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**INTER-PROVINCIAL MIGRATION OF INCOME AMONG
CANADA'S OLDER POPULATION: 1996-2001**

K. BRUCE NEWBOLD

SEDAP Research Paper No. 148

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Inter-provincial Migration of Income among Canada's Older Population: 1996-2001

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Abstract:

Much of the literature on internal migration in Canada has focused on the determinants of migration, as opposed to the impacts. Yet, it is likely that migration has a large impact upon the distribution and re-distribution of income across regions. Such impacts may be magnified within the older population, as their relocation involves the transfer of savings such as pensions, retirement investments, or other income supplements from province to province. Using methods proposed by Plane (1999), income-based versions of demographic effectiveness and efficiency are applied to evaluate the movement of non-earned income in the Canadian context among Canada's older population. The analysis uses data drawn from the 2001 Census, and focuses upon the older population (aged 60+ in 2001), distinguishing between three types of income, including (i) Old Age Security and Guaranteed Income Supplements; (ii) Canada/Québec pension plan benefits; and (iii) Retirement Investment income. In addition to evaluating the magnitude of income redistribution, the impact of primary, return, and onward migration on regional income distributions is also evaluated, illustrating the importance of return migration in transferring incomes over space.

JEL Classification: J11, J14, O15, R23

Keywords: Canada, migration, pension

Résumé:

La majorité de la littérature sur la migration interne au Canada s'est principalement concentrée sur les déterminants de la migration, par opposition à ses conséquences. Cependant, il est très probable que ces flux migratoires aient des répercussions profondes sur la répartition et la redistribution des revenus entre les différentes régions. Ces répercussions pourraient être encore plus importantes chez les seniors, car leurs relocalisations impliquent le transfert de province à province de leurs épargnes telle leurs pensions, leurs investissements de retraite, et tout autre supplément de revenu. En utilisant des méthodes proposées par Plane (1999), nous examinons le mouvement des revenus non-salariaux des seniors canadiens en appliquant des versions basées sur le revenu de l'efficacité démographique et de l'efficacité. L'analyse repose sur les données du recensement 2001, et se concentre sur la population des seniors (âgé de 60 ans et plus en 2001), considérant trois types de revenu: (i) la Sécurité de la Vieillesse et les Suppléments de Revenu Garantis; (ii) Le Régime de Pension du Canada/Québec; et (iii) les revenus d'investissement de retraite. En plus d'évaluer l'importance de la répartition des revenus, l'impact de la migration primaire, de retour, et secondaire sur la répartition du revenu régional est également évalué, en illustrant l'importance de la migration de retour pour expliquer la dimension spatiale du transfert des revenus.

Introduction

As with other developed countries, Canada's population is growing older, driven by the aging of the baby boom generation, greater life expectancies, and historically low fertility levels. By 2021, approximately one in five Canadians will be at least 65 years old, and the proportion of adults aged 80 and over (what has been referred to as the 'old' old) is projected to increase from approximately 3 percent in 2001 to 6 percent by 2021 (Statistics Canada 2003a). At the same time, Canada's older population is healthier, more affluent, and generally more mobile than earlier generations (Chen and Millar 2000; Manual and Schultz 2001).

The unprecedented changes in the structure of Canadian society immediately raises questions about the implications of this demographic change, including the importance of an aging population with respect to Canada's national pension plan, amongst other issues. As Canada's population ages, it will become increasingly dependent on non-earnings income such as that generated from individual savings, private pension plans, or other state-supplied welfare benefits, and the sources of non-earnings income will represent an increasing proportion of total personal income. Concurrently, life-course perspectives on migration suggest that retirement is associated with an increased propensity to migrate as individuals leave the labour force. Often times, these migrations are associated with movement to amenity areas (Cuba 1980; Longino 1995; Newbold 1996), or returns to the place of birth (Long 1988; Newbold and Liaw 1990; Rogers 1990).

While a large body of research has explored mobility patterns amongst Canada's older population (i.e., Cheung and Liaw 1987; Hayward 2001; Liaw and Ledent 1988; Ledent and Liaw 1989; Moore and Rosenberg 1997), there is relatively little research that addresses its

impact. Yet, a potentially important component of inter-regional migration is the ability to alter income levels of the origin and receiving regions through individual transfers. Emerging literature in the US (see, for example, Plane 1999; Manson and Groop 2000; Nelson 2005; Shumway and Otterstrom 2001) explores the intersection between migration and income flows on the assumption that migration is redistributing income across space. If non-earnings income is closely linked to migration, migrants will potentially import or export income into or out-of a region and its economy. Regions with net-losses of non-earnings income could be seen as providing income subsidies to regions with net in-migration, as observed in the US (Nelson 2005). In fact, the movement of older individuals and, by definition, their non-earnings income, potentially creates a significant ‘mail-box economy’ as non-earning incomes are imported into receiving destinations. In this way, transfers of non-income earnings across space can effectively be seen as subsidies (Nelson 2005). Conversely, the opposite may also be true, as non-earnings income is shifted out of sending regions. At the same time, migration is more than a one-time event, with the literature demonstrating the importance of primary (i.e., individuals migrating out of their province of birth), return (i.e., secondary migrations returning an individual to their province of birth), and onward migrations (i.e., secondary migrations to a province other than the province of birth) as components of overall migration flows (Long 1988; Newbold and Liaw 1990). Although return migrations are generally not associated with a ‘retirement peak’ in the migration schedule around age 65, primary and onward migrations often exhibit such a peak, suggesting the potential importance of income transfers. At the same time, return and onward migrations represent a large volume of total migration flows, and previous out-migrants from economically depressed regions tend to represent a large part of inflows, leading to speculation

that return migrations may redistribute non-earned incomes back to economically disadvantaged regions such as Atlantic Canada.

