1. Introduction

In his well-known paper, Mincer (1978; p.769) points out, "As I argued in the theoretical discussion, conflicting private locational incentives cannot always be reconciled, and prospective or actual migration may lead to family dissolution." To my best knowledge, this hypothesis has not been tested. For researchers who may intend to estimate the true marital effect of *actual* migration, the major obstacle is the endogeneity of actual migration choices. Another challenge is the lack of information on returns at each possible locational choice.

But is there an effect of prospective migration on marital stability? If there is uncertainty about future location preferences before marriage, locational conflicts can occur in the future and this increase the probability of divorce. In particular, this uncertainty may pose a greater threat to the marital stability of full-time working couples, since they are more likely to face joint-location issues than other couples. I use occupation mobility as the proxy for this uncertainty, which is the probability of having to migrate within the same occupation. It is measured by the fraction of workers in an occupation who have moved across state lines in the past five years.[1] The underlying assumption is that, all else being equal, a person working in an occupation with higher mobility has a higher chance of facing a locational conflict with the working spouse, and their marriage is thus more likely to break up.

Using linear probability models and data from the 5% Public-Use Microdata Samples (PUMS) of Census 2000, I find some evidence that higher occupation mobility does predict a larger probability of divorce for all four education-gender groups except for the college-educated male. In general, the effect is higher among the non-college-educated than among the college-educated,

[1] Occupation mobility is initiated and used by McKinnish (2008) in studying power couple migration decisions.

for both genders. But this positive effect is substantially dampened when occupation mobility is replaced by occupation-industry mobility, and when occupation and industry fixed effects are added.

The analysis is then extended to exploit both public data and the restricted Geocode data from the National Longitudinal Survey of Youth 1979 (NLSY79), which contains richer information on first marriage, spouse's occupation and individual characteristics. First marriage is examined here since NLSY79 allows us to separate first marriage from remarriages. But the disadvantages of using NLSY79 are a smaller sample with less statistical power and a relatively young population. To compute occupation mobility and other characteristics at different times in this part, three rounds of Census: 1980, 1990 and 2000 are used.

A main concern about the identification is that occupation mobility may in part reflect another factor, for instance, one's preference for moves to new towns or cities. That is, occupation mobility can be correlated with individual preferences for migration. This correlation can confound the true effect of occupation mobility, the proxy for prospective migration, on marital stability. This potential endogeneity is addressed by including pre-marriage migration history as a proxy for one's preference for migration. The independent variable of pre-marriage migration history is constructed using the restricted Geocode data from NLSY79. In a way, the analysis here is similar to the one conducted by Farber (1994), who uses "prior job change" variables to account for a person's taste for changing jobs in studying the causality from job tenure to job separation.

Without controlling for pre-marriage migration history, the coefficient estimates for either occupation mobility or occupation-industry mobility are never statistically significant. Even after this control is added, there is still no strong evidence that occupation mobility affects the stability

of first marriages. For the time being, my work indicates that rational expectation of future occupation migration before entering a marriage cannot be excluded as a candidate to explain these findings.

The remainder of this paper is organized as follows. In the next section, a literature review on divorce and on migration is presented. Section 3 describes data from Census 2000 and provides some estimation results. Section 4 discusses NLSY79 with the focus on its restricted Geocode data; more empirical results are then presented. Finally, Section 5 concludempiric

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A prospective locational change by one party may give rise to spousal conflict over optimal locational choices, with marital instability being the result. Such locational conflicts may not be fully anticipated before marriage. Consider the case in which a husband working in a mobile occupation wishes to move, but the new location results in a substantial utility loss for his wife. If a suitable transfer of utility from the husband to the wife cannot be accomplished, the couple may divorce.

It is assumed that all else being equal, people working in an occupation with higher (lower) mobility are more (less) likely to face conflicts on optimal location choices with their spouses, and their families are thus more (less) prone to dissolutions. Suppose that there are two husbands: one works as an insurance salesman (a low mobility occupation) and the other is an economist (a high mobility occupation), with both wives being an elementary school teacher. In contrast to the economist, the insurance salesman has a stronger local social network and lower occupation mobility, which implies that the latter is less inclined to have future location conflicts with his wife and thus is less likely to have an unstable marriage due to prospective migration.

