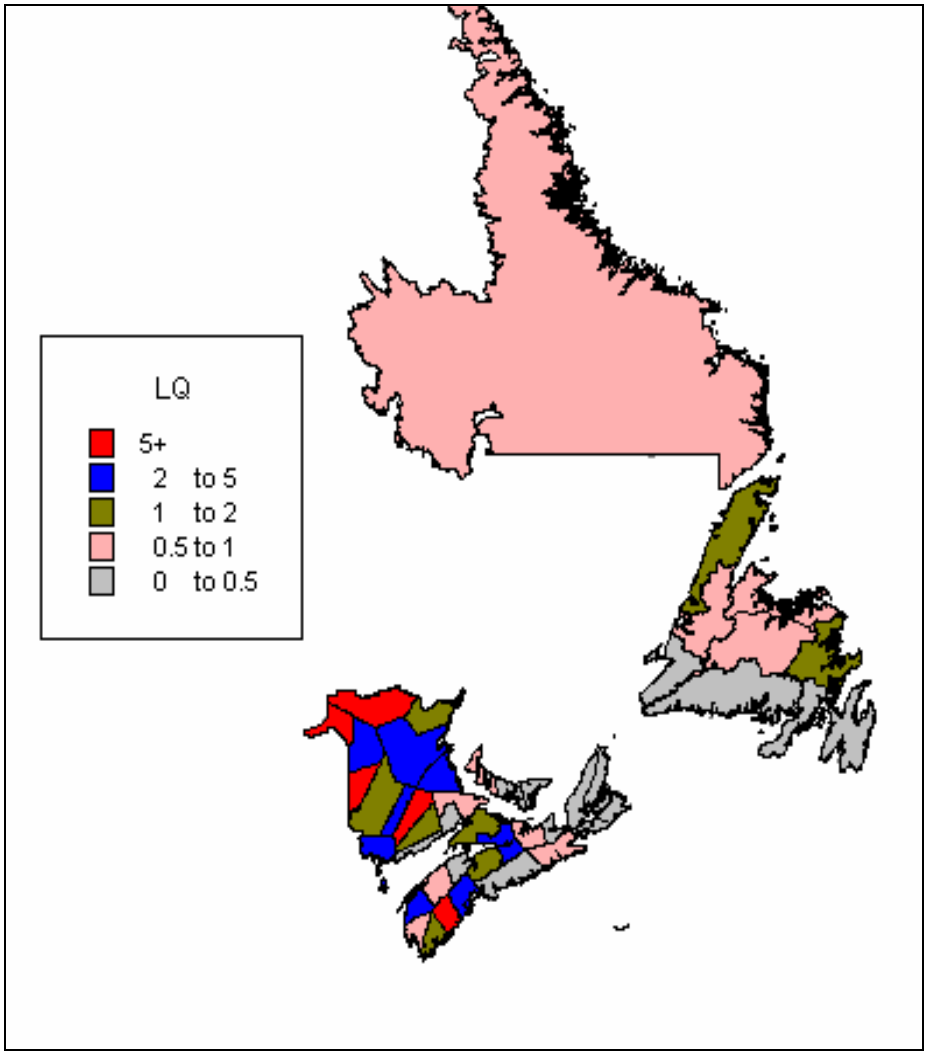


We note that other sectors are present in even fewer regions (e.g., textile mills; textile product mills; and leather and allied product). In these cases, where only a very few regions have location quotients above zero, there are probably only a few plants operating in Atlantic Canada.

Wood product manufacturing is very important in New Brunswick and western Nova Scotia (see map 6.9), where it is relatively concentrated in rural regions not adjacent to a metropolitan area. It is relatively less important in Prince Edward Island and in most regions of Newfoundland and Labrador.

Map 6.9

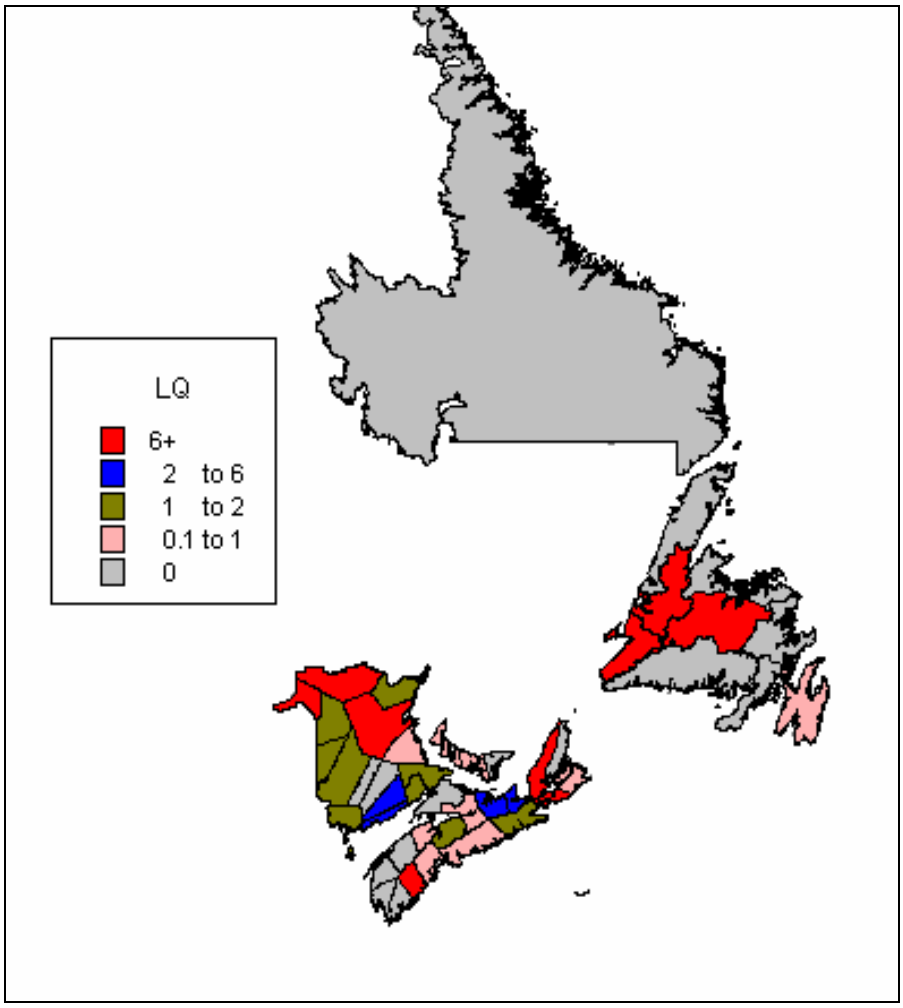
Location Quotients: Wood Product Manufacturing (321), Atlantic Canada's Census Divisions, 2001



Paper manufacturing is also relatively important in several rural regions not adjacent to a metropolitan area, this time in central Newfoundland, in northern and southern New Brunswick, and in northern Nova Scotia (see map 6.10).

Map 6.10

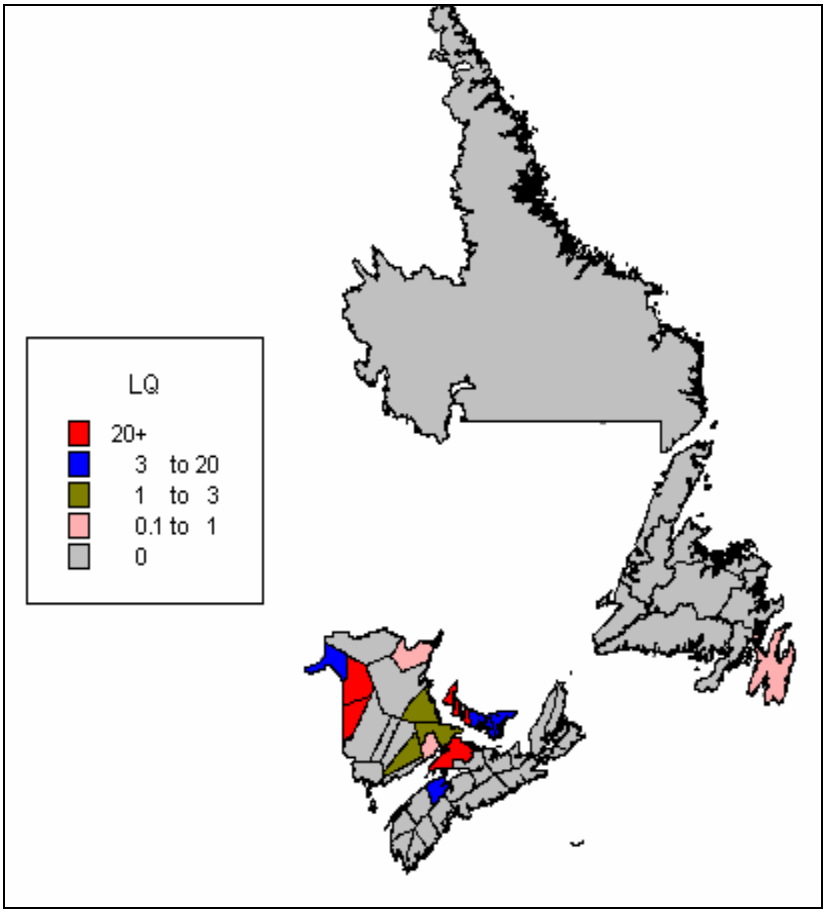
Location Quotients: Paper Manufacturing (322), Atlantic Canada's Census Divisions, 2001



At the four-digit level, a few manufacturing subcategories yield valuable results. For example, we saw earlier when we presented provincial location quotient results that the sector of fruit and vegetable preserving and specialty foods was relatively important to the region. We may be surprised, therefore, to find that it is a sector with a relatively important location quotient in only a few regions, especially in Prince Edward Island, in western New Brunswick, and in northern Nova Scotia (see map 6.11).

Map 6.11

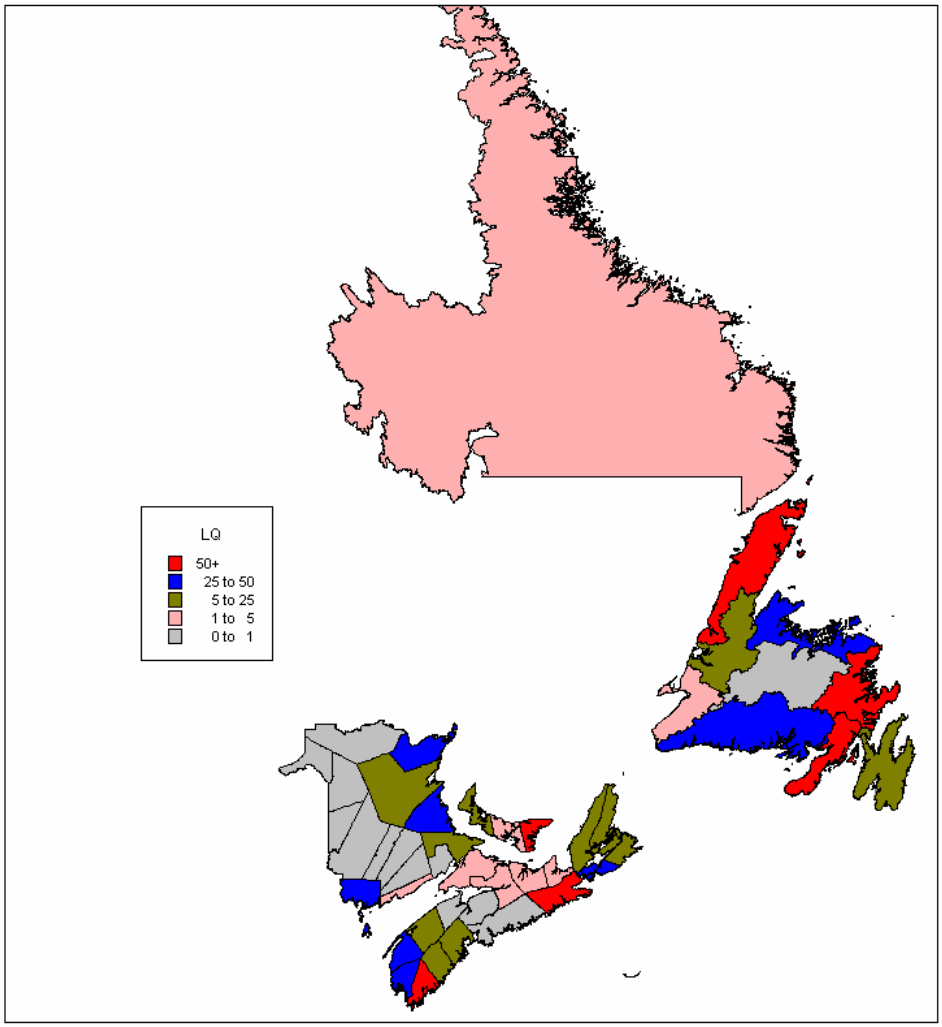
Location Quotients: Fruit and Vegetable Preserving and Specialty Food Manufacturing (3114), Atlantic Canada's Census Divisions, 2001



Seafood product preparation and packaging yields relatively high location quotients in regions with coastlines (see map 6.12), a result which is not surprising given our earlier analysis of fish harvesting. Also note the very high location quotients in several regions: six above 50 and eight between 25 and 50. This means that fourteen of Atlantic Canada's CDs have a concentration of employment in this sector at least twenty-five times higher than the national average.

Map 6.12

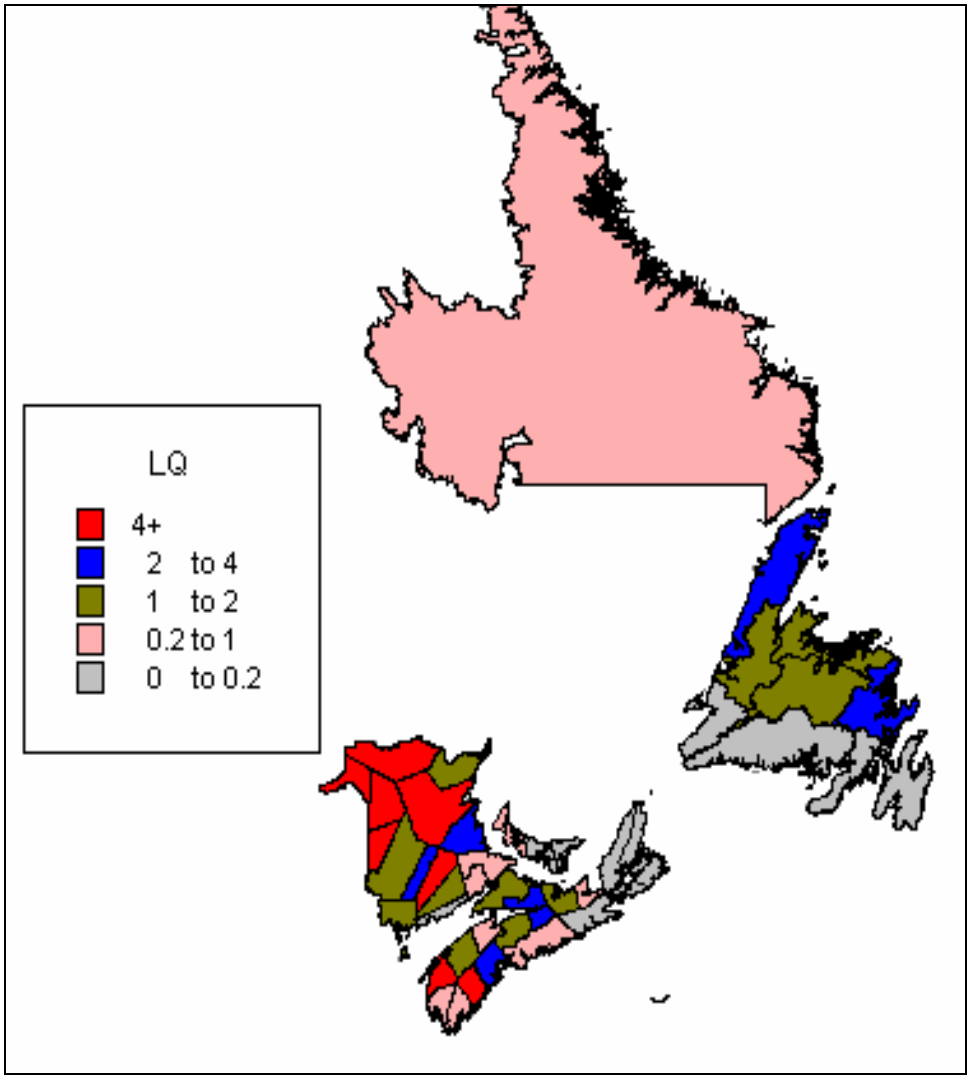
Location Quotients: Seafood Product Preparation and Packaging (3117), Atlantic Canada's Census Divisions, 2001



Border issues have negatively affected the region's sawmills during the past few years. From map 6.13, we can see that the impact of these difficulties are not uniformly distributed across Atlantic Canada. Sawmills and wood preservation employment is indeed relatively more important in northwestern and central New Brunswick, in western Nova Scotia, and in northern Newfoundland. This is a good example of the need to have a thorough understanding of the geographical distribution of employment in order to better understand issues affecting specific sectors.

Map 6.13

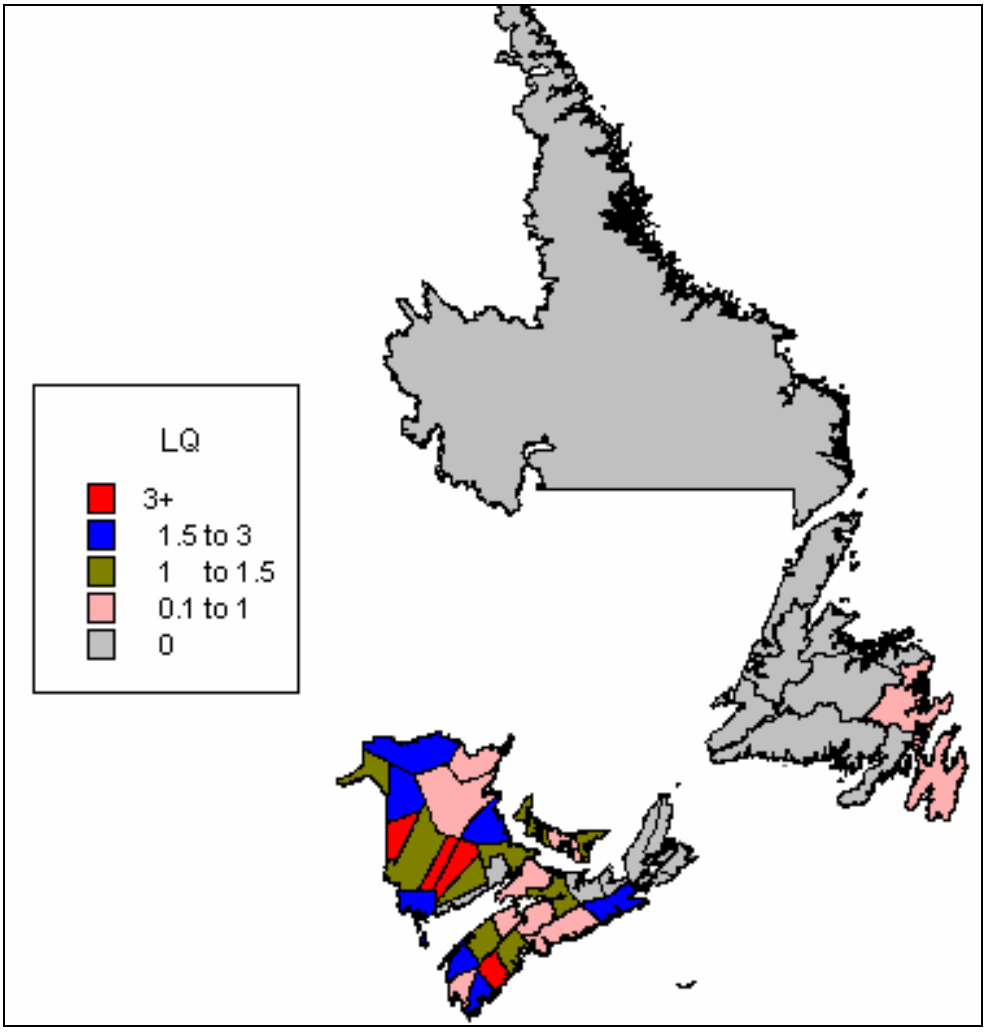
Location Quotients: Sawmills and Wood Preservation (3211), Atlantic Canada's Census Divisions, 2001



Other manufacturing four-digit subsectors which exhibit a certain concentration of high location quotients include other wood product manufacturing (see map 6.14), cement and concrete product manufacturing (see map 6.15), and ship and boatbuilding (see map 6.16).

