A RAND NOTE

HOW WORKING WIVES AFFECT FAMILIES' MIGRATION AND DIVORCE DECISIONS

Mark David Menchik, Christina Witsberger

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Prepared for

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PREFACE

This study investigates whether wives' employment (and the level and stability of their earnings) influences family decisions on interregional migration, and whether those decisions are related to the concurrent breakup of a marriage. Because the study casts empirical light on new economic hypotheses of family decisionmaking, the findings should be of interest to academic audiences. The findings should also interest policymakers and others who are concerned with the growing participation of married women in the labor force, or who seek a better understanding of how workers respond in a family context to the attractive job opportunities that migration appears to offer.

The research and writing of this Note were supported by grants P50-HD12639 and R01-HD12394 from the Center for Population Research, National Institute of Child Health and Human Development, U.S. Department of Health and Human Services.
SUMMARY

The increasing number of dual-earner American couples has raised the possibility that one spouse's ties to a job may conflict with the other spouse's willingness or desire to migrate so as to take advantage of attractive employment opportunities elsewhere. It is also possible that their separate job ties or employment opportunities may lead to a situation in which marital dissolution accompanies the migration of only one spouse, or of both spouses to different areas.

This research addresses three questions:

- Is the two-earner family less likely to migrate than an otherwise identical male-earner-only family?
- Is marital dissolution more likely when two-earner families migrate than when they do not?
- Is marital dissolution more likely when a two-earner family migrates than when a similar family, with only a male-earner, migrates?

Interest in these questions has been stimulated by the increasing prevalence of dual-earner families, and also by the promulgation of new theoretical perspectives on family migration decisions. A new economic theory of dual-earner families propounded by Jacob Mincer (who draws upon the marriage and divorce theories of Gary Becker) argues that spouses' decisions about migration and marital dissolution reflect the economic returns to the various alternatives and the strength of marital ties. This theory differs from older sociological explanations, which emphasize the husband's role as principal earner in a traditional family. In attempting to answer the above questions, this research aids in the empirical assessment of Mincer's hypotheses.

Our data follow the experiences of 1609 couples (both male-earner-only and dual-earner), between 1969 and 1974, detecting any move the husband made during this period to a different labor market area (Bureau of Economic Analysis region). We focus on the level and stability of
the wife's earnings, relative to the couple's total earnings, as
determinants of migration and dissolution. A polytomous logit equation
models the various effects, and includes demographic and other economic
variables to standardize for influences on migration and dissolution
other than the wife's relative earnings.

We find that a wife's being employed does not invariably inhibit
the couple's migration, and that the effect varies by the husband's age
and also by the duration of the marriage. In fact, for all but the
oldest husbands, migration is more likely when the wife earns a small
amount than when she has not worked at all recently. When the husband
is about 35 and older, however, migration is deterred slightly if the
wife earns a moderate to substantial fraction of the family income
(between about 30 to 60 percent). Younger couples, by contrast, do not
exhibit a significant decrease in migration likelihood when the wife
earns a considerable amount. Moreover, we find that two-earner families
who have the lowest migration rates are generally subject to the highest
risk of migration-associated marital dissolution. These findings are
consistent with the economic theory.

Some contradictions of the hypothesized effects of family ties on
migration decisions are also found, however. Families without working
wives, for example, also have a significantly greater risk of
dissolution when migration occurs. Also, when the wife earns somewhat
more than her husband (i.e., about 60 percent of the family income), a
lower probability of migration is not linked to a significantly higher
rate of migration-associated dissolution.

Our findings suggest that family economics, stage in the life
cycle, and gender roles play complex roles in family decisionmaking.
Further confirmatory research is needed. Ideally, such research should
be based on more recent and extensive data for couples that have been
less influenced by the tradition of the male as the dominant earner.
ACKNOWLEDGMENTS

We are grateful to V. Jeffery Evans, our project monitor at NICHD, for his encouragement and assistance. At Rand we wish to thank Peter A. Morrison, who played an important administrative role; Daniel A. Relles, who helped us carefully analyze an intricate but rewarding data set; and Susan Messing for her contribution to the initial analysis. Julie DaVanzo, Frances E. Kobrin, Paul Menchik, Peter A. Morrison, and Linda Waite read the manuscript and offered helpful suggestions. Any errors of analysis or interpretation, however, are the authors' sole responsibility.
CONTENTS

PREFACE ................................................................. iii
SUMMARY .................................................................. v
ACKNOWLEDGMENTS ................................................... vii

Section
I. INTRODUCTION ...................................................... 1

II. RESEARCH DESIGN AND PROCEDURES ...................... 4
   Theoretical Background and Research Design ............. 4
   The Data .............................................................. 7
   The Polytomous Logit Model .................................. 13

III. EMPIRICAL FINDINGS ............................................. 17
   Variable Specifications ......................................... 17
   Wife's Earnings Fraction ....................................... 17
   Stability of Wife's Earnings ................................... 18
   Interactions Between Wife's Earnings Fraction
   and Other Variables ............................................ 18
   Control Variables .................................................. 19
   Simple Associations with Migration and
   Marital Dissolution .............................................. 20
   Polytomous Logit Results ....................................... 23
   Economic Effects ................................................... 26
   Effects of Age and Prior Moving Experience
   on Migration ....................................................... 27
   Effects of Age and Marital History on
   Marital Dissolution .............................................. 28
   Other Personal and Family Characteristics ............... 29

IV. ASSESSING THE HYPOTHESES ................................. 30
   Family Migration .................................................. 31
   Test Assumptions .................................................. 31
   Effects of Wife's Stable Earnings ............................ 33
   Migration Differentials by Family Life-Cycle Stage ... 33
   Effects of Wife's Unstable Earnings ....................... 36
   Joint Effects of Husband's Hours Worked
   and Wife's Earnings ............................................. 36
   Summary of Findings on Migration ......................... 37
   Migration-Associated Marital Dissolution ............... 38
   Test Assumptions .................................................. 38
   Effects of Wife's Stable Earnings ......................... 39
   When the Wife Earns More than the Husband ........... 40
   Single- vs. Dual-Earner Families ......................... 40
   Effects of Wife's or Husband's Unstable Earnings ...... 41
   Summary of Findings on Migration-Associated
   Marital Dissolution ............................................. 41
CONTENTS--continued

Section
IV--continued

Effects of Wife's Earnings on Marital Dissolution
   Without Migration ............................................. 42

V. CONCLUSIONS ................................................... 43

REFERENCES ......................................................... 45
I. INTRODUCTION

The sharply increasing proportion of American wives in the work force raises the possibility of friction between the career interests of two working spouses and may threaten their marital stability.\(^1\) In a family with a single earner (typically the husband), the offer of a better job somewhere else is a familiar path to career advancement. An opportunity for one earner in a two-career family, however, entailing a move, may hurt the other's career and sow the seeds of marital instability and divorce. If the couple decides not to move, the spouse who sacrificed an opportunity may find his or her career impeded, and thereupon nurse a discontent that again can break out into discord.

Stimulated by a long-standing interest in migration and divorce, sociologists have examined how these processes may be influenced by the growing number of working wives and the consequent changes in male and female roles.\(^2\) More recently, economists have extended their microtheory—the theory of individual economic actors—to family situations. Gary Becker and his associates have developed economic theories of marriage and divorce decisions (Becker, 1974; Becker, Landes, and Michael, 1977), while Jacob Mincer (1978) has examined migration in a family context.

Unlike many sociological explanations, the economic hypotheses emphasize the decisions of rational people who seek to promote their economic advantage. These hypotheses therefore openly introduce economic considerations into marital decisions: Taking into account limited information, uncertainty, and the long-term consequences of their choices, people evaluate the relative advantages of marrying, staying married, or divorcing. They do the same in deciding whether to migrate. The interpersonal consequences of such decisions, made as they

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\(^1\) Approximately 50 percent of married, spouse-present females were in the labor force in 1980, compared with only 24 percent in 1950 (based on U.S. Bureau of the Census, *Current Population Survey*).

\(^2\) Cherlin (1981), Long (1974), Smith (1979), Sweet (1973), and Waite (1981) review this literature, some of them taking a multidisciplinary perspective.
are within a potential or actual family, distinguish this theory from those pertaining to independently acting individuals.

In the simplest example considered by Mincer (1978, pp. 749-754), two working spouses decide whether to migrate by considering how a move would affect their long-term earnings. It might increase the husband's earnings but reduce the wife's. If the wife's loss (in both income and nonmonetary components) exceeds her husband's gain, theoretically they will not move. In this instance, the wife's economic situation has prevented her husband from making a move he would have made had he been single.

When the prospective move increases net family income, the wife will consider whether her benefits from staying married (including any benefits from the husband's increased earnings) exceed her personal losses. If so, she will migrate with her husband. If not, divorce or separation is to her long-term advantage.

This economic theory does not rely on many of the concepts central to sociological explanations, particularly past ones. (See the review by Waite, 1981, p. 19.) Absent are notions of "traditional" or "modern" sex roles, the economic independence or personal satisfaction that a wife gains by working, the positive or negative effects of a wife's job (or a family's migration) on a marriage, or generalized concepts of spouses' commitment to their marriage. Without these explanatory concepts, so common in the literature, the economic hypotheses may not

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3 See, for example, Lichter (1980), who shows that migration disrupts wives' continuity of employment, especially nonprofessional women. Sandell (1977, 1978) finds migration to have a significantly negative effect on wage growth for wives, which he traces to a decline in their amount of work within the first two years after migration. Evidence is less consistent for migration's effects on husbands' earnings. Mincer (1978) concludes from Census figures that migrant males' unemployment is reduced relative to their origin rates; however, this was only true for intrastate mobility. Sandell (1977) finds significantly positive returns for middle-aged husbands' earnings from migration, but did not find this effect in his 1978 study of a younger cohort. Bartel's (1979) analysis shows a wage gain only for younger men who have quit or transferred jobs.

4 Mincer (1978, p. 750) does say that "costs and returns should be understood to include both monetary and nonmonetary components." Since nonmonetary considerations are difficult to quantify, however, they are often slighted in economic studies.
fully and precisely interpret real-world migration and divorce phenomena.

The objective of the inquiry in this Note is to provide some empirical evaluation of the economic hypotheses referred to, particularly Mincer's. We compare two-earner families with those that have only a male earner. The term "two-earner family" applies to many different situations, however, because the level and stability of working wives' earnings vary widely. The data we use are longitudinal data on the members of about 1600 households, collected by the University of Michigan as part of its Panel Study of Income Dynamics (PSID) (ISR, 1972). (The PSID is described in more detail in Sec. II under the heading "The Data.".) The richness of this data set enables us to specify features of each spouse's earnings, and to control for influences upon migration and marital dissolution other than the wife's earnings, thereby helping us to isolate the role of that variable. We also estimate how strongly the hypothesized influences affect migration rates and the rates of migration-associated marital dissolution.

