Acadiensis

ACADIENSIS

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Volume 15, numéro 1, autumn 1985

URI : https://id.erudit.org/iderudit/acad15_1art01

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Éditeur(s)

The Department of History of the University of New Brunswick

ISSN

0044-5851 (imprimé)
1712-7432 (numérique)

Découvrir la revue

Citer cet article

Thornton, P. A. (1985). The Problem of Out-Migration from Atlantic Canada, 1871-1921:: A New Look. *Acadiensis*, *15*(1), 3–34.

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The Problem of Out-Migration from Atlantic Canada, 1871-1921: A New Look

THE PERIOD FROM THE 1860s TO THE 1920s was a crucial one for Atlantic Canada. During this period both the Maritimes and Newfoundland failed to develop successfully. The Maritimes, despite optimistic beginnings, were ultimately unable to complete their industrial transformation. Newfoundland was unable to diversify out of its single-resource base, which in turn never modernized sufficiently to compete with "newer" fishing nations. Meanwhile a net figure of close to half a million people left the Maritimes and an unknown but considerable number left Newfoundland. Pondering such data in 1927, R.H. Coats of the Dominion Bureau of Statistics stated that "generally speaking the trend in population, especially in a 'new' country, is regarded as an index of its prosperity....The study of population tendencies in the Maritimes...may therefore be regarded as illustrating and reflecting the course of their economic development".[1] In this respect Coats was simply expressing the conventional wisdom of economists concerning migration theory and projecting it, as others have done before and since, onto the region to "explain" demographic trends over the preceding half-century.

Just what role did out-migration play in the relative economic fortunes of the region? Economic historians offer diverse and somewhat conflicting interpretations. In the Maritimes, the most commonly held view is that out-migration was (and indeed still is) a *consequence* of the failure of the region to industrialize successfully,[2] whereas in Newfoundland overpopulation (and hence a lack of sufficient out-migration) is seen as a *cause* of worsening economic conditions.[3]

The author wishes to acknowledge the help and thank Dr. David Frost for the hours of work he put in programming the procedures used in this study and generating the SYMAP data base.

1 DBS, *The Maritime Provinces since Confederation: A Statistical Study of their Social and Economic Condition during the Past Sixty Years* (Ottawa, 1927), p. 3.

2 See for example, Canada, Dominion Bureau of Statistics [DBS], *The Maritime Provinces since Confederation* (Ottawa, 1927); New Brunswick, Office of the Economic Adviser, *Migration, New Brunswick, 1871-1967: A Statistical and Economic Analysis* (Fredericton, 1967); O.J. Firestone, *Canada's Economic Development 1867-1950* (London, 1958); S.A. Saunders, *Economic History of the Maritime Provinces* (Fredericton, 1984 [1939]); Alan Brookes, "Out-Migration from the Maritime Provinces, 1860-1900: Some Preliminary Considerations", *Acadiensis*, V, 2 (Spring 1976), pp. 26-56; and Alan Brookes, "The Golden Age and the Exodus: The Case of Canning, Kings County", *Acadiensis*, XI, 1 (Autumn 1981), pp. 57-82; David Alexander, "Economic Growth in the Atlantic Region, 1880-1940", *Acadiensis*, VIII, 1 (Autumn 1978), pp. 47-76; Kari Levitt, *Population Movements in the Atlantic Provinces* (Halifax, 1960).

3 One of the earliest discussions of overpopulation can be seen in "Report of the Select Committee

Thus, in one part of the Atlantic Region (the Maritimes) out-migration is considered a consequence of failure, while in another part of the region (Newfoundland) it is felt that out-migration would have been beneficial but in insufficient numbers it was a cause of economic failure. At best this is confusing both theoretically and empirically.

The empirical literature leads us to believe that migration can be both a cause and a consequence of economic conditions. The theoretical literature, although somewhat ambiguous on this topic, generally assumes that migration is a consequence of economic forces.[4] Similarly, both the empirical and the theoretical literature are ambiguous on the effects of out-migration. It has been argued that migration can be both a "good" and a "bad" phenomenon.[5] In fact, despite a not inconsiderable literature on out-migration from the region, the consequences of out-migration on the region have never been examined in any systematic way.[6] Indeed regional historians appear not to have been conscious of

to Consider and Report on the Construction of the Railways", Newfoundland, *Journals of the House of Assembly, 1880*, p. 126; the most recent discussion of this topic can be found in Parzival Copes, *The Resettlement of Fishing Communities in Newfoundland*, (Ottawa, 1972). For the best overview of the topic see David Alexander, "Newfoundland's Traditional Economy and Development to 1934", in J. Hiller and P. Neary, eds., *Newfoundland in the Nineteenth and Twentieth Centuries*, (Toronto, 1980), pp. 17-39.

4 Economic theories of migration all presume that migration is the dependent variable responding to inter-regional changes in economic opportunity. See for example J. Isaac, *Economics of Migration* (London, 1947) and more recently work by L.A. Sjaastad, 'The Costs and Returns of Human Migrations", *Journal of Political Economy*, 70 [supplement] (1962), pp. 80-93.

5 See Isaac, *Economics of Migration*, and other neo-classical economists who believe that migration usually results in regional equalization. On the other hand advocates of the core-periphery school usually assume that migration tends to increase rather than decrease regional disparities: see John Friedmann, *Regional Development Policy: A Case Study of Venezuela* (Cambridge, 1966) and Gunnar Myrdal, *Economic Theory and Under-developed Regions* (London, 1957). They all nevertheless believe that migration comes about because of the existence of regional disparities and the tendency for labour to move from areas of low wages and productivity to areas of higher wages and productivity.

6 Most of the work has focused on the spatial patterns of out-migration, particularly the places of origin and destination and the apparent causes of large-scale out-migration. Much of this has been dependent upon sources which identify migrants from the United States end. In addition to the work by Brookes already mentioned and his Ph.D. thesis, "The Exodus: Migration from the Maritime Provinces to Boston during the second half of the Nineteenth century", University of New Brunswick, 1979, see also the companion volumes by M.L. Hansen and J.B. Brebner, *The Mingling of the Canadian and American Peoples, 1604-1938* (New Haven, 1940) and L.E. Truesdell, *The Canadian-Born in the United States, 1850-1950* (New Haven, 1943). Of the remaining work which has focused on the Atlantic Region end of the process there has been a considerable literature concerned about the impact of the continued drain of out-migration on the viability of the region: see the three volumes brought out by the Dominion Bureau of Statstics: *The Maritime Provinces since Confederation* (1927), *The Maritime Provinces in their Relation to the National Economy of Canada: A Statistical Study of their Social and Economic Condition since Confederation* (Ottawa, 1934), and *The Maritime Provinces in their Relation to the National Economy of Canada: A Statistical Study of of their Social and Economic Condition since Confederation* (Ottawa, 1948). More recently two works by economists have followed in the same vein: Levitt, *Population Movements in the Atlantic Provinces* (1966) and D.J. McDonald,

the theoretical issue at stake and seem to have absorbed by osmosis the *a priori* theoretical assumption that migration is necessarily a consequence of economic conditions. This assumption, however, is both ambiguous and inadequately substantiated.

There are, therefore, two problems. Within the regional literature we need to clarify our arguments and specifically address the question of the consequences of migration for the region. Within the theoretical literature, we need to overcome the too narrow assumptions and lack of a temporal perspective. To do this we need to look at the region's experience consciously in terms of the theoretical issue: is out-migration necessarily a consequence of economic failure or can it also be a cause? In this paper the principal focus is on the regional experience of out-migration. Theory is examined to provide a framework for studying the consequences of out-migration on Atlantic Canada. In turn the regional case helps to establish the inadequacy of the available theory, which will need to be reassessed and restated in order to accommodate the empirical findings.

An examination of decadal intercensal rates of population growth in Atlantic Canada (see Table One) and out-migration in the Maritimes (see Table Two) compared with Quebec, Ontario and Canada as a whole from 1851 to 1931 is instructive in that it is open to conflicting interpretations. Looking back retrospectively from the present, several studies have shown that Atlantic Canada grew much more slowly than Quebec, Ontario and Canada as a whole since 1880,[7] and that in total more than 600,000 people left the Maritimes, which resulted in a net loss to the region of more than 460,000 people, or some 50 per cent of the population still present in 1931 at the end of the period.[8] These authors have interpreted this demographic history as symptomatic of economic stagnation and underdevelopment. However a closer examination could support an alternative interpretation.

Table One shows two distinct phases of population growth. Between 1851 and 1881, growth rates in the region were high and on a par with levels elsewhere in Canada. Only after 1881 and then for the entire period until 1931 were growth

Population, Migration and Economic Development in the Atlantic Provinces (Fredericton, 1968). All these studies however start from the assumption that out-migration in the 19th century was a consequence of economic stagnation, although Levitt and McDonald in particular do discuss the consequences of continued and persistent out-migration on the economic development of the region in the 20th century.

7 *Ibid.*, pp. 3-21; Levitt, *Population Movements*; McDonald, *Population, Migration and Economic Development.*

8 Several independent estimates have been made of the extent of out-migration from the Maritimes between 1881 and 1931, although as yet none exist for Newfoundland prior to 1907. In 1927, 1934 and 1948 the Dominion Bureau of Statistics, concerned about increasing regional disparity, estimated *gross* out-migration from the Maritimes over the period at approximately 600,000 and *net* out-migration at 470,000: DBS, *The Maritime Provinces*, p. 20. Similarly Nathan Keyfitz estimated *net* out-migration at 463,000: "The Growth of the Canadian Population", *Population Studies*, Vol. IV, No. 1 (1950-51), pp. 52-3); while Yolande Lavoie estimated *gross* out-migration at 618,000: Y. Lavoie, *L'Emigration des Canadiens aux Etats Unis avant 1930* (Montreal, 1972), p. 39.

