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.

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[1]See, for example, DeJong and Donnelly (1973), Pack (1973), and Sommers and Suits (1973).

II.

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:

$$(1) \quad Mi = Mi \underset{(-)\ (+)\ (+)}{(Yi,\ Ti,\ Ci)}$$

and

$$(2) \quad Yi = Yi \underset{(-)\ (+)\ (-)}{(Mi,\ Hi,\ Ui)}$$

in which
- Mi = gross out-migration rate from SMA *i*, 1965-1970[3]
- Yi = annual average percentage rate of growth in per capita personal income in SMSA *i*, 1965-1970
- Ti = per capita property taxes in SMSA *i*, 1967
- Ci = average number of days per year when the temperature in SMSA *i* falls to 32° Farenheit or below
- Hi = annual average percentage rate of growth in housing investment in SMSA *i*, 1965-1970
- Ui = average (of 1965, 1966, 1967, 1968) annual unemployment rate in SMSA *i*

The precise system to be estimated is

$$(3) \quad Mi = a_o + a_1 Yi + a_2 Ti + a_3 Ci + a_4$$

$$(4) \quad Yi = b_o + b_1 Mi + b_2 Hi + b_3 Ui + b_4$$

in which a_o and b_o 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]*Mi* 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

$$\hat{M}i = -22.67345 - \underset{(1.98)}{12.76151}\, Yi + \underset{(2.44)}{0.30038}\, Ti + \underset{(0.29)}{0.04551}\, Ci \tag{5}$$

and

$$Yi = 8.31608 - \underset{(1.99)}{0.03071}\, Mi + \underset{(6.71)}{0.10171}\, Hi - \underset{(0.40)}{0.00031}\, Ui \tag{6}$$

where the terms in parentheses are t-values.

It should be observed that there are in fact important interactive effects between *Mi* and *Yi*, as evidenced by the high t-values from the *Yi* and *Mi* 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

Cebula, R. J., "Local Government Policies and Migration: An Analysis for SMSA's in the United States, 1965-1970," *Public Choice*, 1974, 19, 85-93.

Cebula, R. J. and Vedder, R. K., "A Note on Migration, Economic Opportunity, and the Quality of Life," *Journal of Regional Science*, 1973, 13, 205-211.

DeJong, G. F. and Donnelly, W. L., "Public Welfare and Migration," *Social Science Quarterly*, 1973, 54, 329-344.

Pack, J. R., "Determinants of Migration to Central Cities," *Journal of Regional Science*, 1973, 13, 249-260.

Sommers, P. M. and Suits, D. B., "Analysis of Net Interstate Migration," *Southern Economic Journal*, 1973, 40, 193-201.

Tiebout, C. M., "A Pure Theory of Local Expenditures," *Journal of Political Economy*, 1956, 64, 416-424.

U. S. Bureau of the Census, *Census of the Population: 1970*, Subject Reports, Final Report PC(2)-2C, *Mobility for Metropolitan Areas*, 1973.

U. S. Bureau of the Census, *Statistical Abstract of the United States*, various issues.