REPEAT MIGRATION IN THE UNITED STATES: WHO MOVES BACK AND WHO MOVES ON?

Julie DaVanzo

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INTERNATIONAL INSTITUTE FOR APPLIED SYSTEMS ANALYSIS
A-2361 Laxenburg, Austria

FOREWORD

Declining rates of national population growth, continuing differential levels of regional economic activity, and shifts in the migration patterns of people and jobs are characteristic empirical aspects of many developed countries. In some regions they have combined to bring about relative (and in some cases *absolute*) population decline of highly urbanized areas; in others they have brought about rapid metropolitan growth.

The objective of the Urban Change Task in IIASA's Human Settlements and Services Area is to bring together and synthesize available empirical and theoretical information on the principal determinants and consequences of such urban growth and decline.

This paper focuses on the repeat moves that many people in the United States make during their lifetime. The analysis is based on the capital that individuals accumulate in a specific location and on the quality of information that migrants obtain before making their decision to move. The careful examination of why people move and the focus on migration sequences make this essay a particularly important contribution to our understanding of current patterns of migration behavior and spatial population change.

A list of publications in the Urban Change Series appears at the end of this paper.

Andrei Rogers
Chairman
Human Settlements
and Services Area

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ABSTRACT

Migration often occurs more than once in an individual's lifetime. Many people may move back to the location where they were born after a stay in another area, or they may move on to yet another new location. In this paper the migrant's location-specific capital and information costs are examined, and empirical findings for the United States are presented and discussed.

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I. INTRODUCTION

Most studies of migration implicitly treat it as a one-time event, paying no heed to the possible distinction between a first-time move and subsequent repeat moves. Yet the demographic literature (e.g., Goldstein, 1964; Morrison, 1971) has for some time noted that most moves are not people's first moves, but rather are repeat moves--either onward to new locations or back to places where they lived before (i.e., return moves).

This paper focuses on this majority of moves and inquires into how the people who may potentially make such moves (i.e., people who have moved before) choose among the alternatives of (1) returning to a location where they lived before, (2) moving on to a new location, and (3) staying put. I focus in particular on return moves, which are important in their own right because they have the potential of reversing long-standing migration streams, such as the historic outflow of black migrants from the South or the contemporary exodus of migrants from the industrial Northeast in the United States.

To analyze how people select among these three alternatives the human capital model of migration is broadened to incorporate the concepts of location-specific capital and information costs. I then test the model using longitudinal micro data for the United States (the Panel

Study of Income Dynamics) that enable one to measure migration at one-year intervals and thus detect a large fraction of all moves that are made.* I find that the migration of people to new locations conforms with relationships long accepted in the study of migration, whereas the migration of people who return shortly after leaving sometimes contradicts these relationships. For example, the negative relationship between distance and migration, a nearly universal finding of migration studies, does not hold for return migration.

Section II discusses the conceptual framework, describes the hypotheses tested, and explores certain formal similarities between repeat migration on the one hand and marital dissolution and job turnover on the other. Section III describes the data analyzed and how they were structured. Section IV presents the empirical findings. The paper concludes in Section V with a summary of main findings and a discussion of their implications, including relevance to the "one-year - five-year migration problem" that has been studied in recent IIASA research (e.g., Kitsul and Philipov, 1980).

II. CONCEPTUAL FRAMEWORK AND HYPOTHESES

Conceptual Framework

Our basic model regards a person (or family) as migrating in the

*Many studies of return migration (Bowman and Myers, 1967; DaVanzo, 1976; Kau and Sirmans, 1976; Yezer and Thurston, 1976; Long and Hansen, 1977a and b; Miller, 1977; and Allen, 1979) use aggregate U.S. Census data, which measure return and other repeat migration by comparing a person's places of residence at (1) the time of the census, (2) five years before the census, and (3) birth.

expectation of being better off by doing so; i.e., the person moves if he believes the benefits will exceed the costs.* Usually the model is set forth as a one-period model--the person has only one opportunity to decide whether or not to migrate (and if so, where). However, if we want to explain why people might choose to leave places to which they recently decided to move, and in particular, why they might move back to places they previously decided to leave, the model must be extended to a multiperiod framework. In each time period the person decides whether he will move, and if so, where.

A person moves initially because he expects the benefits of the move to outweigh the costs. He may intend at the time to remain in the new location for the forseeable future or he may anticipate moving again soon, especially if he is moving to the new location to receive schooling or training, or to undertake a limited-term assignment. However, not all repeat moves are preplanned; some arise because initial moves did not "work out."

Only with perfect information and perfect foresight would the potential investor in migration always weigh correctly the advantages

*The benefits of migration include not only increased earnings and fringe benefits over one's lifetime, but also increased nonwage income (e.g., higher welfare payments or higher agricultural subsidies) or better amenities (e.g., a more pleasant climate). Similarly, the costs include not only out-of-pocket expenses for transportation and moving of belongings (direct costs), but also such factors as earnings foregone while moving and looking for another job (opportunity costs); the psychic costs of leaving friends, relatives, and familiar surroundings, along with the monetary and time costs of staying in touch with those left behind (e.g., visits back); the cost of financing the investment in migration; the cost of acquiring information about moving and about opportunities in potential destination areas; and losses in the value of location-specific assets (e.g., a clientele) whose worth is tied to the original location.

and disadvantages of specific locations or of moving at all. But information is not costless, and uncertainty is a fact of life. The potential migrant is assumed to invest in search only as long as the benefits of having more information are perceived to outweigh the costs. With imperfect information, some investors will overestimate or underestimate the net benefits of migrating.

Since only those who expect the net benefits of migrating to be positive will move, initial migration should select against "pessimists" (those who underestimate the net returns of migration) and tend to involve persons who in general overestimate the net benefits of moving (Allen, 1979). Such selectivity should be stronger, the less accurate the information about the potential destination is; therefore, the less accurate the information, the greater should be the proportion of migrants who overestimate the net benefits of moving, and hence are likely to be disappointed and prone to move again (Allen, 1979).

