STABILITY AND CHANGE IN INDIVIDUAL DETERMINANTS OF MIGRATION:

EVIDENCE FROM 1985-1990 AND 1995-2000

by

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Abstract

In this paper, we compare the reliability of migration estimates from two rather different macroeconomic periods in recent U.S. history. One of these periods, 1985-1990 coincides with the culmination of a vast industrial restructuring which saw a significant decline in manufacturing employment. The other period, 1995-2000, encompasses a time of robust economic growth and tight labor markets driven by productivity gains associated with new technologies. Our interest here is in the stability of common individual-level predictors of migration in these rather disparate macroeconomic contexts. Using confidential internal versions of the 1990 and 2000 Census long-form data, we estimate logistic models of the likelihood that individuals will migrate. The geographic detail in the internal Census data permits us to measure migration in ways that are not possible with public-domain Census data on persons. We develop migration definitions that distinguish between local residential mobility likely associated with life course transitions from migration out of the labor market area that may be driven more by employment and other socioeconomic considerations. Using logistic modeling, we find that the same individual attributes predict migration reasonably well during both periods. We also compute some illustrative probabilities of migration that show temporal stability in migration predictors could be lessened by certain changes in population composition.

Key Words: Migration, United States Census

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Stability and Change in Individual Determinants of Migration: Evidence from 1985-1990 and 1995-2000

Though much has been written about factors that influence the likelihood that people move, the stability of these determinants over time has received relatively little attention. In this paper, we compare migration covariates from two rather different macroeconomic periods in recent U.S. history. One of these periods, 1985-1990 coincides with the culmination of a vast industrial restructuring which saw a significant decline in manufacturing employment. The other period, 1995-2000, encompasses a time of robust economic growth and tight labor markets driven by productivity gains associated with new technologies. Our interest here is in the stability of common predictors of migration in these rather disparate macroeconomic contexts. Using confidential internal versions of the 1990 and 2000 Censuses' long-form data, we estimate logistic models of the likelihood that individuals will migrate. The geographic detail in the internal Census data permits us to measure migration in ways that distinguish between local moves that are likely associated with life course transitions and moves out of the labor market that may be driven more by employment and other socioeconomic considerations.

Migration Periods

Our use of decennial long-form U.S. Census data for 1990 and 2000 permits us to examine two migration windows: 1985-1990 and 1995-2000. The migration periods we analyze cover two very different periods in American macroeconomic history. U.S. unemployment averaged 6.2 percent in the five years up to 1990 and 4.9 percent in the

five years prior to 2000.[1] In the sections that follow, we consider the implications of each period on migration.

1985-1990. Writers like Bluestone and Harrison (1982) have identified the 1985-1990 years as the culmination of the "deindustrialization" era. This was a time marked by an industrial restructuring that saw the closure of many U.S. manufacturing establishments, especially in the "rustbelt" of the northeast and midwest. Unlike restructuring of the 1970s and early 1980s in which production facilities moved to nonunion, southern U.S. locations (Falk and Lyson, 1988), the 1985-1990 period saw apparently irreversible flows of manufacturing activity to other countries. At that time, displacement of U.S. manufacturing workers was a serious policy concern. It is certainly conceivable that this industrial restructuring would have precipitated migration—of necessity—as displaced workers left declining industrial communities in search of other opportunities. Our interest here is the extent to which this tumultuous period might alter the effects of widely accepted factors on migration. For example, did the macroeconomic conditions increase the likelihood that older labor force participants would migrate net of other individual factors typically associated with migration? Are there other socio-demographic attributes of individuals that might operate differently in predicting migration in tough times?

1995-2000. The 1995-2000 period was a time of robust economic growth hailed by some as the advent of a New Economy (Alcaly, 2003). The unwinding industrial regime of the

[1] Source: U.S. Bureau of Labor Statistics at www.bls.gov/cps, Table 1. "Employment status of the civilian noninstitutional population, 1940 to date."

1970s and 1980s had been quickly replaced by a vibrant information sector driven by high technology, innovation, and great gains in productivity. Corporate profits rose, and investment capital abounded. A restructured labor force responded to new opportunities, resulting in tight labor markets. In the robust scenario of the late 1990s, we might expect social and demographic factors typically associated with migration to work in different ways that they would under other macroeconomic circumstances. With plentiful employment opportunities, might differences between the racial and ethnic groups in migration behavior be mitigated? Would the presence or absence of a spouse matter more or less? Would a college graduate be more likely than ever to migrate?

Only a decade apart, these two migration windows offer an interesting opportunity to revisit fundamental relationships between individual attributes and migration responses. In this paper, we compare coefficients for individual social and demographic factors in migration models for these periods of relatively good and bad times. We use confidential, internal Census long-form data for the 1990 and 2000 decennial censuses. The detailed data allow us measure important individual and household attributes such as key family life course points that might facilitate or discourage migration. The geographic detail in the data permits us to define migration in socioeconomic terms that capture movement within and between local labor markets. This flexibility in measuring migration means that we can move beyond convention that treats movement out of an origin county as migration. Instead, we can define migration in terms of movement out of a local labor market area (counties bound together by strong commuting relationships).