Table One

Percentage Population Change by Decade, 1851-1961

	1851-61	61-71	71-81	81-91	91-01	01-11	11-21	21-31	31-41	41-51	51-61
Newfoundland*	15.0	18.0	21.0	3.0	9.0	9.0	8.0	7.0	10.0	19.0	27.0
Prince Edward Island	29.0	16.3	15.8	0.2	-5.3	-9.2	-5.5	-0.7	8.0	3.6	6.3
Nova Scotia	19.5	17.2	13.6	2.2	2.0	7.1	6.4	-2.1	12.7	11.2	14.7
New Brunswick	30.1	13.3	12.5	0.0	3.1	6.3	10.2	5.2	12.0	12.7	15.9
Maritimes	24.5	15.6	13.5	1.2	1.5	4.9	6.6	0.9	12.0	11.2	14.6
Ontario	46.6	16.1	18.9	9.7	3.2	15.8	16.1	17.0	10.4	21.4	35.6
Quebec	24.9	7.2	14.1	9.5	10.8	21.6	17.7	21.8	15.9	21.7	29.7
Canada	32.6	14.2	17.2	11.8	11.1	34.2	21.9	18.1	10.9	21.8	30.2

Sources: Newfoundland, *Census*, 1857, 1869, 1874, 1884, 1891, 1901, 1911, 1921, 1935; *Census of Canada*, 1951, 1961; Michael Staveley, "Aspects of Migration in Newfoundland and Labrador", Ph.D. thesis, University of Alberta, 1973, p. 70.
*Note that before 1891 the four intercensal periods for Newfoundland are 1857-69, 1869-74, 1874-84 and 1884-91.

Table Two

Net Migration Estimates, 1851-1931:
Maritime Provinces, Quebec, Ontario, Canada

	1851-61	1861-71	1871-81	1881-91	1891-1901	1901-11	1911-21	1921-31
				in thousands				
Maritimes	+ 23	− 13	−25	−101	− 89	− 75	− 76	−122
Quebec				−132	−121	− 29	− 99	− 10
Ontario				− 84	−144	+ 74	+ 46	+129
Canada	+171	−191	−85	−205	−181	+715	+113	+103
				as % of base population				
Maritimes	+ 4.3	− 2.0	− 3.3	− 11.6	− 10.1	− 8.4	− 8.1	− 12.2
Quebec				− 9.7	− 8.1	− 1.8	− 4.9	− 0.4
Ontario				− 4.3	− 6.8	+ 3.4	+ 1.8	+ 4.4
Canada	+ 7.0	− 5.9	− 2.3	− 4.7	− 3.7	+ 13.3	+ 1.6	+ 1.2

Note: All rates are calculated on the total population at the beginning of the decade.
Source: 1881-1931: Keyfitz, "The Growth of Canadian Population", *Population Studies*, Vol. IV, No. 1 (1950-51), pp. 52-53; 1851-1881: D.J. McDonald, *Population, Migration and Economic Development in the Atlantic Provinces* (Fredericton, 1968), pp. 9-13.

rates extremely low in the Maritimes. Although considerably higher in Newfoundland, they were nevertheless lower than elsewhere in Canada. By contrast, despite somewhat retarded growth in the 1880s and 1890s in Ontario, there were no abrupt changes in demographic growth and this sluggish period lasted only 20 years there compared with 50 in Atlantic Canada. Table Two confirms that the turning point in the demographic growth of the Maritimes compared to the rest of Canada occurred in the 1880s, when out-migration was for the first time higher than the level experienced in the rest of Canada. However, these data also show that net out-migration had commenced more than two decades earlier and that the major difference between the Maritimes and the rest of Canada really surfaced around the turn of the century. After 1900 chronic out-migration continued in the Maritimes while Ontario and to a lesser extent Quebec showed a recovery, with in-migration exceeding out-migration in some cases by significant proportions.

Economic historians have largely agreed that the economic recession of the 1880s and 1890s was no worse in the Maritimes than elsewhere in Canada and that the major reason for concern about the fate of the Maritimes came after the turn of the century when the great economic boom which swept the rest of Canada produced only slight reverberations in the Maritimes.[9] H.T. Johnson goes still further to challenge conventional wisdom by suggesting that the 1870s, far from being a decade of stagnation, witnessed pronounced increases in the rate of economic development, productivity and urbanization: indeed between 1871 and 1891 levels of urbanization appeared inexplicably high in the Maritimes.[10] Yet it was at precisely this time that massive and sustained out-migration occurred and population growth faltered. How then can demographers and economic historians alike, studying the region, continue to assume that such out-migration was a consequence of economic stagnation and not possibly a significant cause of subsequent economic stagnation? It may be suggested, then, that massive and sustained net losses of about 15 per cent of the region's population per decade may have seriously jeopardized the potential of the region to complete its industrial transformation. Certainly by the 1920s there could be no doubt about the economic stagnation and backwardness of the region — as the large number of official enquiries into this matter bear witness.[11]

But what about Newfoundland? Except for David Alexander's work[12] there have been no attempts to "bridge the Cabot Strait" to compare demographic and economic trends in the Maritimes and Newfoundland, and cast them in a

9 Alexander, "Economic Growth in the Atlantic Region", p. 48.

10 H.T. Johnson, "Urbanisation and Economic Growth in Canada, 1851-1971", Research Report 7321, Department of Economics, University of Western Ontario, 1973, p. 11.

11 Many of them, as we have seen, looked specifically at this question of the relationship between out-migration and economic development. See for example, the three reports published by the Dominion Bureau of Statistics in 1927, 1934 and 1948, Levitt, *Population Movements*, New Brunswick, Office of the Economic Adviser, *Migration, New Brunswick, 1871-1961*, and McDonald, *Population, Migration and Economic Development*.

12 Alexander, "Economic Growth in the Atlantic Region".

similar framework. For this reason it is perhaps not surprising that out-migration in Newfoundland should have been interpreted in such a different fashion from the Maritimes. Population numbers and growth have been seen as Newfoundland's prime economic problem: too many people in relation to too few resources.[13] Why then, as Table One would suggest, was out-migration insufficient to reduce growth rates to the level achieved in the Maritimes? In the absence of estimates of out-migration from Newfoundland, the plethora of economic studies would nevertheless lead us to question seriously whether the higher levels of population growth in Newfoundland relative to the Maritimes between 1881 and 1931, presumably reflecting lower levels of out-migration, necessarily indicate a more satisfactory economic performance. Instead it seems more likely that continued population growth may indicate nothing more than greater barriers to out-migration. In this context they can be expected only to have contributed to further impoverishment.

The regional literature thus points to an interesting question that has to be asked: Was out-migration a significant contributing factor to economic stagnation in the Maritimes, and just what was its extent and effect on Newfoundland? Just how many people left, from where and when? In the Maritimes did they leave in sufficiently large numbers *before* the marginal productivity of labour and economic opportunites had deteriorated? Did they not leave in sufficiently large numbers in Newfoundland until *after* productivity and economic opportunity had deteriorated? The regional literature also shows us clearly that the crucial period to study to answer this question at least for the Maritimes lies between 1870 and 1900. The theoretical literature shows us how we might address this question.

Economic theories of migration presume that migration is the dependent variable responding to inter-regional changes in economic opportunity. Assuming that there are no obstacles to migration and that migration costs are negligible, economists believe that people will move from low-income to high-income areas in response to differences in the marginal productivity of labour and available opportunities. Under such circumstances there are two schools of thought about the impact of migration on regional income and employment disparities. Neoclassical theorists believe, assuming labour to be homogeneous, that such migration will result in regional equalization of income.[14] Centre/periphery theorists, on the other hand, maintain that such migration will serve only to increase wage and productivity differences because migrants are demographically and economically selective and because money and investment concentrates where economies of scale, agglomeration, market potential and productivity are greatest.[15]

13 Alexander, "Newfoundland's Traditional Economy and Development to 1934"; "Report of the Select Committee on the Construction of the Railway", *Journals of the Newfoundland House of Assembly, 1880*, p. 126.

14 Isaac, *Economics of Migration*.

15 Friedmann, *Regional Development Policy*, and Myrdal, *Economic Theory and Underdevelopment*.

Migration theory, such as that developed by the International Labour Office and by Everett Lee, has removed some of the oversimplifications and further clarified such theory. They recognize that there are barriers to migration imposed by such factors as costs, inertia, distance, migration laws or inadequate information channels. More importantly, they recognize that there are basically two sets of economic forces operating: "push" and "pull" forces.[16] Where "push" factors at origin are strongest (such as rural poverty, low wages and incomes, few or declining opportunities, absence of amenities, poor education facilities and the like) then migration is less demographically and economically selective. Under these circumstances out-migration may be beneficial to the region, relieving it of surplus labour. However, where "pull" forces are strongest (such as the lure of cheap farm land, virgin forests, attractive opportunities for employment, promotion or good salaries, along with readily available amenities such as schools and hospitals) then migration is usually highly selective of the young, dynamic, better-educated and more highly skilled. Under these circumstances out-migration may deprive the region of the very people on whom self-sustained growth depends. The impact of migration on economic development, therefore, depends to a large extent on the conditions at origin and destination. In addition, the extent and timing of migration are determined as much by the quality of the links between areas,[17] the strength of the "pull" forces,[18] and the general level of prosperity (booms stimulating greater migration than busts).[19] Also important is the level of relative deprivation, that is the difference between such factors as unemployment and economic opportunity levels of two places

16 E.S. Lee, "A Theory of Migration", *Demography*, 3 (1966), pp. 47-57. The best review of migration theory by a staff member of the International Labour Office is W.R. Böhning, "Elements of a Theory of International Economic Migration to Industrial Nation States", in M. Kritz et al., eds., *Global Trends in Migration*, (New York, 1981), pp. 28-43. But see also the numerous studies and papers put out by that office either as independent studies or through the two journals they publish, *The International Labour Review* and *Industry and Labour*.

17 It is this notion of the quality of links between areas which underlies the now well-substantiated "laws" of migration: that most migration occurs over short distances; that over long distances migration tends to form distinctive streams and counterstreams where, in both cases, the quality of links would presumably be better; and the volume of migration increases over time and especially with economic development as the quality of links improve.

18 See for example Peach's study of West Indian Immigration to Britain before the restrictions were imposed in 1962, which showed that the volume of migration was most clearly associated with the need for unskilled labour in Britain rather than conditions in the West Indies, with fluctuations in numbers best correlated with fluctuations in employment opportunities in Great Britain, with a certain lag for the transatlantic flow of information: G.C.K. Peach, *West Indian Migration to Britain* (Oxford, 1968). Empirical studies at the regional level confirm these findings. See for example D. Friedlander and R. Rossiter, "A Study of Internal Migration in England and Wales", *Population Studies*, 19 (1966), pp. 239-79 and 20 (1966) pp. 45-60; and P.J. Schwind, *Migration and Regional Development in the United States, 1950-1960*, Research Paper No. 133, Department of Geography, University of Chicago, 1971.