When a person who has migrated recently considers doing so again, he should have more information about the moving process in general. The information costs of the repeat move should be lower than those of the initial move--a learning-by-doing phenomenon (Bowman and Myers, 1967). In addition, the potential repeat migrant will have a great deal of first-hand knowledge about certain potential destinations--locations where he lived before. Furthermore, he might have left other forms of location-specific capital behind in those locations. Location-specific capital is a generic term denoting the diverse factors that tie a person to a particular place. It refers both to concrete and intangible assets

whose value would be lost, costly to replace, or steadily diminished if the person moved somewhere else: for example, job seniority, an existing clientele (as in the case of a well-regarded doctor or carpenter), a license to practice a particular profession in a certain geographic area, a nonvested pension, language fluency, property ownership, personal knowledge of an area, and community ties and close friendships. Thus returning to a place where he lived before may enable a person to recoup one of the costs of the initial departure from that area--the value of location-specific capital he left behind.

When a person who has migrated previously does so again, he should favor some former place of residence because he has location-specific capital there. Other factors (including length of absence) being the same, the more location-specific capital left behind, the greater should be the propensity to return. The longer the absence, however, the weaker should be the propensity to return, since location-specific capital typically depreciates in value.* For example, the carpenter's clientele cannot wait indefinitely for him to return; old friends may die or migrate; and, of course, the value of information about an area depreciates as conditions there change.**

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*Consistent with this, a number of studies (e.g., Kiker and Traynham, 1974; Blejer and Goldberg, 1980; DaVanzo and Morrison, 1981) present evidence showing an inverse relation between the likelihood of return migration and the length of the interval of absence. Other possible reasons for the negative relationship between return migration and interval of absence are given on page 7.

**However, some people who leave an area may intend all along to return, and may continue to invest in their location-specific capital there to keep it from depreciating. In developing countries, for example, people who leave their home village sometimes attempt to maintain the value of their location-specific capital through frequent visits back or through retaining ownership of property. [For example, Speare

Similarities with Models of Job Turnover and Marital Dissolution

The conceptual model described above, with its emphasis on specific capital and information costs, resembles that used in analyses of job turnover (see review by Parsons, 1977) and marital dissolution (Becker, Landes, and Michael, 1977). In all three models, imperfect information gives rise to a possible mismatch--of migrants to locations, employees to employers, or husbands to wives. The likelihood of mismatch is larger the greater the information costs, although even perfect information would not prevent repeat moves, job changes, or marital dissolutions.*

In all three applications, people accumulate capital that is specific to either a location, a job or firm, or a spouse, and this acts as a deterrent to changing state.** The more specific capital they accumulate in a state, the less likely they should be to leave. Reverse causation is, of course, a possibility in each case. People should be less likely to invest in state-specific capital (e.g., to buy a home, invest in firm-specific training, or have children) the likelier they are to change their current state.

(1971) found that only 18 percent of the Taiwanese migrants in his sample who had been homeowners before moving sold their homes when they moved. Also see Nelson (1976).] Indeed, the person may "circulate" between his home village and a city in order to gain some or all of the benefits of the latter location while retaining those of the former (Hugo, 1979).

*A repeat move, job change, or marital dissolution might be anticipated if the time paths of net benefit streams associated with alternative options crossed. Anticipated changes are undoubtedly more likely in the migration and job turnover cases (e.g., moves following a term in military services or completion of college, or associated with sabbatical leaves) than in the marriage/divorce case, where presumably few dissolutions are anticipated at the outset.

**The term "state" is used here in the general rather than the geographic sense.

Finally, for all three applications, empirical evidence has been found of a strong negative relationship between duration in a state and the likelihood of leaving it. This may be due to any of several causes: the early detection and correction of "mismatches," prior to an intensive investment in specific capital; the accumulation over time of state-specific capital that deters people from leaving that state; or the early departure of people more prone to leave a state,* leaving behind an increasingly selective sample of those less prone to leave.**

However, migration differs from job turnover and marriage/divorce in two important respects. First, in job turnover and marriage/divorce, there are two active decisionmakers--employee and employer, husband and wife--whereas (family consideratins aside--see Mincer, 1978) in migration, there is only one. (It should be noted, however, that because employment and migration are closely related, employers at destination may play a substantial role in the migrant's decision.) Second, there is no meaningful counterpart to the return migration option in the case of job turnover or marriage/divorce.*** In our model, the location-specific capital in a place where people lived before may draw them back if they choose to move again, and this often happens.

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*This higher propensity could be due either to an intrinsically higher probability (e.g., wanderlust in the case of migration) or to generally lower search costs or the possession of less state-specific capital (e.g., the migration of college professors).

**For the migration case, at least, we would add a fourth item to the list: the depreciation over time of location-specific capital in a previous area of residence.

***Returning to a previous employer, remarrying a previous spouse, returning to the state of being single (as opposed to immediate remarriage to someone else), and reconciliation following a marital separation are possible, but most of them rarely occur.

In short, the formal properties of return and other repeat migration have meaningful counterparts in other demographic and social processes where decisions depend partly on information costs and on state-specific capital.

Hypotheses Tested

The concept of location-specific capital implies several hypotheses about migration generally, and about return and other repeat migration in particular (the latter being our focus here):

(1) *The more location-specific capital a person has at the current residence, the less likely he should be to leave.*

We test this hypothesis by examining the relationship between the likelihood of repeat migration and one especially salient indicator of location-specific capital: whether or not the person owned the house he occupied before the move in question.*

(2) *When a person who has migrated previously does so again, he should favor some former place of residence because he has location-specific capital there. Other things (including length of absence) being the same, the more location-specific capital that is left behind, the greater should be the propensity to return.*

We test this hypothesis by inquiring whether, when length of absence is held constant, people who moved in the recent past are more likely to return the more location-specific capital they had in their original location. In our empirical analysis, our indicators of location-specific capital before the initial move include a dummy vari-

*There is the possibility here of reverse causation. People who plan to stay in the new location may be more likely to buy homes (and to invest in other forms of location-specific capital).

able indicating whether the person owned a home in the area where he lived originally (i.e., before the initial move) and a variable measuring the number of years he resided in the dwelling unit where he lived before the initial move.*

(3) *Since most location-specific capital depreciates in value over time, the attraction of location-specific capital in drawing people back to a place where they lived before should weaken as the interval of absence lengthens.*

To test hypothesis 3, we examine whether the relationship between our particular indicators of location-specific capital at the initial location and the likelihood of a person's returning there weakens as the interval of absence lengthens.

