

Job Changing and the Decline in Long-Distance Migration in the US

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Abstract

Interstate migration in the U.S. has decreased steadily since the 1980s, but little is known about the causes of this decline. We show that declining migration is related to a concurrent secular decline in job changing. Neither of these trends are primarily due to observable demographic or socioeconomic factors. Rather, we argue that the decline in job changing has caused the decline in migration. After establishing a role for the labor market in declining migration, we turn to the question of why job changing has become less frequent over the past several decades. We find little support for several explanations including the rise of dual-career households, the decline in middle-skill jobs, occupational licensing, and the need for employees to retain health insurance. Thus, the reasons for these dual trends remain opaque and should be explored further.

I. Introduction

Internal migration within the United States has fallen markedly and continuously since the 1980s (Figure 1).¹ This trend has generated concern among policymakers and academics, as population flows across regions are an important mechanism of adjustment to local economic shocks (Blanchard and Katz 1992; Bound and Holzer 2000; Dao, Furceri and Loungani 2014; Zabel 2012). Indeed, high migration rates are often cited as a contributing factor to the lower average unemployment rate in the United States relative to Europe (Bentivogli and Pagano 1999; Decressin and Fatas 1995; Magrini 2004).² On the other hand, declining internal migration might warrant optimism rather than concern if it signals a diminished need for migration. For example, improved matching between individuals and their jobs and locations may have led to a more efficient allocation of workers across the US. Understanding the cause of the decline in geographic mobility is essential for determining its implications for individuals' wellbeing, and hence whether public policy should attempt to halt this secular decline.

The aging of the population seems to be a natural candidate to explain declining migration since an individual's propensity to move decreases as he or she ages. However, Cooke (2011) and Kaplan and Schulhofer-Wohl (forthcoming) find that aging can only explain a small portion of the downward trend in interstate migration. In this paper, we also find only a limited role for aging as well as a wide variety of other demographic shifts in the composition of the population. Consequently, we look beyond demographics and explore whether changes in the labor market can help explain the secular decline in migration. Explanations related to the labor market seem promising for several reasons. One is that the three-decade decline in US internal migration has coincided with a decline in the frequency of labor market transitions and churning, as indicated by measures of job-to-job transitions, job creation and destruction, and worker reallocation (Davis, Faberman, Haltiwanger 2012; Davis and Haltiwanger 2014; Hyatt and Spletzer 2013). Another is that longer-distance migration generally entails a change of local labor markets. And job-related reasons are the most commonly cited among interstate migrants (Molloy, Smith, Wozniak and Trezzi 2016).

¹ Other research documenting the multi-decade decline in interstate migration—the primary focus of this paper—includes Cooke (2011 and 2013), Kaplan and Schulhofer-Wohl (forthcoming), and Molloy, Smith and Wozniak (2011). Migration over shorter distances has also fallen over the second half of the 20th Century (Fischer 2002; Wolf and Longino 2005).

² As of 2005, long-distance migration within the United States was still higher than that in most other European countries (Molloy, Smith and Wozniak 2011).

Some other research attempting to explain the downward trend in interstate migration has also focused on issues related to the labor market. Cooke (2013) finds that the trend in migration is correlated with a larger fraction of people living in dual-earner households and technological advances that have allowed workers to work remotely. Partridge et al. (2012) and Dao et al. (2014) find that industry-based employment shocks have become weaker predictors of population inflows into cities in the 2000s as compared to the 1990s, suggesting that the downward trend in migration might be related to a change in the responsiveness of the population to labor demand shocks.³ Kaplan and Schulhofer-Wohl (forthcoming) argue that a secular shift in the occupational composition of cities has reduced the need to move long distances in order to work in a different occupation. In contrast to these studies, we argue that the decline in interstate migration is a symptom of a broader labor market phenomenon—a concurrent downward trend in the propensity of workers to change jobs—which the explanations in the studies cited above cannot necessarily also explain.

We begin by addressing three specific questions. First, does there appear to be a connection between the secular decline in migration and the downward trend in the frequency of job changing? We assemble a wide range of evidence suggesting that these downtrends are indeed related. Second, can secular changes in the demographic or socioeconomic characteristics of the population, such as the age distribution or homeownership, provide a unifying explanation for the trends in migration and job transitions? We show that, while changes in the composition of the population can explain some of these trends, there remains a significant amount unexplained. Third, does it seem more likely that changes in the labor market caused the decline in geographic mobility, or has declining mobility caused a decline in job changing? We provide a variety of evidence that suggests the long-run decline in interstate migration has been caused by a change in the way that the labor market functions, rather than vice versa.

Given these findings, we turn to the fourth and final question of what can explain the downward trend in job changing. We examine a number of potential explanations including 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 an increase in occupational licensing. We find little empirical support for any of these hypotheses. Thus, the root

³ Alternatively, the changing responsiveness of the population to local shocks may be a *reflection* of declining migration rather than a cause.

cause of the secular decline in labor market transitions—and consequently the secular decline in long-distance migration—remains a puzzle.

We conclude by discussing a number of factors that may have led to broad-based increases in the costs of making a labor market transition or decreases in the benefit of doing so. As the trends in geographic mobility and job changing seem to have become an enduring feature of the US economy, further research is needed to understand the precise mechanisms driving these declines. The implications from this research may also extend beyond the U.S., as declines in internal migration have also been documented for other countries including Canada, Australia, and Mexico (Bell and Charles-Edwards 2013; Kaplan and Schulhofer-Wohl, forthcoming).⁴

II. Determinants of Migration

Following others, we define internal migration as moves within the US over a distance that would typically require migrants to change local labor markets, housing markets, or both. Internal migration has been of interest to researchers across the social science disciplines, and hence there exist a variety of theories to explain internal migration. One common approach is to model migration as the outcome of a process by which each individual weighs the benefits of living in a different location against the costs of moving (Greenwood 1997; Lee 1966; Roback 1982; Rosen 1979; Sjaastad 1962). Many benefits and costs are related to employment opportunities or are otherwise financial in nature. Some examples of such benefits include a higher wage or better job match, improved job search prospects, and cheaper housing, while related costs include the literal cost of moving one's household, time costs associated with finding new housing and employment, and the loss of local networks or location-specific human capital. Beyond economic reasons, other important costs and benefits are related to local amenities or family concerns. Chen and Rosenthal (2008) show that economic benefits seem to be important drivers for young and college-educated people, while amenities appear more important for older individuals. Morrison and Clark (2011) emphasize that non-economic reasons appear to be important, while Clark and Davies Withers (2007) demonstrate that migration depends on complex interactions between all of these factors.

A second approach has focused on the characteristics of migrants compared to non-migrants, sometimes making the case that different demographic and socioeconomic characteristics affect the relative costs and benefits of moving (Fischer 2002; Greenwood 1997; Schwartz 1976).

⁴ By contrast, long-distance migration within the UK does not appear to exhibit a secular decline (Champion and Shuttlesworth, forthcoming).