19 See especially Hart's work on inter-regional migration within Britain in which he demonstrates that gross migration flows were mainly between more prosperous regions: R.A. Hart, "A Model of Inter-regional Migration in England and Wales", *Regional Studies*, 4 (1970), pp. 279-96.

rather than absolute levels,[20] the relative awareness of alternative opportunities, and the perceived value ascribed to them.[21]

Because conventional economic wisdom assumes that migration is primarily a consequence rather than a cause of economic growth, relatively little attention has been paid to the impact of migration on economic development, or on why regions might not always respond in the same way. In this respect Bernard Okun and Richard W. Richardson's study of the United States is particularly helpful.[22] They have stressed the necessity of looking at the relationship between place of origin and place of destination to explain variations in the quantity of net migration and the "quality" of migrants. This, they suggested, would help in understanding the differential impact of migration on regional economic growth. They categorized regions according to an income level — high or low — and the direction of economic change — growing or stagnating — thereby identifying four types of regions: *low stagnant regions; high growing regions; low growing regions; high stagnant regions.*

Low stagnant regions (perhaps such as Newfoundland) specializing in primary, normally labour-intensive production, where the marginal productivity of labour is low and the opportunity costs nil, are likely to be places of origin only for migrants. Net migration of unskilled families in both short and long runs is likely to be beneficial because it raises per capita incomes and encourages capitalization. Equally straightforward, *high growing regions* (such as New England in the second half of the 19th century and Ontario between 1900 and the 1920s) will predominate as a destination for migrants, and in the long run will experience beneficial cumulative economic growth from continued net immigration.

Much more complex are the cases of the two other types of regions. *Low growing regions* (such as some parts of the Maritimes in the 1870s and 1880s) will be net exporters of population in industrial countries. While they might experience short-term benefits from out-migration (except where they are sparsely settled) in the long run and especially in the context of a shift from primary to manufacturing sectors such regions are likley to experience severe shortages of labour which will deter the rate of economic growth. This will be especially true

20 See especially Oliver's classic study, in which he found that levels of *relative* employment, expressed in terms of the difference between the regional and national unemployment rate, were more important than absolute levels of unemployment in determining migration. Nevertheless, it should be added that Oliver found only contradictory support for his model: "There is a large measure of disparity in response to changes in unemployment condition in the various regions": F.R. Oliver, "Inter-regional Migration and Unemployment, 1951-1961", *Journal of the Royal Statistical Society*, 127A (1964), pp. 42-75.

21 This has been developed by behaviouralists into the notion of "place-utility": see J. Wolpert's seminal paper on this topic "Behavioural Aspects of the Decision to Migrate", *Papers and Proceedings, Regional Science Association*, 15 (1965), pp. 159-69.

22 B. Okun and R.W. Richardson, "Regional Income Inequality and Internal Population Migration", in J. Friedmann and W. Alonso, eds., *Regional Development and Planning* (Cambridge, 1964), pp. 303-18.

where industrialization is also associated with a secular decline in the birth rate as occurred in the late 19th century. *High stagnant regions* associated with the presence of industries which enjoyed their peak at an earlier stage (such as the "wood, wind and sail" economy of the Maritimes) and have subsequently failed to attract sufficient new and rapidly growing industry are also likely to be net exporters of migrants. The channels of information are available, access to them is well-developed and high incomes allow people to move more readily, while since they are skilled and educated there is considerable demand for their labour. On the other hand such regions will not tend to receive many immigrants because their economy is stagnating, though migrants may come from *low stagnant regions* because of the relatively better opportunities for education, welfare, and domestic service resulting from higher incomes and levels of urbanization. At the same time net out-migration is likely to be detrimental in both the short and the long run. The drain of population combined with the "quality exchange" of migrants — poor, uneducated immigrants replacing skilled, educated and wealthier out-migrants — works severely against the region's ability to develop economically and attract growth industries and will in turn ultimately bring down per capita incomes. (Okun and Richardson believe that out-migration "will contribute to, but is not initially responsible for the impairment of the region's economy").[23]

If the Maritimes is typical of such "low growing" or "high stagnant" industrial regions then we might expect out-migration to be high, highly selective of the young active population and also of skilled craftsmen from industrial and urban areas as well as rural areas. If such migration also preceded to some extent economic stagnation, its extent and selectivity could be expected to have seriously jeopardized the capacity of the region to industrialize fully. On the other hand, if Newfoundland is characteristic of economically backward "low stagnant" primary producing regions, "push" factors would predominate, making for relatively less demographic and economic selectivity among migrants. Furthermore, if out-migration from Newfoundland was on a relatively small scale, and not from the most over-populated but the most "open" regions, it might be expected to do little to relieve population pressure. At the same time the proximity of the Maritimes, its openness to information, and the availability of transportation channels to New England could also have heightened the feeling of relative deprivation among Maritimers. On the other hand, in Newfoundland, which was relatively more isolated, feelings of relative deprivation would not be as great, despite the more dire economic conditions.

A serious examination of the relationship between migration and economic development in Atlantic Canada must not only be based upon sound theoretical premises but must also involve a systematic quantitative assessment, at the subprovincial level, for Newfoundland as well as the Maritimes, of how many people left, from where, and, most importantly, when. What follows, therefore, is an attempt to estimate net migration levels and rates by age and sex at the

23 *Ibid.*, p. 315.

county level for all four Atlantic Provinces and place them within the theoretical framework outlined above. Such an analysis of the extent, timing and geographic and demographic characteristics of the migration process with its implications for regional economic growth is designed to provide a statistical and theoretical basis for future micro-scale studies. For only at this scale will it be possible to demonstrate conclusively the nature of the impact of out-migration on the economic development of the region.

Since no data exist on migration *per se* except those gleaned indirectly from the United States census,[24] we can calculate only the extent of net migration: that is, the population increase between censuses less natural increase (or decrease). In the absence of vital statistics of births and deaths prior to 1921,[25] we are forced to find some other way to calculate natural increase. Fortunately, from 1871 to 1901 in the Maritimes and from 1874 to 1884 and 1891 to 1921 in

24 While immigrants are, at least officially, recorded, no record is kept of out-migrants. One method used extensively by researchers on this topic has been to use the records of recipient countries — in this case the United States. Perhaps the most widely used U.S. source has been the Census (both published and unpublished manuscript) which contains information on Canadian-born residents. See for example Hansen and Brebner *The Mingling of the Canadian and American Peoples*, Truesdell, *The Canadian Born*, and Brookes "Out-Migration from the Maritime Provinces". These sources, it is widely agreed, grossly understate actual levels of immigration of Canadians: see Keyfitz, "The Growth of the Canadian Population", p. 48.

25 Universal and standardized mandatory vital registration commenced in Canada only in 1921 — with Quebec joining in 1926. Nevertheless several provinces did collect vital statistics of varying quality prior to this period. Nova Scotia collected and published vital statistics for a brief period between 1864 and 1875, when the statistics were highly unreliable, and then not again until 1908-1909: see the "Annual Report of Births, Marriages and Deaths", in appendices to the *Journal of the House of Assemly, Nova Scotia, 1864-1875* and *Journal of the Legislative Council, Nova Scotia, 1878*. In New Brunswick "Annual Reports of Registration of Births, Deaths and Marriages" exist for 1888-1894 published as appendices to the *Journals of the Legislative Assembly of the Province of New Brunswick*. These appear to under-record births by about one-third. Reliable registration commenced in 1917-1918 under the Chief Medical Officer and can be found in the "Annual Report of the Chief Medical Officer with Vital Statistics", published annually by the Department of Health, New Brunswick. In Prince Edward Island some registration exists for the years 1906-1907 to 1928, published as the "Annual Report of the Registrar General of Births, Marriages and Deaths" in the appendices of the *Journal of the Legislative Assembly, Prince Edward Island*. No reports have been found for 1911-1912, 1920, 1922 and 1923. The number of registered births was always so low, however, that a large proportion of births evidently escaped registration. Newfoundland began to publish its own vital statistics from 1896, which can be found in the "Annual Report of Births, Marriages and Deaths", Department of Health, Newfoundland. Of course Newfoundland vital statistics were not published by the Dominion Bureau of Statistics until after Confederation in 1949. It should be remembered, however, that even after the commencement of universal standard registration in Canada in 1921 the total number of births registered from 1921 to 1945 have been considered sufficiently deficient to warrant a correction for under-registration. Government estimates of completeness of registration were 94 per cent for 1931 and 97 per cent for 1941. It is generally agreed that registration was unlikely to be much more than the minimum 90 per cent required by DBS when the national vital statistics system commenced in 1921. For a detailed discussion of vital registration in Canada especially prior to 1921 see R.R. Kuczynski, *Birth Registration and Birth Statistics in Canada* (Washington, 1930).

Newfoundland, censuses record population by age and sex at the county level and at regular intervals, thus making cohort analysis possible. Basically intercensal cohort analysis calculates net migration as the difference in the numbers of people in each age group from one census year to the next, less those who died in the interim. Given the age structure of a population in a census year and a comparable age structure for the same population ten years later, survival factors are used to project forward from the first census the number expected to survive until the next census and backwards from the terminal population to adjust for those who could be expected to have died during the period. The difference between the expected and the actual populations gives two estimates of net migration for each age group, which when averaged give a final approximation.[26] These can then be summed to give the total net migration and converted into rates by dividing them by the average of the base populations for the two census years.

The problems associated with this technique have been extensively discussed elsewhere,[27] and it is necessary only to itemize those points which affect the interpretation of the results. 1) Five-year age groups after 1881 in the Maritimes and 1891 in Newfoundland allow the most detailed breakdown of migration by age. For the intercensal period 1871-1881 only ten-year age groups can be used in Nova Scotia and New Brunswick. This does not affect the comparability of overall estimates of net migration, although it does affect estimates of age-specific net migration rates. In Prince Edward Island and Newfoundland, however, incomplete age breakdowns and age group breakdowns which are larger than ten years mean that these figures have to be adjusted to make their total estimates comparable over time and space.[28] 2) For reasons of reliability only those born before the first census, or who were younger than 60 by the first census are used to calculate net migration. Nevertheless the total base popula-

26 In the first case all the expected deaths are assumed to occur within the area prior to out-migration. In the latter case they are assumed to occur only to the population remaining after migration. Thus the forward method gives higher estimates of deaths than the number taking place and hence understates the net outflow, while the reverse projection has the opposite effect. Hence the consistently lower estimates of net out-migration given by the forward projection relative to the reverse projection. By taking the average of these two estimates we assume that there was an even flow of migrants during the decade and that half of the deaths among migrating cohorts occurs after migration. In the older cohorts, where the difference between the two estimates is greatest, this assumption is less likely to be true, as the proportion of deaths occurring at the beginning of the decade is likely to be greatest and this may account for the tendency for the oldest cohorts to show positive net migration, while all other cohorts were experiencing net losses.