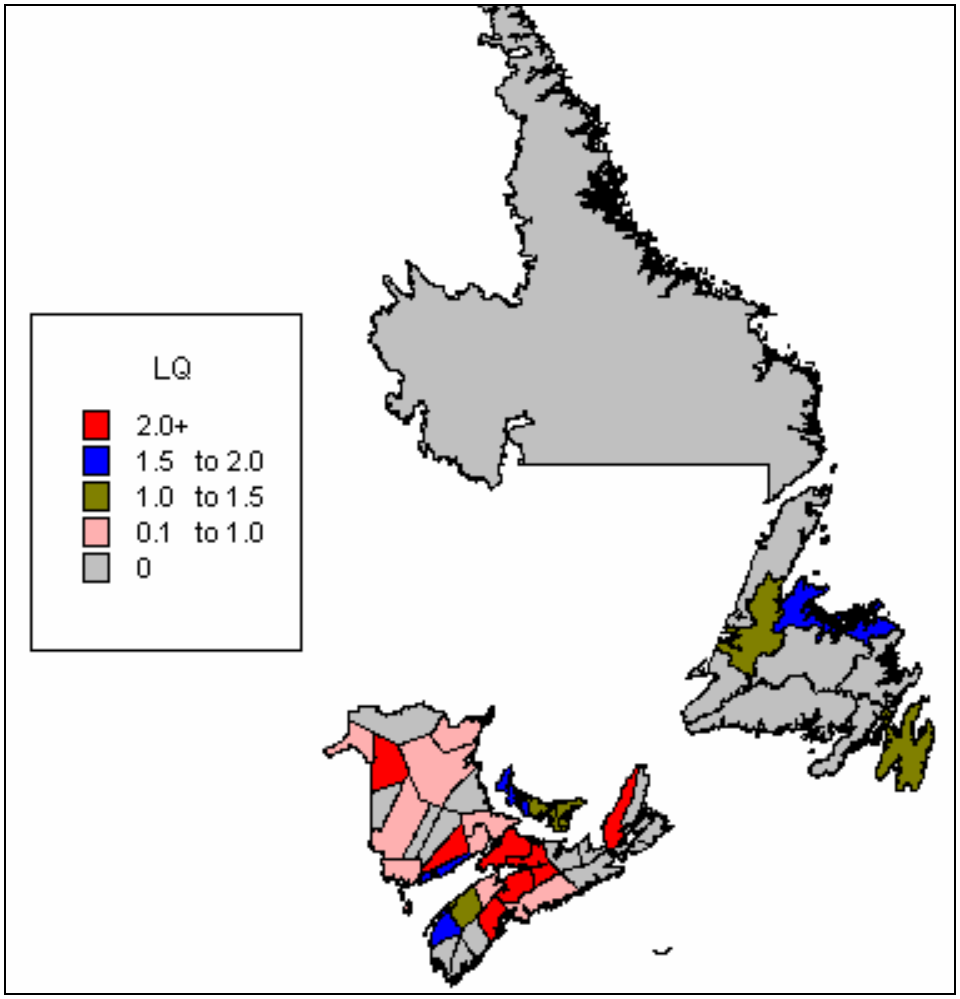
Map 6.14

Location Quotients: Other Wood Product Manufacturing (3219), Atlantic Canada's Census Divisions, 2001



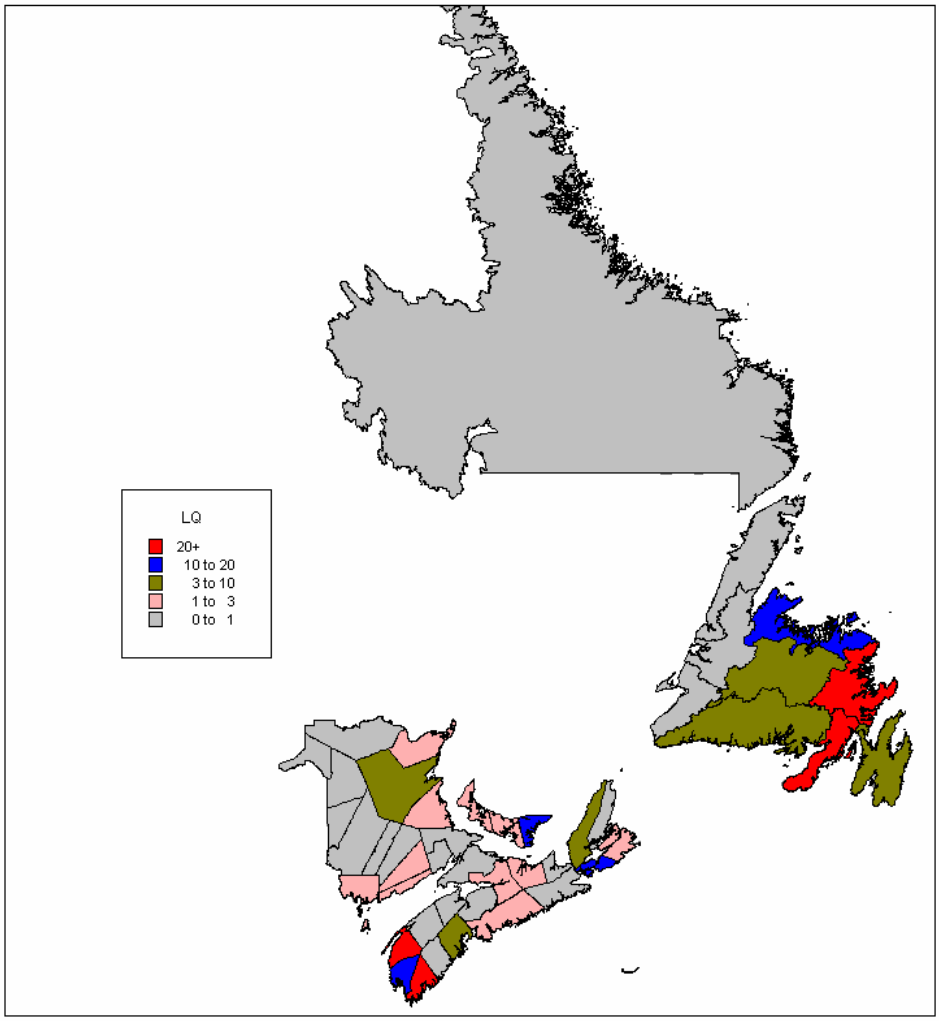
Map 6.15

Location Quotients: Cement and Concrete Product Manufacturing (3273), Atlantic Canada's Census Divisions, 2001



Map 6.16

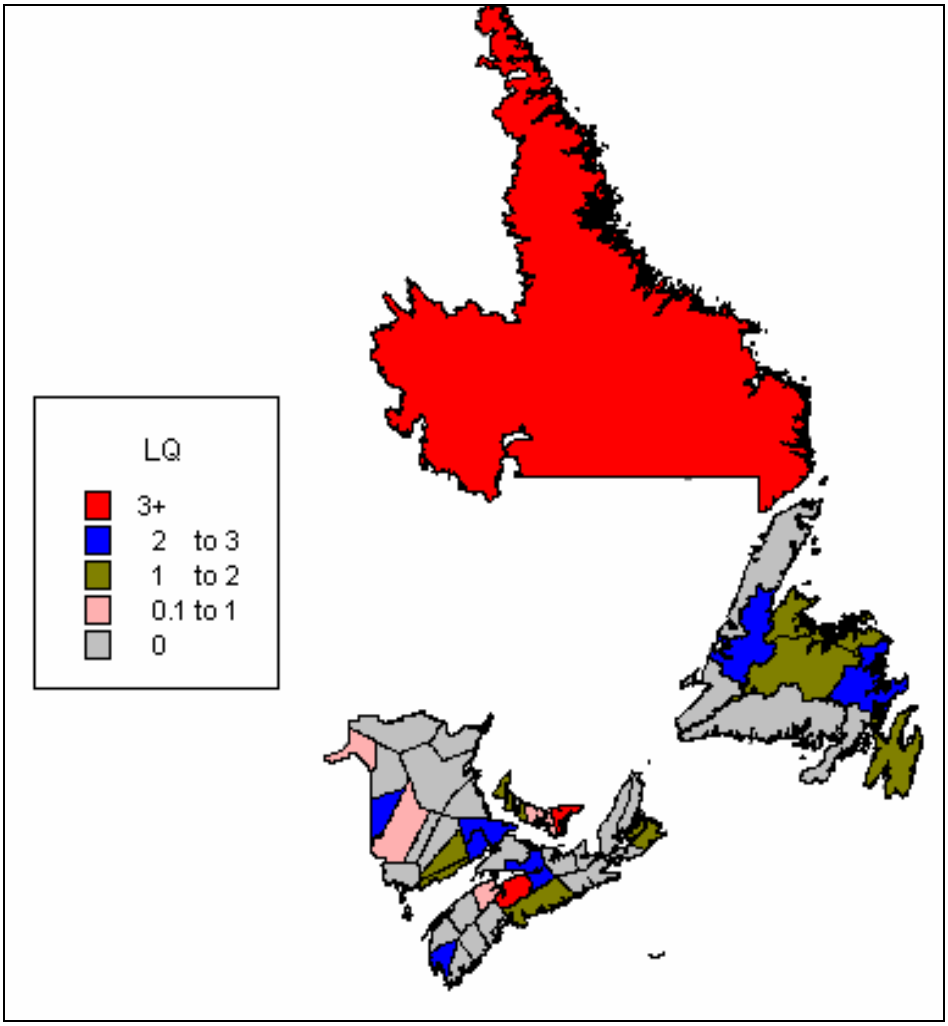
Location Quotients: Ship and Boat Building (3366), Atlantic Canada's Census Divisions, 2001



As mentioned earlier, wholesale activity often tends to be concentrated in certain areas. Petroleum product wholesaler-distributors is a case in point for several regions, essentially rural, with a location quotient of zero (see map 6.17). Retail trade, on the other hand, generates location quotients more evenly distributed, a reflection of the need to be closer to consumers than wholesale trade (see map 6.18).

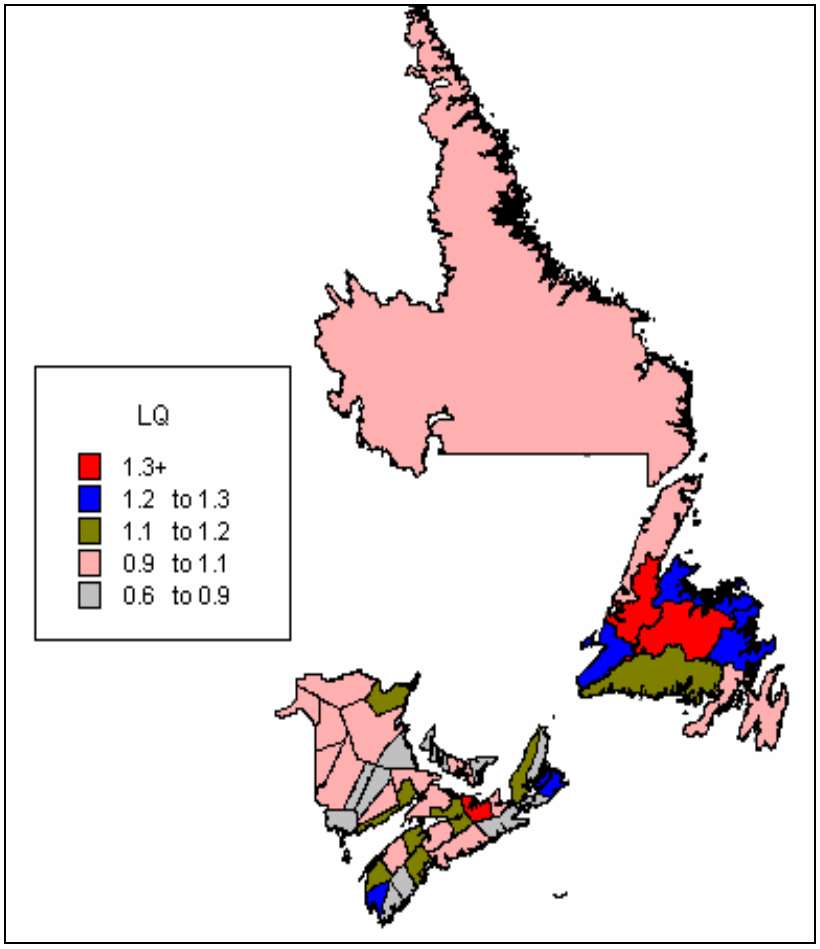
Map 6.17

Location Quotients: Petroleum Product Wholesaler-Distributors (412), Atlantic Canada's Census Divisions, 2001



Map 6.18

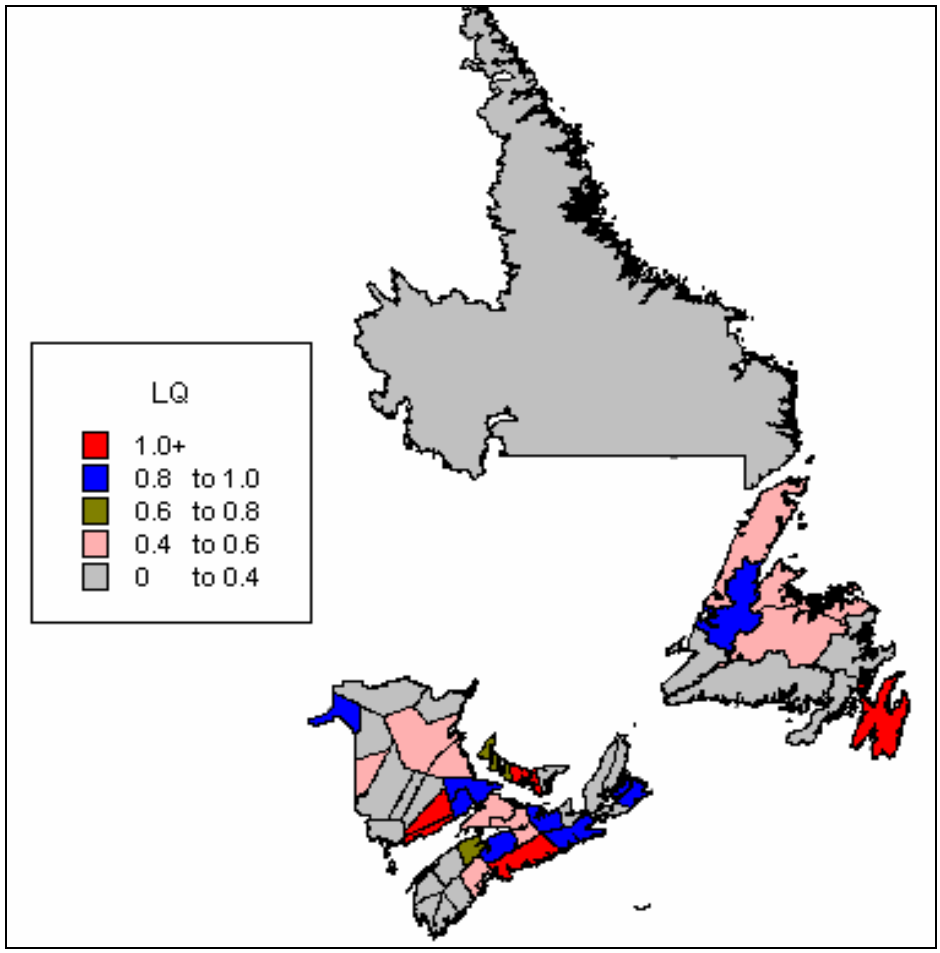
Location Quotients: Retail Trade (44–45), Atlantic Canada's Census Divisions, 2001



As for the distribution of location quotients in what may be called new economy sectors, we find that most of these sectors are concentrated in the larger urban regions, with a relatively less important presence in rural regions, results consistent with those of Polèse and Shearmur (2002). Examples of these are telecommunication (see map 6.19); professional, scientific, and technical services (see map 6.20); and business support services (see map 6.21).