For example, younger workers—who have built up little firm-specific or occupation-specific experience, and may have less well-developed local networks—likely have lower costs to moving than older workers. Conversely, older workers may have higher costs of moving and face lower benefits from moving, because they have fewer working years remaining to accrue higher wages from a different job. In this case, the trend in migration might reflect changes in the types of people in the population. Population demographics can also affect migration if the size of a birth cohort influences economic or social outcomes (Easterlin 1976, 1980). Specifically, Plane and Rogerson (1991) show that migration rates of the baby boom generation are lower than for earlier cohorts at the same age, which they argue is the result of greater labor supply pressure. However, Wilson (1983) finds no evidence that the returns to an interstate move were lower for baby-boomers than for earlier cohorts.

A third approach emphasizes the idea that migration plays an important role in allowing an economy to transition from a rural society to a developed, urban economy. For example, the model of migration described by Zelinsky (1971) hypothesizes that a burst of rural-to-urban migration accompanies a society’s modernization, but that as society becomes increasingly advanced, rural-to-urban migration slows and internal migration is predominantly between cities and suburbs. In this case, the slowing of migration could reflect the end of a large-scale economic and social transition. Massey (1999) summarizes these theories and others.

This paper is most directly related to the first two approaches. In Section IV, we consider the importance of changing demographic and socioeconomic characteristics to declining migration. In Section V, we assess the likelihood of a variety of potential explanations for the concurrent decline in job changing and migration, most of which can be thought of as related to a cost or benefit of moving. We do not discuss issues related to rural-to-urban migration, as the focus of our paper is on the period from the 1980s onward, and the rural-to-urban transition was largely complete by this time. Moreover, the decline in interstate migration primarily reflects declines in in-migration and outmigration in most states, not a change in the pattern of net migration across states (Kaplan and Schulhofer-Wohl, forthcoming; Molloy, Smith and Wozniak 2011).

III. Data Sources

Much of the evidence in this paper is drawn from the Annual Social and Economic Supplement of Current Population Survey (ASEC-CPS), which is a nationally-representative survey

designed to provide statistics on a wide range of population demographics and labor market outcomes. Each year in March, the CPS asks respondents if they are living in the same house as the previous year and, if not, whether they are living in the same county or the same state as in the previous year.⁵ Thus, one can use these responses to construct measures of internal migration across various distances. The CPS provides the longest available annual time series on migration rates for the US, extending from the late 1940s to the present.⁶ Figure 1 shows migration rates from the CPS; the exact methods of calculation are described in Saks and Wozniak (2011). The figure shows that annual rates of migration were relatively stable from the 1950s through the 1970s, and then fell substantially.⁷ In 2013, the rate of moving within the same county was 38% below its 1948-1971 average, while the rate of moving across states has fallen 51% over the same period.

We also use the ASEC-CPS to compile information on labor market transitions. Similar to Stewart (2007), we measure job-to-job transitions based on the reported number of employers in the previous year.⁸ We also calculate labor market transitions by examining the fraction of individuals who report a different industry or occupation for their current job than for their job in the previous year.⁹ In other work (Molloy, Smith, Trezzi, and Wozniak 2016) we consider other forms of labor market transitions, such as movement into and out of the labor force. We focus on job-to-job transitions in this paper because it is the only measure of job transitions that can be calculated from microdata since the 1980s (thus allowing detailed analysis by demographic characteristic).

In some cases we supplement our information on migration with data from two other sources. One alternative source of information comes from the Internal Revenue Service, which

⁵ The sample size for the ASEC ranges from about 20,000 in the 1940s, to 40,000 in the 1970s, and to nearly 100,000 in the 2000s.

⁶ Because the interstate migration variable was biased by an imputation procedure from 1999 to 2005 (Kaplan and Shulhofer-Whol 2012; Koerber 2007), we drop all observations where migration is imputed. In addition, from 1988 onward we drop all observations that have any imputed responses as indicated by the “suprec” variable. Combined, these imputation flags cause us to drop approximately 10% of the sample from 1988 onwards. Our CPS data are provided by the Unicon Research Corporation because the Integrated Public Use Microdata Series, which is the more commonly-used source of CPS microdata, does not include the suprec variable.

⁷ The CPS did not ask the migration question for most of the 1970s.

⁸ The CPS question instructs that if the respondent worked for more than one employer at the same time, it should only count as one employer. This question was asked from 1976 onward. A more common way to measure job-to-job transitions is to use the response to the question of whether the respondent is working for the same employer as in the previous month. That measure is only available from 1994 onward; the aggregate fraction of job-to-job changes is very similar using either of these two measures (Molloy, Smith, Trezzi and Wozniak 2016).

⁹ Occupations and industries are defined using 3-digit Standard Industrial Classification codes—there are more than 200 separate industries and 500 occupations. Examples of 3-digit industries include coal mining, retail bakeries, and grocery stores; examples of 3-digit occupations include cashiers, civil engineers, and pharmacy aides. As with the migration responses, we drop all observations with imputed values as indicated by the “suprec” variable, as well as responses with imputed values for occupation, industry, occupation last year, industry last year, or number of employers in the previous year.

tabulates migration estimates based on individuals that file income tax returns from a different address than in the previous year. An advantage of the IRS data is that they are compiled from the universe of tax filers, so the data are not subject to sampling error. A few disadvantages of these data are that not all individuals file taxes, and in some cases the address used will be the address of the person who prepared the taxes, rather than the address of the person paying the taxes. Also, the IRS does not collect or report information on the characteristics of migrants, so we match the state-level IRS migration rates with state-average population characteristics from the CPS. Both the CPS and IRS data show substantial decreases in interstate migration from the 1980s onward, although the decline is steeper in CPS data since the early 2000s.

The other alternative source of information on migration that we use is the Panel Study of Income Dynamics (PSID). The PSID is a nationally-representative survey that follows individuals over time, so one can measure migration as the fraction of individuals that report living in a different state than they reported in the previous year. The PSID was conducted annually from 1969 to 1997 and biennially since then, so we use these data to construct two-year migration rates from 1971 to the present. An advantage of the PSID is that, because it follows people over time, one can observe their characteristics prior to when they move. By contrast, the CPS is a repeated cross section, so one only knows information about the respondent in the previous year if they are asked specifically about that characteristic.

IV. Results

This section presents results on three main questions. First, does there appear to be a connection between the decline in migration and changes in other types of labor market adjustments? Second, could demographic trends be causing declines in both these outcomes? And finally, could one of these trends be driving the decline in the other?

A. Is there a connection between the declines in migration and job changing?

Many measures of labor market transitions have also been falling over the same period that long-distance migration has trended down. In Figure 2, we plot the fraction of the population 16 and older that changed employers, changed industry, or changed occupation from the previous year. All three flows trended down from the early 1980s to the late 2000s. These trends are consistent with statistics on trends in hires, layoffs and quits from 1990 to 2010 (Davis, Faberman and Haltiwanger 2012; Hyatt and Spletzer 2013), in occupation switching since the mid-1990s (Moscarini

and Thomsson 2007), in job creation and destruction since the early 1990s (Davis and Haltiwanger 2014; Hyatt and Spletzer 2013), and in the fraction of workers with short tenure (Hyatt and Spletzer 2015).

