Finance and Economics Discussion Series
Divisions of Research & Statistics and Monetary Affairs
Federal Reserve Board, Washington, D.C.

Declining Migration Within the US: The Role of the Labor Market

Raven Molloy, Christopher L. Smith, and Abigail Wozniak

2013-27

NOTE: Staff working papers in the Finance and Economics Discussion Series (FEDS) are preliminary materials circulated to stimulate discussion and critical comment. The analysis and conclusions set forth are those of the authors and do not indicate concurrence by other members of the research staff or the Board of Governors. References in publications to the Finance and Economics Discussion Series (other than acknowledgement) should be cleared with the author(s) to protect the tentative character of these papers.

Declining Migration within the US: The Role of the Labor Market

Raven Molloy
Federal Reserve Board of Governors

Christopher L. Smith
Federal Reserve Board of Governors

Abigail Wozniak
University of Notre Dame, NBER and IZA

April 2013

Abstract

We examine explanations for the secular decline in interstate migration since the 1980s. After showing that demographic and socioeconomic factors can account for little of this decrease, we present evidence suggesting that it is related to a downward trend in labor market transitions—i.e. a decline in the fraction of workers moving from job to job, changing industry, and changing occupation—that occurred over the same period. We explore a number of reasons why these flows have diminished over time, including changes in the distribution of job opportunities across space, polarization in the labor market, concerns of dual-career households, and a strengthening of internal labor markets. We find little empirical support for all but the last of these hypotheses. Specifically, using data from three cohorts of the National Longitudinal Surveys spanning the 1970s to the 2000s, we find that wage gains associated with employer transitions have fallen, possibly signaling a growing role for internal labor markets in determining wages.

Disclaimer: Any opinions and conclusions expressed herein are those of the authors and do not indicate concurrence with other members of the research staff of the Federal Reserve, the Board of Governors, or the U.S. Census Bureau. All results have been reviewed to insure that no confidential information is disclosed.

Acknowledgements: Wozniak would especially like to thank Frank Limehouse and the team at the Chicago Census Research Data Center for assistance with the restricted National Longitudinal Surveys. Ning Jia (University of Notre Dame) also provided invaluable research assistance. The authors would like to thank seminar and conference participants at Temple University, the University of Notre Dame, the Federal Reserve System conference on Regional Analysis, and the 2012 Census Research Data Center Researcher conference.

I. Introduction

Declines in internal migration since the mid-2000s have attracted the attention of researchers and the public because they coincided with a dramatic housing market contraction and deep economic recession (Batini et. al. 2010, Frey 2009, Kaplan and Schulhofer-Wohl 2012b). In earlier work, we demonstrated that these declines are in fact the continuation of a longer-run trend rather than a cyclical phenomenon (Molloy, Smith and Wozniak 2011). Specifically, internal migration within the United States has fallen continuously since the 1980s, reversing the upward trend that occurred earlier in the 20th century. We also found that the decline in migration within the US since 2000 was not shared by most other advanced European countries, suggesting that it does not reflect a more general phenomenon among advanced economies. Falling migration may be troubling if it is symptomatic of a broader decline in dynamism within the United States. Some have noted a secular downtrend in the amount of "labor market churning" in the form of lower job creation and destruction rates, worker flows between jobs, and flows between labor market states (Faberman, Davis, Haltiwanger 2012; Hyatt and Spletzer 2013), and declining internal migration may be another product of the same underlying phenomenon. Perhaps less troubling, declining internal migration could simply be an expected outcome of demographic trends such as the aging of the population. The decline in migration might even warrant optimism rather than concern if it signals improved matching between individuals and their jobs and locations, and consequently a more efficient allocation of workers across the US.

In this paper, we assess explanations for the secular decline in migration, focusing on factors that may have played a role throughout the entire thirty year period.[1] It is of course

[1] We use the terms "secular" and "long-term" trend to emphasize that the decline in migration is not cyclical and has lasted for a considerable period of time. Of course, thirty years is still a relatively short period in the context of US

possible that the factor primarily responsible for depressing migration may have changed over the three decades that are our focus. However, a natural starting point is to examine ideas that can account for a large portion of the entire time period in question.

We begin by summarizing the contributions of a number of demographic and socioeconomic factors to the change in migration from the 1980s to the 2000s in a simple Oaxaca decomposition framework. We find very different results for long-distance (inter-state) migration and short-distance (within county) migration. For within-county migration, compositional changes in age, homeownership, and other observable characteristics explain much of the decline since the 1980s. By contrast, changes in demographics only explain a small part of the decline in long-distance migration. Instead, the results point to a substantial drop in the probability of migration that is common among all demographic and socioeconomic groups in the model.

We then proceed to investigate other explanations for the decline in long distance moves. Several pieces of evidence suggest that the labor market has played a key role in the migration decline. First, survey respondents report that interstate moves tend to be related to labor market reasons rather than other reasons, such as life-cycle events or housing-related factors. Second, other measures of churning in the labor market, such as industry and occupational mobility, quits, and employer-to-employer flows, have also trended down during this period. These declines also cannot be explained by simple changes in demographics. Third, we present evidence that labor market transitions, such as employer-switching and occupation-switching, and geographic mobility are strongly correlated at both the individual and state level. Finally, we

---

economic history. Rosenbloom and Sundstrom (2004) document an increase in internal migration in the US from 1900 to 1970, which they attribute to rising educational attainment.

show that the downward trend in labor market transitions can explain, in a decomposition sense, a substantial portion of the decline in migration.

In sum, the descriptive evidence suggests that an explanation for the long-run decline in migration should be related to the labor market—in particular, the decline in labor market transitions—rather than to the housing market or to compositional changes within the population. We interpret this evidence as further suggesting that a common cause must at least partly explain the declines in both migration and labor market transitions. In the second half of the paper, we examine a number of potential common causes. These hypotheses include changes in the distribution of employment across different types of occupations, a rise in the proportion of dual-earner households, job-lock associated with rising health care costs, and more general shifts in the relative benefits to changing jobs and locations.

We are able to rule out an important role for several of the hypotheses that we explore, leaving changes in the relative benefits to job or location switching as the most plausible cause. However, it is difficult to identify a clear source of such changes. One possibility is that internal labor markets have become more important sources of wage growth over this time period. Several findings in the data support this interpretation. Using data from three cohorts of the National Longitudinal Surveys, we document that returns to employer tenure and to employer transitions have both declined from the 1970s to the 2000s, while wage gains associated with occupation transitions have risen. A strengthening of internal labor markets offers a unifying explanation for these changes, along with the observed declines in migration and job changing. At this point we consider it a plausible driver of the migration decline and many of the trends in labor market transitions over the last three decades.

II. How much of the decline in migration can be explained by demographic and socio-economic trends?

The long-run decline in migration can be seen clearly in Figure 1, which plots statistics from the Current Population Survey (CPS).[2] Prior to the 1970s, annual migration rates fluctuated around a stable mean, although longer-distance moves were less common than shorter-distance moves. During the 1970s, however, rates of moving across any distance began to decrease and declines since then have been dramatic. The rate of moving across a long distance has fallen by a larger percentage than the migration rate for short distances. Specifically, the interstate migration rate in 2011 was 53 percent below its 1948-1971 average, while the rates of moving between counties within the same state and of moving within the same county fell 44 and 36 percent, respectively, over the same period.[3]

A natural explanation for the observed decline in migration is changing demographic or socio-economic trends, as they have slowly been shifting in favor of groups with lower mobility rates. For instance, the aging of the population and rising homeownership rates should depress migration rates, since these groups tend to move less frequently than average. Because demographics are commonly thought to be the primary drivers of declines in migration, we begin with an analysis of these factors.

To assess the importance of a large number demographic factors in a single framework, we use an Oaxaca decomposition to examine the change in an individual's propensity to move between the decades of the1980s and the 2000s. This period covers the entire decline observed in

[2] The CPS provides the longest possible annual time series on migration rates for the post-war US. Details on the construction of this series can be found in Molloy and Wozniak (2011).

[3] The CPS may overstate the decline in interstate migration since the 1990s due to a change in imputation procedures (Kaplan and Schulhofer-Wohl 2012a, Koerber 2007). However, we show elsewhere that both a corrected CPS series and series from other data sources also show pronounced declines in migration over the last three decades (Molloy, Smith and Wozniak 2011).

Figure 1. For each decade, we estimate an OLS regression of the probability of migration on a number of characteristics to be discussed below. We then apportion the change in the average probability of moving from one decade to the other into a portion attributable to the change in the quantity of each independent variable (i.e. the change in the characteristics of the population), a portion attributable to the change in the estimated coefficient of each independent variable (i.e. the change in the propensity to move of the population with a given characteristic), and a portion attributable to the interaction between quantities and coefficients. Specifically:

$$\overline{Y_{00}} - \overline{Y_{80}} = \left(\overline{X_{00}} - \overline{X_{80}}\right)\beta_{80} + \left(\beta_{00} - \beta_{80}\right)\overline{X_{80}} + \left(\overline{X_{00}} - \overline{X_{80}}\right)\left(\beta_{00} - \beta_{80}\right) \qquad (1)$$

where $\bar{Y}_{tt}$ is the average probability of moving in the decade denoted by *tt*, $\bar{X}_{tt}$ is the average of the independent variables in the same period, and β_{tt} is the vector of estimated coefficients from the regression of Y on X using a single decade of data. Because the CPS is a small sample, we estimate the OLS regressions using pooled data from the 1981-1989 and 2002-2010 time periods.[4] Including multiple years in each sample period also allows us to smooth through any cyclical changes in migration that might affect the comparison of any two short time periods. The regressions include year indicators so that the coefficients are identified from variation in the independent variables within a given year. We normalize the coefficients so that they reflect deviations from the average propensity to move in each sample period rather than deviations from the propensity to move of a reference category. In this way, the results are not sensitive to which characteristics are chosen as the reference category. In general, the results are not sensitive to which sample is chosen as the reference period—for example, whether the change in the average quantity of a variable is multiplied by its coefficient from the 1980s or its coefficient

[4] The CPS did not include the migration question in 1985, so the 1980s sample includes 8 years of data. To be symmetric, the 2000s sample also spans 9 years but omits the fifth year (2006). Prior to 1980, the CPS only asked migration questions in 1964-1971 and 1975. The data also contain far fewer relevant covariates in that time period. It is therefore not possible to extend the analysis of this section back to periods before the 1980s.

from the 2000s. However, because it does matter in a few cases, we calculate the contributions both ways and report the average of the two results.

Table 1 shows the results of the Oaxaca decomposition for intra-county migration, the shortest migration distance available in the CPS. The explanatory variables can account for much of the 1.6 percentage point drop in migration; changes in the distribution of the explanatory variables explain 0.7 percentage point (Column 5), and changes in the coefficients other than the constant explain 0.3 percentage point (Column 6). Of note, the rise in homeownership contributes 0.2 percentage point to the decline in migration (homeowners are less likely to move than renters), and the age distribution of the population contributes another 0.7 percentage point (the share of young people, who are more likely to move, falls). Together, these two factors account for more than half of the aggregate decline in intra-county migration. The change in the constant, which reflects the change in propensity to move of a person with average characteristics, contributes 0.6 percentage point, or only 1/3 of the decline in aggregate intra-county migration.

In contrast to the results for short-distance migration, the Oaxaca decomposition is much less successful at explaining long-distance moves with these same variables. Table 2 repeats the same Oaxaca decomposition exercise as above, except with inter-state migration as the dependent variable. The overall decline in inter-state migration from the 1980s to the 2000s is 0.9 percentage point, of which the rise in homeownership contributes only 0.06 percentage point and the age distribution of the population contributes only 0.15 percentage point (Column 5). Together, these two factors explain one fourth of the decline in aggregate interstate migration, only half of their explanatory power for within-county migration. Changes in the quantities of other characteristics, such as the increase in educational attainment, have offset the negative

effect of these factors on interstate migration. Thus, changes in the distributions of all demographic and socio-economic factors combined—in the absence of other changes—have no net effect on aggregate interstate migration. Cooke (2011) and Kaplan and Shulhofer-Wohl (2012) also find that demographics and other observable characteristics can explain little of the decrease in migration from the 1990s to the 2000s.[5]

Turning to the contribution of changes in the coefficients (column 6), the changes in interstate migration do not appear to be concentrated in any particular demographic or socioeconomic group. Rather, the constant contributes 0.8 percentage point to the decline in migration, nearly all of the actual drop in interstate migration. Thus, by and large, the decrease in interstate migration was common across all demographic and socio-economic groups in the model.[6] Two particular results worth noting are that, conditional on the other factors in the model, the interstate migration rate of renters has fallen by more than that of homeowners and the interstate migration rate of individuals with at least a college degree has fallen slightly more than that of individuals with less education. Therefore, it seems unlikely that the aggregate trend in migration could be driven by a decrease in migration of low-skilled workers to areas with high house prices, a phenomenon that Ganong and Shoag (2012) find to be important in explaining a slowing in geographic wage convergence from 1980 to 2010.