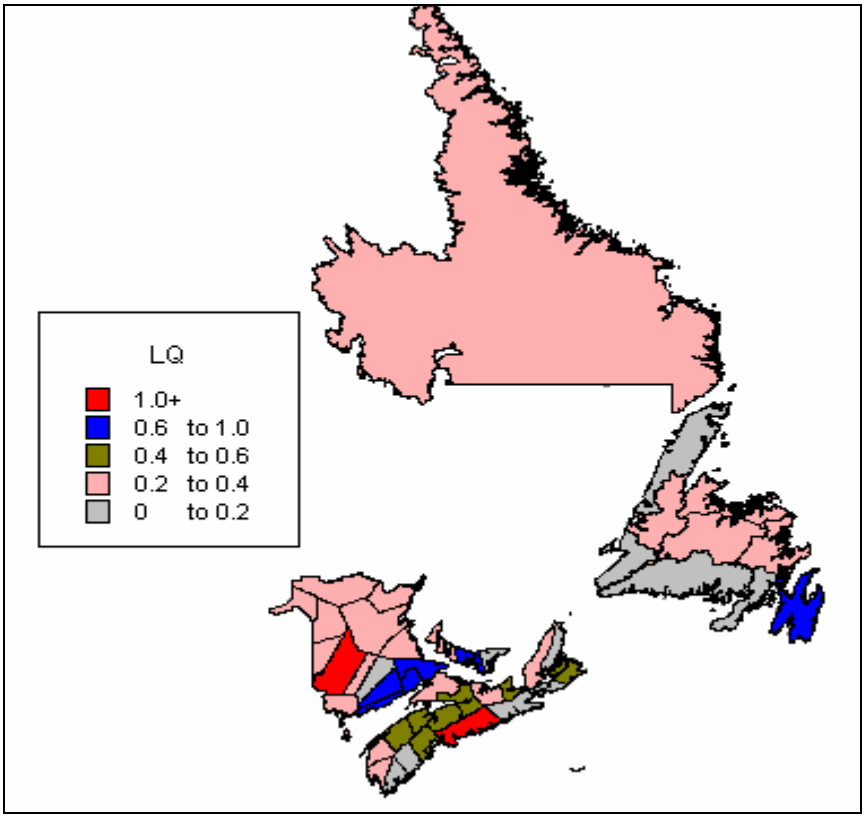
Map 6.19

Location Quotients: Telecommunications (5133), Atlantic Canada's Census Divisions, 2001



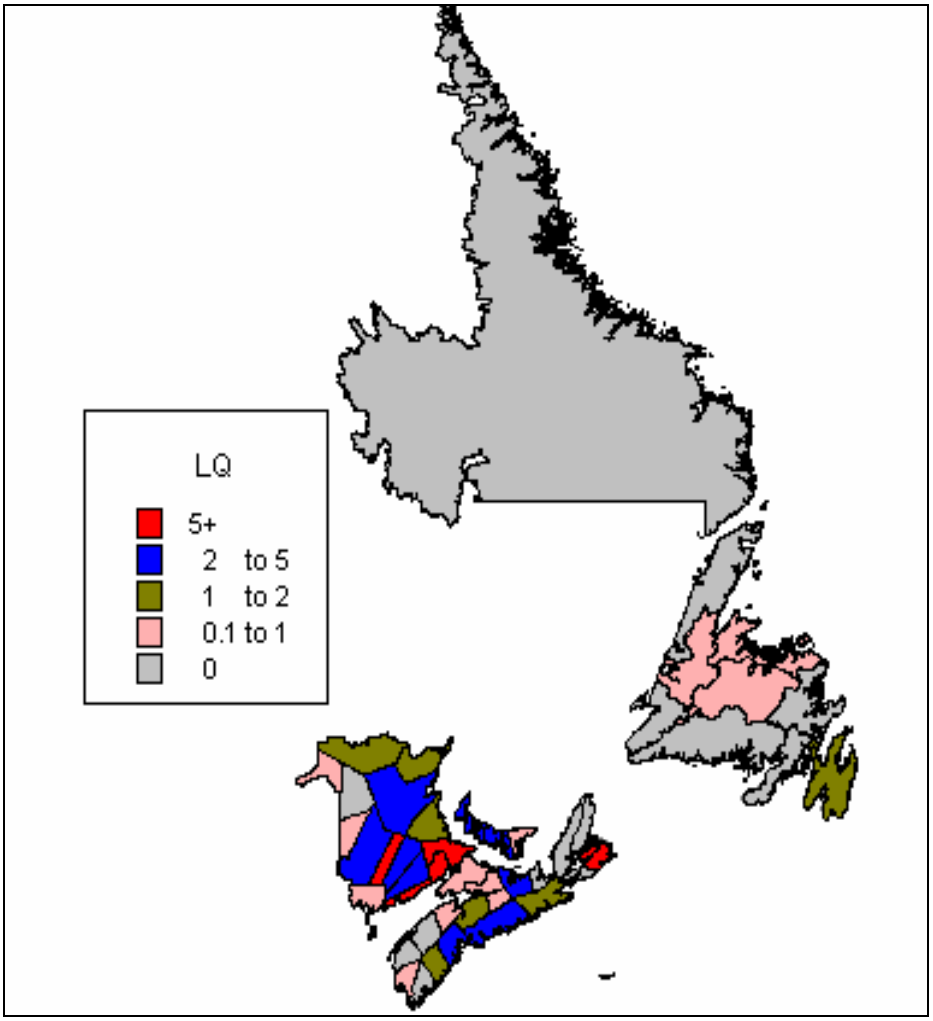
Map 6.20

Location Quotients: Professional, Scientific, and Technical Services (541), Atlantic Canada's Census Divisions, 2001



Map 6.21

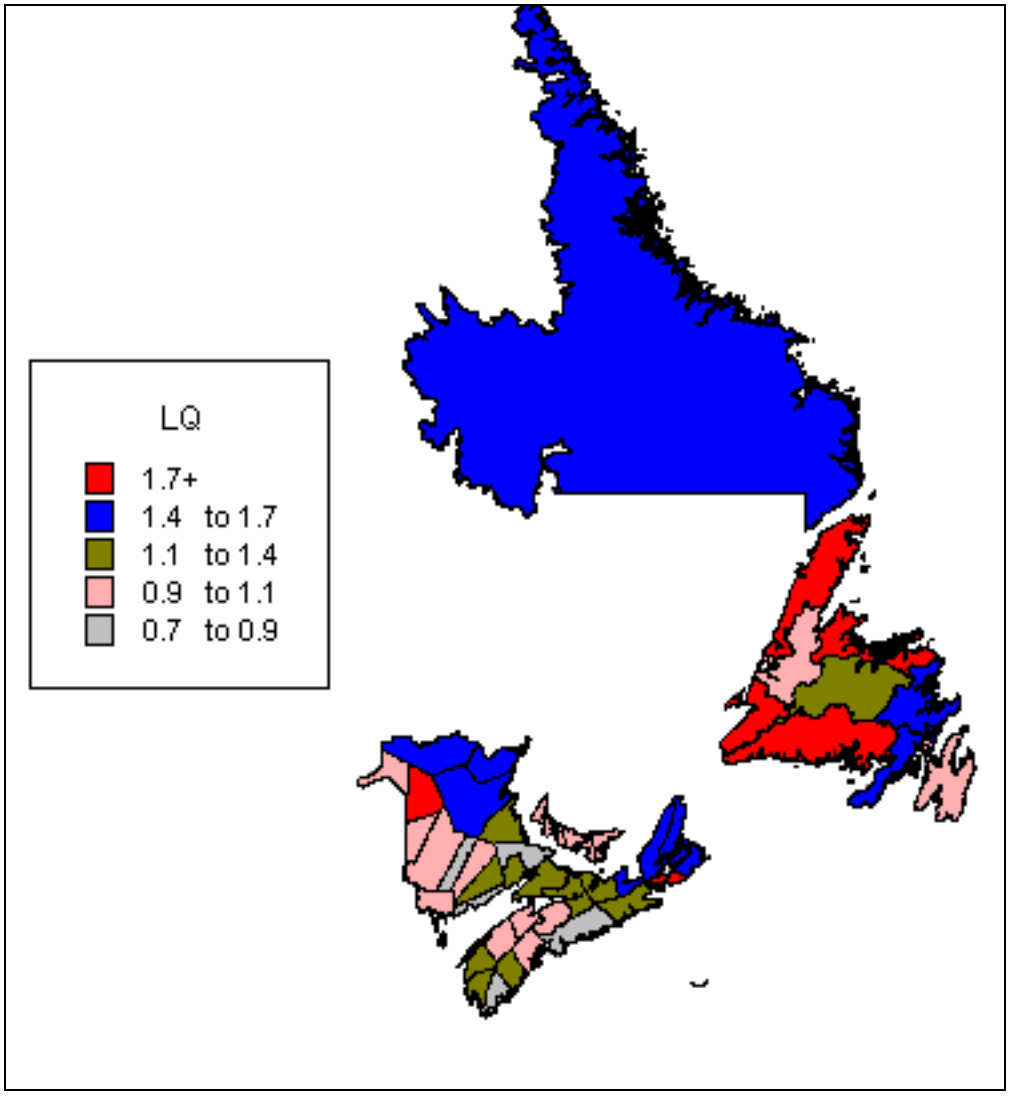
Location Quotients: Business Support Services (5614), Atlantic Canada's Census Divisions, 2001



We conclude this section by focusing on a few government-related sectors. First, for elementary and secondary schools, one might think that most regions would have location quotients close to 1. However, this is not the case for several regions of Atlantic Canada (see map 6.22). These results may not be a reflection of the relatively high employment in this sector but rather a consequence of the relative weakness of the overall regional economy, which causes the location quotients for sectors such as elementary and secondary schools — sectors that are not market driven but population/public policy driven — to be higher. The same is probably true for hospitals (see map 6.23), although in that case it is more feasible to have a relatively higher concentration of employment in some regions.

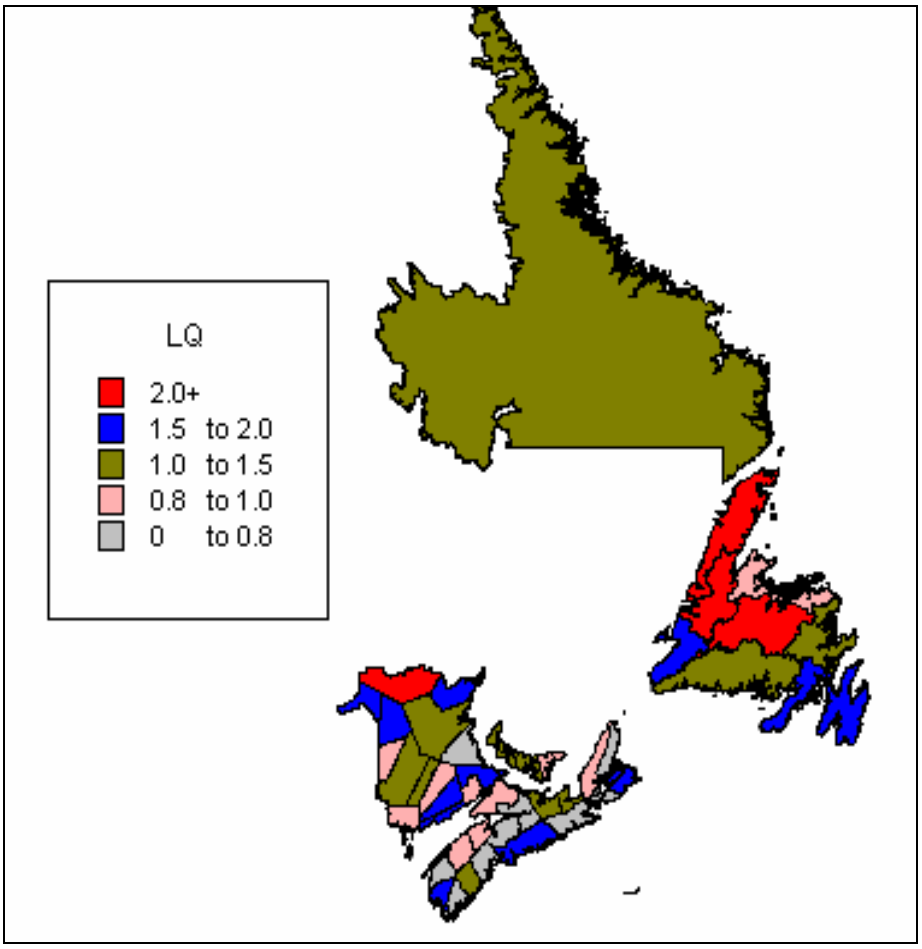
Map 6.22

Location Quotients: Elementary and Secondary Schools (6111), Atlantic Canada's Census Divisions, 2001



Map 6.23

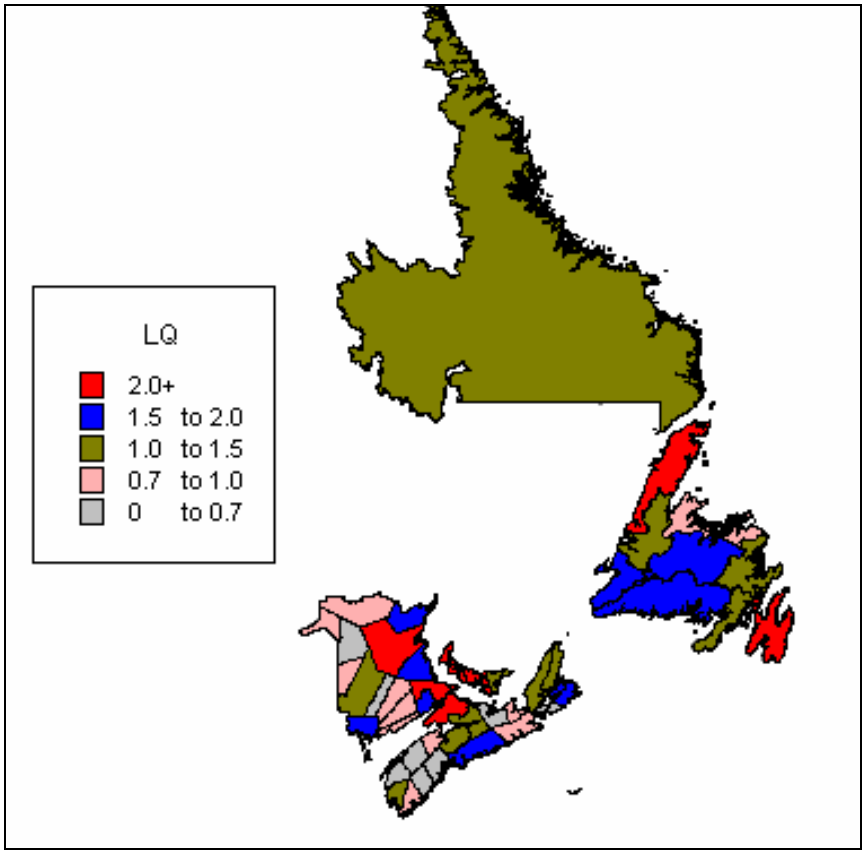
Location Quotients: Hospitals (622), Atlantic Canada's Census Divisions, 2001



Finally, we have public administration employment, which we will analyse in greater depth in chapter 7. For the sector federal government public administration — other than defence services (see map 6.24), we have high location quotients in most urban regions and in a few rural ones (e.g., PEI-Prince, with its GST centre). Provincial public administration employment, for its part, has high location quotients in provincial capitals and in adjacent areas (see map 6.25). The exception is Halifax, where even though the location quotient is above 1, it is not as high as in other provincial capitals of the region. This reflects the diversity of employment in the Nova Scotia capital.

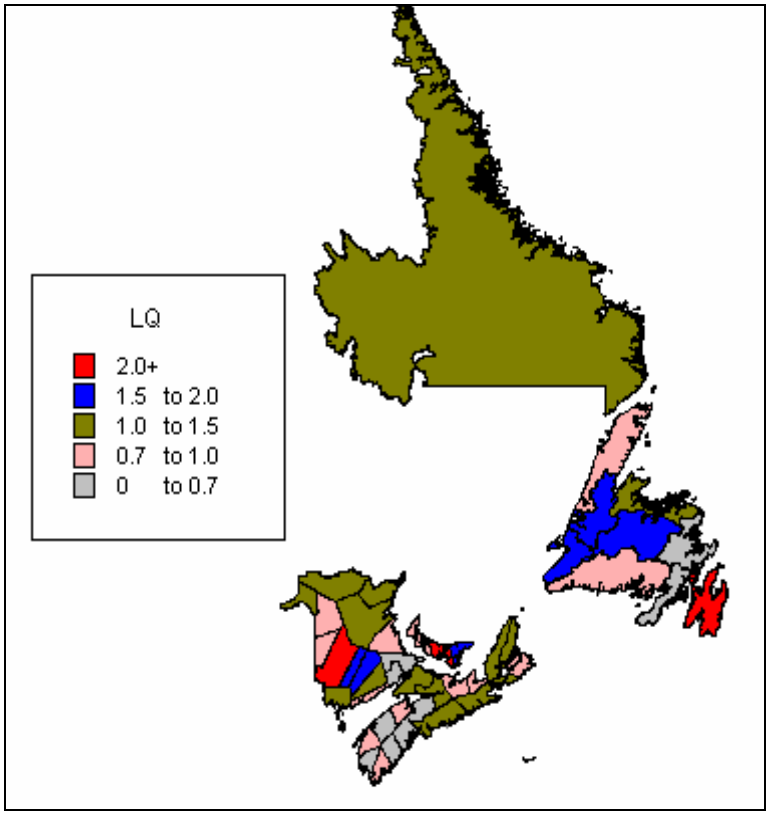
Map 6.24

Location Quotients: Federal Government Public Administration – Other Than Defence Services (9112–9119), Atlantic Canada's Census Divisions, 2001



Map 6.25

Location Quotients: Provincial Public Administration (912), Atlantic Canada's Census Divisions, 2001



From Location Quotients to Clusters

In the previous section, we presented results of location quotients for various sectors. We will now consider what inferences can be drawn from those results to better understand the presence of actual or potential clusters in Atlantic Canada.

Clusters have indeed been an important component of recent thinking about economic development (e.g., Bekar and Lipsey 2002; Gibbs and Bernat 1997; Munnich, Schrock, and Cook 2002; Nordicity Group et al. 1997; Porter 1990 and 1998; Porter et al. 2001 and 2004; Scorsone 2002). Bekar and Lipsey (2002, 63) define clusters "as a large regional grouping of geographically proximate innovative firms, where those firms have strong linkages to local educational and research bodies, government laboratories, financial institutions, or other elements of the business infrastructure, and to each other."

In the context of the present study, we do not have all the elements necessary to identify actual or potential clusters based on characteristics such as those presented by Bekar and Lipsey. Nevertheless, we do have information which allows us to identify sectors with a relatively high level of geographical concentration. That identification is based on employment as compared to the national average and as measured by the location quotient. However, the ultimate identification of these as clusters would require further analysis.

We must keep in mind that a high location quotient does not automatically denote the presence of a cluster. While a high location quotient should be a characteristic of a cluster, it does not have to be. Other features such as the following are also necessary: the presence of relatively large firms, R & D capacity, relative proximity to suppliers, access to international markets, etc.

Building upon the results of the previous section on location quotients, we present in this section results based on the following methodology. We first identify all four-digit (NAICS) levels with a location quotient above 10. We then looked at actual employment, eliminating sectors with less than two hundred jobs even if the location quotient was above 10. This was followed by an analysis of sectors with a location quotient between 5 and 10. We also added sectors with a minimum of four hundred jobs. We then looked at adjacent CDs or related sectors to identify possible *spill-overs* of these clusters. For those "supporting actors," the threshold was lowered. Among the reasons for including these spill-overs are that we are measuring location of residence, not of employment, the possible presence of smaller units of production in the cluster, in neighbouring CDs and the presence of possible local suppliers. Following are the results of this analysis. Each warrants further analysis before concluding that we have indeed identified a cluster. Furthermore, our methodology does not preclude the existence of clusters which are not included in the following tables (see tables 6.2 to 6.32).

