

# Changing patterns of core-periphery migration in Canada, 1961 – 1991

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*Abstract:* In this paper, census data for the period 1961 to 1991 are used to analyze the changing pattern of core-periphery migration in Canada. The historical dominance of the country by the core regions of Ontario and Quebec up to the 1960s was reversed in the 1970s when those two regions lost population through net migration. The peripheral regions, notably the provinces of British Columbia and Alberta, served as the receiving areas for migrants. The 1980s saw another reversal of the migration trend with the core regions registering positive net migration. Only one of the core regions, that is, the province of Ontario, accounted for this revival of the core through net migration gains. The analysis shows that at the provincial level, the phenomenon of core-periphery migration occurred in Canada. The provincial migration trends are indicative, however, of “a continuously changing pattern” rather than “a clean break with the past”. The core province of Quebec suffered net migration loss throughout the study period. British Columbia although included in the periphery never lost its attraction for migrants. The inclusion of British Columbia in the periphery of Canada seems outdated and a redefinition of the core region of the country is warranted.

## Introduction

The direction of internal population migration in North America and the developed countries has not been constant over time. For instance, in 1982 Vining and Pallone put forward the thesis that the century-long migration towards high-density core regions was over in the developed world. It was found that the 1970s saw a population turnaround and net migration and population growth favoured the non-metropolitan areas (Vining and Pallone 1982). This phenomenon has come to be known as core-periphery migration, which represents a new spatial patterning in migration (Berry 1988).

The concept of core-periphery migration refers to the turnaround in population concentration whereby there was positive net migration to a nation's core region in the 1960s and negative net migration to that same core area in the 1970s. Berry (1988) points out that the phenomenon of core-periphery migration is no different than his concept of counterurbanization that has been observed in North America and other more developed countries (MDCs). Counterurbanization is a process of population deconcentration from urban to rural areas, and is effected mainly through migration. Migration has important consequences for spatial population redistribution especially in the developed countries, where the rate of natural population growth has fallen below replacement levels (Feichtinger and Steinmann 1992). In the MDCs the most important factor in spatial population distribution is migration. The study of the changing migration patterns in an area, is therefore, an important research objective with both theoretical and policy implications. Theoretically, it is relevant to examine the extent to which internal migration patterns in Canada portray a core-periphery directional bias, as evidenced in the U.S. and other developed countries. From the policy perspective, changing population movements have important consequences for public planning and delivery of social services (Rosenburg *et al.* 1989).

A large body of literature has documented the patterns, volume, characteristics, and incidence of the migration phenomenon in Canada (see for example Shaw 1985; Field 1988; Liaw 1990). As Joseph *et al.* (1988) rightly point out however, relatively little previous research has been done with the specific goal of examining migration in terms of core-periphery shifts in Canada. The dearth of studies in this area implies that the phenomenon of core-periphery migration in Canada is not clearly understood, nor are the policy implications concisely articulated. Joseph *et al.* (1988) are justified in their call for an evaluation of the role of the migration component in the population turnaround.

The study by Cochrane and Vining (1996) for the MDCs also included Canada. Like other developed countries, Canada's core region declined in terms of migration in the 1970s. A major limitation of Cochrane and Vining's (1996) approach is the way in

which they defined core-regions; a definition that they also generalised to Canada. They state that “the core regions of a country are those regions which are economically and politically dominant: they contain the principal cities of the country and have traditionally experienced high rates of net migration from other less urbanised, peripheral regions. The identification of these regions poses little difficulty and should be not controversial” (Vining and Pallone 1982: 340).

The use of this *traditional* definition of the core region of Canada still persists in the literature (Reed 1995) but it might no longer be tenable if the core-periphery shifts of migration are carefully documented. This study attempts to provide empirical evidence from Canada to supplement the earlier works of Vining and Pallone (1982). Specifically, the objective is to analyze the internal migration patterns in Canada from 1961-1991 and determine whether the patterns fit into their core-periphery framework. Since the data analyzed extend beyond the 1980s, it might be possible to also assess the temporary or permanent nature of the core-periphery shifts. A secondary objective of the analysis is to demonstrate that discernible shifts in core-periphery migration patterns render the traditional definition of Canada’s core-periphery outdated (especially in view of contemporary political developments in the country). Data for the analysis are extracted from the censuses of Canada and the post-censal estimates of population published by Statistics Canada, 1992.

