Interstate Migration and the Tiebout Hypothesis: An Analysis According to Race, Sex, and Age

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This article examines the impact on interstate net migration of differential state and local property tax and transfer policies in the United States by race, age and sex for 1965–70. The results offer considerable support to the Tiebout hypothesis that the consumer-voter moves to that area which best satisfies his preferences for public goods.

1. INTRODUCTION

Government policies influence society in a wide variety of ways through taxation, transfer and expenditure activities. As taxation, transfers and expenditures are carried out, income redistribution and variations in the levels and distributions of burdens and benefits from governmental action are experienced. For example, when a governmental unit increases the level of welfare benefits, it further redistributes income through a taxation-transfer process. Alternatively, whenever a governmental unit raises the levels of, say, educational spending and taxes, there will likely result a myriad of additional benefits and costs for the various members of the society.

The purpose of this study is to examine the impact on interstate net migration (locational decisions) of state and local government taxation and income redistribution (transfer) policies in the United States. As Tiebout [28, p. 418] has suggested, the ". . . consumer-voter may be viewed as picking that community which best satisfies his preference pattern for public goods." Presumably, ". . . the consumer-voter moves to that community whose local government best satisfies his set of preferences." The present article seeks, in effect, to test the validity of this argument by focusing on the migration impact of two types of state and local government policies: the average level (per recipient) of welfare payments and per capita property tax levels.

At the outset, it should be noted that the issue of income redistribution through general assistance (welfare) programs has received considerably attention from various authors in recent years.[1] One article concerned with the demand for general assistance payments has argued that the ". . . demand for government assistance programs . . . may be looked upon as a special case of the demand for leisure . . ." [4, p. 1003]. The article

concludes, after a theoretical and empirical analysis, that welfare ". . . recipients are like the remainder of consumers in that they react to economic incentives" [4, p. 1018]. Accordingly, the present article argues that would-be migrants who are likely to be welfare recipients will tend to respond to (be attracted by) the "economic incentive" of higher welfare payments, other things held the same.[2]

On the other hand, because welfare benefits represent a redistribution of income through a tax-transfer process from the economically better-off to the economically worse-off, these "benefits" may in effect represent an economic disincentive to the "better-off." Von Furstenberg and Mueller [12] and Aronson and Schwartz [2] are among the authors who acknowledge and are concerned with this "disincentive" or "dissatisfaction" effect of redistributive taxes. Thus, the higher the level of welfare benefits in an area, the less attractive it would likely be to the economically better-off, *ceteris paribus*.[3]

In this analysis, attention is focused on two types of migrants: white and black migrants. Given the preceding arguments, black migrants may well react differently, on the average, from white migrants. In particular, since a much larger proportion of blacks than whites is eligible for welfare benefits, it may be expected that the level of welfare benefits will act generally as a much stronger attraction to black than to white migrants.[4] In addition, whites on average may view the redistributive taxes associated with financing the welfare benefits as unfavorably redistributing income away from themselves.[5] Accordingly, would-be white migrants may view areas with higher welfare benefit levels as redistributing income more unfavorably than areas having lower such levels. Thus, *ceteris paribus*, the white migrants may be expected to gravitate to areas with lower levels of welfare benefits.[6]

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[1] See, e.g., Brehm and Saving [4], DeJong and Donnelly [11], Deran [12], Gallaway, Gilbert and Smith [14], Hockman and Rodgers [18] and [19], Meyer and Shipley [20] and von Furstenberg and Mueller [13].

[2] Related to this, see DeJong and Donnelly [11] and Pack [23].

[3] Musgrave's analysis [22, Ch. 11] of the effects of proportional-versus-progressive taxation could be modified to yield the same conclusion.

[4] Pack [23, p. 254] also argues that black migrants " . . . respond positively to high levels of . . . public welfare expenditure . . ."

[5] This follows from the analysis in Brehm and Saving [4] and von Furstenberg and Mueller [13] and from the enormous racial disparities in income levels in the United States. Related to the latter issue, see, e.g., Gwartvey [17], Weiss and Williamson [34] and Welch [35].

[6] Pack [23, p. 254] feels that high welfare payments effectively discourage in-migration and encourage out-migration.

With respect to the impact of state and local per capita property tax levels, it is argued that the higher the property tax level in an area, the higher the cost of living in that area. Since migrants presumably seem at least somewhat sensitive to living cost differentials (see [6]), it is argued that migrants prefer areas with lower property taxes, *ceteris paribus*. However, since by and large only a relatively small portion of blacks as compared to whites are property owners, it is argued here that property tax levels are likely to have a much greater impact on whites than on blacks.[7]

2. THE MIGRATION MODEL

To test the validity of the preceding arguments, we proposed estimation of the following model of net migration (by race, age and sex):

$$M_i = M_i(W_i, T_i, Y_i, U_i, C_i) , \qquad (2.1)$$

where

M_i = a measure of net migration (in-migration less out-migration) to state i,

W_i = a measure of welfare benefits in state i,

T_i = a measure of property tax levels in state i,

Y_i = a measure of per capita income in state i,

U_i = a measure of unemployment in state i,

C_i = a measure of cold weather in state i.

