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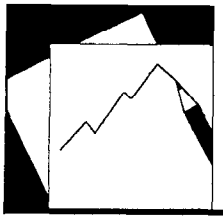

IMF Working Paper

Family Attachment and the Decision to Move by Race

Antonio Spilimbergo and Luis Ubeda

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Family Attachment and the Decision to Move by Race

Prepared by Antonio Spilimbergo and Luis Ubeda[1]

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Abstract

Blacks in the United States have a lower geographic mobility rates than whites even though they have several characteristics that are usually associated with high rates of mobility: high unemployment, low rate of home ownership, low marriage rate and settlement in areas where unemployment is high. This paper tests the relevance of family ties in explaining mobility by using proxies that are constructed using data from the University of Michigan's Panel Study of Income Dynamics, covering the period 1977–88. The results are robust to different specifications and estimation techniques, and explain the puzzle of the role played by the nuclear and the extended family in the decision to move.

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Authors' E-Mail Addresses: aspilimbergo@imf.org; ubeda@eco.uc3m.es

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[1] Antonio Spilimbergo is an economist in the Research Department of the International Monetary Fund and Luis Ubeda is at Universidad Carlos III de Madrid. The authors gratefully acknowledge valuable comments by Olivier Blanchard, Ricardo Caballero, Steven Davis, and Paul Krugman.

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I. Introduction

In the period 1968–88, 5.3 percent of the U.S. white male population moved and changed standard metropolitan area while only 3.7 percent of the black male population did. The difference in migration rates is puzzling when considering that blacks show many demographic and economic characteristics that usually favor migration: typically, blacks have a lower level of home ownership and a lower marriage rate, live in areas with higher unemployment rates, and experience a higher unemployment rate than the rest of the population. In fact, blacks seem to react very little to economic incentives to migrate: in the period 1977 through 1988 while being unemployed increased the migration rate from 5.1 percent to 9.2 percent for white males, it increased the migration rate only from 3.0 percent to 3.6 percent for black males. Even after controlling for these and other economic and demographic characteristics there was a significant difference in migration patterns between blacks and whites. This puzzle has remained unsolved.

This paper analyzes whether ties with the nuclear and extended family can explain these remarkable differences across communities. Our approach is based on the fact that agents care both about economic factors (wages, unemployment rate, etc.) and social factors (presence of family, proximity to friends, etc.) when deciding whether or not to move and these factors have different effects on the decision to migrate for individuals in different communities.

Although the effect of the family on the decision to migrate has been suggested before (for a review see Greenwood, 1985), the empirical work did not use family variables to explain the difference in migration patterns across races. In this paper, in addition to the nuclear family, we also investigate the role of the extended family using data from the Panel Study of Income Dynamics (PSID). We find that family attachment however defined has a strong effect on migration and that its differential effect on blacks and whites fully explains differences in migration behavior across these racial groups.

The paper is organized as follows. Section II reviews the literature and places our paper in its context. Section III outlines our estimation framework and presents the data. Section IV estimates migration equations. Section V presents some robustness tests. Section VI concludes.

II. Literature Review

The empirical literature has long explored the idea that family and social ties can explain both micro and macro patterns in migration. Before the use of microdata, however, only suggestive evidence was available and the interpretation was tentative. For instance, Schwartz (1973) interprets the strong negative correlation between migration and distance as evidence of psychic costs related to separation from friends and family and suggests that these factors can be

measured in terms of the resulting permanent transportation costs. In support of this, Lansing and Mueller (1967) document in a survey with 723 moves between 1962 and 1963, that 12 percent of the moves were made "to be closer to family and friends." The early empirical literature also shows that the stock of past migration is an important determinant of future migration flows between the same locations. Nelson (1959) argues that if the family of an individual has migrated in the past from region i —the individual's current residence— to region j, it is more likely that the individual, when moving out of region i, will decide to go to region j rather than to another region because of informational advantages and smaller settlement costs.[2]

Panel data bases such as PSID have given a more detailed picture of both the economic and noneconomic determinants of migration.[3] Mincer (1978) and Graves and Linneman (1979) find that family ties tend to decrease migration rates. Being married (especially if the spouse works) and the presence of school–age children reduce the probability of migration. Kau and Sirmans (1977) and DaVanzo (1983) find that past migration experience is very important to explain individuals' migration choices. These findings confirm the great potential of panel data bases to uncover the determinants of migration and that "pure cross-sectional models are unlikely to encompass fully the complex nature of [migration] relationships" (Molho, 1984). Following the most recent literature, our analysis uses panel data and takes into account dynamic effects.