Following this introduction, a review of previous studies is presented in section 2, after which the traditional definition of Canada’s core-periphery is outlined in section 3. The changing pattern of interprovincial migration is analysed in section 4, and in section 5 empirical evidence is adduced for core-periphery shifts in migration. Section 6 presents the conclusion and suggests some directions for future research.

## **Review of Previous Studies**

In view of the large body of literature on Canadian migration (see for example, Liaw 1990; Shaw 1985; Simmons 1980), a

comprehensive review of the subject is beyond the scope of this paper. This brief review is necessarily highly selective and focuses on relevant studies that have bearing on the topic. Most previous studies have concentrated on rural population growth, rural-urban population transfers, metropolitan and non-metropolitan migration, and migration within the urban hierarchy (Keddie and Joseph 1991; Davis 1990; Field 1988; Joseph *et al.* 1988; Parenteau 1982; Simmons 1980).

Using census data at the national and provincial levels, Parenteau (1982) analyzed the changes in rural and urban population in Canada between 1971 and 1976. He found that there was a decline in the rates of urbanization and a revival in the population growth of the rural areas during the study period. Field (1988) employed data from the 1976 Census of Canada to examine the migration links between the rural-urban hierarchies during the period 1971-1976. Field found that "domestic migration patterns in Canada revealed a substantial net transfer of population from all levels of the urban hierarchy to the rural sector" (1988: 55). Simmons (1980) similarly shows that net migration to the largest cities in Canada rapidly declined between the late 1960s and early 1970s. These patterns of internal migration shifts are similar to the population turnaround in the U.S. in the 1970s when the rural and non-metropolitan areas gained population at the expense of the urban areas (Fuguitt and Brown 1990).

In an assessment of the applicability of the population turnaround concept to Canada, Joseph *et al.* (1988) employed census data and focused specifically on rural population growth from 1961-1981. Although their study did not consider the relative contribution of migration vis-à-vis natural increase to rural population growth, their findings are relevant to this study. This is because with declining birth rates in all areas of the country, a large proportion of the growth of the population can be attributed to net migration. For instance, Keddie and Joseph (1991) point out that during the 1976-1981 period, the province of British Columbia recorded a population growth rate of 11.3 per cent but the contribution of net migration to this growth was nearly double that of natural increase.

The study by Joseph *et al.* (1988) found that the period 1971-1981 saw the rural areas registering a higher population growth

rate than the urban areas. Keddie and Joseph (1991) found that the early 1980s pointed to an increase in urban population growth. It must be pointed out that these changing growth trends are reflective of the changing population growth trends at the provincial and national levels. In an analysis of the growth and distribution of the Canadian population, Termote (1987) noted that between 1966-1971 and 1971-1976, there was a reversal of interprovincial migration that favoured the four eastern (Atlantic or Maritime) provinces and the three Prairie Provinces. Further, Termote (1987: 42) states that the 1971-1976 period was “characterized by a strong deterioration of Ontario’s migration balance.” This changing migratory trend corroborates the findings of Cochrane and Vining (1996) for the MDCs.

In sum, it might be said that past studies point to large differences in rural-urban population growth as well as considerable shifts in the internal migration patterns in Canada. The empirical evidence shows further that the phenomenon of counterurbanization or metropolitan dispersal of population was observed in the Canadian urban scene. An analysis of population shifts at the provincial level between 1961 and 1991 within the framework of core-periphery migration will go a long way to supplement the findings in the above literature review. Before we undertake an analysis of the migration data however, it is necessary to turn attention first to the core-periphery of Canada, as traditionally defined.

## **Defining Canada’s Core-Periphery**

The concept of core-periphery is used inter-changeably with other concepts such as heartland-hinterland, metropolis-hinterland, centre-periphery or centre-margin (McCann 1982). The concept describes the unequal relations between regions, or rural and urban centres, such that the core or heartland dominates the periphery or hinterland in terms of human and natural resources and socio-economic development. Friedmann (1973) defines hinterlands as regional sub-systems that stand in a relationship of economic, political and cultural *dependency* to a heartland. Anderson (1988:

8) points out that a useful distinction between heartland and hinterland can be made by identifying the central Canadian industrialized core as the heartland and the rest of the country as the hinterland.

