Canadian Studies in Population, Vol. 14 (2), 1987, pp. 209-222

DEMOGRAPHIC CHANGE, PROVINCIAL FISCAL BEHAVIOUR, AND REGIONAL ECONOMIC GROWTH

William G. Watson
McGill University, Montreal, Quebec, Canada

Résumé – Cette étude réexamine la littérature empirique sur chacun des liens causaux d'un modèle de démographie et de croissance régionales qui opère comme suit: (1) Les différences démographiques à travers les régions engendrent des différences en taux d'impôt. (2) Les différences en taux d'impôt causent la migration interrégionale. (3) La migration interrégionale cause des effets démographiques défavorables dans les régions que les gens quittent. (4) Ces effets, à leur tour, réduisent la croissance économique, et directement par la productivité réduite de la main-d'oeuvre et indirectement alors que les taux d'impôt montent davantage afin de supporter proportionnellement des dépenses publiques plus grandes à partir d'une base d'impôt réduit. L'étude mène à la conclusion que de telles interconnections devraient être étudiées dans le contexte d'un modèle d'équilibre général.

Abstract – The paper reviews the empirical literature on each of the causal links of a model of regional demographics and growth that operates as follows: (1) Demographic differences across regions give rise to differences in tax rates. (2) Differences in tax rates cause interregional migration. (3) Interregional migration causes "unfavourable" demographic effects in regions people leave. (4) These effects in turn reduce economic growth, both directly through reduced productivity of the labour force, and indirectly as tax rates rise even further in order to support proportionately greater public expenditures from a reduced tax base. The paper concludes that such interconnections should be studied within the context of a general-equilibrium model.

Key Words – **interregional migration, intergovernmental grants, regional economics, cumulative causation, public expenditures, taxation**

Introduction

This paper is concerned with how demographic differences from province to province and region to region can affect regional economic growth, both directly – by changing the skill and productivity mix of regional populations – and indirectly – by influencing the levels of regional taxes and public expenditures. These demographic differences can either be stable and longstanding – that is, "steady-state" differences – or they can be the result of short-term changes in a given region's demographic structure. These short-term changes can, in turn, be either "exogenous" to the model, that is, caused by external or random events, or they can be "endogenous" to it, in which case the interplay of demography and economics can produce systematic and possibly permanent differences in regions' economic and demographic structures.

Endogenous demographic changes have long been thought to influence the economic fortunes of Canada's less-developed regions. A recurring theme in Maritime economic history is that the Maritimes have suffered greatly from emigration of their most talented and entrepreneurial citizens both to other parts of Canada and to the United States (see Brookes, 1976 and Matthews, 1983). My conclusion in this review of the relevant literature is that the interplay of demographics and economics may well involve Atlantic Canada in a vicious circle, though much more work needs to be done to discover just how important such interplay is.

In thinking about possible interactions between demography and regional economic growth, at least six phenomena are important:

1. regional dependency ratios;
2. regional variation in female participation in the labour force;
3. the effects of dependency ratios on local expenditure needs, and therefore (possibly) on local tax rates;
4. the effects of female participation rates on local market income and therefore (possibly) on local tax rates;
5. the effects of local fiscal variables on migration both into and out of the locality; and
6. the effects of migration on local economic growth and therefore on local expenditure needs.

In the real world, of course, these variables are likely to interact with one another in ways that can only be captured in a "general-equilibrium" (GE) model. Unfortunately, a regional GE model that embodies demographic effects does not exist (though see Whalley and Trela, 1986, for an "ordinary" regional GE model), so this paper can only summarize what has been learned

about these variables' interaction from "partial-equilibrium" studies, that is, studies that examine only one or two of these interactions at a time. This is done in the next two sections below. One obvious lesson here is the importance of building a regional GE model that will address such questions.

Outlines of a Model

While awaiting the development of a GE model, it is possible to try to develop some intuition about how demographic and economic factors interact to determine regional variations across the entire spectrum of economic indicators. This section of the paper tries to do that.