The fact that blacks and whites respond differently to incentives to move has been well documented. In a pioneering survey, Lansing and Mueller (1967) note that blacks report family and/or community reasons for geographical mobility more frequently than whites. In order to understand the difference in migration rates across races, Bowles (1970) regresses net migration rates out of the South in the United States in the period 1955–60 on the expected discounted income gain and finds that the coefficient on income gain is significantly higher statistically for whites than for blacks, concluding that whites react more than blacks to economic incentives. Along similar lines, Liu (1976) finds that blacks differ from whites in the effect that several "quality of life" indexes have on the rate of net migration in U.S. states. McHugh (1988) finds that two migrant stock measures are strong determinants of black interstate migration flows for the periods 1965–70 and 1975–80, suggesting the importance of family and social networks in black migration. More recently, Bound and Holzer (2000) find that even after controlling for

[2]This observation has been confirmed in several countries including the United States (Greenwood, 1969) and Venezuela (Levy and Wadycki, 1973). Past flows seem particularly relevant to explain internal migration in developing countries and immigration clusters in the United States. Along similar lines, Carrington, Detragiache, and Vishwanath (1996) explain the timing of the Great Black Migration of 1915-60 with a model based on migration costs that decrease with the stock of past migration from South to North.

[3]For instance, while using aggregate data it had not been possible to find a significant effect of local unemployment on migration. Da Vanzo (1978) showed that high local unemployment rates increase the probability of migration of the unemployed but exert little influence on those who have a job. For a review of the early appication of micro data on migration, see Greenwood (1985).

education blacks move less in response to local labor demand shocks. They conclude that "... the limited adjustment in labor supply for these groups appear to have contributed importantly to the relatively greater deterioration of their employment and earnings in declining areas during the 1980s."

Even though the difference in mobility rates between blacks and whites has been widely documented, there has not yet been a clear explanation for it. Roughly speaking, the early literature of the 1960s and 1970s focused more on sociological considerations, while later literature has documented important differences in the labor market across communities. As an example of early studies, Bowles (1970) speculates that "... the stability of an unequal income distribution may be explained in part by socially generated attributes—risk aversion and high rates of time preference, for example—which inhibit black people from taking advantage of those avenues for higher incomes, such as education and geographical mobility". Among the studies stressing differences in the labor market, Greenwood (1975) reports that nonwhites are less likely than whites to have a job in hand when they move. Along similar lines, Holzer (1987) shows that job search effectiveness is quite different between blacks and whites. Blacks tend to use formal job search methods, while whites rely more on friends and relatives and direct walk-ins to business premises—informal methods that turn out to be more effective for whites than for blacks.

Neither of the above approaches—sociological and labor market—is fully satisfactory in explaining the different migration patterns across races. The sociological approach has been more suggestive than studies based on formal testing. The labor market approach is based on testable hypotheses but has left out many relevant sociological considerations. As a result, the dummy for race is always significant in migration regressions. The contribution of this paper is to show that (nuclear and extended) family ties can fully explain the difference in migration rates.

III. Data and Estimation Framework

Our estimation framework—a panel logit—is similar to what has been used in the previous literature. The left-hand-side variable ($move_{t+1}$) is 1 if the individual moves in year $t+1$, and 0 if he does not. All the right-hand-side variables refer to the year t. The set of the control variables is standard with the exception of the family variables and the interaction between these variables and race. We include standard demographic and economic variables as well as variables to control for past migration history as detailed below.

Data source

Our empirical analysis is based on the 1977–88 waves of the University of Michigan's Panel Study of Income Dynamics (PSID), which give twelve years of data on over 5,000 U.S. families. "Person-year" observations, each representing one year in which a person is at risk to migrate, are used as units of analysis. We restrict our sample to males older than 16 years and younger than 65 years for whom all our control variables described below are available. Given these selection criteria the sample size is 42,934 "person-year" observations or 7,815 individuals.[4]

[4]DaVanzo (1978 and 1983) includes in her sample only individuals who are head of family in

Dependent variable—move

The PSID records each individual's county of residence annually. To take into account that many moves are across different counties, but within the same metropolitan area, counties are aggregated up to Standard Metropolitan Statistical Areas (SMSAs) according to the 1993 definitions as released by the U.S. Office of Management and Budget. Moves are defined by comparing residence information for two consecutive years according to the following criteria: (i) movement from one SMSA to another SMSA is considered a move; (ii) movement from a rural area to a SMSA (or vice versa) is considered a move; (iii) movement from a rural area to another rural area is considered a move only if the two areas are in different states.