In sum, the Oaxaca decompositions demonstrate that much of the downward trend in intra-county migration is explained by demographic and socioeconomic factors whereas the

[5] One plausible hypothesis for the decline in migration is that the population distribution has returned to geographic equilibrium after the population shifted towards southern states. In our 2011 paper, we showed that there does not appear to be a net decline in migration in to the southern regions, inconsistent with the "new equilibrium" argument. Similarly, the results in table 2 show that changes in the geographic concentration cannot explain much, if any, of the decline in cross-state mobility.

[6] If the decrease in migration were concentrated in particular groups, then we would have found larger contributions from the change in the coefficients for those groups, and correspondingly a smaller contribution from the change in the constant.

trend in interstate migration cannot be explained by these same factors. These findings are robust to calculating the decomposition in several ways and to using other time periods.[7] Consequently, we turn to other explanations for the decrease in long-distance migration over the past thirty years.

III. Connections between the Migration and the Labor Market

Migration is often linked to transitions in the labor market such as starting a new job or retiring from the labor force. This connection is particularly clear for migration over longer distances, which generally entails a change of local labor markets. Consistent with this notion, Figure 2 shows that CPS respondents most commonly cite job-related reasons as the explanation for an inter-state move, whereas these reasons are much less important among respondents who moved over shorter distances. Interestingly, job-related inter-state migration has trended down from 2000 to 2010 more noticeably than the other reasons. The reason for moving was not asked in years prior to 2000, so it is difficult to say whether the decrease in employment-related mobility since 2000 is part of a longer-run trend.

Many measures of labor market transitions have decreased during the same period that long-distance migration trended down. In Figure 3, we plot the fraction of the population 16 and older that changed employers, entered employment, exited employment, changed industry, or changed occupation from the previous year.[8] These statistics are all from the March supplement

[7] We find similar results when using different base periods as weights and when excluding various sets of characteristics. Moreover, we find similar results when comparing migration in the 1964-71 period to the 2003-2010 period. In particular, although data on homeownership and a few other characteristics are not available for the 1964-71 period, the decline in interstate migration from the 1960s to the 2000s cannot be explained by the age distribution or any other population characteristics.

[8] We estimate job transition rates using March CPS microdata as provided by the Unicon Research Corporation. The sample that we use for our estimates drops individuals who have imputed values for occupation, industry, occupation last year, industry last year, or number of employers worked in the previous year. For 1988 and later, we also drop individuals who have any imputed responses for the March supplement as indicated by the "suprec"

to the CPS.[9] Job-to-job changes, exit from employment, and changes in industry and occupation all trended down from the early 1980s to the late 2000s.[10] These trends are consistent with statistics compiled by Davis, Faberman and Haltiwanger (2012), who document downward trends in hires, layoffs and quits from 1990 to 2010 based on the Business Employment Dynamics database and the Job Openings and Labor Turnover survey; with Hyatt and Spletzer (2013), who show a downtrend in hires and separations (CPS, JOLTS, LEHD), job creation and destruction (BED and LEHD), and job-to-job flows (LEHD, CPS); and with Moscarini and Thomsson (2007) who document a decline in occupation switching in the CPS since the mid-1990s.

We suspect that the simultaneous declines in migration and many measures of labor market transitions may be more than coincidental, so we perform several tests to better understand just how closely the two trends are connected. We begin by calculating the contribution of changing demographic and socioeconomic factors to the decline in labor market transitions. This exercise is similar to the Oaxaca decompositions reported in the previous section, except that the dependent variable is one of the four labor market transitions with a

---

variable. We have found that this sample selection criteria corrects for discrete jumps in transition rates that appear in some years as well as for changes in the imputation of migration. Because the March CPS microdata provided by IPUMS does not allow users to correct for this form of imputation, we favor estimates derived from Unicon data.

[9] Specifically, we use the number of hours worked in the previous year to indicate whether an individual was employed in that year. We measure job-to-job transitions based on the reported number of employers in the previous year. The exact question asked to the CPS respondent is "How many employers did you work for in the previous calendar year?" The CPS question further instructs that if the respondent worked for more than one employer at the same time, it should only count as one employer. Hence, respondents who report working for 2 or more employers in the previous year have plausibly transitioned across jobs at some point in the year. We also find a downward trend in job-to-job transitions when using the response to the question whether an individual is working for the same employer as in the previous month, which is available in the monthly CPS from 1994 onwards. The March CPS does not report labor force status in the prior year so we cannot observe more detailed labor market transitions, such as labor force entry.

[10] Although the rates of changing occupation and industry are quite similar, the workers who change industry are not necessarily the same as those who change occupation: from 1980-2010, about 15 percent of workers who change industry do not change occupation, and also about 15 percent of workers who change occupation do not change industry. For visual clarity, we omit the fraction changing industry though the fraction changing industry is very similar to the fraction changing occupations.

downward trend in Figure 3. If the observables were to explain the decline in labor market transitions, the trends in migration and labor market transitions would not likely be related since we reject an important role for these same observables in the migration decline. The results are reported in Table 3. The ageing of the population and the rise in real incomes make noticeable contributions to the aggregate declines in changing employers, changing occupations and changing industry, as older individuals and richer individuals are less likely to make these types of transitions. However, these effects are partly offset by the shift towards more educated workers, who tend to make these transitions more often than less educated workers. As shown by the last row of the table, the combined trends in all of the right-hand-side variables explain less than half of the decrease in these labor market transitions. In all, just as demographic and socioeconomic characteristics are unable to explain much of the decrease in long-distance geographic mobility, they are also unable to explain much of the decrease in these labor market transitions. This finding is very similar to what Hyatt and Spletzer (2013) show; they also estimate the contribution of changes in demographic characteristics to changes in labor market transitions, and find that aging, gender, race, and education can explain no more than half of the decline in hiring, separation, and job-to-job transition rates.[11] In contrast, the contribution of changes in the characteristics we consider here can explain *most* of the decline in the fraction of the population who exit employment—the last two columns of the table—and the aging of the population can itself explain about one-quarter of the decline.

To demonstrate the link between migration and job transitions more concretely, Figure 4 shows a scatter plot of the change in the fraction of individuals in a state who changed firms

[11] Using the Longitudinal Employer-Household Dynamics (LEHD) data, Hyatt and Spletzer are able to show that the trend towards larger and older firms can explain at most 10 percent of the decline in hiring, separation, and job-to-job transition rates. Although we cannot observe firm size or age in our data, since they can explain at most 10 percent of the decline in labor market transition rates in the LEHD, it seems likely that they are also unable to explain the decline in the CPS.

from the 1980s to the 2000s against the change in the rate of migration into that state over the same period. The graph shows a very strong positive correlation: states like Florida and Texas that experienced very large drops in the fraction of workers who changed firms also experienced the largest decreases in in-migration. To explore further, we regress annual migration rates for a state on a variety of variables related to job transitions as well as other variables related to the labor market, state and year fixed effects, and other demographic controls. All control variables are calculated from the March supplement to the CPS, but we use both the CPS and IRS data to compute migration rates for the dependent variable.[12] The results are shown in Table 4. We find a statistically significant, positive relationship between the fraction of a state's population that changed firms in the previous year and fraction that moved into the state. We also find a positive relationship between migration and both occupation and industry changing, although these estimates are not as precise. The fraction that transitioned from employment to non-employment is not related to migration rates. As shown by the last row of the table, the labor market transition variables combined explain about 0.6 percentage point of the 1.1 percentage point decline in interstate migration from the 1980s to the 2000s. Other independent variables also contribute to explaining state-level migration rates, but all together they still explain less than the job transition measures. Results are roughly similar using statistics from the IRS to measure migration rather than the CPS—job transition variables explain about one-quarter of the decline in migration—thus, the importance of declining job transition rates is apparent regardless of whether migration is measured in CPS or IRS data. This result is instructive because, as we show in our 2011 paper, the CPS exaggerates the decline in long-distance migration compared to other data sources.

[12]Additional controls are: the fraction of the state unemployed, the log of average annual income for the state, and the fraction of the state that is young (under 21) and of prime working age (21-64).

We can get a different perspective on the connection between migration and labor-market transitions by including variables related to these flows in the Oaxaca decompositions of interstate migration.[13] As shown in Table 5, the downward trends in changing employers, industry and occupation each contributed from 0.05 to 0.1 percentage point to the drop in interstate migration; the contribution of exiting employment is also negative but relatively small. Adding these pieces together, the downward trend in labor market transitions can account for about one fifth of the drop in migration of the employed population. Although this estimate suggests a smaller role for labor market transitions than implied by the cross-state regressions of Table 4, Moscarini and Thomsson (2007) show that typical measures of occupation and job switching suffer from high degrees of measurement error, which could attenuate their estimated contribution in the Oaxaca decompositions. Because the cross-state regressions are based on average labor market transitions at the state level, they may smooth through some of the noise at that is present at the individual level. Regardless of the exact magnitudes, we find a strong connection between the decline in interstate migration and the decline in labor market transitions over the past thirty years using a variety of approaches.

IV. Possible causes of the secular decline in migration and job market transitions

The fact that labor market transitions and geographic migration are correlated does not explain *why* these flows have been falling. In this section, we discuss five mechanisms that could be behind both trends. We focus on common explanations for the two trends both not only

[13] The sample is limited to individuals who were employed in the previous year because industry, occupation, and firm changes are only defined for this group. Consequently, we cannot include the transition from not employed to employed in this specification. When we exclude industry, occupation, and firm changes and instead include the transition from not employed to employed, this transition explains essentially none of the aggregate decline in interstate migration.

because a simple explanation is intuitively appealing but also because the evidence in the previous section suggests that these two trends are linked.

One explanation for declining migration has been suggested by Kaplan and Schulhofer-Wohl (2012b). They propose a model built on two assumptions: that the range of occupations and industries has become more similar across metropolitan areas and that the incidence of "experimental" migration for amenity reasons has declined due to lower travel costs. When they are combined, these two assumptions imply that aggregate migration should fall.[14] In support of the first assumption, they show that occupations and industries have become less concentrated by state over the past 20 years and that the variance across areas in the average wage for an industry or occupation has fallen. Although this theory may explain the decline in migration, it does not have a clear prediction for changes in job market transitions over time. On one hand, a greater variety of local job opportunities would seem to lead to *higher* rates of employer, industry, and occupation changes, because switching jobs is less costly if it does not also require a change of residence. On the other hand, a wider variety of job opportunities in various industries and occupations could improve the match between a worker and firm, reducing the need for further job transitions down the road. We conclude that the Kaplan and Schulhofer-Wohl explanation may account for a portion of the observed decline in migration, but it is not likely to account for the simultaneous decline in migration and job transitions. This is particularly true for young workers for whom the return to experimentation with sectors and locations is high; in the next

[14] Both assumptions are critical. Without the assumption that amenity-match migration has fallen, a decline in migration for job-match reasons could lead to no change in overall migration rates. This is because smaller amenity differentials are needed to generate migration in the absence of differentials in employment opportunities across cities. It is unclear to us why cheaper information about alternative locations should decrease migration. It is true, as Kaplan and Schulhofer-Wohl point out, that now one can more easily visit California to learn about it without actually moving there. However, while this type of travel might prevent some migration that might later be viewed as a mistake, it might also encourage migration by allowing individuals to learn about new opportunities and locales, as well as allowing people to move while retaining closer ties to their original locations.

section we show the same simultaneous declines in job transitions and migration for a sample of young workers.

A second hypothesis for the dual declines in migration and job transitions is related to the long-run structural shift in the distribution of occupations. Specifically, the share of adults in lower-skill/lower-paying jobs (e.g. food service, personal care services, cleaning services) and higher-skill/higher-paying jobs (e.g. professional, managerial, and design jobs) have both grown, while the share of adults in middle-skill/middle-paying jobs (e.g. administrative, manufacturing, and sales jobs) has fallen.[15] This "hollowing out" or polarization of the occupational distribution is thought to be due to the expanded use of computers and greater ease of automation and off-shoring, which raises demand for higher-skill jobs, reduces demand for the middle-skill jobs, and displaces some workers formerly employed in middle-skill jobs into lower-skilled ones (Autor, Katz and Kearney 2008). This shift might have reduced migration if, in the past, less educated workers were likely to move to a different labor market to take a middle-skill jobs. The elimination of large shares of these jobs could then lower migration rates by reducing the set of "migration worthy" jobs for less educated workers. However, we find no empirical support for this idea. Specifically, we regressed the change in a state's migration rate on the fraction employed in middle-skill occupations or the manufacturing industry (which was particularly affected by skill-biased technical change and globalization). We found no significant relationship between these polarization measures and migration rates. In addition, as shown in Table 4, the average inter-state migration rate of people with a high-school degree was not higher

[15] This classification is commonly used by those who research labor market polarization, e.g. figure 3 of Autor 2010. In this classification, "high-skill" jobs tend to offer higher wages and require higher education, and include manager, professional, and technician occupations. "Middle-skill" occupations are less likely to require a college degree than are high skill jobs, but also offer higher wages on average than "low-skill" jobs; they include sales jobs, office and administration jobs, production, craft, and repair jobs, and operator, fabricator, and laborer jobs. "Low-skill" occupations are service sector jobs, and include protective services, food preparation, building and grounds cleaning, and personal services.

than that for individuals with more education in the 1980s, nor did it fall by more than for workers at other education levels. And job turnover rates tend to be higher for lower-skill, service and retail sector jobs,[16] so rising employment shares in the lower tail of the skill distribution should all else equal push up average job transition rates, and possibly also push up average migration rates if people in these sectors who experience job turnover are more likely to change locations in search of a new job.