The concept of imperfect information leads to the following hypothesis:

(4) *The sounder the information on which the migrant based his initial move, the less prone he should be to move again.*

The more closely the outcome of the initial move accords with pre-move expectations, the more likely it is that the migrant will be satisfied and want to stay at the new location.**

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*In a companion paper (DaVanzo and Morrison, 1981) we show that, at each interval of absence, the probability of a return move is always at least twice as high if the potential return destination is the area where the person grew up (a place where he presumably has more location-specific capital than in other areas). In the present study we restrict our sample to people who are at risk to only one return; hence, nearly all the return moves considered here are back to places where the migrants grew up.

**An exception would be return and other repeat moves that were preplanned and are, hence, not necessarily the result of imperfect information. We cannot determine whether or not each repeat move in our data was preplanned. However, we do control in our empirical analysis for one major category of moves that presumably were foreseen--moves by people leaving military service.

Although we lack direct measures of the soundness of migration information, we do have several indirect indicators of this. One is the person's education, an indicator of the quantity and quality of information the person has about opportunities elsewhere. We assume a positive relationship between education and information, due both to the superior ability of educated people to process information efficiently (see Schultz, 1975, and references therein), and to their tendency to compete for jobs in labor markets that are national in scope, for which information is available through trade journals, professional meetings, and the like (Schwartz, 1973).

Another indicator of information examined here is the distance of the person's initial move. To the extent that the costs of information about alternative opportunities are positively related to the distance to those opportunities, the further the initial move, the less reliable should be the information on which it was based. Migrants who move a hundred miles should have easier repeated access to first-hand information than those who move a thousand miles. Moves based on less reliable information should be less likely to prove "successful," making a subsequent "corrective" move more likely (Yezer and Thurston, 1976).

We also examine dummies indicating the person's employment status before the initial move and before the potential repeat move. Unemployment or underemployment after the initial move (i.e., before the potential repeat move) presumably was an unintended consequence of the initial move and can be assumed to indicate that the migrant would not consider that move to have been successful. Unemployment before the initial move may have prompted that move and may have affected the manner

in which the person gathered information prior to making the initial move. On the one hand, unemployed people have more time to search; on the other hand, the stigma of unemployment (labeled as a "lemon") or financial pressure may limit the ability to do so effectively. Furthermore, unemployed people have little or no job-specific capital to tie them to an area.

Our final hypothesis is:

(5) *The poorer the labor-market opportunities in the place where the migrant formerly lived, the less likely he should be to return there.*

To test this hypothesis, we consider the relationship between the likelihood of return migration and the unemployment rate in the area of residence before the initial move. The variable we use refers to the time before the initial move. (We would have preferred to measure the economic conditions at the potential return destination for the time immediately before the repeat move--and, in particular, to consider the effect of changes in those conditions since the person left that location--but those data were not readily available for all potential returnees.)

III. DATA, SAMPLE, AND ESTIMATION TECHNIQUE

Data

The data used here are from the University of Michigan's 1968-75 Panel Study of Income Dynamics (PSID), which provides eight years of

data on over 5000 families in the United States.* These data enable one to examine sequences of moves (within which individual moves can be interpreted) and to measure migration at one-year intervals, thereby detecting a large fraction of all moves that are made.

For the purposes of this study the PSID data have been restructured so that the units of analysis are "person-year" observations.** A person-year represents one year in a person's life during which he is at risk to migrate and may or may not move. Our sample consists of person-year observations during which the person was the head of a family, for which at least one additional year of information is available (to show whether or not he moved the following year).***

Although it is possible with the PSID data to analyze migration down to a county level, a somewhat larger aggregation is employed here. Counties have been combined into Standard Metropolitan Statistical Areas (SMSAs) and nonmetropolitan State Economic Areas (SEAs), areas that approximate labor markets in the United States. Henceforth, when I refer to "move," "migration," or "area," I am using the terms with reference to SMSAs and nonmetropolitan SEAs.

Definition of Moves

In the PSID, sample members' area of residence is recorded annually between 1968 and 1975. The area where the person lived when "growing up" also is recorded, but its precise point in chronological time cannot

*As noted below, the sample used here is considerably smaller.

**For technical details on our restructuring of the data, see DaVanzo and Morrison (1978, Appendix).

***The PSID oversampled families with low incomes, and hence the data are not strictly representative of all U.S. family heads.

be ascertained (except that it logically falls earlier in the sequence of life events). I refer to this earlier location as the person's "origin." The eight-year residence history, along with information on the origin (the area of residence at an indefinitely earlier point in life), enables us to identify and classify moves over each one-year interval as follows:

(1)*Primary move.* Defined as a first move between years t and t + 1 by a person who has grown up in and (while tracked by the PSID) remained in the same area through year t. No more than 29 percent of the annually recorded moves between 1968 and 1975 in the PSID data are primary (DaVanzo and Morrison, 1981).*

(2)*Return move.* Defined as a move between 1968 and 1975 back to a place where the person lived previously (either his origin or a location inhabited between 1968 and 1973). Twenty-six percent of the moves recorded annually between 1968 and 1975 in the PSID data are return moves. We can identify two (not mutually exclusive) types of return moves:

(2a)*Short-interval return move.* Defined as a move between 1969 and 1975 back to an area where the person previously lived in any year between 1968 and 1973. An interval of absence, or migration interval (MI), is associated with each short-interval return move. The maximum possible MI that we observe in our data is six years (an initial move in 1968-69 and a return move

*This is doubtless an overestimate. Since we cannot ascertain previous residences (and hence previous moves) between origin and 1968, some repeat moves are undoubtedly misclassified as primary.

in 1974-75). Sixteen percent of the moves recorded annually between 1969 and 1975 in the PSID data (and 62 percent of the return moves) are short-interval returns.