To draw a more concrete connection between trends in migration and labor market transitions, we first look to see whether geographic areas that experienced larger declines in labor market transitions also experienced larger decreases in long-distance migration. Figure 3 shows a scatter plot of the change in the fraction of individuals in a state who changed firms 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 and statistically significant correlation: states that experienced very large drops in the fraction of workers who changed firms also experienced the largest decreases in in-migration.¹⁰

To explore further, we regress annual migration rates for a state on variables measuring labor market transitions as well as other variables related to the labor market, state and year fixed effects, and other demographic controls. This exercise informs us about whether the relationship observed in the scatterplot is robust to controlling for a range of observable differences across states and time. All control variables are calculated from the ASEC-CPS, but we compute the dependent variable using both the CPS and IRS data.¹¹ The results are shown in Table 1. We find a statistically significant, positive relationship between the fraction of a state's population that changed firms in the previous year (unconditional on mobility status) 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. To gauge the magnitudes of these correlations, we multiply the estimated coefficient of each labor market transition variable by the change in the variable from the 1980s to the 2000s. As shown by the last row of the table, the labor market transition variables combined explain about 0.5 percentage point of the 1.1 percentage point decline in interstate migration from the 1980s to the 2000s. Results are roughly similar using statistics from the IRS to measure migration rather than the CPS (column 2)—job transition variables explain about one half of the decline in migration.

¹⁰ One might be concerned that some of this relationship is mechanical because most geographic moves are accompanied by job changes. However, when we recalculate the fraction changing firms in each state conditional on not having moved in the past year, the positive relationship remains with virtually the same slope.

¹¹ 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).

B. Could demographic changes be causing concurrent declines in both migration and job changing?

Some research has already shown that population demographics have had only a small role in driving the decline in migration (Cooke 2011; Kaplan and Schulhofer-Wohl, forthcoming), but the contribution to aggregate job changing has not yet been explored. As shown in Table 2, the share of the population between the ages of 20 and 34 fell considerably from the 1980s to the 2000s, and these individuals make geographic and job transitions much more frequently than older age groups. However, transition rates for all age groups except ages 55+ fell noticeably, suggesting that the age distribution of the population alone is unlikely to explain the aggregate declines in these transition rates. Another population trend that has received much attention is the rise in homeownership prior to the Great Recession, which could depress migration since homeowners are less mobile than renters. But as with age composition, the transitions rates of both homeowners and renters fell from the 1980s to the 2000s (Table 2).¹² Moreover, migration and job-to-job transitions have remained at historically low levels since the end of the recession, despite a substantial drop in the homeownership rate.

These statistics give the impression that changes in population characteristics are unlikely to explain the decline in migration, but we formally assess the importance of age and homeownership in accounting for the trend in aggregate migration by estimating a regression that pools individual-level data across years and includes year fixed effects. The fixed effect coefficients reflect average migration in each year after controlling for the other variables in the regression. We plot these coefficients in Figure 4A, which shows the coefficients on the year fixed effects from regressions of interstate migration including no controls (the solid line) and including controls for age and homeownership (the dashed line).¹³ The solid line falls by about 0.9 percentage points from the 1980s to the 2010s, and the dashed line falls by 0.8 percentage points. Thus, the trends in age and homeownership can only account for a small fraction (0.1 of 0.9 percentage point) of the decline in cross-state migration.¹⁴

¹² One concern with these statistics is that the CPS does not record homeownership status in the previous year. However, using the PSID Bachmann and Cooper (2012) document declines in mobility among all four possible combinations of tenure: renter-renter, homeowner-homeowner, renter-homeowner and homeowner-renter.

¹³ The CPS did not include the migration question in 1985 or 1995. Prior to 1981, the CPS only asked migration questions in 1964-1971 and 1975. The pre-1980 data also contain far fewer relevant covariates, so we do not extend the analysis of this section back to periods before the 1980s.

¹⁴ On the other hand, age and homeownership can explain roughly half of the decrease in short-distance moves (migration within counties) over this period; results available upon request.

Of course, other demographic and socioeconomic factors could be responsible for the decline in aggregate interstate migration. One plausible explanation is that housing has become substantially more expensive in some parts of the country relative to others, reducing the ability of both homeowners and renters to be able to move into these locations. If this were the case, we would expect migration into high-price areas to have fallen by more than migration into other areas. However, Table 2 shows that this is not the case, whether we define high-price areas as states with a higher-than-average median house value in 2014 or as states with stricter-than-average land use regulation.¹⁵ More generally, net migration across Census divisions has not changed much over the past several decades, even as gross flows into and out of these areas have contracted (results available upon request). Moreover, growing dispersion in cost of living should reduce the migration of low-skilled workers more than that of high-skilled workers (Ganong and Shoag 2012), but migration rates have fallen for individuals at all levels of education (see Table 2).

To formally assess the role of a range of other demographic and socioeconomic characteristics, we add a large number of covariates to the regression described above: gender, educational attainment, race, marital status, presence of children, real income, and indicators for divorced heads with children, employment status, self-employment status, metropolitan area status, and Census division.¹⁶ As shown in Figure 4A, these variables do not explain any additional portion of the decline in interstate migration (in fact, controlling for these variables makes the decline in migration even more pronounced).

Finally, a rise in immigration is another important demographic trend over the last several decades, and immigrants are often thought to arbitrage wage and employment differences across local markets (Borjas 2001; Cadena and Kovak, forthcoming). It is possible that the growing immigrant population has reduced the need for U.S. residents to respond to geographic labor market disparities by moving long distances. Indeed, analysis of migration flows into states that typically receive large flows of foreign migrants shows that in-migration fell more than migration into states that typically receive few foreign migrants. On the other hand, migration into states with low foreign immigration still fell noticeably and at the national level, and migration has declined even

¹⁵ Median house values are from the 2014 American Community Survey and regulation is measured as the state-average of the Wharton Residential Land Use Regulatory Index (Gyourko, Saiz and Summers 2008).

¹⁶ Specifically, we control for real income with indicators for quintiles of the distribution across all years of household income relative to the consumer price index. Thus, shifts in the distribution of real income over time are allowed to affect aggregate migration rates. The regressions do not include nativity because this information is not available in the CPS until 1994. In earlier work, we found the declines in migration since 1994 were similar for the native and foreign born populations (Molloy, Smith and Wozniak 2011).

among native groups that do not typically compete in the same labor market as immigrants, like the more educated.¹⁷

We next examine the role of population characteristics in explaining the downtrend in the propensity to change employers, occupations, or industries. The central exercise is the same as that in Figure 4A, except that the dependent variable is one of the three labor market transitions shown in Figure 2. The results are shown in the remaining three panels of Figure 4. Just as with interstate migration rates, demographic and socioeconomic characteristics are unable to explain much of the decrease in these labor market transitions. This reinforces our earlier conclusion that the declines in migration and labor market transitions are related. If observables had explained a large portion of one decline but not the other, a common explanation would be less plausible.

Because the analysis above is based on simple correlations and not on exogenous variation, one should be wary of making a strongly causal interpretation. To the extent that the coefficient for a given variable might be smaller than its true causal effect, our estimates will understate the role of observables in declining migration. It is difficult to think of reasons the coefficients on observable characteristics in the migration regression would be biased downward by a large amount. For example, being young would have to be correlated with an unobservable characteristic that lowers migration, and it is difficult to come up with such a variable. We therefore think these results suggest strongly that compositional changes among the variables in the regression are not the main causes of the trends in migration or job changing. Rather, the downward trends in these transitions seem to represent a real change in the economic decisions made by individual people in the economy.