The findings have potentially important implications for migration research. On the one hand, if we find substantial differences in the effects of individual determinants of migration across a decade, this would suggest increased attention to individual factors in migration analysis. On the other hand, should we find relatively stability in individual determinants across time, subsequent researchers should attend more to macro-level factors such as economic conditions and community push-pull factors that shape migration opportunities for individuals.

Individual Determinants of Migration

Age is a widely acknowledged predictor of migration (Long, 1972; Jamieson, 2000). Young adults are most likely to migrate. Adults over age 65 also have a high likelihood of migration as they resettle near home and family. If the hard times of the latter 1980s impacted migratory behavior, we might expect the relationship between age and migration at that time to be weaker than at other times. That is, persons of all ages may have been more likely to migrate in search of new opportunities.

Education is another factor often found to be associated with the propensity to migrate. Long (1972, 1992) has found that persons with more than a high school education were much more likely to be mobile that were persons with less education. We surmise that the knowledge emphasis in the New Economy period (1995-2000) might lead to even higher valuation of advanced skills and even more migration by the highly educated. It may also be the case that the impact of deindustrialization during the 1985-1990 period caused less

educated persons to be more likely to migrate than they would be in less economically volatile times.

Race and ethnicity have also been found to have small, but persistent effects on the likelihood of migration. South (1998) and South and Crowder (1996, 1999) show racial differences in migration. Others have found race and ethnicity to be anchoring factors that limit mobility, especially when the place of current residence has a strong ethnic identity or large minority population (Breton, 1970; Kobrin and Speare, 1983; Clark, 1992). In the two contrasting periods we study here, we might expect race and ethnicity to matter less in migration behavior in stark times as local industrial opportunities dry up for all residents. In the context of the New Economy, race and ethnicity could matter more because prevailing stereotypes do not attribute knowledge and technological skills to minority groups. Or, might the tight labor markets of a robust period render race and/or ethnicity less important factors in migration?

There is evidence that adults living in the state in which they were born are less likely to be long-distance migrants. White and Mueser (1998) posit that persons living outside their state of birth are less committed to their present residence and more likely to be mobile. This, too, may be a conventional migration predictor that breaks down in times of major industrial transformation.

Household attributes have also been found to be important to migration (Long, 1972; Sandefur and Scott, 1981). A migration decision is presumably simpler in a single-adult household than in a two-adult household. Thus, marital status is one important factor. Long (1972, 1992) calls attention to key life course points that may result in greater or lesser likelihoods of migration. Significant life course events include birth of first child, oldest child reaching school age, and oldest child starting high school. At the onset of the oldest child's schooling, Long suggests that that households may relocate within a locality to a perceived better school district. And, households with children in high school are far less likely to move. We will test whether these household attributes retain their predictive value in two contrasting contexts—one of industrial restructuring and one of a booming new economy.

Research Design

Census Measurement of Migration.

A key issue in the analysis of migration decisions among U.S. residents is the definition and operationalization of migration. The U.S. Census Bureau defines migration as a change of residence that involves a move across county boundaries (U.S. Census Bureau 2003). Although this definition is often employed in county-level ecological studies of migration (Irwin et al. 2004), researchers conducting analyses at the individual level do not make much use of this definition because public-domain Census microdata sources, such as the Current Population Survey (CPS) and the Public Use Microdata Samples (PUMS) from the decennial census, identify counties only for the largest metropolitan

areas. Thus, county moves are not indicated in public microdata for medium to small metropolitan areas and nonmetropolitan areas. An additional concern is that county boundaries may be arbitrary delimiters of migration measurement. Metropolitan areas residents may move across county boundaries without changing employers or relinquishing memberships in social organizations such as churches or voluntary associations.

Among public-domain data analysts, a more common approach is to define migration based on state rather than county boundaries (for examples, see Gurak and Kritz 2000 and Kritz and Gurak 2001). In these studies, migration is defined as a move that crosses a state line. To be sure, public use microdata commonly include current and prior state of residence. However, interstate migration represents only one piece of the broader migration picture. Recent migration statistics from the 2000 Census indicate that among internal migrants only 46.8% are interstate migrants (U.S. Census Bureau 2003). The other 53.2% of migrants (25.3 million persons) is comprised of intrastate migrants who have moved between counties. In addition, state-based definitions may be biased by the geographic size of states and/or counties. Many interstate moves along the U.S. Atlantic Coast, such as a move between Connecticut and Massachusetts, occur over a relatively short distance as compared to moves within larger states.[2]

[2] Distance based measures have also been employed in some cases for longitudinal survey data that collect detailed place of residence information. For example, Yankow (2002) employs a distance based measure using the 1979 National Longitudinal Survey. Unfortunately, nationally representative data of the U.S. population do not include such detailed indicators.

