SOME MICRO ASPECTS OF HUMAN MIGRATION ACTIVITY*

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INTRODUCTION

Only recently have economists emphasized the human agent as a resource and the significance of human migration in promoting economic growth. Advances in technology, increased per capita income and population have all emphasized the necessity of labor force adjustment in our economy. Due to dynamic shifts in aggregate demand and supply functions, labor must be mobile to receive the maximum return possible for its contribution to gross national product. All comparable resources would receive the same returns when factor markets are in equilibrium, regardless of their use. While a textbook equilibrium is not likely to be observed in the U.S. labor market, it can be presumed that human migration is an equilibrating phenomenon.

Investment in human capital can be in the form of formal schooling, health, on-the-job training, learning of job opportunities and migration [8]. Most of the above factors are interrelated and must be taken into account when considering any one aspect of human investment, such as migration. Treating migration as an investment provides the criterion to test the effectiveness of migration in reducing earnings differentials between human resources employed in various geographical areas [9].

Although the need for quantitative investigations of migration activity has been expounded, little is known about micro aspects of the migration activity of labor force participants [4, 5]. The inability to measure psychic costs associated with human migration suggests that empirical estimates of rates of return to the migration activity should exceed those of real capital investments.

The purpose of this investigation was to quantify costs and benefits associated with the human migration activity. No attempt was made to determine societal costs and benefits or externalities that may accompany human migration.

The Sample

Greensboro and Winston-Salem, North Carolina, are two of the most rapidly growing industrial areas in that state. Origin of the labor force in rapidly growing areas and costs and returns associated with migration activity was one type of data collected.

In the summer of 1965, approximately 200 household heads were interviewed in Greensboro and Winston-Salem, North Carolina.[1] For this study, households were the units of observation because of the hypothesized transient nature and difficulty of locating single migrants. Also, most census data refer to household or family statistics.

Families that had moved to Greensboro or Winston-Salem subsequent to 1960 from outside the counties in which the cities are located were considered to be migrants. Census tracts and blocks were identified with respect to racial composition, thus providing a sample of white and non-white migrants. The sampling scheme was formulated so

that equal numbers of white and non-white migrants would be selected. The random sampling unit was a city block drawn from previously specified census tracts.

RETURNS TO MIGRATION

Economic, psychological, and sociological phenomena all interact to comprise a set of antecedents or conditions which may stimulate an individual's need for moving; however, this study only investigated economic phenomenon. Economic phenomenon can best be quantified by examining income differentials obtained as the result of moving.

Income Differences

Since any person who moved to these cities between January 1960 and July 1964 was considered a migrant, the range in the length of residence could vary as much as 4.5 years. Thus, analysis had to account for adjustment after moving. (Earnings immediately after relocating may not reflect future productivity.) This hypothesis was substantiated by data on many migrants which show increased earnings at the end of each year after moving. With this situation, it was not appropriate to obtain an income differential for each individual by subtracting one's

income prior to the move from income immediately after moving.[2] To standardize the earnings of all migrants to some mean length of residence, income differences per week (earnings now minus earnings immediately after move) were regressed on time (time expressed as months lived in city) by occupational classification. Resulting coefficients were used to adjust the earnings of each individual consistent with the mean length of residence within their occupational groupings.

Another income differential was computed without standardizing for length of residence. The average for both differences was about 1000 dollars for the white and approximately 450 dollars for the non-white (Table 1).

Real Income Differentials

The possibility of spatial differences in real income due to cost of living differentials is always present. For instance, comparisons of farm and non-farm incomes have been plagued by such conditions.

An adjustment for cost of living differentials between place of origin and destination would require formulating consumer price indices for the two locations. Income elasticities for all consumer items would also be needed.

Table 1. ADJUSTED AND UNADJUSTED INCOME DIFFERENTIALS OBTAINED BY MIGRANTS MOVING TO GREENSBORO AND WINSTON-SALEM, NORTH CAROLINA, 1965.

Income Difference	Adjusted[a]			Unadjusted	
	White	Non-White		White	Non-White
			(dollars)		
Average	1010	447		972	459

[a]Adjusted for length of residence only.

Despite these problems in formulating a correct measure of cost of living, some rough estimates of cost of living, based on the judgment of interviewees, are presented below. Concentration on the largest items in the consumer budget, the migrants were asked whether clothing, foodstuffs and housing costs

were higher or lower in place of destination as compared to place of origin.

On the average, white migrants reported that yearly family food and clothing were $32 higher after the move, and housing costs were reported to be $109 less after the move.[3] The possibility exists,

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[2] To obtain an income differential required that an individual be employed at the time of the interview and that the migrant was employed prior to making the move. Individuals not in the labor force prior to moving, such as students and people who retired prior to or after the move were not included in this analysis.