This paper therefore examines how internal migration redistributes non-earnings income across the Canadian provinces between 1996 and 2001. It applies a novel technique (Plane 1999) to examine inter-regional income flows, focusing on Canada's older (aged 60+) population who receive non-earnings income including pensions and welfare benefits. The objectives of the paper are two-fold. First, it documents the movement of non-earned income between Canada's provinces, focusing upon the efficiency of the observed flows. Second, the paper explores the potential for primary, return, and onward migration to re-distribute non-earnings income across Canada, and the significance of regional income re-distributions by each type of migration.

Background: Non-earnings income and migration

For Canada's older population, non-earnings income may be derived from three main sources that are defined by a bundle of federal, provincial, and private programs (Statistics Canada, 2003b) (For an overview of Canada's programs see, for example, Beland and Myles 2003; Tompa 1999). First, the Canada/Québec Pension Plans (C/QPP) are parallel, universal, publicly administered programs providing retirement and disability pensions to everyone who participated in the paid labour force, along with survivor pensions to partners and children. Both are portable, compulsory, and contributory for every person aged eighteen or greater earning a pensionable income, with contributions based upon earnings. Second, the Old Age Security system consists of the Old Age Security (OAS) pension, the Guaranteed Income Supplement (GIS), and the Spousal Allowance (SPA). The OAS is an unfunded plan that is paid through

general tax revenue and is means-tested (i.e., geared to income) and taxable. Likewise, GIS is a means-tested program providing non-taxable benefits available to OAS pension recipients with low incomes. The SPA is a means-tested, taxable benefit available to 60-64 year old spouses of OAS pensioners and 60-64 year old widows and widowers. Third, private pensions include Registered Pension Plans (RPPs) offered by employers and funded by employers and employees, Registered Retirement Savings Plans (RRSPs) which offer a tax-sheltered vehicle for retirement saving, and Registered Retired Income Funds (RRIFs), which are the vehicle for paying out RRSP income beyond age 70.

Retirement income programs such as OAS/GIS, C/QPP, and private pensions provide a significant proportion of income for those aged 65 and over. In 1999, income from these three sources was responsible for 76 percent of the total income of those aged 65 and over, up from 65 percent in 1990 (Statistics Canada 2003b). Of the three sources, private pensions account for slightly less than 30 percent of income, while OAS/GIS has slipped to 27 percent of total income, and C/QPP benefits represent approximately 20 percent of total income for those aged 65 and over (Statistics Canada 2003b). The proportion of the older population receiving C/QPP benefits has also grown, with approximately 85 percent of those aged 65 and over receiving such benefits in 1999, up from 72 percent in 1990. Increased labour force participation by women, and the maturing of these plans largely explain this growth.

Although important sources of income, the geography of non-earnings income varies across provinces (Social Development Canada 2005). In 2004, for instance, the average CPP benefit payment was greatest in Ontario (\$678), and lowest in Newfoundland and Labrador (\$555), with the four Atlantic provinces (Newfound and Labrador, Prince Edward Island, New Brunswick, and Nova Scotia) tending to have somewhat lower than average CPP incomes.

Likewise, OAS and GIS incomes vary by province. For OAS, the average payment is highest in the four Atlantic provinces (averaging \$5,477) and the three Prairie provinces (Manitoba, Saskatchewan, and Alberta, with an average payment of \$5,444), and lower in British Columbia (\$5,178), Ontario (\$5,247), and Québec (\$5,386). GIS payments varied as well, with benefits tending to be greatest in Ontario (\$4,259), British Columbia (\$4,382), and somewhat less in the Atlantic provinces (\$3,752) and the Prairies (\$3,880). Although OAS is paid to almost all seniors, income from OAS/GIS has been decreasing as a percentage of total income (dropping from 30 percent in 1990 to 27 percent in 1999). Regional uptakes also vary. In 2000, for example, greater than fifty percent of OAS recipients in Newfoundland and Labrador, PEI, and New Brunswick received GIS. In other provinces, GIS supplements ranged from 27 to 48 percent (Statistics Canada 2003b).

While there is some variation over space in terms of the distribution of non-earnings income, the potential for inter-provincial migration to redistribute this income is unknown. Retirees may, for example, return to provinces of birth or a previous residence, or migrate to high amenity areas, taking their income with them. Plane's (1999) novel application of net migration and migration efficiency to evaluate income re-distribution provides insight into the ability for inter-regional migration to re-distribute income. That is, rather than describing the spatial patterns of migration, Plane's technique used these standard migration measures to examine inter-regional monetary flows due to migration. Using this methodology, Manson and Groop (2000) noted the movement of income down the urban hierarchy, resulting in a greater disparity of income over space, with suburbs and outlying areas enjoying income growth. However, wage and salary incomes earned in the destination may not be equivalent to those earned in the origin if, for example, the migrant was unemployed in the origin.

While the direct relationship between income and migration may be ambiguous given the difficulty in untangling the interaction between income and migration, it is likely clearer with respect to mobile, non-earnings income. Applying Plane's (1999) technique, Nelson (2005) focused on the re-distribution of non-earnings income within the older population in the US, observing a shift in non-earnings income from the Rustbelt to the Sunbelt. At the same time, non-metropolitan areas of the Rustbelt experienced net gains of non-earnings income associated with in-migration, with migration generally contributing to greater economic disparities across the nation.