27 See P.A. Thornton, "The Extent and Consequence of Out-Migration from Atlantic Canada, 1871-1921", paper presented to the Annual Meeting of the Association of American Geographers, Washington, April 1984.

28 The 1871-1881 estimates for Prince Edward Island had to be adjusted by a factor of 1.016, and for Newfoundland by as much as 1.113. These adjustment factors were based upon the difference in the 1880s estimates of net migration using the 1870s cohort breakdown rather than the complete quinary age cohorts.

tions are used to calcuate the rates as if net migration among the very young and the very old was negligible. By and large, therefore, these figures represent conservative estimates. 3) Swedish life tables have been used to calculate survival factors.[29] Canadian and Massachusetts life tables were discarded on the grounds of unreliability and temporal incompleteness.[30] The English and United States ones were discarded on the grounds that they do not reflect the economic and social conditions prevailing in Atlantic Canada at the time as accurately as the equally reliable Swedish data do.[31] In particular, in the late 19th century both Sweden and Atlantic Canada had approximately similar levels of urbanization, were similarly affected by heavy out-migration and were relatively less industrialized than the adjacent United Kingdom and United States respectively. All these factors are important in determining survival chances.[32] Moreover the migration estimates based upon Swedish life tables render both consistent results and estimates which are intermediate between those derived using English and New World life tables.

Two caveats are in order. Local mortality differences were very pronounced in the late 19th century, especially between rural and urban areas.[33] By applying

29 The Swedish mid-decade survival factors were calculated from life tables published by N. Keyfitz and W. Flieger, *World Population: An Analysis of Vital Data* (Chicago, 1968) for 1873-7 (p. 485), 1883-7 (p. 488), 1893-7 (p. 490). Three other potential sets of life tables exist and have been used in other studies to calculate net migration in Canada.

30 Canadian life tables do exist: Canada, DBS, Social Analysis Branch, *Canadian Abridged Life Tables 1871, 1881, 1921, 1931* (Ottawa, 1939) based upon Canadian census estimates of age-specific mortality rates and were used by me in an earlier report on this study: P.A. Thornton, "The Extent and Consequences of Out-Migration from Atlantic Canada, 1870-1920", in L.R. Fischer and E.W. Sager, eds., *Merchant Shipping and Economic Development in Atlantic Canada* (St John's, 1982), pp. 187-218. These life tables are widely agreed to be grossly inaccurate: see Keyfitz, "The Growth of the Canadian Population", p. 57 and D.M. McDougall, "Immigration into Canada, 1851-1920", *Canadian Journal of Economics and Political Science*, 27 (1961), pp. 162-75. The early Dominion Bureau of Statistics studies of out-migration from the Maritimes all used Massachusetts and later United States life tables. See P.R. Uhlenberg, "A Study of Cohort Life Tables: Cohorts of Native born Massachusetts Women, 1830-1920", in *The Demographic History of Massachusetts* (New York, 1976), p. 419 and United States, Bureau of the Census, *United States Life Tables, 1890, 1901, 1910, and 1901-1910* (New York, 1976), pp. 102-33. A comparison of results based upon these three and the Swedish life tables for the time confirm that both the Canadian and Massachusetts data are unreliable.

31 Keyfitz, "The Growth of the Canadian Population" and McDougall, "Immigration into Canada" both used English life tables modified in various ways to better fit Canadian conditions. The English and United States data though reliable do not reflect the economic and social conditions prevailing in the Maritimes at the time as well as the Swedish data do.

32 For example, between 1871 and 1891 both the Maritimes and Sweden exhibited similar levels of urbanization, which increased from approximately 12 per cent in the Maritimes and 13 per cent in Sweden in 1871 to 18.8 per cent in both places in 1891. At the same time Massachusetts and England were between 60 and 80 per cent urban, the United States as a whole 25 to 40 per cent.

33 See R. Woods, "The Structure of Mortality in mid-nineteenth century England and Wales", *Journal of Historical Geography*, Vol. 8, No. 4 (1982), pp. 373-94. For example Woods found variations in life expectancy at birth among the 631 registration districts of England and Wales in 1861 ranging from a low in Liverpool of 26 years for males and 27 years for females to a high of

"national" survival factors at the county level, differences in mortality will appear as differences in net migration. Generally speaking, therefore, in urban and to a lesser extent in industrial counties, mortality is likely to be underestimated and net out-migration overestimated. Nevertheless the margin of error is not sufficiently large to negate the estimates of the extent and degree of local variations in net migration in the Atlantic Region. A more serious problem stems from the way in which net migration techniques disguise actual flows of migrants and especially hide internal rural-urban migration. Hence migrants who perhaps moved from rural Queens County, Nova Scotia to Halifax, to fill positions vacated by Haligonians who moved to the "Boston States", would in effect appear to have migrated directly from Queens to New England, disguising both the extent of out-migration from Halifax County and the "quality exchange" of migrants. These problems aside, however, intercensal cohort analysis does provide us with reasonably accurate estimates of net migration at the county level broken down by age and sex.[34]

A provincial summary of the extent of net out-migration from the Atlantic Region is contained in Table Three.[35] By the 1870s the region was already losing through migration more people than it was gaining: the net loss amounted to 46,000 people or a little more than four per cent of the total population of the region. By the 1880s, however, out-migration had reached epidemic proportions: the net loss represented some 112,000 people or 12.5 per cent of the population of the Maritimes alone. This exodus slackened off only slightly in the 1890s, when the net loss was 101,000 people from the Maritimes and 123,000 people from the whole of the Atlantic Region, representing some 11 per cent of the population.[36] Unfortunately, in the absence of age-sex breakdowns at the county level after 1901 we do not know what happened in the Maritimes after the turn of the century. We do have data for Newfoundland until 1921, but not for the crucial decade of the 1880s when out-migration was supposed to have been very high.[37] It would seem that out-migration waned somewhat in the 1900s but rose

55 years for males and 57 years for females in Oakhampton, Devon.

34 The variation in estimates of net migration resulting from the use of the wide range of survival estimates is amazingly small both absolutely and from one county to the next and renders the results reliable within a maximum range of +/−10 per cent, except in Newfoundland and Prince Edward Island in the 1870s.

35 These results have been revised from the earlier estimates printed in Thornton, "The Extent and Consequences of Out-Migration". The present results are based upon mid-decade estimates of mortality using Swedish life tables while the originals used beginning-of-decade Canadian estimates.

36 These estimates are between 10 and 15 per cent above Keyfitz and DBS estimates and the same below Lavoie's if beginning-of-decade estimates are used in all cases. See Keyfitz, "The Growth of the Canadian Population", pp. 52-3, DBS, *The Maritime Provinces* (1927), p. 20, and Lavoie, *L'Emigration de Canadiens*, p. 39.

37 See Michael Staveley, "Aspects of Migration in Newfoundland and Labrador", Ph.D. thesis, University of Alberta, 1973, and P.A. Thornton, "Dynamic Equilibrium: Population Ecology and Settlement in the Strait of Belle Isle", Ph.D. thesis, University of Aberdeen, 1980, Chapter 8.

Table Three

Intercensal Net Migration Levels:
Maritime Provinces 1870s to 1890s, Newfoundland 1870s to 1910s

	1870s*		1880s		1890s	
	Migration (000s)	Net-Migration Rate per 1000	Migration (000s)	Net-Migration Rate per 1000	Migration (000s)	Net-Migration Rate per 1000
Prince Edward Island	−3.3**	−32.5	−15.8	−144.5	−18.5	−169.4
New Brunswick	−16.9	−55.5	−46.9	−146.8	−36.4	−113.2
Nova Scotia	−19.1	−45.8	−48.9	−109.8	−46.0	−103.3
Maritime Provinces	−39.3		−111.6		−100.8	

	Newfoundland				
	1870s*	1880s	1890s	1900s	1910s
Net-Migration (000s)	−6.9**	n.a.	−21.9	−16.7	−32.1
Net-Migration Rate per 1000	−38.5	n.a.	−105.7	−80.4	−154.9

** data adjusted
* Newfoundland data represent the intercensal period 1874−1884

to its highest levels in the 1910s. It is frustrating that we do not know more of what happened in the 1920s, when out-migration was once again a topic of national concern.[38]

In the 1870s out-migration was greatest from New Brunswick and least from Prince Edward Island, with Nova Scotia, the most urbanized and industrialized province, nevertheless not exempt from the exodus. By the 1880s Prince Edward Island was experiencing levels of out-migration as high as New Brunswick, with Nova Scotia managing to retain a significantly larger proportion of its population. By the 1890s out-migration from Prince Edward Island had reached an all-time high of 17 per cent of the total population at mid-decade, significantly above that for the remaining provinces who otherwise showed little variation (10.5 per cent). Out-migration from Newfoundland appears to have been on a par with the lowest levels achieved by any Maritime Province.

One of the major advantages of the cohort method of estimating net out-migration is that it reveals the age and sex characteristics of the net migrating population. The diagnostic features of the demography of out-migration are evident from Table Four. Females appear to have had a greater propensity to leave the region than men, although this may in part be a spurious by-product of the fact that males predominated among immigrants.[39] Migration was heavily concentrated among the young active age groups who lost between 20 and 50 per cent of their numbers in any decade, or three to four times the rate from the population at large. Out-migration was considerably less age-selective in Newfoundland than the Maritimes, and there is some tendency for age-selectivity to decrease over time.

What does this mean? The female-led nature of migration tends to support the contention that migration in the Atlantic Region was primarily to cities, and cities moreover that were not perceived as being geographically or culturally distant, since it is held that it was primarily over short distances and to the cities that women predominated among migrants.[40] Although this runs contrary to evidence derived from local studies, such as Alan Brookes' study of Canning, Nova Scotia, it should be mentioned that studies based upon nominative sources often do disguise female involvement since they depend upon household data and family names. Indeed Brookes' study also documents the significant participa-

38 In his report on the Newfoundland census of 1921, the Newfoundland Colonial Secretary deplored the loss by emigration of the younger people and showed how this had resulted in a declining birth rate in rural districts, with districts showing a constant diminution of population since 1884: *Census of Newfoundland, 1921*, Introduction.