An additional operational definition for migration employs the use of county groupings defined by metropolitan area classifications or Public Use Microdata Areas (PUMAs). Metropolitan areas represent a useful geography in that metropolitan areas often represent geographically bounded labor markets and improve upon arbitrary county definitions. However, population thresholds required for the release of metropolitan area identifiers in publicly available data sources limit the use of this geography to those persons whose migration origin or destination was in one of the larger metropolitan areas. Records for survey respondents residing in smaller metropolitan areas, micropolitan areas, or nonmetropolitan areas do not contain these identifiers due to confidentiality requirements.

To address this issue, the U.S. Census Bureau has created public use microdata areas (PUMAs). Outside of the largest metropolitan areas, PUMAs are comprised of county groups. In the 2000 PUMS one-percent file, 'Super-PUMA' geographic units contain a minimum population of 400,000 persons. Thus, PUMAs in micropolitan and nonmetropolitan territory may encompass very large geographic areas. For the five-percent PUMS, PUMAs contain a minimum of 100,000 persons. In some cases, PUMA geographies may follow meaningful local boundaries, such as municipal limits, major transportation routes, and geographic or topological features. For the vast majority of U.S. territory, however, PUMAs are often comprised of a number of counties merged into a convenient spatial unit to satisfy an arbitrary population threshold.

To overcome the limitations of migration definitions employed in prior studies, we define migration using commuting zones (Tolbert and Sizer 1996). A commuting zone consists of one or more counties that are linked economically and socially by commuting patterns with no minimum population requirement. Thus, counties are grouped together in a socially and economically meaningful way. Commuting zones are defined using cluster analysis techniques described elsewhere (see Tolbert and Sizer 1996). The central strength of this geography is that commuting zones are comprised of a contiguous group of counties and the boundaries for these zones are estimated uniformly for all counties in the U.S. We define migration using commuting zone definitions derived from 1990 and 2000 decennial census commuting data.

Using the commuting zone to bound migration and differentiate it from local residential mobility, we operationalize *migrants* as those who move between commuting zones. *Local movers* are those who change residences within the commuting zone. *Stayers* reside in the same housing unit for both points time (either 1985 and 1990 or 1995 and 2000). We view migrants as making longer distance, employment-based moves that likely require affiliation with new employers, building new social networks, and membership in new organizations (e.g., churches, associations, clubs). Local movers are likely motivated by life course events (e.g., a move to a different school attendance zone). Bounding migration by commuting patterns improves on the arbitrary character of some migration definitions (e.g., those that simply define migration as an inter-county move).

Data and Analytic Techniques

To address our research questions, we examine confidential individual-level migration data from the 1990 and 2000 decennial census. Our analyses are conducted under special agreement with the U.S. Census Bureau at the Census Research Data Center at the Chicago Federal Reserve Bank. Confidential versions of decennial census data include the same data items as public versions. But, confidential U.S. Census data have additional information that give us two key advantages over 1990 and 2000 public-use microdata samples. First, these data contain detailed geographic information on current residence and place of residence five years prior to the decennial census. These identifiers provide a means to identify the commuting zone of residence at the time of data collection and five years prior regardless of its population. Second, we employ all long- form respondents (about 16 percent of the population) that meet the criteria outlined below. Public-use microdata are limited to one-percent and five-percent samples. The 1990 and 2000 long-form samples contain information on approximately one in six persons in the U.S. population and are the largest samples of the U.S. population containing socioeconomic data relevant to migration studies. A large sample is especially useful in our study because the intent of the long-form sample is to measure local (small area) population characteristics. This local detail is valuable because the data are representative locally as well as nationally.

We focus our analysis on the U.S. working age population in 1990 and 2000. Because the census migration questions asks persons where they lived five years prior to the decennial census (i.e. 1985 for the 1990 Census and 1995 in the 2000 Census), we

analyze data on all persons who are at least 20 years of age, but less than 60 in 1985 and 1995. We also limit our analysis to persons residing within the continental United States at the time of the decennial census and five years prior. Given these inclusion criteria, our unweighted samples contain information on 19.5 million persons in 1990 and 22.1 million in 2000. [3]

The key dependent variables in our analysis are binary items indicating whether or not the person is a stayer (i.e., same housing unit) or local mover (i.e., changed residences within the commuting zone), a stayer or migrant (i.e., changed commuting zones), and a local mover or a migrant. We model these outcomes using logistic regression techniques that compare stayers versus local movers (coded one), stayers versus migrants (coded one), and local movers versus migrants (coded one). Based on this coding scheme, all coefficients reported for our independent variables are interpreted as the likelihood of migrating.