C. Causality: Is one of these trends causing the other?

Given the apparent connection between declines in migration and job changing, we turn to the question of whether one is causing the other. Three facts lead us to the view that it is changes in the labor market that are driving the change in migration patterns, rather than vice versa.

First, the relative magnitude of the populations involved suggests that the causality runs from job transitions to migration. In the CPS, the percent of the population that changed employers fell by four percentage points over 1980 to 2013. By contrast, the percentage of long-distance movers only fell by one percentage point over the same period—a decrease that is only one-fourth the size of the decrease in employer changing.

¹⁷ These results are also available upon request.

Second, labor market transitions have declined even among individuals who did not change their state of residence. This is clear from Figure 5, which graphs the rate of labor market transitions (defined as a change in employer, industry or occupation) separately for long-distance movers and individuals that remained in the same state. Because the decline in labor market transitions occurs for both those who move locations and those who stay in the same location and, as mentioned above, the number of labor market transitions is so much larger than the number of geographic transitions, it seems reasonable to suspect that the causality runs from job transitions to migration.

The fraction of people who moved across states but did not make a labor market transition also trended down. This group is larger than might be expected (about 45% of interstate migrants did not make a labor market transition in the previous year) and is not accounted for by individuals who live in states with large metropolitan areas that cross state lines. Without more detailed data, it is not clear what the downtrend in migration among this group suggests about causality. One possibility is that firms have slowed reallocation of their workers across establishments in different geographic areas, which may be related to fundamental changes in the rates of job creation and destruction. Another possibility is that the labor market may not be the sole driver of trends in long-distance migration.

A third reason to suspect that the decline in job changing has caused the decline in migration is that the migration decline is more pronounced among individuals that participated in the labor force around the time of migration. Figure 6A plots migration rates from the PSID of individuals “in labor force” and “out of labor force”, where people are in the labor force if they were employed, unemployed, or temporarily laid off in either the previous year, the current year, or both. The figure shows a pronounced downward trend among labor force participants, but no discernable trend among individuals who are out of the labor force. We find similar results in the CPS (Figure 6B) although in the CPS labor force status in the previous year is not recorded, so must be inferred using hours worked.¹⁸

V. Evidence on Potential Mechanisms

¹⁸ In other words, in the CPS we incorrectly attributed individuals that were unemployed in the previous year and out of the labor force in the current year as “out of the labor force.” Imposing this (incorrect) assumption in the PSID does not alter the PSID results. Results are similar if we redefine labor force status to include the labor force status of anyone in the household.

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 several secular trends that could drive the decline in labor market transitions, in turn contributing to a decline in migration.

A. Changes in the Locations and Types of Occupations

Kaplan and Schulhofer-Wohl (forthcoming) show that the range of occupations has become more similar across metropolitan areas—specifically, that occupations 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. They argue this may have caused fewer people to migrate to a different area to find employment in a specific occupation.

In our view, a drawback of this theory is that it does not have a clear prediction for changes in labor 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 location. 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. Thus, while the Kaplan and Schulhofer-Wohl explanation may account for a portion of the observed decline in migration, it may be unable to also explain the simultaneous decline in migration and labor market transitions.

Another feature of the distribution of occupations in the US is that the share of adults in lower-skill, lower-paying jobs and higher-skill, higher-paying jobs have both grown, while the share of adults in middle-skill, middle-paying jobs has fallen—a phenomenon often called “polarization” of the labor market (Autor, Katz and Kearney 2008).¹⁹ This shift might have reduced migration if, in the past, less educated workers were likely to move to a different labor market to take middle-skill jobs, which are now in shorter supply. However, we find no empirical support for this idea. As shown in Table 1, when we control directly for the shares of workers in middle-skill jobs and manufacturing in cross-state regressions, the coefficient on these variables is either zero (when measuring migration with IRS data) or small and statistically insignificant (using CPS data).²⁰ In

¹⁹ “High-skill” jobs include manager, professional, and technician occupations. “Middle-skill” occupations 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.

²⁰ Over this period, the percent employed in middle-skill jobs fell 6 percentage points and the percent employed in manufacturing fell 7½ percentage points. Applying the coefficients in Table 1, these changes could explain 0.3

addition, job turnover rates tend to be *higher* for lower-skill, service and retail sector jobs, so rising employment shares in the lower tail of the skill distribution should all else equal push up average rates of labor market transitions. In Molloy, Smith, Trezzi and Wozniak (2016), we show that declines in labor market transitions have actually been less pronounced in states with larger shares of middle-skilled occupations or manufacturing jobs.

B. Household structure, compensation, and work arrangements

Another 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) argue that the colocation problem of couples who both have a college degree has caused the college-educated population to be relatively concentrated in large cities. To assess the role of dual-earner households in these trends, Table 3 shows the fraction of individuals in households where both spouses are employed and their interstate migration rates. The fraction of individuals in dual-earner households did not increase from the 1980s to the 2000s, making this reason an unlikely candidate to explain the trend in labor market transitions. However, it is possible that only individuals who are invested in particular careers have joint-location issues with a spouse.²¹

As a proxy for households where both spouses have career constraints, we create an indicator for households where both spouses are employed in a professional or technical occupation. For individuals in these households, the probability of moving or changing employers is, indeed, slightly lower than that of other employed individuals in this occupational category (Table 3). But the fraction of individuals in these households only rose from 2% in the 1980s to 3% in the 2000s, so this segment of the population is too small to affect aggregate trends in any meaningful way. The same is true for individuals in a household where both spouses work and have earnings in the top quintile of the earnings distribution, another proxy for individuals that have invested in a career. As a third proxy for dual-career households, we calculate the fraction of individuals who are in a household where both spouses work and have at least a college degree. This fraction is somewhat

percentage point of the 1.15% decline in cross-state migration in the CPS. However, as noted before, these coefficients are not statistically significant, and we cannot reject that the true relationship is zero.

²¹ 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 forthcoming). But as more and more women have moved into occupations with longer career trajectories, changing locations may have become harder for more households.

larger than the previous two proxies, having risen from 4½% in the 1980s to 8% in the 2000s. And their migration and job transition rates have fallen appreciably over this period. But the migration and job transition rates of individuals who are not in such households have also declined considerably. Consequently, when we include this measure of dual-career households in the individual-level regressions described in Section 4B, the estimated year fixed effects are little changed. We find similar results when we examine households where the spouses have similar earnings, defined as the difference between their wage and salary income being less than 25% of their average wage and salary income.

Another possibility related to work and compensation is the rise in health care costs over the same period, which could prevent workers with employer-provided health insurance from taking a new job because it would require changing health insurance companies.²² Table 3 shows that the fraction of individuals in a household where at least one person has an employer that paid for a group health plan did not change from the 1980s to the 2000s. And as with dual and single earner households, the migration rates of individuals in households both with and without employer-provided health insurance fell substantially and by similar amounts for both groups of households.