In our sample 24 percent of individuals move at least once. However, the average masks important differences between blacks and whites. Table 1 divides the individuals of our sample according to the number of moves in the period 1969–88. In that period, 30.7 percent of whites moved at least once compared to only 15 percent of blacks.

Table 1. Description of Mobility Rates

Number	Whites		Blacks	
of Moves	Percent	Cumul.	Percent	Cumul.
0	69.32	69.32	84.98	84.98
1	14.45	83.76	8.53	93.51
2	9.68	93.44	4.42	97.93
3	3.60	97.05	1.15	99.08
4	1.74	98.79	0.62	99.69
5	0.81	99.60	0.22	99.91
6	0.25	99.85	0.04	99.96
7	0.11	99.96	0.02	99.98
8	0.03	99.99	0.02	100.00
9	0.01	100.00	0.00	100.00

Note: Authors' elaboration from the PSID 1969–88 waves

Definition of the explanatory variables (baseline regression)

The independent variables in our baseline regression include personal and family characteristics. Among the individual characteristics we control for: the number of years of schooling, the unemployment status, race, ownership of a house, marital status, number of children, employment status of the spouse, three dummies for age, and a dummy that is 1 if the individual receives transfers. In addition, we use four variables for income: three dummies for the income level, which are computed using total income (including nontaxable transfers) in constant 1988 dollars, and a dummy variable that is 1 if the income in year t is less than 75 percent of the maximum income in the last four years in constant dollars, and the individual is not unemployed.

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the considered year. This gives her more information about the individual (since PSID provides additional information on the heads of the family) but substantially reduces the number of observations available (about one person out of six is head of the family). We extend the analysis to all individuals, giving us many more observations at the cost of less detailed information.

This variable captures the fact that an individual may want to move as a consequence of an abrupt fall in income even if he is still employed.

We also include a dummy equal to 1 if the individual has moved during the previous year. This control has been suggested by DaVanzo (1983) who showed that the phenomenon of repeat migration is quite relevant: people who have migrated in the year before tend to migrate the following year with a high probability (12.6 percent return to the previous residence and 15 percent move onward in her sample).

Additional explanatory variables for the extended regressions

In addition to the variables mentioned above, we introduce some geographic variables in the extended version. We use the county's unemployment rate and the state rate whenever the former is not available. Moreover, we add three regional dummies for the NorthEast, NorthCentral, and South regions.[5] Finally, we add a variable on family mobility history as specified below.

Family variables

The nuclear and extended family variables are elaborated using primary data from PSID. This panel data base started in 1968, interviewing 4,802 households across 40 states. Each individual is assigned a "68 family number" and a "person number." These two numbers, used in combination, identify a person throughout the years. If a person leaves the original family and forms a new family, he keeps the original "68 family number" for identification purposes. So, after the 1968 wave, sharing the same "68 family number" does not necessarily mean living in the same household, e.g., brothers-in-law will share the same "68 family number" even if they live in different households.[6]

We define "extended family" as the collection of individuals who are older than 16 and share the same "68 family number." The extended families, that coincide with adults in the households in 1968, later diverge as families split and as new individuals join the survey, etc.

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[5]The *NorthEast region* comprises the states of: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont. The *NorthCentral region* comprises: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin. The *South region* comprises: Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia, and Washington, D.C.

[6]Individuals who joined the PSID sample after 1968 were given the same "68 family number" of the person they were associated with. Just under one third of the 37,528 individuals have joined panel families through marriage or cohabitation. About one fifth of the 37,528 individuals were born into sample families.

As a result, extended families have a larger size than the households. Table 2 presents summary statistics of the different concepts of families for blacks and whites.

Table 2. Description of Different Family Concepts

Type of family	Average Size	Variance	Maximum
Blacks			
Nuclear Family	3.07	1.57	11
Extended Family in Same Location	6.42	3.62	21
Extended Family	7.40	3.82	24
Whites			
Nuclear Family	2.57	1.02	10
Extended Family in Same Location	4.84	2.83	19
Extended Family	6.25	3.23	21

Sources: Authors' calculations based on PSID data (1977–88).