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As suggested in the introduction, occupation mobility is a proxy for the probability of being forced to do cross-state locational changes in a foreseeable future. With one spouse working in an occupation with higher mobility, the family tends to suffer more instability because of more conflicting locational choices for the husband and wife. Since it is not observed in the census data whether a divorce occurs before migration or after, the theoretical prediction in Mincer (1978) cannot be directly tested. In other words, our empirical study with census data is actually testing whether or not and to what extent the probability of a prospective spousal conflict on optimal locational choices predicts one's divorce status. But with individual historical information of location and marriage status change, the analysis based on

Many later works provide evidence that women's increasing labor-force participation and higher economic status are reasons to explain the jump in divorce rate from the late 1960s (Ross and Sawhill 1975; Michael 1988; Greenstein 1990; Ruggles 1997; and South 2001). The basic idea in these papers is that increasing labor market participation improves women's (expected) utility outside marriage and reduces their investment in marriage-specific capital, leading to higher marital instability.

Some sociological studies have contributed to the understanding of the relationship between migration and family instability. For example, Trovato (1986) examines the interrelationship between migration and divorce in 1970s Canada and finds that regions characterized by high rates of population mobility have high divorce rates. Using the 1990 and 1995 Current Population Surveys, Hill (2004) discovers that for women who have ever migrated, the likelihood of experiencing a first divorce around the time of migration is greater than at any other time. A main drawback in this body of studies is that

I first report some descriptive statistics using data of 5% PUMS from Census 2000. The full sample includes 18-to-55-year-old non-Hispanic white men and women who were married at least once and resided in U.S in 1995. Sample means of key variables are presented in Table 1. The occupation mobility measure is the fraction of workers in that occupation class who migrated across state lines in the prior five-year period, i.e., from 1995-2000. Occupation-industry mobility is the fraction of workers in that occupation-industry class who migrated across state lines in the same period. Occupation wage is the average wage in each occupation, which is computed among workers with wages between $3 and $300 per hour.

Individuals are classified into four groups by gender and education. The divorce rate is higher in the non-college group than that in the college group both for men and for women. College men and college women have higher mobility than their non-college counterparts. As is expected, both male and female with a college degree or higher have higher earnings and work for more time.

Table 1 Descriptive Statistics, Census 2000

	College male	**college female**	**Non-college male**	**Non-college female**
Variable	Mean	Mean	Mean	Mean
Divorce rate	.13	.16	.21	.21
	(.34)	(.36)	(.41)	(.40)
Occupation Mobility	.12	.10	.08	.087
	(.05)	(.04)	(.03)	(.03)
Occupation-Industry Mobility	.12	.107	.07	.086
	(.06)	(.05)	(.04)	(.04)
Occupation wage	25.65	21.62	18.06	15.88

	(9.53)	(6.89)	(5.25)	(5.81)
Age	42.20	40.6	40.99	41.23
	(9.17)	(9.53)	(9.18)	(9.85)

3.2 Methods with Census 2000

The following linear probability model is used as the baseline to estimate the effect of occupation mobility on an individual's divorce status.

Equation 1

Where *M* is the occupation mobility and *Wage* is the logarithmic occupation wage; is an individual's logged earnings; is the individual's weekly working hours. is a vector of demographic controls including age, age squared, education level as well as the interaction between age and education. State and state-urban fixed effects are added in order to control for both across state and within state urban-rural differences in divorce. Two additional controls:

children under six or children between six and 18 are included for women. I estimate Equation 1 separately for college males, non-college males, college females and non-college females. [2]

Personal earnings and weekly working hours are included in Equation 1 because they are possibly correlated with one's occupational characteristics and can affect family divorce decisions. For example, it is likely that people are in general better compensated for working in more mobile occupations. Notice that controlling for occupation wage, to some extent, already alleviates our concerns. In addition, earnings and weekly working hours are post-divorce information, and there may exist a feedback effect from divorce to one's post-divorce working hours and earnings. Therefore I have excluded personal earnings and weekly hours from Equation 2 (By the same token, child dummies are excluded from female groups). [3]

Equation 2

where denotes one’s occupation-industry mobility, and is now the corresponding occupation-industry wage.

	College male	College female	Non-college male	Non-college female
mobility	-.08	.31	.058	.56
	(.11)	(.14)	(.08)	(.18)
Occ wage	-.01	-.04	-.068	.06
	(.02)	(.01)	(.009)	(.02)
Earn	-.034	.008	-.060	.005
	(.002)	(.002)	(.0023)	(.002)
N	194127	202675	421740	445087

Table 3 reports the results of Equation 2, which has the same specification except that it excludes personal earnings and weekly work hours as well as children dummies for female groups. Using Equation 2 occupation mobility significantly increases the probability of divorce status of non-college men who have been married, while in Equation 1 it has barely an effect on the divorce status of non-college men when controlling for their personal earnings and weekly working hours in Equation 1. In contrast, for women who are or have been married, results using both equations indicate that, being in a more mobile occupation significantly increases their probability of being divorced, with a disproportional effect on non-college-educated females. Specifically, in Equation 2, increasing the occupation mobility of a non-college-educated female by one standard deviation (.04) makes her family more likely to break up by 1.8 percentage points. This is a moderate effect, considering that the average divorce rate among families with non-college wives is 21%.

