

Internal Migration in the US: Updated Facts and Recent Trends*

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December 2010

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Introduction

The idea that one can pick up and move to a location that promises better opportunities has long been an important part of the American mystique, a classic example being Steinbeck's tale of the Joads heading west to escape the Dust Bowl. Indeed, one frequently-cited stylized fact is that internal migration rates—i.e. population flows between regions, states, or cities within a country—are higher in the US than in other countries. However, as with all things mythical and stylized, reality is more complex. The Dust Bowl migrants were actually exceptional in a period of markedly low internal migration (Ferrie 2003, Rosenbloom and Sundstrom 2004). And while the US has one of the highest migration rates in the world by many measures, citizens of some other countries—including Finland, Denmark and Great Britain—appear equally mobile. Moreover, migration in the US has been falling in the past several decades, calling into question whether high rates of geographic mobility are still a distinguishing characteristic of the US economy. In this article, we update the basic facts on internal migration within the US, adding fifteen years of data since an overview was last published. An examination of migration is particularly important in the context of the current economic environment of slow job growth and depressed housing market activity, because individual relocation decisions often involve changes in employment and housing consumption.

Economists have been interested in migration for more than a century. In the early decades of the twentieth century, a frequent topic of interest was movement from rural to urban areas.¹ Researchers tended to focus on the social costs of migration, including the effects of “brain drain” from rural areas and the challenges to cities faced with absorbing migrants (Long,

¹ Examples are Bachmura (1959) and Harris and Todaro (1970). Price and Sikes (1975) list over 1200 social science articles on the subject.

1988, Chapter 1). As decades passed and urbanization of the US slowed, interest in rural to urban movements waned. Economists developed a model of migration decisions founded in the economic ideas of individual maximization of expected net benefits to location choice. They also increasingly had access to data sources that allowed them to define migrants more precisely.² Migration scholars, partly in conjunction with statistical agencies, converged on a broad definition of migration as a move over a long-enough distance to entail an appreciable change in the local economic environment.³ Researchers began focusing on the determinants of migration (describing who moves and why) and analyzing the equilibrating effects of migrants on local economies (Greenwood 1997).

This paper picks up the history of internal migration in the US in the 1980s, a period largely subsequent to the most recent comprehensive review on this topic, Greenwood 1997. We first provide a brief overview of the theoretical determinants of internal migration and discuss several empirical issues concerning measurement of migration. Next, we present some basic facts on migration during the 1980 to 2009 period. We document a downward trend in migration that has partly reversed increases in mobility earlier in the century. By contrast, relative differences in migration patterns across most demographic and socioeconomic groups were quite stable during this period. The widespread decline in migration rates across a large number of sub-populations suggests that broad-based economic forces are likely responsible for the decrease. The fourth section explores the effects of two such forces that have had large economic effects in the past five years: the recession and housing market contraction. We find relatively small roles for both of these cyclical downturns. Rather, recent declines in migration

² See Long (1988), Chapter 1 for an interesting history of the development of the current set of migration questions on the US Census.

³ Sjaastad (1962) and Schwartz (1973) are early papers focusing on “distance migration,” or migration across local labor markets, as opposed to over short distances from rural to urban markets.

appear to be a continuation of the longer-run trend. Finally, we compare the recent changes in migration in the US to other developed countries. Although migration has not fallen in most other countries, geographic mobility in the US still appears to be relatively high.

I. Determinants of Internal Migration

Migration is a means for workers to arbitrage the costs and benefits of residing in different locations. These factors include the flows of local amenities and taxes as well as a range of costs and benefits that are more idiosyncratic across individuals, such as the disutility of residing in a big city when one prefers a small town or the utility of residing near family. For adults of working age, a primary benefit of living in a particular area is the ability to work in a specific local labor market at low cost. Consequently, in the standard human capital model of migration, workers move from local labor markets where the return on their individual skills is relatively low to markets where this return is relatively high.⁴ Migration thus becomes a form of human capital investment: a project that individuals can undertake to raise the returns to their labor.