(2b) *Origin return move.* Defined as a move between 1968 and 1975 back to the area where the person grew up. An origin return may also be a short-interval return, of course, as when a native of A leaves A in 1969 and returns in 1970. For origin returns that are not short-interval returns ("origin only" returns), the migration interval is indeterminate, but is likely to be quite long, especially for older adults. One-fifth of the annually recorded moves between 1968 and 1975 (and over three-quarters of the return moves) in our data are returns to origin; three-fifths of the short-interval return moves between 1969 and 1975 in the PSID data are also returns to origin.

(3) *Onward move.* Defined as any nonreturn repeat move, i.e., a move whose destination (so far as can be determined) does not duplicate a previous area of residence. Onward moves, like return moves, have a migration interval. (Once again, the longest specific MI we can detect here is six years.) Forty-five percent of the moves between 1968 and 1975 in the PSID data are onward moves.

Hypothetical illustrations of each type of move are shown in Table 1.

In this study we estimate a multivariate model explaining short-interval return moves and short-interval onward moves, which together account for the majority of moves recorded in the PSID data. We have

Table 1

Hypothetical Illustrations of Moves and Migration Intervals (MI)

Type of Move Illustrated	Location of Residence in: Origin	1968	1969	1970	1971	1972	1973	1974	1975
Primary move	A	A	A	[A	B]	B	B	B	B
Short-interval return move									
MI = 1 (also to origin)	A	A	A	[B	A]	A	A	A	A
MI = 6 (not also to origin)	A	B	C	C	C	C	C	[C	B]
Origin only return move	A	B	B	[B	A]	A	A	A	A
Onward move (short interval)	A	A	B	[B	C]	C	C	C	C

MI=1 (spans 1970–1971); MI=6 (spans 1968–1974); MI indeterminate (spans 1968–1969); MI=2 (spans 1969–1970)

SOURCE: DaVanzo and Morrison (1981)

restricted our sample to person-year observations that are at risk to only a single short-interval return, i.e., person-year observations preceded by exactly one move.*

*This restriction enables us to avoid the complications that arise when some observations are at risk to one return and others are at risk to multiple returns. The restriction means that we consider around three-fifths of all of the short-interval return moves registered in our data set; nearly all of these short-interval returns are also returns to origin. (We also consider a few cases at risk to only one short-interval return whose "origin" is unknown.)

Since the migration interval (interval of absence) plays an important role in our hypotheses, and since interpretation becomes more complex when it is not controlled, we subdivide our sample into observations at risk to repeat moves after a one-year migration interval (MI=1), on which we have 564 observations, and those at risk to repeat moves with a two- to six-year interval (MI=2-6), for which n=790; we estimate separate equations for each subsample. Ideally, we would have looked at each migration interval separately, but the sample sizes beyond MI=2 are too small to permit this.*

A given individual may appear more than once in the MI=2-6 sample.** (For example, the person who does not return at MI=2 in, say, 1971 will then be at risk to return with MI=3 in 1972, and will appear again in the MI=2-6 sample as long as we have information on his 1973 location.) The 790 observations for the MI=2-6 sample are on 331 individuals. Of these 331 individuals, 10.9 percent returned and 16.9 percent moved onward within the MI=2-6 period. (These translate into average annual probabilities of 4.6 percent for MI=2-6 return and 7.1 percent for

*The number of observations becomes progressively smaller the longer the migration interval, for the following reasons. People who moved between 1968 and 1969 are at risk to return with MI=1 between 1969 and 1970. Similarly, people who moved between 1973 and 1974 are at risk to an MI=1 return between 1974 and 1975. Hence we have observations for six sets of years on MI=1 migration. However, we have only one set of observations on people at risk to MI=6 migration--only people who moved between 1968 and 1969 and who had not returned to the 1968 location by 1974 are at risk to an MI=6 return (which would occur between 1974 and 1975). Furthermore, when a person returns to a particular place, he is no longer at risk to return there. Thus, from a given cohort of initial movers--say, 1968-69 movers--the number at risk to return to the 1968 location shrinks as the migration interval increases. For both of these reasons, our MI=2-6 sample is biased toward shorter migration intervals.

**To my knowledge, statistical techniques do not yet exist to handle error-components problems in a polytomous choice context.

MI=2-6 onward migration.)

All individuals represented in the MI=2-6 sample were also in the MI=1 sample (and are classified there as MI=1 stayers). Of the entire MI=1 sample--i.e., all people who moved for the first time the preceding year--12.6 percent returned to the initial location and 15 percent moved onward by the following year. Thus, in our sample 28 percent of those who moved one year moved again the next, and of those who didn't move then, at least 28 percent made a repeat move before six years had passed.* Thus, nearly half of the primary moves in our data are followed by a repeat move within the following two to six years.

Estimation Technique

In Section IV we present equations estimated by the maximum likelihood polytomous or multinomial logit technique, also known as "conditional logit." Each coefficient, β_j, shows how a change in a variable, X_j, affects the probability of choosing alternative j relative to some other alternative. In this study we consider the probabilities of making a return move or an onward move relative to the alternative of not migrating again. The general form of the equation is:

$$P_i(j|X_{ij}) = \frac{e^{\beta_j X_{ij}}}{\sum_{k=1}^{J} e^{\beta_k X_{ik}}}$$

where j(k) indexes alternatives, i indexes individuals, J is the total number of choices facing each individual, and X is the vector of

*This is undoubtedly an underestimate since we do not observe all migrants for a full six years following their initial moves.

explanatory variables; $\sum_{J=1}^{J} P_i(j) = 1$ for each i. In the equations estimated below, the value of each explanatory variable X (e.g., educational attainment) is the same over all j for each individual. The effect of each X is allowed to differ between returning and moving onward relative to staying.

IV. EMPIRICAL FINDINGS

The results of our polytomous logit estimation are presented in Table 2.