Section II discusses the economic theory in more detail and describes the research design, the data, and the statistical procedures used. Section III presents the mathematical model of migration and marital dissolution that was fitted, and Sec. IV details its findings. A concluding section interprets the empirical results.
II. RESEARCH DESIGN AND PROCEDURES

THEORETICAL BACKGROUND AND RESEARCH DESIGN

Mincer theorizes that, in considering migration to a given destination, each spouse weighs (1) the long-term consequences for his or her earnings, and (2) the benefits of remaining married. The latter includes the consequences of any change in the earnings of the other spouse. If both spouses expect a net gain from migration, they will move. If neither expects an advantage, they will naturally stay put. Complexities arise when one spouse expects a gain and the other a loss. If the latter spouse agrees to migrate (because the perceived benefits of staying married appear to outweigh the costs of migration), then that spouse is a "tied mover" who has migrated only because of marital ties.

Similarly, one spouse may become a "tied stayer" who forgoes the expected gains from migration because they are outweighed by the other spouse's losses. Here the tied stayer would have migrated had he or she not been married. (When multiple destinations are possible, the family choice of a compromise--including the compromise of no migration--can make both spouses tied movers or tied stayers. See Mincer, 1978, p. 755.)

Migration-associated marital dissolution is yet another possibility. One spouse's losses from migration may be so severe as to outweigh the benefits from marriage. That spouse is motivated to dissolve the union. (The other spouse might then choose to migrate alone, given economic gains that outweigh the disadvantages of ending the marriage.) This aspect of Mincer's theory (1978, p. 756) draws upon Becker's economic theory of marriage (1974).

The possibilities for tied movers, tied stayers, and migration-associated dissolution have so far been explained through migration's prospective effects on earnings, but the theory is somewhat more general than that. The individual gains (or losses) resulting from migration may stem from climate, social ties, or other noneconomic locational characteristics. It has been argued that spouses, by virtue of being married, are likely to share similar locational preferences (Mincer,
If so, the search for individual economic advancement is more likely to pull the spouses in different directions than is the quest for other locational benefits. This seems a reasonable assumption; since married couples ordinarily share the same residence, they should attach much the same value to their location-specific capital (e.g., community ties, homeownership).

Migration decisions are much simpler in single-earner families, where the spouses cannot differ in the economic returns to migration. Holding all else equal, comparing dual and single-earner families results in the following hypotheses:

- Because of the tied stayer phenomenon, two-earner families are less likely to migrate than single-earner families;
- Among two-earner families, the risk of marital dissolution is higher for migrants than nonmigrants;
- When two-earner families do migrate, there is a higher risk of marital dissolution than when single-earner families migrate.

The magnitude of the hypothesized effects—the extent to which the presence of two earners in a family deters migration but spurs migration-associated dissolution—depends on several unobserved quantities that were discussed. (These are the benefits to each spouse of remaining married and the individual's gains or losses resulting from migration.)

A thorough investigation of the economic consequences of migration is beyond the scope of this research, and we do not attempt to estimate directly migration's effects on earnings. Therefore, we incorporate

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1 Mincer does not elaborate on the basis for this assumption. It seems to fit in with Becker's (1974) analysis of optimal marital sorting ("like attracts like").

2 A comparison of earnings before and after migration does not identify the true prospective effect that migration has on income, since we do not know what the migrant would have earned in the absence of migration, nor what a migrant's earnings would have been had he or she not moved. The assumption that later earnings without migration would be the same as those before migration would not always hold. Similarly, a comparison between the earnings of migrants and nonmigrants would overlook the unmeasured ways in which these two groups differ. The difficulties in estimating the returns to migration are discussed in DaVanzo and Hosek (1981). See also Bartel (1975, 1979) and DaVanzo (1976).
into our analysis certain variables, such as education, that are associated with these consequences. (Formal education is an important component of permanent income because it measures certain permanent skills that are easily transferable from job to job.) And, although we cannot estimate directly the nonpecuniary benefits of staying married, we consider pertinent variables such as the duration of marriage as surrogates for these effects. Unions of long standing, one can argue, betoken strong advantages deriving from marriage or a low intrinsic probability of divorce.

Our analysis emphasizes the percentage contribution of the wife's earnings to the total family income, and also considers the stability of her earnings. The larger that percentage (holding all else equal), the more likely that tied stayer and tied mover phenomena will affect migration and dissolution decisions, and the stronger the hypothesized effects should be. On the other hand, one might expect unstable wifely earnings to be accorded less weight in family decisionmaking.³

Holding other influences constant, the potential for intrafamily conflict about migration should increase as the wife's percentage contribution to family income increases, since the family's economic balance becomes less weighted in favor of the husband's job. The greatest discord should threaten when the husband and wife bring in approximately equal incomes. Thereafter, increases in the wife's earnings shift the economic balance more toward her job, reducing the conflict over migration decisions since one partner is again the dominant earner. Unfortunately, because not many wives earn more than their husbands, we cannot fully assess this aspect of the economic

³ For example, "the larger the wife's contribution to family earnings, and the stronger her job attachment, the greater the deterrent effect on family mobility" (Mincer, 1978, p. 754). Similarly, we examine cases where the wife's temporarily high relative earnings accompany her husband's unemployment. There, the instability of the wife's earnings reflects increased labor force participation caused by her husband's unemployment, a situation of interest. The detailed examination of various earning situations--not merely comparisons of the two- and male-earner families--distinguishes this research from Mincer's (1978) and Sandell's (1977) studies.
theory, particularly in regard to the more extreme circumstances (e.g., when the wife earns 80 percent or more of the family income). Moreover, the very rarity of these extreme situations suggests that their analysis would be of little practical importance, at least for the time period we studied. We can, however, consider the less unusual cases in which the wife earns about 1-1/2 times the husband's amount (60 percent of their total earnings), which still differs strongly from the vast majority of two-earner couples where the wife earns well less than her husband.

Economic theory would predict that the case where the wife accounts for 60 percent of total spousal earnings would parallel the "mirror image" case where the husband earns 60 percent of the total. The economic family ties relevant to migration decisions should be identical in these two situations, if the gender of the dominant earner were not a factor. Sociological theory might well take a different view, particularly as long as society accepts the husband's traditional role as principal earner, and gender roles are used to explain behavior and its consequences. In some families, the wife's earning more than her husband could produce a stressful situation with strong effects on migration and divorce.

THE DATA

The Panel Study of Income Dynamics (PSID) is well suited to relating spouses' earnings histories to their migration and marital dissolution decisions (ISR, 1972). A probability sample of the American population in 1968, the PSID initially surveyed members of about 5000 households. This cohort is being resurveyed annually. Cohort members

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*In our sample, 42 percent of the wives earned no income during the two years prior to our migration period of risk. Of the remainder, only 5 percent (n = 51) earned more than their husbands. This should not be surprising since the male-female earnings gap is well known to observers of female labor force participation. In 1970, for example, the ratio of female to male earnings was approximately 0.60 for married, full-time workers. If the number of weeks worked is not a factor, the comparable ratio was only 0.42 (in 1969) for all married, spouse-present workers; this statistic reflects the fact that married women do not work as many hours on the average as married men. (Sources: U.S. Bureau of Labor Statistics "News," and special tabulations from the 1970 Census Public Use Sample.)*
are "tracked" through time even when they migrate or leave their original 1968 family through marital dissolution or other reasons. We utilized the PSID 11-year file, which contained data from the 1968 through 1978 yearly interviews. (If a cohort member died during this period, could not be located, or refused further interviews, all of his or her data were removed from the 11-year file.)

A wide range of socioeconomic data is collected at each survey wave, pertaining both to the family characteristics for each cohort member and to individuals within each family. Unfortunately for our purposes, the PSID data collection effort was not blind to gender roles, particularly in the early years of the survey. Much more information is available on husbands' characteristics and background than wives', especially regarding labor market experiences. Nonetheless, the measures that we have of the wives' earnings are adequate for use here, and are more extensive than in many other data sources.

We examine couples who were married and living together at both the 1968 and 1969 interviews, and use the earnings data from these interviews in the analysis. (The PSID definition of married couples includes "permanent cohabitators," that is, those who have been living together for at least a year.) We limited our sample to families in which the husband was clearly a civilian labor force participant. We did so in order to eliminate the confounding effects of students, retirees, and military personnel, whose migration (and perhaps divorce) patterns undoubtedly differ from the general married population and respond to different stimuli. Therefore, to be included in our working sample, the husband had to meet at least one of the following criteria: (1) At the time of the 1969 survey, he was either currently employed, laid off, or unemployed and looking for work; or (2) he had worked at least 780 hours (about 20 weeks of full-time work) during 1968. Finally, we eliminated families in which a spouse was in an institution (typically the military) at any time during 1968 to 1974. As a result of these criteria, only one husband in our final sample had no labor earnings in both 1967 and 1968.5

5 We acknowledge that these selection criteria could result in the exclusion of extreme role-reversal households in which the wife earned all or most of the income, which would be of particular interest to us. Also, the chronically unemployed or "discouraged workers" would be
Taking the five years following the 1969 interview as the period "at risk," we then determined whether migration or marital dissolution occurred at any time during this period. Our measure of marital dissolution included either a divorce or a separation during these five years, thus including all instances of marital disruption that may have economic determinants. Long-distance migration was defined as the husband's moving at least once in this period to a Bureau of Economic Analysis (BEA) region different from the one occupied in 1969. The 173 BEA regions are aggregates of whole counties that divide up both metropolitan and nonmetropolitan portions of the United States (BEA, 1975). Being large economic units, there is little commuting across their borders. Thus, a change in region almost guarantees a change in workplace. (Using BEA regions to define migration also largely eliminates, from our analysis, moves made for purely residential reasons.)

For the couples who did not separate, our definition is comparable to household migration, since both husband and wife were living together prior to our period of risk. In the case of marital dissolution, we had to decide which partner to follow after the split, since our sample size would not permit multivariate analysis of all possible combinations of migratory events for both spouses after dissolution. We chose to follow the males, since the data were more reliable and extensive for husbands than for wives.\(^6\)

Our chosen definition of migration, together with the variable constraints, means that this Note focuses on the male side, especially in regard to the determinants of concurrent migration and dissolution. We believe that the data on wives would have produced similar results, omitted. A later examination of the excluded cases, however, showed only two husbands who were not students, retired, or disabled. Both were unemployed but not looking for work at the 1969 survey date, and had not worked 780 hours in 1968. One of these two families migrated (neither divorced), but the wife earned only 7 percent of the combined spousal earnings in this case. Consequently, we are confident that this did not affect our results or conclusions.

\(^6\) For example, several of the demographic variables used in our model do not exist for wives, or have more missing data for wives (e.g., length of current residence, region where grew up, and whether previously married).
however, partly because measures of many wives' characteristics would be highly correlated with the husbands', such as education and age at marriage. Even so, because the results would not be symmetrical, the differences for wives would be an interesting topic for further research.