[3] If an individual owned a home before moving, after moving or both, the yearly housing cost was estimated by computing the probable monthly payments. Given the tax rates of $2.46 per 100 dollars assessment for Greensboro and $2.84 for Winston-Salem (tax rates were obtained from the North Carolina tax research department), a 6 percent interest rate, a 25-year loan, and 2 percent of the value of the house allowance for maintenance, the yearly housing cost was computed as follows: value of house x .02 + value of house x .0782 + assessment value/100 x tax rate. The .0782 is an annuity tabular value. If an individual owned a home prior, but not after the move, the tax rate at place of origin was assumed to be the same as the place of destination.

then, that real income gains could be greater than reported incomes for white families. Non-white migrants on the average, reported an increased cost of $117 for food and clothing. They also reported housing costs of $123 less after moving. The reported difference for the non-whites is thus almost zero. Apparently, most migrants did not make drastic alterations in family living expenditures. One can probably assume for both groups that the real income differences were not substantially different from those unadjusted for cost of living differentials.

Income Differences by Occupational Group

The various occupations into which migrants (head of household) entered were grouped into four categories representing similar skill and income levels: (1) professional, technical, managers, officials, and proprietors; (2) clerical, and kindred workers; (3) sales workers, craftsmen, foremen, and kindred workers; and (4) operatives, service workers and laborers.

Table 2 shows some characteristics of migrants by occupational groups. The occupational variables

were used in a regression equation to determine their net relationship with earnings.[4] Less variation in income differentials was explained than expected. However, the larger income gain of migrants who changed occupations, as compared to those who did not, indicates complementarity between occupational changes and the migration activity. Occupational change was specified as a zero or 1 variable and found statistically significant in a multiple regression analysis. The resulting coefficient for the white migrant was $801 and $682 for the non-white migrants.

In general, occupational groups 1 and 4 experienced the largest income gain from moving for both races, although there were only two observations in non-white group 1 (see Table 3). Similarly, the clerical occupations for both races had relatively few observations; 6 for the white and 4 for the non-white. These few numbers suggest that any inferences about them be interpreted with caution.[5]

With the exception of the non-white occupation group 2 (clerical) and the white occupational group 3 (salesmen and craftsmen), it appears that all

Table 2. THE AVERAGE LENGTH OF RESIDENCE, AGE, EDUCATION, DIFFERENCE IN HOURS WORKED PER YEAR, AND THE NUMBERS OF MIGRANTS WHO HAD TRAINING PRIOR TO MOVING, AFTER MOVING AND CHANGED OCCUPATIONS, BY OCCUPATIONAL GROUPING AND RACE, FOR GREENSBORO AND WINSTON-SALEM, NORTH CAROLINA, 1965.

Variable	White					Non-White				
	Occupa-tion 1[a]	Occupa-tion 2[b]	Occupa-tion 3[c]	Occupa-tion 4[d]	Total	Occupa-tion 1	Occupa-tion 2	Occupa-tion 3	Occupa-tion 4	Total
Length of residence (months)	26	34	27	32	28	32	27	22	21	30
Age	35	32	36	30	35	30	37	36	33	33
Education	13.5	11.5	11.9	11.4	12.3	10.5	13.0	9.2	9.2	9.4
Difference in hours worked per year	68	104	107	353	130	482	10	-40	22	24
Training before move	10	2	14	4	30	1	3	3	12	19
Training after move	7	0	10	6	23	2	2	3	12	19
Occupational change	10	3	20	4	37	2	1	9	38	50
Total migrants	30	6	44	14	94	2	4	11	75	92

[a]Professional workers, technical workers, managers, officials, and proprietors.

[b]Clerical workers.

[c]Sales, craftsmen, and foremen.

[d]Operatives, service workers, and laborers.

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[4]Thirty-four percent of the variation of income differentials was explained by the regression model for the white sample, and 44 percent of the variation was explained for the non-white sample.

[5]The large negative income difference for the non-white clerical occupation eludes explanation, especially when a casual observation of area newspapers suggests a strong demand for clerical occupations.

Table 3. AVERAGE TOTAL COSTS OF MOVING, AVERAGE INCOME DIFFERENTIALS, AND RATES OF RETURN, BY OCCUPATIONAL GROUPING AND RACE, FOR MIGRANTS MOVING TO GREENSBORO AND WINSTON-SALEM, NORTH CAROLINA, 1965.

	White				Non-White			
Occupation	Costs[a]	Income Differ- ences	Rate of Return	Benefit- Cost Ratios	Costs	Income Differ- ences	Rate of Return	Benefit- Cost Ratios
	(dollars)		(%)		(dollars)		(%)	
Occupation 1[d]	485	1335	275	12.5	167	946	566	26.7
Occupation 2[e]	937	1100	117	4.8	1853	-1849		
Occupation 3[f]	425	437	103	4.0	552	340	61	2.0
Occupation 4[g]	530	1821	343	16.0	402	586	146	6.1
Weighted Average	492	972	197	8.7	478	459	96	3.7

[a]Costs of moving comprised of direct costs, foregone earnings, and any negative income differences for the first three years after moving.