Location-Specific Capital Before the Repeat Move

Location-specific capital accumulated in the current location is indexed here by home ownership. In Table 2 we see that, consistent with Hypothesis 1, the more location-specific capital a person has (gauged here by whether or not the person owns the home he presently occupies) the less likely he is to leave this new location, either to move onward or to return.* The deterrent effect of this location-specific capital is always stronger for people who have lived in the new location for two to six years than for those who have lived there for just one year (the coefficients are not significantly different from zero for the latter). Thus location-specific capital appears to more firmly tie the migrant to

*As pointed out earlier the causation may run the other way as well; i.e., those who initially intend to stay may be more likely to buy homes than those who are not yet committed to staying.

Other indicators of location-specific capital examined--e.g., a dummy indicating the presence of relatives nearby before the potential repeat move--were also negatively related to the likelihood of repeat migration, though the coefficients were not significant at the 5 percent level.

Table 2

Polytomous Logit Equations Explaining Choice of Staying, Returning, or Moving Onward, By Migration Interval (MI)

	Migration Interval (MI)							
	MI = 1				MI = 2 - 6			
	RETURN		ONWARD		RETURN		ONWARD	
EXPLANATORY VARIABLES	Coeff	t	Coeff	t	Coeff	t	Coeff	t
Location-Specific Capital								
Before Repeat Move								
Own House (D)[a] [b]	-0.319	(-0.61)	-0.513	(-1.02)	-1.61	(-2.55)	-0.956	(-2.35)
Before Initial Move								
Own House (D)	-1.89	(-2.10)	0.310	(0.56)	0.0565	(0.08)	0.383	(0.79)
Duration of Residence in Dwelling Unit (years)	0.147	(2.95)	0.00281	(0.05)	0.0731	(1.35)	0.0159	(0.37)
Education (years)	-0.0575	(-1.21)	0.157	(2.71)	0.0387	(0.59)	0.0607	(1.15)
Distance of Initial Move (logarithm of miles)	0.183	(1.60)	0.162	(1.37)	0.155	(1.06)	0.212	(1.81)
Employment Status [b]								
Before Initial Move								
Unemployed (D)	2.03	(3.76)	1.04	(1.58)	[e]	[e]	-0.0534	(-0.05)
Area Unemployment Rate (%)	-0.0760	(-0.88)	0.169	(2.13)	-0.202	(-1.45)	0.00858	(0.10)
Before Repeat Move								
Unemployed (D)	0.486	(0.99)	0.745	(1.36)	[e]	[e]	[e]	[e]
Underemployed (D)[c]	0.758	(2.39)	0.642	(1.74)	0.358	(0.81)	-1.10	(-1.98)
Military (D)[d]	1.23	(2.20)	1.44	(2.57)	1.95	(2.95)	1.38	(2.21)
Split-off (D)[b]	0.385	(0.76)	0.927	(1.72)	-0.420	(-0.63)	0.324	(0.65)
Intercept	-2.40	(-2.34)	-6.30	(-5.11)	-3.59	(-2.58)	-4.37	(-3.98)
Mean of Dep. Var.	0.126		0.150		0.046		0.071	
Log Likelihood	-359.0				-323.3			
Sample Size	564				790			

NOTES:
See text for a description of the estimation technique.
Unless otherwise noted, explanatory variables are measured at the time of the survey before the repeat move.

[a] D = dummy variable.

[b] These variables are measured at the time of the survey before the initial move. They are only defined for persons whose characteristics we observe the year before the initial move. The sample here includes some "split-offs" for whom we observe location of residence before the initial move, but not their characteristics (see Appendix of DaVanzo and Morrison, 1978). For split-offs, the before-initial-move variables are all zero. To adjust for this, a split-off dummy is included. Thus, the before-initial-move variables and coefficients are only defined and relevant for the sample of nonsplit-offs.

[c] Employed, but desiring to work more hours.

[d] Military status is not reported in the 1968, 1969, and 1970 PSID surveys. For these years, the military dummy was set equal to zero and a missing data dummy (not reported here) was included to correct for this.

[e] This variable is excluded because 2 or fewer people fell in the type-of-move/dummy=1 category.

his new location the longer he has lived there.

Location-Specific Capital Accumulated Before the Initial Move at the Potential Return Destination

Hypothesis 2 suggests that, other things being the same, people who become returnees should possess more location-specific capital in the place they return to than do those who could return but do not. Thus, we expect the coefficients of the variables measuring location-specific capital before the initial move to be positive in explaining return migration. Moreover, from Hypothesis 3, we expect these coefficients to be larger for MI=1 than for MI=2-6, because most location-specific capital depreciates the longer one is away.

Consistent with Hypothesis 2, the longer the person lived at the pre-initial move dwelling (a proxy for the length of time he lived in that location), the likelier he is to return to that location. Consistent with Hypothesis 3, the Duration of Residence coefficient is highly significant in explaining MI=1 return migration, but is smaller and less significant for MI=2-6 return migration. That is, the pull of location-specific capital at the initial location appears to lessen as the interval of absence lengthens and this capital depreciates.

Contrary to expectation, however, the coefficient of our other indicator of location-specific capital before the initial move--whether the person owned the home he lived in before moving--is significantly negative for MI=1 returnees. This implies that, other things being the same, persons who owned their homes before initially moving are less likely to return than those not owning homes before leaving the area. This relationship could well reflect a more deliberate and final deci-

sion to leave by those persons who incurred the transaction costs necessary to sell a home before they left an area.* For persons who did not face this cost, departure would be less costly and more easily "undone" by returning. However, if this is the case, this same selectivity argument could be applied equally well to our other measures of location-specific capital before the initial move, making our prediction about the direction of their net effect on return migration ambiguous.**

Education

For MI=1 repeat migrants, educational attainment is a critical variable influencing whether the person returns or migrates onward. The more educated the migrant, the greater the likelihood that a new (rather than the previous) area will be chosen as the destination.*** The highly significant positive relationship between education and the likelihood of MI=1 onward migration (relative to the alternative of not moving again), means that MI=1 onward migrants are doubly selected. Primary migration is selective of the more highly educated of the population at

*We cannot determine from the PSID data whether the person sold his home when he left the initial location, but our empirical results suggest that this is usually the case.