The movement of non-earnings income within Canada by the older population may be no less important given known and long-evident regional economic and demographic disparities. In a paper examining the geographic dimensions of aging in Canada, Moore *et al.*, (2000) noted that the geography of aging in Canada was linked to economic disadvantage. That is, areas with high and growing proportions of elderly were most likely to be in areas of slow growth and below average incomes. Inter-regional migration may further these differences, shifting people and non-earnings income away from slow growth regions, similar to patterns observed in the US. At the same time, the re-distribution of non-earnings income is directly linked to individual migrants, preferences, and their destination choices, rather than the economic opportunities of the sending and destination regions *per se* that would more likely influence the decisions of labour-force migrants who respond to income and employment opportunities.

From the perspective of return and onward migration, the decision to undertake a return migration has frequently been attributed to the ability to access location specific capital, knowledge of the area, and the attraction of family and friends (Long 1988; Newbold and Liaw 1990). Although analysis of age profiles of return migration suggest that it cannot be described

as a phenomenon of retirees reversing an earlier migration and “going home”, it may be that those that do return to their place of birth bring with them greater non-earnings income, assuming that their lifetime pensionable income in their host region was greater than that which they would have received in their home region had they stayed. Conversely, primary and onward migrants are more commonly associated with increased mobility at the time of retirement, and therefore may be more likely to redistribute non-earnings income that could be considered as ‘new money’ contributing to the economic base of a region (Mulligan 1987; Nelson 2005). Yet, the relative contribution of each of the three types of migration to income re-distribution is unknown.

Data and Methods

The primary question this paper answers is how inter-provincial migration re-distributes non-earnings income across Canada, with a secondary and complementary focus on income distribution associated with primary, return, and onward migration. To answer this, the paper utilizes data drawn from Statistics Canada’s 2001 Public Use Microdata File (PUMF), a three percent sample of the Canadian population derived from the Census long-form (Statistics Canada 2005). The sample population is restricted to those aged 60 and over in 2001 who were not in the labour force, not institutionalized, and who reported non-earnings income in 2000.

Three types of non-earnings income are reported and used in this analysis: (i) Old Age Security and Guaranteed Income Supplement (OASGIS); (ii) Canada or Québec pension plan benefits (CQPPBP); and (iii) Retirement investment income (RETIRP). OASGIS income refers to old age security and guaranteed income supplements paid to persons 65 and over and to

allowances paid to widows or widowers aged 60-64 in 2000. CQPPBP refers to benefits received during 2000 from the Canada or Québec Pension Plans (i.e., retirement pensions, survivors' benefits, and disability pensions, with benefit eligibility starting at age 60. RETIRP income includes income derived from Registered Retirement Savings Plans (RRSPs), Registered Retirement Income Funds (RRIFs) and other pensions as a result of paid employment, with monies received in 2000. Total (TOTAL) non-earnings income is defined as the total of all three sources of income received in 2000.

The paper may be divided into two sections, with the first focusing upon non-earnings income redistribution in general, and the second distinguishing between primary, return, and onward migrations and differential effects in terms of income redistribution. In both sections, individuals are defined as migrants if their 1996 place of residence differed from their 2001 province of residence. In the first section, migration is evaluated within a ten-by-ten matrix, excluding the three northern territories given sparse migration flows between these regions and the rest of Canada. In the second section, the distinction between primary, return, and onward migrations are based upon the individual's province of birth, province of residence in 1996, and province of residence in 2001. Return migrations are those migrations that return an individual to their province of birth by 2001, and onward migrations are those occurring between 1996 and 2001 to a province other than the province of birth, assuming at least one previous migration event out of the province of birth prior to 1996. Primary migrants are defined as those migrating out of their province of birth between 1996 and 2001. In this case, migration is defined as a nine-by-nine matrix, excluding the Maritime province of Prince Edward Island (PEI), owing to data aggregation.

In both sections, the paper examines income efficiency and net income migration.

Following Plane (1999), income efficiency is defined as the ratio between net migration (in – out-migration) and gross migration (in + out-migration) income flows;

$$E_Y = 100 \left(\frac{Y_{IN} - Y_{OUT}}{Y_{IN} + Y_{OUT}} \right)$$

where Y_{IN} represents the non-earnings income of in-migrants and Y_{OUT} that of out-migrants, and

Y represents non-earnings income noted above (TOTAL, OASGIS, CQPPBP, and RETIRP).

Negative values indicate that migration serves to remove income from a region, and positive values suggest that income enters a region. Values close to zero indicate no net change in income distribution.

The second section also decomposes primary, return, and onward migration streams into the *net migration component* and the *differential migration component*, enabling the analysis to distinguish whether provinces gained or lost income through the volume or characteristics of migrants (Plane 1999). The net migration component, which measures the effect of aggregate levels of migration on income redistribution, is defined as

$$Y_{NMC} = y_*(I - O)$$

where y_* is the average of in- and out-migrant per capita income. The *differential migration component* measures the effects of differences between the per-capita incomes of in- and out-migrants (see Plane 1999), where:

$$Y_{DIF} = Y_N - Y_{NMC}$$

where Y_N is the net income migration. Under this decomposition, if the absolute value of the net migration component exceeds the value of the corresponding differential migration component,

then the volume of migration is the major contributor to income redistribution. In cases where the differential migration component exceeds the net migration component, the characteristics of the migrants and the income they embody drives income redistribution.

Results

Before considering the efficiencies of income migration, it is important to understand the differences in the relative income levels of inter-provincial migrants. Table 1 lists the per-capita income levels of in-, out-, and non-migrants (stayers) for each of the ten provinces. Generally, inter-provincial migrants had slightly higher total non-earnings than non-migrants (\$16,923 versus \$16,434), although the difference was small. In-migrants to Ontario had the highest per-capita non-earnings income (\$18,921), whereas persons moving into Newfoundland and Labrador had the lowest incomes (\$13,049). Out-migrants from Québec had the highest total per-capita non-earnings income (\$22,671), while out-migrants from PEI had the lowest income (\$9,735).