The choice of time frame for analysis involved a series of tradeoffs, most of which we resolved by maximizing the number of instances of migration and dissolution while still retaining a base period for earnings information. Five years is a commonly used period for being at risk of migration or dissolution, and a shorter period would have reduced the frequency of these events. A longer period, on the other hand, would have increased the chance that the measured influences upon migration and dissolution might alter during the period studied.

We considered an alternative time frame placed later in the survey's history (1973 to 1978), but it produced data that were too sparse for detailed analysis. As time passed, more couples in the PSID separated, making them ineligible for our study since we could only use couples who were married at the beginning of the survey. A new marriage after 1968 did not restore the balance for us because the new spouse, not a member of the original PSID sample, was only interviewed while living with the 1968 cohort member. Thus, we had no prior earnings data for new spouses, nor could we detect their migration after any marital dissolution.\footnote{Although starting the period at risk with the first interview (1968 instead of 1969) would have supplied somewhat more data for analysis, it would have lost all information about employment stability.}

These choices resulted in a sample of 1609 couples for analysis, among whom 134 husbands migrated and 75 marriages dissolved; there were 16 instances of both migration and dissolution (see Table 1). A simple chi-squared test performed on Table 1 is highly significant, showing that 16 joint occurrences of the two events are far more than the 6.2 that would be expected from the overall probabilities of dissolution and migration.

The sequencing of the two events of interest also posed special problems. Our analysis looks at the tendency of migration, dissolution,
Table 1
THE FREQUENCY OF MIGRATION AND MARITAL DISSOLUTION
AMONG THE SAMPLED COUPLES

<table>
<thead>
<tr>
<th>Migration?</th>
<th>No</th>
<th>Yes</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marital dissolution?</td>
<td>No</td>
<td>1416</td>
<td>118</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>59</td>
<td>16</td>
</tr>
<tr>
<td>Total</td>
<td>1475</td>
<td>134</td>
<td>1609</td>
</tr>
</tbody>
</table>

SOURCE: Panel Study of Income Dynamics.

\[ \chi^2 = 17.43, \ p < .001 \]

or both to occur within a stated interval, not dissolution occurring specifically before or after migration. Theoretical and data considerations influenced this choice. The data only identify migration or marital dissolution as occurring at some time during the 12 months between survey waves, so we know only approximately when the two events took place. More important, we cannot tell exactly when the decisions were made, nor when they began influencing the behavior of each spouse. Once made, decisions to migrate or separate often take some time to execute.

Microeconomic theory also recognizes the interrelationships of migration and marital disruption, and the fact that causality can run in both directions (Mincer, 1978, p. 769). Differing migration preferences may lead to marital dissolution, and a spouse may be less willing to become a tied stayer or mover if the marriage is already perceived as unstable. Post-migration dissolution may also occur if the move puts

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* Of course, marital dissolution almost automatically implies a change of residence for at least one spouse. But it certainly does not require the long-distance migration studied here--migration that crosses the boundary of a BEA region and virtually dictates that a change of workplace has occurred.
stress on the marriage for socioeconomic reasons. Finally, the
dissolution of a marriage (for whatever reason) may change the
locational preferences of a spouse, who may now migrate to maximize his
or her own utility. The higher mobility rates of single and divorced
persons are well established. As Mincer concludes (1978, p. 772), "not
only do migration incentives contribute to instability, but instability--
whatever its source--increases migration."

For the interested (or skeptical) reader, Table 2 details the
temporal sequences of our two outcome variables for the 16 cases of
concurrent marital dissolution and migration.9 (Although several of

Table 2
THE SEQUENCING OF THE CLOSEST MIGRATION IN RELATIONSHIP
TO MARITAL DISSOLUTION AMONG THE SAMPLED COUPLES

<table>
<thead>
<tr>
<th>WIFE'S MIGRATION</th>
<th>Pre-dissolution</th>
<th>Same year</th>
<th>After dissol.</th>
<th>No migration</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-dissolution</td>
<td>4</td>
<td>1[a]</td>
<td>1[a]</td>
<td>0</td>
</tr>
<tr>
<td>Same year</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Husband's</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Migration</td>
<td>1 year before</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>and 1 year after</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>dissolution</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>After</td>
<td>0</td>
<td>1</td>
<td>(3)</td>
<td>(2)</td>
<td>6</td>
</tr>
<tr>
<td>dissolution</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>2</td>
<td>16</td>
</tr>
</tbody>
</table>

SOURCE: Panel Study of Income Dynamics.

9 The combination of a pre-dissolution husband and a same-year wife
means that the wife, of course, also migrated pre-dissolution with her
husband, but her closest migration was the same year. This also follows
for a pre-dissolution/after-dissolution combination.

9 Examination of the data for the 59 couples who dissolved their
marriage, but in which no male migration was observed, showed that only
4 of the wives in these couples migrated subsequent to the marital
dissolution.
these couples exhibited multiple migrations in our observed five-year interval, the tabulations shown are for the migration closest in time to the reported dissolution.) For the majority of these couples (11, or 69 percent) marital dissolution appears to have followed or accompanied migration. The exceptions are the five persons noted in parentheses in Table 2, in which the husbands' migration may have been a response to dissolution. For these five husbands, migration followed marital dissolution by an average of 1.7 years. For the other 11 couples, the average time between the closest migration (by husband or wife) and divorce/separation was only 0.7 year. This table clearly identifies the close relationship between these two events for our sample. Given the nature of the data, we must be cautious in interpreting our results.

THE POLYTOPHIOUS LOGIT MODEL

Polytomous logit is a regression-like statistical procedure in which the dependent variable may assume one of several discrete values. In this analysis, each couple has four alternatives, the empirical frequencies of which appear in Table 1. They can:\(^{10}\)

1. Not migrate and remain married;
2. Migrate and remain married;
3. Not migrate but split up;
4. Migrate and also split up.

Unlike the situation in many applications of polytomous logit, the alternatives here have an intrinsic structure, namely, their arrangement into the two-by-two matrix of Table 1. Moreover, we have made no analytic distinction in the sequence of joint migration and dissolution decisions. As we shall see, the probabilities of migration and dissolution are influenced by many of the same determinants.

\(^{10}\) In cases 3 and 4, migration is measured on the husband; the wife may or may not migrate, as detailed in the previous section.
Ideally, polytomous logit models interdependent decisionmaking such as that assumed here. Another specification would be a pair of dichotomous (i.e., two alternative) logit equations: (1) migration or not, conditional on marital status and other variables; and (2) dissolution or not, conditional on migration status and other variables. The pair of equations would not, however, capture and display the interdependencies involved in the two jointly endogenous decisions as well as would a single polytomous logit equation.\textsuperscript{11}

With four polytomous alternatives, a given right-hand-side (rhs) variable may appear in three or fewer forms. (The excluded alternative is the implicit comparison.) The structure of the alternatives here leads to specifying rhs (i.e., exogenous) variables as influencing the:

- Probability of migration;
- Probability of dissolution; or
- Probability of concurrent migration and dissolution.

Using the terminology of analysis-of-variance models, the first two conditions above represent an exogenous variable's main effects upon either migration or dissolution. The third represents an exogenous influence upon the interaction effect linking migration and dissolution to each other.

Each parameter in the model represents an rhs variable that exerts a specific form of influence on a particular outcome. Certain variables were modeled as exerting all of the three possible influences listed above, but in most cases there was no outstanding empirical or theoretical need to specify an influence on the interaction effect. The model had to be complex to allow a very general specification for the role of the wife's earnings and also to control for the other determinants of migration and dissolution. Given that requirement, we

\textsuperscript{11} Another possibility (used by many for its computational ease) would be to use ordinary least squares (OLS) regression with a dichotomous alternative. However, OLS estimations become much poorer approximations to the proper logit procedure, as the probability of one alternative moves closer to zero. In our analysis, this is an especially important consideration since migration and dissolution probabilities are rather small.
tried to limit the number of variables and parameters whenever possible, excluding those that were neither significant nor had a major theoretical rationale for inclusion.\textsuperscript{12} The resulting polytomous logit equation was complex, with 22 different rhs variables and 43 parameters. The STATLIB computer software that we used (Brelsford and Relles, 1981) provided great flexibility in specifying the model.

The individual coefficients in the estimated equation will be interpreted somewhat like coefficients of rhs variables in regression analysis, but with two important differences. First, a given polytomous coefficient can influence only the chance of migration (as compared with nonmigration), only the chance of dissolution (as compared with staying together), or it can have effects on both of these events. In addition to these main effects, certain variables (relating to the wife's earnings) have coefficients for the interaction between these two outcomes. If migration and dissolution were truly independent events, basic probability theory tells us that the chance of both occurring is simply the product of the two separate probabilities (or the sum of the two logistic coefficients for migration and marital dissolution). If they are not independent, the parameter of the interaction effect should be nonzero. In this case, the total effect of a given rhs variable on joint migration and dissolution requires properly combining the coefficients for that variable's main effects on migration and dissolution with the coefficient for the variable's interaction effect for both occurring. However, if a person does not divorce or separate, only the variable's coefficient for the main effect on migration influences his migration probability. In essence, by not estimating an interaction (or main) effect for certain variables, we are assuming that the effect is not significantly different from zero.\textsuperscript{13}

\textsuperscript{12} More important, since only 16 of the 1609 husbands both migrated and separated, our ability to model interaction effects between migration and dissolution was greatly limited. Avoiding needless complexity in the model was necessary to allow the computation of maximum likelihood estimates of the parameters. For further discussion of logistic models with multiple response variables and possible estimation difficulties, see Cox (1970), Nerlove and Press (1973), McFadden (1974), or Fienberg (1977).

\textsuperscript{13} Cox (1970, pp. 107-108) has a brief discussion of this concept for describing a model's parameters as concisely as possible.
Given the complexity and nonlinearity of our model, it is difficult to determine the magnitude of a variable's effect by inspection of the coefficients. This is more easily visualized by inserting hypothetical data (for situations of interest) into the estimated equation, and calculating the "predicted" probabilities of various events. Contrasting two such predictions demonstrates how a specified change in an independent variable affects the estimated probability of migration or dissolution.

