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THE INFLUENCE OF PSYCHIC COSTS ON HUMAN RESOURCE ALLOCATION

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ABSTRACT

"The Influence of Psychic Costs on Human Resource Allocation"

Eastern Kentucky migrants in two urban centers were studied to determine the income levels required to induce a return to their home region. The average income specified was \$1,777 below 1971 earned family income, and close to the 1971 average earnings in Eastern Kentucky. Roughly 50 percent of the variation in the income differential (psychic costs) was explained by regression analysis.

Variations in the income differentials suggest that rural-to-urban migration is associated with negative private externalities at the point of origin and that interregional factor price differentials are inadequate measures of relative welfare.

BIOGRAPHICAL SKETCH OF AUTHORS FOR

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THE INFLUENCE OF PSYCHIC COSTS ON HUMAN RESOURCE ALLOCATION

Introduction

Most economists who have analyzed migration as an investment in human capital have recognized that utility differentials between regions are to be expected (Johnson, Samuelson, Sjaastad). Such differentials are viewed as "psychic" costs or gains, rather than resource costs which normally enter into constructs of market (i.e., interregional) efficiency.¹ The influence of psychic costs on human migration should be more widely recognized, especially the possibility that they signal a more optimal pattern of resource allocation than reflected in market determined wage rates. Thus, a more complete understanding of migrants' perceptions of interregional utilities would provide both theoretical and practical insights into the decision-making process underlying human mobility. Such an understanding represents a critical conceptual construct for a viable rural development policy.

The approaches to rural economic development advocated by Hildreth and Schaller and Tweeten remain inadequate until a reasonable measure of psychic differentials is developed; that is, a measure of the income necessary to make rural people indifferent between remaining in their home area and migrating to urban areas or vice versa. Knowledge of this particular differential would be helpful in establishing rural industries, in planning rural income maintenance programs and in the development of other public policies for rural areas.

The intent of this paper is to report an analysis of psychic costs for a pooled sample of Eastern Kentucky migrants located in Cincinnati, Ohio, and Lexington, Kentucky.² The evolution of empirical analyses of the "psychic" concept will be briefly traced, the analytical results reported, and the implications for rural development policy discussed.

Evolution of the Psychic Concept

As early as 1960 Maddox warned that the psychic costs of migration were probably quite significant and could not be ignored by researchers and policy makers. His warning was largely ignored to the detriment of intellectual inquiry and practical public policy. Most migration research has followed a more simplistic route with limited policy relevance, while policy makers helplessly watched the continuing panorama of human mobility without the tools to effectively grapple with the related problems that have emerged.

Sjaastad defined psychic costs as a consumer surplus equal to the maximum dollar income that could be taken from the individual before he would decide to migrate in order to improve his economic position.

Weidemann and Sanders adopted this definition in studies of return migrants in Eastern Kentucky. They found that an additional income increment of \$4,000 (in 1968 dollars) would be required to induce former migrants to return to the city. Regression analysis by Weidemann on 19 respondents indicated that age, emotional adjustment and income were significant determinants of psychic costs.³

Hansen was implicitly dealing with this same issue in his study of *of senior high school students in Eastern Kentucky relative to employment in regional growth centers. He made no attempt, however, to adjust the costs* the opportunity wage costs for differences in the demographic characteristics of the students, nor for interactions that occur between different locations.

Rohrlich directs concern to the social opportunity cost of the psychic effect, implying that society will lose if a psychic factor keeps the migrant away from higher earnings potential in the city. In

this framework any acceptance of a dollar income below the maximum attainable is viewed as a loss to society. Such arguments lack a sound theoretical basis and are acceptable only if dollar figures comprehensively measure utility, a proposition few economists would be willing to support.

Morgan and Deaton studied the income difference necessary to induce out-migration from three low-income counties of East Tennessee. Families willing to move away had higher current earnings, were more educated, and more concentrated in the occupational categories of craftsmen and operatives.⁴ These differences corresponded to similar distinctions between migrants and return migrants reported by Deaton and Ansel, especially regarding income, education, and age. Regression analysis supported their hypotheses of a direct relationship between the psychic costs of migrating and age, marital status family size, and family income. Each year of education for the household head required \$395 in additional income to induce out-migration.

A Monetary Measure of Psychic Differentials

In a 1971 field survey of Eastern Kentucky migrants in Cincinnati, Ohio, and Lexington, Kentucky, each migrant was asked "How much would you have to earn per month in Eastern Kentucky in order for you to move back?" The response was adjusted to an annual basis to reflect the minimum acceptable annual income to return to Eastern Kentucky. Therefore, the psychic cost was constructed by subtracting the present minimum acceptable income at the point of origin (Eastern Kentucky) from the present total family earned income (nonasset) in the city.⁵ A negative income differential is the amount the migrant would sacrifice in annual income in order to return to Eastern Kentucky.