A third possible explanation for the secular declines in migration and job transitions is a rising share of dual-earner households. When both spouses are employed, it can be more difficult to move long distances because both people must find a suitable job in the new location. Indeed, Costa and Kahn (2000) find that the colocation problem of couples who both have a college degree has caused the college-education population to be concentrated in large cities. Although the fraction of individuals in dual-earner households did not increase much from the 1980s to the 2000s (see Table 2), it is possible that only individuals who are invested in particular careers have joint-location issues with a spouse.[17] As a proxy for two-career households, we create an indicator for households where both spouses are in a professional or technical occupation. The probability of moving of these households is, indeed, slightly lower than that of other individuals in this occupational category. However, the fraction of individuals in these households only rose from 3 percent in the 1980s to 4½ percent in the 2000s, so this trend only contributes a few percentage points to the decline in aggregate interstate migration. Results are similar when we proxy for dual-career households with households where both

[16] For instance, from 2003-2010, on average 5 percent of CPS respondents who were employed in service or retail occupations in one month were not employed in the subsequent month, whereas for other occupations only 3 percent were subsequently not employed.

[17] For example, it is possible that many dual-earner households in the 1980s had one spouse who was not particularly attached to a career and who could therefore easily move to follow their spouse's job (Benson 2012). But as more and more women have developed true careers, changing locations may have become harder for more households.

individuals have at least a college degree or where both are in the top of the income distribution. Moreover, as with the two previous hypotheses, this theory explains declines in labor market transitions associated with interstate moves, but it is not clear why colocation issues would lead to declines in labor market transitions more generally.

A fourth possibility is the rise in health care costs, which could prevent workers with employer-provided health insurance from taking a new job because it would require changing health insurance companies.[18] When we include an indicator for whether anyone in the household has an employer that paid for a group health plan in the Oaxaca decompositions, those in such households were only slightly less likely to have moved in the past year than others in the 2000s, and they were slightly *more* likely to have moved than others in the 1980s. In addition, the fraction of individuals in such households was about the same in the 1980s and 2000s. Thus, this factor does not make a meaningful contribution to the change in interstate migration.

The shortcomings of the theories considered above lead us to consider a more general class of explanations: whether internal labor markets in firms have changed in a way that encourage less entry and exit from a given job, consequently reducing both migration and labor market transitions. For example, the returns to firm-specific types of human capital may have increased relative to forms of human capital that are more portable across firms and geography.[19] One factor that could have led to an increase in the return to firm-specific human capital is if

[18] A rather extensive literature presents mixed findings on the extent to which healthcare-related "job lock" depresses job transition rates, though Gruber and Madrian (2001) argue that the most convincing evidence supports the job lock hypothesis. At the same time, there is more consistent evidence that the availability of employer-provided health insurance delays transitions to retirement and affects labor supply decisions of secondary earners (see also Madrian 2004).

[19] We are not aware of any studies that have documented how returns to different types of human capital have *changed* over the last three decades. The literature on firm-specific, industry-specific, or occupation-specific human capital has focused mainly on identifying, differentiating, and understanding these forms of specific human capital at a particular point in time (or on average over many years), rather than estimating changes in the returns over time. Neal (1995) and Parent (2000) both argue that observed returns to job SHC are in fact driven by industry SHC. Recently, Kambourov and Manovskii (2009) find an important role for occupation SHC, echoing earlier arguments in Shaw (1984, 1987). Importantly, they find large returns to occupation SHC once the data have been corrected for a high degree of measurement error, on the order of a 20 percent return to 5 years of occupational experience.

changes in the matching process between workers and firms have caused workers to be matched earlier in their careers with an employer who offers them the best return on experience. Such improvements in matching technology might arise if the set of local employment opportunities becomes more diverse, as hypothesized by Kaplan and Shulhofer-Wohl (2012), or if there have been improvements in information that workers and firms possess during search. Improved worker-firm matches would imply that we should observe increased returns to firm-specific experience compared with earlier periods in which more workers labored at jobs with poorer match quality (Jovanovic 1979).

Other features of internal labor markets may have led to a decline in job changing or other labor market transitions, even if the returns to specific types of human capital have not changed. For example, informational asymmetries between a worker's current employer and other potential employers may have become more pronounced over time as skills that are difficult to measure have become more important in determining a worker's performance. Also, technology may have become more firm-specific, implying that workers have more to lose when moving to a different firm. Corrado, Hulten and Sichel (2009) document that investment in "firm-specific" resources such as employer-provided worker training rose appreciably from the 1970s to the early 2000s. If the returns to training do not accrue smoothly over time, then wage returns to firm-specific training could show up primarily as wage differences across old and new jobs, rather than as a smooth increase in returns to job- or firm-specific experience.[20] Other costs of changing jobs may have also risen over time. Fujita (2011) proposes a model in which there is a secular increase in the risk of experience depreciation during an unemployment spell for all workers in an economy. Workers therefore become increasingly reluctant to separate from

[20] This is consistent with evidence that employer-provided training has no more than modest impacts on wage growth (Rouse and Krueger 1998, Hellerstein and Neumark 1995).

their firms and risk the loss of skill that would result from a failed transition to a new job. He argues that such a model can reconcile declining labor market turnover with stagnant wages and rising public anxiety about job security.[21] If internal labor markets have become more important drivers of wage growth over time, we might see a decrease in the wage gains associated with changing employers relative to the gains associated with making transitions within the same firm.

Table 6 summarizes the implications of various theories for aggregate trends in migration, labor market transitions, returns to portable types of human capital, and returns to labor market transitions. Only the theories related to health insurance, firm-specific human capital, and internal labor markets predict general aggregate declines in both migration and labor market transitions. We have already shown evidence in the Oaxaca decompositions that employer-provided health insurance is not a likely candidate. Because changes in the returns to firm-specific human capital and internal labor markets have different predictions for the returns to tenure and the returns to labor market transitions, next we turn to evidence on those trends.

V. Examining Returns to Geographic and Labor Market Transitions over Time

In this section, we present empirical evidence on the returns to different types of human capital and the returns to making transitions within and between firms using a panel of young workers assembled from three cohorts of the National Longitudinal Surveys. We describe the data in the next subsection. The subsequent subsection presents evidence on the how portable different types of human capital are across space and on the changes in returns to these types of human capital over time. Then we examine the wage gains associated with various labor market

[21] In his model, firms have bargaining power and early career match quality is unchanging over time, so there is no clear prediction for the returns to experience. Nevertheless, it implies diminishing job transitions, and consequently lower long-distance migration.

transitions across the three cohorts, and the final subsection discusses the robustness of our results.

V.1 Background on the National Longitudinal Survey

Our analysis relies on an assembled panel of three cohorts from restricted-use versions of National Longitudinal Surveys (NLS). Two important advantages of this data source are that it spans a very long time period—over four decades—and that it includes information on four types of individual work experience, or tenure: industry-specific, occupation-specific, employer-specific, and location-specific.

Our sample includes data on young men from three of the seven NLS surveys: the NLS-Young Men (NLS-YM); the NLS-Youth 1979 (NLSY79), and the NLS-Youth 1997 (NLSY97).[22] Because respondents in the latest waves of the NLSY97 are still young, we restrict each sample to respondents aged 22 to 29 to maintain comparability across the samples. Roughly speaking, our cohorts represent the labor market experiences of young workers during the 1970s (the NLS-YM), the 1980s (NLSY79) and the 2000s (NLSY97).

Although the details of data collection varied from survey to survey, all respondents were asked to provide complete job information (including the name of their employer) in each year of the survey. In addition, each survey provides identifiers for state and county of residence. We can therefore calculate years of tenure beginning with the first job reported in the survey for 3-digit industry, 3-digit occupation, a specific employer, and a specific county or state. For example, we calculate years of industry tenure as the difference between the current survey year and the year and month in which she began the current spell of employment in the current

[22]Results for young women are available upon request. There are three other NLS data sets that we do not use: the NLS-Older Men, the NLS-Mature Women, and the Children of the NLSY-79. The Mature Men were already older than our target age group of 25-29 when that survey began. The Children of the NLSY79 survey is small. It also became biannual as that cohort entered the labor market, limiting comparability with the cohorts with annual data.

industry. The measure therefore reflects consecutive years of tenure.[23] Occupation, job, and location tenure are defined analogously. To measure location tenure, we use the number of years that an individual has resided in his current state of residence.[24] Measures that are available in monthly increments are rounded to the nearest year. We should emphasize that we measure tenure based on job information reported in each year of the survey, making our measures of tenure different from self-reported retrospective measures. Specifically, we use the high quality observations on employer change and interstate moves to clean the classification error-prone industry and occupation observations. We require that a respondent either make a long-distance move or change main employers in order to change industries or occupations. Absent one of those transitions, industry and occupation remain constant throughout a spell. This roughly follows the procedures in Moscarini and Thomsson (2007). More detail on the construction of our experience variables is available in the Online Data Appendix.

To calculate the return to each type of tenure, we estimate the following wage equation:

$$y_{ijt} = \beta_0 + \beta_1^j indten_{ijt} + \beta_2^j indten_{ijt}^2 + \beta_3^j occten_{ijt} + \beta_4^j occten_{ijt}^2 + \beta_5^j jobten_{ijt} + \beta_6^j jobten_{ijt}^2 + \beta_7^j locten_{ijt} + \beta_8^j locten_{ijt}^2 + X_{ijt}\beta_9^j + \Theta_t^j + \varepsilon_{ijt} \quad (2)$$

The dependent variable is log hourly wages for respondent *i* on the main job in survey year *t*, which we deflate using the Consumer Price Index. The hourly wage is based on the "hourly rate of pay" variable constructed for each reported job by the NLS administrators.[25] The *j* subscripts on the data and superscripts on the coefficients indicate the following NLS data sets or

[23] Since our respondents are young, consecutive years of tenure within the survey and total years of tenure within the survey (which sums across spells of employment that may not be chronologically contiguous) are very similar. We have constructed both consecutive and total measures of tenure for the industry, occupation, and location tenure measures. Years of total tenure with a given employer is more difficult to construct, but consecutive years of tenure is readily available in each survey wave. For these reasons, we use the "consecutive years of tenure" version of all tenure variables.

[24] Individuals may work in a state or county other than their state of residence, adding some noise to these measures of location tenure. The amount of error will be greater for county tenure because more people commute across county lines than across state lines.

[25] For more detail, see the "Wages" sections of the NLS User's Guide for each cohort.

subsamples: NLS-YM, NLSY79, NLSY97. We focus on results for men because the labor force participation of women changed markedly over these three decades and we are concerned that female labor force participants in the late 2000s are different in many unobservable ways from their counterparts in the late 1970s, which complicates cross-cohort comparisons. X_{ijt} is a set of basic background controls that includes a dummy for Black race, a dummy for Hispanic ethnicity, age, age squared, and four educational attainment dummies (dropout, high school graduate, 1-3 years of college, 4+ years of college). Θ_t is a set of survey year dummies, which varies across the j data sets. More detail on variable construction is available in the Online Data Appendix, which also describes the cleaning procedures we followed to minimize false industry and occupation switches resulting from disparities in how responses to those questions were coded from year to year in the earlier survey waves.

Because our respondents are young, some may still be in school or not otherwise strongly attached to the labor market. Therefore we further restrict our sample to those with at least moderate labor force attachment, defined as having worked at least half the previous calendar year. We also restrict the sample to those with complete data in a survey year for all variables of interest. Many respondents who report employment are nevertheless missing industry and occupation information, so this is a substantive restriction.