The other difficulty in interpreting the polytomous equation lies in calculating standard errors, and testing for statistical significance. The large-sample standard error of an individual coefficient is known, and its significance is demonstrated by its t-statistic, as in ordinary regression analysis. However, on many occasions we will be interested in whether two predicted probabilities differ significantly. Because logit probabilities are nonlinear functions of the parameters, a significance test contrasting them cannot be made in the usual way. Instead, for the key comparisons of interest, we performed Monte Carlo simulations to estimate the significance of a given effect.\textsuperscript{14}

\textsuperscript{14} We executed 200 Monte Carlo trials for each prediction of interest. The distribution of the parameter vector was treated as multivariate normal with first and second derivatives matching those of the likelihood function at its maximum. (This is a common large-sample approximation.) We then sampled from the resulting "posterior" distribution in standard Monte Carlo fashion, and calculated the salient probability estimates. To test the difference between two predicted probabilities, we computed the mean difference (averaged across the Monte Carlo trials) and the standard error of that difference. The ratio of the two is a t-statistic which estimates statistical significance.
III. EMPIRICAL FINDINGS

In this section, we first briefly describe the variables used in our analysis. Some simple statistical results (means and correlations) are then presented in Table 3 for sample description purposes, along with tabulations showing the empirical proportions of migration and marital dissolution in our data. These tabulations (by husband's age and wife's earnings) give us a preliminary picture of how probabilities of migration and dissolution vary by the share of the family income that the wife earns. The coefficients of the fitted polytomous logit model are then presented in Table 4, and we briefly discuss the results pertaining to variables that are not of primary theoretical concern (i.e., standard economic and demographic influences). In Sec. IV, we will evaluate the statistical results more fully when we assess the economic hypotheses.

VARIABLE SPECIFICATIONS

Wife's Earnings Fraction

Since the main focus of our analysis was on the effects of the relative level of wives' earnings, they received the most detailed and extensive variable specifications. The wife's earnings fraction (WEF) is the ratio of her 1967 plus 1968 labor earnings to both spouses' combined earnings for the same period. The economic theory holds that the closer WEF is to one-half, all else equal, the stronger are the effects of the wife's work upon migration and migration-associated dissolution.

In our polytomous logit model, we used one of the most general functional forms possible—a four-element spline function. This is a continuous, piecewise linear function of WEF which (depending on the data) may change slope at WEF values of 0.10, 0.30, and 0.50.\(^1\) When WEF is between zero and 0.10, the analog to its regression slope is simply

\(^1\) These three values were selected, after examination of variable frequencies, as logical breakpoints in the distribution that would produce large enough subsamples for analysis.
the coefficient for the basic variable, WEF. For WEF between 0.10 and 0.30, however, the effective slope of WEF is the sum of two coefficients (those for WEF and the spline variable defined for WEF > 0.10). Similarly, the sum of all four WEF spline variables is the effective slope when WEF is greater than 0.50.\(^2\)

**Stability of Wife's Earnings**

The absolute value of the two-year range of WEF, relative to its average (RANGEWEF), indicates the constancy of the wife's contribution to spousal earnings for the two years prior to our "at risk" period. (Unfortunately, there are no reliable data in the PSID on an individual's job tenure, whether the jobholder is husband or wife, so that information was not available.) That range, which can vary from 0 to 2, is represented by a two-element spline function—the basic variable, RANGEWEF, and a variable defined for RANGEWEF > 0.40. Examination of the data for working wives disclosed that small values of WEF were frequently associated with sharp year-to-year variations. (For example, the mean of RANGEWEF was 1.5 for 0 < WEF <= 0.15, but was only 0.21 for WEF >= 0.50.)

**Interactions Between Wife's Earnings Fraction and Other Variables**

The logarithm of the husband's 1968 work-hours (LGHRSWK) was interacted with WEF on theoretical grounds, since one might expect a wife's share of earnings to have different effects on both migration and marital dissolution depending on the husband's employment status.\(^3\) A wife's working may not inhibit migration much if it appears that she is working only temporarily because of her husband's unemployment; being able to work, she may even increase the likelihood of migration, since

\(^2\) Because the effective slope of WEF is generally the sum of coefficients, there is little meaning in the familiar significance tests as to whether individual coefficients differ from zero. Although the familiar tests appear in Table 4, more appropriate ones will be made in Sec. IV, which interprets these variables.

\(^3\) The interaction effects were specified in two variables (one for WEF < 0.5 and the other for WEF >= 0.5) to allow the gender of the principal earner to exert an influence.
the couple would not depend solely on the husband’s finding a job in the new location. Also, Becker, Landes, and Michael (1977) find that a husband’s unexpectedly low earnings, as from unemployment, have positive effects on marital dissolution.

For somewhat less complex reasons, our model included the interaction of WEF with length of marriage for its effects on migration. Census Bureau data show that migration decreases with age and length of marriage, and that wives’ labor force participation lowers long-distance migration rates, except for young couples (Mincer, 1978; Long, 1974). Bartel (1979) also finds differing effects by age of the husband. Mincer (ibid., pp. 759-761) outlines the life-cycle events that can increase the migration propensities of newly formed families, and subscribes to the theory that, because of their shorter job tenure and employment instability, young working wives do not inhibit migration. (Interacting length of marriage with WEF produced a significantly better-fitting model, at p < 0.05, than the alternative—using the current age and WEF interaction.)

Control Variables

The other variables included in our analysis represent influences upon migration and marital dissolution other than those emphasized by the microtheory, for which we seek to standardize the equation. After considering other research and our preliminary modelling, we included these variables:

- Economic influences—family income, husband’s education, and husband’s hours worked in 1968;
- Migration history—whether the family in 1969 lived in the same BEA region where the husband grew up, and the length of time lived in the 1969 residence;
- Demographics—current age, duration of marriage, the husband’s age when married, race, and the presence of school-age or younger children in the household.

---

DaVanzo (1976, pp. 61-62) finds some support for this, which she refers to as a "risk-pooling" hypothesis.
We tried the following variables at various stages of modelling, but excluded them from the final equation because they proved not significant:

- The local unemployment rate (prior to the migration risk period);
- Census region of residence;
- Size of the largest city in the survey sampling unit;
- Type of area where the husband grew up (farm, suburb, city);
- Age of the youngest child in the household;
- Number of children in the household;
- Fraction of housework hours put in by the husband;
- Difference in the spouses' ages;
- Estimated number of years before the husband's retirement.

None of these variables had significant effects on migration or marital dissolution when our chosen variables were in the equation.

**SIMPLE ASSOCIATIONS WITH MIGRATION AND MARITAL DISSOLUTION**

Table 3 shows the sample means of the major variables used in our analysis, grouped by migration and dissolution categories. The simple correlations (Pearson product-moment correlations) shown with the outcome variables exhibit no major surprises. Most of these variables show significant correlations with migration and with marital dissolution, although the correlation with joint migration and dissolution is often not significant. The directions of the relationships resemble those found in most studies. An exception is the significantly positive correlation between the husbands' hours worked and migration, which is inconsistent with the higher mobility rates of the unemployed (see Saben, 1964). We will discuss this point further when the logit results are presented.

Our measure of the percentage of spousal earnings contributed by the wife in 1967-1968 (WEF) shows positive relationships with both migration and, significantly, marital dissolution. The empirical proportions of migration and dissolution, categorized by WEF and the
Table 3

SAMPLE STATISTICS

MEANS AND CORRELATIONS

<table>
<thead>
<tr>
<th>Variable</th>
<th>NEITHER (n=1416)</th>
<th>MIG (n=134)</th>
<th>DIV (n=75)</th>
<th>MIGDIV[b] (n=16)</th>
<th>Correlation[d] with: MIG</th>
<th>DIV</th>
<th>MIGDIV</th>
</tr>
</thead>
<tbody>
<tr>
<td>RACE</td>
<td>.27</td>
<td>.12</td>
<td>.39</td>
<td>.13</td>
<td>-.10*</td>
<td>.06+</td>
<td>-.03</td>
</tr>
<tr>
<td>SAMEBEA</td>
<td>.63</td>
<td>.37</td>
<td>.53</td>
<td>.44</td>
<td>-.15*</td>
<td>-.03</td>
<td>-.03</td>
</tr>
<tr>
<td>KIDL6</td>
<td>.40</td>
<td>.50</td>
<td>.56</td>
<td>.50</td>
<td>.05+</td>
<td>.07+</td>
<td>.02</td>
</tr>
<tr>
<td>KIDGE6</td>
<td>.36</td>
<td>.21</td>
<td>.29</td>
<td>.19</td>
<td>-.09*</td>
<td>-.02</td>
<td>-.03</td>
</tr>
<tr>
<td>PREV MARR</td>
<td>.13</td>
<td>.16</td>
<td>.15</td>
<td>.06</td>
<td>.02</td>
<td>.01</td>
<td>-.02</td>
</tr>
<tr>
<td>Husband's AGE</td>
<td>41.8</td>
<td>37.8</td>
<td>33.2</td>
<td>31.4</td>
<td>-.09*</td>
<td>-.15*</td>
<td>-.09*</td>
</tr>
<tr>
<td>YRS EDUC</td>
<td>10.8</td>
<td>12.6</td>
<td>10.8</td>
<td>13.0</td>
<td>.14*</td>
<td>-.01</td>
<td>.06+</td>
</tr>
<tr>
<td>LENMAR[c]</td>
<td>17.7</td>
<td>12.0</td>
<td>10.3</td>
<td>8.5</td>
<td>-.14*</td>
<td>-.14*</td>
<td>-.09*</td>
</tr>
<tr>
<td>AGEMARR1[c]</td>
<td>23.3</td>
<td>23.9</td>
<td>21.6</td>
<td>22.7</td>
<td>.04</td>
<td>-.07*</td>
<td>-.01</td>
</tr>
<tr>
<td>LEPRES</td>
<td>7.8</td>
<td>4.3</td>
<td>3.6</td>
<td>2.5</td>
<td>-.13*</td>
<td>-.12*</td>
<td>-.07*</td>
</tr>
<tr>
<td>Husb. HRS WORK</td>
<td>2296</td>
<td>2412</td>
<td>2182</td>
<td>2403</td>
<td>.05+</td>
<td>-.04</td>
<td>.02</td>
</tr>
<tr>
<td>Husb. EARNING</td>
<td>8133</td>
<td>8410</td>
<td>6398</td>
<td>6012</td>
<td>.02</td>
<td>-.07*</td>
<td>-.04</td>
</tr>
<tr>
<td>Wife's EARNING</td>
<td>1197</td>
<td>1593</td>
<td>1715</td>
<td>1978</td>
<td>.05+</td>
<td>.05+</td>
<td>.04</td>
</tr>
<tr>
<td>FU INCOME</td>
<td>10719</td>
<td>10900</td>
<td>9122</td>
<td>8763</td>
<td>.01</td>
<td>-.05</td>
<td>-.03</td>
</tr>
<tr>
<td>WEF</td>
<td>.12</td>
<td>.15</td>
<td>.20</td>
<td>.21</td>
<td>.04</td>
<td>.10*</td>
<td>.05</td>
</tr>
<tr>
<td>RANGE WEF</td>
<td>.51</td>
<td>.60</td>
<td>.69</td>
<td>.32</td>
<td>.03</td>
<td>.05</td>
<td>-.03</td>
</tr>
<tr>
<td>WEF = 0</td>
<td>.43</td>
<td>.37</td>
<td>.23</td>
<td>.44</td>
<td>-.03</td>
<td>-.09*</td>
<td>.00</td>
</tr>
<tr>
<td>WEF(for WEF&gt;0)</td>
<td>.21</td>
<td>.24</td>
<td>.26</td>
<td>.37</td>
<td>.04</td>
<td>.07+</td>
<td>.09*</td>
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</table>