A third hypothesis related to work and geographic location is that technological change has made it easier for people to work remotely, so fewer people would need to change jobs in order to move to a different city (say because of their spouse's job), or change cities in order to take a new job. Indeed, Cooke (2013) finds that the aggregate interstate migration rate is correlated with the rise in cell phone use, a proxy for technological change that would enable working remotely. However, the rise in the fraction of people who work remotely full-time is too small to account for much of the secular decline in job changing and migration. In the 2014 American Community Survey, only 4.6% of workers reported working at home, up from 2.3% in the 1980 Census. Moreover, this explanation does not explain why workers who remain in the same local labor market would change jobs less frequently.

C. Increasing importance of occupational licensing

²² A rather extensive literature presents mixed findings on the extent to which healthcare-related “job lock” depresses job transition rates, though Gruber and Madrian (2002) argue that the most convincing evidence supports the job lock hypothesis. More recently, Garthwaite, Gross and Notowidigdo (2014) find evidence of health insurance related job lock among low skill workers in the 2000s. 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).

A final ongoing trend that may contribute to the simultaneous declines in job transitions and geographic mobility is the well-documented rise in the prevalence of occupational licensing (Kleiner 2006; Kleiner 2015; Kleiner and Krueger 2013). In 2008, about 20% of U.S. workers were required to hold a state license in order to perform their jobs, up from an estimated 5% of workers holding state licenses in 1950 (Kleiner and Krueger 2013). Licenses often require a substantial up-front investment in both human capital and fees, thereby creating a disincentive to changing occupations in the future. Moreover, licensed workers may be more difficult to recruit and screen, which could reduce the ease with which licensed employees change employers. The potential effects of licensing on geographic mobility and labor market flexibility in general have long been a source of concern (Holen 1965; Kleiner, Gay and Greene 1982). The varied state-level nature of most occupational licensing means that workers in licensed occupations must typically make new investments in obtaining a license when they move across state lines. For example, some occupations require licenses in some states but not others, meaning that some interstate migrants may need to obtain a license for the first time to continue working in their occupations.

Despite its growing prevalence, there is little consistent data on the extent of licensing over time and measuring the prevalence of licensing at the state level is only possible in recent data. Therefore, it is not possible to extend the panel analysis in Table 1 to include licensing measures. Instead, we regressed state-level changes in in-migration from the 1980s to the 2000s on the rate of licensing among a state's labor force in 2013 plus the full set of controls used in Table 1, expressed as differences and excluding the year effects. Thus, we are implicitly assuming that states where licensing is most prevalent today experienced the largest increases in licensing over time.

The raw data show that states with higher rates of workforce licensing experienced substantially larger declines in in-migration since the 1980s. However, we do not find a similar correlation with any of our measures of job transitions. Moreover, in the regressions with controls the coefficients on licensing rates were statistically insignificant and economically small for all our measures of transitions. Thus, the expanding prevalence of licensing is unlikely to have caused the downward trends in migration and labor market transitions. Of course, one must be cautious about drawing conclusions from this analysis because its limitations are severe. Without panel data on changes over time in licensing prevalence, it is not clear whether or how current levels of licensing among a state's workforce may relate to changes in that share over time. DePasquale and Stange (2016) take a step in this direction by examining changes in state licensing requirements in the

nursing industry, and they find no evidence of an effect on the labor supply or mobility of nurses. Future research along these lines would be helpful.

VI. Conclusion

In this paper, we consider a possible role for the labor market in driving the secular decline in US interstate migration since the 1980s. We show that 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 further find that demographic and socioeconomic factors can account for little of the trend in either migration or the trend in labor market transitions. We then present evidence that causality likely runs from declining labor market transitions to declining migration. Specifically, because labor market transitions occur much more frequently than long-distance migration and have been declining even for workers that remain in the same state, it seems unlikely that an increase in the cost of migration would be able to explain the decrease in labor market transitions. Rather, the decline in labor market transitions—particularly transitions across employers—has likely led to the associated decline in long-distance migration.

Finally, we consider 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, constraints among dual-career households, and the rise of occupational licensing requirements. We find little empirical support for these hypotheses.

In sum, declines in interstate migration and labor market transitions are evident for a wide range of types of people, jobs and locations. Thus, our findings point toward explanations that would affect a large fraction of the workforce and broad swaths of the economy. In a very general sense, explanations for the decline in labor market transitions (and consequently the decline in interstate migration as well) can be categorized into factors that have raised the cost of making such transitions, and factors that have reduced the benefit of making such transitions.

On the cost side, possibilities include changes in job search or the hiring practices of firms, a rise in the importance of soft information—which is more difficult to obtain and assess—in the hiring process, and an increase in the importance of on-the-job training and accumulation of firm-specific human capital, which would be lost in a transition between employers. In fact, some research finds that employer investments in workers in the form of training and on-the-job skill development has risen over time (Cairo 2013; Corrado, Hulten and Sichel 2009). Fujita (2012)

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 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. Higher costs imply a less fluid labor market, which has the potential to reduce aggregate economic efficiency and ultimately household welfare. For example, Davis and Haltiwanger (2014) argue that the secular decline in labor market fluidity may be suppressing job creation and human capital accumulation.

On the benefit side, it could be that returns to making a transition in the labor market are smaller because wages are more similar across employers or locations than in the past. Also, it is possible that initial matches between firms and workers are of higher quality than in the past, for example because more information is available prior to the match or because the pool of potential matches from which workers and firms draw is larger or more diverse.

As these trends seem to have become an enduring feature of the U.S. economy, further research is needed to shed light on the mechanisms driving these declines. This paper contributes to that agenda by documenting evidence against a number of explanations and showing where the next stage of the search should start. Specifically, the limited role for population demographics suggests that explanations for the decline in migration should be related to broad-based phenomenon that affect broad classes of workers and firms. In addition, the close connection between job changing and interstate migration suggests that explanations for the decline in migration should also explain the concurrent secular decline in job changing. Further research should therefore explore reasons why workers have been changing jobs less frequently, regardless of whether the job transition is associated with a residential move or not. One fruitful avenue may be to dig deeper into the downward trend in new firm formation (Decker et al. 2014; Pugsley and Sahin 2014), since job churning tends to be much more pronounced at younger, smaller firms. It would also be useful to use matched employer-employee data to examine how compensation changes within firms have evolved over time, which would shed light into how the benefits to remaining within a firm have changed.

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Table 1: Determinants of State In-Migration

	CPS	IRS
	(1)	(2)
% changing firms	0.06 (0.01)	0.03 (0.01)
% changing occupations	0.04 (0.04)	0.00 (0.02)
% changing industries	0.06 (0.04)	0.03 (0.02)
% less than 24 years old	-0.04 (0.04)	-0.09 (0.02)
% 65 years old or older	-0.01 (0.03)	-0.08 (0.02)
% with no more than a high school degree	-0.03 (0.02)	0.01 (0.01)
% homeowner	-0.06 (0.01)	0.00 (0.01)
log(median wage)-log(25th pctlile wage)	-0.54 (0.58)	0.11 (0.21)
log(75th pctlile wage)-log(median wage)	-0.65 (0.78)	-0.27 (0.27)
% employed in middle-skill jobs	0.02 (0.02)	0.00 (0.01)
% employed in manufacturing	0.02 (0.01)	0.00 (0.01)
% self-employed	-0.01 (0.02)	0.00 (0.02)
% living in HH with emp.-provided health care	0.02 (0.01)	0.01 (0.00)
% living in a HH where both spouses work	-0.01 (0.01)	0.00 (0.01)
Change in cross-state migration (1981-1990 to 2001-2010)	-1.15	-0.43
Change due to job transition variables	-0.51	-0.23
Change due to other RHS variables except trends	-0.04	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 1981-2010. 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 job transition variables, 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 2002-10; 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 three variables in the table. For columns 1, N=1428 (51 states and 28 years). For column 2, N=1344 (48 states and 28 years--data are not available for AK and HI).