The core region of Canada has thus been traditionally defined as comprising the two provinces of Quebec and Ontario. As Anderson (1988) points out “Canada’s industrial core is described as a region extending from Windsor through the Toronto area and northeast along the St. Lawrence River to Montreal and Quebec City” (1988: 2-3). This definition of the heartland is described as Canada’s *Main Street* (Yeates 1975). Walker (1990: 43) states that “at an early stage in Canada’s economic history a national scale core-periphery had emerged with the core centring on the Quebec-Windsor corridor and dominated by Montreal and Toronto.” Statistical data on the volume of domestic exports of Canada show that from January to November 1997, 68 percent of Canada’s exports originated from the two core regions of Quebec and Ontario; but Ontario alone accounted for 50 percent of the exports (Appendix 1). The statistics in Appendix 1 demonstrate that Quebec’s share of total exports declined from 20 percent in 1974 to 18 percent in 1997.

The standard definition of Canada’s core-periphery is shown in Figure 1. As already noted, Quebec and Ontario form the core regions; the western, northern and Atlantic Provinces are all considered as peripheral to the centre. In the analysis that follows, the periphery is subdivided into the Maritimes (Newfoundland, Prince Edward Island, Nova Scotia, and New Brunswick), the Prairies (Manitoba, Saskatchewan and Alberta), and British Columbia (BC).<sup>1</sup> This categorization of the periphery is in line with previous studies and is intended to facilitate the analysis.

Generally, in the core-periphery model, there is a concentration of socio-economic development efforts in the core. Since most migrations are economically motivated (Shaw 1985), the usual direction of migration flow is from the periphery to the core of a country. This is because most migrants seek to avail themselves of the socio-economic opportunities in the core area. Empirical evidence shows that the historical pattern of internal migration in Canada was positive net migration to the core regions of Ontario



*Figure 1: Provinces and Core Region of Canada (1961-1991).*

and Quebec from 1901 to 1961, although Quebec experienced a net loss in the period 1911-1921 and also in 1941-1951 (Stone 1969; George 1970). In the next section the 1961 to 1991 data on internal migration patterns among the provinces of Canada are analysed to ascertain if the traditional definition of core-periphery relationship is applicable in a Canadian context.

### **Net Interprovincial Migration in Canada, 1961-1991**

Data on net interprovincial migration are analyzed in Table 1. It can be seen from this table that during the period 1961-1966 all provinces, with the exception of Ontario and British Columbia, registered negative net migration. In the 1966-1971 period Alberta joined Ontario and British Columbia as the provinces that gained population through positive net migration. During the two time

**Table 1:** *Interprovincial migration in Canada, 1961-1991.*

Province	1961-66	1966-71	1971-76	1976-81	1981-86	1986-91
Newfoundland	-15,213	-19,344	-1,856	-18,983	-15,051	-15,971
P.E.I.	-2,970	-2,736	+3,754	-829	+751	-711
Nova Scotia	-27,125	-16,396	+11,307	-7,140	+6,895	+2,117
New Brunswick	-25,679	-19,596	+16,801	-10,351	-3,931	-5,246
Quebec	-19,866	-122,735	-77,610	-156,496	-81,254	-40,382
Ontario	+85,369	+150,712	-38,559	-57,827	+121,767	+72,318
Manitoba	-23,470	-40,690	-26,828	-42,218	-2,634	-36,454
Saskatchewan	-42,094	-81,398	-40,753	-9,716	-2,974	-66,079
Alberta	-1,984	+32,008	+58,571	+186,364	-31,676	-41,438
British Columbia	+77,747	+114,966	+92,285	+122,625	+7,382	+138,860
Yukon & NWT	-3,360	-3,072	+3,213	-5,430	-3,141	-2,780

Source: Statistics Canada, 1992

periods of 1961-66 and 1971-76, Quebec registered negative net migration. In fact, throughout the entire period under study from 1961 to 1991 Quebec, one of the core provinces, lost population through net migration.

Table 1 further demonstrates that in the 1971-76 period, the Maritime Provinces of Prince Edward Island (P.E.I.), Nova Scotia, and New Brunswick recorded positive net migration as opposed to the previous time periods 1961-66 and 1966-71, when they suffered negative net migration. The other two provinces recording positive net migration during the 1971-76 period were the western provinces of Alberta and British Columbia. It is significant to note that during 1971-76 and the 1976-81 inter-censal periods, both Ontario and Quebec (the core regions) registered negative net migration.

A remarkable feature of Table 1 is the net migration figures for the 1976-81 period. During that period all the provinces, except the two western provinces of Alberta and British Columbia, recorded negative net migration. The data for the 1981-86 period reveal that the provinces registering positive net migration were Ontario, British Columbia, and two Maritime Provinces of P.E.I. and Nova Scotia. In the 1986-91 period, all the provinces except Ontario and British Columbia lost population through migration. The figures in Table 1 indicate that British Columbia is the only province to demonstrate a consistent pattern of positive net migration.