EMPIRICAL PROBABILITIES BY WEF[e] AND AGE OF HUSBAND

<table>
<thead>
<tr>
<th>AGE</th>
<th>WEF: 0</th>
<th>.1</th>
<th>.2- .3</th>
<th>.4+</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-29</td>
<td>.09</td>
<td>.16</td>
<td>.07</td>
<td>.22</td>
<td>.13</td>
</tr>
<tr>
<td>30-49</td>
<td>.06</td>
<td>.07</td>
<td>.07</td>
<td>.04</td>
<td>.06</td>
</tr>
<tr>
<td>50+</td>
<td>.06</td>
<td>.06</td>
<td>.08</td>
<td>.03</td>
<td>.06</td>
</tr>
<tr>
<td>Total</td>
<td>.06</td>
<td>.09</td>
<td>.07</td>
<td>.08</td>
<td>.07</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>WEF</th>
<th>.1</th>
<th>.2- .3</th>
<th>.4+</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>.02</td>
<td>.10</td>
<td>.13</td>
<td>.16</td>
</tr>
<tr>
<td>.04</td>
<td>.04</td>
<td>.08</td>
<td>.08</td>
<td>.08</td>
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<tr>
<td>.00</td>
<td>.00</td>
<td>.01</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>.03</td>
<td>.05</td>
<td>.07</td>
<td>.08</td>
<td>.08</td>
</tr>
</tbody>
</table>

n = (668) (407) (304) (214) (1593) (675) (408) (307) (219) (1609)
TABLE 3 NOTES:

a Categories: NEITHER=Neither migrate nor divorce/separate; MIG=Migrate; DIV=Divorce/separate; MIGDIV=Both migrate and divorce/separate.

b The 16 "Migrate and divorce" observations are also included in the separate "Migrate" and "Divorce" columns.

c The statistics for these variables exclude previously married husbands.

d Correlation significance (1-tailed): + = p < .05; * = p < .01.

e The values of WEF shown are rounded, except for the first category which is strictly zero earnings.

f The 16 "Migrate and divorce" cases were excluded from these migration calculations for better comparisons with other data.

VARIABLE DEFINITIONS USED IN TABLE 3:
RACE -- 1 if husband is nonwhite, 0 if white.
SAMEBEA -- 1 if the family resided at the 1969 interview in the same BEA region that the husband grew up in, else 0.
KIDLT6 -- 1 if there are children less than 6 years old (in 1969) in the household, 0 otherwise.
KIDGE6 -- 1 if there are children aged 6-17 in the household, else 0.
PREVMARR -- 1 if husband was married before, else 0.
YRSEDC -- Husband's years of education.
LENMAR -- # of years married in 1969 if this is the husband's 1st marriage.
AGEMARR1 -- Husband's age when married, if this is his 1st marriage.
LENRES -- Number of years husband has lived in his residence in 1969.
HRSWORK -- Number of hours the husband worked in 1968.
FUINCOME -- Total 1968 family unit income from all sources (in 1968 dollars).
WEF -- The wife's 1967 plus 1968 combined labor earnings as a fraction of both spouses' 1967 plus 1968 labor earnings.
RANGEWEF -- The relative range of the wife's earnings share; it is the absolute value of: the difference between the 1967 and 1968 single-year values of WEF, divided by the average of these two fractions.

husband's age, at the bottom of Table 3 further define the simple relationship between these variables when other factors are not accounted for. The probability of marital dissolution exhibits a generally increasing function with WEF for all ages, while the migration rate rises and then drops again at higher WEF levels (except for the youngest age group). The husbands over age 30 show much less variation in migration. It should be noted that our sample does not exhibit a higher migration rate for men without working wives, even when the marital disruptees are excluded from the calculations. This is in
contrast to the 1970 Census tabulations described in Mincer (1978) and Long (1974).

POLY TOMOUS LOGIT RESULTS

Table 4 presents the estimated polytomous logit equation, listing the explanatory variables with their coefficients, t-statistics in parentheses, and levels of statistical significance. (At convergence, the logarithm of the likelihood function was -647.) Several alternative equations, not shown, led to parameter estimates resembling those in Table 4, suggesting a stable model. The standard errors and significance levels were calculated by the usual large-sample approximation (Brelsford and Relles, 1981). The notes below the table explain the rhs variables not defined in the notes to Table 3. The effects of certain variables upon migration and marital dissolution, and the reasons for their inclusion, are discussed below. These variables standardize the equation, allowing "all-else-equal" examination of the hypotheses that are our main interest. Interpretation of the variables of primary theoretical importance (those pertaining to the wife's earnings) is deferred to the following section.

---

5 Several explanations for this result are possible. One is that our variable indicates whether a wife worked in either of two years prior to migration, and the Census tabulations only consider the immediately preceding year. If the wife's labor market experience was erratic, she might be earning less than one-third of the family income--these categories show slightly higher migration rates in our sample. Return migration could also be a factor. If a migrating couple were dissatisfied with their new location, they might be more likely to return to their old area of residence if the wife had been working there also; these families would show up as nonmigrants in the Census figures.

6 The economic and demographic control variables discussed here generally had effects upon migration and dissolution that agreed with the literature. See the citations in Sec. I and also Becker, Landes, and Michael (1977), DaVanzo (1976), Greenwood (1981), Hoffman and Holmes (1976), and Kaluzny (1975).
Table 4
THE ESTIMATED POLYTONOMOUS LOGIT EQUATION

Coefficients for Effects on Probability of:

<table>
<thead>
<tr>
<th>Right-hand-side (rhs) Variables</th>
<th>Migration</th>
<th>Marital Dissolution</th>
<th>Migration &amp; Dissolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wife's Earnings Fraction</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. WEF</td>
<td>13.310</td>
<td>18.234</td>
<td>-22.377</td>
</tr>
<tr>
<td></td>
<td>(.94)</td>
<td>(1.52)</td>
<td>(-1.27)</td>
</tr>
<tr>
<td>2. WEGT1</td>
<td>-3.081</td>
<td>-8.125</td>
<td>26.931</td>
</tr>
<tr>
<td></td>
<td>(-.46)</td>
<td>(-1.01)</td>
<td>(1.04)</td>
</tr>
<tr>
<td>3. WEGT3</td>
<td>-7.026</td>
<td>-4.383</td>
<td>3.294</td>
</tr>
<tr>
<td></td>
<td>(-1.20)</td>
<td>(-.72)</td>
<td>(.23)</td>
</tr>
<tr>
<td>4. WEGT5</td>
<td>7.365</td>
<td>3.067</td>
<td>-25.555</td>
</tr>
<tr>
<td></td>
<td>(.87)</td>
<td>(.47)</td>
<td>(-1.47)</td>
</tr>
<tr>
<td>5. RANGEWEF</td>
<td>-.349</td>
<td>-.327</td>
<td>-.510</td>
</tr>
<tr>
<td></td>
<td>(-.30)</td>
<td>(-.24)</td>
<td>(-.16)</td>
</tr>
<tr>
<td>6. RWEFGT4</td>
<td>.525</td>
<td>.652</td>
<td>-.187</td>
</tr>
<tr>
<td></td>
<td>(.38)</td>
<td>(.40)</td>
<td>(-.05)</td>
</tr>
<tr>
<td>Other Economic Variables</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. LGFUINC</td>
<td>-.761***</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>(-3.28)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. YRSEDUC</td>
<td>.148***</td>
<td>-.057</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>(3.98)</td>
<td>(-1.31)</td>
<td></td>
</tr>
<tr>
<td>9. LGHRSWK</td>
<td>.812*</td>
<td>.153</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>(1.91)</td>
<td>(.25)</td>
<td></td>
</tr>
<tr>
<td>Demographic Variables</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. SAMEBEA</td>
<td>-1.056***</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>(-5.15)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. LENRES</td>
<td>-.049**</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>(-2.25)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. AGEMOVIN</td>
<td>.023*</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>(1.82)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. LENMAR</td>
<td>-.007</td>
<td>-.080***</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>(-.50)</td>
<td>(-4.46)</td>
<td></td>
</tr>
</tbody>
</table>
Coefficients for Effects on Probability of:

<table>
<thead>
<tr>
<th>Right-hand-side (rhs) Variables</th>
<th>Migration</th>
<th>Marital Dissolution</th>
<th>Migration &amp; Dissolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demographic Variables (Cont.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. AGEMARR1</td>
<td>--</td>
<td>- .095***</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(-2.91)</td>
<td></td>
</tr>
<tr>
<td>15. AGEPM</td>
<td>--</td>
<td>- .075***</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(-4.01)</td>
<td></td>
</tr>
<tr>
<td>16. RACE</td>
<td>-1.213***</td>
<td>.440</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>(-3.96)</td>
<td>(1.53)</td>
<td></td>
</tr>
<tr>
<td>17. KIDLTF6</td>
<td>.081</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>(.27)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. KIDGE6</td>
<td>- .390</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>(-1.33)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interaction Variables</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. HRSWEFLO</td>
<td>- .996</td>
<td>-1.049</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>(-.58)</td>
<td>(-.79)</td>
<td></td>
</tr>
<tr>
<td>20. HRSWEFHI</td>
<td>- .567</td>
<td>- .927</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>(-.35)</td>
<td>(-.71)</td>
<td></td>
</tr>
<tr>
<td>21. LMRWEFLO</td>
<td>- .141*</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>(-1.85)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22. LMRWEFHI</td>
<td>- .313</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>(-1.60)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CONSTANTS</td>
<td>-3.389</td>
<td>-1.492</td>
<td>2.235***</td>
</tr>
<tr>
<td></td>
<td>(-.96)</td>
<td>(-.31)</td>
<td>(4.31)</td>
</tr>
</tbody>
</table>

**Source:** Logit coefficients estimated from Panel Study of Income Dynamics.

**Notes:** Unless otherwise indicated, data pertain to the time of the 1969 interview, specifically, the residence and the marriage at that time. The dependent variable comprises the combinations of the husband's migration and the couple's dissolution between the 1969 and 1974 interviews. Table entries are estimated coefficients with t-statistics in parentheses. The two-tailed significance level, p, of the t-statistics is symbolized by:

* .05 < p < .10
** .01 < p < .05
*** p < .01
DEFINITIONS OF NEW VARIABLES USED IN TABLE 4:
WEFGT1 -- The larger of 0 or (WEF - .1).
WEFGT3 -- The larger of 0 or (WEF - .3).
WEFGT5 -- The larger of 0 or (WEF - .5).
RWEFGT4 -- The larger of 0 or (RANGEWEF - .4).
LGFUINC -- The average of the logarithms of the 1967 and 1968 total family income from all sources (in 1967 dollars).
LGHRSWK -- The logarithm of: (hours the husband worked in 1968) + 1.
AGEMOVIN -- Husband's age when he moved into the 1969 residence (home).
AGEPM -- Husband's current age if he was previously married; this variable = 0 for those who have values in AGEMARR1 and LENMAR. Similarly, AGEMARR1 and LENMAR = 0 for those who have values in AGEPM.
HRSWEOFLO -- The product of LGHRSWK and WEF, if WEF < .5, else 0.
HRSWEOFHI -- The product of LGHRSWK and WEF, if WEF >= .5, else 0.
LMRWEOFLO -- The product of LENMAR and WEF, if WEF < .5, else 0.
LMRWEOFHI -- The product of LENMAR and WEF, if WEF >= .5, else 0.