Table 7 shows basic summary statistics of the NLS samples. There are roughly 3000 respondents in the NLS-YM spanning 1966 to 1981, 10,000 respondents in the NLSY79 spanning 1979 to 1994, and 5,000 respondents in the NLSY97 spanning 2002 to 2009. The top rows of the table show that tenure in state rises a bit over the three cohorts while the fraction of the sample changing states in the previous year falls, illustrating the decline in geographic mobility. By contrast, the cohort averages do not show a downward trend in the fraction of NLS

respondents that made a labor market transition in the previous year. This result is due to changes in the age distribution of the NLS within each sample period. As shown in Figure 5, when separated by age, we find clear downward trends in migration and all three types of labor market transitions over time in the two NLSY data sets.[26]

V.2. Portability of and Returns to Experience in the NLS Data

Table 8 presents descriptive evidence on this topic by showing the fraction of interstate movers that also changed industry, occupation or firm. In the oldest cohort, 77 percent of interstate movers also changed employers. It may be somewhat surprising that all interstate movers did not change employers. While we have verified that this result is not driven by respondents who live in metropolitan areas that span state lines, it is possible that it reflects workers in large firms with establishments in multiple states. More pertinent for our purpose is that fewer workers in this cohort—only about 60 percent—changed industry or occupation when they moved across states. In other words, individuals who moved across state lines were more likely to change jobs than to change occupation or industry, suggesting that firm-specific human capital is less portable across space than other forms of human capital. By and large, this result also holds for the two other cohorts, albeit to a smaller degree.[27] In unreported results, we also find that interstate movers change industry and occupation less often than they change employer in the CPS.[28]

[26] Comparable statistics for the NLS-YM have not yet been released by Census RDC reviewers. The close relationship between industry and occupation changing is somewhat coincidental. There are considerable numbers of respondents who make one change but not the other. In other words, it is not the case that all industry changers also change occupation in our data.

[27] The only exception to this statement is that the NLSY-79 tabulation shows a slightly higher rate of occupation changing than employer changing.

[28] In the CPS, less than half of interstate movers change firms—a number that suggests an even lower rate of employer changing with an interstate move than the NLS. However, details of CPS data collection could contribute to this higher rate. The migration question in the CPS measures a change in residence from March to March, while the employer change question refers to the previous calendar year. Consequently, individuals who move and change firms in January or February will count as migrants but not employer switchers.

Table 9 presents estimates of the returns to a third year of tenure (experience) in our four categories of interest for men in the NLS samples. We focus on the third year of experience because average tenure in each sample is between two and three years. We report results from the NLSY97 both including and excluding the recession years of 2008-2009 because we were concerned that the short time frame of this sample and severity of the recession would skew the results. However, it turns out that the estimates are little affected by whether these years are included. Despite some variation in the returns to different types of experience across the three cohorts, we see little evidence of trends that would have led to reductions in migration or job market transitions over time. Specifically, returns to employer experience are economically small and generally insignificant for all three cohorts. This implies that rising returns to staying with one's employer cannot account for the simultaneous declines in labor market transitions and migration. It is important to emphasize that this result is due to the fact that the regression controls for occupation and industry tenure. When we exclude those other forms of tenure, we find returns to employer tenure of roughly 5 percent in all three cohorts. Our results for returns to job tenure in the NLS-YM and NLSY79 are therefore broadly similar to those in Neal (1995) and Parent (2000), both of whom examine workers from similar time periods to our two earlier cohorts and find that the addition of industry tenure greatly reduces returns to job tenure. The results for the NLSY79 are qualitatively similar but smaller in magnitude as compared to those in Kambourov and Manovskii (2009) who find that returns to occupation tenure are highest when all three forms (industry, occupation, and job) are included.

Meanwhile, the return to a third year of industry experience dips in the 1980s (NLSY79 cohort), but rebounds in the 2000s (NLSY97 cohort). Returns to a third year of occupation experience are substantial in both the earlier cohorts but become smaller and insignificant for the

NLSY97 cohort. Thus, young workers in the most recent NLSY cohort may earn lower returns to staying in their occupations relative to previous cohorts. In this case, we might expect changes in occupation to have become more frequent as the return to staying in the same occupation falls. However, neither the NLS nor the CPS shows a rise in occupation switching over time, so this result is something of a puzzle.

The last row of Table 9 shows that the wage gain associated with an additional year of residence in the same state was negative in the first two cohorts. Our interpretation of this result is that individuals in these cohorts who remained in the same state were negatively selected—i.e. that even conditional on the covariates like education that we include in the regression, the unobserved characteristics of workers who move across state lines were associated with higher wage growth than those of individuals that remain in the same state. This type of selection appears to be less important in for the NLSY97 than for the earlier cohorts.

Overall, we view Table 9 as showing little evidence that changes in the returns to different types of human capital can explain the concurrent declines in general labor market transitions and long-distance migration.

V.3 Changes in Returns to Transitions over Time

In the next analysis, we consider how returns to labor market transitions may have changed across cohorts. To this end, we estimate equations where the dependent variable is the change in the log wage and the key independent variables of interest are whether the individual changed industry, occupation, employer or state in the last year. Taking the first difference of equation (2) suggests that we should also control for changes in age and each type of tenure, as well as the quadratic terms of each of these variables. In addition, we include the levels of all of the covariates in equation (2) because these characteristics are correlated with worker quality

and, as discussed below, we do not want our results to be driven by changes in the quality of workers who make a labor market transition relative to those workers that remain with the same employer, industry or occupation. We also control for year effects.

As shown in Table 10, we find important differences between the NLSY97 and earlier cohorts. For the first two cohorts, changing employers was associated with significant wage gains—about (number not yet disclosed from RDC) percent in the NLS-YM and 3½ percent in the NLSY79. By the NLSY97 cohort, the estimated gain from changing employers had declined to a statistically insignificant 2½ percent, and it is even smaller when excluding the recession years. These results suggest that the return to changing employers may have declined over time, which would imply reductions in aggregate job changing and migration. Although it is difficult to rule out an alternative interpretation that the type of worker who changes employers now is of lower unobserved quality than in the past, this interpretation is made less likely by the inclusion of observed measures of quality such as education.

In contrast to the wage gains associated with changing employers, the wage gains from changing occupations were substantially larger in the NLSY97 than in the earlier two cohorts, rising from essentially zero in the earlier two cohorts to 6 percent for the 97 cohort. This result is consistent with the decline in the return to occupation tenure reported in the previous section. Taken together, the decline in wage growth across jobs and rise in wage growth across occupations within jobs suggest that internal labor markets may have become more important for workers over this time period. If so, this could explain the simultaneous declines in job transitions and migration, since migration would be expected to decline as workers stay in their jobs longer.

The results reported in Table 10 are somewhat sensitive to whether or not changes in tenure are included in the regression. Although theory suggests that they should be included, they are highly correlated with the labor market transition indicators because the change in a type of tenure equals one when a worker does not make a transition of that type. When we exclude these variables, the coefficients on the transition indicators frequently become smaller and insignificant, making it difficult to say anything concrete about changes in the return to making such transitions. However, since the inclusion of the change in tenure variables is suggested by theory, and moreover these variables are included in specifications used by other researchers like Topel and Ward (1992), we are comfortable with the specification reported in Table 10.

V.4 Robustness of Results from the NLS

One concern with the baseline NLS results is that they are based on a very young age group and so might not be representative of the general trends in the returns to tenure and labor market transitions. In the NLS-YM and the NLSY79, we can examine individuals up to age 37. Because the returns to tenure tend to decline with tenure and older workers usually have more tenure, we find smaller returns to tenure for this group than we did for the younger group. Nevertheless, results are broadly similar in that we find no noticeable increases in returns, as defined in Table 9, from the first cohort to the second cohort. We also find similar returns to labor market transitions, as defined in Table 10, when we include workers up to age 37 in the estimating samples for the first and second cohorts.

We can also use other datasets to examine the returns to tenure for older age groups. Specifically, the PSID, CPS, and Survey of Income and Program Participation (SIPP) all have

information on employer tenure in various years. In each survey, the information comes from a direct question concerning the length of time the respondent has been working for their current employer or the start date at their current employer, so they might have more measurement error than the measures of tenure that we calculate in the NLS. In addition, none of these datasets have information about industry or location tenure, and only the SIPP has information about occupation tenure.[29] If these forms of tenure are correlated with one another and if the trends in the returns to these forms of tenure are different, then excluding the other forms of tenure may bias the estimates on return to employer tenure.[30] Nevertheless, we use PSID and CPS data to see whether the trends in the return to employer tenure are similar for different age groups. We tried a similar comparison with SIPP data but limitations on the survey years for which we had appropriate questions led us to drop that analysis. Table 11 shows estimates of the return to employer tenure in the PSID and CPS for the same time periods of the NLS-79 and NLS-97, as well as the intervening time period for completeness. We also report returns to employer tenure from a comparable specification in our three NLS samples. When occupation, industry and location tenure are omitted from the specification, we obtain estimates of return to tenure in the NLSY samples that are quite similar to comparable samples defined by age and time period from the PSID and CPS. More importantly, we find similar trends over time in the return to employer tenure for older age groups in the PSID and CPS as we find for young workers: estimates for the 2000s are either the same or lower than estimates for earlier time periods, providing no support for a decline in job transitions or migration on the basis of changing returns to tenure.

[29] While the job tenure and occupational mobility supplement asks respondents about their tenure at their current job, it does not specifically ask about tenure in an occupation or industry. However, the supplement does ask respondents whether they were working in the same occupation one year ago.

[30] For example, suppose that returns to firm-specific tenure are rising over time, returns to occupation-specific tenure are falling and firm-specific tenure is positively correlated with occupation-specific tenure. If we are unable to control for occupation-specific tenure, then the uptrend in firm-specific tenure will be biased downward.

We can also look at the wage gain associated with changing employers for older workers in the PSID. We use a specification similar to that in the NLS except that we cannot include indicators for occupation, industry, or location switching, nor can we control for occupation, industry, or location tenure. Also, we look at two-year wage changes because after 1997 the PSID was only collected every other year. As reported in Table 12, the most striking result is that the return to changing employers is larger in the 1995 to 2001 period than it was in either the earlier or later periods. Even so, there does appear to be a modest decline in the wage gain associated with changing employers from the 1980s to the 2000s for all but the 50-64 age group.[31] In that sense, these results are consistent with those found in the NLS.

VI. Conclusion

In this paper, we examine explanations for the secular decline in interstate migration since the 1980s. Demographic and socioeconomic factors can account for little of this decrease. By contrast, there is a strong empirical relationship between the downtrend in migration and downward trends in a variety of labor market transitions—i.e. a decline in the fraction of workers moving from job to job, changing industry, and changing occupation—that occurred over the same period. We explore a number of reasons why both types of flows might have diminished over time, including changes in the distribution of job opportunities across space, polarization in the labor market, concerns of dual-career households, and a strengthening of internal labor markets. We find little empirical support for all but the last of these hypotheses.

[31] This result is robust to excluding the 2007-2009 recession.

Specifically, using data from three cohorts of the National Longitudinal Surveys (NLS) spanning the 1970s to the 2000s, we find that wage gains associated with transitions between employers have fallen. This result is important because since the work of Topel and Ward (1992), economists have surmised that changing employers is a main channel of individual-level wage growth. We also find that return to occupation-specific tenure has fallen over the same period, while the return to changing occupations has risen. To the extent possible, we confirm that these trends observed in the NLS can also be found in other datasets. These patterns may signal a growing role for internal labor markets in determining wages, as wage growth has become more closely related to occupational transitions (possibly promotions) and less closely related to tenure per se. The resulting decrease in job changing may have brought about a decline in long-distance migration as fewer people move to take a new job.

At this stage, we view our evidence on internal labor markets as intriguing, but speculative. As the downward trends in labor market transitions and geographic mobility seem to have become an enduring feature of the US economy, further research is needed to shed light on the mechanisms driving these declines.

References

Autor, David. 2010. "The Polarization of Job Opportunities in the U.S. Labor Market: Implications for Employment and Earnings." *Center for American Progress* and *The Hamilton Project.*

Autor, David, Lawrence Katz, and Melissa Kearney. 2008. "Trends in Wage Inequality: Re-Assessing the Revisionists." *Review of Economics and Statistics.* 90(2): 300-323.

Batini, Nicoletta, Oya Celasun, Thomas Dowling, Marcello Estevao, Geoffrey Keim, Martin Sommer and Evridiki Tsounta. 2010. "United States: Selected Issues Paper." International Monetary Fund Country Report 10/248.

Benson, Alan. 2012. "Re-Thinking the Two-Body Problem: The Segregation of Women into Geographically Flexible Occupations." *Manuscript*, MIT.

Buchinsky, Moshe, Denis Fougere, Francis Kramarz, and Rusty Tchernis. 2008. "Interfirm Mobility, Wages, and the Returns to Seniority and Experience in the U.S." Center for Applied Economics and Policy Research Working Paper 2008-006.

Cooke, Thomas J. 2011. "It is not Just the Economy: Declining Migration and the Rise of Secular Rootedness." *Population, Space and Place.* 17: 193-203.