39 It is not surprising, therefore, that the greatest differential between male and female levels of net migration were found in the 1870s when immigration was still significant. In the 1870s out-migration was only 3.6 times in-migration, while in the 1880s it was 11.6 times and in the 1890s 6.5 times. See DBS, *The Maritime Provinces* (1927), p. 20.

40 Ravenstein was the first to demonstrate that rural-urban migration in the 19th century was predominantly female-led: see D. Grigg, "E. G. Ravenstein on the Laws of Migration", *Journal of Historical Geography*, 3 (1977), pp. 41-54. On the other hand overseas immigrants were predominantly male.

Table Four

Age and Sex Characteristics of Net Out-Migration
(Net Migration Rates [NMR] per 1,000 population)

	Column 1 Male Net-Migration Rate	Column 2 Female Net-Migration Rate	Column 3 NMR Largest Male Cohort	Column 4 Ratio: Col. 3 : Col. 1	Column 5 NMR Largest Female Cohort	Column 6 Ratio: Col. 5 : Col 2
1870s						
Nova Scotia	39.6	52.1	184(16-20/26-30)	4.65	225(21-30/31-40)	4.32
New Brunswick	53.8	57.4	217(16-20/26-30)	4.03	253(21-30/31-40)	4.41
Prince Edward Island*	23.2	42.0	258(16-20/26-30)	11.13	329(16-20/26-30)	7.83
Newfoundland*	34.1	43.2	76(20-29/30-39)	2.24	129(20-29/30-39)	2.99
1880s						
Nova Scotia	100.1	119.6	374(20-24/30-34)	3.74	397(20-24/30-34)	3.32
New Brunswick	142.4	149.9	435(15-19/25-29)	3.05	421(20-24/30-34)	2.81
Prince Edward Island	141.3	148.3	490(20-24/30-34)	3.47	473(20-24/30-34)	3.19
Newfoundland	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1890s						
Nova Scotia	91.4	115.3	372(20-24/30-34)	4.07	397(20-24/30-34)	3.44
New Brunswick	107.3	119.3	380(15-19/25-29)	3.54	359(20-24/30-34)	3.01
Prince Edward Island	169.3	169.6	578(20-24/30-34)	3.41	525(20-24/30-34)	3.10
Newfoundland	94.2	117.6	248(20-24/30-34)	2.63	324(20-24/30-34)	2.76
1900s						
Newfoundland	89.4	71.1	232(20-24/30-34)	2.61	328(20-24/30-34)	4.61
1910s						
Newfoundland	142.6	167.7	354(20-24/30-34)	2.48	479(15-19/25-29)	2.85

* adjusted rates

tion of women in the industrial economy of Nova Scotia and a growing tendency for women to seek employment in the factories of Canada and the United States.[41] Moreover it is now widely agreed that the Industrial Revolution was built on the backs of the cheap labour of women.[42] If the degree of age-selectiveness indicates the importance of "pull" forces at destination relative to "push" forces at home, then these data would corroborate that "pull" forces in New England were more significant than "push" forces at home throughout the period. Moreover, "pull" forces were more significant in Nova Scotia than New Brunswick and surprisingly crucial for Prince Edward Island emigrants in the 1870s and 1880s.[43] "Push" forces at home were apparently more significant among Newfoundland emigrants, although it should be noted that the more inclusive age categories for Newfoundland in the 1870s would significantly deflate the index of age-selectivity for that decade.

These provincial statistics, however, disguise considerable variation among counties in both the level and age-selectivity of migrants. Figures One to Five show for each decade the levels of out-migration by county. In the 1870s out-migration was already widespread — only eight out of the 53 counties experiencing net in-migration. These can be described as either sparsely settled counties in New Brunswick and Newfoundland which were still experiencing some initial settlement, or the cities of Halifax and St. John's. As we might expect, the in-migration to the frontier was predominantly male-led and relatively less age-selective, while cityward immigration was heavily female-led and highly concentrated among the young single age-groups. Saint John, New Brunswick, on the other hand, experienced the highest out-migration of any county — losing close to 29 per cent of its total population, 40 to 50 per cent of its young active population. The major fire which struck Saint John in 1877 may help explain the extent of out-migration from Saint John, but the age and sex selectivenes of that migration suggests that the out-migration was real and not simply a temporary displacement of people from the city to surrounding areas. This is supported by the fact that although out-migration was much less from the surrounding rural part of the county the countryside did not appear to have received the large numbers of displaced urbanites. Moreover, out-migration from the surrounding counties was among the highest in New Brunswick. Overall out-migration was considerably more severe from New Brunswick than elsewhere, and was most heavily concentrated in the counties closest to and best connected with the United States. In Newfoundland, both the older-settled Conception Bay counties, known for over-population,[44] and the more open communities along the

41 Brookes, "The Golden Age and The Exodus", pp. 67-9.

42 See for example S.M. Trofimenkoff, "One Hundred and Two Muffled Voices: Canada's Industrial Women in the 1880s", *Atlantis*, Vol. 3, No. 1 (Fall 1977), pp. 66-82.

43 It could be that these "pull" forces for Prince Edward Island out-migrants were more social or cultural than economic relative to Nova Scotia: see Brookes, "Out-Migration from the Maritime Provinces", p. 37.

44 See P.A. Thornton, "The Demographic and Mercantile Bases of Initial Permanent Settlement in

FIGURE 1

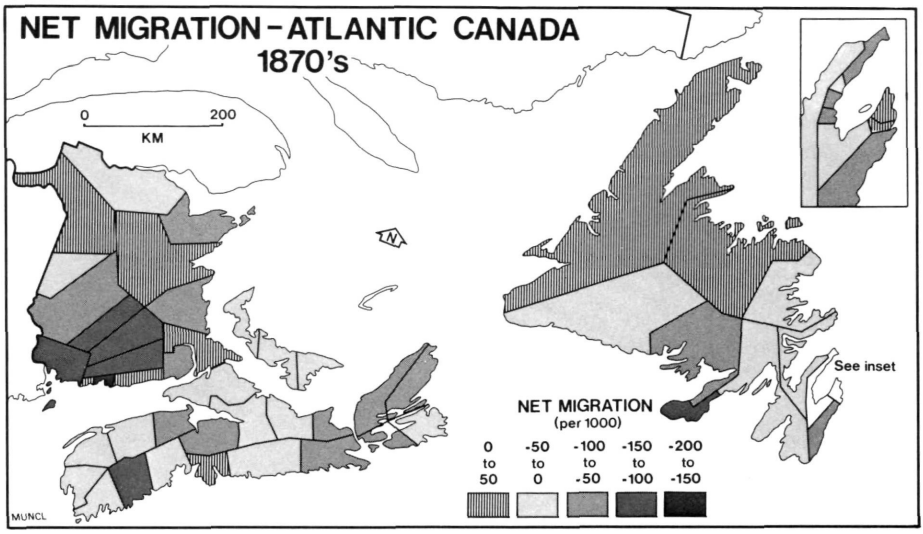
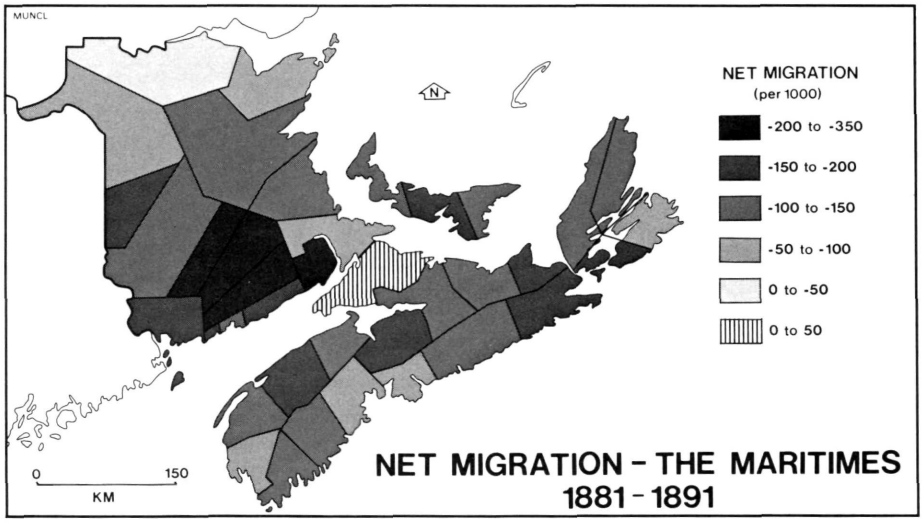


FIGURE 2



South Coast, experienced rates of out-migration on a par with the Maritimes, and considerably above the rest of the Island.

By the 1880s all of the Maritimes but the industrial Cumberland County was experiencing net out-migration of epidemic proportions, although it was still lower in the most remote counties as well as on the Atlantic seaboard (shipping

the Strait of Belle Isle", in J. Mannion, ed., *The Peopling of Newfoundland: Essays in Historical Geography* (St. John's, 1977), pp. 152-83.