To begin with, suppose the various regions of Canada were demographically identical (which is not now, and probably never has been, true; see the following section). Now suppose the demographic structure of, say, the Maritimes, was disturbed in such a way that dependency ratios rose in that region. For present purposes, it does not particularly matter whether the unusually rapid growth of population is at the bottom or top of the age distribution, so suppose, for convenience, that it is at both. The immediate effect would be an increase in the demand for schools and for medical care. While in theory these demands could either be ignored or financed out of reduced expenditures in other areas, in practice there is likely to be a net increase in local expenditures following on the increase in the dependency ratio. This can be financed by increases in borrowing, taxes, or federal transfers. As it happens, federal transfers are not very sensitive to expenditure "needs": Established Programmes Financing (EPF) grants are explicitly unrelated to actual expenditure on the various established programmes, while equalization payments emerge from a tax-based formula that takes no account of local need. So either taxes or borrowing must increase, and since more borrowing today means higher taxes in the future, in either case taxpayers are likely to perceive an increase in their lifetime tax burden.

A second way in which local tax rates may rise in response to demographic change has to do with the labour force participation of female workers. If an increase in the proportion of children in a population causes fewer women to participate in the labour force, this means, in effect, that more women will be earning "home income" rather than market income. The total value of goods and services produced may not change – that is, the value of home work may be more or less the same as the value of market work – but home income is harder to tax than market income. So even with no change in the funds needed

for public purposes, tax rates will have to be higher whenever the labour force participation rate is lower.

Other things equal, an increase in lifetime local taxes per worker is likely to encourage emigration from the province(s) concerned. To be sure, people with dependents may be willing to pay higher taxes in exchange for public support for their dependents, but those who have no dependents pay extra taxes and receive no extra benefits. (Indeed, they may have been the beneficiaries of public programmes that get cut in order to pay for the increased services for dependent-aged people.) And even those with dependents will find that they can get the same services for them in other provinces, but at more favourable tax rates. In sum, the tax changes that follow a change in the age structure of a region's population likely will encourage interregional migration – certainly of those who have no dependents, but possibly also of those who do.

The next link in the causal chain is that those who leave a region in response to an increase in its tax rate will not be a random sample of its population. Taxpayers obviously are more likely to leave than non-taxpayers. And so, by and large, are young people, since they stand to suffer a larger lifetime loss as a result of increased tax rates. Moreover, if increases in tax rates are progressive, higher-income people are more likely to leave than lower-income people, while those who remain will be less likely to invest in "human capital", – that is, to pursue training and education that would raise their lifetime incomes.

If on average those who leave are <u>not</u> average, then this raises the possibility of a significant "backwash" effect on regional economic growth (to use the terminology of Myrdal, 1957; see also Hirschman, 1958 and Gaile, 1979, 1980). Moreover, it will skew the age structure of the remaining population even more toward the dependent age groups, which will bring about further increases in expenditure requirements and reductions in the income base out of which taxes are paid.

As mentioned, the idea that Atlantic Canada has suffered from a vicious circle – in which slow growth leads to emigration, which leads to even slower growth and even more emigration – is a familiar theme in Canadian regionalism. On the other hand, migration flows between provinces are not that large in absolute terms (see Winer and Gauthier, 1982b), while differences in tax rates across provinces may not be crucial in the decisions of very many migrants. So it remains to be seen just how important the vicious-circle hypothesis is empirically. The next section summarizes some of our knowledge about the strength of the different causal links in this story.

Established Results

Regional Demographies Do Differ

Age structures do differ across provinces (see Savoie, 1986). The Maritimes have higher dependency ratios than central Canada and the far West (that is, Alberta and British Columbia), a pattern consistent with the story told above about higher dependency ratios giving rise to higher tax rates. Moreover, regional demographic structures have differed for some time. Green (1971) finds large differences for the late 19th century, although they closed somewhat toward the turn of the century. On the other hand, Shaw (1986) finds few differences in age structure across metropolitan areas in the 1970s. Thus the observed difference in age structures across provinces may have something to do with remaining differences in the rural-urban mix of provincial populations.