We draw our independent variables from prior research on U.S. internal migration studies. These measures include individual-level characteristics and measures of family composition. Our individual level measures include race/ethnicity, nativity, sex, education, age, marital status, and the presence of children. We measure race/ethnicity using two binary variables. The first measure identifies whether or not the individual is black (1=black, 0=non-black). Our second binary indicator categorizes individuals based on Hispanic origin (1=Hispanic, 0=not Hispanic). Nativity is measured based on whether

[3] Like all migration definitions based on the Census five-year question, our operationalization of migration still has its limitations (Morrison, et al. 2004).

or not the person lives in the state in which they were born (1=live in state of birth). We control for gender using a binary measure where 1=female and 0=male. Education is measured using an indicator of whether or not the individual has graduated from college (1=college graduate, 0=not college graduate). Age is measured as continuous variable. In our analyses, we perform a log transformation on our age measure because of nonlinearities in the relationship between age and propensity to migrate identified in prior studies.

In terms of individual determinants, life course variables should be very important (Long, 1972; 1992). Our measures of family composition include marital status and the age of the oldest child. Marital status is measured using a binary measure where 1=married and 0=not married. The age of the oldest child is categorized using five binary measures that identify the age of the oldest child during the five years prior to the 1990 or 2000 decennial census. The contrast category in our models are persons with no own children in the household. The remaining four categories include: 1) persons whose oldest child was born during the five year period (age 0-4), 2) persons whose oldest child started school during the five year period (5-9), 3) persons whose oldest child entered middle school (10-14), and 4) persons whose oldest child started high school (15-17).

Analysis and Results

In our analysis, we developed a migration database consisting of persons at risk of migration during the five-year periods for which information is available on the 1990 and 2000 Census long form. These periods were 1985 to 1990 and 1995 to 2000. Basic

statistics on migrants and non-migrants are presented in the next section. Table 1 compares the 1990 and 2000 U.S. adult population in terms of migration behavior, individual attributes, and a set of life-course items. These persons were at least age 20 in 1985 or 1995 and no more than age 65 in 1990 or 2000. In terms of unweighted counts, the 1990 migration base sample consists of roughly 19.5 million persons. The 2000 sample is larger at 22 million.

In the discussion that follows, we employ the term *stayers* to refer to those living in the same house at both measurement points in the migration window (i.e., in both 1985 and 1990 or in 1995 and 2000). *Local movers* are those who moved within the local labor market area. We refer to those who moved to another labor market area as *migrants*. In our logistic modeling strategy, we make three comparisons of these groups: 1) stayers versus local movers, 2) migrants versus stayers, and 3) migrants versus local movers.

The upper panel of Table 1 shows percentages of these base populations in terms of exhibited migration behavior. More than half of the population shows no change in residence; i.e., they are stayers. In 1990, 55.3 percent of the base population reported no migration (i.e., same house of residence since 1985). In 2000, this percentage increases slightly to 56.7 percent. Of those who do report a move during the five-year intervals, most are local movers, relocating within the labor market area (30.7 percent in 1990 and 30.4 percent in 2000). The least likely migration behavior is move out of the labor market area. Migrants constitute only 14 percent in 1990 and 13 percent in 2000. The proportions

of the adult population exhibiting these various migration behaviors are strikingly constant across these rather different macroeconomic time periods.

The middle panel of Table 1 compares the 1990 and 2000 adult populations in terms of a set of individual attributes. Like the migration behaviors just discussed, these personal attributes differ little from year to year, suggesting substantial reliability in measurement. Within time periods, the migration subpopulations do differ in some interesting ways. The stayers (same house) are older on average than those reporting local moves or out-of-market migration. Stayers show an average age in the mid-forties while the movers and migrants are in their mid-thirties. In terms of race, African Americans are the least like to move out of the labor market. Hispanics are slightly more likely to move within the area than are non-Hispanics. Both stayers and local movers are much more likely than out-of-market movers to be living in their state of birth. Out-migrants are slightly less likely to be female, but far more likely to be college graduates. Persons leaving the market area are also the least likely to be married with spouse present.

Taken together, these individual attributes provide clues to those who are likely to exhibit these various migratory and non-migratory behaviors. Persons staying in the same residence are older, very likely living in their state of birth, less likely to be college graduates, and most likely to be married with spouse present. Local movers are younger and less likely to be married with spouse present. Like the stayers, though, those moving within the market are very likely to be living in state of birth. Persons reporting migration out of the labor market tend to be younger and not living in state of birth. They exhibit

the highest proportion of college graduates in our migration sample and, while more than half report being married with spouse present, the percentages are lower than those of the other migration groups.

The lower-most panel of Table 1 compares the migration groups in terms of some key life-course events that should be associated with the propensity to migrate. In terms of the oldest child being born between 1985 and 1990 or between 1995 and 2000, local movers and migrants are more likely than stayers to report such an event. The local movers and out-of-market migrants are also more likely to report that the oldest child in the family started school during the period. The percentages of persons with oldest children starting middle school are similar across the three migrant types. The oldest child starting high school clearly has an anchoring effect in both our migration samples. Onset of high school is reported by larger percentages of residential stayers than movers of any sort.

Discussion of Models.