FIGURE 3

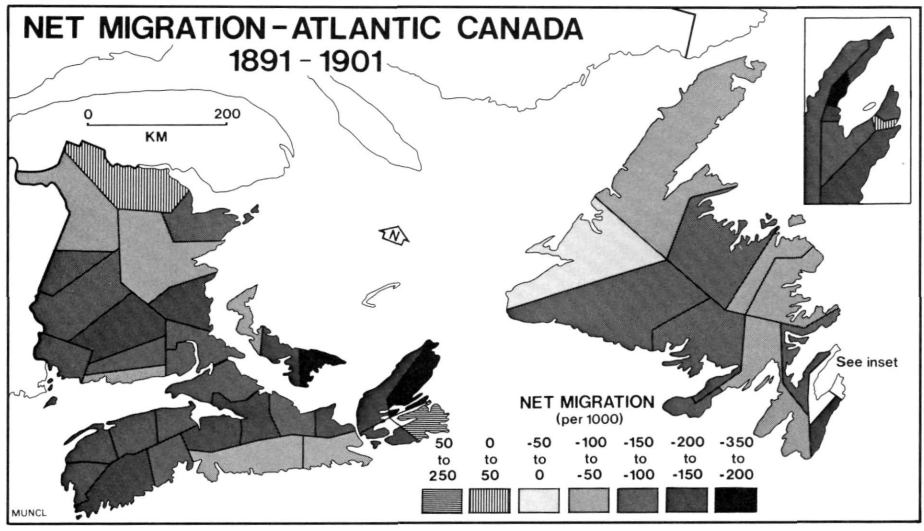


FIGURE 4

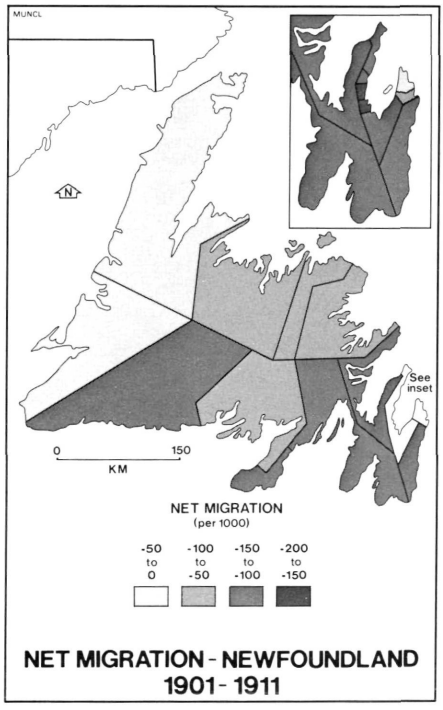
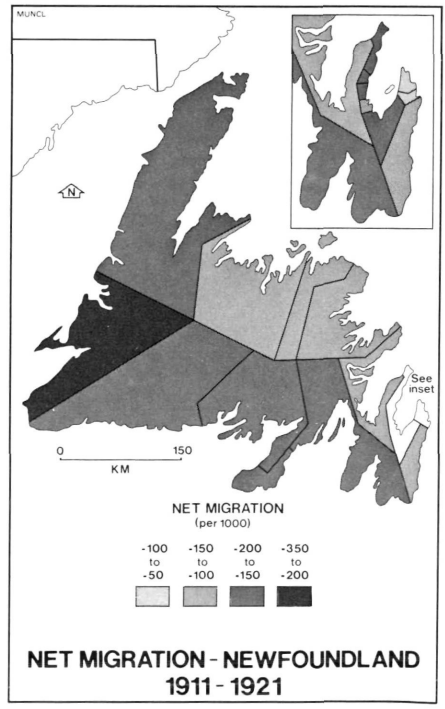


FIGURE 5



counties) and in the industrial counties of Nova Scotia. The highest levels of net out-migration — where more than 20 per cent of the total population and close to 60 per cent of the young active age groups left — were experienced in four counties in the St. John River Valley area. Nevertheless levels of between 15 and 20 per cent were widespread throughout the region. Even counties containing cities such as Charlottetown, P.E.I. and Saint John, N.B. along with counties in which the shipping industry was important, such as Hants and Northumberland, were not exempt from high rates of out-migration.

Heavy out-migration persisted through the 1890s, although the centres of greatest net out-migration had shifted somewhat. Only industrializing Cape Breton County showed immigration and that was on a large scale and dominated by young men. Many probably came from the adjacent rural counties of Victoria, Inverness, Richmond and Antigonish, all of which experienced very high levels of out-migration. A large number also came from Newfoundland (see Table Five). Prince Edward Island experienced massive out-migration and even counties which had previously managed to retain relatively more of their population were now no longer able to, although more remote frontiers and city counties still remained relatively less affected. Out-migration from Newfound-

Table Five

Newfoundland Immigrants Resident in the Maritimes, 1901

County	Number of Immigrant Newfoundlanders 1851-1901	Newfoundlanders as Percentage of Immigrants
Cape Breton, N.S.	6246	54
Victoria, N.S.	735	33
Halifax, N.S.	7014	27
Lunenburg, N.S.	264	24
Guysborough, N.S.	386	17
Pictou, N.S.	1725	16
Cumberland, N.S.	1570	14
Shelburne and Queens, N.S.	468	10
Albert, N.B.	324	15

Note: only places in which Newfoundlanders made up more than 10 per cent of immigrants are included. Data for Shelburne and Queens were aggregated in census reports for 1891 and are aggregated here for consistency.
Source: *Census of Canada, 1901.*

land was smaller than might be expected from the literature,[45] although it was most concentrated in the older-settled overpopulated regions of Conception Bay and the Southern Shore. By the 1910s, when emigration was at its highest in Newfoundland, the West Coast joined these longstanding areas of out-migration, but the traditional inshore fishing areas of the East and North-East coast still showed lower levels of out-migration.

In general, then, out-migration peaked earlier in New Brunswick and Prince Edward Island than in Nova Scotia, but only in Saint John, New Brunswick did out-migration peak in the 1870s. Moreover it would seem that it was in the urban, shipping, fishing and industrial counties that migration peaked later, suggesting that these more "industrialized" or "modernized" counties were relatively speaking better able to hold onto their populations or at least replace them for a longer time. In Newfoundland both the overpopulated Conception Bay and the "open" South and later West coasts, with strong mercantile connections with the mainland, were consistently more prone to out-migration than the more inward-looking traditional inshore fishing communities of the East and North-East coasts.

The individual county age-sex profiles of net migrants fall into five distinct categories, although the large majority — 70 per cent of all pyramids in the Maritimes over three decades — fall into the classic profile category, the first profile shown in Figure Six, represented by Kings County, New Brunswick, 1881-1891. Its essential characteristics are the pronounced "V" shape, showing out-migration strongly concentrated among the young active age groups. These areas often lost as much as 40 to 60 per cent of their population in any decade, and young children and families are poorly represented. Females show a slightly greater propensity to migrate than men. This profile is typical of "short-distance" migration which is generally a response to "pull" forces. Two other factors displayed by this profile also seem typical: the disproportionately low rate of out-migration among people 45-49 at the opening of the decade and 55-59 by the close of it, and the tendency for migration to show a net gain among males 50-60. These may reflect inadequacies of either age-reporting or survival estimates or both.

The second profile, Harbour Grace, Newfoundland, 1891-1901, represents, by contrast, the classic Newfoundland profile in which out-migration predominates. This differs significantly from the one above in that there is a much less pronounced "V" shape, showing less age-selectivity and a high proportion of children and families represented. This profile is more characteristic of a population among whom out-migration is largely a response to "push" forces at home.

The remaining profiles represent only a relatively few cases. The third profile, Saint John, N.B., 1881-91, is both a good and a bad example of a city profile. It is typical in that all cities experienced in-migration among young females, especially among the 10-14/20-24 range, even, as is especially apparent in this

45 See footnotes 37 and 38.

FIGURE 6

AGE-SEX PROFILES OF MIGRANTS

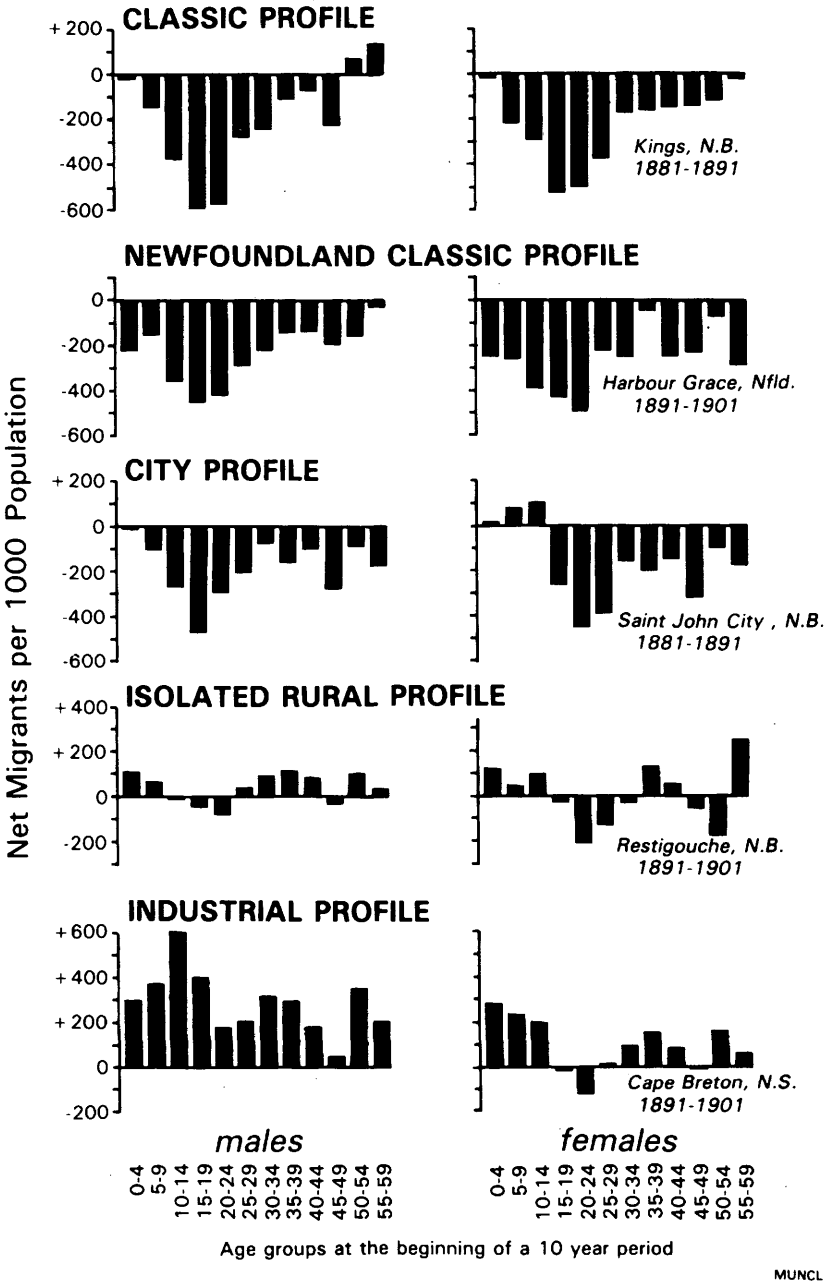
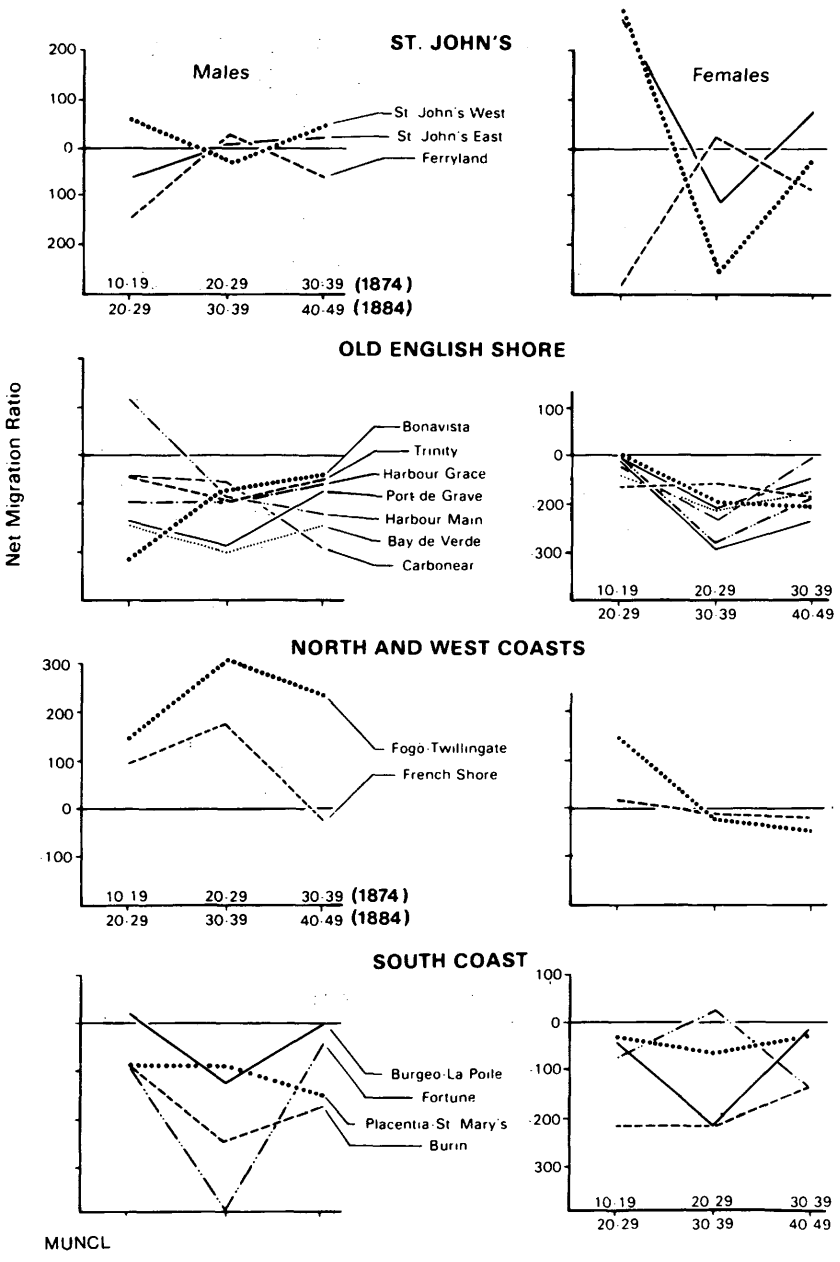