Labour force participation rates are also considerably – and consistently – lower in the Maritimes than in the other regions of Canada. Presumably this is at least partly due to the higher dependency ratio. What is certain is that the lower overall participation rate reduces the market income on which taxes can be levied. Assuming expenditure needs are given, this raises local tax rates.

Demographic Change Does Affect Local Expenditures and Taxes

This is certainly the usual assumption of those who make a living predicting future expenditure patterns. Thus the Economic Council of Canada (1980), Foot (1982), and Denton and Spencer (1983) all made their projections on the assumption that expenditure requirements for health care, education, and other programmes depend on the size of the "client" population groups for such programmes (though they come to different conclusions about how large future expenditures will be). On the whole, however, the evidence that demographic changes have greatly influenced public expenditures in the past is not overwhelming. The baby boom clearly gave rise to increased expenditures on education, while the recent aging of most western populations has caused an increase in the percentage of Gross National Product (GNP) transferred by means of public pension plans. On the other hand, in theory, at least, such changes in the composition of expenditures can be accomodated without the aggregate of expenditures necessarily rising. My own work on the growth of public expenditures in the Organization for Economic Co-operation and Development (OECD) countries in the period 1945-75 suggests that while demo-

graphic change did place upward pressure on expenditures virtually everywhere, in very few countries did it account for more than a small fraction – usually less than 10 per cent – of the growth in the share of public expenditures in GNP (see Watson, 1980).

This result may not be of great relevance to the future of Canadian regionalism, however. With both economic conditions and the public mood considerably less expansive than was true in the 1950s and 1960s, it is unlikely that other expenditure programmes will be growing rapidly, so changes in age structure that require increased expenditure are likely to loom much larger in the determination of overall tax and expenditure rates than was true formerly: there just is not enough slack in the system for them not to. Thus the operating assumption that as demographic structures change so, too, will tax rates, seems reasonable.

Maritime Public Services are Roughly Equal to Those Elsewhere in the Country; Maritime Tax Rates are Higher

These two facts have been well documented (see, for instance, Canada, 1982, or Courchene, 1984). What they imply is that because of the lower aggregate tax base in the Maritimes and the insufficiency of federal transfers, the average Maritime taxpayer receives a bundle of public services not unlike that available elsewhere in the country, but pays more for them than his fellow citizens in other provinces. This obviously creates an unfavourable "fiscal residuum" which, other things equal, is likely to induce at least some emigration from the region. The same is true of Quebec and Manitoba, though the problem is more severe in the Maritimes.

Note that since the fiscal residuum is the difference between the benefits received from government and the taxes paid to it, it does not particularly matter whether the lower tax base gives rise to national average expenditures with higher than average taxes or to national average tax rates with lower than average expenditures. In either case, the Maritimes' fiscal residuum will be less than elsewhere and, assuming people respond to such things, Maritimers will be tempted to move to other regions.

Migrants Do Respond to Interregional Differences in Fiscal Variables

The standard statistical technique for investigating the determinants of interregional migration is to test whether flows between regions can be associated with regional differences in income, employment, mean temperature, ethnic composition, and other such factors. In recent years, several studies of Cana-

dian interregional migration have attempted, in addition, to relate it to differences in fiscal variables across regions. Courchene (1974) found that unemployment insurance reduced migration from the Maritimes; Winer and Gauthier (1982a) successfully related interregional migration to differences in unemployment insurance and federal transfer payments to the provinces; McNevin (1982) found that interprovincial differences in tax rates had the expected effects on migration; Shaw (1986) concluded that while fiscal variables and standard economic variables interact in a complicated way, fiscal variables do have independent explanatory power in migration equations; finally, Mills *et al.* (1983) found that migrants in fact responded more to a dollar of fiscal surplus than to a dollar of market income.