In sum, these statistics demonstrate a considerable amount of change in interprovincial migration patterns during the 1961-1991 period. Although Joseph *et al.* (1988) found no evidence in support of a population turnaround at the rural scale of analysis, Table 1 reveals that at the provincial level, there was a complete reversal in the pattern of internal migration during the period under study. It must be pointed out that the shifts in internal migration patterns may be more clearly discerned and appropriately analyzed at the provincial level where as Walker (1990: 43) rightly points out “data availability is so much better.” The core-periphery migration shifts, which support the notion of a population turnaround, are further analyzed in the next section.

### Core-periphery Migration: Empirical Evidence

Data on internal migration to the core regions of Canada from the 1961 to 1991 censuses are summarised in Table 2. These figures demonstrate that in the 1960s there was positive net migration to the core areas; that is, the core areas gained population through net migration. As already noted however, the core region of Quebec suffered net migration loss during the entire period (1961-1991). The net migration gain in the core region can be attributed to the positive net migration experience in Ontario, which appears to be the most important province in the core area in terms of population dynamics.

Table 2: Net migration to the Canadian core region, 1961-1991.

Period	Quebec	Ontario	Total
1961-66	-19,866	+85,369	+65,503
1966-71	-122,735	+150,712	+27,977
1971-76	-77,610	-38,559	-116,169
1976-81	-156,496	-57,826	-214,322
1981-86	-81,254	+121,767	+40,513
1986-91	-40,382	+72,318	+31,936

Source: Calculated from Table 1.

The analysis in Table 2 clearly indicates that in the 1970s the core areas of Canada recorded negative net migration in the magnitude of negative 116,169 in 1971-76 and negative 214,322 in the 1976-81 period. Both Quebec and Ontario registered negative net migration during the 1970s. This pattern is a clear reversal of the trend in the 1960s when Ontario accounted for the positive net migration to the core areas. Another migration reversal occurred again in the 1981-86 and 1986-91 periods, when the core again recorded positive net migration. During both periods however, Quebec experienced negative net migration, so that the core gains were entirely due to Ontario.

The negative net migration to the core areas during the 1970s supports a reversal in the direction of the pattern of internal migration in the developed countries during that period (Cochrane and Vining 1996; Vining and Pallone 1982). During the 1970s the dominance of the core regions declined, albeit temporarily. In his comments regarding the Canadian situation, Termote (1987: 33) states, "the regional pattern of the 1970s is characterized by an important decline in the 'demographic power' of the two central provinces (Quebec and Ontario), which until the 1960s dominated Canada's demographic structure." Based on the demographic criteria, a more specific assessment might be to urge for a redefinition of Canada's core-periphery, since the concept is a popular model for examining the movement of people and it is also a framework used to describe Canada's regional economic development. The question that arises then, is in what direction was the flow of out-migration from the core regions in the 1970s?

In Table 3, data on net migration to the core areas are compared with net migration to the periphery provinces. An analysis of this data clearly reveals the volatile and changeable nature of migration patterns in Canada. During the 1961-66 and 1966-71 periods, the peripheral regions (except for British Columbia) lost population (to the core) through negative net migration. The reversal of the migration pattern in the 1971-76 and 1976-81 periods, already noted, is clearly borne out in Table 3. Except for the Prairies, which recorded negative net migration in 1971-76, the periphery gained population through positive net migration. This

**Table 3:** Net migration to core and periphery, 1961-1991.

Period	Core		Periphery		
	Quebec	Ontario	Maritimes	Prairies	B.C.
1961-66	-19,866	+85,369	-71,005	-67,548	+77,747
1966-71	-122,735	+150,712	-58,099	-90,080	+114,966
1971-76	-77,610	-38,559	+30,006	-9,010	+92,285
1976-81	-156,496	-57,826	-37,303	+134,430	+122,625
1981-86	-81,254	+121,767	-15,267	-37,284	+7,382
1986-91	-40,382	+72,318	-24,045	-143,971	+138,860

Source: Calculated from Table 1.

demonstrates that the direction of internal migration was from the core to the periphery.