Table 6.2

Forest Sector Potential Clusters, Central Newfoundland and Labrador, 2001

1133 – Logging		
Census Division	**LQ**	**Jobs**
NL4	1.38	25
NL5	3.33	145
NL6	2.09	85
NL7	1.14	40
NL8	4.39	140
NL9	5.34	90
1153 – Support Activities for Forestry		
Census Division	**LQ**	**Jobs**
NL4	3.15	25
NL5	2.88	55
3211 – Sawmills and Wood Preservation		
Census Division	**LQ**	**Jobs**
NL5	1.22	90
NL6	1.09	75
NL7	2.52	150
NL8	1.20	65
NL9	3.50	100
3221 – Pulp, Paper and Paperboard Mills		
Census Division	**LQ**	**Jobs**
NL4	11.03	305
NL5	11.58	770
NL6	9.65	600

Table 6.3

Forest Sector Potential Clusters, Eastern Nova Scotia, 2001

1133 – Logging		
Census Division	**LQ**	**Jobs**
Inverness	5.17	115
Victoria	2.77	20
Cape Breton	0.65	70
Antigonish	6.01	150
Richmond	5.19	50
1153 – Support Activities for Forestry		
Census Division	**LQ**	**Jobs**
Cape Breton	1.07	50
Antigonish	16.01	175
3211 – Sawmills and Wood Preservation		
Census Division	**LQ**	**Jobs**
Cape Breton	0.11	20
Antigonish	0.35	15
3221 – Pulp, Paper and Paperboard Mills		
Census Division	**LQ**	**Jobs**
Inverness	14.29	485
Cape Breton	0.21	35
Antigonish	3.67	140
Richmond	12.58	185

Table 6.4

Forest Sector Potential Clusters, Southwest Nova Scotia, 2001

1133 – Logging		
Census Division	**LQ**	**Jobs**
Queens	5.32	70
Shelburne	0.96	20
Lunenburg	6.30	395
Annapolis	9.29	235
1153 – Support Activities for Forestry		
Census Division	**LQ**	**Jobs**
Shelburne	3.29	30
Lunenburg	2.00	55
Annapolis	1.81	20
3211 – Sawmills and Wood Preservation		
Census Division	**LQ**	**Jobs**
Queens	8.52	190
Shelburne	0.71	25
Lunenburg	2.59	275
Annapolis	1.05	45
3212 – Veneer, Plywood and Engineered Wood Product Manufacturing		
Census Division	**LQ**	**Jobs**
Queens	2.83	20
Lunenburg	7.42	250
3221 – Pulp, Paper and Paperboard Mills		
Census Division	**LQ**	**Jobs**
Queens	19.93	400
Lunenburg	0.57	55

Table 6.5

Forest Sector Potential Clusters, South-Central New Brunswick, 2001

1133 – Logging		
Census Division	**LQ**	**Jobs**
Queens	7.86	110
Charlotte	2.65	90
York	2.48	325
Kings	4.51	405
Saint John	1.40	140
1153 – Support Activities for Forestry		
Census Division	**LQ**	**Jobs**
Queens	14.68	90
Charlotte	2.69	40
York	4.80	275
Kings	1.27	50
Saint John	0.57	25
3211 – Sawmills and Wood Preservation		
Census Division	**LQ**	**Jobs**
Queens	18.32	435
Charlotte	1.91	110
York	1.62	360
Kings	1.48	225
Saint John	0.12	20

3212 – Veneer, Plywood and Engineered Wood Product Manufacturing		
Census Division	**LQ**	**Jobs**
Charlotte	17.23	150
York	1.78	125
3221 – Pulp, Paper and Paperboard Mills		
Census Division	**LQ**	**Jobs**
Charlotte	2.89	150
York	1.65	330
Kings	3.46	475
Saint John	3.33	510

Table 6.6

Forest Sector Potential Clusters, Northern New Brunswick, 2001

1133 – Logging		
Census Division	**LQ**	**Jobs**
Madawaska	5.45	260
Restigouche	5.53	215
Carleton	4.52	175
Northumberland	5.05	285
Gloucester	2.24	220
Victoria	5.92	145
1153 – Support Activities for Forestry		
Census Division	**LQ**	**Jobs**
Madawaska	5.99	125
Restigouche	2.94	50
Carleton	4.43	75
Northumberland	6.28	155
Gloucester	1.28	55
Victoria	8.39	90
3211 – Sawmills and Wood Preservation		
Census Division	**LQ**	**Jobs**
Madawaska	11.32	915
Restigouche	13.64	900
Carleton	7.84	515
Northumberland	4.60	440
Gloucester	1.65	275
Victoria	5.89	245
3212 – Veneer, Plywood and Engineered Wood Product Manufacturing		
Census Division	**LQ**	**Jobs**
Madawaska	2.73	70
Northumberland	11.55	350
3221 – Pulp, Paper and Paperboard Mills		
Census Division	**LQ**	**Jobs**
Madawaska	9.14	665
Restigouche	9.93	590
Carleton	1.27	75
Northumberland	12.02	1035
Gloucester	2.47	370
Victoria	0.80	30

Table 6.7

Fisheries Potential Clusters, Coastal Newfoundland and Labrador, 2001

1141 – Fishing		
Census Division	**LQ**	**Jobs**
NL1	8.88	1780
NL2	58.28	960
NL3	60.05	645
NL4	32.11	385
NL5	7.63	220
NL7	25.15	585
NL8	35.79	755
NL9	58.71	655
3117 – Seafood Product Preparation and Packaging		
Census Division	**LQ**	**Jobs**
NL1	11.37	2320
NL2	93.34	1565
NL3	28.81	315
NL4	2.87	35
NL5	8.52	250
NL7	54.27	1285
NL8	25.61	550
NL9	55.48	630

Table 6.8

Fisheries Potential Clusters, Prince Edward Island, 2001

1141 – Fishing		
Census Division	**LQ**	**Jobs**
Kings	64.00	1115
Queens	8.06	555
Prince	10.53	1705
3117 – Seafood Product Preparation and Packaging		
Census Division	**LQ**	**Jobs**
Kings	54.98	975
Queens	3.35	235
Prince	20.48	840

Table 6.9

Fisheries Potential Clusters, Cape Breton, 2001

1141 – Fishing		
Census Division	**LQ**	**Jobs**
Inverness	33.31	490
Cape Breton	7.75	550
Victoria	69.02	330
Richmond	12.55	80
3117 – Seafood Product Preparation and Packaging		
Census Division	**LQ**	**Jobs**
Inverness	13.69	205
Cape Breton	5.89	425
Victoria	14.38	70
Richmond	32.36	210

Table 6.10

Fisheries Potential Clusters, Northeast Nova Scotia, 2001

1141 – Fishing		
Census Division	**LQ**	**Jobs**
Pictou	10.86	410
Guysborough	36.02	240
Antigonish	15.74	260
Cumberland	5.06	130
Halifax	1.44	520
3117 – Seafood Product Preparation and Packaging		
Census Division	**LQ**	**Jobs**
Pictou	4.29	165
Guysborough	72.26	490
Antigonish	2.38	40
Cumberland	1.91	50
Halifax	0.99	365

Table 6.11

Fisheries Potential Clusters, Southwest Nova Scotia, 2001

1141 – Fishing		
Census Division	**LQ**	**Jobs**
Shelburne	126.81	1750
Yarmouth	69.33	1580
Digby	40.46	650
Annapolis	15.53	260
Lunenburg	18.80	780
Queens	24.71	215
3117 – Seafood Product Preparation and Packaging		
Census Division	**LQ**	**Jobs**
Shelburne	63.36	890
Yarmouth	35.35	820
Digby	42.80	700
Annapolis	6.46	110
Lunenburg	16.57	700
Queens	21.45	190

Table 6.12

Fisheries Potential Clusters, Southwest New Brunswick, 2001

1141 – Fishing		
Census Division	**LQ**	**Jobs**
Charlotte	24.87	560
Saint John	2.18	145
3117 – Seafood Product Preparation and Packaging		
Census Division	**LQ**	**Jobs**
Charlotte	46.68	1070
Saint John	2.37	160

Table 6.13

Fisheries Potential Clusters, Eastern New Brunswick, 2001

1141 – Fishing		
Census Division	**LQ**	**Jobs**
Gloucester	27.22	1770
Northumberland	14.60	545
Kent	14.51	360
Westmorland	1.48	180
3117 – Seafood Product Preparation and Packaging		
Census Division	**LQ**	**Jobs**
Gloucester	37.77	2500
Northumberland	10.79	410
Kent	28.30	715
Westmorland	9.55	1180

Table 6.14

Mining Potential Clusters, Labrador, 2001

2122 – Metal Ore Mining		
Census Division	**LQ**	**Jobs**
NL10	92.71	2040
2131 – Support Activities for Mining and Gas Extraction		
Census Division	**LQ**	**Jobs**
NL10	0.72	30

Table 6.15

Mining Potential Clusters, Cape Breton, 2001

2121 – Coal Mining		
Census Division	**LQ**	**Jobs**
Cape Breton	34.59	495
2123 – Non-Metallic Mineral Mining and Quarrying		
Census Division	**LQ**	**Jobs**
Cape Breton	0.49	25
Victoria	7.33	25
Inverness	13.34	140
2131 – Support Activities for Mining and Gas Extraction		
Census Division	**LQ**	**Jobs**
Cape Breton	0.35	45

Table 6.16

Mining Potential Clusters, Central Nova Scotia, 2001

2123 – Non-Metallic Mineral Mining and Quarrying		
Census Division	**LQ**	**Jobs**
Cumberland	14.18	260
Antigonish	2.97	35
Guysborough	14.73	70
Hants	7.43	190

Table 6.17

Mining Potential Clusters, Northeast New Brunswick, 2001

2122 – Metal Ore Mining		
Census Division	**LQ**	**Jobs**
Gloucester	9.72	610
Restigouche	1.21	30
Northumberland	1.11	40
2123 – Non-Metallic Mineral Mining and Quarrying		
Census Division	**LQ**	**Jobs**
Gloucester	8.30	385
Northumberland	9.01	240
2131 – Support Activities for Mining and Gas Extraction		
Census Division	**LQ**	**Jobs**
Gloucester	1.55	185
Northumberland	0.58	40
3314 – Non-Ferrous Metal (except Aluminum) Production and Processing		
Census Division	**LQ**	**Jobs**
Gloucester	15.70	500
Restigouche	14.27	180

Table 6.18

Food (Other Than Seafood) Potential Clusters, Prince Edward Island, 2001

3111 – Animal Food Manufacturing		
Census Division	**LQ**	**Jobs**
Kings	1.39	35
Queens	2.72	40
3114 – Fruit and Vegetable Preserving and Specialty Food Manufacturing		
Census Division	**LQ**	**Jobs**
Kings	6.36	295
Queens	33.69	915
Prince	3.83	45
3115 – Dairy Product Manufacturing		
Census Ddivision	**LQ**	**Jobs**
Kings	2.71	135
Queens	4.63	135
Prince	2.38	30
3116 – Meat Product Manufacturing		
Census Division	**LQ**	**Jobs**
Kings	0.93	125
Queens	0.25	20

Table 6.19

Food (Other Than Seafood) Potential Clusters, Central Nova Scotia, 2001

3111 – Animal Food Manufacturing		
Census Division	**LQ**	**Jobs**
Kings	5.51	105
Pictou	2.54	35
Colchester	8.06	130
3114 – Fruit and Vegetable Preserving and Specialty Food Manufacturing		
Census Division	**LQ**	**Jobs**
Kings	3.69	130
Cumberland	22.52	390
3115 – Dairy Product Manufacturing		
Census Division	**LQ**	**Jobs**
Kings	1.06	40
Halifax	0.86	225
Pictou	2.01	55
Colchester	3.13	100
3116 – Meat Product Manufacturing		
Census Division	**LQ**	**Jobs**
Kings	11.00	1125

Table 6.20

Food (Other Than Seafood) Potential Clusters, Northwest New Brunswick, 2001

3114 – Fruit and Vegetable Preserving and Specialty Food Manufacturing		
Census Division	**LQ**	**Jobs**
Carleton	61.68	1065
Victoria	37.95	415
Madawaska	9.88	210
3116 – Meat Product Manufacturing		
Census Division	**LQ**	**Jobs**
Madawaska	3.48	215

Table 6.21

Textile Potential Clusters, Central Nova Scotia, 2001

3132 – Fabric Mills		
Census Division	**LQ**	**Jobs**
Colchester	13.44	305
Annapolis	22.09	190
3141 – Textile Furnishings Mills		
Census Division	**LQ**	**Jobs**
Colchester	16.29	250
3152 – Cut and Sew Clothing Manufacturing		
Census Division	**LQ**	**Jobs**
Colchester	4.19	540

Table 6.22

Textile Potential Clusters, Northwest New Brunswick, 2001

3131 – Fibre, Yarn, and Thread Mills		
Census Division	**LQ**	**Jobs**
Restigouche	29.43	115
3132 – Fabric Mills		
Census Division	**LQ**	**Jobs**
Madawaska	3.08	50
3152 – Cut and Sew Clothing Manufacturing		
Census Division	**LQ**	**Jobs**
Madawaska	5.59	515

Table 6.23

Energy Potential Clusters, Coastal Newfoundland and Labrador, 2001

2131 – Support Activities for Mining and Oil and Gas Extraction		
Census Division	**LQ**	**Jobs**
NL1	3.66	375
NL2	4.75	40
NL7	21.03	250
3241 – Petroleum and Coal Products Manufacturing		
Census Division	**LQ**	**Jobs**
NL1	2.2	810
NL6	0.91	45
NL7	0.59	25
NL8	1.03	40

Table 6.24

Energy Potential Clusters, Southwest New Brunswick, 2001

2131 – Support Activities for Mining and Oil and Gas Extraction		
Census Division	**LQ**	**Jobs**
Saint John	15.48	525
Kings	13.33	405
3241 – Petroleum and Coal Products Manufacturing		
Census Division	**LQ**	**Jobs**
Saint John	0.25	30
Kings	0.50	55

Table 6.25

Rubber Potential Clusters, Central Nova Scotia, 2001

3262 – Rubber Product Manufacturing		
Census Division	**LQ**	**Jobs**
Lunenburg	31.82	1115
Kings	16.67	735
Pictou	43.14	1375
Queens	14.29	105
Annapolis	5.66	80

Table 6.26

Architectural and Structural Metals Manufacturing Potential Clusters, Southeast New Brunswick, 2001

3323 – Architectural and Structural Metals Manufacturing Potential		
Census Division	**LQ**	**Jobs**
Kent	11.49	495
Westmorland	1.66	350
Northumberland	1.39	90

Table 6.27

Electrical Equipment Manufacturing Potential Cluster, Central Nova Scotia, 2001

3353 – Electrical Equipment Manufacturing		
Census Division	**LQ**	**Jobs**
Cumberland	19.45	300

Table 6.28

Shipbuilding Potential Clusters, Coastal Newfoundland and Labrador, 2001

3366 – Ship and Boat Building		
Census Division	**LQ**	**Jobs**
NL1	8.27	705
NL2	30.71	215
NL3	5.48	25
NL7	30.34	300
NL8	17.85	160

Table 6.29

Shipbuilding Potential Clusters, Northeast Nova Scotia, 2001

3366 – Ship and Boat Building		
Census Division	**LQ**	**Jobs**
Pictou	50.87	560
Colchester	1.86	35
Halifax	2.54	390

Table 6.30

Shipbuilding Potential Clusters, Southwest Nova Scotia, 2001

3366 – Ship and Boat Building		
Census Division	**LQ**	**Jobs**
Shelburne	36.66	215
Yarmouth	12.39	120
Digby	27.09	185
Lunenburg	6.52	115

Table 6.31

Business Support Services (Including Call Centres) Potential Cluster, Cape Breton, 2001

5614 – Business Support Services		
Census Division	**LQ**	**Jobs**
Cape Breton	7.13	1285

Table 6.32

Business Support Services (Including Call Centres) Potential Clusters, South New Brunswick, 2001

5614 – Business Support Services		
Census Division	**LQ**	**Jobs**
Saint John	10.55	1780
Sunbury	8.27	540
Albert	9.99	670
Westmorland	5.86	1810
York	4.15	915
Kings	4.17	630
Northumberland	3.63	345

Concentration

The location quotient is a measure of *relative* employment concentration, the relative share of employment of a sector in a region compared to the relative share of employment of the same sector in a reference region. But there is also the *true* employment concentration, and that will now be analysed using two different approaches.

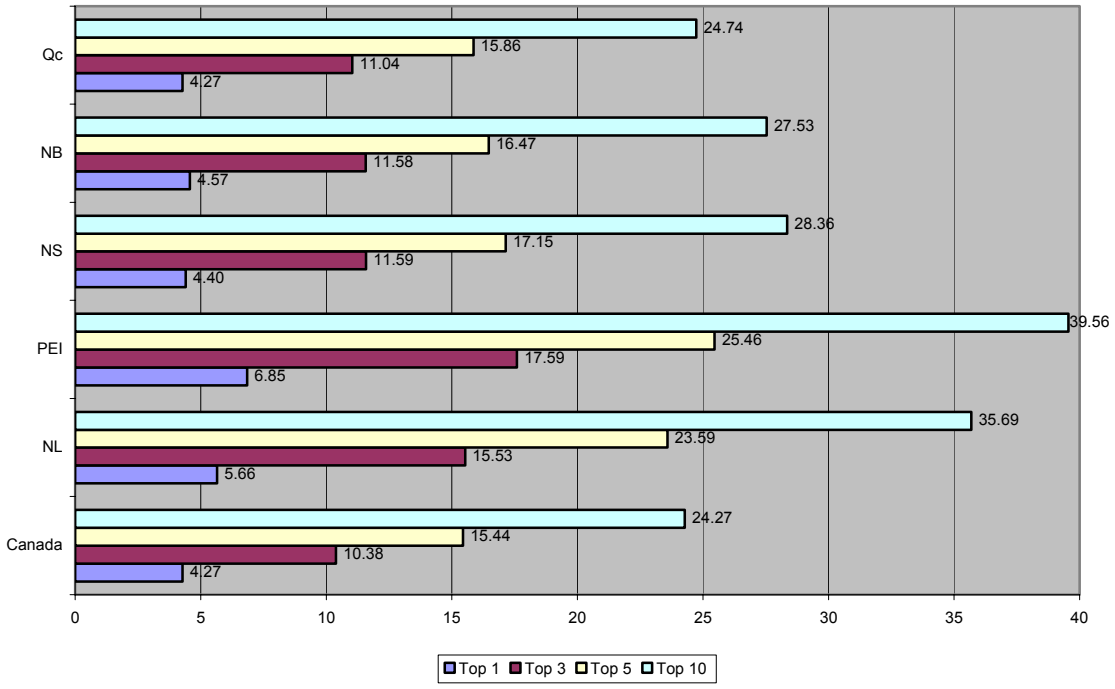
The first is simply to take the percentage of employment in the top sector and the top-three, top-five, and top-ten sectors in a given region. We do this by using four-digit NAICS categories. The second is the Herfindahl index. There are different variants of this index (e.g., Kim, Barkley, and Henry 2000, 238–39 or Clarke 1985, 14); however, we have adopted the one presented by Page and Beshiri (2003). They define it thus: "The sum of the squared employment shares of each industrial sector in a given community…. The sum varies from 0 (when a community has many industries, each with a small share of employment — high diversity) to 1 (when one industrial sector accounts for all the community's employment — complete specialization)" (Page and Beshiri 2003, 4). The Herfindahl index does not in itself give us much information; however, it is useful when we compare its evolution over time or between regions. We will use it for the latter. The principal difference between the two methods is that the first focuses on the relative importance of the most important sectors, while the second takes into account the relative importance of all sectors.

A final point before turning to our results: there is a tendency that the larger the population, the smaller the degree of concentration. CDs should therefore have a higher degree of concentration than provinces, and provinces than the country as a whole.

Focusing first on concentration measured as a proportion of employment in the top sector, we see that Prince Edward Island has the most concentrated economy in eastern Canada (see figure 6.1). Newfoundland and Labrador is not far behind, followed by New Brunswick and Nova Scotia. The Herfindahl index confirms these results.