For other variables, see definitions in Table 3.

Economic Effects
A significantly negative coefficient shows that reductions in total family income definitely encourage migration when the effects of the husband's education are accounted for. Education (YRSEEDUC) is a proxy for the husband's permanent income and, with it in the equation, low actual income may represent short-term (i.e., transitory) misfortune in the labor market, leading to migration. Many studies, particularly those using aggregate data, find high income to be associated with high rates of migration (our simple correlation also showed this, although nonsignificantly). This finding, however, appears to confound the permanent and transitory influences of income and education.  

Husband's education has a negative (though nonsignificant) effect on the rate of marital dissolution. When education was allowed to influence dissolutions in preliminary models, the family income variable (with which it is closely correlated) was much less significant than education. We therefore excluded income for marital dissolution effects in the final equation presented here.

---
7 DaVanzo (1976) found family income to have significantly negative effects on migration for unemployed husbands, but insignificant effects for employed husbands who were not looking for another job.
8 This is consistent with other studies that also generally find a negative but insignificant relationship. See Becker, Landes, and Michael (1977), Cherlin (1977), and Mott and Moore (1978).
The hours the husband worked in 1968 was included as a main effect on dissolution or migration, since it was interacted with WEF as previously described. As a main effect, LGHRSWK was of no importance in dissolution. However, the main variable does have a significantly positive influence on migration; as noted before, this was also true of the correlation. Although this seems contradictory to the finding in other research that unemployment increases mobility, consideration of our data strongly suggests that this conclusion would be unwarranted. In 1968, the overall U.S. unemployment rate of married, spouse-present males was extremely low (1.6 percent). In fact, only 2 percent of the husbands in our working file reported less than six months employment in 1968, so it is more likely that the coefficient is measuring the migration propensities of the large portion of our sample that worked more than a full-time equivalence in 1968. Approximately 27 percent of our husbands reported more than 2500 work-hours, and simple crosstabs do show a much higher migration rate at the upper end of the distribution. One hypothesis is that males who find it financially necessary to work two jobs may migrate to find a higher-paying main job that will relieve this burden. A detailed analysis of these effects is beyond the scope of the present research, but they suggest interesting possibilities for other analysis.

**Effects of Age and Prior Moving Experience on Migration**

Growing up in the BEA region of current residence (SAMEBEA) sharply deterred leaving that region, but had no significant effect on marital dissolution in preliminary estimations. This was expected, for if the husband leaves his region of origin, he may lose much or all of an especially large amount of location-specific capital--important ties to friends and relatives, perhaps seniority at work or a loyal business clientele, and the like--all strong deterrents to migration.

A long stay in the current residence (LENRES) also deters migration. This variable represents several different effects in our model, including the accumulation of location-specific capital, and perhaps more important, it is our best proxy for the husband's job
tenure.\(^9\) (As previously mentioned, reliable length-of-job information was not available.) Bartel's (1979) analysis showed that most of the negative effect of length of residence can be attributed to job tenure. The husband's age in 1969 equals duration of residence plus his age when he moved into his current home. Using the latter two variables (LENRES and AGEMOVIN) in the equation (rather than an algebraically equivalent specification) shows the independent and significant effect of duration of residence. Note that the LENRES coefficient is twice the size of the "residual age" effect, AGEMOVIN. It also helps define the true effect of age when length of residence is in the model. The positive coefficient for AGEMOVIN indicates that it is not measuring the obvious relationship of age and migration, which is always negative in summary tabulations. (In fact, if actual age is used instead of AGEMOVIN, it also has a positive sign when LENRES is included, although slightly less significance than AGEMOVIN.) Instead, this variable can be interpreted as an indicator of prior migration experience. Its significance supports the findings of others that, for a given age group, the propensity to move is greater for those who have most recently moved.\(^10\)

**Effects of Age and Marital History on Marital Dissolution**

The coefficient of LENMAR shows that marital dissolution is deterred both by advanced age and a long union (LENMAR and the husband's age had a correlation of 0.90 in our sample). These phenomena are well documented and obvious--after all, a long union reflects past decisions not to dissolve the marriage.\(^11\) Specifying both the duration of marriage and husband's age at marriage as rhs variables tells us that

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\(^9\) For example, the tables in Long (1973) show that the percentage of males (aged 25 to 34) changing residence is almost equal to the percentage changing jobs.

\(^10\) See DaVanzo (1976), Toney (1976), and McGinnis (1968). McGinnis outlines this hypothesis as the "axiom of cumulative inertia."

\(^11\) Theory suggests that the interaction of length of marriage and the wife's employment might influence migration, so LENMAR was included as a "main effect" on migration. It has no significance as such, and the interaction variables will be discussed in the next section.
the latter has an independent effect that is significant. Like other researchers, we find that marriages contracted at an early age are much more likely to be dissolved later. For previously married husbands, the current age variable (AGEPM) represents these longevity effects, since length of marriage could not be computed for these persons. Its coefficient and t-statistic show consistency with the LENMAR variable.\(^{12}\)

Other Personal and Family Characteristics

The other demographic variables included in the equation are RACE and indicators of the presence of children in the household (KIDLT6 and KIDGE6). Nonwhite husbands were significantly less likely to migrate, with other factors held constant. Being nonwhite had a positive but nonsignificant effect on dissolution, showing that most of the racial effects had been accounted for by the economic variables in our model. When the other variables were in the equation, indicators of the presence or age of children bore little relationship to marital dissolution, so these effects are not estimated in our final equation. This may seem surprising, but it appeared in many different specifications. For example, the presence or absence of children did not affect the relationship between WEF and dissolution. Most likely, any relationship between having children and avoiding marital breakup is incorporated in the duration of marriage and age variables, which are, of course, closely linked with the presence, number, and age of children. The presence of school-age children did somewhat impede migration, a finding consistent with other research (Long, 1972; Bartel, 1977; and Mincer, 1978).

\(^{12}\) Such a specification, which switches between variables based on marital history, ordinarily includes a dummy variable to flag previously married husbands. Since we needed to eliminate parameters whenever possible, that variable was removed from final estimation because it was nonsignificant (the t-statistics ranged from 0.01 to 0.80 in various models).
IV. ASSESSING THE HYPOTHESES

We now turn to the implications of the polychotomous logit results for our primary research concern: how the wife's earnings fraction (WEF) affects family migration patterns and concomitant marital dissolution. First, we present empirical results to evaluate our primary hypothesis outlined in Sec. II: that dual-earner families are less likely to migrate than similar single-earner families. We then proceed with evidence for assessing the two hypotheses concerning migration-associated marital dissolution: that the risk of dissolution is greater for migrant than for nonmigrant two-earner families, and that the risk of dissolution is higher for migrant two-earner than for migrant single-earner families.

In reality and in our model, different levels of the wife's earnings have complex economic effects upon migration and dissolution. For example, increasing the wife's earnings fraction causes changes in all of the WEF spline variables plus the interaction variables that use WEF. When analysis requires hypothetical changes in several variables, the t-ratios for individual coefficients that can be calculated from Table 4 thus prove to be inadequate. Instead, we will contrast hypothetical migration and dissolution rates computed from the estimated equation under alternative assumptions. Such contrasts are designed to hold other variables equal (e.g., race and education) and so indicate only the effects of the specified changes. However, since our equation (like all logit models) is a nonlinear function of its variables, we must assume "typical" values for all the variables in it. Except for the effects being studied, the same variable assumptions will be used throughout.\footnote{The nonlinearity of the model also means that standard errors cannot be calculated algebraically for the estimated migration and dissolution rates. Instead, Monte Carlo tests will show whether an apparent difference in the estimated (i.e., "predicted") rates is, in fact, statistically significant.}
FAMILY MIGRATION

Test Assumptions

Table 5 presents the estimated probabilities of family migration in a five-year period, for differing values of the wife's earnings fraction (WEF), its range (RANGEWEF), and husband's age. The standard values used for variables held constant are documented in the notes to Table 5. For these estimates, we only consider the probability of migration without marital dissolution to avoid the complexities introduced by the interaction of dissolution and migration, especially for dual-earner and younger couples. Unfortu- nately, the sparsity of our data prevents us from making predictions beyond WEF = 0.60 with any confidence, since there were so few families in which the wife earned over 75 percent of the income. Because of their large standard deviations, all comparisons against predictions with WEF = 0.80 were extremely nonsignificant and are not presented in Table 5.

The total spousal earnings remain constant throughout Table 5, but the level of the wife's earnings varies with WEF. As a consequence, the husband's hourly wage (although not directly a variable in the equation) would be decreasing since his work-hours are held constant. We chose this assumption of constant family income since it reflects our actual sample conditions most accurately. The husbands in our sample show a generally decreasing hourly wage rate as their wife's earnings increase; the opposite is true for wives. (The highest mean male hourly wage appeared in families without working wives, and the lowest when the wife earned over half the family income; the husbands' and wives' average hourly wages are approximately equal at WEF = 0.50.) The average total spousal earnings peaks approximately at WEF = 0.40, and the lowest-

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2 We have already seen from Table 1 that the probability of migration is much higher for divorced/separated males, and the equation's coefficients show length of marriage and WEF to have considerable effects on marital dissolution.

3 Alternatively, we could make the contrary assumption that the wife's earnings supplement the husband's, leaving the husband's earnings constant as the wife earns more. A set of predictions under this assumption led to the same pattern as in Table 5, but each migration probability beyond WEF = 0 was 0.03 lower than those shown, because of the negative effect of the family income coefficient.
Table 5

THE INFLUENCE OF LEVEL AND VARIATION OF WIFE'S EARNINGS FRACTION (WEF) UPON
THE ESTIMATED PROBABILITY OF MIGRATION WITHOUT MARITAL DISSOLUTION

<table>
<thead>
<tr>
<th>Case Number</th>
<th>RANGE of WEF</th>
<th>AGE 30 (LENMAR=7)</th>
<th>AGE 40 (LENMAR=17)</th>
<th>AGE 50 (LENMAR=27)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>0.11</td>
<td>0.12</td>
<td>0.14</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>0.20</td>
<td>0.18</td>
<td>0.17</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>0.40</td>
<td>0.12</td>
<td>0.09</td>
</tr>
<tr>
<td>4</td>
<td>0</td>
<td>0.60</td>
<td>0.25</td>
<td>0.06</td>
</tr>
<tr>
<td>5</td>
<td>2.00</td>
<td>0.20</td>
<td>0.19</td>
<td>0.19</td>
</tr>
<tr>
<td>6</td>
<td>0.40</td>
<td>0.40</td>
<td>0.11</td>
<td>0.08</td>
</tr>
<tr>
<td>7[b]</td>
<td>0.67</td>
<td>0.60</td>
<td>0.15</td>
<td>0.04</td>
</tr>
</tbody>
</table>

SOURCE: Estimates from Panel Study of Income Dynamics.
NOTES: For definitions of WEF, RANGE of WEF, and LENMAR, see notes to Table 3.