In a simple, one-period version of the standard model, individuals choose consumption and location to maximize utility given the prevailing wage and price level in each location. If we assume an initial distribution of individuals across locations, migration arises in this model as individuals relocate to maximize utility. One can easily expand the simple model to include roles for individual- and time-varying factors that affect the utility flow for a given location, such as an individual's age or changes in relative prices and wages across locations. Models of migration choices recognize that a change in residential location is costly. These costs often depend on the origin, destination, and individual demographic characteristics, but they can also

⁴ Borjas (1987) is a well-known use of this simple model.

change over time due to a variety of factors including the cost of searching for a new job or home, the cost of terminating a current job or selling a home, or the cost of relocating one's household.

At their core, all models represent the migration decision as driven by the balance of costs and benefits to location choice. Specific models vary in their treatment of factors that affect utility flows and migration costs. A few of the many factors migration models have incorporated include beliefs about employment probabilities, expected wages, expected costs of living, local amenities and tax rates, monetary and psychological moving costs, and the costs of buying and selling a home. However, the central idea—that individuals and families weigh the costs and benefits of their location options and migrate when the benefits from relocation outweigh the costs—is at the heart of models spanning several decades of economic research on the subject (Schultz, 1961; Greenwood, 1985 and 1997; Treys et al, 1993; Kennan and Walker, forthcoming). Today, policy makers and the public largely share this concept of migrants as maximizers of net benefits, although Long (1988) notes that this was not always the case.⁵ Recently, economists have started to conceptualize migration as a part of a search and matching problem (Dahl, 2002; Shimer 2007). This idea is a logical extension of labor market theory, since the geographic search that migration often entails is an important component of general labor market search.

When aggregating individual location choices into national migration patterns, three main mechanisms can generate changes in the aggregate migration rate. First, the distribution of individual characteristics that are correlated with the net benefits of migration—i.e. demographics—can change. For example, the ageing of the US population should reduce

⁵ Long (Ch. 1, p. 13) explains that an older conception of migration was “as a phenomenon of such cataclysmic events as economic depressions, natural disasters, and wars...” Long credits Lowry (1966) with introducing the “behavioral” model of migration to the social sciences in general.

aggregate migration as an increasing share of the population moves into demographic groups with a higher cost of moving. Another relevant example is a shift of large numbers of individuals into homeownership. Since owners tend to be less mobile than renters due to the high costs of housing market transactions, an increase in homeownership should depress migration.

Second, migration choices for particular groups of individuals can change. Building on the example of demographic groups, changes in migration rates *within* a given demographic group might change, thereby affecting overall migration rates. For example, young individuals might have become more likely to migrate for college (Hoxby 2009), raising migration rates for this group. A second example is shifting relative local labor market conditions. If labor demand in one state falls significantly relative to another, then residents of the former state should move to the latter, potentially raising aggregate migration rates.

Finally, changing fundamental economic factors may influence the net benefits to migration for most or all individuals. One example of particular relevance to the US economy in the past several years is the national business cycle. Saks and Wozniak (2007) show that internal migration rates in the US are procyclical, even after controlling for changes in relative labor market opportunities across space.⁶ This cyclicity suggests that the net benefit of moving falls during recessions for most of the population. Thus, the economic downturn that began at the end of 2008 could be expected to depress migration during the last several years.

II. Measuring Migration

Migration scholars today generally make two decisions to define migrants. First, they choose the geographic units that will define potential origin and destination locations. Second,

⁶ Other studies that have found procyclical migration patterns include Greenwood, Hunt and McDowell (1986), Greenwood (1997), Milne (1993), and Pissarides and Wadsworth (1989).

they define the time period in which individuals must move between origins and destinations.⁷ We discuss the options available to researchers making these decisions in turn.

The idea of changing local labor markets is often used to motivate how far one has to move to qualify as a migrant because such moves entail a significant change in surrounding economic activity and frequently require a change in employment location or status. This motivation arises from the economic model of migration as a choice that maximizes expected economic opportunity (usually labor market outcomes) across areas. In some data sources, researchers can observe close approximations of local labor markets. These areas include the greater metropolitan area of residence (MSA)—now called the “core based statistical area” (CBSA)—and the Economic Area (EA).⁸ The boundaries of these locations are defined by government statistical agencies using commuting patterns in order to best capture a local labor market, and these areas frequently identify distinct spheres of economic activity.