For all four cases in Table 3, occupation mobility has a larger and more positive effect on the divorce status of non-college-educated person

Table 3 OLS Estimates of Linear Probability of Divorce Status

(Without controlling for personal earnings, weekly working hours, and children dummies)

	College male	**College female**	**Non-college male**	**Non-college female**

Table 4 reports the coefficient estimates of occupation-industry mobility based on Equation 3, using the full-time employed sample. To alleviate the concern on personal endogenous selection of an occupation or/and an industry, the third row reports results controlling for occupation fixed effect, and the fourth row does a similar job by including both occupation and industry fixed effects.

There are several interesting findings. For both genders, mobility effects are larger for workers without a college degree than college-educated workers. For instance, in Row 2, a one-standard-deviation (.04) increase in occupation-industry mobility raises the divorce of non-college-educated women rate by 1.12 percentage points; while, the same increase is only associated with a rise of .84 percentage point of divorce rate among families with college-educated women. The effects estimated using models with the fixed-effects are considerably smaller in magnitude than using without fixed-effects. In particular, controlling for both occupation and industry fixed effects, occupation-industry mobility now reduces the probability of being married

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Table 5 reports the descriptive statistics. For individuals whose occupation, industry, and income are not available at the year of first marriage, the most recent information from the prior five years is used. Since spouses' past occupational information is not reported, I am unable to fill spouses' missing value. Using mobility and wage rate in the industry-occupational cell substantially decreases the sample size more than that in the occupation cell because some industry-occupation combination information is not available in the Census 5% PUMS. Individual controls also include the highest grade completed, highest grade completed by spouses, age at the first marriage, race indicators, on indicator of living with both biological parents at age 14, and the expected number of children in 1979.

There is a slightly higher divorce rate among women who are or have been married in our sample than once or currently married men. An explanation is that women usually marry ealier, have a longer period of being observed in our sample, and therefore

Table 5 Descriptive Statistics for Variables in Cross-section Regressions (NLSY79)

	Women		**Men**	
	Mean	Standard Deviation	Mean	Standard Deviation
Percent divorced from first marriage	.36		.35	
Age of first marriage	23.8	(4.87)	24.9	(4.82)
Year of first marriage	1985	(4.96)	1986	(5.08)
Duration of first marriage in years (if divorced)	7.89			

Spouses' income	19207	(17244)	12158	(13173)
Spouses' working hour (weekly)	40	(14.00)	34	(12)
N	2194		2072	

4.2 Information in the Geocode files of NLSY79

The Geocode files of NLSY79 provide us with migration information that the public-use files do not. To be specific, the history before his/her first marriage can be constructed using the Geocode data.[10] I argue that to some extent this migration history can reflect and thus be treated as a proxy for one's preference for migration. Recall that in using Census data, individual heterogeneous preferences for migration is one of the main confounding factors in the OLS regression of marriage status on one's own spousal occupation mobility. This is because the selection of one's occupation in part due to migration preferences, and such prefer can also affect family stability. Being able to control heterogeneity in the taste for migration should have the potential to lessen concern on identifying the real causal effect of occupation mobility on one's marriage.

I create two different sets of controls for prior migration history. One consists of indicators of the number of pre-marriage migrations; the other is the duration (in years) since the most recent pre-marriage migration. Notice that

4.3 Methodologies Overview

Following McKinnish (2007), the regression analysis includes two parts: a linear probability model using cross-sectional data and a discrete-time hazard model using panel data. In the linear probability model, the information of respondents' occupation, industry and location at the time of first marriage is used. Unlike work and location decisions made during the marriage

Although actual migration may affect one's marriage stability, it should not enter the right-hand side of the divorce regression. The reason is that actual migration is more likely to be correlated

the year of his/her first marriage. and are occupation variables with respect to spouses' occupation at the year of their first marriage. and are the annual income from wages and salary in logarithm for respondents and their spouses. and

Similar to the analysis of using Census data, Equation 6 differs from Equation 5 by instead using the industry-occupation mobility and the industry-occupation wage rate to account for the mobility differences at the occupation level within the same industry, and vice versa.