Figure 6.1

Concentration of Economic Activity: Percentage of Employment in Most Important 4-Digit NAICS Sectors (Top 1, Top 3, Top 5, and Top 10), Canada, Atlantic Provinces, and Quebec, 2001

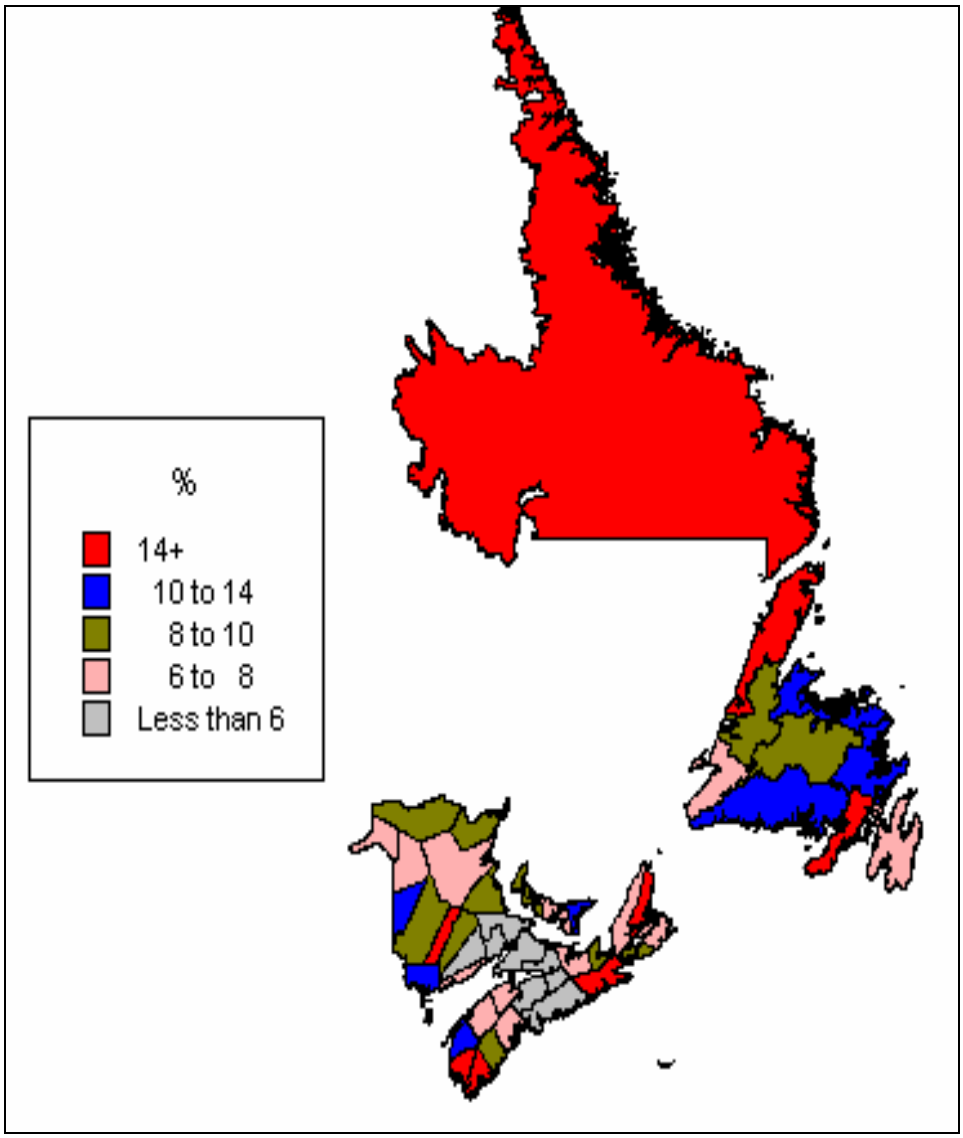


We now turn our attention to Atlantic Canada's CDs. Focusing first on the percentage of employment in the top sector (see map 6.26), two regions stand out: NB-Sunbury, with Defence services, and NS-Shelburne, with fishing. We also see that rural regions tend to have more concentrated employment than urban regions, especially in what might be called the Moncton-Halifax corridor.

Using three, five, and ten sectors changes the values, but does not significantly change the geographical landscape (see map 6.27). It seems clear that employment in rural regions is more concentrated than employment in urban regions and that the degree of concentration usually increases as one moves on the Ehrensaft typological ladder.

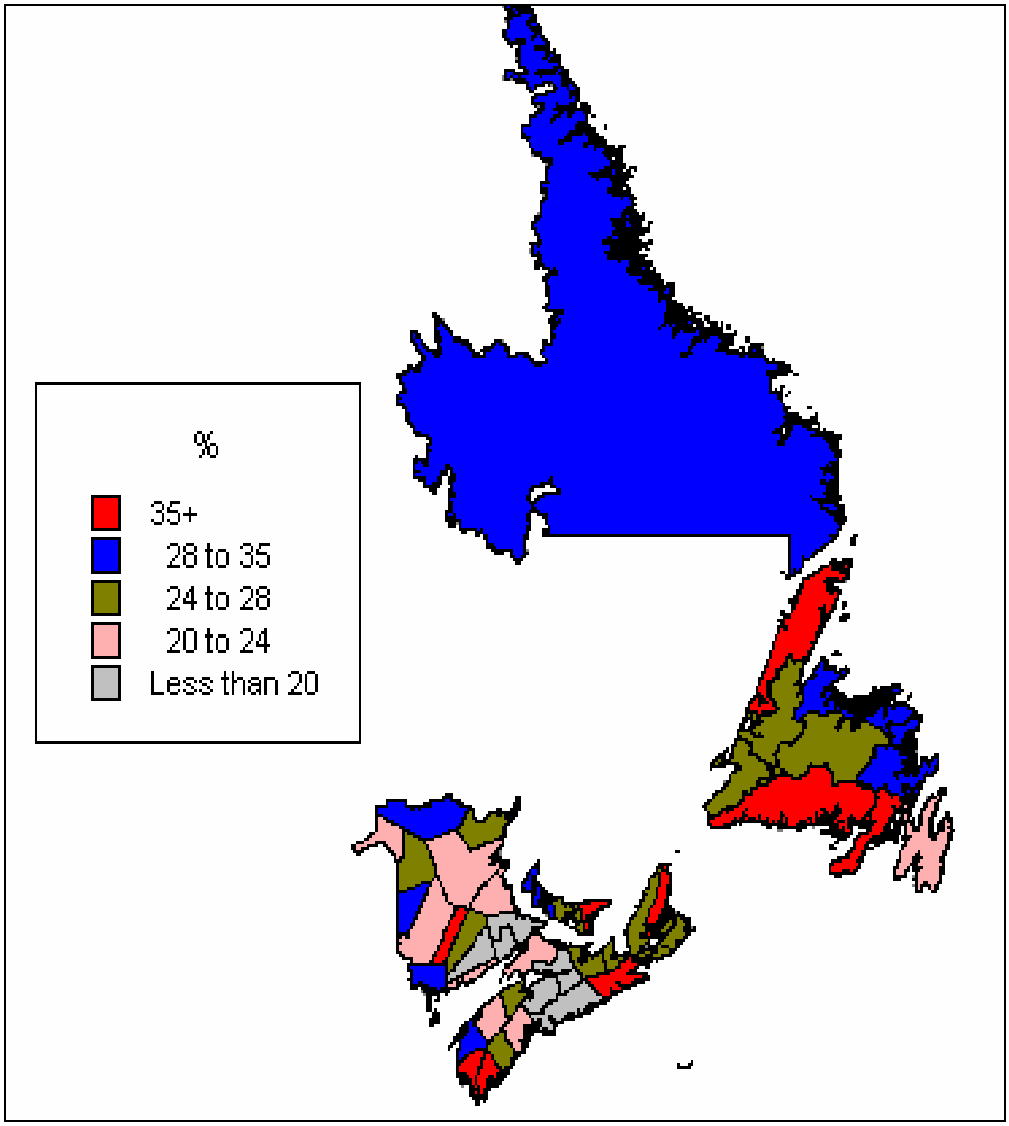
The Herfindahl index confirms our results (see map 6.28). Rural Atlantic Canada has employment more sectorally concentrated than urban Atlantic Canada.

Map 6.26
Percentage of Employment in the Most Important 4-Digit NAICS Sector, Atlantic Canada's Census Divisions, 2001



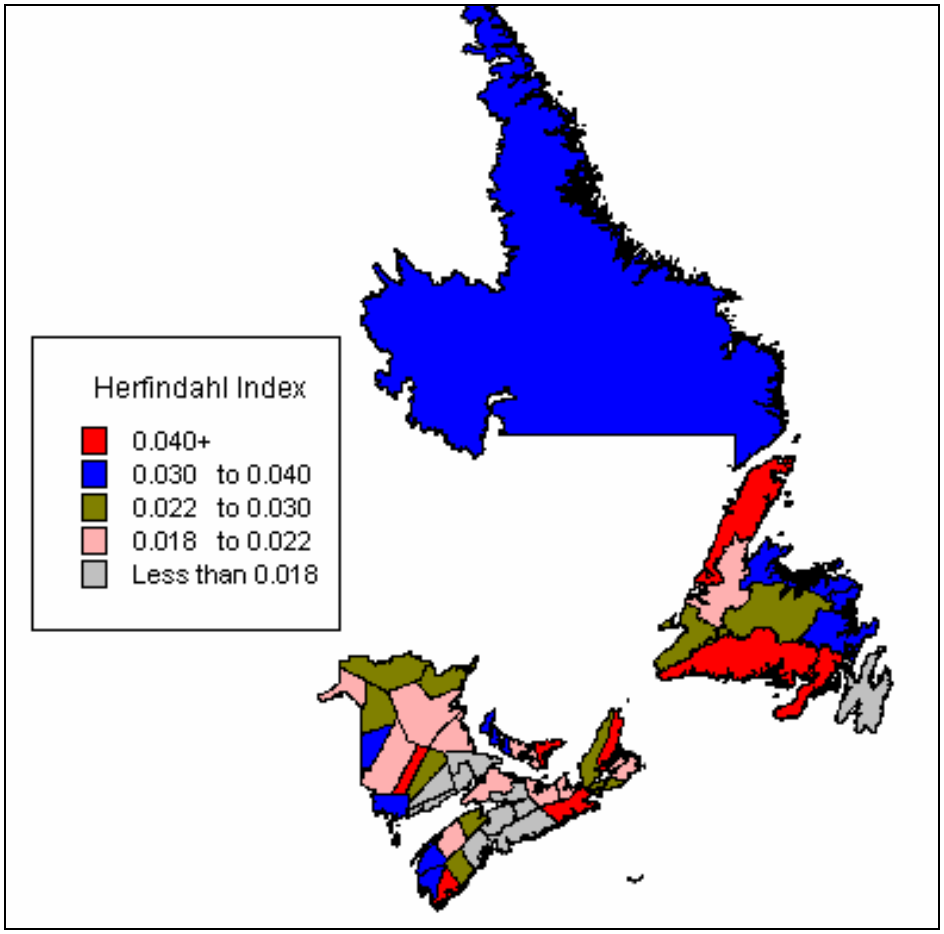
Map 6.27

Percentage of Employment in the Five Most Important 4-Digit NAICS Sectors, Atlantic Canada's Census Divisions, 2001



Map 6.28

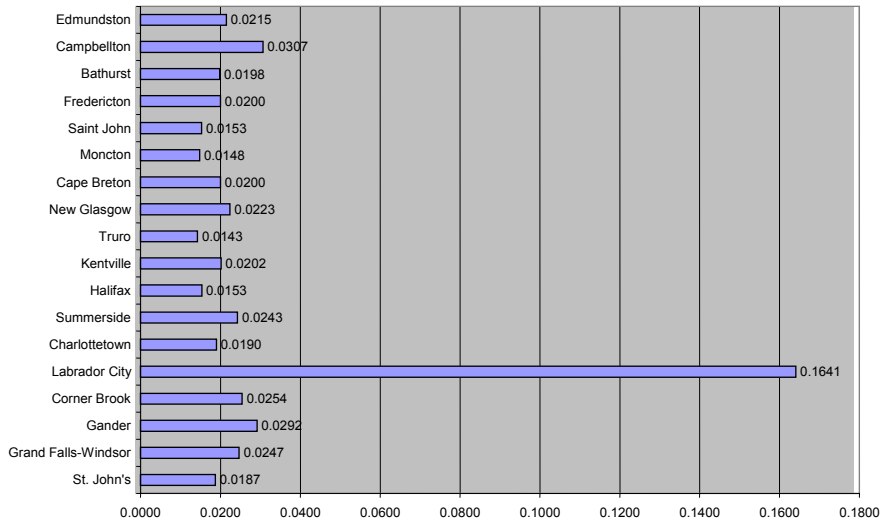
Herfindahl Index for 4-Digit NAICS Sectors, Atlantic Canada's Census Divisions, 2001



We conclude this section with a presentation of the levels of concentration for Atlantic Canada's agglomerations (see figure 6.2). The high degree of concentration of Labrador City (metal ore mining) is striking. What is also rather surprising is that five agglomerations have a higher Herfindahl index than their relevant CDs. These are Bathurst, Saint John, Kentville, Summerside, and Charlottetown.

Figure 6.2

Concentration of Economic Activity: Herfindahl Index for 4-Digit NAICS Sectors, Atlantic Canada's Urban Centres, 2001



The Knowledge Economy

We now follow APEC's lead and present the distribution of employment based on the degree of knowledge intensity. APEC adopted a classification used by Lee and Has, and we used APEC's classification to develop one that has been slightly modified (see table 6.33). There are weaknesses in this approach, however: "This classification system has become relatively well accepted, although it is far from perfect. For one, the methodology creates a large group of medium-knowledge industries which could usefully be further classified into medium-high and medium-low sectors. Lee and Has also concede that, while they explicitly targeted the knowledge-producing industries, their 'method invariably picked up some knowledge-using industries'" (Atlantic Provinces Economic Council 1999, 5–7). It nevertheless meets our objective in this case of illustrating the degree of knowledge intensity in Atlantic Canada's economy, with a special focus on its regions.

Table 6.33

Knowledge Intensity Grouping

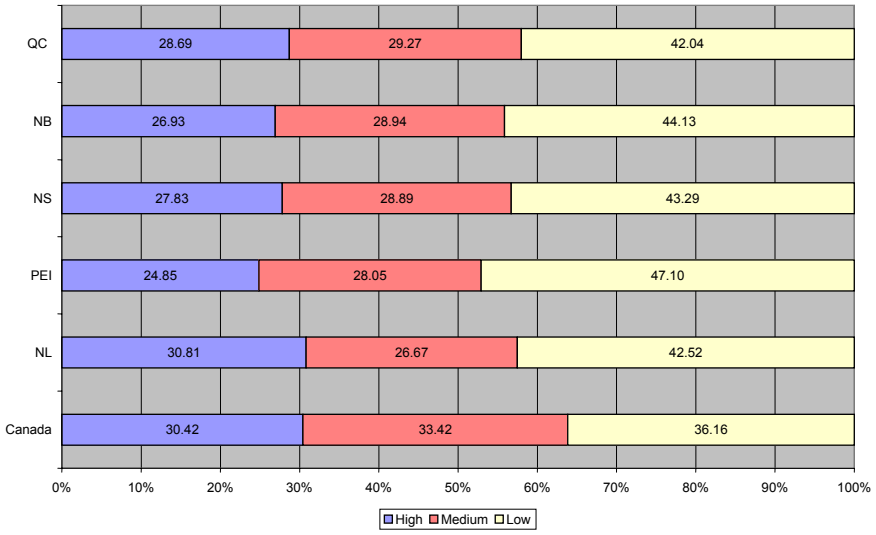
High-Knowledge Sectors	
Scientific and professional equipment	Communications
Electronics	Aircraft and parts
Computer and related services	Business machines
Engineering and scientific services	Pharmaceuticals and medicine
Electrical power	Chemical products
Machinery	Refined petroleum and coal products
Management consulting services	Educational services
Health and social services	Pipeline transportation
Other business services	
Medium-Knowledge Sectors	
Other transport equipment	Other electrical products
Primary metals (non-ferrous)	Textiles
Paper and allied products	Mining
Rubber	Plastics
Primary metals (ferrous)	Non-metallic mineral products
Wholesale trade	Crude oil and natural gas
Fabricated metal products	Motor vehicles and parts
Food	Beverages
Tobacco	Finance, insurance, and real estate
Other utilities	Mining services
Other services	Printing and publishing
Construction	Amusement and recreational services
Low-Knowledge Sectors	
Fishing and trapping	Other manufacturing products
Wood	Furniture and fixtures
Logging and forestry	Transportation
Storage and warehousing	Agriculture
Retail trade	Personal services
Quarries and sand pits	Accommodation and food services
Clothing	Leather

Source: Atlantic Provinces Economic Council (1999), 6.

Newfoundland and Labrador has a higher proportion of high-knowledge intensity than Canada as a whole (see figure 6.3). The other Atlantic provinces are below the national average in this category. All four provinces also trail the national average for medium-knowledge-intensity employment. The reverse is true for low-knowledge intensity.

Figure 6.3

Distribution of Employment Based on Knowledge Intensity, Canada, Atlantic Provinces, and Quebec, 2001

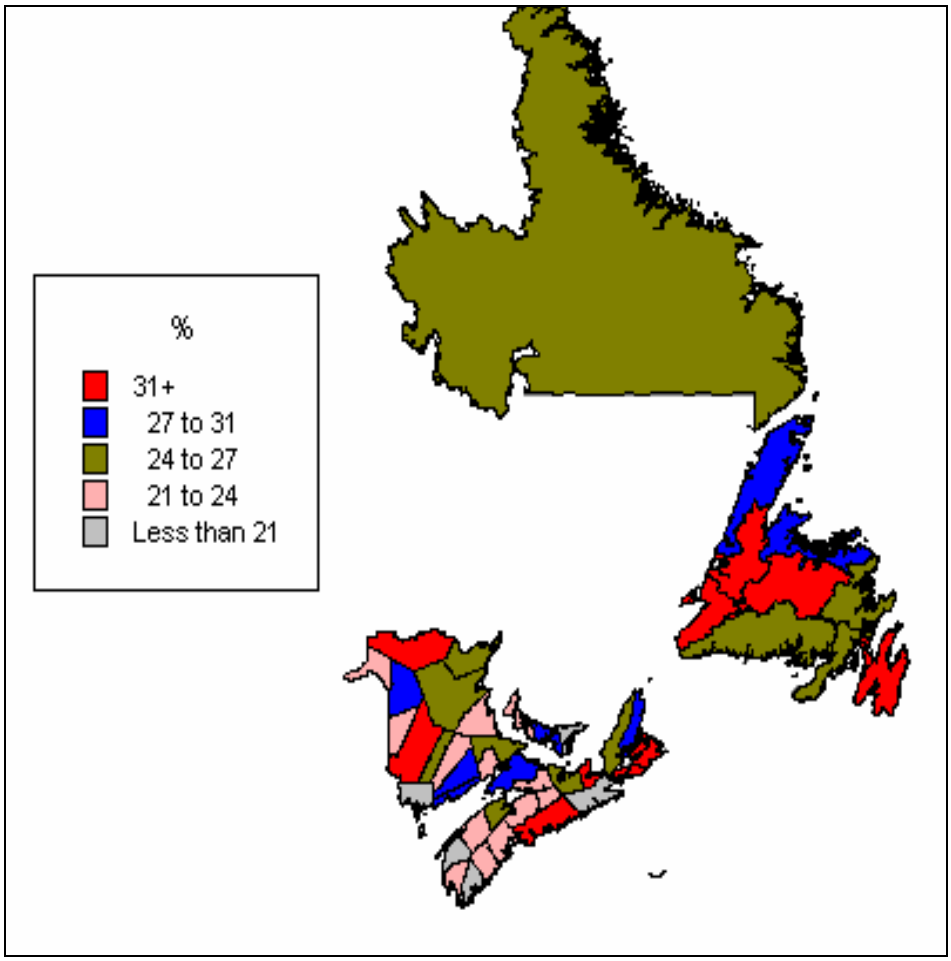


Turning to the region's CDs, we find that the leading high-knowledge regions are often, but not always, regions containing urban centres or located nearby (see map 6.29). The performance of Newfoundland and Labrador is remarkable in this regard, with three rural CDs amongst the region's leaders. Medium-knowledge-intensity employment is relatively important in the core of the Maritimes and in a few rural regions of Newfoundland and Labrador (see map 6.30). Finally, low-knowledge-intensity employment is usually concentrated in more rural regions (see map 6.31).