The variables altered to produce age-effects were AGEINR (since LENRES was held constant) and LENMAR (since AGEMARR1 was constant).

The following circumstances were assumed in all of the above estimates (time reference is 1969 unless noted otherwise):
- This is the husband's first marriage, and he married at age 23;
- The husband is white, and has 12 years of education;
- There is a child < 6 years old in the household, but none older;
- The husband moved into the current dwelling 7 years ago;
- The husband did not grow up in the BEA of 1969 residence;
- The total family income is $8100 in 1967 and 1968 (in 1967 $);
- The husband worked 2000 hours in 1968 (except in Case 7).

All of these values are the overall sample means (or majority) with the following exceptions: Actual mean education was 11 years; mean hours worked was 2300; only 40 percent did not grow up in the current BEA; and only 41 percent had a child less than 6.

The probability shown is that of a family migrating at least once across BEA boundaries during 1969-1974 and not dissolving their marriage during the same period. This probability was estimated from the coefficients of the polytomous logit model.

Case 7 represents severe unemployment of the husband--all variable values noted above pertain, except that husband's hours worked were about 675.
income families are those in which the wife earns over half the income.

**Effects of Wife's Stable Earnings**

The first four rows of Table 5 show the effects of different levels of WEF for wives whose share of spousal earnings is constant for two years prior to the migration risk period. The results are mixed. Contrary to the economic hypothesis, a low level of wife's work (WEF = 0.20) actually heightens the migration rate over WEF = 0, although the effect has significance only for the young husbands (age 30). Increases in WEF beyond 0.20 do have the hypothesized effect on migration. As WEF rises from 0.20 to 0.40, the probability of migration decreases considerably, and is significant for the two older age groups.

When WEF exceeds one-half, we observe interesting results. For the older age groups (age 40+), lower migration likelihood is maintained but at estimated rates slightly lower than those for WEF = 0.40. In these groups, the migration rate for WEF = 0.60 is lower than any other situation shown. However, the difference between these two cases (0.40 vs. 0.60) lacks statistical significance, so we cannot reject the hypothesis that the migration behavior is similar for these families when the wife earns 40 to 60 percent of the income.

**Migration Differentials by Family Life-Cycle Stage**

The young families (husband younger than 40) exhibit a different pattern in Table 5: Their estimated migration rates are highest when the wife earns over half the income. The predictions for WEF > 0.50 have larger standard deviations, so the Monte Carlo t-statistics for this effect are not overwhelmingly significant (the comparison for the increase as WEF goes from 0.40 to 0.60 had a t of -0.89, and the test of whether the rate at WEF = 0.60 was higher than at WEF = 0 had a t of

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4 The Monte Carlo t-ratio of -1.37 corresponds to a one-tailed significance level of 0.09. The one-tailed test is used since the direction of the effect has been hypothesized.

5 The significance of the p value increases by age group since the decrease in migration is greater--0.18 (age 30) to 0.07 (age 40) to 0.04 (age 50).
However, the same tests for the other age groups produced extremely smaller t-statistics (ranging from -0.12 to 0.06), which does suggest that age (or duration of marriage) plays some role in migration for dual-earner families.

To further assess this age difference, we compared the estimated rates at each value of WEF (for RANGEWEF = 0) across the first two age columns. The significance was marginal for WEF = 0, 0.40, and 0.60 (all p values were about 0.12). There was no significant difference in the migration rates at WEF = 0.20. The significance of the LENMAR and WEF interaction variables described in the previous section is being tested here. These variables (LMRWEFLO and LMRWEFHI) are responsible for the different patterns shown by age group in Table 5. If the interaction variables were not included, the estimated migration probabilities would still differ by age or length of marriage (as long as an age variable or its equivalent were in the model). However, the patterns would be identical as WEF increased, differing by a constant multiplicative factor across age groups for each WEF.

The t-statistics for the variable coefficients (-1.85 and -1.60) and the borderline significance for a change of ten years of marriage suggest that the hypothesized effects have some validity. These interaction terms operate in the following manner (when other variables are held constant): (1) For a given WEF value, the probability of migration decreases as length of marriage increases (an intuitive result); and (2) for shorter marriages, the probability of migration generally increases with WEF; the function changes at about 11 years of marriage, and after that the highest migration probability shifts backward until it reaches WEF = 0 (at about 40 years of marriage).

It thus seems safe to conclude that life-cycle events (represented by marriage duration) are influential. The higher migration rates seen in young families when the wife works, and especially when she earns over half the income, could be due to several factors. Completion of schooling and labor force entry of the husband, and the prospective childbearing of the wife, might lessen the impact of her earnings on migration decisions compared with older couples, as others have
suggested. However, we cannot assume that the husband is the sole actor and that the wife, given her preferences, would always choose not to move. If substantial wife's earnings are an indication of greater labor force commitment, this assumption might especially be challenged for younger wives. The life-cycle earnings profiles of both males and females show increases through their twenties. However, while the peak earning power is around age 40 for males, it is about age 30 for females (Barrett, 1979, pp. 36-37). Thus, a working wife would be more likely to benefit from judicious migration in the younger age groups, and would also have more time in the labor force in which to realize these gains.

While some studies have found migration to have negative effects on wives' earnings, this is usually a result of lowered labor force participation after moving rather than direct wage effects, and the effect is often temporary (Sandell, 1977, pp. 410-412). DaVanzo (1976, pp. 86-89) provides some evidence that dual-earner couples who migrate tend to choose a destination where the wage gains of both husband and wife are maximized.

At this point we should also note the striking similarity between the migration predictions produced from the logit coefficients and the empirical probabilities found in the simple tabulations by age and WEF (see Table 3). The consistency demonstrated shows that age alone is an excellent predictor of how wives' earnings affect family migration, and lends further support to the validity of this relationship.

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6 See Mincer (1978, p. 761). Bartel (1979, p. 782) also makes this conclusion, although she finds that wife's earnings eventually have a significantly negative effect on the migration of young families when they are "substantial." Since she only considers the dollar amount of the wife's earnings, however, it cannot be determined how substantial this must be in relation to family income. Duncan and Ferrucci (1976) find the wife's percentage of family income to have nonsignificant effects on migration for young couples, but that finding could be due to the authors' using only a linear term.
Effects of Wife's Unstable Earnings

We also hypothesized that the variability of WEF should play a role in migration, since the family's decision to migrate considers long-term costs and benefits. If the wife's contribution to family income is unstable, the consequences of migration for her earnings may have little weight in the decision and do little to inhibit migration. Comparing Cases 5, 6, and 7 in Table 5 with counterpart Cases 2, 3, and 4 permits us to assess this hypothesis.\(^7\)

For a low average level of wife's work (WEF = 0.20), high variation seems to increase migration slightly, but for higher WEFs the estimated rates are somewhat lower than the stable earnings cases, which would contradict the hypothesis. (The coefficients of the RANGEWEF spline function produce a positive effect only when RANGEWEF is quite high, greater than 1.20.) Comparing these rates with the ones for RANGEWEF = 0 produced no statistically significant results, however, which is not surprising given the low t-statistics of their coefficients in the equation. It appears that a different variable specification, or perhaps consideration of wife's earnings over a longer time period, is needed to analyze the effects of her earnings stability on migration.

Joint Effects of Husband's Hours Worked and Wife's Earnings

The remaining way in which WEF was hypothesized to influence the migration rate was conceptualized in the husband's hours worked and WEF interaction variables (HRSWEOFLO and HRSWFHFI), as described in Sec. III. The coefficients of these terms were nonsignificant, and Monte Carlo test results showed no significance in comparisons of several different hours-worked assumptions (such as full time vs. considerable unemployment as in Case 4 vs. Case 7 in Table 5). From this evidence, we cannot reject the hypothesis that the amount the wife earns affects migration independently of the husband's employment situation, if other factors are controlled.\(^8\)

\(^7\) Case 5 represents the wife working one year but not the next. This variation is common for low averages like 0.20. Cases 6 and 7 show the less extreme variation that may accompany higher WEFs.

\(^8\) Unlike the LMREWF interaction, the HRSEXWEF variables have little effect on the migration pattern produced by WEF, when the husband's work-
Summary of Findings on Migration

These results regarding family migration and wife's earnings are generally consistent with, and help to clarify, the findings of others. The studies that use only a dichotomous indicator of wives' labor force participation (Sandell, 1977; Bartel, 1979; Mincer, 1978) or simple tabulations (Long, 1974) have found negative, but not always highly significant, effects on migration for middle-aged and older couples. Also, these same studies have found the negative relationship not to hold for younger families.9 Our conclusions reinforce these findings, and suggest that consideration of the amount of the wife's work, not merely whether she works, may produce better results (since the function is not necessarily linear).

Few studies, however, have been able to estimate the effects of the wife's contribution to the family income. Mincer (1978) found wife's dollar earnings to have no significant effect on migration in older families. As described above, the results of Bartel (1979) and Duncan and Perrucci (1976) for young couples were also inconclusive. Our results are similar to those of DaVanzo (1976), who analyzes the wife's earnings share in a manner most similar to ours (also using PSID data). Using a quadratic function, she finds that the probability of migration is greatest when the wife earns about 30 percent of the total spousal earnings (DaVanzo, 1976, p. 63). Our spline function also peaks at about this level when the couple has been married less than 25 years.10

9 The one exception can be found in Sandell's (1978) study of younger families, in which the wife's employment does have a negative effect on migration between Standard Metropolitan Statistical Areas (SMSAs).

10 One difference between our results and those of DaVanzo (1976) is her finding that a working wife always increases the probability of migration until she earns a very large proportion (over 75 percent) of the income. In contrast, our estimated rates are lower (compared with WEF = 0) when the wife earns about 40 percent or more of the income. This could be due to several differences in the specified models; the most likely is that we specify an interaction effect for WEF and LENMAR, which produces a different function by age.
The results described thus far appear to support the hypothesis that migration is repressed in two-earner families, but only when the secondary earner accounts for a considerable portion of the total income. We may infer from Table 5 that this is due to competing economic interests, since other factors are held constant. Under the next heading below, however, we will analyze further to what extent this may represent a tied stayer phenomenon.

