

## **A Note On Mobility Determinants In Canada, 1965-1971**

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### **I. INTRODUCTION**

Recently, Grant and Vanderkamp (1976) have analyzed the determinants (and to a lesser degree, the effects) of geographic mobility in Canada. Using Unemployment Insurance Commission (UIC) data, Grant and Vanderkamp disaggregate migration flows according to a variety of demographic traits, including sex, age, occupation, and income. Among the exogenous factors postulated as influencing migration are income, distance, and population.

Overall, Grant and Vanderkamp do a thorough and technically sound analysis of interregional migration; however, they may have omitted a number of important considerations in their analysis. For example, they fail in any direct way to disaggregate migration flows according to the employment (unemployment) status of migrants. Clearly, there is every reason to expect differences in the propensity to migrate as between employed and unemployed persons. Moreover, there is every reason to expect differences in the variables influencing the migration decisions of the employed on the one hand and the unemployed on the other. Thus, failure to disaggregate according to employment (unemployment) status may result in specification bias. Similarly, once one disaggregates by employment (unemployment) status, one must consider the new (different) variables which are likely to influence each migrant group. Along these lines, it seems reasonable to hypothesize that welfare benefit levels may be an important determinant of the migration of the unemployed, especially in view of the enormous geographic welfare benefit differentials existing in Canada. The unemployed individual may view welfare benefits as a form of long-term unemployment compensation and/or as a form of income per se; hence, welfare may very well be an argument in his decision calculus.

Accordingly, the purpose of this Note is to examine the possible impact of geographic welfare differentials on interregional migration in Canada. The focus is on a net migration to Canada's 22 largest central metropolitan areas (CMA's) over the 1965-1971 period.<sup>1</sup> The model is structurally somewhat similar to Grant and Vanderkamp in its inclusion of the income and population variables.

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## II. AN INITIAL MODEL

To examine the migration impact of welfare in Canada, we initially postulate the following model:

$$(1) N_i = a_0 + a_1 Y_i + a_2 W_i + a_3 P_i + \mu$$

where  $N_i$  = net number of unemployed migrants to CMA<sub>i</sub>, 1965-1971, expressed as a percentage of CMA<sub>i</sub>'s 1965 population<sup>2</sup>

$a_0$  = constant

$Y_i$  = 1965 per capita income in CMA<sub>i</sub>

$W_i$  = 1965 per recipient welfare benefit level in CMA<sub>i</sub>

$P_i$  = 1965 total population in CMA<sub>i</sub>

$\mu$  = error term<sup>3</sup>

In accord with conventional migration theory, we would expect that  $a_1 > 0$ . That is, migrants are hypothesized as being attracted by the prospect of a higher income, *ceteris paribus*. Next, since welfare may be viewed by these migrants as a form of income per se and/or as a form of *long term* unemployment benefits, they presumably should be attracted by the prospect of higher welfare levels, *ceteris paribus*; hence, we argue that  $a_2 > 0$ . Finally, following Grant and Vanderkamp (1976, p. 34), we argue that population size is a surrogate for employment opportunities. That is, the larger the CMA's population, the greater the expected job opportunities, *ceteris paribus*:  $a_3 > 0$ .

Estimating equation (1) by OLS yields

$$(2) N_i = -.109 -.053 Y_i + 1.107 W_i + .001 P_i$$

$$(-.75) (-.68) \quad (+8.89) \quad (+6.11)$$

$$R^2 = .95, DF = 18, F = 113.4$$

where terms in parentheses are t-values.

In result (2), two of the three coefficients ( $a_2$ ,  $a_3$ ) have the correct signs; moreover, these same coefficients are statistically significant at far beyond the .01 level. The coefficient of determination is .95, so that the model explains roughly 95 percent of the variation in the dependent variable (the unemployed migration rate). Finally, the F-ratio is significant as well, at far beyond the .01 level.

Clearly, the results in equation (2) indicate that unemployed migrants are strongly and positively influenced by the prospect of higher welfare benefits and by population size in the destination CMA, where (as noted above) the latter is a proxy for employment opportunities.

## III. AN ALTERNATIVE MODEL

As an alternative to the model in equation (1), we have also estimated the following regression:

$$(3) N_i = b_0 + b_1 Y_i + b_2 W_i + b_3 U_i + \mu^*$$

where  $N_i$ ,  $Y_i$ ,  $W_i$  = as above

$b_0$  = constant

$U_i$  = average total unemployment rate in CMA<sub>i</sub>, 1965

$\mu^*$  = error term

Following our discussion in Section II above, the following signs on coefficients in (3) are to be expected:

$$(4) \quad b_1, b_2 > 0$$

In addition, following conventional migration theory, we would expect that  $b_3 < 0$ . This is on the grounds that the higher the unemployment rate in an area, the greater the risk of not being able to secure gainful employment, *ceteris paribus*. This model differs from that in regression (1) in the substitution of variable  $U_i$  for variable  $P_i$ .

The OLS estimate of regression equation (3) is

$$(5) \quad N_i = -.439 \quad -.066 Y_i + 1.008 W_i - .002 U_i$$

$$(-1.89) \quad (-.57) \quad (+9.21) \quad (-1.88)$$

$$R^2 = .85, DF = 18, F = 33.6$$

where terms in parentheses are, once again, t-values.

These results are fairly similar to those in (2). Two of the three coefficients ( $b_2$ ,  $b_3$ ) have the expected sign; in addition, one ( $b_3$ ) is significant at about the .06 level, whereas another ( $b_2$ ) is significant at well beyond the .01 level. Thus, as in regression (2), welfare plays a critical role in the migration of unemployed persons.

#### IV. CONCLUSION

This Note has attempted to extend the recent Grant and Vanderkamp (1976) study of Canadian mobility. The empirical findings strongly suggest that it is relevant to disaggregate migration according to employment (unemployment) status and to examine the role of welfare as a determinant of the migration of the unemployed.

Given the apparent influence of Canadian welfare differentials over geographic mobility, it would seem very worthwhile to investigate whether human resource misallocation is occurring. It may be that greater welfare benefit uniformity in Canada would act as a weaker distorting factor in migration flows; that is a matter beyond the scope of this Note, however.

#### FOOTNOTES

<sup>1</sup>The CMA's studied in this paper were Calgary, Alb., Ont., Toronto, Ont., Vancouver, B.C., Victoria, B.C., Chicoutimi, Que., Edmonton, Alb., Halifax, N.S., Windsor, Ont., and Winnipeg, Man.

<sup>2</sup>This is a standard representation of the migration rate as a dependent variable. Related to this, see Cebula and Vedder (1973), Pack (1973), or Sommers and Suits (1973).

<sup>3</sup>The data were scaled [see, e.g., Grant and Vanderkamp (1976)] to allow for "readable" coefficients. The welfare data were provided by Allan Sleeman; other data sources were *Census of Canada: 1971*, Vol. 3, Part 1, *Economic Characteristics*, Table 6, pp. 1-10, (*Bulletin* 3.1 - 3), January 1975; *Census of Canada: 1971*, Vol. 1, Part 5,

*Population*, Table 23, pp. 1-70, (*Bulletin* 1.5 - 8), May 1975; *Census of Canada: 1971*, Vol. 1, Part 3, *Population*, Table 22, pp. 1-8, (*Bulletin* 1.3 - 4), April 1973; and *Census of Canada: 1971*, Vol. 3, Part 1, *Economic Characteristics*, Table 41, pp. 1-2, (*Bulletin* 3.1 - 14), April 1975.

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