We present odds ratios in Table 2 for three sets of comparisons: stayers versus local movers, stayers versus migrants, and local movers versus migrants. We also indicate which pairs of 1985-90 and 1995-2000 coefficients are significantly different from one another. The test we use is a test for maximum likelihood coefficients recommended by Brame et al. (1998). To be sure, virtually all the differences are statistically significant due to the very large sample sizes. But, in all but one or two comparisons, the absolute differences in coefficients have little substantive significance. The relative stability of

these coefficients and associated probabilities over time will become central to our discussion.

Stayers versus Local Movers. The first of three comparisons we make with our models is the contrast between those who did not move at all between 1985 and 1990 or 1995 and 2000 and those who changed houses, but moved within the local labor market. The stayers are coded zero, and the local movers are coded one. Odds ratios for variables associated with non-movers versus within-market movers are presented in the leftmost panel of Table 4. Between 1985 and 1990, 55 percent of the sample did not move at all while 31 percent moved within the labor market area. Quite similarly, between 1995 and 2000, 57 percent did not move, and 30 percent moved within the area. In both decades, the largest effect is a life-course item: birth of the oldest child during the migration period. Persons reporting such an event were far more likely to move within the labor market area than were persons without children. The odds ratio for such a move between 1985 and 1990 is 1.85, and the odds ratio for the same move between 1995 and 2000 is 1.73. Though the odds ratios are very similar, the difference in the underlying regression coefficients is statistically significant. Other factors associated with an increased likelihood of making a local move (i.e., odd ratios >1) are oldest child starting school during the five-year migration window, being a college graduate, and being Hispanic. These measures, too, are relatively stable across the two decades.

Barely greater than zero (0.08), the log of age item is the best predictor of no move at all in both decades. Increases in age are associated with much lower likelihoods of moving,

even within the local area. The odds ratios are the same for the 1985-1990 and the 1995-2000 periods. Being married, having the oldest child start high school, and living in the state of birth are factors associated with a greater likelihood of being a stayer when compared to moving with the labor market area. With the exception of age, all the pairs of regression coefficients differ statistically from one another.

On balance, despite being significantly different, the absolute magnitudes of the difference in the odds ratios across time are quite small. The pattern of relationships exhibits substantial temporal consistency. There is only one sign change. Being black changes from a slight dampening effect (0.95 for 1985-1990) to a slight facilitating effect (1.05) on the likelihood of moving locally contrasted with staying in the same residence.

Stayers versus Migrants. The middle panel of Table 4 displays 1985-1990 and 1995-2000 odds ratios that contrast persons who did not move with those who moved out of the labor market area. Stayers are coded zero. Migrants, who represent 14 percent of the 1990 sample and 13 percent of the 2000 sample, are coded one. The regression coefficients on which the odds ratios are based all differ from one another in statistically significant, but substantively minor ways. The best predictor of being a migrant—in both decades—is being a college graduate (odds ratios of 1.50 and 1.57). Generally, there is a small reduction over time in the magnitude of life course effects on migration. This is the most apparent in the case of birth of the oldest child during the migration window. This is second-most influential effect on the propensity to migrate. College graduate and birth of the oldest child are the only individual attributes that enhance the likelihood of migration

out of the labor market area as opposed to staying in the same house. This is the case for both time periods.

Log of age again proves to be a powerful inhibitor of migration when compared to staying in the same residence. The odds ratios are uniformly small (0.05 and 0.04) in both periods. Living in state of birth also dampens the likelihood of being a migrant in a relatively consistent way across time. Being Hispanic and/or black also is associated with a lower likelihood of migration. These odds ratios, too, are similar in magnitude in both decades.

This comparison of stayers and migrants does show one temporal difference of note. In 1990, having the oldest child starting high school had only a modest (0.87) effect on being a migrant. In 2000, though, the odds ratio for this life-course effect is 0.55, indicating a greater likelihood of staying in the same residence. We surmise that this reflects the economic turbulence of the 1980s and the robustness of the 1990s. In harder times, the need to move out of the labor market may trump even having a child start high school.

Local Movers versus Migrants. The last comparison is that of persons who moved within the local labor market (coded zero) and those who moved out of the area (coded one). Hence, the third panel in Table 3 presents data on persons who changed residences between 1985 and 1990 or between 1995 and 2000. As we observed in the comparison of stayers and migrants above, having a college degree makes a person much more likely to

leave the labor market area (odds ratios of 1.50 in 1990 and 1.55 in 2000). This relationship varies little over time. Like the results presented above, there is a general trend toward a slight reduction in the effects of our life course items over time. This is best seen in the case of birth of the oldest child. In this migrant-local mover comparison, however, the effect actually changes direction over time. In 1990, the odds ratio of 1.33 indicates that having the oldest child start high school enhances the likelihood of migration relative to people without children present. Not so by 2000, as the 0.73 odds ratio shows that the child in high school reduces the chances of migration out of the area. Again, it is our conjecture that this change in the effects of an important life-course effect is a product of the divergent macroeconomic trends that characterized the 1980s and the 1990s. The robust economy of the 1990s enabled more individuals attached to communities to remain and prosper in place. In the two sets of models that include out-of-market migrants, having the oldest child enter high school during the migration window clearly dampens the likelihood of leaving the area more so in the 1995-2000 period than in the 1985-1990 period. The only other item associated with an increased propensity to migrate is married, spouse-present (odds ratio = 1.11). However, this effect holds only for the 1995-2000 period as the odds ratio for 1985-1990 is 0.92. Though this is another example of a change in coefficients over time, the 1990 and 2000 odds ratios for married, spouse-present are both close to zero and do not suggest a magnitude of change such as that observed for the oldest child starting high school variable.