The final two columns in Table 1 provide perspective on the relative income levels of migrants and non-migrants, which lists the per capita income of in- and out-migrants expressed as a percentage of non-migrant income. Out-migrants from PEI have the lowest per capita incomes relative to non-migrants (67.1 percent), while out-migrants from New Brunswick, Québec, and Saskatchewan have higher incomes relative to stayers. In terms of in-migration, migrants to two of the four Atlantic provinces (PEI and New Brunswick) have incomes greater than non-migrants, suggesting the importation of non-earnings income, although this does not hold for either Newfoundland or Nova Scotia. On average, however, in-migrants to the Atlantic

provinces have higher incomes than stayers. In-migrants also have higher incomes than stayers in Québec, Ontario, and British Columbia, while in-migrants to the three Prairie provinces have earnings less than non-migrants.

The picture changes with respect to the specific income sources. For instance, with respect to C/QPP benefits, there is little difference in terms of the average benefit received by migrants and stayers (\$4,210 and \$4,252, respectively), suggestive of a broad equity with respect to these payments at the national scale. There is, however, considerable variation across the provinces. For example, in-migrants to Newfoundland had higher CQPPBP incomes relative to stayers (122.4 percent), although out-migrants from the same province also had high benefits relative to stayers. In-migrants to New Brunswick also had high incomes relative to stayers (136.1 percent), while in-migrants to Saskatchewan had much lower incomes than stayers (85.9 percent). With respect to OASGIS payments, almost all in- and out-migrants have earnings equal to or below that of non-migrants, and the average OASGIS earnings of migrants (\$4,828) is less than that of stayers (\$5,264). More than likely, the relatively lower OASGIS income amongst migrants reflects greater pensionable incomes during their labour force years, and therefore greater incomes from other sources (i.e., CQPPBP or RETIRP) that are based on earned income, with individuals earning higher incomes facing a 'claw-back' of OASGIS monies by the Federal government. In other words, as a taxable, means-tested benefit, migrants are somewhat less reliant upon this income source than stayers.

This assumption appears to be validated with reference to retirement income pensions (RETIRP), with in-migrants earning, on average, more than stayers (\$7,920 versus \$6,919). Further, in-migrants have substantially greater RETIRP incomes than stayers in all but the Prairies. Given that out-migrants from several provinces, including New Brunswick, Québec,

and the Prairies have incomes that are substantially greater than stayers, it would appear that retirement pension monies are being redistributed away from these provinces.

Income Efficiencies

Table 2 reflects the income efficiencies for each type of non-earnings income across the provinces. The values in the 'in-migrant' column represent the aggregate income of individuals moving into each of the provinces, while 'out-migrant income' shows the aggregate amount of income lost through out-migration. The difference between these two columns is the net income migration, or the increase (decrease) in aggregate provincial income associated with migration, while the final column presents the income efficiency measure, which capture the effects of net population gains (losses) and the differences in the per-capita income of migrants (Plane 1999).

In total, inter-provincial migration was responsible for the movement of over \$607 million in non-earned income between the ten provinces in 2000. Turning first to TOTAL non-earnings income (i.e., the sum of all three types of non-earnings income), Québec, Manitoba, and Saskatchewan each had net negative income out-migration, with each of these three provinces experiencing net out-migration in the period. Québec had the greatest loss by far (-\$71.5 million), echoing its net population loss attributable to out-migration (2,552 out-migrants between 1996 and 2001), and reflected in a large negative income efficiency ratio (-43.9 percent), a function of the significantly higher per-capita incomes of its out-migrants (\$22,671) relative to its in-migrants (\$17,951). The net population and income losses in Manitoba and Saskatchewan were further reflected in the negative income efficiency ratios (-12.4 and -39.5 percent for Manitoba, and Saskatchewan, respectively).

Conversely, the remaining provinces had a net influx of non-earnings income. Although receiving only a relatively modest net income (\$3.8 million) reflective of a small net gain but relatively low in- and out-migration given its small total population size, Prince Edward Island had a large positive income efficiency (51.2 percent), largely due to the significantly higher per capita income of its in-migrants relative to its out-migrants (\$14,925 versus \$9,735). The provinces of Nova Scotia and Alberta also had relatively high efficiencies (21.8 and 26.2 percent, respectively). Large gainers (in terms of net income changes) included Alberta (\$49.7 million) and British Columbia (\$36.1 million). In the case of Alberta, this reflected a large net in-migration of nearly 3,700 individuals, an exceptional number given that the province is generally not considered to be a retirement destination, unlike the neighbouring British Columbia. Ontario, Canada's largest province, had a modest positive net income of just \$5.7 million in 2000, and an income efficiency near zero (1.8), suggesting that there was no net change in income distribution.

The picture changes again when specific forms of non-earnings income are considered. For instance, with respect to CQPPBP income, four provinces including Québec, Ontario, Manitoba, and Saskatchewan had net income loss. With an efficiency of just -0.8 percent or \$598,448, Ontario's loss was marginal, while Québec's efficiency was -43.1 percent, losing over \$14 million in 2000 due to out-migration. Efficient gainers included PEI (44.3 percent), although the efficiency is misleading given the relatively small net gain through migration. New Brunswick (23.7 percent) and Alberta (29.9 percent) were two other highly efficient gainers, with Alberta receiving the largest net income (\$15.4 million).