[b]Unadjusted income differentials.

[c]Income differentials discounted at the 20 percent rate.

[d]Professional workers, technical workers, managers, officials, and proprietors.

[e]Clerical workers.

[f]Sales, craftsmen and foremen.

[g]Operatives, service workers, and laborers.

occupational groupings on the average gained somewhat similar income differentials.[6]

Internal Rates of Return. For each occupational group, rates of return on investment in migration were determined by finding the interest rate at which the sum of the lifetime income advantage as the result of moving was equal to the cost incurred in moving. The assumption was made that migrants would continue to receive the same real income differential that they presently receive as the result of moving.

The lifetime income gain as the result of moving can be achieved only if individuals live to retirement. Age 65 was selected as the retirement age. Hence, to adjust for the probability of living to age 65, the number of survivors by age from 100,000 live births was divided by the number of survivors for the average age of migrants within specific occupational groups. After the survival ratios or rates were computed, the income differential was multiplied by the probability of surviving to the corresponding age.

Mathematically, the rate of return was found by equating cost of moving to lifetime earnings, with interest rate (r) the unknown. Symbolically, cost of moving equals:

$$\frac{\sum_{1}^{n} k_j z_j}{(1 + r)^n}$$

where:

k_j = the average income difference for the jth year,

z_j = the probability an individual will live to the jth year, and

n = the number of years remaining before migrant retires.

Another uncertainty regarding lifetime income gains is that of unemployment. No data were available to estimate the probability of becoming unemployed. However, there is no reason to believe that migrants would incur higher unemployment rates in labor markets at place of destination. In fact, a few of the migrants moved because they were unemployed at places of origin.[7]

Rates of return to migration appear to be relatively large, especially when one considers estimated returns to other types of investment in the human agent. Mincer [6] provides a range from 10-18 percent for returns to on-the-job training. Becker [1]

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[6]Interviewers discovered some migrants who had moved realizing that in the short-run they would have less income. However, they expected long-run income gains. Unfortunately, whether the income gain is realized remains to be determined in the future.

[7]If widespread unemployment should prevail the migrant would be at a disadvantage because he would possess less seniority than the indigenous employee.

estimates 15 percent as the return to a college education. Carroll [2] estimated a 22 percent return to technical education. Hirsch and Segelhorst [3] estimated 83 percent as being the rate of return to an additional year of public education for male students in Clayton, Missouri. All of the above rates are below the rate of return to migration estimated in this study.

Rates of return to migration among diverse occupational groupings varied considerably (Table 3). The average rate, however was 197 percent for whites and 96 percent for non-whites.

The high average rates of return to migration undoubtedly reflect the relatively low quantified costs of moving. If the psychic costs of migration could be quantified such large rates probably would not occur. Also, the returns to migration could reflect an additional investment as the result of the search for employment alternatives, i.e., some migrants may have spent considerable time in searching for new jobs and as a result experienced foregone earnings as well.

When discussing these rates of return it should be remembered that the absolute magnitude of the investment is not large when compared to other investments in human capital, such as additional schooling, technical training, and the like. A study of farm-nonfarm mobility by Perkins and Hathaway [7] shows absolute income differentials of about $600 which are in the range of those found here.

Return/Cost Ratios. Another way to viewing the returns to migration can be shown when lifetime income differences are discounted by a 20 percent rate and divided by the cost of moving. The 20 percent rate was selected because it was felt that most people could borrow money at a 20 percent rate, regardless of their financial situation. Even at a 20 percent discount rate, on the average, white migrants received about nine dollars for every dollar invested in moving expenses, and the non-white received about four dollars for each dollar spent on moving costs.

SUMMARY AND CONCLUSIONS

In summary, size of the direct cost of moving does not appear large enough to impede human mobility. However, the fact that a relatively large proportion of migrants experienced foregone earnings suggested problems of communication between prospective employers and employees.

The total costs of moving incurred by some migrants in this study, although by most standards not inordinately large, entailed considerable financial burden. This was especially true for the non-white migrants. Many potential migrants of low income status may not have adequate cash reserves to meet the moving costs. Traditional lenders of capital, such as banks, loan firms, friends and relatives would probably be quite reluctant to make loans for the purpose of leaving the community.

The magnitude of investment is not large when compared to other investments in human capital, such as additional schooling, technical training, etc. Although no attempt was made to quantify psychic costs, the relatively low cost of moving and inability to quantify psychic costs undoubtedly contributed to the high rates of return associated with migration activity.

Externalities associated with the human migration activity were not considered. Any public policy, such as a subsidization scheme, must consider both the social and private balance sheet pertaining to human migration.

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