Davis, Steven J., R. Jason Faberman, and John Haltiwanger. 2012. "Labor Market Flows in the Cross Section and Over Time." *Journal of Monetary Economics*. 25(1): 1-18.

Donovan, Colleen and Calvin Schnure. 2011. "Locked in the House: Do Underwater Mortgages Reduce Labor Market Mobility?" Unpublished manuscript.

Frey, William H. 2009. "The Great American Migration Slowdown: Regional and Metropolitan Dimensions." http://www.brookings.edu/reports/2009/1209_migration_frey.aspx

Gruber, Jonathan and Brigitte C. Madrian. 2002. "Health Insurance, Labor Supply, and Job Mobility: A Critical Review." NBER Working Paper 8817.

Hellerstein, J. and Neumark, D. 1995. "Are Earnings Profiles Steeper than Productivity Profiles? Evidence from Israeli Firm-Level Data." *Journal of Human Resources*. 30(1): 89-112.

Hyatt, Henry R. and James R. Spletzer. 2013. "The Recent Decline in Employment Dynamics." Unpublished manuscript.

Kambourov, G. and Manovskii, I. 2009. "Occupational Specificity of Human Capital." *International Economic Review*. 50(1): 63-115.

Kaplan, G. and Schulhofer-Wohl, S. 2012. "Inter-state Migration Has Fallen by Less Than You Think." *Demography*. DOI 10.1007/s13524-12-0110-3.

Kaplan, G. and Schulhofer-Wohl, S. 2012. "Understanding the Long-Run Decline in Interstate Migration." *Manuscript.* University of Pennsylvania.

Katz, L. and Murphy, K. 1992. "Changes in Relative Wages, 1963-1987: Supply and Demand Factors." *The Quarterly Journal of Economics*. 107(1): 35-78.

Kreuger, A. and Rouse, C. 1998. "The Effect of Workplace Education on Earnings, Turnover and Job Performance." *Journal of Labor Economics*. 16(1): 61-94.

Madrian, Brigitte C. 2004. "Health Insurance Portability, Labor Supply and Job Mobility." Inter-American Conference on Social Security Working Paper 04012.

Molly, R.; Smith, C. L.; and Wozniak, A. 2011. "Internal Migration in the US." *Journal of Economic Perspectives*. 25(3): 173-196.

Moscarini, G. and Thomsson, K. 2007. "Occupational and Job Mobility in the US." *Scandinavian Journal of Economics*. 109(4): 807-836.

Neal, D. 1995. "Industry-Specific Human Capital: Evidence from Displaced Workers." *Journal of Labor Economics*. 13(4): 653-677.

Parent, D. 2000. "Industry-Specific Capital and the Wage Profile: Evidence from the National Longitudinal Survey of Youth and the Panel Study of Income Dynamics." 18(2): 306-323.

Rosenbloom, Joshua L. and William A. Sundstrom. 2004. "The Decline and Rise of Interstate Migration in the United States: Evidence from the IPUMS, 1850-1990." In *Research in Economic History* Vol. 22, ed. Alexander Field, 289-325. Amsterdam and San Diego: Elsevier, JAI.

Schulhofer-Wohl, Sam. 2010. "Negative Equity Does Not Reduce Homeowners' Mobility." Federal Reserve Bank of Minneapolis WP 682.

Shaw, K. 1984. "A Formulation of the Earnings Function Using the Concept of Occupational Investment." *Journal of Human Resources*. 19(3): 319-340.

Shaw, K. 1987. "Occupational Change, Employer Change, and the Transferability of Skills." *Southern Economic Journal*. 53(3): 702-719.

Topel, Robert H. and Michael P. Ward. 1992. "Job Mobility and the Careers of Young Men." *Quarterly Journal of Economics*. 107(2): 439-479.

Valletta, Robert G. 2010. "House Lock and Structural Unemployment." Unpublished manuscript.

Table 1: Oaxaca decompositions of within-county mobility rate
Change in Average, 1981-1989 to 2002-2010 (percentage points): -1.60

	1981-1989		2002-2010		Contrib of changes in:	
	Avg. move rate	Pop. share	Avg. move rate	Pop. share	Quantities	Coeffs.
Gender					**0.01**	**0.02**
Female	8.22	0.53	6.89	0.52	0.00	0.22
Male	9.33	0.47	7.38	0.48	0.00	-0.20
Age distribution					**-0.67**	**-0.03**
Age 25-34	16.80	0.29	15.31	0.21	-0.49	-0.29
Age 35-44	9.00	0.22	8.34	0.22	0.01	-0.12
Age 44-54	4.76	0.31	4.43	0.38	-0.17	0.11
Age 55+	2.87	0.19	2.29	0.19	-0.01	0.26
Education					**-0.07**	**0.05**
No high school degree	8.09	0.26	8.71	0.14	-0.04	-0.09
High school degree, no college	8.49	0.38	7.10	0.31	0.00	0.11
Some college	10.04	0.16	7.25	0.26	-0.01	0.00
College degree	9.06	0.19	6.24	0.29	-0.02	0.04
Racial composition					**0.00**	**-0.32**
White	8.34	0.87	6.58	0.83	0.00	-0.39
Black	11.44	0.10	10.31	0.11	0.00	0.08
Other	11.60	0.03	8.90	0.06	0.01	-0.01
Maritial Status					**0.02**	**0.00**
Married	6.90	0.68	5.15	0.63	0.05	0.08
Separated / divorced	11.76	0.20	8.89	0.21	0.02	-0.19
Single	14.34	0.11	12.48	0.16	-0.05	0.11
Kids in house					**0.03**	**-0.16**
Kids	10.17	0.38	8.67	0.34	0.01	0.20
No kids	7.86	0.62	6.33	0.66	0.01	-0.36
Number of earners					**-0.01**	**0.10**
Dual earners	7.96	0.30	5.22	0.31	0.00	-0.08
Single or no earner	9.09	0.70	7.99	0.69	0.00	0.18
Renter / owner					**-0.24**	**0.15**
Renter	19.61	0.28	17.41	0.26	-0.12	-0.08
Owner	4.66	0.72	3.63	0.74	-0.12	0.23
Location in 1980-2010 income distribution					**-0.06**	**0.01**
1st quintile	8.05	0.23	7.98	0.18	-0.02	0.04
2nd quintile	8.86	0.20	7.50	0.19	0.00	-0.07
3rd quintile	9.99	0.20	8.04	0.20	0.00	-0.07
4th quintile	9.60	0.20	7.22	0.20	0.00	0.00
5th quintile	7.19	0.18	5.29	0.23	-0.04	0.10
Employment status					**0.05**	**0.11**
Employed	10.12	0.60	7.88	0.63	0.00	0.09
Unemployed	15.66	0.04	12.66	0.04	0.00	-0.01
Not in labor force	5.72	0.36	5.03	0.33	0.05	0.03
Self-employed?					**-0.01**	**-0.13**
Self employed	7.75	0.06	5.61	0.08	0.00	0.01
Not self emp	8.81	0.94	7.25	0.92	0.00	-0.14
Census region					**0.16**	**-0.05**
New England	7.01	0.05	5.68	0.05	0.00	0.04
Middle Atlantic	5.98	0.16	5.10	0.14	0.09	0.09
East North Central	8.21	0.17	6.65	0.16	0.00	0.05
West North Central	7.77	0.07	6.16	0.07	0.00	0.01
South Atlantic	8.39	0.17	6.91	0.19	0.00	0.02
East South Central	8.19	0.06	7.28	0.06	0.00	0.04
West South Central	11.16	0.10	8.60	0.11	0.00	-0.11
Mountain	11.71	0.05	9.28	0.07	0.06	-0.03
Pacific	11.49	0.15	8.45	0.16	0.01	-0.17
Metro status					**0.08**	**-0.04**
Living in metro area	9.32	0.74	7.45	0.83	0.04	-0.05
Not living in metro area	7.02	0.26	5.59	0.17	0.04	0.02
Constant					**0.00**	**-0.56**
Total					**-0.71**	**-0.89**
Pct of total change explained					**44.3**	**55.7**

Note: Oaxaca decomposition also includes year fixed effects. The contribution of the interaction terms is not listed.

Table 2: Oaxaca decompositions of cross-state mobility rate
Change in Average, 1981-1989 to 2002-2010 (percentage points): -0.86

	1981-1989		2002-2010		Contrib of changes in:	
	Avg. move rate	Pop. share	Avg. move rate	Pop. share	Quantities	Coeffs.
Gender					**0.00**	**0.01**
Female	2.17	0.53	1.40	0.52	0.00	0.12
Male	2.59	0.47	1.50	0.48	0.00	-0.11
Age distribution					**-0.15**	**-0.01**
Age 25-34	4.31	0.29	3.05	0.21	-0.12	-0.08
Age 35-44	2.48	0.22	1.54	0.22	0.00	-0.06
Age 44-54	1.41	0.31	0.94	0.38	-0.04	0.03
Age 55+	0.90	0.19	0.64	0.19	0.00	0.10
Education					**0.28**	**0.01**
No high school degree	1.42	0.26	0.88	0.14	0.12	0.06
High school degree, no college	2.07	0.38	1.09	0.31	0.02	0.07
Some college	2.86	0.16	1.44	0.26	0.01	-0.01
College degree	3.85	0.19	2.12	0.29	0.11	-0.10
Racial composition					**0.00**	**-0.07**
White	2.40	0.87	1.43	0.83	-0.01	-0.12
Black	1.82	0.10	1.38	0.11	0.00	0.07
Other	3.33	0.03	1.73	0.06	0.02	-0.02
Maritial Status					**-0.05**	**-0.14**
Married	2.23	0.68	1.30	0.63	-0.03	-0.17
Separated / divorced	2.37	0.20	1.40	0.21	0.00	-0.03
Single	3.22	0.11	2.09	0.16	-0.03	0.05
Kids in house					**0.02**	**-0.03**
Kids	2.69	0.38	1.59	0.34	0.01	0.03
No kids	2.17	0.62	1.37	0.66	0.01	-0.06
Number of earners					**-0.01**	**-0.07**
Dual earners	1.69	0.30	0.91	0.31	0.00	0.06
Single or no earner	2.67	0.70	1.69	0.69	0.00	-0.13
Renter / owner					**-0.06**	**0.29**
Renter	5.21	0.28	3.23	0.26	-0.03	-0.16
Owner	1.30	0.72	0.84	0.74	-0.03	0.45
Location in 1980-2010 income distribution					**-0.01**	**0.00**
1st quintile	2.62	0.23	1.74	0.18	-0.01	-0.06
2nd quintile	2.24	0.20	1.38	0.19	0.00	-0.05
3rd quintile	2.38	0.20	1.34	0.20	0.00	-0.01
4th quintile	2.09	0.20	1.29	0.20	0.00	0.07
5th quintile	2.48	0.18	1.52	0.23	0.00	0.06
Employment status					**-0.02**	**0.10**
Employed	2.33	0.60	1.36	0.63	-0.03	0.07
Unemployed	5.05	0.04	3.19	0.04	0.00	-0.01
Not in labor force	2.14	0.36	1.42	0.33	0.00	0.04
Self-employed?					**0.00**	**-0.23**
Self employed	1.59	0.06	1.01	0.08	0.00	0.02
Not self emp	2.42	0.94	1.48	0.92	0.00	-0.25
Census region					**0.08**	**0.03**
New England	2.27	0.05	1.28	0.05	0.00	0.00
Middle Atlantic	1.23	0.16	0.92	0.14	0.03	0.10
East North Central	1.55	0.17	0.99	0.16	0.01	0.07
West North Central	2.44	0.07	1.61	0.07	0.00	0.01
South Atlantic	3.28	0.17	1.86	0.19	0.01	-0.11
East South Central	2.17	0.06	1.65	0.06	0.00	0.02
West South Central	2.86	0.10	1.46	0.11	0.00	-0.04
Mountain	4.79	0.05	2.72	0.07	0.04	-0.04
Pacific	2.42	0.15	1.21	0.16	-0.01	0.03
Metro status					**0.00**	**-0.02**
Living in metro area	2.36	0.74	1.47	0.83	0.00	-0.03
Not living in metro area	2.16	0.26	1.32	0.17	0.00	0.01
Constant					**0.00**	**-0.79**
Total					**0.07**	**-0.93**
Pct of total change explained					**-8.1**	**108.1**

Note: Oaxaca decomposition also includes year fixed effects. The contribution of the interaction terms is not listed.