In terms of OASGIS and RETIRP incomes, Québec, Manitoba, and Saskatchewan were again efficient losers, while PEI, Nova Scotia, New Brunswick, and Alberta were consistent and

efficient gainers, although efficiencies changed with respect to particular incomes. For instance, while Alberta's efficiency for OASGIS income was 36.0 percent, it was only 15.5 percent for retirement income (RETIRP). Although Ontario had net income migration for both RETIRP and OASGIS incomes, the associated efficiency was small (approximately 2.5 percent), again indicating only limited impact on income within the province.

Primary, Return, and Onward Inter-provincial Migrations

One interesting application of Plane's method is to the issue of primary, return, and onward inter-provincial migrations, and particularly in the ability of return migration to a province of birth (so-called "lifetime migrations") to redistribute incomes back to economically disadvantaged regions such as Atlantic Canada. It has long been speculated, for example, that return migrations back to a home region at the end of the labor force career allows these individuals to inject their saved incomes into the local economies (i.e., Long 1988), with income potentially greater than comparable non-migrants, given earnings differentials across space and greater life-time earnings. Primary, return, and onward migrations are based upon the individual's province of birth, province of residence in 1996, and province of residence in 2001. Return migrations are those migrations that return an individual to their province of birth by 2001, and onward migrations are those occurring between 1996 and 2001 to a province other than the province of birth, given that the individual had already made at least one inter-provincial migration out of their province of birth prior to 1996. Primary migrations are migrations out of the province of birth between 1996 and 2001. Prince Edward Island is dropped from this portion of the analysis, due to Statistics Canada's aggregation of place of birth with the Territories.

Focusing on income efficiency and net income migrations, Table 3 considers the relative contribution of primary, return, and onward migrants. Turning first to the general properties of primary, return, and onward income migrations, there is a broad similarity between the *income* migrations observed within this paper and primary, return, and onward *population* migrations observed within the broader literatures (i.e., Long 1988; Newbold and Liaw 1990). These effects are also generally observed with respect to particular types of non-earned incomes. For instance, inter-provincial variations in net non-earned income transfers is determined mainly (but not exclusively) by primary migration, with the exception of movement into the three Atlantic provinces. In these cases, the transfer of income associated with return migration exceeded that associated with primary migrations. New Brunswick, Ontario, Alberta, and British Columbia all gained income through primary migration, while all other provinces lost.

Second, return migration tends to work counter to primary migrations. That is, if primary migrations are responsible for a net in-migration of income to a province, return migration ‘cancels’ a portion of the effect, reducing the observed net income change. Third, onward migration tends to reinforce the primary migration effect. Fourth, although British Columbia appears to remain as the ‘end of the line’ (Newbold and Liaw 1990), in that just as it has a strong ability to attract migrants and retain its population, it is the recipient of large income inflows, Alberta has consistent net income gains and positive income efficiencies regardless of migrant type. Although not typically considered to be a retirement destination, Alberta’s booming oil and gas sectors and concomitant low taxation rates, and access to amenity locations, may be spurring its growth within the older population.

Although primary migration is typically associated with the movement of non-earned income, it is also apparent that return migration has a significant economic effect on the Atlantic

provinces, with total net return migration incomes of \$4.5 million for Newfoundland and Labrador, nearly \$9.7 million for New Brunswick, and \$13.7 million for Nova Scotia. Although these are not necessarily large income transfers, net incomes associated with return migration exceeds that associated with primary and onward migrations, contrary to the more general relationship between return and primary migration noted above, and therefore ensures each of these provinces has a positive income gain. Moreover, the efficiency of the movement of income associated with return migration is high, with return efficiencies of 34.6, 48.0, and 30.8 percent for Newfoundland and Labrador, Nova Scotia, and New Brunswick, respectively. At the same time, however, the efficiencies associated with primary and onward migrations into- and out-of the Atlantic provinces were typically large and negative. Together, all three Atlantic provinces had a net influx of non-earned income, although the gains were predominantly associated with return migration.

With a return efficiency of 40.6 percent, and a net gain of \$11.4 million due to return migration, Manitoba is also an efficient gainer. Conversely, British Columbia is a highly efficient loser (-73.2 percent) in terms of return migration, although it was a highly efficient gainer in terms of primary migration (87.6 percent). Québec, and Saskatchewan had highly inefficient primary migration flows (exceeding 80 percent), and Québec's onward efficiency rate was equally as inefficient (-80.4 percent).

Similar results are noted with respect to individual sources of non-earned income. With respect to RETIRP income, for example, the return income efficiency for the three Atlantic provinces exceeds 43 percent in each case, with each of these three provinces receiving a substantial financial injection due to return migration. At the same time, they experience a net loss due to primary and onward migration and typically have inefficient primary and onward

flows. While British Columbia is a highly efficient loser (-65.8 percent) with respect to return migration, the efficiency of its RETIRP in-migration flows approaches 100 percent (96.9 percent). Ontario's RETIRP return migration efficiency was -7.8 percent.

Consequently, the results suggest two broad conclusions. First, primary migration is responsible for the majority of inter-provincial income flows, with Québec experiencing the largest net loss (-\$66 million), and British Columbia receiving the largest net gain (\$86.3 million), suggesting the role of amenities and the general attractiveness of the province in influencing the migration decisions of Canada's older population. Second, there is evidence suggesting that return migration tends to re-distribute income away from the wealthier provinces of Ontario and British Columbia and into other provinces, and particularly the Atlantic provinces.