There is thus ample evidence that fiscal variables – such as tax rates, the generosity of unemployment insurance, and federal transfers – do have an effect on people's decision whether or not to continue to live in a region. This is not particularly surprising: Maritime parents undoubtedly worry about such things as the quality of their children's education or the proximity of the nearest general hospital, and if these either become scarcer or cost more in taxes, Maritimers presumably will give consideration to moving to regions where unfavourable changes in the fiscal environment have not taken place.

Migrants Are Not a Random Sample of the Population

The overwhelming consensus in the literature on migration is that migrants are not typical members of a population, but rather are disproportionately young, educated, and talented. The common phenomenon of return migration requires some modification in this assumption, but there is a great deal of evidence that supports it.

Perhaps the most dramatic evidence for Canada was Statistics Canada's special supplement to the 1980 Labour Force Survey, reporting on recent migrants to Alberta and British Columbia (see Statistics Canada, 1982). By quite a large margin, migrants were disproportionately: young adults, labour force participants, educated, married, and – as evidenced by the speed with which they found jobs – employable. Although the drain on the other provinces of Canada was generally limited to less than one per cent of their 1975 population in the four years 1976-80, and although much return migration has taken place since, there can be little doubt that the economic loss to the regions left was greater than is indicated by the number of migrants.

Much the same results are found in several other studies of migration. Green (1971) concluded that for most of the 19th century, interregional migration in Canada was age- and sex-specific and generally tilted dependency ratios

in the province left in an "unfavourable" direction. Brookes (1976) found that in the Maritimes after 1875, half the population under 30 migrated either within region or between regions each generation. Courchene (1974) concluded that, in more recent decades, the decision to migrate generally was taken before age 35, after which the probability of moving declined substantially. Grant and Vanderkamp (1976) found that peak rates of migration occurred at ages 20-24, though this undoubtedly reflected education-associated migration. In a study of migration to and from Newfoundland in the 1970s and earlier, Gauthier (1980) reported that return migrants to Newfoundland were to be found predominantly among older groups and that they were consistently less educated than emigrants from Newfoundland. In correcting for self-selection bias in Canadian migration studies, Robinson and Tomes (1982) found that migrants had personal characteristics that would have led them to have higher than average incomes in their home provinces had they not moved. Finally, Shaw (1986) found that the probability of migrating declined with age and family size and increased with potential migrants' level of education.

Several other studies for Canada confirm that migration is not random, but generally takes the younger, the better educated, and the more entrepreneurial members of a region's population. Studies for other countries reveal the same finding (see, for example Greenwood, 1981, Bourguignon and Gallais-Hommono, 1977, and Drudy, 1978). In conclusion, there is ample evidence that migration is non-random and, not surprisingly, tends to select out the more "desirable" members of a declining region's populations. The consequence for those who remain behind are the subject of the next section.

Emigration Reduces Per Capita Growth in the Region Left and Increases It in the Region Entered

In fact, this is a rather more precise version of the proposition than is really intended. The point is simply that emigration may leave the economic fortunes of a region even worse off than they had been. In brief, Myrdal's 1957 hypothesis that both growth and decline are processes of "cumulative causation" finds at least some support in the literature. To begin with, Gober-Mayers estimated a simultaneous-equations model of migration and income- and employment-growth for the U.S.A. which indicated that "changes in age, sex, race, and education composition that resulted from interstate migration affected the rates of income growth in US states" (Gober-Mayers, 1978:1248). In brief, his conclusion was that:

> The effect of overall migration benefits upon per capita income growth appeared consistent with the view of migration as a stimulant to economic change. States that experienced rapid increases in per capita income during the period 1965 to 1970 did so, at least partly, because they had more desirable resident populations in 1970 than in 1965, and this change in population composition was the direct result of interstate migration (Gober-Mayers, 1978:1248-49).

There is also, of course, the previously-mentioned evidence on the quality of migrants. As noted, both Shaw (1986) and Greenwood (1981) found that migrants are better educated on average than those they leave behind, even after age is controlled for. Moreover, after estimating an econometric model of growth, Greenwood concluded explicitly that emigration from a region discouraged employment and income growth while immigration encouraged both. (Wrage, 1981, on the other hand, found that immigration can retard the growth of wages by increasing local labour supply. Its long-run effects may yet be beneficial, however, since it does tend to raise labour productivity.)