Personal Attitudinal Traits Hypothesized to Influence
the Level of Psychic Costs

The rural Appalachian-to-urban migration stream represents a unique shift in cultures, interpersonal relationships, and job orientation that may be highly disconcerting to the rural person. The migrant is reared in a personal, familial, rural community. The decision to move often entails an abrupt shift from a community of family and friends, to an impersonal, urbanized world, with a job in a mechanized factory for which he is often ill-prepared. Overcoming this psychological rift is a major task of new migrants.

This study hypothesized that the most important of these psychological attitudinal adjustments could be conceptually placed into three categories consisting of attitudes or relative satisfaction toward: 1) job (job satisfaction), 2) friends and acquaintances in the urban community (interpersonal satisfaction), and 3) the public and private services and facilities of the city (service satisfaction) (Holmes, Kavanagh and Lowin, Weissenberg and Gruenfield, Armstrong, Mukherjee).

Batteries of questions were constructed for each of these attitudes to elicit a response to each statement or scale item according to one of six degrees of agreement: agree strongly, agree, agree slightly, disagree slightly, disagree, or disagree strongly (adapted from Roen and Burnes). The values were scored 1 to 6 to reflect successive degrees of dissatisfaction. A series of reliability tests were made on each battery of scale items utilizing a reliability program perfected by Specht. An index for each attitude (JOBSCORE, INTSCORE, and SERSCORE) was constructed by calculating the simple mean for each respective battery of valid scale items.

Regression Analysis

A linear regression model was designed to analyze variation in psychic costs for the pooled sample of migrants due to variation in the characteristics of migrants and their families. In addition to the attitudinal indices, other continuous, independent variables included in the analysis were: family earned income in 1971 (FAMINC); migrant's years of education (EDUC); migrant's age at the time of migration (AGE); family size (FAMSIZ); distance migrated (DIST); years of residence in the city (YRSRES); months lived in other cities (OTHERCIT); and migrant's weeks of unemployment during the previous year (UNEMP). Dummy independent variables were: migrant's rural-urban origin (URBAN); migrant's sex (FEMALE); migrant's participation in formal job training (JOBTRN); property ownership by the family in Eastern Kentucky (PROPEK); family homeownership in the city (OWNHOM); migrant's military training (MILTR); and migrant's occupation according to major Census categories.

Stepwise regression was utilized to develop the model with the lowest standard error of estimate. Table 1 presents the mean, standard deviation and regression results for the variables remaining in the "best-fit" model.

Results of the Analysis

The positive mean value for the dependent variable, psychic costs, suggests that the average migrant would give up \$1,777 to return to Eastern Kentucky. Thus, a salary \$1,777 below the current urban family earnings of \$9,409 or \$7,632 would be an acceptable Eastern Kentucky income. The average worker in Eastern Kentucky in 1971 had an income of \$7,069 (Morgan, p. 165), only \$563 below the acceptable level designated by the sample of urban migrants.

Table 1. Regression Model for Migrant Income Differential Needed to Return to Eastern Kentucky

| Variable | Mean | deviation | coefficient | Regression standard error | F value |
|-----------|---------|-----------|-------------|---------------------------------|---------------------|
| Dependent | 1776.64 | 5135.09 | | | |
| Constant | | | -9739.52 | | |
| FAMINC | 9409.05 | 3912.50 | 0.77 | 0.07 | 134.10 ^a |
| INTSCORE | 3.82 | .94 | 1215.46 | 316.25 | 14.77 ^a |
| PROF | .18 | .39 | -2563.67 | 721.55 | 12.62 ^a |
| EDUC | 11.65 | 3.01 | -195.72 | 93.50 | 4.38 ^c |
| FEMALE | .13 | .33 | 3059.50 | 789.63 | 15.01 ^a |
| SAL | .13 | .34 | -1907.22 | 770.23 | 6.13 ^b |
| PROPEK | .10 | .30 | 1534.08 | 801.43 | 3.66 |
| URBAN | .29 | .46 | -996.69 | 545.70 | 3.34 |
| SERSCORE | 2.95 | .70 | 628.19 | 412.87 | 2.32 |
| OWNHOM | .38 | .49 | -735.63 | 524.97 | 1.96 |
| UNEMP | 1.70 | 5.06 | 57.91 | 48.50 | 1.43 |
| FAMSIZ | 3.27 | 1.39 | 217.89 | 185.28 | 1.38 |

$R^2 = 0.49$; $s_{\hat{y}} = 3769.68$; Regression $F = 19.70$; $N = 263$

^a $F_{.01} = 6.64$; ^b $F_{.025} = 5.02$; ^c $F_{.05} = 3.84$.