In practice, using metropolitan areas to define the origin and destination of migrants has some drawbacks. First, these areas do not cover the entire territory of the U.S, so population flows from rural to metropolitan areas will not be counted as migrants, even though these flows frequently entail moves over long-distances. Second, metropolitan area boundaries are revised every few years in order to reflect the most current patterns of economic activity, which poses problems for measuring inter-metropolitan area migration consistently over time. Third, metropolitan area identifiers are not available in many public datasets.

⁷ Long (1988) discusses a third dimension of the migrant definition, which is the types of residences that count as a permanent residence (i.e. whether to include residences such as a dormitory or a second home). Since users of survey data frequently have little leeway in making this decision, we omit this choice from our discussion.

⁸ We use “MSA” as a general term for metropolitan area. The Census Bureau has used many different names for this concept including SMSA, MSA, CMSA, PMSA, and CBSA. Metropolitan area definitions are just groups of counties. If a county has sufficient commuting ties to a particular MSA, it is included in that MSA.

Alternatively, many researchers have used state or county boundaries to define migrants. These geographic units are available in more datasets and have the additional advantages that they include the entire geography of the US and their boundaries are stable over time. However, using either state or county boundaries suffers from a degree of misclassification—some inter-county movers remain within the same local labor market, while some inter-metropolitan migrants will not be counted in inter-state migration statistics. Inter-region migration, which describes population flows between groups of states, is unlikely to suffer from misclassification but occurs less frequently than migration over shorter distances.

Turning to the decision concerning the time period over which to measure migration, the available options are usually fairly limited. In most large public use datasets, migration can typically be observed over an individual's lifetime or over a recent period, usually the last twelve months or five years. It is often the case that only the end points of these time periods are observed. For example, a person who resided in the same metropolitan area five years ago and at the time of the survey would be classified as a non-migrant, even if he or she lived in a different metropolitan area for some of the intervening years. Moreover, individuals who have moved many times will be indistinguishable from individuals who have only moved once.⁹ This type of measurement error is most severe when considering lifetime migration, since some migrants will have returned to their birth state after having spent perhaps considerable time elsewhere. This limitation can be problematic if lifecycle migration patterns differ across socioeconomic and demographic groups, because comparison of migration rates at one point in time may mislead

⁹ Some individuals counted as lifetime migrants will have moved when they were still a member of their parents' household, in which case they did not make the decision to migrate. These people would also be indistinguishable from individuals who move frequently during their adult life.

researchers about how groups differ in their propensities to migrate. Without detailed longitudinal data, it is difficult to gauge the severity of these issues.¹⁰

There are three main sources for constructing migration rates for the US from large, nationally-representative datasets that are publicly available: the US Census, which has produced decennial data since 1790 and recently began producing annual data in the form of the American Community Survey (ACS); the Annual Social and Economic Supplement of the Current Population Survey (CPS); and the Internal Revenue Service (IRS) migration data. Some longitudinal datasets can also be used to study migration, but the time spans and geographic identifiers in these sources are usually limited.

The Census provides the greatest flexibility in defining migrants. For most years and samples since 1940, researchers can observe whether an individual is currently residing in a different state or county than five years ago, as well as the exact state of residence in those two periods. Beginning in 1980, researchers can also observe the current MSA and the MSA of residence five years ago for individuals living in MSAs in both periods. The ACS reports similar data for an annual frequency, but it is only available since 2005.¹¹ In the decennial Census, researchers can also construct an approximation of lifetime migration by comparing current state of residence to an individual's birth state, going back to 1850.

Choices are more limited in the CPS and IRS, but both allow researchers to construct annual time series on migration over long time periods, going back to 1965 in the CPS and 1975 in the IRS data.¹² The CPS is similar to the ACS in that it asks individuals whether their

¹⁰DaVanzo (1983) found that in PSID data, about one-quarter of all inter-SMSA moves between 1968 and 1975 were return moves back to an SMSA where the individual previously lived.

¹¹ The ACS is available starting in 2000, but it did not cover all of the US until 2005 (US Census Bureau 2009).