Income Migration Decomposition

In this final section, income migration flows are disaggregated using Plane's (1999) techniques, enabling greater understanding of provincial gains or losses associated with primary, return, and onward migrations. Decomposition of migration flows allows an understanding of whether income gains or losses are driven by net migration (i.e., the volume of migration into and out-of a province), or by differences in the per-capita income levels of in- and out-migrants. Results of this decomposition are illustrated in Table 4, with two conclusions drawn from the table. First, the volume of net migration typically determined whether provinces had a net gain or loss of income, as opposed to the differential income effects of in- and out-migrants. For example, regardless of migration type (primary, return, or onward) or type of income (total, CQPPBP, RETIRP, OASGIS), income losses in the provinces of Québec, Manitoba, and

Saskatchewan were dominated by losses due to net migration. Conversely, income gains in Ontario, Alberta, and British Columbia were almost consistently (with the exception of Ontario's gains due to differential gains associated with return migration) due to the volume of net in-migration to these three destinations, reflecting overall migration patterns.

Second, income differentials between in- and out-migrants had only a limited effect on the redistribution of income. New Brunswick experienced income gains or losses owing to the differential effect of migration. In the context of OISGIS incomes and total income transfers associated with onward migration, the province had a net loss due to differential effects, meaning that its in-migrants reported relatively lower incomes than its out-migrants. Conversely, it experienced income gains for primary, return (RETIRP only), and onward migrations (CQPPBP only), meaning that its in-migrants in these situations reported relatively higher non-earned incomes than its out-migrants. Nova Scotia and Ontario also had gains/losses owing to differential effects in the quality of in- and out-migrants in specific cases.

Conclusions

Using a method to examine inter-regional income flows first illustrated by Plane (1999), this paper has examined the redistribution of non-earnings income of Canada's older population (aged 60+) through inter-provincial migration between 1996 and 2001. In particular, the paper explored the potential for primary, return, and onward migrations to re-distribute non-earnings income across the provinces, therefore providing insight into the economic impacts of these migration flows, and building upon a well-established migration literature.

In general, non-earned income appears to be an important economic base for some provinces, with inter-provincial migration having the ability to re-distribute this income source. Transfers of non-income earnings across space can effectively be seen as subsidies (Nelson 2005), with a broad comparability to results observed in the US, despite differences in spatial scale and income sources. There is, for example, a significant movement of non-earned income across the provinces, with migration responsible for the movement of over \$607 million dollars in non-earned income in 2000 alone. Such movement reinforces the notion (and potential importance) of ‘mail-box economies’, with non-earned incomes imported into receiving provinces. In particular, Alberta and British Columbia had a significant net inflow of non-earned income in 2000 (\$36.1 and \$49.7 million for British Columbia and Alberta, respectively), while other provinces such as Ontario and the four Atlantic provinces had more modest income inflows (less than \$10 million). Ontario’s role, therefore, seems to be one of a re-distributor of income, neither benefiting nor losing from income transfers despite its large population size and general attractiveness within the overall migration system. Meanwhile, income shifts into less economically advantaged provinces such as the Atlantic provinces that have struggled to retain both employment opportunities and population, provides needed cash.

On the other hand, provinces with net-losses of non-earnings income, including Québec, Manitoba, and Saskatchewan, could be seen as providing income subsidies to the above receiving regions, effectively making these three provinces the subsidizers. Québec’s loss of non-earned income, and the efficiency of the loss, may be particularly troubling, but may only reflect circumstances that were put into place in the 1970s with the passage of Bill 101 that restricted the use of English language and stimulated the on-going out-migration from the

province of its English population. While they may have remained in the province since the 1970s, exit from the labour force provides the opportunity to migrate out of the province.

Second, it is apparent from the results that primary, return, and onward migrations have a significant impact in terms of the redistribution of income across provincial units. Primary migration is typically responsible for the majority of income transfers. In particular, the amenity-rich province of British Columbia experienced a huge cash infusion associated with primary migration, exceeding \$86 million, while Québec lost over \$66 million during the same period and through primary migration. At the same time, return migration generally provides an important monetary infusion for the provinces, and in particular the three Atlantic provinces. In these cases, the net amount of income transferred into these three provinces enabled a positive income gain, which was otherwise eroded through the movement of income out of the province associated with primary and onward migrations.

Finally, income transfers between provinces were predominantly the outcome of the volume of net migration, as opposed to differential income effects of in- and out-migrants to each province. In particular, the provinces of Alberta, British Columbia, and Ontario's net income transfers were associated with the quantity of in-migration (as opposed to the 'quality' of in-migrants), while income losses from other provinces including Manitoba, Saskatchewan, and Québec were also associated with the volume of migration. While already representing large transfers of income, the flow of non-earned income is likely to become increasingly important in the coming years, concomitant with an increasing ability and desire within the older population to relocate for health, lifestyle, or amenity reasons. Put another way, as Canada's older population grows both in numerical and proportional terms, the potential for inter-provincial

migration, and thus the transfer of incomes across provincial borders, is likely to become increasingly important.

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Table 1. Total (per capita) Non-Earnings Income, 2000