We use the concepts of nuclear and extended family to construct two measures of family attachment and more generally of social ties. The "nuclear family" variable is defined as the fraction of members aged over 16 living in the same household over the total number of individuals in the extended family excluding the individual; the "non–nuclear family" variable is defined as the fraction of members aged more than 16 that live in the same SMSA excluding the individuals of the household over the total number of individuals in the extended family excluding the individual. Both measures are constructed so that they are 0 if the individual lives alone (i.e., without any other member of the extended family in his area) and 1 if all the family lives with him. Note that these variables do not depend on the absolute size of the family. In addition, these measures are adjusted for the following factors. First, individuals living in rural areas in the same state are considered as living in the same area. Second, both variables are set to zero whenever the extended family consists of only one individual.

Family mobility history

Finally, we construct a variable capturing the family mobility history. This variable is defined as the sum of past moves by extended family's members over the sum of past individual–years of the extended family excluding the individual. The variable is one if everybody in the extended family moved in every year in the past. It is zero if no family member has ever moved. We include this variable in the extended regressions.

Table 3 presents summary statistics for the sample used.

IV. Results

Table 4 reports the results for the baseline specification in which we control for most individual characteristics but not for geographic variables. We allow for the interaction between

Table 3. Summary Statistics

	Whites		Blacks	
	Mean	St. Dev.	Mean	St. Dev.
Move	0.053	0.224	0.030	0.170
Non–nuclear family proxy	0.358	0.350	0.466	0.357
Nuclear family proxy	0.418	0.343	0.393	0.338
Own the house	0.727	0.445	0.471	0.499
Years of education	12.632	2.588	10.931	2.677
Fall in income	0.160	0.367	0.140	0.347
Age <= 24	0.162	0.369	0.274	0.446
25 <= age <= 36	0.407	0.491	0.411	0.492
37 <= age <= 54	0.304	0.460	0.218	0.413
Income < 10000	0.158	0.365	0.426	0.495
10000 < income < 20000	0.196	0.397	0.280	0.449
20000 < income < 30000	0.221	0.415	0.166	0.372
Married	0.886	0.318	0.692	0.462
Spouse's employment status	0.423	0.494	0.330	0.470
Children in the household	1.184	1.185	1.559	1.524
Unemployed	0.046	0.210	0.153	0.360
Received transfers	0.251	0.434	0.300	0.458
North East region	0.211	0.408	0.073	0.260
North Central region	0.279	0.449	0.168	0.374
South region	0.327	0.469	0.689	0.463
Local unemployment rate	5.946	3.238	6.401	3.077
Family mobility history	0.054	0.070	0.025	0.042

Note: Authors' elaboration from PSID 1977–88 waves.
The sample includes 7,815 individuals.

the family and race variables.

Before discussing the novel part of Table 4, which relates to family attachment and race, we should mention that the estimates on the remaining variables confirm the results of previous studies: younger and educated individuals, unemployed or working with a declining income, and single people move frequently, while people with children, a working spouse and a house move rarely.

The first contribution of Table 4 is that it shows that the two components of family attachment have a strong negative effect on the probability of migration for both blacks and whites. So it provides evidence on the importance of family as a migration determinant. It also shows that for blacks the effect of family attachment is significantly stronger than for whites. This is consistent with Lansing and Mueller (1967), who document that blacks quoted family and/or community reasons for very infrequent geographical mobility more than whites. It is also interesting to note that in Table 4 the interaction term between nuclear family and race is especially strong and significant. The effect on migration of family attachment is stronger for blacks than for whites and the main difference lies on the effect of the nuclear family attachment.

But perhaps, the most important result is that the racial dummy (*black*) is not significant once we control for the family variables and their interaction with race. This finding is in sharp contrast with previous empirical studies that consistently found that the variable for race was

Table 4. LOGIT with Fixed Effects (dependent variable $move_{t+1}$)