¹² Migration rates based on CPS microdata can be extended back to 1948 using published tables. Although the IRS has calculated inter-state migration rates since 1975, the inter-county migration rates are not available until the early 1980s.

residence in the previous year was in the same state or county as their current residence. Also like the ACS, it provides the previous state of residence but not the county. The CPS is a much smaller sample than the other data sources (about 1/3 of the ACS and 1 percent of the decennial Census), so analysis of finer geographic areas is problematic. There are also published totals from the CPS, ACS, and Census that can be useful for computing migration rates for some populations, but they typically contain little information on where migration flows originate.

The IRS data provide the best detail on migration flows between pairs of states and counties. Based on the universe of tax filers, they compute the number of returns (which approximates households) and the number exemptions (which approximates people) that flow between pairs of locations.¹³ The IRS reports flows in both directions between each pair, so both gross flows and net flows can be calculated. They also report the total number of non-migrants which are useful for calculating migration rates. Although the population of tax filers is not necessarily representative of non-filers, according to the CPS, 87 percent of household heads filed tax returns between 1992 and 2009 (the years for which this information is available) and the fraction of filers did not change during this period.¹⁴

III. Basic Facts about Internal Migration in the US

In this section, we give an overview of the main facts about internal migration in the US using some of the measures and datasets discussed above. We also examine how those measures

¹³ Flows between pairs of counties are only reported for values greater than a certain level. However, the IRS also reports gross inflows and outflows from each county to all other counties, so the data still can be aggregated to measure national flows across county boundaries.

¹⁴ The CPS data show that tax filers tend to migrate more frequently than nonfilers, but these differences also have not changed much over time. Therefore, although the lack of data on nonfilers should raise the estimated level of migration rates in the IRS data relative to the ACS and CPS, it should not affect the trends.

correlate with one another, how they vary across socioeconomic and demographic groups, and how they have changed over time.

In general, the number of people who change residences within the country each year is large: roughly 1½ percent of the population moves to a different Census region annually, and about the same number of individuals move to a different state within the same region (see Figure 1).¹⁵ In addition, roughly 3 percent move across counties within the same state. All together, in each year between 5 and 6 percent of the population moves across a county boundary, a long-enough distance to make a meaningful difference in their local housing and labor market environment. These flows are roughly one-third the size of annual flows into or out of employment (Fallick and Fleischman 2004). Since some people move frequently while others move rarely, the fraction of the population that has moved within the past five years is only about 4 times the annual migration rate (see Table 1). Lifetime migration rates—the fraction of people who live in a different location than where they were born—are roughly 3½ times higher than 5-year migration rates. In total, slightly less than 1/3 of the population lives in a different state than they were born, while slightly less than 1/5 live in a different Census region. Thus a substantial fraction of the native population has moved a relatively long distance at some point during their lifetime.

As we mentioned above, lifetime migration rates do not necessarily reflect recent migration decisions. Among 18-34 year-olds who live in a different state than their birth state, roughly 35 percent had moved across state lines in the past 5 years (averaging across the 1980,

¹⁵ The CPS and ACS data in these figures (as well as in all analysis below) are based on microdata rather than published tables in order to exclude individuals in group quarters or with imputed migration data. The imputation exclusion matters for the CPS because their imputation methodology biased migration estimates upward from 1999 to 2005 (Kaplan and Schulhofer-Wohl 2010, Koerber 2007). The group quarters exclusion matters for the ACS because prior to 2006 the ACS did not cover individuals in group quarters, who have a higher propensity to migrate than other individuals.

1990 and 2000 Censuses). Thus, nearly 2/3 had moved more than 5 years previously, even at that relatively young age. Not surprisingly, this fraction is even lower for older age groups. Fifteen percent of 35 to 64 year old lifetime migrants had moved within the last five years, while only 8 percent of lifetime migrants older than 64 had moved within the past five years. Therefore, lifetime migration rates will typically reflect location decisions that are relatively dated.

For researchers studying local labor and housing markets, a natural statistic of interest is the fraction of the population that crosses metropolitan area boundaries. According to the 5-year migration statistics from the Census and 1-year migration statistics from the ACS, virtually all (97 percent) of cross-state migrants also changed metropolitan areas, while only 60 to 70 percent of cross-MSA migrants also changed states. Thus, inter-state migration underestimates the number of people that move across local labor and housing market boundaries. By contrast, inter-county migration overstates metropolitan area migration, as only $\frac{3}{4}$ of cross-county migrants changed metropolitan areas. Despite their differences, both inter-state and inter-county flows provide a reasonable proxy of inter-metropolitan migration.