FIGURE 7

REGIONAL AGE-SEX PROFILES OF MIGRANTS NEWFOUNDLAND, 1874-1884



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case, when the overall tendency was wholesale out-migration. This net gain of young girls, who were perhaps attracted by the greater opportunity in the city for entering service, was usually counterbalanced by a net outflow of women in the 15-24/25-29 age group, who were probably returning home to marry. This reciprocal relationship is best exemplified by the net-migration age-sex profile of Ferryland relative to St. John's (Figure Seven). What is atypical of the Saint John, N.B. profile is the extent of net out-migration — as much as 40-50 per cent of all males between the ages of 15-19 at the beginning of the decade and 25-29 by the end — and the excess of male migrants over female migrants.

The next profile, of Restigouche, N.B., 1891-1901, is typical of a small number of rural counties in New Brunswick and Newfoundland — namely Victoria, Westmorland, Northumberland and Gloucester in New Brunswick and Fogo, Twillingate, St. Barbe and St. Georges in Newfoundland — which experienced periods of in-migration as well as out-migration. There are a variety of reasons why such rural areas should experience in-migration, but for the most part these were responses to specific local conditions rather than more general ones. In all cases, however, they created new opportunities for rural settlement. In this case in-migration exceeds out-migration, although both were clearly operating. Such pyramids are characterized by a "ragged" shape, with little age-selectivity among migrants, and male migrants outnumbering females.

Finally, the last profile, Cape Breton, Nova Scotia, 1891-1901, is unique in this study. It is a pyramid, characteristic of a vibrant industrializing county. Similar features are found only in Cumberland County a decade earlier, where they are much less pronounced. In both net immigration predominates, although it rarely lasts more than a decade, and is male-led. Cape Breton also shows somewhat greater age-selectivity among migrants than either Restigouche or Cumberland County, where the number of young males actually shows a net loss.

Figure Seven shows the age composition of migrants by district for Newfoundland from 1874 to 1884 and is instructive for two reasons. First, it shows that age-sex profiles of migrants can be used to distinguish regional patterns of migration: St. John's and its drawing area (Ferryland); the overpopulated English Shore with Bonavista and Trinity Bay, somewhat different from Conception Bay; the expanding "frontiers" on the North and West Coasts; and the "open" well-connected South Coast. Secondly, it further corroborates the relationship between age-selectivity and the relative strength of "push" versus "pull" forces. The overpopulated English shore — where "push" forces can be expected to have been strongest — showed less age selectivity than the North and West "frontiers" and the "open" South Coast, where migrants could be expected to have been responding to "pull" forces.

The empirical evidence on the extent, timing and geographic and demographic characteristics of out-migration presented here strongly supports the thesis that out-migration may have been a significant contributing factor in the economic decline of the region, and may have worked in different ways in New-

foundland and the Maritimes to this same end. In the Maritimes out-migration occurred on a massive scale throughout the late 19th century. A steady net loss was already well underway by the 1870s, and was to reach epidemic proportions in the 1880s and 1890s. This was at a time when, as Alexander and others have shown, the economy of the region was well developed and still growing, and (at least for the 1880s) growing faster than Ontario in terms of real output and gross value of production in manufacturing.[46] It would seem, therefore, that endemic out-migration from the Maritimes, such as that which occurred in the 1880s, largely anticipated the economic downturn in the region's economy, which did not really set in until the decade of the 1890s. Migration was moreover highly selective of the young productive age groups and probably, therefore, of the more educated and highly skilled. It was greatest from those counties closest to and most connected to New England, where the pull of the "Boston States" was most likely to have been strongest. Moreover, in the 1870s out-migration occurred disproportionately from urban parts of counties. This is especially true for Prince Edward Island and Nova Scotia where only 13 and 23 per cent of the population respectively was urban but 22 and 42 per cent of net out-migration was from urban areas. Nevertheless, with the exception of Saint John, New Brunswick, shipping and industrial counties as well as those containing cities appear to have been better able to hold onto population somewhat longer than other counties, though in the end even they were affected severely by out-migration.

A significant qualitative exchange of migrants also seems to have been occurring in the Maritimes, both through rural-urban redistribution within the region, and through immigration of presumably less-skilled workers from Newfoundland replacing more highly skilled out-migrants. Between 1880 and 1900, 150 to 200 per cent of the region's net out-migration came from rural areas. The excess 50 to 100 per cent of regional out-migration measured at the county level, therefore, represented a rural to urban redistribution of the region's own population. This step-by-step migration up the rural-urban hierarchy must have had a detrimental effect on economic growth, inevitably involving a qualitative exchange of migrants: young, unskilled, rural workers moving to the city to replace skilled, urban out-migrants, and in turn themselves acquiring skills only to become the next wave of skilled out-migrants. This process is empirically documented by local studies such as those of Alan Brookes and T.W. Acheson, who moreover suggest that migration was also occupationally selective of craftsmen and traders, rather than farmers, lumbermen and unskilled labourers, although these latter did make up a large proportion of out-migrants, especially in later decades.[47] At the same time a large number of presumably less skilled New-

46 See Alexander, "Economic Growth in the Atlantic Region", pp. 58, 60. In the 1880s the decadal increase in gross value of production in mining and manufacturing were both above the Canadian levels. By the 1890s, however, the rates were significantly below those for Canada as a whole. But this was only after 20 years of sustained out-migration.

47 In Brookes' sample of 1524 Nova Scotians (of whom 450 were adult males) entering the United

foundlanders immigrated to the Maritimes during the last half of the 19th century, concentrating especially in the urban counties, such as Halifax, and certain industrial counties, such as Cape Breton (See Table Five). The end result was a constant drain of the Atlantic Region's young active population which certainly reduced the size of the region's labour force: the proportion of the total population who were of working age slipped from about one per cent less than the Canadian average in 1881 to close to five per cent less than Ontario by 1901. Thus, out-migration was a significant and incremental drain on the region's productive population compared to Central Canada.[48]

In Newfoundland by contrast, out-migration occurred on a slightly smaller scale, may not have peaked until this century, and was less age-selective. Although it did occur from the most "overpopulated" districts in Conception Bay, the quality of the links with the Maritimes and New England also seemed to have played a role in determining the level of out-migration. Out-migration was also high from the "open" and well-connected districts with traditional mercantile links with the Maritimes and New England. It was much less pronounced in the most distant, traditional, inward-looking inshore fishing communities, where population density was ultimately greatest, but where fishermen may have been trapped by merchant indebtedness resulting from the operation of a closed truck system. Moreover, population pressure on the traditional inshore fishery of Newfoundland was particularly acute in the 1880s.[49] This would seem to coincide with and even anticipate the period of massive out-migration from Newfoundland.

Finally the existence of traditionally strong links between the Maritimes and

States in 1872, 102 were farmers, 109 were mariners, 127 servants, 72 carpenters, 64 labourers and 33 were merchants: Brookes, "Out Migration from the Maritime Provinces", p. 37. See also T.W. Acheson, "A Study of the Historical Demography of a Loyalist County", *Histoire sociale/ Social History*, 1 (April, 1968), pp. 63-4. Similar evidence is found in E. Kerr, *Imprint of the Maritimes: Highlights in the Lives of 100 Interesting Americans Whose Roots are in Canada's Atlantic Provinces* (Boston, 1959).