**In restricting our working sample to persons at risk to only one return, we unintentionally limited it almost exclusively to persons whose potential return destination is their "origin," a place where they are likely to have a large quantity of location-specific capital. Expanding the sample to include observations at risk to multiple returns should introduce a heterogeneity that would provide a stronger test of the draw of location-specific capital in previous locations. Also, perhaps a combined analysis of the decision to move initially and the decision to move again could help disentangle the two opposing effects of location-specific capital at the initial location.

***Similar results emerge in Miller's (1977) analysis of aggregate census data. Deaton and Anschel (1974) also find return migration to be selective of the less educated among outmigrants.

large, and MI=1 is selective of the most highly educated of these. This result, together with the fact that onward migrants tend to be young (because primary migrants are young), suggests that MI=1 onward migration may incude a number of individuals searching for an optimal location after leaving college.

The negative relationship between education and the likelihood of MI=1 return migration (again relative to the alternative of not moving again) is nearly significant at the 10-percent level and obviously differs substantially from the relationship of education with MI=1 onward migration. The MI=1 returnee, then, is an exception to the general rule that the propensity to migrate is higher for more highly educated persons. Our interpretation is that the information on which less educated persons base their initial moves may be more limited and, hence, their moves may be less likely to prove "successful" and more likely to eventuate in a subsequent "corrective" return move.*

For migration intervals of two to six years, education has no significant effect on whether a person stays, returns, or moves onward. As in the case of MI=1 migrants, the more education a person has, the more likely he is to move on to a new location; however, the magnitude of the effect is considerably smaller for MI=2-6 than for MI=1, and is not significantly different from zero.

*Our conclusion that moves in MI=1 return move sequences seem to be based on less reliable information is consistent with DaVanzo and Morrison's (1978) finding that, compared with MI=1 onward migrants, MI=1 return migrants are less likely to have anticipated their initial and repeat moves, are less effective planners, and are less cautious. Additional support for the inverse relationship between information and the likelihood of return migration is Blejer and Goldberg's (1980) finding that immigrants to Israel who were provided with subsidized information before moving were less likely to subsequently leave Israel.

Distance of Initial Move

Perhaps the most provocative result of our multivariate analysis concerns the role of distance, a variable that has been extensivley studied in earlier migration research. The firmly established "distance-decay" relationship, whereby the probability of migrating diminishes the further the distance of the move, proves to have a noteworthy exception in the case of return migration.

We have included the distance of the initial move (in logarithm of miles to allow for diminishing marginal cost) as a proxy for the information cost of the initial move. Our hypothesis is that, since information costs are likely to increase with distance, initial moves may be based on progressively less reliable information the longer their distance. Accordingly, longer-distance moves may be more susceptible to failure and, hence, more likely to require a subsequent corrective move, either back to the previous location or on to a new one. Our results are consistent with this hypothesis. The longer the distance of the initial move, the likelier it is to be followed by either a return move or an onward move.* The positive, and usually statistically significant, distance coefficients for both return and onward migration suggest that longer distance moves are less likely to be successful and that the sub-

*The direct cost of a return move is also positively related to distance, which in itself should result in a negative relationship between distance and return migration. Thus, our positive distance coefficient for return migration means that the information effect is stronger than the direct cost effect (Allen, 1979).

Another possible explanation for the positive relationship between the distance of the initial move and the likelihood of returning is that, whereas frequent visits "back home" may be an acceptable substitute for moving back in the case of short-distance initial moves, they are less feasible for longer-distance initial moves.

sequent "corrective" moves may take the form of either return or onward moves. For MI=1, return moves are somewhat more likely, but the opposite is true for MI=2-6.*

The positive distance coefficient for return migration means that, for this type of migration, the probability of a subsequent move is not diminished, but rather is increased, the more distant the destination. The credibility of this exception to the usual "distance-decay" relationship is enhanced by two considerations. First, this exception derives from individual-level data on interlabor market moves measured over a one-year interval, which detect a large fraction of all moves made. Second, other studies have detected it either directly or indirectly: see Yezer and Thurston (1976), DaVanzo (1976), Long and Hansen (1977a)--all of which use aggregate census data (which measure returns as interdivisional moves in a five-year interval back to one's birthplace)--and DaVanzo (in press).

The coefficients in Table 2 themselves tell us nothing about the distance (or direction) of onward moves, which could be, among other possibilities, (1) further moves in the same direction as the original move; (2) short corrective moves following long initial moves; or (3) near-returns to the origin of the initial move. However, an examination of our data suggests that none of these three possibilities

*Our MI=2-6 result is consistent with Allen's (1979) finding, (based on aggregate census data) that the positive relationship between the likelihood of an onward move and the distance of the initial move is stronger than the positive relationship between the distance of the initial move and the likelihood of a return move. Allen hypothesizes that this is because the direct cost of a return move is positively related to the distance of the initial move, while there is no necessary relationship between the distance of the initial move and the direct cost of an onward move.

predominates. The average distance of onward moves is nearly the same as the average distance of the initial moves they follow.* Moreover, the average distance between the destination of the onward move and the origin of the initial move (i.e., a comparison of A and C in an ABC sequence of residences) is approximately equal to the average distances of the initial move and of the onward move,** suggesting that the three places of residence in an onward-move sequence (the origin of the initial move, destination of the initial move/origin of the onward move, and destination of the onward move) are, on the average, located at the vertices of a nearly equilateral triangle.