Table 2 reports differences in cross-state migration rates across demographic and socioeconomic groups. We use annual CPS data for this analysis, but results are mostly similar when using annual data from the ACS and 5-year or lifetime migration rates from the Census. Differences across groups are also similar for inter-county and inter-region migration. We report estimates separately by decade, but the relative differences have not changed much over time. The propensity to migrate falls with age, but rises with education. Migration also tends to be a little lower for black, Hispanic, and foreign-born individuals, as well as for individuals with at least one child in the household. Migration rates are the same for men and women. Turning to

economic characteristics, migration is lower for high income individuals, unemployed workers, and renters.¹⁶ Although many of these characteristics are correlated with one another, differences among groups are the same when estimated in a regression framework that includes all of the other characteristics. In terms of magnitudes, the largest differences in the propensity to move are between homeowners and renters, between the unemployed and individuals who are either employed not in the labor force, between individuals with at least some college and those with less education, and between individuals younger than 34 and those older than 45.

Table 1, Table 2 and Figure 1 all show a downward trend in migration over the past 25 years. Although the magnitude and timing of this decrease varies somewhat across datasets and measures of migration, by almost any measure migration in the 2000s was lower than the 1990s. This decrease marks a noticeable departure from the longer-run trend, as several researchers have documented a secular rise in migration from 1900 to 1990 (Ferrie 2003, Rosenbloom and Sundstrom 2004).¹⁷ To illustrate, Figure 2 shows lifetime migration rates across states and an estimate of 5-year migration inter-state migration rates using the methodology of Rosenbloom and Sundstrom (2004).¹⁸ The 5-year migration rate peaked in 1980 and by 2009 it had fallen below its level of 1950. Life-time migration rates evolve more gradually because changes in migration patterns over a short period have only a small impact on the cumulative probability of migration over an entire lifespan. Nevertheless, lifetime migration rates also dipped in the 2000s, marking the first appreciable decline since 1940.

¹⁶ Employment status and home ownership are only observed/recorded in the CPS for the current year. Based on the Panel Study of Income Dynamics, individuals are also more likely to have moved across state lines if they were unemployed or renters in the previous year.

¹⁷ A few researchers have documented a decline in migration from the 1960s to the 1980s using annual CPS migration rates (Greenwood 1997, Long 1988, Rogerson 1987). Therefore, it is possible that the reversal in trend migration began in the 1970s rather than the 1980s. However, the contraction in migration from the 1980s to the 2000s is noticeably larger than the earlier decline.

¹⁸ Specifically, Rosenbloom and Sundstrom assume that a household moved between states in the previous five years if a 4- or 5-year old living in the household resides in a different state than their birth state. The 5-year migration rate is then the fraction of households with 4- or 5-year olds that moved.

The reason for the decrease in migration since the 1980s is not clear. Rosenbloom and Sundstrom attribute much of the increase in migration in the 20th century to a rise in educational attainment. However, education is unlikely to explain the decrease in the past 30 years because educational attainment has not fallen while migration has fallen for individuals at all levels of education. More generally, the decrease in migration does not seem to be driven by any other demographic or socioeconomic trends because migration rates have fallen for nearly every sub-population and the composition of the population has not shifted in a way to affect aggregate migration appreciably.¹⁹ Migration rates across short distances (i.e. within county) have trended down as well. Because the secular decrease in mobility is so widespread, it is likely driven by a factor that has affected a large fraction of the population, such as a general increase in the cost of moving or a decrease in the incentive/benefit of relocation.

IV. Recent Changes in Migration

One striking feature of Figure 1 is that the annual migration rates reported in the CPS have fallen much more since 2005 than the migration rates reported in the IRS or ACS data. The precipitous drop in the CPS migration estimates has received much attention from the media and academics because it brought mobility to its lowest recorded level since the survey began in the late 1940s (Batini et. al. 2010, Frey 2009).²⁰ Because it coincided with a severe housing market downturn, this dramatic decline has led to much speculation and some research about the

¹⁹ For example, a common supposition is that the aging of the population has reduced aggregate migration since the propensity to move decreases with age. However, the fraction of the population age 45-64 only expanded from 20 percent in 1981 to 25 percent in 2010 (and the fraction older than 64 did not change much). Based on the average differential between migration rates of this group and the rest of the population, the rise in the 45-64 population share would only have reduced aggregate inter-state migration by 0.1 percentage point, less than one tenth of the aggregate decrease in inter-state migration.