48 The distribution of the population of labour force age is as follows:

	Per Cent of Population of Labour Force Age			
	1871[1]	1881[2]	1891[2]	1901[2]
Maritimes	52.0	54.5	54.9	55.4
Newfoundland	n.d	n.d	53.9	54.8
Ontario	50.7	55.8	58.4	60.3
Canada	n.d	55.6	57.2	58.3

Source: *Census of Canada*, 1871, 1881, 1891, 1901; *Census of Newfoundland*, 1891, 1901.

[1] labour force age is 20-69.

[2] 1881 onwards labour force age is 15-64.

49 This was especially true following the introduction and widespread adoption of the cod-trap which restricted the number of berths (sites) that could be used and hence access to the fish resource: see Alexander "Newfoundland's Traditional Economy", and E.W. Sager, "The Traditional Outport Economy", paper presented to the Canadian Historical Association, Halifax, June 1981.

New England in the late 19th century, meant that information on opportunities was both readily available, and the demand for skilled labour high, at precisely the time when the region itself most needed increased investment in its labour force and was least in a position to release surplus labour.[50] Newfoundland, by contrast, remained initially relatively isolated from New England and as its population had fewer skills to offer for the market, the demand for their labour was less at a time when the out-migration of excess population might well have encouraged greater capitalization in the fishing industry.

Existing theory, in taking a static view of migration, has largely ignored the crucial question of whether migration can be both a *cause* as well as a *consequence* of the economic well-being of a region. This is all the more surprising in light of the empirical evidence put forward by economists such as Brinley Thomas. He argues that migration flows between Britain and West Europe to the New World in the 19th and early 20th centuries were the *cause* of the economic swings on those two continents and also explain their inverse relationship. Each of the three upsurges in emigration from Europe — 1863-72, 1870-90, and 1898-1907 — was accompanied by a boom in British capital exports, thus precipitating a downswing in domestic investment in the British economy and an upswing in the Canadian and American economies.[51] It should not come as a surprise that out-migration from one *region* (such as the Maritimes) should be highest when economic growth in the nation or continent (Canada and United States) was also most rapid, and lowest when economic growth slowed down. Since trends in economic activity in the region parallel (even if at a lower level) those in the nation as a whole, large-scale out-migration is likley to occur when the region is most in need of increased rather than decreased investment in its labour force, and when surplus skilled labour is probably in shortest supply.

It is ironic that economic historians have consistently looked to Central Canada, Confederation and the National Policy to explain the demise of the Maritimes and to the internal social structure of Newfoundland and its colonial connections to explain that nation's impoverishment. In both cases the root of the problem may have lain in the pull of the neighbouring "Boston States", which acted as a drain on the "bone and sinew" of the Maritimes population and as an insufficient pull on the fishing population of Newfoundland.

Only when migration is seen as part of a system — rather than a specific or even repeated set of events — does it become possible to overcome the static, cause-effect view of migration which pervades existing migration theory. Migra-

50 McDonald argues this point passionately. He bases his argument on two criteria: (1) The timing of migration is usually at a point when economic growth is at its greatest and not at its lowest, and economic trends in the region usually parallel those of the nation as a whole; (2) The selectivity of migration means that instead of losing surplus manpower the region loses the very people on whom self-sustained growth depends. "In essence the Maritimes are being divested of a dynamic element which is a precondition to self-sustained growth": McDonald, *Population, Migration and Economic Development*, pp. 22, 41.

51 B. Thomas, *Migration and Urban Development: A Reappraisal of British and American Long Cycles* (London, 1972).

tion usually exists within some larger context of economic and social change which determines the nature of the inter-relationship between area of origin, area of destination, and the characteristics of migrants. This wider context both fuels the process of migration and is in turn affected by it. In 19th century Atlantic Canada the structural context was the industrialization of North America with its concomitant integration of regional economies into one national or even continental economy, involving in turn the concentration and centralization of investment. Such a theoretical framework requires that we see migration as both a consequence and a cause of the economic well-being of the region.[52]

The evidence presented here should be seen as suggestive rather than proof of the role of out-migration in regional underdevelopment in Atlantic Canada. In that sense it is offered as an hypothesis which needs to be tested in micro-scale studies. The major weakness of this approach stems from what is termed statistically "the ecological fallacy", which arises out of the problems which almost inevitably occur when conclusions about individuals are drawn on the basis of aggregate statistics. Nevertheless, the current confusion in the regional literature, the dubious theoretical assumptions on which migration studies are based in this respect, the failure to address the issue of the consequences of out-migration in any serious way, and the absence of studies providing a data base at the sub-provincial level anywhere in the region or for Newfoundland at all, all make such a broad survey an essential first step. Local studies are needed: of individual migrants in terms of their opportunity structures and their decisions to migrate, of economic sectors, such as an examination of potential shortages of skilled or non-skilled labour in certain Maritime industries, and of the effects of out-migration on the development of economies of agglomeration. Only then will it become possible to fully assess the role of out-migration in regional underdevelopment.

52 A.L. Mabogunge pioneered the systems approach to migration. Most specifically he highlighted the importance of the flow of information operating within institutional control systems and the role of feedback amplifying or counteracting the original stimulus and thereby reinforcing or dampening continued migration: A.L. Mabogunge, "A Systems Approach to a Theory of Rural-Urban Migration", *Geographical Analysis*, 2 (1970), pp. 1-18. The most useful and recent systems framework for the study of migration is that provided by R.E. White and R.I. Woods, *The Geographical Impact of Migration* (London, 1980).

Appendix One

Total Net Migration in the Maritimes by County
1871-1901

County	1871-1881	1881-1891	1891-1901
NOVA SCOTIA	−19088.5	−48900.4	−46012.1
Inverness	−1768.0	−3027.1	−3938.2
Victoria	−800.4	−1445.3	−2748.0
Cape Breton	−1178.6	−1880.9	+7941.2
Richmond	−1233.8	−2643.6	−2464.5
Guysborough	−1784.1	−3001.3	−1489.7
Halifax City	+1114.5	−2123.2	
Halifax Rural	−1125.1	−3699.0	
(Halifax Co.)	(−10.4)	(−6148.0)	−6953.0
Lunenburg	−581.2	−2675.2	−3589.7
Queens	−1500.7	−1082.4	
Shelburne	−68.2	−2118.1	
(Queens+Shelburne)	(−1568.9)	(−3200.5)	−3930.6
Yarmouth	−1004.4	−2099.3	−2560.9
Digby	−787.2	−2839.9	−2373.9
Annapolis	−401.5	−3204.4	−2176.3
Kings	−1565.7	−3360.2	−2832.8
Hants	−1847.1	−3905.8	−4141.9
Colchester	−882.1	−2980.1	−4745.9
Pictou	−1585.8	−4477.6	−3779.3
Antigonish	−1044.5	−3218.9	−3130.7
Cumberland	−1072.2	+1253.1	−3957.6
NEW BRUNSWICK	−16886.2	−46926.6	−36362.5
Albert	−697.8	−3068.6	−1658.6
Saint John City	−5072.6	−3694.5	
Saint John Rural	+93.0	−4327.8	
(Saint John Co.)	(−4982.6)	(−8022.2)	−2820.6
Charlotte	−3211.8	−4701.4	−3926.0
Kings	−2677.4	−4992.5	−3369.7
Queens	−1845.5	−3078.7	
Sunbury	−1023.2	−1338.5	
(Queens+Sunbury)	(−2891.7)	(−4449.1)	−2759.4
York	−1659.0	−3541.3	−3281.9
Carleton	−542.7	−3496.7	−3284.5
Victoria	+228.4	−1454.8	−1593.0
Westmorland	+1129.7	−3494.5	−5528.1

Kent	−1139.2	−3425.4	−4207.5
Northumberland	+45.3	−3728.2	−1826.3
Gloucester	−1973.4	−2188.4	−2664.4
Restigouche	−37.8	−364.2	+192.1
PRINCE EDWARD ISLAND[1]	−3312.7	−15775.4	−18464.9
Prince	−630.5	−4400.3	−3062.3
Queens	−2046.5	−819.4	−7152.6
Kings	−732.6	−3138.5	−8247.1
NEWFOUNDLAND[2]	−6863.0		
St. John's East	+933.6		
St. John's West	+632.5		
Harbour Main	−446.4		
Port de Grave	−765.1		
Harbour Grace	−862.7		
Carbonear	−198.0		
Bay de Verde	−725.7		
Trinity Bay	−852.2		
Bonavista Bay	−364.3		
Fogo+Twillingate	+311.0		
St. Barbe/St. George	+320.1		
Burgeo/LaPoile	−276.4		
Fortune	−426.4		
Burin	−960.0		
Placentia/St. Marys	−455.0		
Ferryland	−663.5		

1 Adjusted by a factor of 1.016.

2 Adjusted by a factor of 1.113. The intercensal period for Newfoundland is 1874-1884.

Appendix Two

Total Net Migration in Newfoundland by County
1891 - 1921
(000s)

County	1891-1901	1901-1911	1911-1921
St. John's East	−2465.7	−201.1	−1963.1
St. John's West	+170.8	−1031.9	−1011.1
Harbour Main	−1126.4	−1302.4	−1810.2
Port de Grave	−1479.0	−1255.6	−1151.8
Harbour Grace	−3015.4	−2367.0	−2215.4
Carbonear	−1323.5	−564.3	−921.3
Bay de Verde	−1492.4	−1213.8	−1466.5
Trinity Bay	−2510.0	−2727.0	−2681.7
Bonavista Bay	−1151.1	−1598.4	−2740.2
Fogo	−557.9	−689.0	−918.3
Twillingate	−1943.5	−1013.6	−1985.7
St. Barbe	−586.0	−136.6	−1192.8
St. Georges	−78.1	−166.4	−1816.1
Burgeo/Lapoile	−936.2	−810.2	−1139.1
Fortune	−850.0	−760.1	−1257.1
Burin	−1032.3	−1095.1	−1479.8
Placentia/St. Marys	−726.6	−2026.9	−2611.0
Ferryland	−868.9	−769.6	−627.0
NEWFOUNDLAND	−21920.6	−16686.1	−32132.8