Employment Status

Unemployment before the initial move is a frequent precursor of MI=1 repeat migration. Persons at risk to MI=1 repeat migration who were unemployed before their initial moves are much likelier to move again the next year (and especially to return) than are those who were not unemployed before their initial move. Twenty-four percent of eventual MI=1 return migrants and 11 percent of eventual MI=1 onward migrants in our sample were unemployed at the time of the survey before their initial move, as opposed to just 3.6 percent of persons who moved initially but then stayed put. Perhaps the immediate pressure of unemployment resulted in a less careful search among alternative destinations. Unemployment before the initial move is unrelated to the

*MI=1 onward moves are on the average nearly 20 percent longer than the initial moves they follow (754 miles as opposed to 631 miles). MI=2-6 onward moves are nearly 20 percent shorter than the initial moves they follow (514 miles as opposed to 621 miles).

**568 miles for MI=1 and 577 miles for MI=2-6.

likelihood of MI=2-6 repeat migration.*

Being unemployed after the initial move also appears to influence subsequent migration decisions for MI=1 repeat migration, though its effect is stronger for onward migration. Underemployment after the initial move also induces subsequent moves after a one-year interval of absence (though it has no significant effect on MI=2-6 return migration and appears to discourage MI=2-6 onward migration). Thus, at least for MI=1, dissatisfaction with the consequences of one move (inability to obtain employment or to obtain acceptable employment) appears to be a cause of the next move.**

To test hypothesis 5, the unemployment rate in the area of residence before the initial move (measured here at the time before the initial move) is included as a proxy for labor-market conditions at the potential destination of return. Its significantly positive coefficient for MI=1 onward migration and negative (though insignificant or barely significant) coefficients for MI=1 and MI=2-6 return migration are consistent with our hypothesis that the less promising the job market conditions in the area of potential return, the less likely a person is to return there and the more likely he is to select an alternative destination if he chooses to move again.***

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*None of the MI=2-6 returnees in our sample were unemployed before their initial moves.

**These results are consistent with Blejer and Goldberg's (1980) finding that unemployment (and also withdrawal from the labor force) before the repeat move has a significant positive relation to repeat migration from Israel (their explanatory variable is the difference between actual and expected unemployment). These results are also consistent with Vanderkamp's (1971, 1972) data for Canada, which suggest that people are more likely to return during recessions.

***In regressions not presented here, I also included the area unemployment rate before the repeat move and found that persons whose initial move has taken them to an area with a relatively high unemployment

In addition to the unemployment and underemployment variables just discussed, Table 2 includes an additional indicator of employment status: A dummy that equals 1 if the person was in the Armed Forces before the repeat move is included to control for transfers within and separations from military service, which are unlikely to be related to many of the variables suggested by our hypotheses.* In Table 2 we see that all types of repeat migration are strongly selective of persons in military service. The military coefficient is largest and most significant for MI=2-6 return migration, presumably reflecting return moves after a term of duty in the service. However, the sizable and significant military coefficient for MI=2-6 onward migration suggests that a number of people move on to a new place after completing their military service (though it is possible that some of these onward moves are transfers within the Armed Forces).

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rate are more likely to return than those who moved to an area with better job prospects, though neither the MI=1 nor the MI=2-6 relationship is significant at conventional levels. However, the area unemployment rate in the current location is negatively (and significantly) related to the likelihood of onward migration. This implies that recent arrivals to an area are less likely to leave that area to move on to a new location, the lower the probability is of finding a job in their current location. This may be due to a queuing for jobs in higher-wage areas, since area unemployment rates and area wage levels tend to be positively correlated. And, of course, there is the question of the extent to which the overall area unemployment rate appropriately measures the likelihood that a particular migrant will obtain a job (Fields, 1976; DaVanzo, 1980).

*Movement within the military is outside the scope of our model. However, people leaving the armed services might be drawn back to location-specific capital at their preservice location. Less than 7 percent of our MI=1 sample and less than 3 percent of our MI=2-6 observations are on people in the Armed Forces.

Other Explanatory Variables

The equations in Table 2 also include a "split-off" dummy, which equals 1 if the person was not a head of household before the first move but had "split off" to become a household head by the time of the survey after the first move. The generally positive coefficients of the split-off dummy indicate that persons whose first move was a split-off from the household where they were living before the move (often young adults leaving their parents' homes) appear likely to move again the following year, especially onward to a new location.* Nevertheless, only the MI=1 onward coefficient is statistically significant.

The negative and significant coefficients of the intercepts for return and onward migration indicate that, when all other explanatory variables included in the equation are held constant, recent arrivals to an area are less likely to move (again) than to stay, and are especially less likely to move on to a new location.**

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*This dummy is also "correcting" for the fact that variables measured before the initial move are not observed for split-offs (see footnote b of Table 2).

**The equations presented here do not include age, sex, marital status, or wage rates, variables that have been significantly related to total migration in previous analyses. Return and onward migration rates do not exhibit much variation by the first three variables. This may be because our sample--recent migrants--is already selected according to these variables, which appear not to play an additional role in determining who moves again.

The reason for not considering wages is different. Many empirical studies of overall migration have shown wage levels in the current area and in alternative areas to be important influences on the propensity to move and the choice of destination. Accordingly, it is likely that the potential return migrant compares expected earnings streams in the current location, the potential return location, and all other possible locations when deciding whether to move again, and if so, whether to return or to move on to a new location. Consideration of the role of wages in influencing these decisions was beyond the scope of the present study for several reasons:

(1) The PSID data on wages refer to the calendar year (January to December) preceding the interview in question, which usually took place

V. CONCLUSIONS

Most analyses that employ the human capital model of migration implicitly treat migration as if it were a once-and-for-all event, an investment that is undertaken if the lifetime benefits exceed the costs. However, the majority of moves are not people's first moves but are repeat moves, either on to new locations or back to places where they lived before. Indeed, in our data, half the people who first moved in the survey period moved again within the next two to six years. In this study, we have extended the human capital framework to apply to return and onward migration by incorporating the concepts of information costs and location-specific capital.