Net migration (M_i) to states over the 1965–70 period was categorized by race (white or black), sex and age. There were three age groups of migrants considered: 20–39, 40–64 and 65 and over.[8] Obviously then, the empirical analysis in this article concerns the migration patterns of some 12 different groups. To control for variations in the population among the states, the variable M_i assumes the form of the ratio of net migration in each of these 12 individual groups of migrants to state i between 1965 and 1970 to the 1965 population in each of these groups in state i. The migration data for whites were assembled for all of the states except Alaska and Hawaii. Migration data for nonwhites were available for only 34 states, with Alaska and Hawaii again being among the states excluded from analysis.[9] The data source was the 1970 Census of Population [30].

To measure welfare benefits, data by state on average monthly payments in 1965 to welfare recipients in the form of aid to families with dependent children and old age assistance were gathered from [33, Table 489] for the nonelderly and elderly, respectively. In accord with the preceding remarks, we would expect the following

to obtain:

$$(\partial M_i/\partial W_i)_{\text{Whites}} < 0 , \qquad (2.2)$$

$$(\partial M_i/\partial W_i)_{\text{Blacks}} > 0 . \qquad (2.3)$$

To measure state plus local property tax levels, data were obtained from [32, Table 596] on total state plus local property tax levels per capita in 1965. As stated in the introductory remarks, it is argued that the higher the per capita property tax level in a state, the less attractive the state will be to white migrants, *ceteris paribus*:

$$(\partial M_i/\partial T_i) < 0 . \qquad (2.4)$$

For blacks, however, since they own relatively less property than their white counterparts, the property tax level will presumably be of less importance, perhaps of no real importance. It is thus hypothesized that on average, for blacks, the following obtains:

$$\partial M_i/\partial T_i \sim 0 . \qquad (2.5)$$

On the premise that it is most logical to relate white migration to white income levels and black migration to black income levels, the data on per capita income were assembled according to race. Specifically, for white migrants the variable Y_i is the per capita white income level in the ith state in 1969, while for black migrants the variable Y_i is the per capita black income level in the ith state in 1969. These data were obtained from the 1970 Census of Population [31].

Before postulating the relationship to be expected between migration and per capita income, it should be noted that this relationship may not necessarily be the same for all age groups considered in this study. The use of some variable to measure per capita income or wage rates is a standard procedure in most migration studies. The conventional argument in these studies is that migrants are, *ceteris paribus*, attracted to areas offering higher income (wages). However, since the elderly (65 and over), as opposed to other age groups, are by and large not full-time participants in the labor force, it is argued here that, *ceteris paribus*, income differentials among states are likely to exercise little or no impact over the migration of the elderly:

$$(\partial M_i/\partial Y_i)_{\text{Elderly}} \sim 0 . \qquad (2.6)$$

On the other hand, in accord with orthodox migration theory, it is postulated that, for the other age groups, migrants are attracted by the prospect of higher incomes, *ceteris paribus*:

$$(\partial M_i/\partial Y_i)_{\text{Nonelderly}} > 0 . \qquad (2.7)$$

The unemployment rate (U_i) is the average unemployment rate in the year 1969 for whites on the one hand and for blacks on the other. These data were assembled from the 1970 Census of Population [31]. Following the same reasoning as in the preceding paragraph, it is argued that since the elderly are basically not full-time

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[7] As noted by Aaron [2, p. 802], the "... Internal Revenue Code contains massive subsidies for housing." Clearly, this is likely to create a less pronounced sensitivity of migrants to property tax differentials than would be the case in the absence of such subsidies.

[8] The group below age 20 was omitted since it was felt that, although there are numerous migrants within this group, for the most part those in this age bracket are not fundamental migration decision makers.

[9] No migration data on blacks was available for those 16 states where the black population in 1970 was below 25,000. The states of Alaska and Hawaii were excluded entirely from analysis.

labor force participants,

$$(\partial M_i/\partial U_i)_{\text{Elderly}} \sim 0 . \qquad (2.8)$$

However, for the nonelderly whose interstate movement is not of the mere job-transfer variety, it is argued that higher unemployment rates imply greater uncertainty (risk) about obtaining employment and, thus,

$$(\partial M_i/\partial U_i)_{\text{Nonelderly}} < 0 . \qquad (2.9)$$

The variable C_i is the mean number of days per year when the minimum temperature in state i falls to 32° Farenheit or below. It is assumed here that, *ceteris paribus*, people on average prefer mild or warm climates to colder climates. Thus, it is hypothesized that

$$\partial M_i/\partial C_i < 0 . \qquad (2.10)$$

These data were assembled from [32, Table 263].

