Local Government Policies and Migration: Reply and Extension

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I.

Kohn is correct in his assertion that it would have been preferable to use 1965 welfare data rather than 1971 welfare data. He also may be correct in arguing that the property tax and expenditure variables are too highly correlated to be treated in the same single equation model. In addition, his own single equation estimates are both interesting and quite relevant from a public policy viewpoint.

I have three additional comments. First, he arbitrarily drops property taxes from the model, thereby omitting any possible insight into the migration impact of this variable. Second, after making his three basic points, he estimates a "new" single-equation model; it should be noted, however, that his policy variables (welfare and spending) have the same signs and essentially the same significance levels as in my original paper. Thus, his results largely confirm mine but do so at the expense of losing insight into the effects of property taxes. Third, and this is more general, the theory of interregional factor price equalization indicates that, with respect to migration and income (wage) levels, the causality runs both ways, i.e., not only does income influence migration but migration influences income as well. Neither my article nor Kohn's (nor other articles on the migration impact of local government policies\(^1\)) takes this into account since these efforts adopt a single equation estimation approach.

\(^*\)School of Business, Emory University.

\(^1\)See, for example, DeJong and Donnelly (1973), Pack (1973), and Sommers and Suits (1973).
In order to gain better insight into the migration impact of property tax differentials, the following simultaneous-equations model (with expected partial derivative signs in parentheses below the respective arguments)\(^2\) is postulated:

\[
(1) \quad M_i = M_i (Y_i, T_i, C_i) \\
\quad \quad \quad (-) \quad (+) \quad (+)
\]

and

\[
(2) \quad Y_i = Y_i (M_i, H_i, U_i) \\
\quad \quad \quad (-) \quad (+) \quad (-)
\]

in which

\[M_i = \text{gross out-migration rate from SMA } i, \text{ } 1965-1970^3\]
\[Y_i = \text{annual average percentage rate of growth in per capita personal income in SMA } i, \text{ } 1965-1970\]
\[T_i = \text{per capita property taxes in SMA } i, \text{ } 1967\]
\[C_i = \text{average number of days per year when the temperature in SMA } i \text{ falls to } 32^\circ \text{F or below}\]
\[H_i = \text{annual average percentage rate of growth in housing investment in SMA } i, \text{ } 1965-1970\]
\[U_i = \text{average (of } 1965, \text{ } 1966, \text{ } 1967, \text{ } 1968) \text{ annual unemployment rate in SMA } i\]

The precise system to be estimated is

\[
(3) \quad M_i = a_0 + a_1 Y_i + a_2 T_i + a_3 C_i + a_4
\]

\[
(4) \quad Y_i = b_0 + b_1 M_i + b_2 H_i + b_3 U_i + b_4
\]

in which \(a_0\) and \(b_0\) are constants and \(a_4\) and \(b_4\) are stochastic error terms.

The migration data were obtained from the 1970 Census of the Population (1973, Table 15), while the population data were obtained from the Statistical Abstract of the United States, 1968 (Section 33). The data on property taxes and housing investment were obtained from the Statistical Abstract of the United States, 1971 (Section 33), while the climate data were obtained from the Statistical Abstract of the United States, 1973 (Table 293). Finally, the income and unemployment data were obtained from various issues of the Statistical Abstract of the United States.

\(^2\)The expected signs all derive from conventional economic theory or are developed in Cebula (1973) or Cebula and Vedder (1973).

\(^3\)\(M_i\) refers only to white migrants. This is because only a relatively small portion of nonwhites own property as compared with their white counterparts. Consequently, while one might expect white migrants to be dissuaded at least somewhat by higher property taxes, one probably should expect nonwhite migrants to be comparatively insensitive to property tax differentials.
III.

Estimating system (3) – (4) by two-stage least-squares yield

\[
(5) \quad M_i = -22.67345 - 12.76151 Y_i + 0.30038 T_i + 0.04551 C_i \\
\quad \quad (1.98) \quad (2.44) \quad (0.29)
\]

and

\[
(6) \quad Y_i = 8.31608 - 0.03071 M_i + 0.10171 H_i - 0.00031 U_i \\
\quad \quad (1.99) \quad (6.71) \quad (0.40)
\]

where the terms in parentheses are t-values.

It should be observed that there are in fact important interactive effects between \(M_i\) and \(Y_i\), as evidenced by the high t-values from the \(Y_i\) and \(M_i\) coefficients. This attests to the desirability of using the simultaneous-equations approach to this problem. Next, observe that per capita property taxes, the variable dropped arbitrarily from analysis by Kohn, had both the expected sign and was statistically significant at the one percent level. Hence, property taxes appear to be an important determinant of migration patterns. This is further evidence, and perhaps stronger evidence than heretofore obtained, in support of the hypothesis that “... the consumer voter moves to that community whose local government best satisfies his set of preferences” (Tiebout, 1956, p. 418).

REFERENCES