The regression model explained 49 percent of the variation in the psychic income differential. Statistically significant factors associated with the psychic costs were family earned income (FAMIC), relative dissatisfaction with interpersonal relationships (INTSCORE), and being a female head of the household (FEMALE). Calculated at the means, the results suggest that \$.77 of each additional dollar of income would be sacrificed to return to the rural area of origin.

Also, each unit increase in the interpersonal dissatisfaction adds \$1,216 to psychic costs. Interpersonal relationships seem to be more important in contributing to dissatisfaction with urban life than the other two measures of satisfaction. Female household heads would sacrifice over \$3,000 in income compared to male household heads to return to Eastern Kentucky, with other variables held constant. Other variables contributing to the level of psychic costs were : property owned in Eastern Kentucky (PROPEK), dissatisfaction with services and facilities (SERSCORE), unemployment in the previous year (UNEMP), and family size (FAMSIZ).

Neither previous time lived in other cities nor length of residence in Cincinnati and Lexington appeared to influence the measure of psychic costs although we had hypothesized that previous socialization would increase satisfaction with urban life. Measures of formal job training experience (JOBTRN) and military training (MILTR) did not enter into the final equation. The distance migrated, age at migration, and the occupational categories of craftsmen, operatives, transport workers and laborers were insignificant.

Relative job satisfaction (JOBSCORE) was not a significant factor explaining variation in psychic costs. A closer examination of the data revealed that migrants were more satisfied with their jobs than with interpersonal relations or services in the city. The mean measure for job satisfaction was 2.81 and the standard deviation was 0.68. The

respective measures for interpersonal relations were 3.82 and 0.94, and for service satisfaction, 2.95 and 0.70.

Conclusions

The psychic costs reported in this sample of migrants reflect preferences for rural life and more familiar social surroundings. These income differentials suggest that migration is associated with the negative private externalities and that interregional factor price differentials are inadequate measures of relative welfare.

The satisfaction measures indicate that the quality of work in the city is a less important deterrant than the quality of the social and physical surroundings to successful adjustments of rural-to-urban migrants. These factors may be of similar importance in planning rural development activities around smaller and intermediate size cities.

Policy makers wishing to decrease interregional income differentials and to assist migrants to adjust to the urban environment and to eliminate the high personal and economic costs associated with return migration should consider the implementation of programs to familiarize actual and potential migrants with the cultural milieu of urban America. The frustrations associated with interpersonal interactions may be significantly reduced if the migrant has a better understanding of the behavior of the urban resident. Such programs could be offered through school systems, state employment services and community organizations. In determining the optimum mix of urban and rural-oriented human resource development policies, the net social benefits of these programs should be compared with the net social benefits of programs that induce firms to locate in rural areas.

Government influences the flow of migrants through alteration of income and employment opportunities in rural and urban areas. For instance, minimum wage legislation probably has greater impact in rural areas with their lower wage rates. The result appears to be greater retention of those with

- the least earning capacity, the poorly educated, the older worker, and and the handicapped, further intensifying the problems of rural areas. Policy makers should take into consideration the impacts of this and similar programs upon migrant flows if desired population distribution is to be achieved and undesirable consequences to be avoided.

Finally, the results suggest that a significant proportion of migrant dissatisfaction can be explained by demographic measures. Development planning should be sensitive to psychic differentials both at the local level and in constructing social welfare functions at the state and national levels.

Footnotes

¹The terms "psychic cost" and psychic gain" will be used whenever the specific direction of the psychic differential is being designated. The term "psychic differential" refers to the general concept irrespective of gains or losses.

²The data utilized in this paper were obtained from research performed pursuant to the University of Kentucky Contract No. NIH-70-2198 with the National Institute of Health, Department of Health, Education, and Welfare.

³Weidemann used the Bell Adjustment Inventory to measure emotional adjustment. Because of the small number used in the regression, his results must be interpreted with caution.

⁴In a sample of 289 families, 236 would not state an income that would induce them to move, or were retired. The remaining 53 respondents gave income differentials sufficient to attract them to four cities of alternative size and distance.

⁵The assumption was made that any transfer payments and asset earnings would continue to accrue to the family irrespectively of geographic location.

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