	Logit Coeff.	Marg. Eff. *100	z–stat
Extended family proxy	-1.92	-4.79	-17.54
Nuclear family proxy	-1.21	-3.02	-9.73
Extended family proxy * black	-0.47	-1.18	-2.73
Nuclear family proxy * black	-1.38	-3.44	-5.69
Black	-0.10	-0.25	-0.92
Moved the previous year	0.95	2.38	10.96
Own the house	-0.93	-2.32	-14.48
Years of education	0.08	0.21	6.35
Abrupt fall in income	0.15	0.38	2.04
Age <= 24	0.82	2.05	6.05
25 <= age <= 36	0.57	1.43	4.42
37 <= age <= 54	0.27	0.68	1.99
Income < 10000	0.15	0.36	1.42
10000 < income < 20000	0.19	0.48	2.37
20000 < income < 30000	-0.11	-0.26	-1.35
Married	0.23	0.58	2.48
Spouse's employment status	-0.44	-1.10	-7.16
Children in the household	-0.06	-0.16	-2.61
Unemployed	0.30	0.74	3.06
Received transfers	0.25	0.61	4.11
Constant	-3.14	-7.83	-12.32
Pseudo R^2: 0.169		Log Likelihood: -6,561.49	
Number of observations: 42,934		Number of individuals: 7,815	
χ^2: 2,611.98 with Pr>$\chi^2(20)$ = 0.00			

Note: The z-statistics are calculated using errors that are heteroskedasticity consistent and adjusted to account for the clustered nature of the sample.
The χ^2 test is for all the explanatory variables equal to 0.
The marginal effects are calculated at the means of the explanatory variables.

significant even controlling for other observable individual characteristics.

These results beg the question whether blacks and whites differ in other respects aside from the role of family attachment. Using a likelihood ratio test we do not reject the null hypothesis that the two groups only differ in the effect of family attachment.[7] In order to explore further the issue of whether the effects of other variables are significantly different in the two communities, we replicate the regression of Table 4 by interacting the terms with the race variable.[8]

Table 5 shows that, aside from the extended family, the effects of the other variables do not differ significantly by race. Moreover, the coefficient on the dummy for race remains insignificant.

[7]Using the loglikelihood values from Tables 4 and 5, the test statistic is 20.93, which is less than the 90 percent critical value of a $\chi^2(15)$ which is 22.31.

[8]Note that this is equivalent to running two separate regressions for blacks and whites with the same explanatory variables. We prefer to show our results in this form to see the significance of the differences between the two groups.

Table 5. LOGIT for all Interactions (dependent variable $move_{t+1}$)

	Logit Coeff.	Marg. Eff. *100	z–stat
Extended family proxy	-1.94	-4.78	-17.08
Nuclear family proxy	-1.23	-3.04	-9.61
Extended family proxy * black	-0.40	-1.00	-2.07
Nuclear family proxy * black	-1.30	-3.20	-4.45
Black	-0.79	-1.95	-1.34
Moved the previous year	0.90	2.22	9.55
Own the house	-0.98	-2.40	-13.33
Years of education	0.08	0.20	5.28
Abrupt fall in income	0.12	0.29	1.42
Age <= 24	0.74	1.82	4.96
25 <= age <= 36	0.52	1.29	3.75
37 <= age <= 54	0.29	0.70	1.97
Income < 10000	0.09	0.22	0.78
10000 < income < 20000	0.16	0.38	1.75
20000 < income < 30000	-0.06	-0.15	-0.73
Married	0.15	0.37	1.37
Spouse's employment status	-0.43	-1.05	-6.14
Children in the household	-0.07	-0.16	-2.26
Unemployed	0.36	0.89	2.98
Received transfers	0.29	0.72	4.25
Moved the previous year * black	0.21	0.51	1.06
Own the house * black	0.23	0.56	1.44
Years of education * black	0.01	0.02	0.24
Abrupt fall in income * black	0.14	0.35	0.79
Age <= 24 * black	0.43	1.07	1.08
25 <= age <= 36 * black	0.40	1.00	1.02
37 <= age <= 54 * black	-0.04	-0.09	-0.08
Income < 10000 * black	0.16	0.39	0.58
10000 < income < 20000 * black	0.07	0.18	0.33
20000 < income < 30000 * black	-0.35	-0.86	-1.48
Married * black	0.22	0.54	1.04
Spouse's employment status * black	-0.07	-0.18	-0.48
Children in the household * black	-0.01	-0.02	-0.13
Unemployed * black	-0.16	-0.40	-0.80
Received transfers * black	-0.17	-0.42	-1.24
Constant	-2.94	-7.25	-10.06

Pseudo R^2: 0.170 Log Likelihood: -6,551.02
Number of observations: 42,934 Number of individuals: 7,815
χ^2: 2,624.64 with $Pr>\chi^2(35) = 0.00$

Note: The z-statistics are calculated using errors that are heteroskedasticity consistent and adjusted to account for the clustered nature of the sample.
The χ^2 test is for all the explanatory variables equal to 0.
The marginal effects are calculated at the means of the explanatory variables.