Comparing the relative performance of agglomerations with their relevant CDs indicates a trend of more knowledge intensity in urban regions. The trend does have exceptions, however. Examples of these are Moncton, Kentville, Labrador City, and Gander.

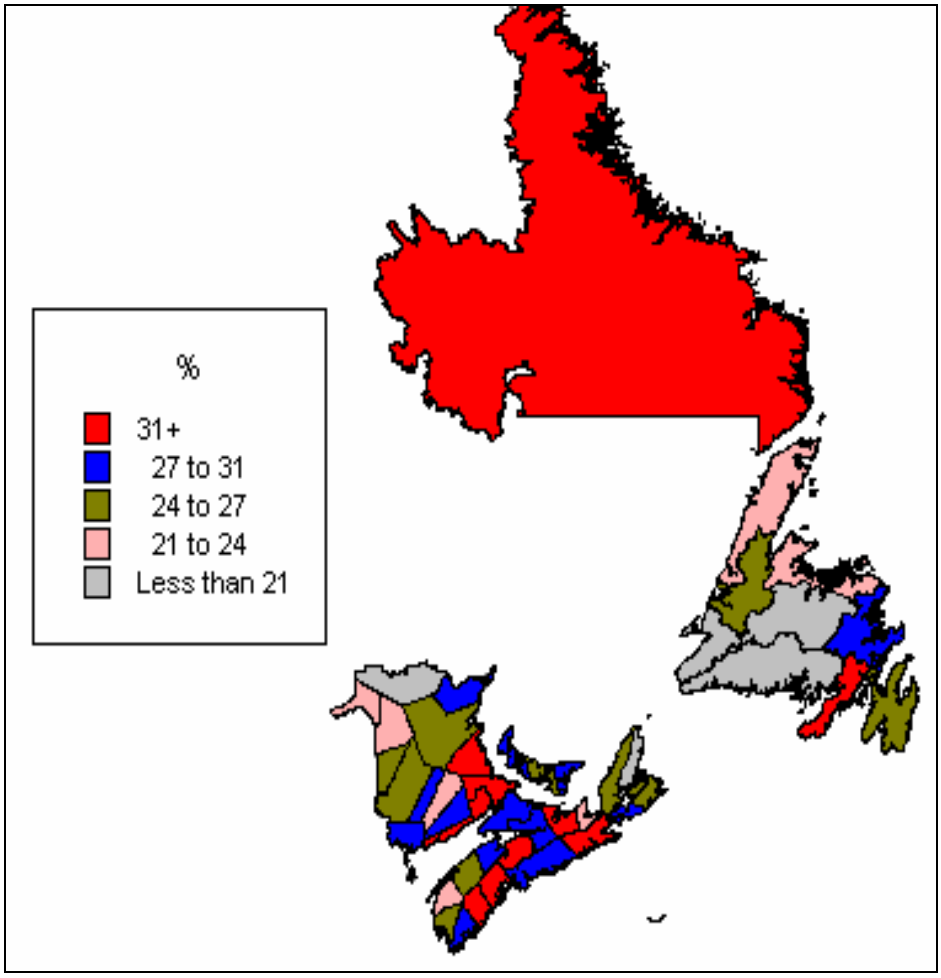
Map 6.29

Percentage of Employment in High-Knowledge-Intensity Industries, Atlantic Canada, 2001



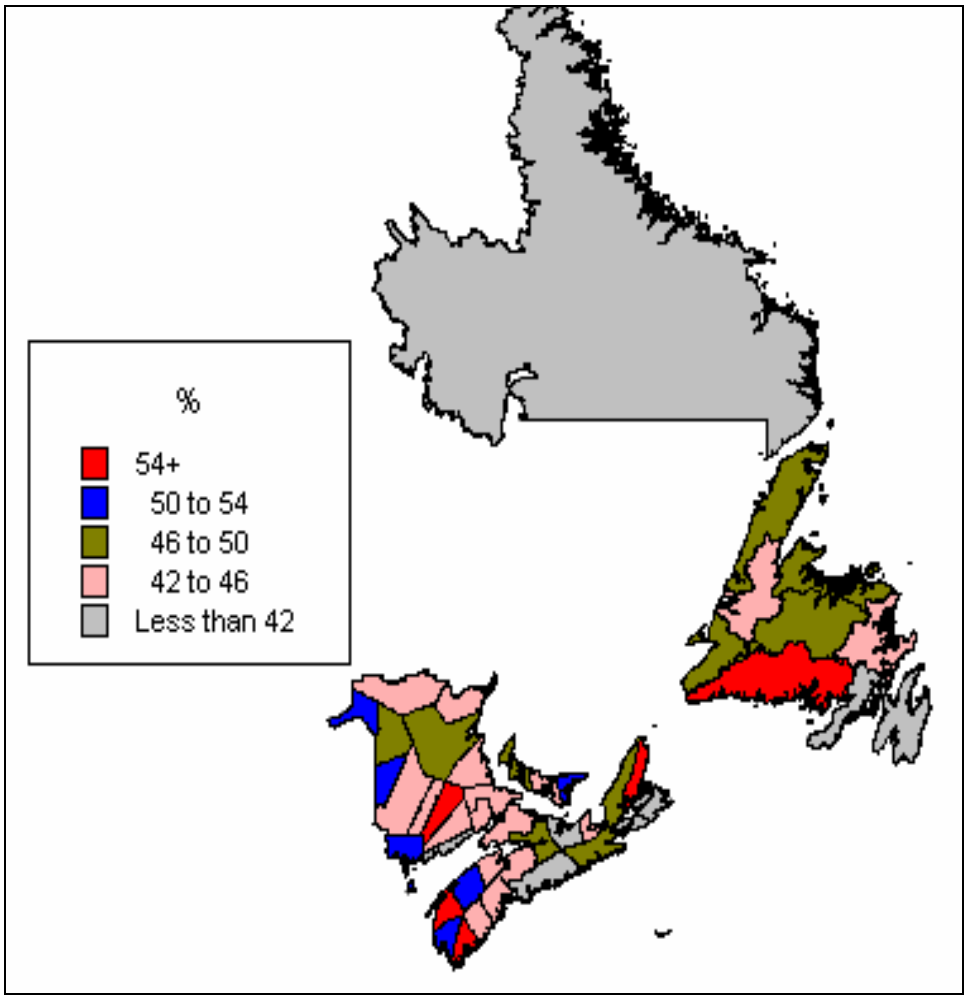
Map 6.30

Percentage of Employment in Medium-Knowledge-Intensity Industries, Atlantic Canada, 2001



Map 6.31

Percentage of Employment in Low-Knowledge-Intensity Industries, Atlantic Canada, 2001



Cyclical Sectors

We conclude this chapter with an analysis of the proportion of employment in cyclical and non-cyclical sectors in the various provinces and regions. We adopted the methodology used by Salem (2003) in his study of sensitivity to the business cycle of Canada's economic sectors. However, we made one modification to Salem's classification: we included the sector seafood product preparation and packaging with cyclical industries not necessarily to reflect its vulnerability to business cycles but to indicate the cyclical nature of the sector as a result of variable landings. The resulting classification is presented in table 6.34.

Table 6.34

Cyclical and Non-Cyclical Industries

Cyclical Industries
• Agriculture, forestry, fishing, and hunting
• Mining and support industry (except oil and gas)
• Construction industry
• Manufacturing industries (except food manufacturing[a] and computer and electronic product manufacturing)
• Wholesale and retail trade industry
• Transportation, warehousing, and storage (except pipeline transport)
• Postal services and couriers and messengers
• Motion picture and sound-recording industries
• Publishing, information, data-processing services
• Professional, scientific, and technical services
• Administrative, support, waste management
• Arts, entertainment, and recreation
• Accommodation and food services
• Other services (except public administration)
Non-Cyclical Industries
• Oil and gas extraction
• Utilities
• Food manufacturing
• Computer and electronic product manufacturing
• Pipeline transportation
• Broadcasting and telecommunications
• Finance, insurance, and real estate
• Educational services
• Health care and social assistance
• Public administration

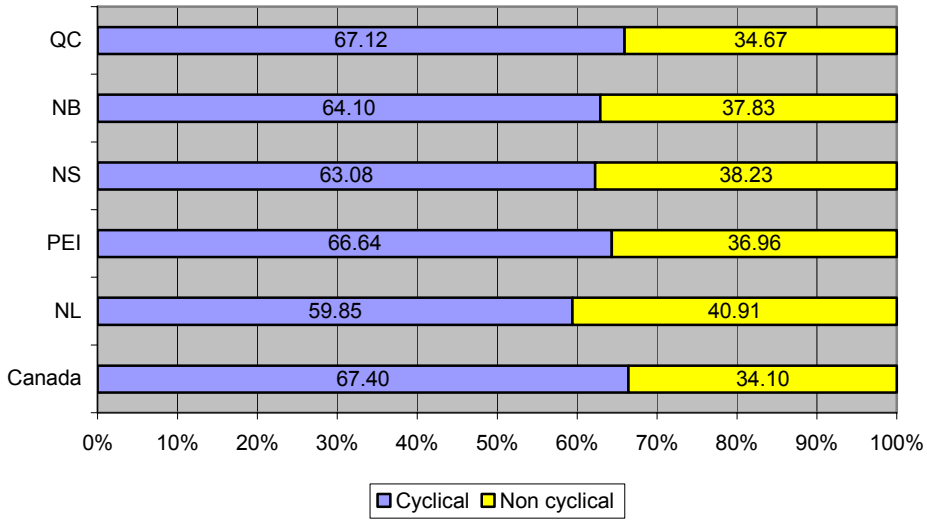
Source: Salem (2003), 9.

[a] We included seafood product preparation and packaging (3117) in cyclical industries to better reflect Atlantic Canada's reality.

It may be surprising to some but all four Atlantic provinces have a lower percentage of employment in cyclical industries — even including seafood product preparation and packaging — than Canada as a whole (see figure 6.4). Newfoundland has the least cyclical economy while Prince Edward Island has the most cyclical. This result of Newfoundland and Labrador may in part be explained by the relatively high proportion of government-related employment, which is non-cyclical. In the region's CDs, urban regions have generally less cyclical employment than rural regions (see map 6.32). This trend is also present in our analysis of the region's agglomerations; the few exceptions include Labrador City, Kentville, and New Glasgow (see figure 6.5).

Figure 6.4

Distribution of Employment Bbetween Cyclical and Non-Cyclical Industries, Canada, Atlantic Provinces, and Quebec, 2001



Map 6.32
Percentage of Employment in Cyclical Industries, Atlantic Canada's Census Divisions, 2001

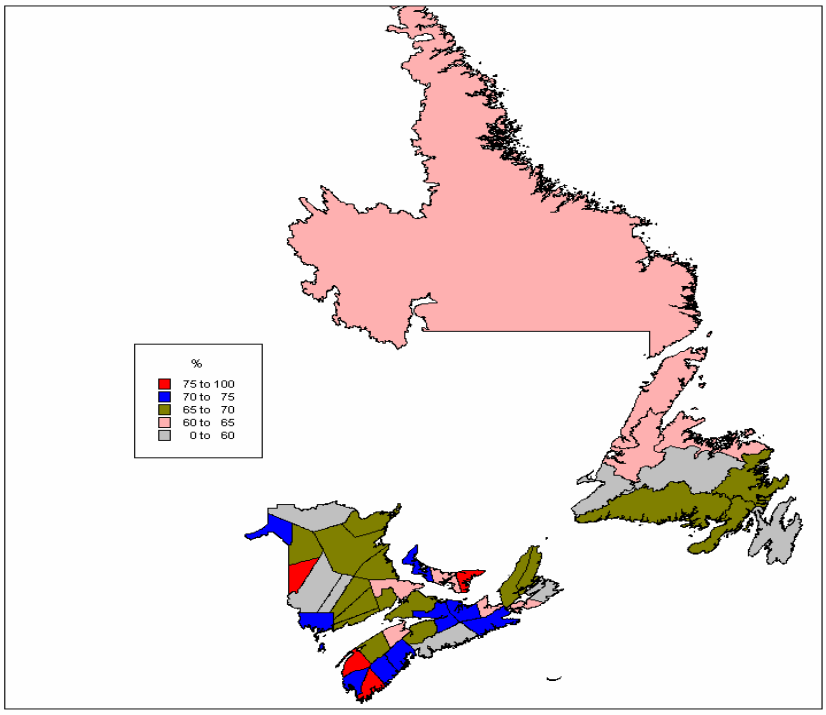
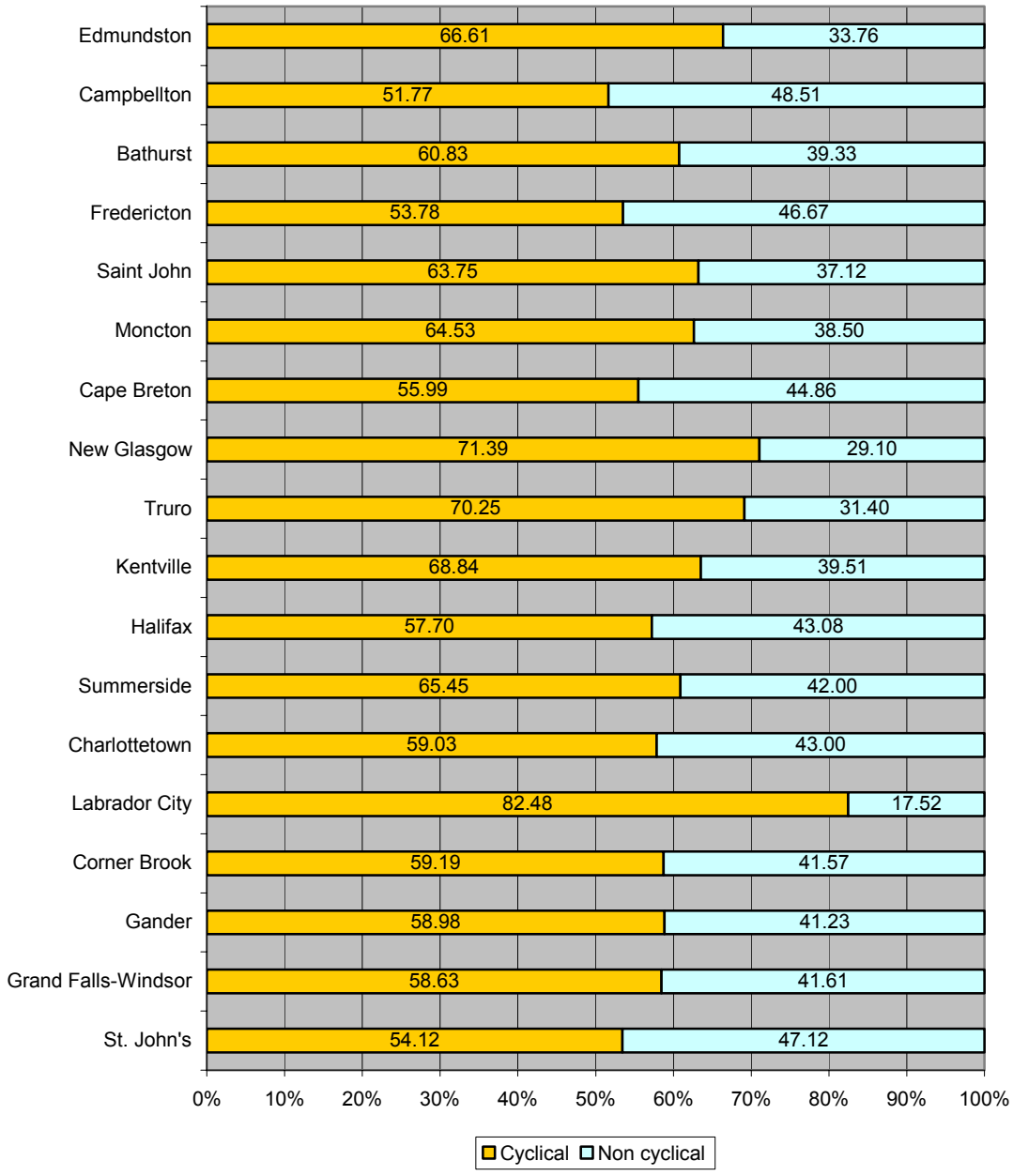


Figure 6.5

Distribution of Employment between Cyclical and Non-Cyclical Industries, Atlantic Canada's Urban Regions, 2001



PART 4
PUBLIC POLICY

7

PUBLIC POLICY

Impact of the Public Sector

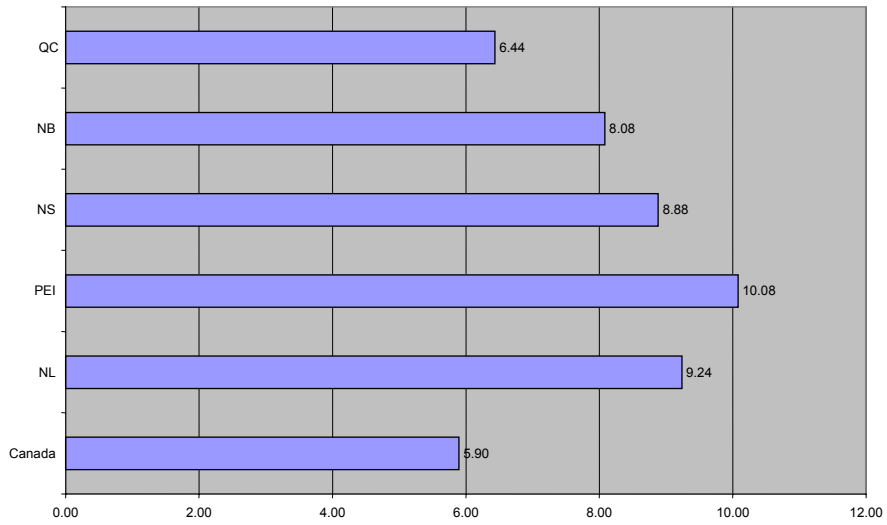
Government plays an important role in the economy of Atlantic Canada as it does in all economies. It is a role that can take a number of different forms: the supply of goods and services; business subsidies, the topic of a recent APEC study (Atlantic Provinces Economic Council 2004); transfers to individuals, which we covered in chapter 4; and regulations which influence economic activity. In this chapter we focus on a different role of government, the economic impact of its mere presence. In particular, we examine public sector employment and the economic impact of the wages paid to these public sector jobs.

Employment

Public administration's share of total employment is relatively large in Atlantic Canada (see figure 7.1). It varies from 10 percent of total employment in Newfoundland and Labrador to 8.1 percent in New Brunswick; for Canada as a whole, it is 5.9 percent. Employment in the federal public administration is a large component of these results, especially in Prince Edward Island and Nova Scotia. In all the Atlantic provinces, the share is above the national average. Defence services play an important role in this area, particularly in Nova Scotia and to a lesser extent in New Brunswick.