Table 3: Oaxaca Decompositions of the Decrease in Labor Market Flows

	Employer change		Occupation change		Industry change		Employment exit	
	1980s: 11.7 %		1980s: 7.0 %		1980s: 7.1 %		1980s: 7.7 %	
	2000s: 10.0 %		2000s: 4.6 %		2000s: 4.7 %		2000s: 6.7 %	
	Diff.: -1.8 %		Diff.: -2.4 %		Diff.: -2.4 %		Diff.: -1.0 %	
	Quants.	**Coeffs.**	**Quants.**	**Coeffs.**	**Quants.**	**Coeffs.**	**Quants.**	**Coeffs.**
Gender	**-0.07**	**-0.16**	**-0.05**	**-0.09**	**-0.05**	**-0.07**	**0.01**	**-0.01**
Female	-0.04	0.89	-0.02	0.42	-0.02	0.32	0.00	-0.12
Male	-0.04	-1.06	-0.02	-0.51	-0.02	-0.39	0.00	0.11
Age distribution	**-0.71**	**-0.55**	**-0.41**	**0.09**	**-0.41**	**0.11**	**-0.24**	**-0.02**
Age 25-34	-0.52	-0.57	-0.28	-0.15	-0.29	-0.13	-0.29	-0.07
Age 35-44	0.00	-0.37	0.00	-0.02	0.00	0.01	0.01	-0.13
Age 44-54	-0.16	0.27	-0.11	0.26	-0.11	0.24	0.05	0.03
Age 55+	-0.03	0.12	-0.02	-0.01	-0.02	-0.01	-0.01	0.14
Education	**0.68**	**0.07**	**0.35**	**0.00**	**0.40**	**0.03**	**0.05**	**-0.02**
No high school degree	0.23	-0.08	0.12	0.00	0.14	-0.02	0.05	-0.02
High school degree, no college	0.10	0.04	0.04	0.10	0.05	0.10	-0.02	-0.05
Some college	0.12	0.12	0.08	0.07	0.09	0.02	0.05	0.05
College degree	0.23	-0.01	0.10	-0.17	0.12	-0.08	-0.03	0.00
Racial composition	**-0.08**	**-1.01**	**-0.04**	**-0.06**	**-0.03**	**-0.08**	**-0.01**	**0.12**
White	-0.07	-1.19	-0.02	-0.07	-0.02	-0.09	0.00	0.12
Black	0.00	0.22	0.00	0.01	0.00	0.02	0.00	0.02
Other	-0.01	-0.03	-0.01	0.00	-0.01	0.00	-0.02	-0.01
Maritial Status	**0.06**	**-0.05**	**0.00**	**0.08**	**0.00**	**0.02**	**-0.30**	**-0.19**
Married	0.06	-0.07	0.02	0.11	0.02	0.03	-0.19	-0.27
Separated / divorced	0.01	-0.07	0.01	-0.12	0.01	-0.08	-0.01	0.05
Single	-0.02	0.08	-0.03	0.09	-0.03	0.07	-0.10	0.02
Kids in house	**0.02**	**-0.03**	**0.01**	**0.00**	**0.01**	**0.00**	**-0.03**	**-0.05**
Kids	0.01	0.08	0.01	0.01	0.01	0.00	-0.02	0.07
No kids	0.01	-0.10	0.01	-0.02	0.01	0.01	-0.02	-0.12
Number of earners	**0.00**	**-0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**-0.13**	**-0.19**
Dual earners	0.00	0.07	0.00	-0.01	0.00	0.01	-0.07	0.15
Single or no earner	0.00	-0.09	0.00	0.02	0.00	-0.02	-0.07	-0.34
Renter / owner	**-0.10**	**0.27**	**-0.07**	**0.25**	**-0.07**	**0.28**	**0.00**	**-0.17**
Renter	-0.05	-0.16	-0.03	-0.15	-0.03	-0.17	0.00	0.10
Owner	-0.05	0.42	-0.03	0.39	-0.03	0.45	0.00	-0.27
Location in 1980-2010 income dist	**-0.52**	**1.06**	**-0.48**	**0.95**	**-0.48**	**0.90**	**-0.09**	**0.01**
1st quintile	-0.11	-0.18	-0.19	-0.23	-0.19	-0.21	0.05	-0.42
2nd quintile	-0.10	-0.64	-0.05	-0.28	-0.05	-0.28	-0.03	-0.32
3rd quintile	0.00	-0.21	0.01	0.11	0.01	0.10	0.00	0.02
4th quintile	-0.01	0.66	0.01	0.52	0.01	0.49	0.00	0.23
5th quintile	-0.30	1.43	-0.25	0.83	-0.26	0.80	-0.11	0.49
Self-employed?	**-0.06**	**-1.10**	**-0.01**	**0.16**	**-0.01**	**0.30**	**-0.04**	**-0.58**
Self employed	-0.03	0.14	-0.01	-0.02	-0.01	-0.04	-0.02	0.05
Not self emp	-0.03	-1.24	-0.01	0.18	-0.01	0.34	-0.02	-0.62
Census region	**0.14**	**-0.13**	**0.09**	**-0.01**	**0.09**	**0.00**	**0.02**	**0.08**
New England	0.00	0.03	0.00	0.01	0.00	-0.01	0.00	0.03
Middle Atlantic	0.05	0.16	0.03	0.14	0.03	0.11	0.02	0.12
East North Central	0.02	0.17	0.01	0.08	0.01	0.12	-0.01	-0.01
West North Central	0.00	0.15	0.00	0.07	0.00	0.07	0.00	-0.01
South Atlantic	0.00	-0.22	0.00	-0.12	0.00	-0.13	-0.01	0.07
East South Central	0.00	0.10	0.00	0.04	0.00	0.06	0.00	0.00
West South Central	0.00	-0.20	0.00	-0.07	0.00	-0.06	0.00	-0.08
Mountain	0.06	-0.10	0.04	-0.07	0.04	-0.07	0.01	-0.05
Pacific	0.00	-0.22	0.00	-0.09	0.00	-0.09	0.01	0.00
Metro status	**-0.02**	**-0.49**	**0.01**	**-0.24**	**0.01**	**-0.29**	**-0.07**	**0.12**
Living in metro area	-0.01	-0.66	0.00	-0.32	0.01	-0.39	-0.04	0.17
Not living in metro area	-0.01	0.17	0.00	0.08	0.01	0.10	-0.04	-0.05
Constant		**1.08**		**-2.91**		**-3.05**		**0.75**
Total contribution	**-0.68**	**-1.13**	**-0.60**	**-1.83**	**-0.55**	**-1.88**	**-0.84**	**-0.14**
Pct of total change explained	**37.5**	**62.5**	**24.7**	**75.3**	**22.5**	**77.5**	**85.8**	**14.2**

Note: Oaxaca decomposition also includes year fixed effects. The contribution of the interaction terms is not listed.

Table 4: Relationship between fraction in a state that lived in a different state in the previous year and select state characteristics

	CPS (1)	IRS (2)
% changing firms	0.06	0.04
	(0.01)	(0.01)
% changing occupations	0.04	0.00
	(0.04)	(0.02)
% changing industries	0.05	0.03
	(0.04)	(0.02)
% emp last year, not currently emp.	0.04	-0.06
	(0.02)	(0.01)
% not emp last year and currently emp.	0.12	0.04
	(0.08)	(0.04)
% less than 24 years old	-3.94	-5.95
	(3.37)	(1.60)
% 65 years old or older	-0.96	-5.52
	(3.32)	(1.59)
% with no more than a high school degree	-1.70	-0.08
	(1.58)	(0.76)
% homeowner	-5.59	-0.08
	(1.15)	(0.82)
log(median wage)-log(25th pctile wage)	-0.65	0.04
	(0.57)	(0.21)
log(75th pctile wage)-log(median wage)	-0.36	-0.24
	(0.80)	(0.28)
% employed in lower-skill jobs	-0.06	-0.04
	(0.02)	(0.01)
% employed in higher-skill jobs	-0.03	-0.03
	(0.02)	(0.01)
% living in HH with emp.-provided health care	0.02	0.01
	(0.01)	(0.01)
% living in a HH where both spouses work	-0.01	0.00
	(0.01)	(0.01)
Change in migration (1981-1989 to 2002-2009)	-1.11	-0.43
Change due to RHS variables	-0.47	-0.06
Change due to job transition vars.	-0.57	-0.10

Note: Coefficients are from state-year level regressions of the percent living in a different state in the previous year on the listed variables, state and year fixed effects, state time trends, and the following additional variables: percent of the state that is male, white, or black; percent employed and unemployed; percent married; and percent living in a household with children. Included years are 1981-2009. Standard errors clustered at the state level are in parentheses. Contribution to change in the fraction moving states from all RHS variables is calculated by: 1) predicting migration for each state in each year based on all RHS variables, excluding state and year fixed effects and state time trends; 2) taking the weighted average across states for each year; 3) calculating the average for 1981-89 and 2002-09; 4) taking the difference over the periods. For the contribution due to the job transition variables, the same exercise is carried out using the first five variables in the table. For the first column, N=1377 (51 states and 27 years). For the second column, N=1296 (48 states and 27 years--data is not available for all states).

Table 5: Oaxaca decomposition of cross-state mobility rate, including job transitions
Change in average, 1981-1989 to 2002-2010 (percentage points): -1.03

	1981-1989		2002-2010		Contrib of changes in:	
	Avg. move rate	Pop. share	Avg. move rate	Pop. share	Quants.	Coeffs.
Job transition variables					**-0.22**	**1.11**
Changed occ. in last year	10.35	0.07	7.68	0.05	-0.04	-0.02
Didn't change occ. in last year	1.88	0.93	1.10	0.95	-0.04	0.38
Changed ind. in last year	10.27	0.07	7.67	0.05	-0.03	0.00
Didn't change ind. in last year	1.88	0.93	1.09	0.95	-0.03	-0.04
Changed firm in last year	8.69	0.12	5.30	0.10	-0.03	-0.08
Didn't change firm in last year	1.63	0.88	0.96	0.90	-0.03	0.64
Emp. last year, but not currently	5.46	0.06	3.43	0.05	-0.01	-0.01
Emp. last year, emp. currently	2.28	0.94	1.29	0.95	-0.01	0.25
Gender					**0.00**	**-0.01**
Female	2.27	0.43	1.32	0.47	0.00	0.04
Male	2.63	0.57	1.46	0.53	0.00	-0.04
Age distribution					**-0.14**	**-0.09**
Age 25-34	3.98	0.36	2.75	0.25	-0.10	-0.03
Age 35-44	2.31	0.28	1.31	0.28	0.00	-0.08
Age 44-54	1.17	0.33	0.77	0.43	-0.03	0.00
Age 55+	0.53	0.04	0.35	0.04	-0.01	0.01
Education					**0.21**	**-0.03**
No high school degree	1.59	0.17	0.93	0.09	0.07	0.03
High school degree, no college	1.94	0.40	0.98	0.29	0.03	0.06
Some college	2.72	0.19	1.22	0.28	0.00	-0.02
College degree	3.76	0.25	2.01	0.34	0.11	-0.10
Racial composition					**0.00**	**-0.08**
White	2.53	0.87	1.38	0.83	-0.01	-0.12
Black	1.85	0.10	1.39	0.10	0.00	0.06
Other	3.05	0.03	1.62	0.06	0.01	-0.02
Maritial Status					**-0.06**	**-0.15**
Married	2.14	0.71	1.16	0.65	-0.04	-0.20
Separated / divorced	3.01	0.16	1.50	0.17	0.00	-0.01
Single	3.58	0.13	2.17	0.18	-0.03	0.06
Kids in house					**0.03**	**-0.01**
Kids	2.30	0.46	1.26	0.41	0.01	0.05
No kids	2.63	0.54	1.49	0.59	0.01	-0.06
Number of earners					**0.00**	**-0.01**
Dual earners	1.62	0.47	0.84	0.47	0.00	0.09
Single or no earner	3.23	0.53	1.88	0.53	0.00	-0.11
Renter / owner					**-0.08**	**0.28**
Renter	5.58	0.28	3.29	0.25	-0.04	-0.16
Owner	1.27	0.72	0.76	0.75	-0.04	0.44
Location in 1980-2010 income distribution					**0.00**	**0.02**
1st quintile	3.59	0.09	2.30	0.05	-0.01	-0.01
2nd quintile	2.98	0.15	1.69	0.13	0.00	0.00
3rd quintile	2.46	0.23	1.30	0.22	0.00	0.00
4th quintile	1.97	0.27	1.17	0.27	0.00	0.06
5th quintile	2.36	0.26	1.39	0.32	0.01	-0.02
Self-employed?					**-0.01**	**-0.22**
Self employed	1.52	0.10	0.96	0.11	0.00	0.03
Not self emp	2.58	0.90	1.45	0.89	0.00	-0.24
Census region					**0.06**	**0.04**
New England	2.53	0.06	1.33	0.05	0.00	0.00
Middle Atlantic	1.42	0.15	0.94	0.13	0.02	0.07
East North Central	1.62	0.17	0.93	0.16	0.01	0.06
West North Central	2.61	0.08	1.54	0.07	0.00	-0.01
South Atlantic	3.31	0.17	1.79	0.19	0.01	-0.09
East South Central	2.27	0.06	1.73	0.06	0.00	0.02
West South Central	2.95	0.11	1.40	0.11	0.00	-0.03
Mountain	4.82	0.05	2.52	0.07	0.03	-0.03
Pacific	2.44	0.15	1.12	0.16	-0.01	0.05
Metro status					**0.00**	**-0.03**
Living in metro area	2.51	0.75	1.42	0.84	0.00	-0.05
Not living in metro area	2.14	0.25	1.25	0.16	0.00	0.01
Constant					**0.00**	**-1.66**
Total					**-0.20**	**-0.83**
Pct of total change explained					**19.3**	**80.7**

Note: Oaxaca decomposition also includes year fixed effects. The contribution of the interaction terms is not listed.