MIGRATION-ASSOCIATED MARITAL DISSOLUTION

Test Assumptions

For a given WEF value, each row of Table 6 presents two estimates: (1) the probability of marital dissolution during a five-year period, given migration in the same period; and (2) the probability of dissolution given no migration.\(^{11}\) The difference between the two probabilities—the last column of the table—represents the amount by which migration is associated with an increased dissolution rate.\(^{12}\)

Table 6 shows predictions for only one age group: the average or 40-year-old husband. Since our equation estimated no marital dissolution effects for the interaction of marriage duration and WEF, and since LENMAR had no coefficient in the model for the effect on joint migration and dissolution, the conditional dissolution probability pattern was virtually identical for all ages (with each prediction differing by a relatively constant factor as length of marriage changed).\(^{13}\) Therefore, other age groups provide no new information, and our discussion applies to the general case.

\(^{11}\) These conditional probabilities were calculated from the outcome probabilities: \(P(D|M) = P(D \cap M) / P(M)\).

\(^{12}\) This effect is shown by the difference between two estimated probabilities (rather than the ratio) since it may be interpreted as the proportion of families differentially affected. A ratio does not have such an interpretation. The ratio of two small probabilities may be large, but affect few families.

\(^{13}\) For example, decreasing LENMAR and AGEINR by 10 years (as was done in Table 5) doubled both the probability of dissolution given migration and given no migration, and thus also doubled the difference.
Table 6
WEF AND MIGRATION-ASSOCIATED MARITAL DISSOLUTION

<table>
<thead>
<tr>
<th>Case Number</th>
<th>RANGE of WEF</th>
<th>WEF</th>
<th>Given Migration</th>
<th>Given No Migration</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0.09</td>
<td>0.01</td>
<td>0.08</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>0.20</td>
<td>0.05</td>
<td>0.03</td>
<td>0.02</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>0.40</td>
<td>0.16</td>
<td>0.03</td>
<td>0.13</td>
</tr>
<tr>
<td>4</td>
<td>0</td>
<td>0.60</td>
<td>0.10</td>
<td>0.05</td>
<td>0.05</td>
</tr>
<tr>
<td>5</td>
<td>2.00</td>
<td>0.20</td>
<td>0.02</td>
<td>0.05</td>
<td>-0.03</td>
</tr>
<tr>
<td>6</td>
<td>0.40</td>
<td>0.40</td>
<td>0.12</td>
<td>0.03</td>
<td>0.09</td>
</tr>
<tr>
<td>7</td>
<td>0.67</td>
<td>0.60</td>
<td>0.10</td>
<td>0.08</td>
<td>0.02</td>
</tr>
</tbody>
</table>

SOURCE: Estimates from Panel Study of Income Dynamics.
NOTES: The predictions shown are for a 40-year-old husband (LENMAR = 17, AGEINR = 33).
In Case 7 the husband worked only 675 hours in 1968 (about 4 months). The wife doubled her earnings from 1967 to 1968, keeping family income constant. See notes to Table 5 for other variable values used.

Effects of Wife’s Stable Earnings

Throughout Table 6, marital dissolution is more likely to accompany migration than to accompany no migration—ununsurprising linkage that does not cast direct light on microtheory. The linkage may be caused by the stress of interregional migration instead of economic processes, or simply by higher post-dissolution migration rates; causality cannot be inferred from the conditional probabilities. The interesting aspect is how the level of WEF influences the amount of migration-associated dissolution.

The difference in dissolution rates is significantly greater than zero when WEF = 0 or 0.40 (the p values are 0.01 and 0.08, respectively). We see the least difference in dissolution probabilities when the wife’s earnings are slight (WEF = 0.20). (In fact, none of the rate differentials is statistically significant except for the WEF = 0

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14 Case 5 is the one exception, but this negative difference is not statistically different from zero.
or 0.40 cases.) These results support the tied stayer hypothesis and its adjunct, that the risk of marital dissolution is greater for migrant than for nonmigrant two-earner couples—especially when we consider them in conjunction with the migration estimates in Table 5. There, we saw the greatest mobility in families where WEF = 0.20 and a significant decrease in migration when WEF rises to 0.40. Now we observe that the risk of marital dissolution is much greater when migration occurs in families where the wife earns almost half the income, and that little risk can be attributed to migration when the wife earns a small amount. Tables 5 and 6 generally complement each other, so it appears that when families consider migration they do tend to make decisions which preserve the family unit.

When the Wife Earns More Than the Husband

The situation for WEF = 0.60 is not as easily interpreted. Migration-associated dissolution is greater than for WEF = 0.20, but is not a significant amount—yet the lowest migration rates were predicted at this level of wife's earnings (for age 40+). No firm conclusions can be drawn since several factors could be responsible. The small sample size that these estimates are based on is the most obvious drawback. Also, the inverse migration rates of the younger vs. older couples may have negated results somewhat. It is also possible that this "imbalance" of earnings puts stress on the marriage if the partners have internalized the societal norm of the husband as dominant wage-earner. Some of the migration in these families may be undertaken as a step toward restoring that norm by increasing the husband's earnings, in which case marital dissolution is much less a risk.

Single- vs. Dual-Earner Families

The predictions shown for male-earner-only (WEF = 0) families deserve further comment, since the probability of dissolution is significantly greater when migration occurs. One of our original hypotheses was that competing economic interests would make marital dissolution a higher risk when two-earner families migrate than when similar single-earner families migrate. Our results do not support that hypothesis. If we perform contrasts down the columns of Table 6
(instead of across, which determine only if migration increases the chance of dissolution for a given WEF value), we find no significant difference in the "dissolution given migration" probabilities for various WEF values. In the same manner, when sets of WEFs are compared, there is no great statistical difference between any of the amounts associated with migration in the last column of the table. (The highest significance level in both column comparisons was a p of 0.12 for the WEF = 0.20 vs. 0.40 cases.)

Effects of Wife's or Husband's Unstable Earnings

Variation in the wife's earnings fraction and unemployment of the husband reduce the likelihood of dissolution accompanying migration, as shown in the last three cases of Table 6. These results are consistent with the hypothesis that migration is less likely to threaten the wife's earnings potential if her labor force attachment is not strong, thus incurring less risk of associated marital dissolution. However, the effects noted are small and, as with migration, no statistical significance was found in the comparisons between the Monte Carlo results for Cases 5, 6, and 7 and their stable earnings counterparts (Cases 2, 3, and 4).

Summary of Findings on Migration-Associated Marital Dissolution

Given the above results, our conclusions regarding migration-associated dissolution must remain tentative. With so few observations, strong statistical effects are unattainable, but we can judge the patterns of family migration and marital dissolution. Generally, they seem sensitive to the wife's earnings share and appear consistent with the tied stayer hypothesis, suggesting that this is a fruitful area for further research. We can also conclude that in dual-earner families, the risk of marital dissolution accompanying migration is greater when the wife earns a considerable portion of the family income. However, since the dissolution rate is also high in migrating families without working wives, we cannot say that the tied stayer phenomenon (relating to conflicting job interests) is the only factor involved.
EFFECTS OF WIFE'S EARNINGS ON MARITAL DISSOLUTION WITHOUT MIGRATION

Finally, we shall consider the effects of wives' earnings on marital disruption when families do not migrate. The various rows of Table 6 show smaller variations in the probability of dissolution given no migration (ranging from 0.01 to 0.08) than in the probability of dissolution given migration (which ranges from 0.02 to 0.16). The Monte Carlo results showed that the probability of dissolution given no migration at $\text{WEF} = 0$ was significantly smaller than in all of the other cases where $\text{WEF} > 0$ (the p values were 0.08 against $\text{WEF} = 0.60$, and 0.04 for the other two comparisons). However, we found no significant difference in dissolution without migration between any two WEFs that are greater than zero. These results corroborate the findings of other studies which suggest that divorce is more likely in families with working wives. (Both findings and explanations vary considerably; see Cherlin, 1981, pp. 53-55; Hofferth and Moore, 1979, pp. 108-110; and Waite, 1981, pp. 17-21.) In addition, we find that the amount the wife earns has little statistical significance.
V. CONCLUSIONS

Subject to the limitations of the data, the analysis has found some patterns of interregional migration and marital dissolution that support Mincer's theory of economic ties and family decisionmaking. To reach our findings we used a polytomous logit equation that simultaneously models migration and dissolution choices. Many of the phenomena are as hypothesized when the wife contributes about 30 to 60 percent of total family income—but not less. Her job slightly deters family migration (migration is somewhat more likely when she earns only about 20 percent of the income) and, when interregional migration does occur, it increases the likelihood of marital dissolution. These results are consistent with the tied stayer hypothesis.

Perhaps the most interesting results obtain for those few sampled couples where the wife earns more than her husband, and for comparisons between families at different stages of the life cycle. When the wife earns about 50 to 75 percent of the family income, migration rates remain lower in the older families but rise for couples who have been married less than 12 years. However, increased migration-associated dissolution is not evident in this situation. Life-cycle events thus appear to affect the economic evaluation of a wife's earnings and the resultant migration decisions.

The effects of wife's earnings on migration are slight, however, and the effects upon migration and dissolution do not attain high levels of statistical significance, perhaps because of a sample that is small, given the model's complexity. On the other hand, age, duration of marriage, and length of residence (familiar determinants of migration and marital dissolution) all display strongly significant influences.

Moreover, not all of the effects are as hypothesized by the economic theory. Migration was not shown to be the most probable when the wife had no recent labor market experience, and the extent of migration-associated dissolution was quite high in this situation. Furthermore, variation in the wife's earnings, which should reflect weaker labor force attachment and hence be less of an impediment to family migration, had little effect.
Another finding of interest pertains to the effect of working wives upon the rates of divorce and other forms of marital dissolution. Like some other researchers, we find a statistical link between working wives and heightened dissolution rates. Beyond the threshold level, however, the amount a wife earns did not prove to have a significant effect on dissolution rates. Our results suggest that variations in the wife's earnings share produce greater differences in dissolution probabilities when interregional migration also occurs, but further research on the subject is needed.

To confirm and extend all of our more important findings, additional research is needed based on data that are more current and extensive. Data constraints limited our research in several ways. In order to have enough data for meaningful analysis, we analyzed migration and marital dissolution over an extended period--1969 to 1974. A shorter risk period and perhaps more recent data would be advantageous. Again because of sparse data, we could not fully analyze the separate effects observed for younger and older couples, nor could we include many variables of potential interest (such as occupation and specific wives' characteristics). More recent data--especially on young couples--would make it possible to test whether changing attitudes toward working wives would qualify our empirical results. Data on wives who earn more than their husbands would enable better tests for contrasting economic and sociological hypotheses. Finally, it would be useful to gather detailed data on spouses' histories of earnings and unemployment, and to formulate adequate procedures for estimating the economic returns to migration. Such estimation would allow more direct tests of the economic theory of family migration decisions.
REFERENCES