This confirms our previous finding that the single most important factor that explains the different mobility rates between blacks and whites is the interaction with family variables.

V. Robustness tests

This section provides robustness tests of our findings on the importance of family attachment as a migration determinant and especially that its interaction with race is fundamental to explaining different migration rates across communities. We perform the following exercises: first, we test an expanded version of our basic model with additional explanatory variables; second, we run a logit regression with fixed effects; third, we consider only unemployed workers; fourth, we check whether our results hold for different definitions of extended family and of occupational status.

We first investigate if our results are robust to the introduction of additional variables that could be correlated with our extended family proxy, such as past migration history of the extended family. We also control for macro regions given that blacks and whites are not distributed homogeneously over the country. For the same reason, we control for the local unemployment rate and its interaction with the employment status given that local unemployment should matter more for unemployed individuals. Table 6 presents these results.

Confirming our previous findings, the dummy for race is insignificant while the extended family variables and their interaction with race are very significant and their effects are similar to those found in Tables 4 and 5 The variable for family mobility history described above is also very significant. This result shows that not only is an individual's history important but the extended family's history is also important. Among the geographic variables only the dummy for the North East region is significant.[9]

A second concern is that the extended family variables could pick up some omitted and unobservable characteristics that are specific to the individual and determine the preference for mobility. Individuals who for some unobserved reasons are prone to move probably have already moved in the past and their extended family variable is consequently lower. Hence the correlation between moving and low values of the extended family variable could be due to omitted variables. In order to explore this possibility we perform a logit regression with fixed effects.[10]

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[9]In an unreported regression, we performed the same exercise as before interacting each explanatory variable with the race dummy. Our results on extended family and race variables are confirmed while only the interacted variables for local unemployment, the dummy for the South region, and age dummies are significant.

Given that family mobility history could be correlated with unobservable characteristics, which are correlated with present and future mobility rates, we repeated the regression of Table 5 without the variable for family mobility history. The result that the race dummy remains insignificant is confirmed.

[10]We also ran two separate regressions for a subsample of individuals who never moved and a sub-sample of individuals who moved at least once in the period before 1977. Both of these

Table 6. LOGIT (extended set of control variables) (dependent variable $move_{t+1}$)

	Logit Coeff.	Marg. Eff. *100	z–stat
Non-nuclear family proxy	-1.76	-4.29	-15.98
Nuclear family proxy	-1.11	-2.69	-8.99
Non-nuclear family proxy * black	-0.57	-1.38	-3.25
Nuclear family proxy * black	-1.39	-3.37	-5.74
Black	-0.01	-0.02	-0.06
Moved the previous year	0.89	2.16	10.42
Own the house	-0.92	-2.25	-14.32
Years of education	0.09	0.21	6.46
Abrupt fall in income	0.15	0.37	2.06
Age <= 24	0.84	2.05	6.20
25 <= age <= 36	0.60	1.45	4.60
37 <= age <= 54	0.28	0.68	2.06
Income < 10000	0.13	0.32	1.31
10000 < income < 20000	0.19	0.45	2.32
20000 < income < 30000	-0.10	-0.24	-1.29
Married	0.20	0.48	2.10
Spouse's employment status	-0.43	-1.05	-6.97
Children in the household	-0.07	-0.17	-2.90
Unemployed	0.36	0.87	1.56
Received transfers	0.24	0.57	3.94
North East region	-0.35	-0.85	-3.68
North Central region	-0.05	-0.11	-0.58
South region	-0.07	-0.17	-0.92
Local unemployment rate	-0.00	-0.01	-0.49
Local un. rate * unempl.	-0.01	-0.02	-0.32
Family mobility history	2.34	5.70	6.54
Constant	-3.25	-7.91	-12.12

Pseudo R^2: 0.174 Log Likelihood: -6,522.53
Number of observations: 42,934 Number of individuals: 7,815
χ^2: 2,770.00 with $Pr>\chi^2(26) = 0.00$

Note: The z-statistics are calculated using errors that are heteroskedasticity consistent and adjusted to account for the clustered nature of the sample.
The χ^2 test is for all the explanatory variables equal to 0.
The marginal effects are calculated at the means of the explanatory variables.