Equation 6

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Pre-Marriage Migration History

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Other controls include occupation wage rate for both parties, state fixed effects, urban fixed effects, occupation fixed effects for both parties, highest education completed by both parties, the age and the year of first marriage, race indicators and a dummy indicating living in the South at age 14.

Equation 7

Results are shown in Table 6 for the sample of all respondents who report their first marriages between 1983 and 1996 in NLSY79. This period is chosen so that each respondent can have consecutive three years to be observed on migration(s). Having migrated once, twice, or three times are the three dummies of pre-marriage migration. The first two columns report the effects of pre-marriage migration history for males and for females separately. The last two columns are the effects for a smaller group of respondents whose first marriages did not break up within 5 years.

If the learning-by-doing hypothesis is correct, it would be expected that the coefficients of migration dummies would decline in the magnitude as one becomes a more experienced migrant. Although the coefficient estimates among non-divorced females (last column) display a decreasing pattern, those of second- and third-migration dummies are never statistically significant. Overall, the results in Table 6 do not provide sufficient evidence to support this hypothesis.

Equation 9contains an individual's occupation mobility and wage rate for both an individual and the spouse. State and urban controls as well as occupational and industry fixed effects are all measured at time t. Individual controls are the same as those when using Census 2000 in Equations 1 and Equation 2. Year effects are also included in the model. I consider a non-parametric baseline and create g(.) as a vector of dummy variables for the duration of marriage, where the hazard is assumed to be constant after ten years of marriages. Discrete-time logit estimation is applied in which the right censor is assumed, and the "hazard" is getting divorced in a certain year.

The hazard model applies unbalanced panel data. People who got married before 1979 could be included in this panel data as long as they didn't divorce prior to 1979. Occupational and industry information for the current year is used. If this information is not available from the individual or his/her spouse for a specific year, the most recent occupation or industry reported in the past five (5) years will be used. This approach avoids selection bias in labor force participation. The disadvantage is that I might estimate how the past occupations instead of the present ones affect the marital stability of those respondents. Observations are dropped if there are no individual occupation or spousal occupation available for the past five (5) years.

4.5 *Results of NLSY79*

Baseline Regression Results

Some preliminary results of Equations 5 and 6 are reported in Table 7-1 and Table 7-2 respectively, for the main coefficients of interest in this study. Standard errors are clustered at the occupational level for Equation 5 and at industry-occupational level for Equation 6. As mentioned before, I do not control for respondents' working hours and income in the OLS regression because

this has by and large been done by adding occupation/industry fixed-effects, and there are possible feedback effects from a (potential) divorce to post-divorce working hours and earnings. To make a comparison, I first run the regressions without controlling for spouses' occupation mobility and then include spouses' occupation mobility. Dummy variables for pre-marriage migration history, state indicators and state-urban interactions are not included in these baseline regressions. [11]

Table 7-1 OLS Estimation of Probability of Divorce (Occupation Mobility)

[11]Using Logit to estimate the effect of occupational mobility on divorce, I obtain similar result in which the coefficient

Table 7-2 OLS Estimation of Probability of Divorce (Industry-Occupation Mobility)

Both the coefficient estimates for male occupation mobility and for male industry-occupation mobility are never statistically significant. And in the latter scenario, they even display wrong signs. Without controlling for the husband's occupation mobility, the effect of female occupation mobility is almost statistically significant at 5% level in Equation 5, and the effect of female industry-occupation mobility is almost statistically signi

controlling for both creates multi-collinearity and results in a large standard error for the coefficient estimates.

Regression results with Geocode information

Table 8 reports results of Equation 8 with Geocode information using four different samples. The f

Table8 OLS Estimation of Probability of Divorce Controlling for Pre-marriage Migration

	Full Sample	**First-marriage before 1996**	**First-marriage 1983 to 1996**	**First-marriage 1985 to 1996**

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Regression result of hazard model

The results using logit discrete hazard model are reported in Table 10. For both male and female groups, the hazard of getting divorced increases with occupation mobility, but the coefficients are not statistically significant. The coefficients of male occupation wage rate are negative, while the coefficients of female occupation wage rates are positive, but both are a statistically insignificant. The coefficient estimates of spousal occupation mobility and wage rate are also reported in a similar pattern.

Table 10 Discrete Divorce Hazard Model

	Male	**Female**
Occupation mobility	1.33	1.9
	(.78)	(.68)
Occupation wage rate	-.012	.0008
	(.009)	(.007)
Spouse occupation mobility	.9	.27
	(.76)	(.6)
Spouse occupation wage rate	.004	-.014
	(.008)	(.008)
N	27,453	35,102

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