Polese (1981) quotes Termote's results that international migration into Quebec in the period 1951-74 had a positive (albeit slight) impact on per capita income in that province. Gauthier (1980) found that emigrants from Newfoundland had higher incomes than those who stayed behind. Robinson and Tomes (1982) found the same, even after adjusting for self-selection bias in the econometric estimates. Beck and Maki (1977) concluded that an unfavourable demographic structure – and not abnormally low per worker incomes – was the most important factor in explaining the Maritimes' lagging economic performance.

Vanderkamp (1970) argued on simple Keynesian grounds that since migrants took aggregate demand with them, they would cause a larger than proportionate drop in local economic activity even if they were not atypically productive. He concluded that for every five migrants, two additional jobs would be lost in the region. Biehl (1980) found that even in a simultaneous-equations model the scale of public infrastructure was a useful predictor of per capita GNP in the German states. Thus demographic changes that reduce the tax base are likely to discourage public investments crucial to growth. As Drudy noted for Norfolk, "(the) local authority, affected by declining local revenues, found it necessary to curtail their commitment to the area in the form of transport, water supplies, sewage disposal, road improvements and social services in general" (Drudy, 1978:58). Usher (1977) told a theoretical story consistent with these results. In a study of why firms locate where they do, Wheaton (1979) found that local tax levels are quite important for new operations by

old forms, if not as important as local levels of technical expertise (which he proxied by the proportion of engineers in the work force). Thus, once skill-stripping begins in a region, it can be aggravated by declining commercial investment. Similarly, Hansen emphasized the "external economies available to private firms in more advanced regions", as well as regional shortcomings arising from the "lack of investment in the quality of human effort" (Hansen, 1967:129, 127).

In more qualitative terms, Morrison argues that emigration typically leaves behind those least able to cope, that labour force quality declines, and that return migrants typically tend to be, in effect, losers:

> Prolonged and heavy outmigration...leaves behind those persons who are least able to cope with the unfavorable conditions that led others to depart in the first place. The remaining residents tend to lack the attributes and skills that would attract new employers who could offer them jobs or that would predispose them to move away as others before them did. (Morrison, 1977:70).

In a similar vein, Barrett (1980) cited arguments about ethnic stagnation and a "sheep instinct" having been self-selected into the Maritime population, while O'Kelly (1979) provided support for the view that migrants and stayers come from separate sub-groups in the population.

These fragments obviously are not conclusive. But they do provide at least some reason to suppose that emigration does have the deleterious effects the Myrdal hypothesis of cumulative causation ascribes to it.

Conclusions and Recommendations for Research

A model of regional growth that places emphasis on the fiscal effects of demographic change and the demographic effects of interregional migration does seem to find some support in the various literature I have reviewed. In brief, the model operates as follows:

1. Demographic differences across regions give rise to differences in tax rates.
2. Differences in tax rates give rise to interregional migration.
3. Interregional migration causes "unfavourable" demographic effects in regions people leave.

4. These "unfavourable" demographic changes reduce economic growth both directly, through reduced productivity of the labour force, and indirectly, as tax rates rise even further in order to support (proportionately) greater public expenditures from a reduced tax base.

It might be noted that although the migration story is consistent with the usual assumption of neoclassical economists (of which I am one), much of this analysis has the flavour of non-neoclassical explanations of regional differences in income. In particular, it suggests that market solutions to the problem of the interregional allocation of labour may not be all that satisfactory from a society-wide view – a conclusion that, in fact, is well known to neoclassical economics (see Atkinson and Stiglitz, 1980).