Clearly, estimation of a single-equation model corresponding to (2.1) would not take account of any possible simultaneity among the variables. In this regard, it may be argued, e.g., that the level of welfare benefits may not only influence migration patterns, but the migration patterns themselves may influence the pattern of welfare benefits. This is precisely what Sommers and Suits [27, p. 197] maintain: with ". . . regard to welfare and migration, it is likely that the causality runs in both directions." To allow for such interactive effects, a two-equation model for each of the 12 migrant groups was formulated as follows:

$$M_i = a_0 + a_1 W_i + a_2 T_i + a_3 Y_i \\ + a_4 U_i + a_5 C_i + \mu \qquad (2.11)$$

and

$$W_i = b_0 + b_1 M_i + b_2 T_i + b_3 Y_i + b_4 U_i + \mu' , \qquad (2.12)$$

where a_0 and b_0 are constants and μ and μ' are stochastic error terms.

3. EMPIRICAL RESULTS

The table summarizes the results of the two-stage least-squares estimation of the system (2.11)–(2.12). Only the estimates for (2.11) will be explicitly discussed here. The results for the nonpolicy variables (unemployment, income and climate) are considered first.

The unemployment variable worked moderately well, having a negative sign in nine of the 12 cases, and being significant at the one percent level in two cases and at the five percent level in three others. None of the elderly groups were found sensitive to this variable. These results imply that unemployment exercised a perceptible influence over interstate migration decisions for several nonelderly migrant groups over the 1965–70 period. Reflecting further on the present results, it appears that unemployment had a considerably greater overall impact on white migration than on black migration.

The income variable had the correct sign in ten of the 12 cases. In both the 20–39 and 40–64 age groups, all of

Structural Parameters Computed by Two-Stage Least-Squares Method, M_i Dependent

Age group	Welfare	Property tax	Income	Cold weather	Unemployment
White males					
20–39	−0.640[a]	−0.375[a]	0.446[b]	−0.185[b]	−0.301[a]
40–64	−0.287[a]	−0.286[b]	0.292[a]	−0.055[b]	−0.192[b]
65 and over	−0.129[b]	−0.111[b]	−0.102	−0.103[a]	−0.201
White females					
20–39	−0.591[a]	−0.450[a]	0.536[b]	−0.176[b]	−0.385[a]
40–64	−0.248[a]	−0.206[b]	0.073[b]	−0.048[b]	−0.209[b]
65 and over	−0.196[b]	−0.181[a]	−0.108	−0.096[a]	−0.227
Black males					
20–39	0.485[a]	−0.097	0.354[b]	0.105	0.201
40–64	0.098[b]	0.080	0.105[b]	0.059	−0.098[b]
65 and over	0.059	−0.038	0.092	−0.046[b]	−0.097
Black females					
20–39	0.886[a]	−0.104	0.421[b]	0.104	0.175
40–64	0.096[b]	−0.066	0.109[b]	0.040	0.109
65 and over	−0.068	0.030	0.068	−0.048[b]	−0.086

[a] Significant at the .01 level or beyond.
[b] Significant at the .05 level or beyond.

the groups were sensitive to the income variable. As for the elderly, the income variable had little impact, as suggested in (2.6).

The climate variable (cold weather) had the hypothesized sign in eight of the 12 cases. However, none of the cases with the wrong sign was significant at even the ten percent level. Along racial lines, this variable had a perceptible impact on white migrants (especially elderly white migrants). This is consistent with recent findings by Greenwood [16], Cebula and Vedder [8] and Miller [21]. The apparent insensitivity of most of the black migrant groups to warm weather might be related to expected adverse discrimination in the South.[10]

Turning now to the policy variables basic to this analysis, the welfare variable had the hypothesized sign in all six of the white migrant regressions; furthermore, it was significant at the one percent level in four cases and at the five percent level in the two other cases. Overall, then, white migrants appear, as argued in (2.2), to have an aversion to areas with higher welfare benefits. This is consistent with recent studies by Pack [23] and Sommers and Suits [27]. As for black migrants, the hypothesized sign was obtained in four of six cases. Black migrants in both the 20–39 and 40–64 age groups appear to be quite attracted to areas with higher welfare levels. This is consistent with Pack [23], Sommers and Suits [27], Cebula, Kohn and Vedder [7] and DeJong and Donnelly [11].

The property tax variable had the correct sign and was significant at the five percent level or beyond in all of the white migration results. Thus, as argued in (2.4), whites appear to be sensitive to property tax differentials. On the other hand, black migrants appear to be altogether

[10] This is perhaps evidenced to some extent by the fact that, over the 1960–70 period, e.g., net black emigration from the south was 1.38 million.

insensitive to property tax levels.[11] This supports the argument in (2.5). Both of these sets of results are similar to those of Pack [23], who examined racial immigration to central cities over the 1955–60 period.

4. CONCLUSION

Apparently, differentials in state and local transfer and taxation activities have had an important impact on human migration patterns in the United States over the 1965–70 period. Thus, Tiebout's arguments cited in Section 1 appear to have at least some validity. In any event, given that such state and local policies are an important determinant of migration, it must be recognized that the impact of such policies may be socially undesirable. If, in fact, undesirable effects have been experienced, it may be worthwhile to reevaluate the nature of public assistance programs, etc., to find less destructive means to attain the objectives of such programs.

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[11] This result might have been different had it been possible to thoroughly and systematically account for the property taxes vicariously paid by renters in their rent payments to landlords.