In the 1976-81 period, while the Prairies experienced a positive net migration gain, the Maritimes suffered negative net migration. There was yet another migration reversal during the 1981-86 and 1986-91 periods. The core gains, again due to Ontario, during these periods contrast sharply with the losses suffered by the periphery. The core (specifically Ontario) seems to have bounced back and attracted more migrants at the expense of the periphery, except for British Columbia. The net migration gain achieved by British Columbia, which is supposed to be included in the periphery, has already been noted. In fact throughout the entire period under study (1961 to 1991), the province of British Columbia gained population through core-periphery migration. It seems that the inclusion of the province of British Columbia in the periphery appears to be an anomaly because of its attractive power for migrants.

The changing pattern of internal migration is said to be due in large measure to the changing economic performance of the various provinces in the country (Walker 1990). A very good example of this is the case of the Prairie province of Alberta, which attracted migrants during the oil boom years between 1971-76 and 1976-81 (see Table 1).

In summary, the analysis in Table 3 clearly indicates that the phenomenon of core-periphery migration occurred in Canada during the 1970s. A shift in the trend occurred however, in the early 1980s,

to favour the core region of Ontario, with the core regaining its dominant position. It is significant to note that Quebec (considered a core province) constantly experienced migrant loss, while British Columbia (considered peripheral) consistently attracted migrants. In the light of this changing trend Walker (1990: 54) states, “the core-periphery structure in Canada is not as clear-cut as it was 20 years ago and could either strengthen or weaken in the future.”

## **Conclusion and Implications for Future Research**

This paper has explored the shifting direction of internal migration patterns in Canada during the 1961-1991 period. It was shown that core-periphery migration occurred during the 1970s and that there was a reversal of the trend in the 1980s to the province of Ontario, the most dominant core area. It is possible that the revival of the core region of Ontario might extend beyond the 1990s. It is clear that within the core region, Ontario stands out as the towering figure over its ailing neighbour, Quebec. In the periphery, the province of British Columbia exerts a dominating influence and is able to continuously draw a large number of migrants.

This has implications for Canadian regional policy. Sooner or later policy analysts will have to address the issue whether British Columbia should still be regarded as a periphery region, one dependent on an ailing core area. In this context, future research needs attempt a redefinition of Canada’s core-periphery structure or articulate a “multi-polar core” concept. This is necessary because the analysis has shown that Vining and Pallone’s (1982) definition of the core region as one that experiences high rates of net migration, does not apply to Quebec.

Previous studies of core-periphery migration saw the 1970s core region migration loss as a “clean break with the past” (Vining and Pallone 1982). The findings in this study indicate that no clean break with the past occurred in Canada. Rather we have what might be called “continuously changing patterns” or what Mera (1988) calls “migration cycles.” Migrants move in response to perceived economic opportunities. As the economic circumstances

of the various provinces change, so too will the direction of internal migration flows.

In a country as large as Canada, interprovincial distances are lengthy. The changing patterns of core-periphery migration revealed in this paper imply that the migrating actors travel over very long distances. The relevant research question for geographers is, do long distances influence migrant decisions? In his study of Canadian population distribution, Termote (1987: 42) concludes “physical distance does not always play a dominant role in interprovincial migration behaviour.” How then do we model aggregate migration flows? Do we continue to use the traditional gravity model approach of relating migration and distance? Or do we adopt the “needs” approach and relate migration to opportunities, knowing that migrants are influenced more by economic opportunities? This can be posed as an empirical research question, involving a field survey, to investigate migrants’ views on the relative importance of linear distance in destination selection.

## Appendix 1

*Volume of Total Domestic Exports by Province, January to November, 1974 and January to November, 1997.*

Province	Total Exports Jan-Nov, 1974		Total Exports Jan-Nov, 1997	
	Thousands of Dollars	% of Total	Millions of Dollars	% of Total
Newfoundland	447,112	1.6	2,269.3	0.9
P.E.I.	16,183	0.1	2,824.2	1.1
Nova Scotia	524,219	1.8	338.0	0.2
New Brunswick	690,787	2.4	4,967.4	2.0
Quebec	5,703,531	20.0	45,752.7	18.0
Ontario	10,888,539	38.1	127,938.7	50.3
Manitoba	468,830	1.6	6,388.4	2.5
Saskatchewan	746,951	2.6	8,815.4	3.5
Alberta	3,719,698	13.0	30,048.3	11.8
British Columbia	5,229,393	18.3	24,518.7	9.6
Yukon & NWT	na	na	437.5	0.2
Total	28,558,913	100.0	254,348.6	100.0