Table 6: Predictions of Various Theories for Declining Migration

Implications of explanations below for…	Migration Rates	Job transitions	Returns to job tenure	Wage change at job change
Slowing migration of less skilled to expensive, high skilled markets (Ganong and Shoag, 2012)	↓, more for less skilled	↓, more for less skilled across markets but no impact within markets	n.p.	n.p.
Decreasing geographic specificity of industries and occupations, improved information about location amenities (Kaplan Schulhofer-Wohl, 2012b)	↓	Unclear. Better local matches ↓ but cheaper local switching ↑	n.p.	n.p.
Disappearance of middle-skill jobs	↓ for less and middle skilled	↑, as middle skill workers shift to higher transition low wage sector	n.p.	n.p.
Rising share of dual career households	↓	Unclear. Job transitions across markets ↓ but no impact within markets	↓ lower match quality to stay in same city as spouse	↑ for long-distance movers: need a higher wage to induce job change
Health insurance related job lock	↓, as job transitions fall	↓	↓ lower match quality to stay in same job	↑ for long-distance movers: need a higher wage to induce job change
Rising returns to firm-specific human capital (tenure)	↓, as job transitions fall	↓	↑	Unclear.↓ since wage at current employer will be higher, but ↑ if only more able workers change jobs
Increasing importance of internal labor markets for wage growth	↓, as job transitions fall	↓	↓, wage growth comes from transitions within an employer not time with employer	↓, wage growth comes from transitions within an employer not between employers

Notes: n.p. indicates "no prediction."

Table 7: Descriptive Statistics for the Samples of NLS and NLSY Men

	NLS-YM	NLSY79	NLSY97
Unique respondents	3000[a]	4784	2643
Tenure in state	5.61	6.642	6.731
	(3.74)	(3.66)	(3.668)
State change last year	0.057	0.056	0.049
	(0.232)	(0.23)	(0.216)
Log real wage	2.13	1.86	1.821
	(0.38)	(0.422)	(0.424)
Black	0.22	0.229	0.216
	(0.41)	(0.421)	(0.411)
Hispanic	0.055	0.164	0.216
	(0.228)	(0.37)	(0.411)
Age	25.4	25.444	24.264
	((2.21)	(2.24)	(1.789)
Highest grade completed=12	0.363	0.452	0.313
	(0.481)	(0.498)	(0.464)
Highest grade completed=13 to 15	0.194	0.202	0.272
	(0.395)	(0.402)	(0.445)
Highest grade completed=16+	0.209	0.165	0.256
	(0.407)	(0.371)	(0.436)
Employer tenure	2.50	2.581	2.438
	(2.39)	(2.41)	(2.271)
Industry tenure	2.81	2.688	2.588
	(2.41)	(2.395)	(2.262)
Occupation tenure	2.77	2.684	2.536
	(2.40)	(2.394)	(2.264)
Industry change last year	0.274	0.316	0.30
	(0.446)	(0.465)	(0.458)
Occupation change last year	0.292	0.319	0.318
	(0.455)	(0.466)	(0.466)
Change employer last year	0.443	0.376	0.375
	(0.497)	(0.484)	(0.484)

Notes: Sample from each data set is 22-29 year old high attachment individuals with non-missing data for wage equations in subsequent tables. High attachment defined as working 26 or more weeks in the previous calendar year. Cells show unweighted means. Standard deviations are in parentheses. All tenure variables represent continuous years of tenure in current position. Industry and occupation tenure defined in part based on edited industry/occupation change measures per discussion in Data Appendix. Log wages are in constant dollars using the 1982-1984 CPI average. [a] indicates number rounded for confidentiality purposes.

Table 8
Fraction of Interstate Movers that Changed Employer, Industry or Occupation

	NLS-YM	NLSY79	NLSY97
Employer	0.77	0.74	0.74
Occupation	0.62	0.78	0.70
Industry	0.57	0.70	0.60

Notes: Sample from each data set is 22-29 year old high attachment individuals with non-missing data on employer, occupation, industry, and state transitions as defined in Table 7. High attachment defined as working 26 or more weeks in the previous calendar year. Cells show unweighted means.

Table 9: Implied Returns to a Third Year of Tenure for Men Ages 22-29

NLS Cohort:	NLS-YM	NLSY79	NLSY97	NLSY97
Industry tenure	0.0226*** (0.0069)	0.0052 (0.0057)	0.0265** (0.010)	0.0236* (0.012)
Occupation tenure	.0269*** (0.0061)	0.0343*** (0.005)	0.0174 (0.0123)	0.022 (0.015)
Employer tenure	-.0012 (0.0071)	0.0151* (0.006)	0.0028 (0.0146)	-0.0020 (0.017)
State tenure	-.0130*** (0.0041)	-0.010** (0.003)	-0.0032 (0.004)	-0.0052 (0.0058)
Observation years	1966/71, 73, 75, 76, 78, 80, 81	1979-1994	2002-2009	2002-2007

Notes: Cells show implied returns to three years of tenure in designated category, holding other characteristics constant. Returns are calculated from Column [1] specifications in wage equation table. High employment attachment defined as working 26 or more weeks in the previous calendar year.
*** indicates significance of level coefficient at the .1% level, ** at the 1% level, and * at the 5% level.

Table 10: Wage Equation Returns to Labor Market and Geographic Transitions

NLS Cohort:	NLS-YM	NLSY79	NLSY97	NLSY97 2008-09 omitted
Industry change	-0.004	0.0177	-0.0222	-0.0158
	(0.0227)	(0.0159)	(0.0271)	(0.0381)
Occupation ch.	-0.0183	-0.0014	0.0628*	0.0913*
	(0.0213)	(0.0149)	(0.0271)	(0.0397)
Employer change	0.0716***	0.034*	0.0251	0.0106
	(0.0203)	(0.0157)	(0.0229)	(0.0325)
State change	0.0109	-0.0546	-0.0004	0.0598
	(0.0494)	(0.0292)	(0.0301)	(0.0435)
N obs	5533	17323	6458	3414

Notes: Male, 22-29 high attachment sample. Dependent variable is annual change in log hourly wage. Covariates include black, Hispanic, 4 education dummies, aged-squared, the change in age squared, the change in all four tenure variables, the change in the squares of all four tenure variables, and year dummies.

Table 11: Returns to Employer Tenure by Age in the PSID, CPS and NLSY

	PSID			CPS			NLSY	
	1982-1994	1995-2001	2003-2009	1983, 1987, 1991	1996, 1998, 2000, 2002, 2004	2006, 2008	1979-1994	2002-2009
Men								
22-29	0.042	0.027	0.041	0.053	0.030	0.033	0.048	0.042
30-39	0.021	0.020	0.019	0.035	0.020	0.012	0.053	-
40-49	0.016	0.020	0.010	0.026	0.021	0.021		
50-64	0.016	0.017	0.018	0.024	0.024	0.018		

Notes: Cells report implied returns to a third year of tenure from log wage equations using the Table 9 specification but omitting industry, occupation, and state tenure and their squares. Each cell is a separate regression using the indicated age group, data set, and data period. Standard errors are available upon request.

Table 12: Returns to Changing Employer by Age in the PSID

	1983-1994	1995-2001	2003-2009	2003-2007
Men				
22-29	0.044	0.123	-0.055	0.037
	(0.021)	(0.044)	(0.048)	(0.049)
30-39	0.060	0.054	0.025	-0.012
	(0.013)	(0.030)	(0.028)	(0.031)
40-49	0.020	0.091	-0.072	-0.010
	(0.018)	(0.041)	(0.025)	(0.027)
50-64	0.002	0.008	-0.063	0.003
	(0.020)	(0.052)	(0.030)	(0.036)

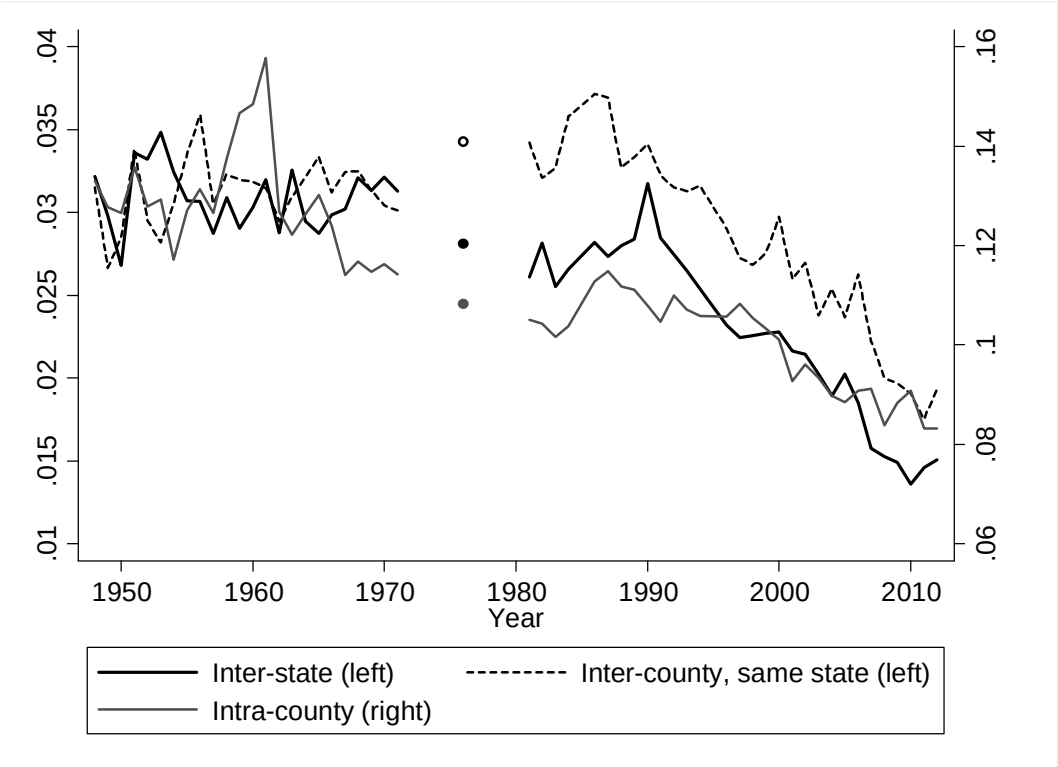
Notes: Each cell reports the coefficient estimate on an indicator for whether an individual changed employers in the previous two years, where the dependent variable is the change in the individual's log wage over the previous two years. Other controls include age, age squared, tenure squared, indicators for educational attainment and race, and the 2-year changes in tenure, tenure squared and age squared. Regressions are estimated separately for each age group and time period, and the sample is restricted to men.

APPENDIX Table 1: Wage Equation Coefficients on Years of Tenure – Men, ages 22-29

	NLS-YM			NLSY79			
	[1]	[2]	[3]	[1]	[2]	[3]	[1]
Industry	0.0231	0.0218	0.0218*	0.0031	0.0022	0.0144	0.0708***
	0.0121	0.012	0.0102	0.0118	0.0118	0.0099	0.0212
Industry^2	-0.0001	0.00	-0.0004	0.0004	0.0004	-0.0003	-0.0089**
	0.0015	0.0015	0.0013	0.0015	0.0015	0.0014	0.0033
Occupation	0.0347**	0.0326**	0.0411***	0.0555***	0.0516***	0.0618***	0.0264
	0.0119	0.0119	0.01	0.0118	0.0119	0.0101	0.0222
Occupation^2	-0.0016	-0.0014	-0.0032*	-0.0043*	-0.004*	-0.0046**	-0.0018
	0.0015	0.0015	0.0013	0.0018	0.0018	0.0014	0.0033
Employer	0.0109	0.0091		0.0223	0.023		-0.0232
	0.0132	0.0133		0.0129	0.0129		0.0222
Employer^2	-0.0024	-0.0023		-0.0014	-0.0014		0.0052
	0.0016	0.0016		0.0017	0.0017		0.0029
State	-0.0181**			-0.0138**			-0.0023
	0.0059			0.0048			0.0067
State^2	0.001*			0.0007*			-0.0002
	0.0004			0.0004			0.0005
N Obs.	10165	10165	10165	24824	24824	24824	9883
R-Squared	0.2029	0.201	0.2003	0.1846	0.1834	0.1829	0.1456

Notes: Dependent variable is log real hourly wage. High employment attachment defined as working 26 or more weeks in the previous calendar year. Additional controls include age, age-squared, black, Hispanic, year dummies (_Y*), and four education group dummies. Robust standard errors clustered at respondent level in parentheses. *** indicates significance at the .1% level, ** at the 1% level, and * at the 5% level.