Table 7. LOGIT with Fixed Effects (dependent variable $move_{t+1}$)

	Logit Coeff.	z–stat
Non-nuclear family	-0.79	-5.54
Nuclear family	-0.58	-2.14
Non-nuclear family * black	-0.43	-1.56
Nuclear family * black	-1.18	-2.19
Moved the previous year	-0.49	-6.14
Own the house	-0.75	-8.41
Years of education	0.09	1.75
Abrupt fall in income	0.07	0.75
Age <= 24	0.22	0.65
25 <= age <= 36	0.20	0.64
37 <= age <= 54	0.09	0.34
Income < 10000	0.07	0.48
10000 < income < 20000	0.39	3.08
20000 < income < 30000	0.08	0.73
Married	0.14	0.99
Spouse's employment status	-0.30	-3.72
Children in the household	-0.18	-4.07
Unemployed	0.32	1.23
Received transfers	0.20	2.59
North East region	0.02	0.07
North Central region	0.15	0.80
South region	0.03	0.20
Local unemployment rate	-0.01	-0.80
Local un. rate * unempl.	0.00	0.11
Family mobility history	-14.31	-11.65

Pseudo R^2: 0.083 Log Likelihood: -2,496.78
Number of observations: 8,232
χ^2: 453.08 with $Pr>\chi^2(25) = 0.00$

Note: The z-statistics are calculated using errors that are heteroskedasticity consistent and adjusted to account for the clustered nature of the sample.
The χ^2 test is for all the explanatory variables equal to 0.
The marginal effects are calculated at the means of the explanatory variables.

The results of Table 7 show that the extended family proxies and their interactions with race remain significant even controlling for individual effects. The dummy variable for race, however, is not present because it is perfectly correlated with the individuals' dummies; for the same reasons, there are fewer observations given that all the individuals who never moved have been dropped.[11]

Unemployed workers are particularly inclined to move in order to find a job. In our sample the yearly propensity to move for the employed is 4.5 percent while for the unemployed it rises to 5.6 percent. This is important because as Blanchard and Katz (1992) show, the effects of local unemployment shocks in the United States completely dissipate through migration in less than a decade. But, if as Bound and Holzer (2000) show, blacks have substantially lower population adjustments in response to demand shifts, unemployment and lower wages may persist longer among blacks. As we noted in the introduction, simple averages in our sample illustrate remarkable differences across race: the propensity to move among employed whites is 5.1 percent each year, but it increases to 9.2 percent among unemployed whites, while it increases only from 3.0 percent for employed blacks to 3.6 percent for unemployed blacks. The study of the determinants of migration among the unemployed and especially their racial differences is then of great relevance.

Table 8 shows the results of our extended regression using only a sample of unemployed. Family attachment continues to be a strong migration determinant for the unemployed. However, it is interesting to notice that while for unemployed whites the effect of family attachment is not very dissimilar from that of employed whites, the racial differential effect of both the nuclear and non-nuclear components of family attachment is substantially stronger for unemployed blacks. Family attachment deters migration especially among unemployed blacks.

This result may be related to Holzer (1987) findings on racial differences in job search methods and their effectiveness for unemployed youth. Whites tend to rely more on informal methods such as friends and relatives and direct walk-ins to business premises. When contrasting this with our findings, that family has a larger effect on unemployed blacks than on whites, we may speculate that family plays a more important role in the social network of contacts for unemployed blacks than for whites, while friends and other weaker ties play a more important role for whites. Another possible explanation, unrelated with contact networks, is that unemployed blacks while searching for a job are more economically constrained and stay with their families to

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(unreported) regressions confirm our results.

[11]In order to apply individual fixed effects in a logit context, it must be supposed that the probability of moving in a certain year is independent of having moved in past years (Greene, 1997). Strictly speaking, this is not the case in the present context because, if a person moved in the past, even controlling for all the other variables, the probability of another move is much higher. For this reason, we have also checked that our results hold using a linear probability model with fixed effects.

Table 8. LOGIT for Unemployed (dependent variable $move_{t+1}$)