Source: Statistics Canada, 1997

## References

- ANDERSON, F.J. 1988 *Regional Economic Analysis: A Canadian Perspective* Toronto: Harcourt Brace Jovanovich.
- BERRY, B.J.L. 1988 'Migration reversals in perspective: The long-wave evidence' *International Regional Science Review* 11(3): 245-51.
- COCHRANE, S.G. AND VINING, D.R., JR. 1996 'Recent trends in migration between core and periphery regions in developed and advanced developing countries' H.S. Geyer, and T.M. Kontuly (eds.) *Differential Urbanization: Integration Spatial Models* (London: Arnold) 90-110.
- DAVIES, W.K.D. 1990 'What population turnaround?: Some Canadian prairie settlement perspectives, 1971-1986' *Geoforum* 21(3): 303-320.
- FEICHTINGER, G. AND STEINMANN, G. 1992 'Immigration into a population with fertility below replacement levels: The case of Germany' *Population Studies* 46: 275-284.
- FIELD, N.C. 1988 'Migration through the rural-urban hierarchy: Canadian

- patterns' *Canadian Journal of Regional Science* 13: 33-56.
- FRIEDMANN, J. 1973 *Urbanization, Planning and National Development* Beverly Hills: Sage Publications.
- FUGUITT, G. AND BROWN, D. L. 1990 'Residential preferences and population redistribution 1972-1988' *Demography* 27(4): 589-600.
- GEORGE, M.V. 1970 *Internal Migration in Canada: Demographic Analysis* Ottawa: Dominion Bureau of Statistics.
- JOSEPH, A.E., KEDDIE, P.D., AND SMIT, B. 1988 'Unravelling the population turnaround in rural Canada' *Canadian Geographer* 32(1): 17-30.
- KEDDIE, P.D. AND JOSEPH, A. E. 1991 'The turnaround of the turnaround? Rural population change in Canada, 1976 to 1986' *Canadian Geographer* 35(4): 367-79.
- LIAW, K-L. 1990 'Joint effects of personal factors and ecological variables on the interprovincial migration pattern of young adults in Canada: A nested logit analysis' *Geographical Analysis* 22(3): 189-208.
- MCCANN, L.D. 1982 *A Geography of Canada: Heartland and Hinterland* Scarborough: Prentice Hall.
- MERA, K. 1988 'The emergence of migration cycles' *International Regional Sciences Review* 11(3): 269-275.
- PARENTEAU, R. 1982 'Is Canada going back to the land' K.B. Beesley, and L.H. Russwurm (eds.) *The Rural-Urban Fringe: Canadian Perspectives* York University: Geographical Monographs No. 10: 53-70.
- REED, M. 1995 'Implementing sustainable development in hinterland regions' B. Mitchell (ed.) *Resource and Environmental Management in Canada: Addressing Conflict and Uncertainty* Toronto: Oxford University Press 335-359.
- ROSENBERG, M.W., MOORE, E.G., AND BALL, S.B. 1989 'Components of change in the spatial distribution of the elderly population in Ontario, 1976-1986' *The Canadian Geographer* 33(3): 218-229.
- SHAW, R.P. 1985 *Intermetropolitan Migration in Canada: Changing Determinants Over Three Decades* Toronto: New Canada Publications.
- SIMMONS, J.W. 1980 'Changing migration patterns in Canada: 1966-71 to 1971-76' *Canadian Journal of Regional Science* 3: 139-162.
- STATISTICS CANADA 1992 Catalogue 91-210 Vol. 10 Table 8.
- STATISTICS CANADA 1997 *Trade of Canada Summary of Exports* Catalogue 65-002.
- STONE, L.O. 1969 *Migration in Canada: Regional Aspects* Ottawa: Dominion Bureau of Statistics.
- TERMOTE, M.G. 1987 'The growth and redistribution of the Canadian population' W.J. Coffey and M. Polese (eds.) *Still Living Together: Recent Trends and Future Directions in Canadian Regional Development*

Montreal: The Institute for Research on Public Policy 37-72.

VINING, D.R. JR., PALLONE, R. 1982 'Migration between core and peripheral regions: a description and tentative explanation of the patterns in 22 countries' *Geoforum* 13: 339-410.

WALKER, D. 1990 'Canada's internal core-periphery structure' R. Hayter and P.D. Wilde (eds.) *Industrial Transformation and Challenge in Australia and Canada* Ottawa: Carleton University Press 43-54.

YEATES, M. 1975 *Main Street* Toronto: Macmillan.

<sup>1</sup> The Yukon and North West Territories are excluded from the analysis of core-periphery migration because of small numbers, which will not have any effect on the findings.