Table 2: Population Shares, Interstate Migration Rates, and Job Transitions for Select Demographic and Socioeconomic Groups

	Population Share		Interstate Migration Rate		Percent Changing Employers	
	1981-89	2000-12	1981-89	2000-12	1981-89	2000-12
Age						
Age 20-24	12.2	9.4	5.7	3.5	32.1	22.7
Age 25-34	25.0	18.7	4.3	3.1	19.1	14.8
Age 35-44	19.0	20.2	2.5	1.6	13.0	10.4
Age 45-54	14.0	19.8	1.5	1.0	9.7	8.5
Age 55+	29.7	31.8	1.1	0.7	5.6	6.3
Homeownership						
Renter	29.9	27.4	5.9	3.7	23.2	15.8
Homeowner	70.1	72.6	1.4	0.9	12.1	9.7
Median house value						
Above average	14.7	14.0	2.2	1.6	14.6	11.6
Below average	85.3	86.0	2.9	1.7	15.8	11.4
Land Use Regulation						
Above average	19.1	16.7	2.0	1.4	14.0	11.7
Below average	80.9	83.3	3.0	1.7	16.0	11.4
Educational attainment						
Less than high school	26.3	14.2	1.4	0.9	13.0	8.6
High school	38.3	31.2	2.1	1.1	12.8	9.0
Some college	16.3	25.9	2.9	1.5	14.2	11.1
College+	19.2	28.7	3.8	2.2	13.3	10.9

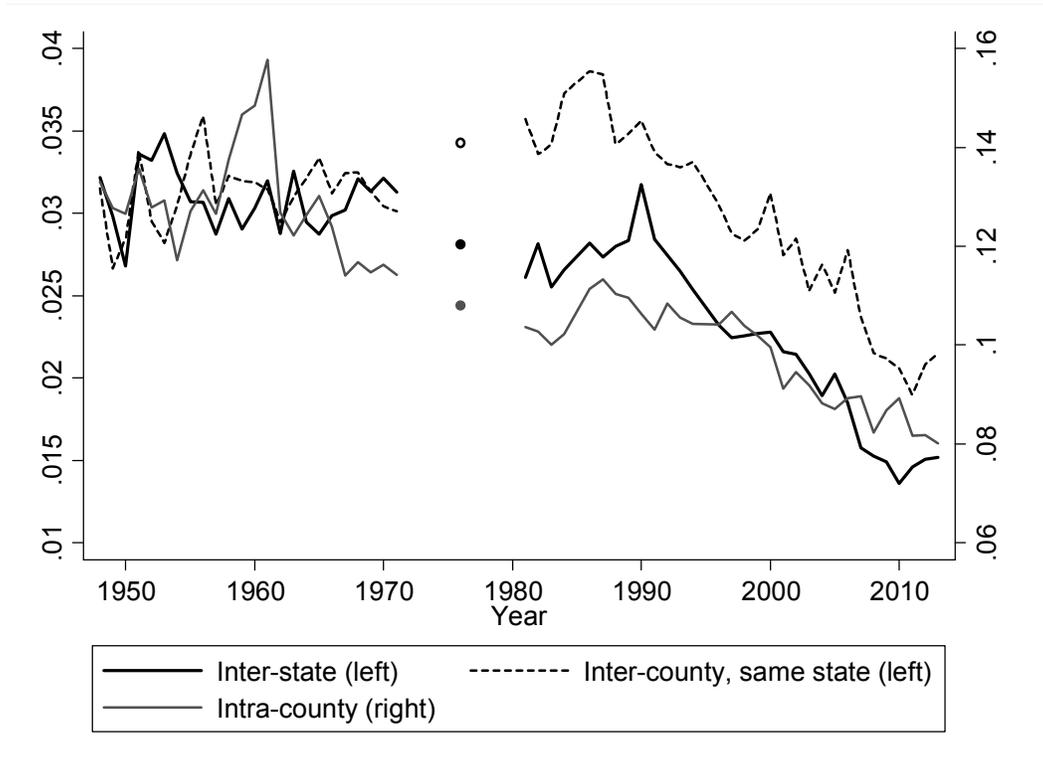
Note. Authors' calculations based on data from the ASEC-CPS. Sample includes all individuals age 20 and up that do not have imputed migration data; the number of observations from the ASEC samples used for these calculations range from roughly 100,000 per year in the 1980s to 120,000 per year in the 2000s. Median house value is from the 2014 American Community Survey. Land use regulation is from the Wharton Residential Land Use Regulation Index (Gyourko, Saiz and Summers 2008). Educational attainment is only available for individuals age 25 and up.

Table 3: Population Shares, Interstate Migration Rates, and Job Transitions by Household Type

	Population Share		Interstate Migration Rate		Percent Changing Employers	
	1981-89	2002-12	1981-89	2002-12	1981-89	2002-12
Both spouses employed	30.5	30.1	1.9	0.9	13.9	9.6
All other	69.5	69.9	3.1	1.9	17.1	11.8
Both spouses employed and prof./tech. occ.	2.1	2.8	3.2	1.4	15.6	10.9
Other employed and prof/tech.	13.5	16.6	3.8	2.2	15.9	12.0
All other	83.1	79.0	2.6	1.4	15.1	10.3
Both spouses employed and in top quintile of earnings distribution	1.2	2.4	1.8	1.0	9.7	8.0
Other employed and in top quintile of earnings	18.5	16.2	2.5	1.6	8.6	8.5
All other	79.5	79.9	2.9	1.5	16.9	11.2
Both spouses employed & college degree or more	4.5	7.9	2.7	1.3	13.9	9.9
Other employed & college degree or more	14.2	18.2	4.1	2.2	13.7	10.9
All other	78.9	70.5	2.6	1.5	15.6	10.7
Spouses have similar incomes	22.6	28.3	2.5	1.2	15.1	9.5
All other	77.4	71.7	2.8	1.6	14.7	10.6
Employer-provided health insurance in household	64.8	64.3	2.7	1.5	14.1	10.0
All other	35.2	35.7	3.0	1.8	21.1	13.5