Figure 1



Migration rates in the Current Population Survey from 1948 to 2012. Sample details are given in Molloy, Smith and Wozniak (2011).

Figure 2

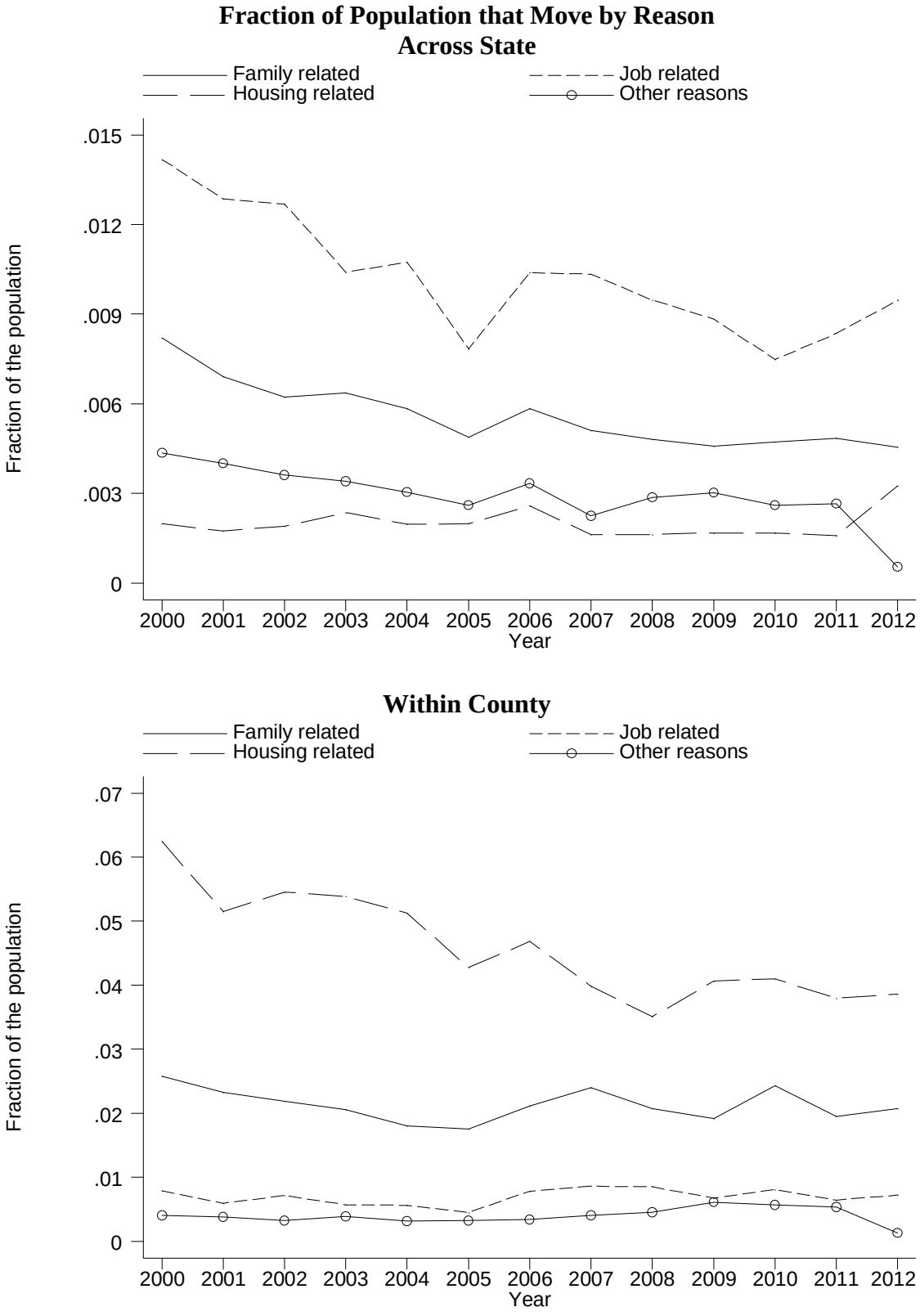

Fraction of Population that Move by Reason Across State
Family related
Job related
Housing related
Other reasons
Fraction of the population
.015
.012
.009
.006
.003
0
2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012
Year
Within County
Family related
Job related
Housing related
Other reasons
Fraction of the population
.07
.06
.05
.04
.03
.02
.01
0
2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012
Year

Figure 3

Labor Market Transitions in the CPS

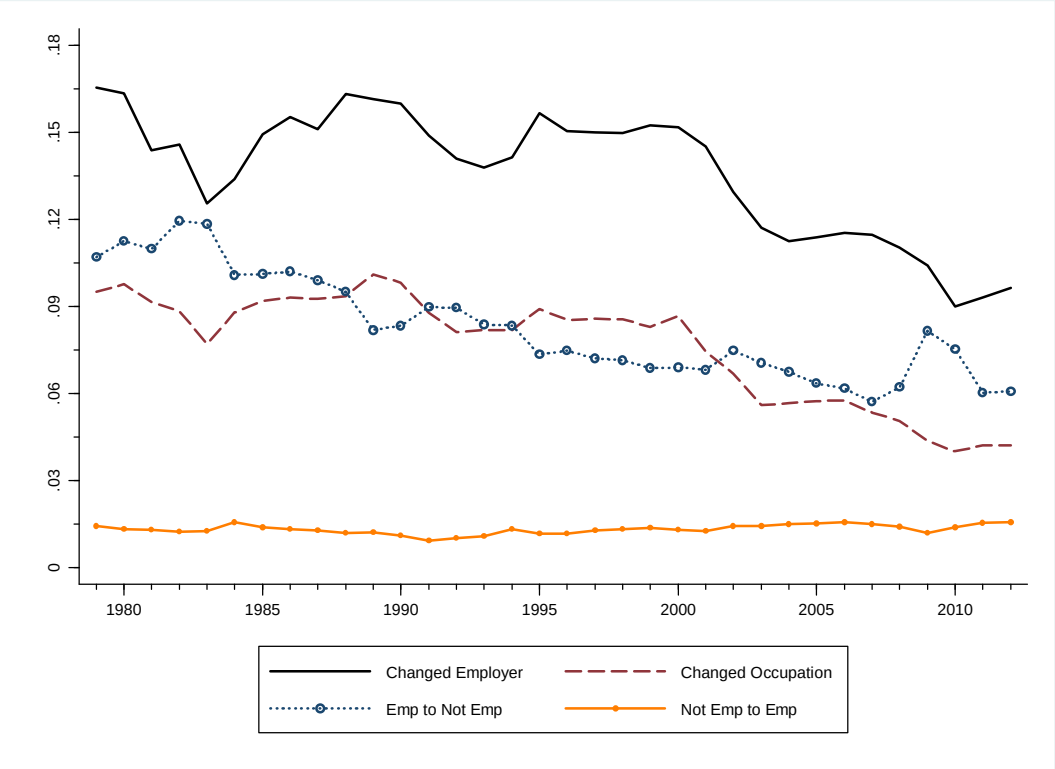


Figure 4
Changes in Job Changing and Changes in In-Migration by State

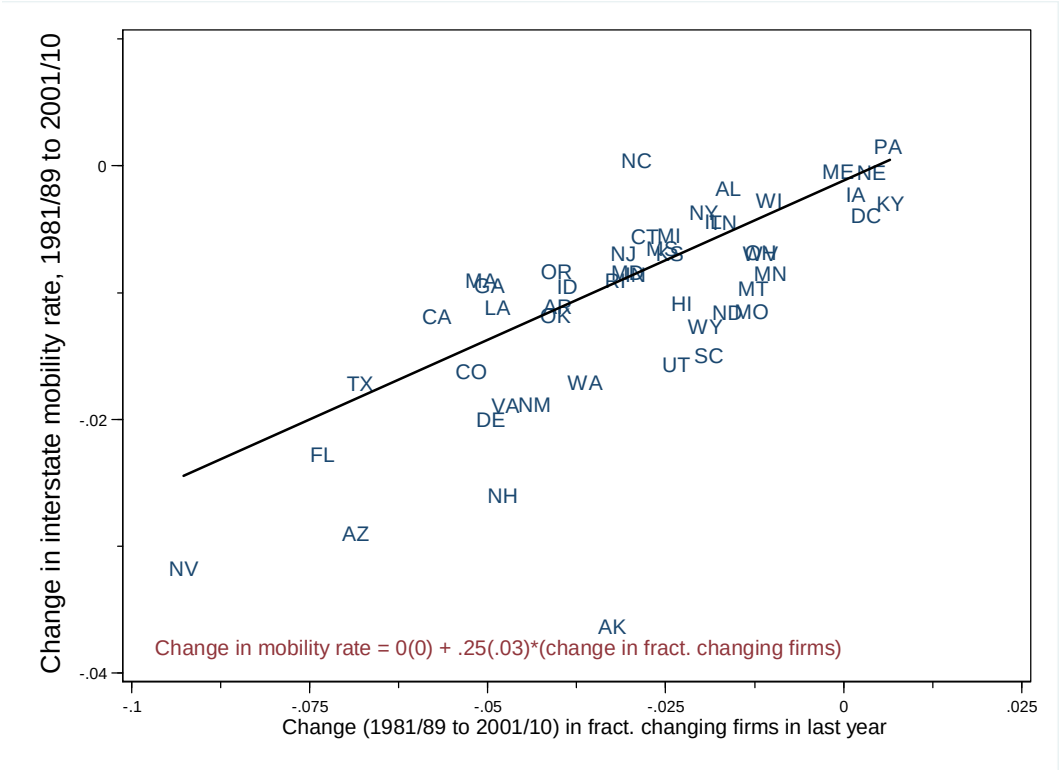
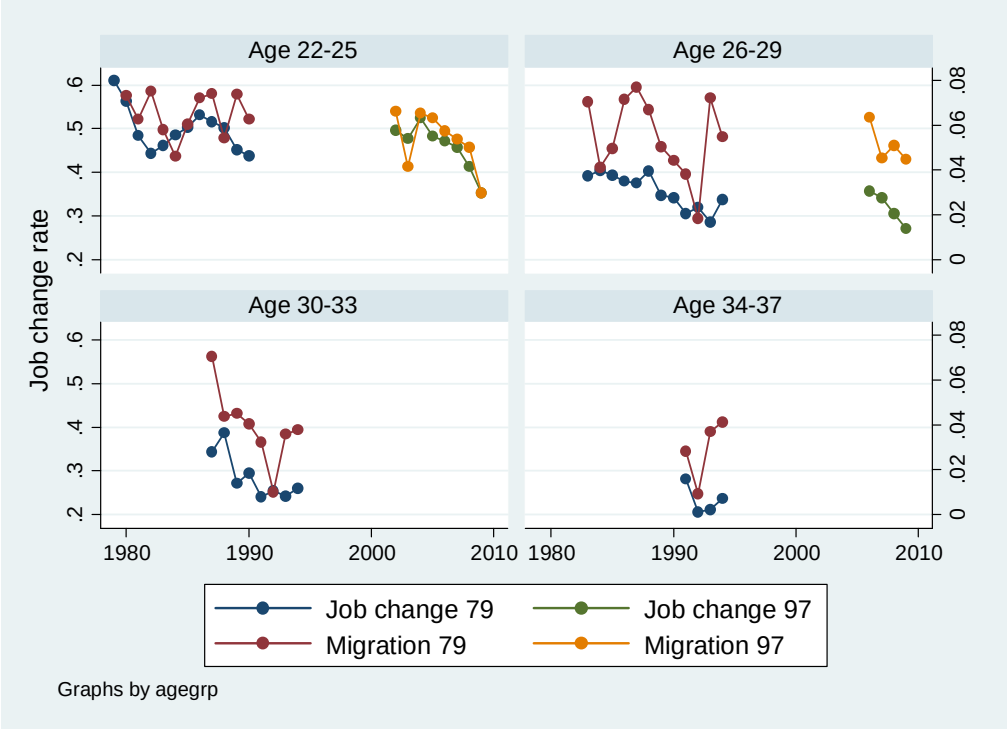


Figure 5

Rates of employer (job) changing and interstate migration in the NLSY79 and NLSY97, by age and year.



Rates of industry and occupation changing in the same data, by age and year