The remaining items in the contrast of migrants with local movers show patterns much like those in the models for migrants and stayers. Living in state of birth substantially

diminishes the prospects of out-of-market migration in a similar fashion in both time periods. Likewise, log of age exhibits dampening effects for 1985-1990 and 1995-2000. Though of less magnitude in effect, the race and ethnicity items are clearly associated with a lower likelihood of migration out of the area. The effects of being black or Hispanic are quite constant over time. In the section that follows, we further illustrate these model results by computing some predicted probabilities of migration for persons of various attributes. The preponderance of the coefficients suggests stability over time in U.S. migration behavior. Still, it is certainly the case the models also suggest that different people behave in different ways. In the next section, we use illustrative probabilities of migration to show how variations in population composition might bring about temporal changes in migration behavior.

Estimated Migration Probabilities. Using the coefficients from the models in Table 2, we present estimated migration probabilities of migration in Table 3. The probability estimates assume that the individual is female, lives in her state of birth, is a college graduate, and is married with spouse present. Attributes that vary in the table are age, race, ethnicity, and occurrence of a key life course event. The point of comparison in each instance is the relatively dissimilarity or similarity of coefficients for 1990 and 2000.

To illustrate, consider the first column of probabilities. The 1990 model yields a 0.657 probability that a married, white, non-Hispanic college-educated female living in the state of her birth who is age 30 and whose oldest child was born between 1985-1990 would

have moved within the local labor market during that time. The corresponding probability for a person with the same attributes in 2000 is a very similar 0.635. Holding those personal attributes constant, we make a comparison of the likelihood of move out of the labor market versus no move in the center portion of the first column. The probability of such a move between 1985-1990 is 0.351 compared to a probability for 1995-2000 of 0.391. Thus, such a person was slightly more likely to move out of the labor market in the latter period. The lower pair of probabilities in Table 3 corresponds to the likelihood of a move out of the labor market versus a move within the labor market. The 2000 coefficient is also slightly higher in that comparison as well.

The second column of probabilities in Table 3 varies only the person's the age (set at 35) and life course event (oldest child starts school). The dampening effect of the life course event is clearly evident in the decline in likelihood of within market movement versus no move. The probability for 1990 is 0.444 and a very similar 0.431 for 2000. There is not much evidence of a temporal difference in the impact of this key life course event on migration in the other within-column comparisons. The oldest child starting school clearly has an anchoring effect on the illustrative individual.

The remaining columns of Table 3 vary race and ethnicity in addition to age and life course event. The pattern of probabilities observed for white non-Hispanic females generally holds, however, for Hispanic and black females. Most notably, we continue to observe only very small changes in the probability of migration from one decade to the next. Within population groups defined by these key personal attributes we should expect

to see stability in fundamental relationships with migration behaviors. Still, important differences can be observed among sub-populations. This suggests that compositional shifts in population will continue to be important in understanding migration trends.

Conclusion

The central research question addressed in our analysis is the relative stability of individual determinants of migration among working age Americans. We compared the likelihood of migration across two unique economic milieus: the industrial restructuring of the 1980s and the new economic prosperity of the 1990s. Drawing on decennial census data for 1990 and 2000, we performed a trend analysis to better understand the types of mobility undertaken by various segments of the population. Our analyses have a number of important methodological, theoretical, and development policy issues for studies of migration.

In terms of measurement, our methodological contribution in this paper is a new operationalization of the concepts of residential mobility and migration. We argue that the use of commuting zones as boundaries better captures the concept of migration because migration definitions are often based rather arbitrarily on crossing county or state lines. While persons may move across a county or state boundary, they may also remain in the same local economic area and maintain the same social network, economic, and organizational attachments prior to the move. Take the household that makes an inter-county move within a metropolitan area to locate near a desirable suburban school. Even though these local movers have changed residences, they may not have changed

employers or left associations and organizations such as clubs and churches. Thus, our definition provides a methodologically refined definition of internal migration that better differentiates a local housing change from a true change in the locus of social and economic activity.

Our findings also provide an important contribution to our current understanding of internal migration trends. One of the most persistent findings across our models is that with few exceptions the effects of residential mobility and migration covariates are quite consistent across time. In both our descriptive and regression analyses, few statistics change substantially across time. Although the economic conditions of each period vary substantially, our findings suggest that the overall propensity to migrate changed only slightly between the two periods. Moreover, similar individuals largely exhibit the same migration behavior at both points in time. As our analysis of probabilities indicates, this consistency in the effects of individual factors on migration is unlikely to change unless the underlying composition of the population at risk changes.