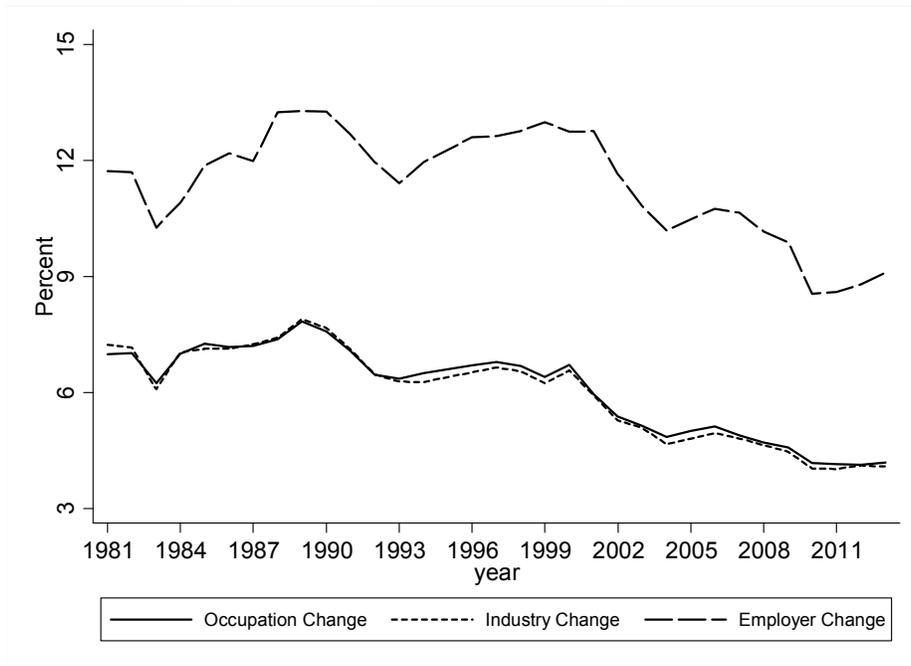
Note. Authors' calculations based on data from the ASEC-CPS. Sample includes all individuals age 20 and up that do not have imputed migration data; the number of observations from the ASEC samples used for these calculations range from roughly 100,000 per year in the 1980s to 120,000 per year in the 2000s. Spouses are defined as having similar incomes if the difference between their wage and salary incomes is less than 25 percent of their average income.

Figure 1



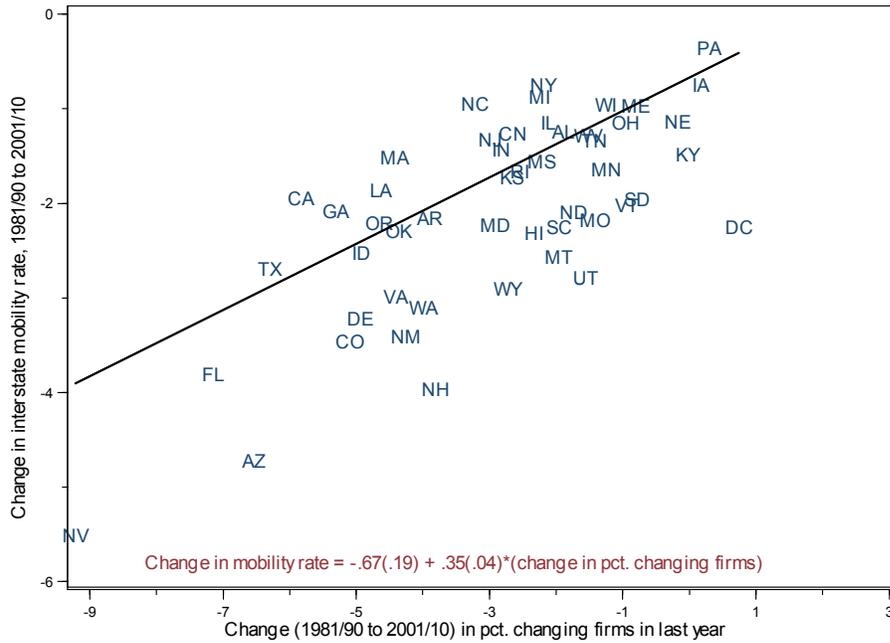
Note. Migration rates of the civilian population age 16 and up from the Current Population Survey. Y axes are the share of the population migrating across states or counties (left) or within a county (right). Post-1989 migration rates are calculated from microdata and exclude imputed values. Sample details are given in Molloy, Smith and Wozniak (2011) and Saks and Wozniak (2011).

Figure 2
Employer, Occupation and Industry Transitions



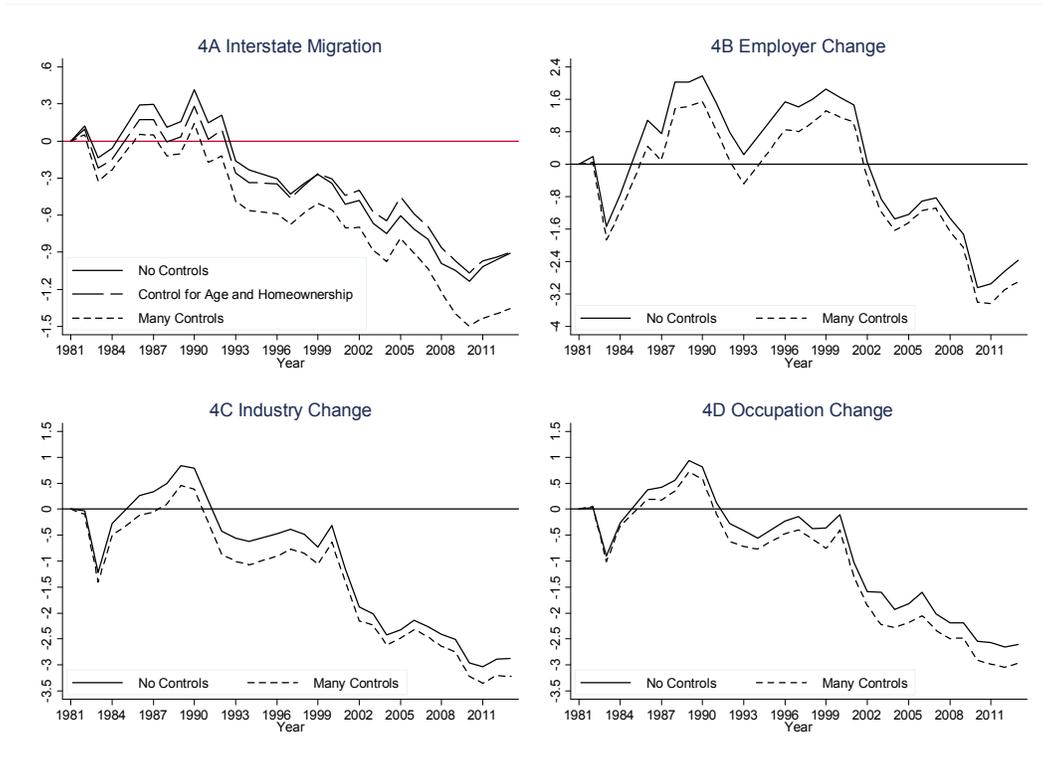
Note. Authors' calculations from the March CPS. Y-axis is percent of workers who were employed at the time of the survey and one year ago, so that industry and occupation can be observed. For both current and past year employment. All observations with imputed values of industry, occupation, or employer change are excluded. Occupations and industries are defined at the 3-digit level.