Our results are broadly consistent with the proposition that the less reliable the information on which the initial move is based, the more likely it is to be followed by a subsequent "corrective" move. Consistent with this we find that, whether the interval of absence is

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in the spring. Because we do not know exactly when between interviews the individual moved, it is often impossible to separate pre-move from post-move wages. A simple example illustrates the problem. For a person who, say, moved between 1968 and 1969 and then again between 1969 and 1970, wages in 1968 (as reported in the 1969 survey) could have been received entirely before the initial move or mostly after it, depending on when between the 1968 and 1969 surveys the individual moved. Even some wages in 1969 (as reported in the 1970 survey, more than a year after the initial move) may have been received before the initial (1968-69) move. On the other hand, it is possible that some (or even most) of the 1969 wages were received after the repeat (1969-70) move.

(2) Even if we could unambiguously measure wages at the initial location before the initial move, at the destination of the initial move/origin of the repeat move, and at the new or return location after the repeat move, there is the problem of characterizing the wage streams the migrant expected if he stayed, returned, or moved on to a new location. Only one of these choices is actually made and, even then, expectations may not be fulfilled.

For preliminary evidence suggesting that people who chose not to return may have done so because of poor opportunities in the potential return destination, see Long and Hansen (1977a) and DaVanzo (in press).

one year or two to six years, the longer the distance of the initial move, the more likely it is to be followed by a return or onward move. (We hypothesize that because information costs tend to increase with distance, longer-distance moves may be based on less reliable information.) Also consistent with the proposition is our finding that the less educated, who are hypothesized to have less information available, are the most likely to return within a year or so of leaving. Moreover, initial moves apparently pressured by unemployment, which may have precluded a careful search among alternative destinations, are quite likely to be followed by return moves.

However, only those migrants who return promptly conform to this "failure" stereotype of a person whose initial move was not carefully thought out. In our sample, those who returned after more prolonged absences were as highly educated as others at risk of returning, and none of them were unemployed before their initial moves.

By contrast with people who return quickly after departing, onward migrants, especially those who move again the year following their initial move, are more highly educated than others at risk. Also, MI=1 onward migrants are less likely than MI=1 return migrants to have been unemployed before the initial move. However, MI=1 onward migrants are more likely than return migrants to have been unemployed before the repeat move.

These results suggest that MI=1 return moves may be the result of a chain of events that began before the initial move and may be due in part to poor planning of that initial move. By contrast, onward moves appear much more likely to be related to events occurring after the ini-

tial move.

We hypothesized that location-specific capital accumulated by recent arrivals in a new location should deter them from moving again, while location-specific capital in the previous location might draw them back. Our findings are consistent with the first hypothesis--recent arrivals who buy homes are less likely to move again--but evidence on the second hypothesis is mixed. Proxies for some types of location-specific capital at the initial location (length of occupancy in the dwelling unit before the initial move) appear to draw people back, while others (home ownership before the initial move) appear to have the opposite effect. The negative result invites an alternative interpretation. People who left an area despite having location-specific capital there may have made a more deliberate decision to leave than those whose departure was less costly.* Indeed, this interpretation is consistent with the general picture that seems to be emerging here: that the moves in a rapid return-move sequence are less carefully planned and are perhaps part of a trial-and-error information-gathering process.

The issues discussed in this paper have important implications for the design and interpretation of migration analyses. Since the majority of moves made in a given year are not first moves, it is important to explain why people move again. We have shown that to do so, we must

*This same argument could be applied to distance also--those who chose to move long distances may have made more deliberate decisions to move than those whose moves were less costly--but the evidence is not consistent with this. I surmise that the reason we find the negative result for some forms of location-specific capital at the initial location and not for distance is that the migrant knows what he is giving up when he decides to sever his ties with the initial location, but he may be less certain about what he is "getting into" when he moves to a distant location.

distinguish between the alternatives of (1) returning to a place where the person lived before and (2) moving onward to a new location. Furthermore, interval of absence is an important conditioning variable. When we distinguish between these two types of repeat moves by interval of absence, many of the relationships that emerge (e.g., with education or distance) are drastically different from those described when no such distinction is made. This suggests that studies that look at overall migration suffer from considerable aggregation bias.

Related to this, it is precisely the most "exceptional" moves (MI=1 return moves) that are most likely to go undetected in census-type measures (which gauge migration over multi-year intervals). Any return move has the intrinsic effect of cancelling an earlier move.* Migrants whose migration sequences entail a self-cancelling return may appear as nonmigrants in a census-type measure. This sizable degree of "camouflaged" movement arises in part because return moves are disproportionately concentrated in the first few years after the initial move in a sequence. The self-cancelling nature of MI=1 return migration probably explains why the exceptional aspects of MI=1 return migration are not evident in analyses of U.S. Census data (which are biased toward long-interval return moves).** Indeed, analyses of five-year migration rates can be expected to underestimate the effect of (personal) unemployment on

*DaVanzo and Morrison (1981) estimate that a migration measure that compares residences at the beginning and end of a five-year period (as does the U.S. Census) misses roughly one-third of annually measured moves of people observed over the five successive years. Half of these undetected moves are self-cancelling initial and return moves; the other half are moves in onward repeat move sequences.

**For example, Long and Hansen (1977b) find that "of those (born in the South) who leave, the most highly educated are the most likely to return."

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migration and to overestimate the effect of education on the propensity to move. (The least educated migrants cancel their initial moves by moving back, while the most educated leave an area and stay away.)

This analysis also has implications for studies of destination choice. Ideally, we would like to know how potential migrants' choices among alternative destinations are affected by characteristics of those potential destination areas and by characteristics of the migrants themselves. In particular, we would like to know how the characteristics of different destinations and individual migrants interact, so we could determine what the potential migrants would experience in each of the potential destinations. In the present analysis we have restricted our attention to a sample of recent migrants and have modelled their choices among the alternatives of (1) staying where they are, (2) returning to a place where they lived before, or (3) moving on to a new location. An attractive feature of this characterization of alternative destinations is that the migrant has actually lived in two of the three alternative locations; thus, we can base our estimate of what the migrant might experience in these locations on his own current or past experience.

Beneath the aggregate net migration flows that redistribute a population are many individual migrants, often moving several times in search of an optimal location. This paper has demonstrated that the concepts of location-specific capital and information costs, whose counterparts have yielded important insights into other areas of behavior, are a useful addition to models attempting to understand this migration behavior.

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