Prov	In-Migrants	Out-Migrants	Stayers	In Migrant (%)	Out Migrant (%)
TOTAL (\$)					
Nfld	13,049	13,488	13,554	96.3	99.5
PEI	14,925	9,735	14,519	102.8	67.0
NS	14,851	14,604	15,488	95.9	94.3
NB	18,921	17,564	14,762	128.2	119.0
PQ	17,951	22,671	14,885	120.6	152.3
ON	19,315	17,445	18,536	104.2	94.1
MB	15,222	15,076	16,200	94.0	93.1
SA	13,173	16,499	15,322	86.0	107.7
AB	14,279	15,232	15,817	90.3	96.3
BC	18,706	15,185	17,438	107.3	87.1
Total	16,923	16,923	16,434	103.0	103.0
OASGIS (\$)					
Nfld	3,900	6,313	5,962	65.4	105.9
PEI	5,409	4,830	5,944	91.0	81.2
NS	4,667	4,733	5,656	82.5	83.7
NB	3,751	5,493	5,861	64.0	93.7
PQ	5,353	4,609	5,326	100.5	86.5
ON	5,077	4,503	4,979	102.0	90.4
MB	4,663	4,063	5,542	84.1	73.3
SA	4,994	5,626	5,725	87.2	98.3
AB	5,064	4,381	5,195	97.5	84.3
BC	4,318	5,312	5,145	83.9	103.2
Total	4,828	4,828	5,264	91.7	91.7
CQPPBP (\$)					
Nfld	4,121	4,458	3,367	122.4	132.4
PEI	3,546	2,768	3,947	89.9	70.1
NS	3,992	4,341	4,034	98.9	107.6
NB	5,254	4,164	3,861	136.1	107.9
PQ	3,625	4,566	3,929	92.3	116.2
ON	4,534	4,284	4,629	97.9	92.6
MB	4,539	4,228	4,231	107.3	99.9
SA	3,536	3,806	4,118	85.9	92.4
AB	4,047	3,941	4,469	90.6	88.2
BC	4,221	4,230	4,444	95.0	95.2
Total	4,210	4,210	4,252	99.0	99.0
RETIRP (\$)					
Nfld	5,028	2,718	4,226	119.0	64.3
PEI	5,970	2,137	4,629	129.0	46.2
NS	6,192	5,529	5,798	106.8	95.4
NB	9,916	7,907	5,040	196.7	156.9
PQ	8,973	13,495	5,630	159.4	239.7
ON	9,704	8,659	8,928	108.7	97.0
MB	6,019	6,785	6,428	93.6	105.6
SA	4,643	7,068	5,479	84.7	129.0
AB	5,168	6,910	6,153	84.0	112.3
BC	10,167	5,642	7,848	129.5	71.9
Total	7,920	7,920	6,919	114.5	114.5

Table 2. Net income migration and income migration efficiency, Canada

TOTAL INCOME (\$)

	In-Migrants	Out-Migrants	Stayers	Net Income Migration	Income Efficiency
Nfld	9,714,219	7,960,640	962,084,170	1,753,579	0.1
PEI	5,563,585	1,795,738	227,882,778	3,767,848	0.5
NS	25,164,854	16,148,754	1,777,634,131	9,016,099	0.2
NB	27,813,239	20,084,265	1,381,607,084	7,728,974	0.2
PQ	45,733,533	117,236,776	13,417,836,487	-71,503,243	-0.4
ON	161,022,633	155,363,687	16,332,135,724	5,658,946	0.0
MB	32,179,883	41,257,363	1,974,660,502	-9,077,479	-0.1
SA	25,448,255	58,610,790	1,740,132,737	-33,162,535	-0.4
AB	119,527,093	69,848,645	3,187,514,186	49,678,447	0.3
BC	155,158,170	119,018,805	5,643,373,122	36,139,365	0.1
Total	607,325,463	607,325,463	46,644,860,923		
CQPPBP (\$)					
Nfld	3,067,859	2,631,041	238,962,657	436,818	0.1
PEI	1,321,959	510,682	61,942,938	811,278	0.4
NS	6,973,378	4,800,087	463,020,956	2,173,291	0.2
NB	7,722,687	4,761,454	361,343,371	2,961,233	0.2
PQ	9,400,138	23,613,164	3,541,597,885	-14,213,026	-0.4
ON	37,552,451	38,150,899	4,078,181,912	-598,448	0.0
MB	9,595,357	11,569,714	515,659,997	-1,974,357	-0.1
SA	6,830,831	13,519,083	467,702,147	-6,688,253	-0.3
AB	33,506,318	18,071,177	900,606,299	15,435,142	0.3
BC	34,814,500	33,158,177	1,438,187,451	1,656,323	0.0
Total	150,785,478	150,785,478	12,067,205,612		
OASGIP (\$)					
Nfld	2,903,317	3,725,771	423,187,183	-822,454	-0.1
PEI	2,016,296	890,910	93,293,807	1,125,387	0.4
NS	8,412,326	5,234,293	649,165,439	3,178,033	0.2
NB	5,514,640	6,280,866	548,514,556	-766,226	-0.1
PQ	14,028,305	23,834,381	4,800,716,388	-9,806,076	-0.3
ON	42,111,821	40,102,199	4,387,284,804	2,009,623	0.0
MB	9,858,721	11,118,838	675,511,490	-1,260,117	-0.1
SA	9,648,260	19,984,594	650,205,019	-10,336,333	-0.3
AB	42,677,296	20,090,415	1,046,880,696	22,586,881	0.4
BC	35,726,532	41,635,249	1,665,169,720	-5,908,717	-0.1
Total	172,897,515	172,897,515	14,939,929,102		
RETIRP (\$)					
Nfld	3,743,042	1,603,828	299,934,330	2,139,215	0.4
PEI	2,225,330	394,146	72,646,032	1,831,183	0.7
NS	9,779,150	6,114,375	665,447,736	3,664,775	0.2
NB	14,575,913	9,041,946	471,749,157	5,533,967	0.2
PQ	22,305,090	69,789,230	5,075,522,215	-47,484,140	-0.5
ON	81,358,360	77,110,589	7,866,669,008	4,247,771	0.0
MB	12,725,806	18,568,810	783,489,015	-5,843,005	-0.2
SA	8,969,164	25,107,113	622,225,571	-16,137,949	-0.5
AB	43,343,478	31,687,054	1,240,027,192	11,656,424	0.2
BC	84,617,137	44,225,379	2,540,015,952	40,391,758	0.3
Total	283,642,470	283,642,470	19,637,726,208		

Table 3. Net income migration and income migration efficiency by primary, return, and onward migration, Canada.