Our findings suggest less emphasis on individual attributes and more focus on macro–level factors such as changing population composition, push and pull features of communities, and macroeconomic changes. In other words, to better understand individual migration behavior, we need to contextualize it. Such a perspective would include multilevel analyses of migration that model interaction between local context and individual-level characteristics as well as direct influence of macro-level structure on micro-level behavior. The results of our work here establish that, despite widely varying

national economic conditions, individual migration behavior is quite stable over time. This does not mean, however, that such behavior is invariant across places. The study of local context, population composition, and individual variation holds promise for clarifying factors that influence American migration patterns.

References

Alcaly, R. 2003. *The New Economy*. New York: Farrar, Straus, and Giroux.

Bluestone, B. and B. Harrison. 1982. *The Deindustrialization of America*. New York: Basic Books.

Brame, Robert, R. Paternoster, P. Mazerolle, and Alex Piquero. 1998. "Testing for the Equaltiy of Maximum-Likelihood Regression Coefficients Between Two Independent Equations." *Journal of Quantitative Criminology* 14: 245-261.

Clark, W. A. V. 1992, "Residential preferences and residential choices in a multiethnic context", *Demography*, 29(3), pp. 451-466.

Falk, W. and T. Lyson. *High Tech, Low Tech, No Tech: Recent Industrial and Occupational Change in the South*. Albany, NY: SUNY Press.

Gurak, D. and M. Kritz. 2000. "The Interstate Migration of U.S. Immigrants: Individual and Contextual Determinants." *Social Forces* 78(3):1017-1040.

Irwin, M., T. Blanchard, C. Tolbert, T. Lyson, and A. Nucci. 2004. "Why People Stay: The Impact of Community Context on Nonmigration in the USA." *Population* 59(5):653-682.

Jamieson, L., 2000, "Migration, place and class: youth in rural areas", *The Sociological Review*, pp. 203-223.

Kobrin, F. E. And A. Speare Jr., 1983, "Out-migration and ethnic communities", *International Migration Review*, 17(3), pp. 425-444.

Kritz, M. and D. Gurak. 2001. "The Impact of Immigration on the Internal Migration of Natives and Immigrants." *Demography* 38(1):133-145.

Long, L., 1992, "Changing residence: Comparative perspectives on its relationship to age, sex, and marital status", *Population Studies*, 46(1):141-158.

Long, L., 1972, "The influence of number and ages of children on residential mobility", *Demography*, 9(3), pp. 371-382.

Morrison, Peter, T. Bryan, and D. Swanson. 2004. "Internal Migration and Short-Distance Mobility." Pp. 493-522 in Jacob S. Siegel and David A. Swanson (eds.), *The Methods and Materials of Demography*.

Sandefur, G. D. and W. J. Scott, 1981, "A dynamic analysis of migration: An assessment of the effects of age, family and career variables", *Demography*, 18(3), pp. 355-368. New York: Elsevier Academic Press.

South, S. J., 1998, "Leaving the 'hood: Residential mobility between black, white, and integrated neighborhoods", *American Sociological Review*, 63(2), pp. 17-26.

South S. J. and K. D. Crowder, 1999, "Escaping distressed neighborhoods: Individual, community, and metropolitan influences", *American Journal of Sociology*, 102(4), pp. 1040-1084.

South S. J. and K. D. Crowder, 1996, "Residential mobility between cities and suburbs: Race, suburbanization, and back-to-the-City moves", *Demography*, 34(4), pp. 525-538.

Tolbert, C. and M. Sizer. 1996. *U.S. Commuting Zones and Labor Market Areas: A 1990 Update*. ERS Staff Paper Number 9614. Economic Research Service, Rural Economy Division, U.S. Department of Agriculture, Washington, D.C.

U.S. Census Bureau. 2003. *Geographical Mobility: 1995 to 2000*. Census 2000 Brief (C2KBR-28). U.S. Department of Commerce, Economics and Statistics Administration, Washington, D.C.

White, M. J. and P. R. Mueser, 1988, "Implications of boundary choice for the measurement of residential mobility", *Demography*, 25(3), pp. 443-459.

Yankow, J. 2002. "Does Distance Matter? A Comparison of Boundary and Distance-Based Measures of Internal Migration." *Journal of Economic and Social Measurement* 28(3):161-175.