Figure 3
Changes in Job Changing and Changes in In-Migration by State



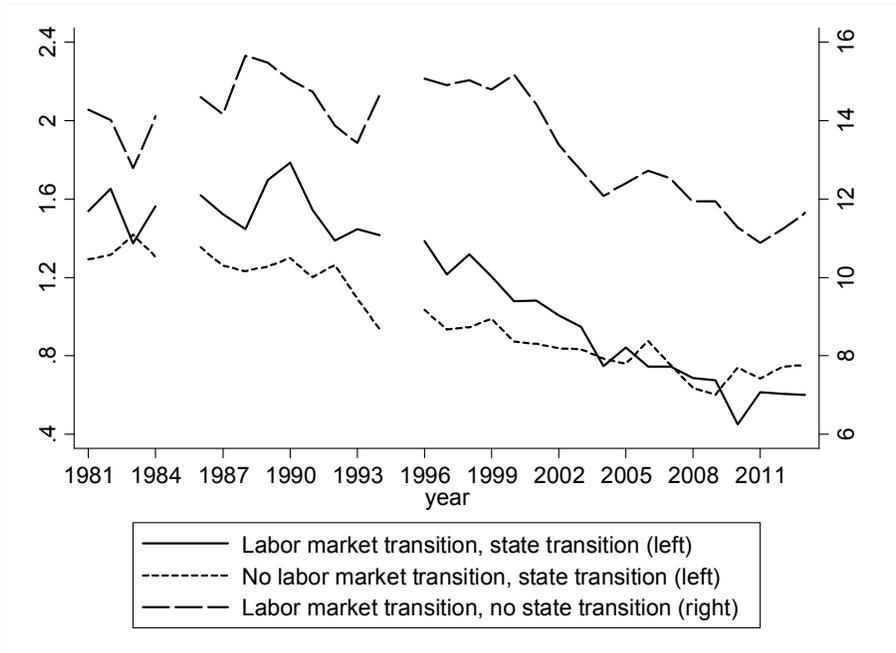
Note. Authors' calculations based on the ASEC-CPS. Imputed values of migration and employer changes are excluded. X axis is the percentage point change in the fraction of workers changing firms in the previous year, and Y axis is the percentage point change in the fraction of the population changing states in the previous year. The estimated equation for the regression line is at the bottom of the figure; standard errors are in parentheses.

Figure 4



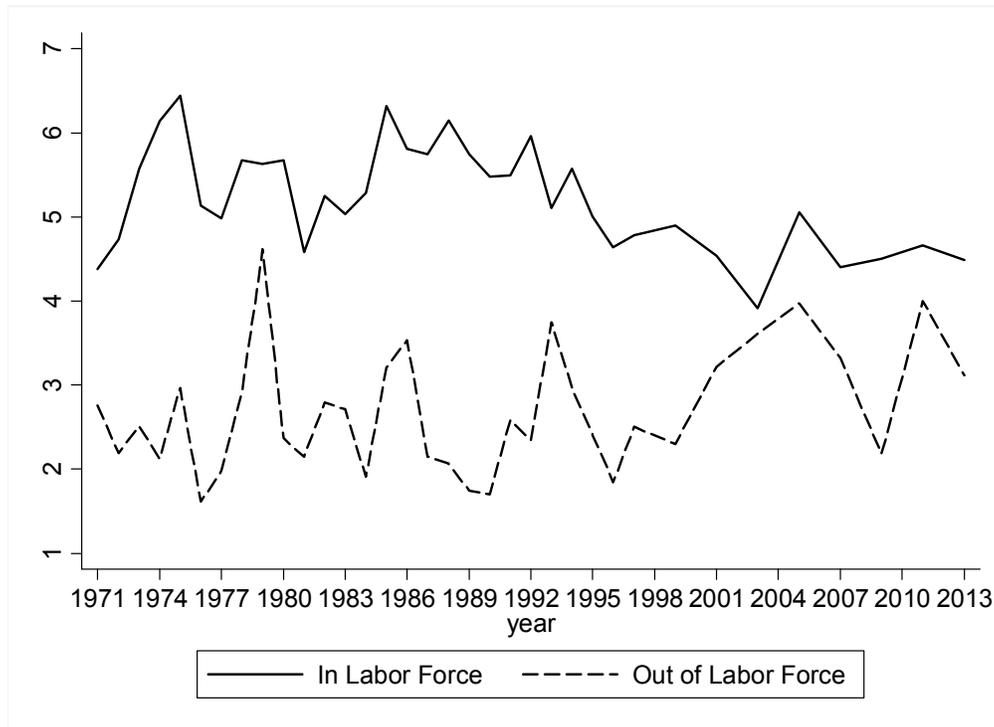
Note. Each line shows the coefficients of year indicators from regressing whether an individual moved on year indicators and other controls using the ASEC-CPS. All observations with imputed values of migration are excluded. Controls are age, homeownership, sex, education, race, marital status, presence of kids, presence of kids interacted with a divorce indicator, indicators for quintiles of the real income distribution, labor force status, self-employed status, Census region, and metropolitan status. Y axis can be interpreted as the percentage point change in each measure since 1981.

Figure 5
Interstate Migration and Labor Market Transitions

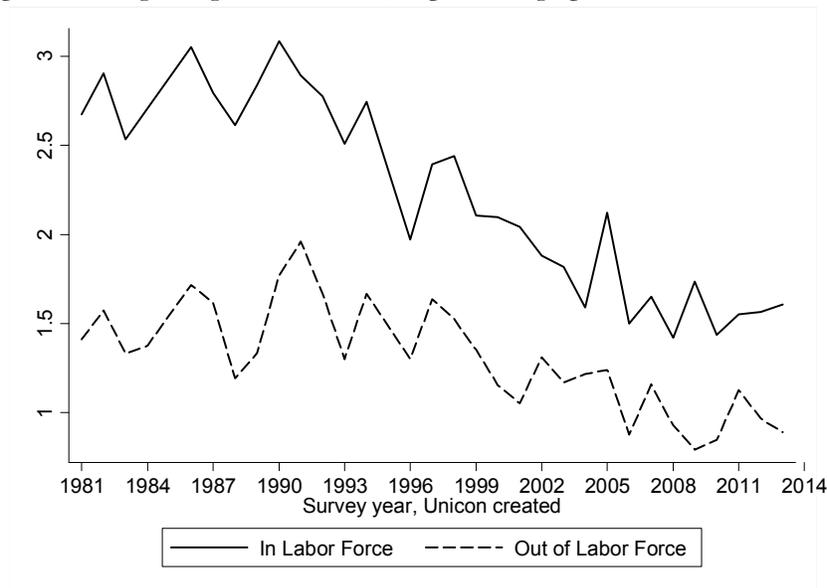


Note. Authors' calculations from the March CPS. All observations with imputed values of migration or job transitions are excluded. Labor market transitions are defined as either a change in employer, a change in industry, or a change in occupation. State transitions are defined as a change in the individual's state of residence. Y axes are the percent of workers experiencing a geographic or labor market transition.

Figure 6



A. Decline in two-year interstate migration rates for individuals in and out of the labor force, PSID data. In the labor force defined as in the labor force in the current year and two years ago. Y axis the share of persons migrating across states, in percentage points.



B. Decline in one-year interstate migration rates for individuals in and out of the labor force, CPS data. In the labor force defined as reporting positive hours worked in the last year, currently employed, or currently unemployed.