TOTAL (\$)								
	Net Income Migration				Income Efficiency			
	Primary	Return	Onward	Total	Primary	Return	Onward	
Nfld	-2,795,225	4,548,803	0	1,753,579	-62.0	34.6	---	
NS	-1,326,860	13,797,540	-3,454,580	9,016,099	-27.0	48.0	-45.0	
NB	1,259,093	9,716,191	-2,551,603	8,423,680	11.9	30.8	-50.7	
PQ	-66,039,150	9,365,618	-14,556,455	-71,229,986	-81.0	15.1	-80.4	
ON	15,779,698	-7,993,857	884,060	8,669,901	11.7	-6.8	1.5	
MB	-14,318,595	11,430,130	-6,189,023	-9,077,488	-48.7	40.6	-38.9	
SA	-36,052,429	5,395,612	-2,505,718	-33,162,535	-83.9	22.7	-14.4	
AB	17,159,200	8,294,685	24,013,492	49,467,376	29.0	14.9	32.3	
BC	86,334,268	-54,554,731	4,359,828	36,139,365	87.6	-73.2	4.3	
CQPPBP (\$)								
Nfld	-1,101,546	1,538,364	0	436,818	-62.1	39.2	---	
NS	-491,113	3,497,077	-832,673	2,173,291	-21.1	47.4	-40.1	
NB	604,638	2,266,413	221,613	3,092,663	18.2	29.6	16.1	
PQ	-13,001,896	2,242,899	-3,527,760	-14,286,758	-80.0	18.2	-87.2	
ON	2,190,958	-765,520	-1,246,757	178,681	7.3	-2.7	-7.8	
MB	-3,867,626	2,766,472	-873,204	-1,974,357	-45.2	33.1	-20.5	
SA	-8,556,194	1,853,255	14,686	-6,688,253	-79.2	32.1	0.4	
AB	5,404,355	3,119,967	6,887,268	15,411,591	34.2	22.5	31.4	
BC	18,818,423	-16,518,927	-643,173	1,656,323	80.9	-83.5	-2.6	
OISGIS (\$)								
Nfld	-1,641,199	818,745	0	-822,454	-67.6	19.5	---	
NS	-585,722	4,666,859	-903,103	3,178,033	-27.1	54.7	-30.6	
NB	-553,623	86,308	-298,912	-766,226	-21.4	1.0	-44.4	
PQ	-13,335,646	6,043,354	-2,435,721	-9,728,013	-75.1	39.5	-59.9	
ON	5,299,552	-2,910,846	855,760	3,244,465	18.0	-8.8	4.9	
MB	-3,873,493	2,982,534	-369,167	-1,260,126	-48.7	29.3	-13.0	
SA	-10,919,621	2,074,964	-1,491,677	-10,336,333	-76.7	21.0	-27.1	
AB	8,903,844	5,554,679	7,940,838	22,399,361	52.2	27.4	31.5	
BC	16,705,907	-19,316,606	-3,298,018	-5,908,717	72.8	-73.4	-11.7	
RETIRP (\$)								
Nfld	-52,480	2,191,695	0	2,139,215	-16.9	43.5	---	
NS	-250,024	5,633,604	-1,718,804	3,664,775	-58.0	44.0	-65.0	
NB	1,208,077	7,363,469	-2,474,304	6,097,242	25.8	47.8	-83.0	
PQ	-39,701,608	1,079,366	-8,592,974	-47,215,216	-83.5	3.2	-86.0	
ON	8,289,188	-4,317,490	1,275,057	5,246,755	10.9	-7.8	5.0	
MB	-6,577,476	5,681,124	-4,946,652	-5,843,005	-51.1	59.2	-56.1	
SA	-16,576,615	1,467,393	-1,028,728	-16,137,949	-92.5	18.2	-12.7	
AB	2,851,000	-379,962	9,185,386	11,656,424	10.8	-1.8	33.7	
BC	50,809,937	-18,719,198	8,301,019	40,391,758	96.9	-65.8	17.3	

Table 4. Typology of Migration Decomposition by Province, 2000

Income Type	Primary	Return	Onward
Total			
Loss from net effects	NF, NS, PQ, MB, SA	NF, NS, NB, PQ, MB, SA	NS, PQ, MB, SA
Loss from differential effects			NB
Gain from net effects	ON, AB, BC	ON, AB, BC	ON, AB, BC
Gain from differential effects	NB		
OISGIS			
Loss from net effects	NF, NS, NB, PQ, MB, SA	NF, NS, PQ, MB, SA	NS, PQ, MB, SA
Loss from differential effects		NB	NB
Gain from net effects	ON, AB, BC	ON, AB, BC	ON, AB, BC
Gain from differential effects			
CQPPBP			
Loss from net effects	NF, NS, PQ, MB, SA	NF, NS, NB, PQ, MB, SA	NS, PQ, MB, SA
Loss from differential effects			
Gain from net effects	ON, AB, BC	AB, BC	ON, AB, BC
Gain from differential effects	NB	ON	NB
RETIRP			
Loss from net effects	NF, PQ, MB, SA	NF, NS, PQ, MB, SA	PQ, MB, SA
Loss from differential effects	NS		NS, NB
Gain from net effects	ON, AB, BC	ON, AB, BC	ON, AB, BC
Gain from differential effects	NB	NB	

NF = Newfoundland & Labrador; NS=Nova Scotia; NB=New Brunswick; PQ=Québec; ON=Ontario; MB=Manitoba; SA=Saskatchewan; AB=Alberta; BC=British Columbia

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