Figure 7.1

Share of Total Employment: Public Administration (91), Canada, Atlantic Provinces, and Quebec, 2001



Maritime and/or Atlantic union is sometimes offered as a remedy for bloated provincial governments. Such criticism is given some credence by our analysis, although the extent of the problem varies significantly from province to province. Overall, however, the share of total employment in local, municipal, and regional public administration is lower than the Canadian average in all four Atlantic provinces. This result, explained by the largely rural character of the region, leads one to ask whether the relatively high share of employment in provincial public administration is a consequence of the comparatively weaker municipal structure in the region.

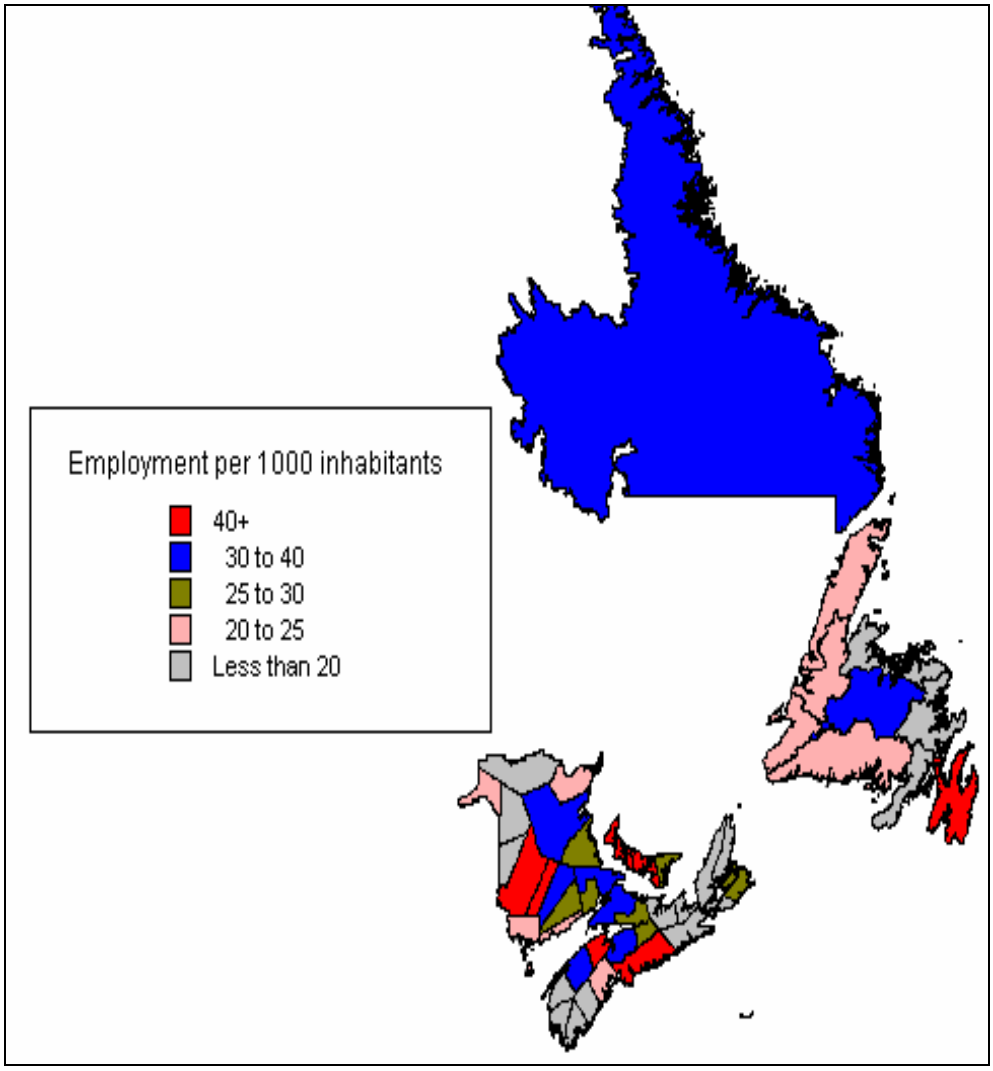
Another factor which may artificially inflate the share of public sector employment is the relative weakness of other economic sectors when the comparative base is the share of total employment. One way to counter this is to measure employment on a per capita basis. The overall results remain the same, but the relative importance of public sector employment is diminished in all provinces.

Turning our attention to Atlantic Canada's regions, we find that public sector employment is often more important in urban regions, whether we use the share of total employment or employment per thousand inhabitants as the reference (see map 7.1). Federal public sector employment is particularly important in NB-Sunbury, Halifax, NS-Annapolis, and Prince Edward Island (see map 7.2). Our analysis also confirms the relative importance of defence services to some of these regions.

Employment in provincial and territorial public administration is largely concentrated in and around provincial capitals (see map 7.3). Note that Newfoundland and Labrador's bureaucracy seems to have a greater presence in some regions outside the capital. We should also note the relatively low level of provincial government employment in southeast New Brunswick. In conclusion, local, municipal, and regional public administration seems better distributed across the region, especially when considered on a per capita basis.

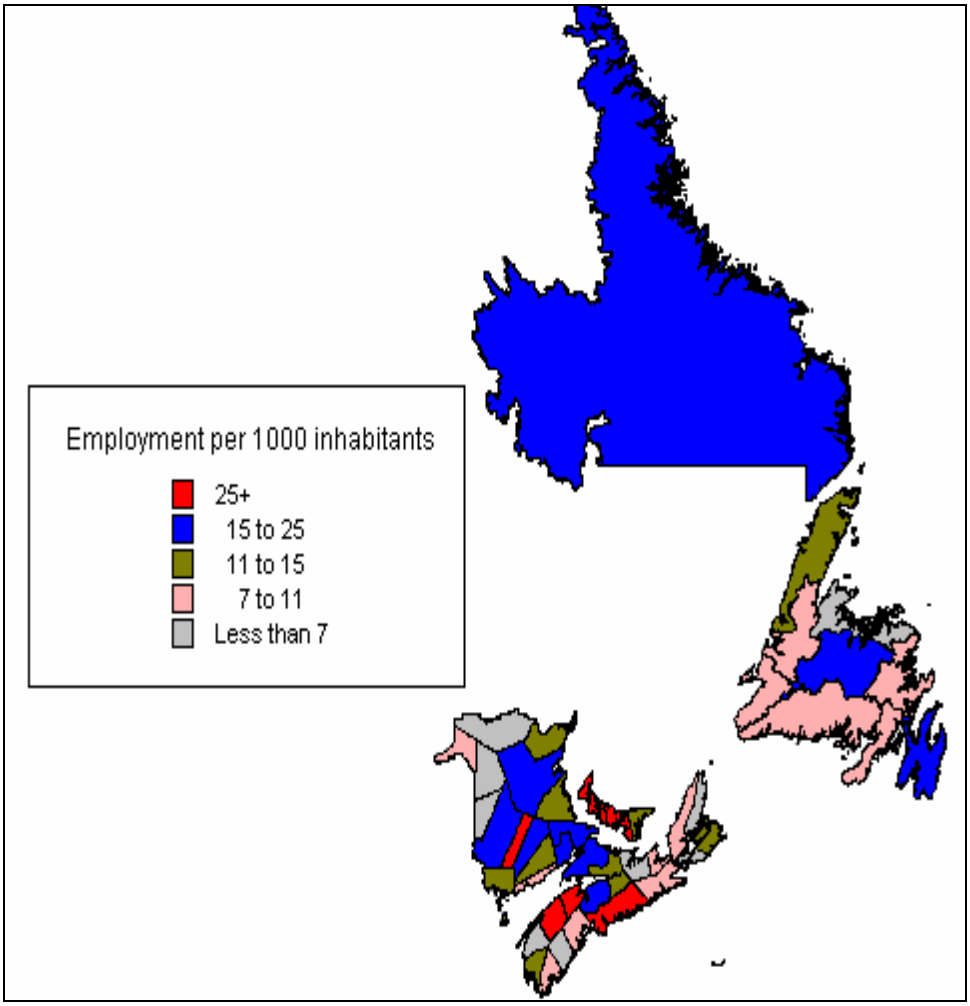
Map 7.1

Public Administration (91) Employment per 1000 Inhabitants, Atlantic Canada's Census Divisions, 2001



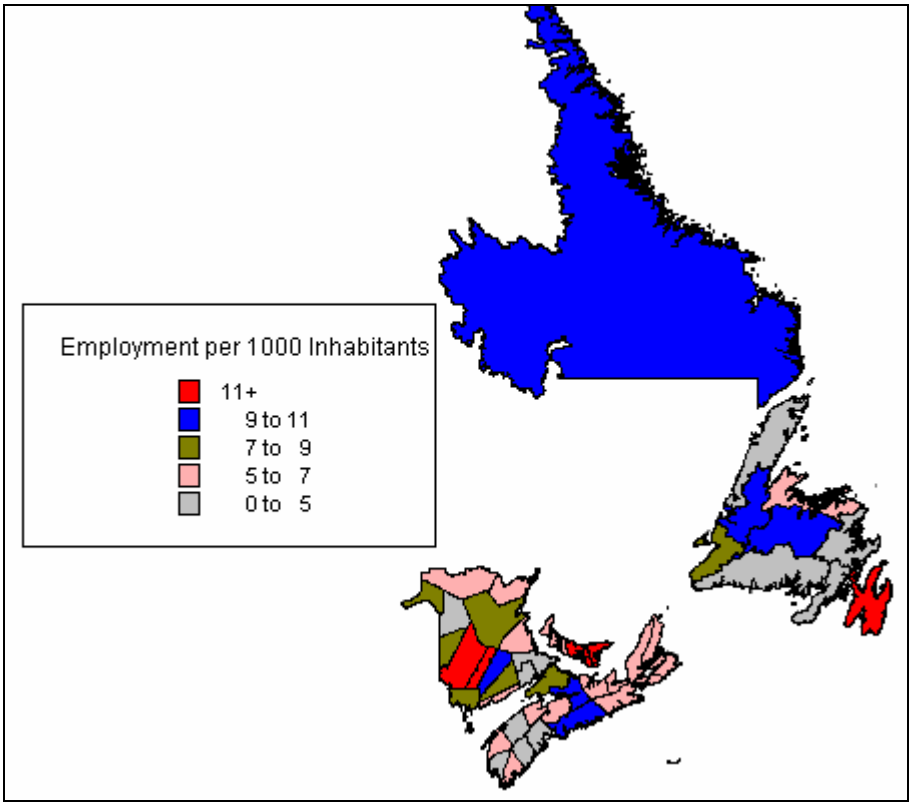
Map 7.2

Federal Government Public Administration (911) Employment per 1000 Inhabitants, Atlantic Canada's Census Divisions, 2001



Map 7.3

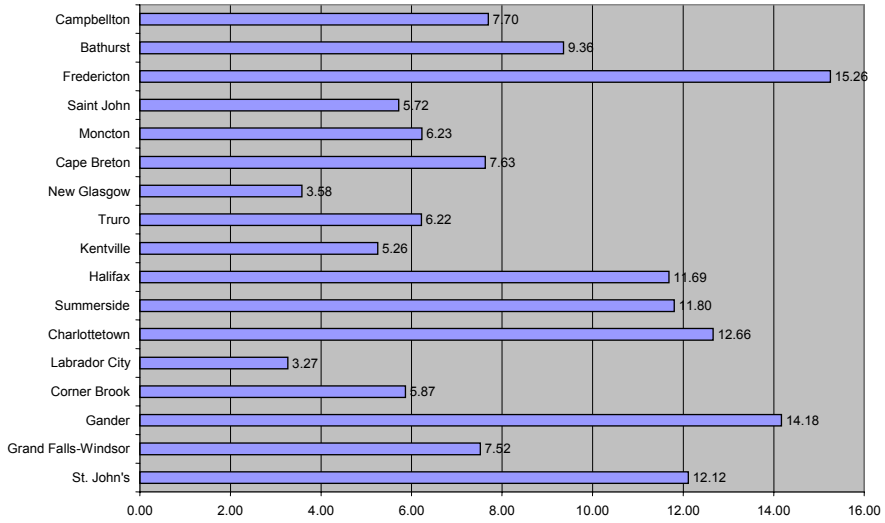
Provincial Public Administration (912) Employment per 1000 Inhabitants, Atlantic Canada's Census Divisions, 2001



In figures 9.21 to 9.25 in our statistical appendix (Desjardins 2005), we present the share of total employment for Atlantic Canada's largest agglomerations. Fredericton and Gander have the largest relative share of public administration employment (see figure 7.2). The federal government's relative presence is stronger in Gander, Summerside, Halifax, and Charlottetown. In Gander and Halifax, employment in defence services accounts for a large share of the federal presence. The provincial government's presence is relatively strongest in Fredericton, followed by St. John's and Charlottetown. Of all agglomerations, Moncton has the smallest relative share of provincial government employment, approximately half of Saint John's. Finally, Grand Falls–Windsor, Bathurst, and Gander are the agglomerations with the largest share of local, municipal, and regional public administration employment, while Kentville and Moncton have the smallest.

Figure 7.2

Share of Total Employment: Public Administration (91), Atlantic Canada Urban Centres, 2001



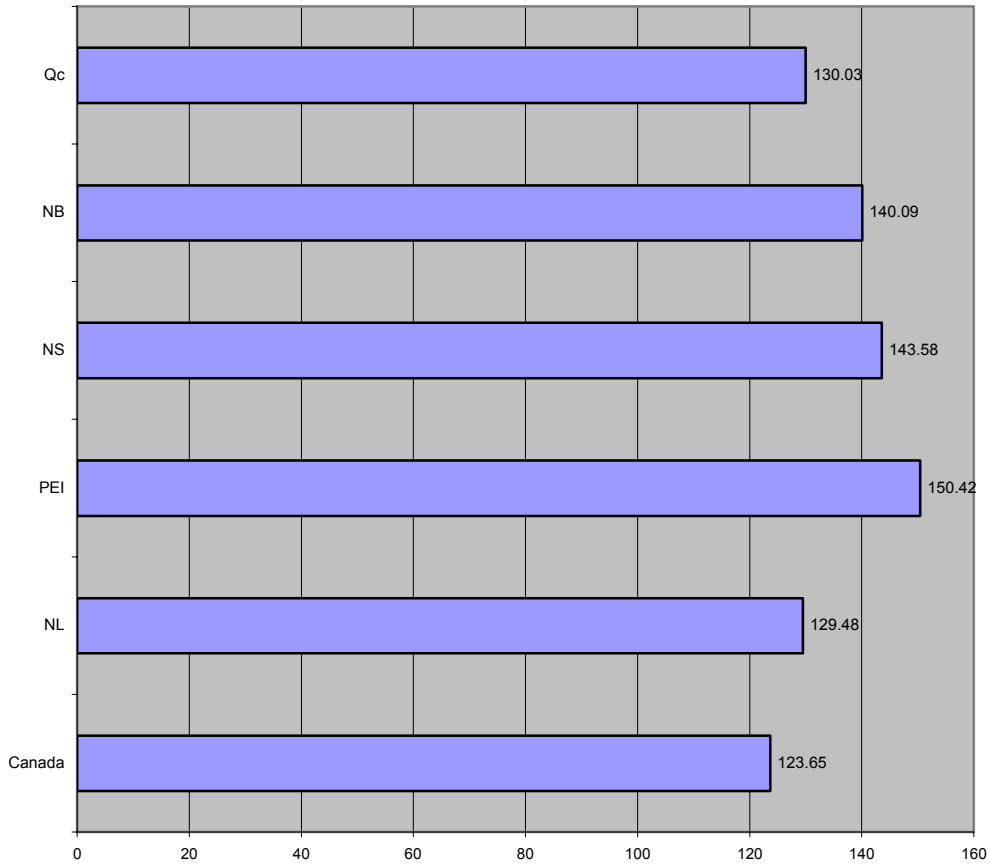
Income

Turning to the impact of public sector income, we can see from figure 7.3 that public sector employment generates relatively higher incomes than other economic sectors. This is all the more true in Atlantic Canada, especially in Prince Edward Island, where the gap between the two is more than 50 percent. The gap is larger for the federal public administration, less so for defence services and for provincial and territorial public administration. Interestingly, this last category generates approximately the same gap in all provinces. Finally, for local, municipal, and regional public administration, the four provinces rank below the national average. For Prince Edward Island and Newfoundland and Labrador, average income for this sector is below even the provincial average.

These results raise some important issues. It might be argued that for those benefiting from the better wages, this situation is highly desirable. In a region where stable, well-paying employment is relatively scarce, it makes a welcome contribution to the regional economy. But could the disparities between public sector wages and average wages create certain biases in local labour markets? It is indeed interesting to note that the income of provincial employees is on average approximately 37 percent above the provincial average for all four Atlantic provinces, while the income of federal government employees can be as much as 70 percent higher. Could this create an “intrusive rentier’s syndrome” similar to the one identified for some private sector employment by Polèse and Shearmur (2002, xxv)? We do not have the answer to that question, but it certainly warrants further analysis.

Figure 7.3

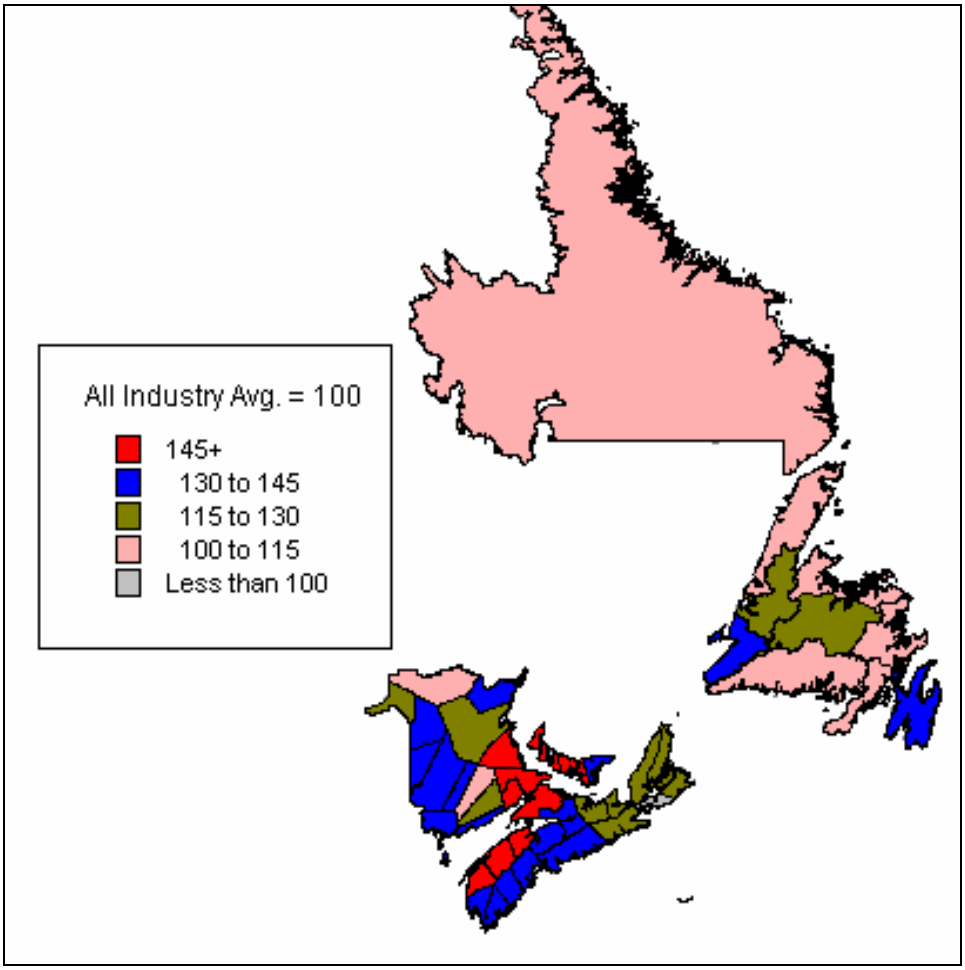
Ratio of Average Employment Income of Public Administration (91) vs. Average Employment Income of All Sectors, Canada, Atlantic Provinces, and Quebec, 2000



In Atlantic Canada's regions, the gap between the average income for jobs in public administration and the average income for all jobs seems to be smaller in some rural regions, particularly in Newfoundland and Labrador (see map 7.4). On the other hand, the gap is higher in Prince Edward Island, southeast New Brunswick, and NS-Annapolis. (Note that we have used the same legend for maps 7.4 to 7.7 to facilitate comparison.) Income from jobs in the federal public administration is significantly higher than the average income (see map 7.5). The same is true for income from jobs in provincial and territorial public administration, with the gap generally higher for rural regions (see map 7.6). As for income from jobs in local, municipal, and regional public administration, with a few exceptions which are mostly in larger urban regions, it is usually lower than the regional average (see map 7.7).