Two parts of this story are in especial need of further research, however. First, more work should be done on the relationship between demographic change and public expenditure. As mentioned, the usual assumption in the forecasting business is that there is quite a close connection between the two. My own work on the first three post-war decades concluded, on the contrary, that the overall level of public expenditures was influenced hardly at all by the quite significant demographic changes that took place in most OECD countries during that period. Rather, events were consistent with the view that in most countries it was simply decided to treat specific client groups – many of them admittedly demographically-based – much more generously than had been true previously. Thus per "client" pensions, educational benefits, and health-care spending rose dramatically in real terms in most countries. It would be very useful, in view of this, to examine whether similarly large demographic changes in the late 1970s and early 1980s forced increases in tax rates or reductions in the level of "non-demographic" expenditures in most Canadian jurisdictions.

A second major area for futher work is, clearly, the model itself. The only way to tell whether the effects and interactions that have been described are empirically important is to specify plausible values for them and then see what comes out of a GE simulation model of regional growth and migration. GE models are notoriously expensive, of course, but the model can be cut to fit the funds available, and quite useful simulations probably can be run with relatively simple models. Indeed, there is not much use in trying to estimate an interregional model econometrically: the necessary data bases simply are not good enough. It would make more sense to construct plausible behavioural equations, simulate on the basis of these, and do extensive sensitivity analysis.

I should note, in concluding, that an exercise like this would provide information of use not only to demographers, but also to students of Canadian

regionalism. The cumulative causation hypothesis has been favoured in many parts of the literature, and it would be interesting to see whether plausible behavioural assumptions could generate results consistent with it. Needless to say, it would also be useful to see whether believable parameters could give results consistent with observed regional growth and interregional migration.

Acknowledgment

I am grateful to David Fynn for his – as always – exceptionally diligent research assistance.

Bibliography

Atkinson, A.B. and J.E. Stiglitz. 1980. Lectures in Public Economics. Maidenhead, Berkshire: McGraw-Hill.

Barrett, G. 1980. Perspectives on dependency and underdevelopment in the Atlantic Region. Canadian Review of Sociology and Anthropology 17(3):273-86.

Beck, R.A.D. and D.R. Maki. 1977. Factors affecting poverty in Atlantic Canada. Canadian Journal of Regional Science 1:55-66.

Biehl, D. 1980. Determinants of regional disparities and the role of public finance. Public Finance 35(1):44-71.

Bradfield, M. 1976. Necessary and sufficient conditions to explain equilibrium regional wage differentials. Journal of Regional Science 16(2):247-55.

Brookes, A.A. 1976. Out-migration from the Maritime provinces, 1860-1900: Some preliminary considerations. Acadiensis 5(2):26-55.

Bourguignon, F. and G. Gallais-Hommono. 1977. International Labour Migrations and Economic Causes: The European Case. Paris: OECD.

Canada. 1985. Report to the Royal Commission on the Economic Union and Development Prospects for Canada. Volume 3. Ottawa: Minister of Supply and Services.

Courchene, T.J. 1974. Migration, Income and Employment. Montreal: C.D. Howe Research Institute.

_____. 1984. Equalization Payments: Past, Present, and Future. Toronto: Ontario Economic Council.

Denton, F. and B. Spencer. 1983. Population aging and future health care costs in Canada. Canadian Public Policy 9(2):155-63.

Drudy, P.J. 1978. Depopulation in a prosperous agricultural sub-region. Regional Studies 12:49-60.

Economic Council of Canada. 1980. One in Three. Ottawa: Supply and Services Canada.

Foot, D. 1982. Canada's Popualtion Outlook: Demographic Futures and Economic Challenges. Toronto: James Lorimer & Co. for the Canadian Institute of Economic Policy.

Gaille, G.L. 1979. Spatial models of spread-backwash processes. Geographical Analysis 11(3):273-286.

_____. 1980. The spread-backwash concept. Regional Studies 14:15-25.

Gauthier, D. 1980. Some economic aspects of internal migration: Newfoundland's case. Economic Council of Canada Discussion Paper No. 178. Ottawa; mimeo.

Gober-Mayers, P. 1978. Interstate migration and economic growth: A simultaneous equations approach. Environment and Planning A 10:1241-1252.

Grant, E. K. and J. Vanderkamp. 1976. The Economic Cauases and Effects of Migration in Canada: 1965-71. Ottawa: Economic Council of Canada.