Table 1. Description of Samples, Migration Sub-Samples, and Individual Attributes

	Total Population Contiguous United States Ages 20-60 1985/1995			Migration Behavior During Five-Year Period								
				Persons Not Moving (Same House)			Persons Moving Within Labor Market			Persons Moving Out of Labor Market Area		
	1990	2000	Change	1990	2000	Change	1990	2000	Change	1990	2000	Change
Sample Sizes (in thousands)	19,458	22,084	2,626	10,759	12,522	1,763	5,972	6,714	742	2,727	2,849	122
Percent of Total Sample Microdata	100%	100%	0%	55.3%	56.7%	1.4%	30.7%	30.4%	-0.3%	14.0%	12.9%	-1.1%
Individual Attributes:												
Percent Black	11.2%	11.6%	0.4%	11.2%	11.3%	0.0%	12.1%	13.2%	1.2%	9.1%	9.0%	-0.2%
Percent Hispanic	9.5%	10.5%	0.9%	8.9%	9.4%	0.4%	11.2%	13.1%	1.9%	7.9%	8.6%	0.6%
Percent Living in Same State of Birth	55.1%	53.1%	-2.1%	60.7%	57.6%	-3.0%	57.5%	54.1%	-3.4%	29.8%	31.6%	1.8%
Percent Female	51.1%	51.3%	0.2%	52.4%	52.1%	-0.3%	50.5%	50.7%	0.1%	47.2%	49.3%	2.2%
Percent Graduating College	22.4%	26.5%	4.2%	19.8%	24.5%	4.7%	21.9%	24.9%	3.0%	32.8%	38.9%	6.1%
Average Age	40.3	41.7	1.4	44.2	45.1	1.0	36.4	38.0	1.6	36.1	37.5	1.4
Percent Married, Spouse Present	66.1%	63.6%	-2.4%	71.3%	69.2%	-2.1%	60.7%	56.2%	-4.5%	58.8%	58.6%	-0.2%
Percent with Oldest Child:												
-Born During Period	7.8%	7.0%	-0.8%	4.0%	3.8%	-0.2%	12.7%	10.9%	-1.8%	11.3%	10.9%	-0.3%
-Starting School During Period	10.8%	10.5%	-0.3%	8.3%	8.3%	0.0%	14.3%	13.6%	-0.7%	12.2%	12.1%	-0.1%
-Starting Middle School During Period	12.5%	13.2%	0.7%	12.3%	13.1%	0.8%	13.4%	13.9%	0.6%	11.0%	11.7%	0.7%
-Starting High School During Period	18.4%	17.3%	-1.1%	21.2%	20.3%	-1.0%	14.0%	14.8%	0.8%	17.9%	11.2%	-6.7%
Percent Without Child Present in 1990/2000	50.5%	52.0%	1.5%	54.2%	54.5%	0.3%	45.7%	46.8%	1.1%	47.7%	54.2%	6.4%

Table 2. Odds Ratios for Models Contrasting Various Types of Migration and Non-Migration

	Type of Migration								
	Stayers vs. Local Movers			Stayers vs. Migrants			Local Movers vs. Migrants		
	Odds Ratio			Odds Ratio			Odds Ratio		
Parameter	1990	2000		1990	2000		1990	2000	
Black	0.95	1.05	*	0.64	0.72	*	0.72	0.72	
Hispanic	1.09	1.10	*	0.60	0.57	*	0.55	0.53	*
Living in Same State of Birth	0.76	0.78	*	0.24	0.30	*	0.31	0.38	*
Female	0.94	0.95	*	0.87	0.93	*	0.91	0.98	*
College Graduate	1.06	1.04	*	1.50	1.57	*	1.50	1.55	*
Log of Age	0.08	0.08		0.05	0.04	*	0.59	0.58	*
Married, Spouse Present	0.72	0.65	*	0.71	0.81	*	0.92	1.11	*
Oldest Child Born During Period	1.85	1.73	*	1.46	1.22	*	0.82	0.75	*
Oldest Child Starting School During Period	1.15	1.12	*	0.95	0.79	*	0.85	0.75	*
Oldest child Starting Middle School During Period	0.95	0.94	*	0.79	0.67	*	0.87	0.76	*
Oldest Child Starting High School During Period	0.74	0.80	*	0.87	0.55	*	1.33	0.73	*
-2 log L	19918795	22779852		11495848	12436899		10645603	11329675	

*p < 0.05 for test for difference between two maximum likelihood regression coefficients.

Table 3. Estimated Migration Probabilities for Females by Attributes, Year, and Type of Move

		Attributes of Person					
		Constant: Female, Lives in State of Birth, College Graduate, Married Spouse Present					
	Age	30	35	30	35	30	35
	Race	White	White	White	White	Black	Black
	Ethnicity	Non-Hispanic	Non-Hispanic	Hispanic	Hispanic	Non-Hispanic	Non-Hispanic
Type of Migration	Life Course	Oldest child born	Oldest child starts school	Oldest child born	Oldest child starts school	Oldest child born	Oldest child starts school
Stayers vs. Local Movers	1990	0.657	0.444	0.676	0.465	0.645	0.431
	2000	0.635	0.431	0.657	0.454	0.647	0.444
Stayers vs. Migrants	1990	0.351	0.182	0.245	0.118	0.257	0.125
	2000	0.391	0.204	0.266	0.126	0.316	0.156
Local Movers vs. Migrants	1990	0.226	0.219	0.139	0.134	0.174	0.168
	2000	0.265	0.249	0.161	0.150	0.206	0.193