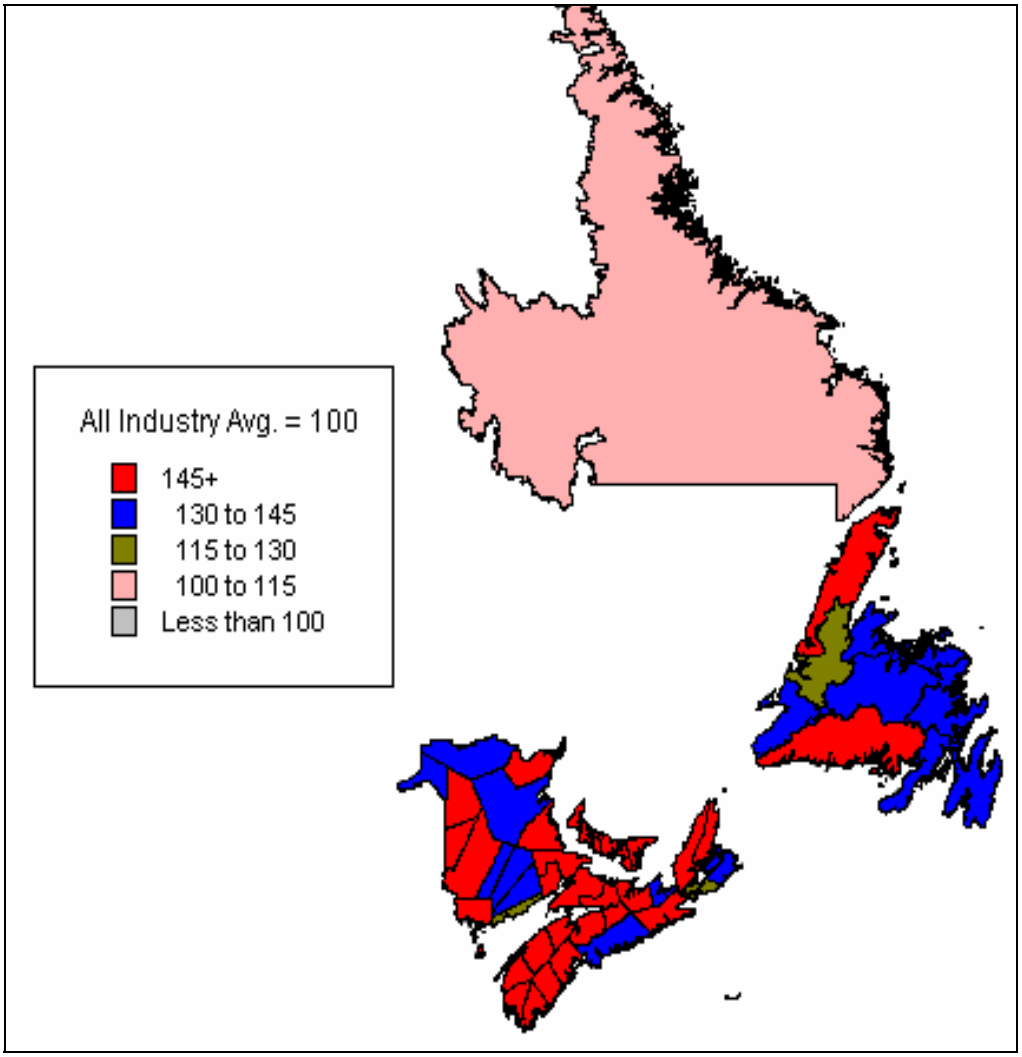
Map 7.4

Ratio of Average Employment Income of Public Administration (91) vs. Average Employment Income of All Sectors, Atlantic Canada's Census Divisions, 2000



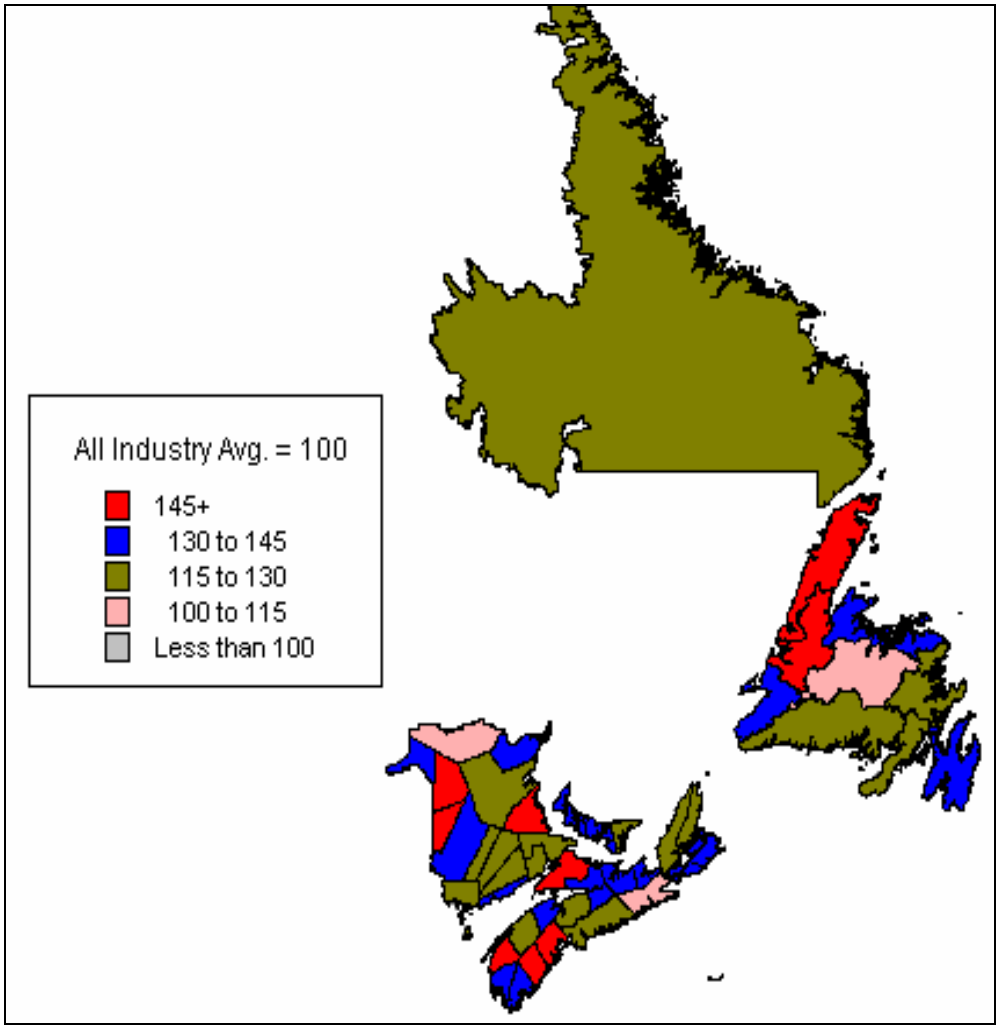
Map 7.5

Ratio of Average Employment Income of Federal Government Public Administration (911) vs. Average Employment Income of All Sectors, Atlantic Canada's Census Divisions, 2000



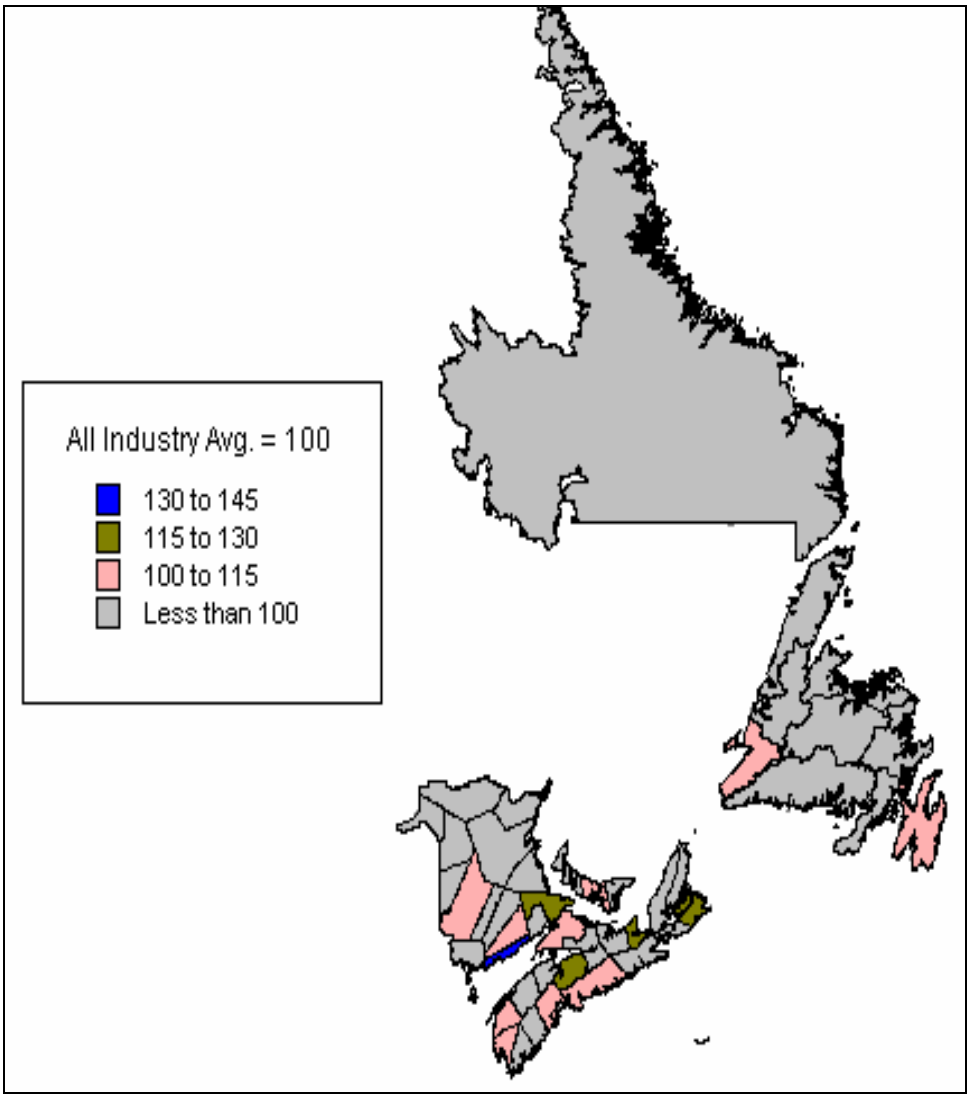
Map 7.6

Ratio of Average Employment Income of Provincial Public Administration (912) vs. Average Employment Income of All Sectors, Atlantic Canada's Census Divisions, 2000



Map 7.7

Ratio of Average Employment Income of Local, Municipal, and Regional Public Administration (913) vs. Average Employment Income of All Sectors, Atlantic Canada's Census Divisions, 2000



Public sector employment is therefore very important in Atlantic Canada. Its proportion, whether measured as a share of total employment or on a per capita basis, is higher than for Canada as a whole. Furthermore, these jobs have an average income which is, with the exception of local, municipal, and regional administration employment, significantly higher than the average income in the reference territory. Whether positive or negative, the unique impact of public sector income is undeniable.

Policy Implications of Our Results

What are the policy implications of our results? The answer to this question is not obvious. In most cases, there are no easy answers to the economic development challenges facing Atlantic Canada in general and its regions in particular. This being said, following is a brief discussion of some of the issues raised by our study.

The important role of urban centres. Atlantic Canada is the only region in the country without a very large metropolitan centre (type 0)[8]. To what extent does this influence the region's development? Although answering this question was not one of this study's initial objectives, it became clear early in our analysis that the relative performance of urban centres is of paramount importance to a region's development. Studies have shown that in today's knowledge-based economy, the general trend is for economic growth to be stronger in larger urban centres (e.g., Polèse and Shearmur 2002). Furthermore, rural areas adjacent to urban centres tend to perform better than those farther away (e.g., Polèse and Shearmur 2002; Porter et al. 2004). In fact, Porter et al. (2004, 17) specifically identify the "analysis of the relationship between the prosperity of rural regions and the characteristics and prosperity of the metro areas to which they are adjacent" as an area warranting further research. In the context of Atlantic Canada, we might also ask if the absence of a very large urban centre in the region is indeed a barrier to growth. In fact, on several occasions we found that a corridor along the Trans-Canada Highway in Nova Scotia and New Brunswick was performing better than the rest of the region. An interesting working assumption would be that this corridor could eventually play, or may already be playing, the role of a very large urban centre. The existing specificities and linkages along this corridor also warrant further research.

Economic growth will most likely favour urban regions. Other studies have suggested that economic growth will be greater in urban regions (e.g., Polèse and Shearmur 2002). The results of this report support this conclusion. However, this does not mean that economic development cannot take place in rural regions — quite the opposite. It does mean, though, that public policy makers should be cognizant of the particular challenges faced by rural regions. And it also means that this dual development — to borrow a term from economic development theory — must be managed properly. The needs of rural regions are not the same as those of urban regions. In several rural regions, it will inevitably be a case of managing demographic stagnation or even decline, with all its implications. Public policy must reflect this.

But some regions have growth potential. It is clear from our analysis that there are significant disparities between the urban and rural regions of Atlantic Canada. It is also clear that rural Atlantic Canada is far from homogeneous. There is a grouping of essentially rural areas in Atlantic Canada whose economies have performed relatively well over the fifteen-year period from 1986 to 2001. This means that policy prescriptions for one rural region are probably not pertinent to others. Relevant differences include distance from a metropolitan area, the nature of the region's industrial structure, the seasonality of its employment, etc. Public policy initiatives should not take the form of one-size-fits-all programs. Even for a region as small as Atlantic Canada, diversity requires that public policy be developed that takes into account each region's characteristics. This calls for a more community-driven approach to economic development that builds upon existing structures and approaches. And it may have to go even further.

8. If we take the four western provinces as one region.

A demographic challenge on Atlantic Canada's horizon. Atlantic Canada's share of the Canadian population has been declining for some time. The region attracts relatively few international immigrants and overall is losing more population to migration than it is gaining. We estimate that other things being equal, the region will be facing an acute labour shortage in the next ten to twenty-five years. This shortage could happen more rapidly as emigration accelerates.

Government must introduce measures to address this demographic challenge. In a few years, it will not only have a significant impact on labour market supply; it will also affect government revenues, demand for local goods and services, demand for public sector services, etc.

The challenge is greater in rural regions, which are losing population at a faster pace. Interestingly, this is not so much a result of an overwhelming exodus of its population — the emigration rates are not extremely high — but rather a lack of immigration. Public policy in this case should thus focus on immigration and the factors which could increase it.

The current challenge of seasonality. On several occasions, seasonality emerged as a characteristic which influenced several other factors. These included migrants, employment, and income. Although it may be difficult to significantly reduce the seasonality — i.e., to increase the duration of employment — of many sectors, it should nevertheless be a policy objective. We should strive to extend work in seasonal sectors as well as increase the proportion of employment in sectors which offer year-long employment. Even government employment should be analysed in this light.

An educational gap that is growing. The region has made significant progress in improving the education of its population, but it has not been enough: the gap between the region and Canada as a whole has widened! The goal should be not only to increase the number of individuals with a post-secondary education but also to reduce the number with less than a grade 9 or a grades 9 to 13 education. This challenge is especially important for several rural regions where educational achievements are often lower than in urban regions. Our analysis based on age revealed that individuals with less than a high school diploma tended to be older than the national average, while those with a high school diploma tended to be younger, leading one to conclude that the statistics should improve. On the other hand, the university-related category pointed to a brain drain, possibly explaining in part the growing gap.

Any initiative to improve educational levels cannot be introduced in isolation. Employment opportunities must exist for individuals who improve their educational achievement, a significant challenge since we noted a relative brain drain when we analysed the profile of migrants.

Embracing the new economy. We found that with the notable exception of Newfoundland and Labrador, the region had a low proportion of employment in high-knowledge-intensity sectors. For the four Atlantic provinces, overall, we found a lower percentage of employment in medium-knowledge-intensity sectors and a higher percentage in low-knowledge-intensity sectors. To fully embrace the new economy, we need to increase our presence in higher-knowledge-intensity sectors. In light of these results, the importance of improving educational achievement becomes all the more obvious. From a public policy perspective, all our efforts should probably not be focused exclusively on increasing high-knowledge-intensity employment. Focusing, although not exclusively,

on medium-knowledge-intensity employment could generate very positive results and be a better match for our labour supply.

The question of clusters. Although our analysis did not allow us to identify actual or potential clusters based on a series of specific characteristics, we were able to identify, using location quotient results, sectors which may fall into either of these two categories. Most of these sectors are resource-based (e.g., forestry and logging, fishing, paper, fruit and vegetable preserving and specialty food manufacturing, seafood product preparation and packaging, etc.). Others are the result, at least in part, of specific government initiatives (e.g., rubber [Michelin], business support services [call centres]). We think that Atlantic Canada may actually have several dynamic clusters. The region may also have several potential clusters which may mature given the right government policies. Further analysis of this issue should yield very important information and lessons for public policy.

The important contribution of public sector employment. Public sector employment is relatively higher in Atlantic Canada. This is important not only because the public sector is a key actor in the region's economic development but because the mere presence of public sector employment is a contributor to the economy. Initiatives which use public sector employment to contribute to the development of regions (e.g., the federal government deconcentration policy of the 1970s) could thus be extremely positive. A note of caution on this front: policy makers should be careful not to create an intrusive rentier's problem. This problem exists when high-paying jobs create a distortion in local labour markets and thwart development by, for example, raising expectations of higher incomes. The end result is that small businesses have difficulty competing in such labour markets, which stymies their development. Consequently, the conditions of local labour markets should be taken into account, especially when those labour markets are small.

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