Green, A.G. 1971. Regional Aspects of Canada's Economic Growth. Toronto: University of Toronto Press.

Greenwood, M.J. 1981. Migration and Economic Growth in the United States. New York: Academic Press.

Hansen, N.M. 1967. Human resources and regional development: Lessons from French experience. Southern Economic Journal 34(1):123-132.

Hirschman, A.D. 1958. The Strategy of Economic Development. New Haven: Yale University Press.

Jones, D.W. 1984. Regional economic adjustment mechanisms: Theory and evidence from United States cities, 1918-1931. Journal of Regional Science 24(3):391-402.

Matthews, R. 1983. The Creation of Regional Dependency. Toronto: University of Toronto Press.

McNevin, A. 1982. Fiscal imbalance and subcentral public sector influences on interprovincial migration in Canada. Wilfrid Laurier University; mimeo.

Mills, K.E., M.B. Percy, and L.S. Wilson. 1983. The influence of fiscal incentives on interregional migration: Canada 1961-78. Canadian Journal of Regional Science 6(2):207-229.

Morrison, P.A. 1977. The functions and dynamics of the migration process. In A. Brown and E. Neuberger (eds.), Internal Migration: A Comparative Perspective. New York: Academic Press.

Myrdal, G. 1957. Economic Theory and Underdeveloped Regions. New York: Harper and Row.

Norrie, K. (ed.). 1985. Disparities and Interregional Adjustment. Research Volume 64 of the Macdonald Commission. Toronto: University of Toronto Press.

O'Kelly, M. 1979. Two models of Canadian interregional migration. Canadian Journal of Regional Science 2(2):59-80.

Polese, M. 1981. Regional disparity: Migration and economic adjustment: A Reappraisal. Canadian Public Policy 7(4):519-525.

Robinson, C. and N. Tomes. 1982. Self-selection and interprovincial migration in Canada. Canadian Journal of Economics 14(1):155-162.

Savoie, D.J. 1986. Defining regional disparities. In David J. Savoie (ed.), The Canadian Economy: A Regional Perspective. Toronto: Methuen.

Shaw, R.P. 1986. Intermetropolitan Migration in Canada: Changing Determinants Over Three Decades. Toronto: NC Press.

Statistics Canada. 1982. Characteristics of migrants to Alberta and British Columbia: 1976-80. The Labour Force (71-001) February.

Usher, D. 1977. Public property and the effects of migration upon other residents of the migrants' countries of origin and destination. Journal of Political Economy 85(5):1001-1020.

Vanderkamp, J. 1968. Interregional mobility in Canada: A study of the time pattern of migration. Canadian Journal of Economics 1(3):595-608.

_____. 1970. The effect of out-migration on regional employment. Canadian Journal of Economics 3(4):541-549.

_____. 1976. The role of population size in migration studies. Canadian Journal of Economics 9(3):508-517.

Watson, W.G. 1980. The Age of Entitlement: Taxation and Public Expenditures in the OECD Countries, 1945-75. New Haven: unpublished Ph.D. thesis.

_____. 1983. The economic implications of aging. McGill Univeristy Committee for Studies on Aging Occasional Papers. Montreal: mimeo.

Whalley, J. and I. Trela. 1986. Regional Aspects of Confederation. Research Volume 68 of the Macdonald Commission. Toronto: University of Toronto Press.

Wheaton, W.C. (ed.). 1979. Interregional Movements and Regional Growth. Washington, D.C.: The Urban Institute.

Winer, S. and D. Gauthier. 1982a. Internal Migration and Fiscal Structure: An Econometric Study of the Determinants of Interregional Migration in Canada. Ottawa: Economic Council of Canada.

_____. 1982b. Interregional migration data: A supplement to 'Internal Migration and Fiscal Structure.'" Economic Council of Canada Discussion Paper. Ottawa.

Wrage, P. 1981. The effects of internal migration on regional wage and unemployment disparities in Canada. Journal of Regional Science 21(1):51-63.