	Logit Coeff.	Marg. Eff. *100	z–stat
Non-nuclear family proxy	-1.41	-4.53	-3.79
Nuclear family proxy	-0.78	-2.51	-1.80
Non-nuclear family proxy * black	-0.80	-2.59	-1.61
Nuclear family proxy * black	-1.78	-5.72	-2.91
Black	0.12	0.38	0.31
Moved the previous year	1.07	3.43	3.98
Own the house	-0.55	-1.78	-2.71
Years of education	0.14	0.45	3.46
Age <= 24	0.54	1.72	0.87
25 <= age <= 36	0.61	1.96	1.01
37 <= age <= 54	0.44	1.43	0.74
Income < 10000	-1.34	-4.30	-3.20
10000 < income < 20000	-1.19	-3.84	-2.82
20000 < income < 30000	-0.97	-3.14	-2.12
Married	0.05	0.17	0.23
Spouse's employment status	-0.75	-2.42	-2.97
Children in the household	-0.07	-0.24	-1.05
Received transfers	0.14	0.46	0.78
North East region	-0.25	-0.81	-0.88
North Central region	0.32	1.03	1.27
South region	0.20	0.64	0.84
Local unemployment rate	-0.01	-0.03	-0.34
Family mobility history	1.59	5.13	1.31
Constant	-2.46	-7.91	-2.59
Pseudo R^2: 0.175		Log Likelihood: -631.23	
Number of observations: 3,527		Number of individuals: 1,902	
χ^2: 264.04 with $Pr>\chi^2(23) = 0.00$			

Note: The z-statistics are calculated using errors that are heteroskedasticity consistent and adjusted to account for the clustered nature of the sample.
The χ^2 test is for all the explanatory variables equal to 0.
The marginal effects are calculated at the means of the explanatory variables.

save expenses such as shelter and food.

Table 8 also confirms our main result that the race dummy is not significant once we allow for the differential effect of family attachment for blacks and whites. In order to pursue further the issue whether the migration behavior of unemployed blacks and whites differs only in the effect of family attachment, we have run a regression with all explanatory variables interacted with the race dummy variable. A log-likelihood test of the null hypothesis that the two groups can be pooled is not rejected.[12] In this new regression, besides family attachment, only the interaction with age dummies is significant.

Fourth, we have tested whether our results are robust to different definitions of extended family. Our definition could pick up effects due to the size of the original nuclear family rather

[12]The test statistic is 24.19, which is less than the 90 percent critical value of a $\chi^2(18)$.

than the extended family effects. In order to address this problem we have constructed two alternative measures of the extended family. The first measure is constructed as the previous measures, but considers only individuals belonging to the nuclear family in 1968 excluding all those who subsequently joined the extended family.[13] The second measure excludes people belonging to the nuclear family. We have tested both alternative definitions of extended family attachment and in both cases our results hold.

VI. Concluding Remarks

Using tracking information from the PSID we have constructed two measures of family attachment and estimated their effect as a determinant of migration together with a number of demographic and economic variables. We find that family attachment has a strong negative effect on the probability to migrate out of a SMSA. Its effect is much higher for blacks than for whites. An average American man (e.g., in a given year an individual with mean right-hand-side variables) moves with a predicted probability that is 4.5 times larger if the extended family variable is zero than if this variable equals one. However, if the individual is white and has average right-hand-side variables, the predicted probability of moving in a given year increases 2.8 times when the individual's family attachment falls from 1 to 0, whereas if the individual is black, the predicted probability increases 11.0 times! So, the effect of family attachment is 3.9 times higher for a black than for a white individual with the same average characteristics. Family attachment is very important in the decision to migrate, but it is much more important for blacks than for whites.

The racial dummy variable is no longer significant if we allow for the differential effect of family attachment for blacks and whites. So that family attachment (both extended and nuclear) can explain most of the differential migration behavior between blacks and whites. This is a major contribution of the paper given that the previous studies could not explain the migration differences across the two races.

Our empirical analysis also confirms that economic factors play an important role in migration decisions. Unemployment increases the likelihood of migrating but the order of magnitude is considerably less than for family attachment. The effect of unemployment on the probability of moving is stronger for whites than for blacks, but this differential effect is considerably less than the differential effect of family attachment. Similarly, experiencing a fall in income raises the probability of moving, and the effect is larger for whites than for blacks. However, both the average effect and the differential effect are much smaller than for family attachment.

The fact that blacks react less than whites to economic incentives and more to the social environment may have important economic and social consequences. In particular, it may help explain the persistence of a higher unemployment rate for blacks than for whites as well as the income gap. Spilimbergo and Ubeda (2002) elaborate this idea by building a double matching

[13]Analogously to the correction we made for the main measure of family attachment, we set this measure equal to zero if the extended family consisted of only one individual.

model in the labor market and in the social environment that generates multiple equilibria. One equilibrium shows low mobility rates, high social attachment and high and persistent unemployment rates, while the other equilibrium is characterized by high mobility rates, low social attachment and low unemployment rates.

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