²⁰ Prominent articles in the media include Fletcher, Michael A. 2010 "Few in US Move for New Jobs, Fueling Fear the Economy Might Get Stuck Too." *The Washington Post*, July 20, p. A1. Also, Roberts, Sam. 2009. "Slump Creates Lack of Mobility for Americans." *New York Times*, April 22.

possible role of the housing market contraction, and in particular the damping effect of underwater mortgages on homeowners' ability to move. It has also spurred discussion about the potential effect on the nascent labor market recovery, as job seekers might not be able to move in order to take a new job.²¹

In contrast to the CPS estimates, the IRS and ACS data paint a different picture of migration rates in the second half of the decade. Although they also suggest that migration has fallen, the magnitude of this decline is much more modest and, in the case of the IRS, the decrease merely seems to continue the downward trend since the 1980s. The estimated levels of migration in the IRS and ACS are similar to one another and were more than 50 percent higher than the CPS estimates in 2008 (the latest year for which all three datasets are available).²²

The similarity between the ACS and IRS estimates may be somewhat surprising because the sources and methodology on which they are based are quite different. By contrast, the CPS and ACS are based on similar sample designs and the same survey question. Nevertheless, there are some methodological differences between the CPS and ACS that could potentially contribute to the disparity. For example, while both sampling frames are drawn from the 2000 Census, the ACS uses postal addresses to update the sampling frame whereas the CPS uses building permits. It is possible that the postal service does a better job of capturing new residences than the residential construction data, which would raise migration in the ACS relative to the CPS since recent migrants are more likely to live in new residences.²³ However, the trends in the number of housing units in the ACS and CPS are similar from 2005 to 2009, making this explanation

²¹ Despite the attention it has received, the recent decline in migration was still much smaller than that which occurred during the Great Depression (see Figure 2).

²² As we mentioned in footnote 16, we have excluded imputed migrants from the CPS and ACS because the methodology used to impute inter-state migration in the CPS overstates the level of migration from 1999 to 2005 (Kaplan and Schulhofer-Wohl 2010, Koerber 2007). Consequently, differences in imputation procedures cannot account for the divergence between these two measures of migration.

²³ For example, building permits are for new structures only, and do not include structures that are split into multiple housing units unless the structure is completely rebuilt.

unlikely. Another methodological difference is that the ACS revisits vacant housing units for up to 3 months in order to collect data, whereas the CPS records a housing unit as vacant after the first visit (Koerber 2007). This difference would raise the migration rate in the ACS relative to the CPS, but it is not clear why it would cause the gap in migration rates to expand over time. Disparities between the CPS and ACS/IRS have also widened for most states and demographic/socioeconomic groups, suggesting that the divergence is not related to weighting geographic areas or sub-populations differently.²⁴

Since we are unable to explain the divergence in migration rates between the CPS and other data sources, it is difficult to determine which source presents a more accurate picture of migration in the past five years. We lean towards the IRS and ACS estimates because they are based on larger samples, but we have yet to uncover a compelling reason to reject the validity of the CPS.²⁵ Clearly this topic is an important area for further research. For now, we merely note these differences and use all three sources to examine the change in migration since 2006, a period when migration rates decreased in all three sources.²⁶

As we discussed above, explanations for changes in aggregate migration can be divided in to three general categories: compositional factors (i.e. an increase in the population share of a demographic or socio-economic group that tends to have a low migration propensity), factors that caused migration rates for a specific population subgroup to decrease, and factors that changed the migration rates for the general population. As with the change in migration from the

²⁴ One modest exception is that in the states that make up the north central division, in-migration rates in the CPS have not fallen noticeably relative to the IRS data.

²⁵ Other datasets that we have examined, such as the Panel Study of Income Dynamics and the Survey of Income and Program Participation, also do not show large declines in migration since 2005.

²⁶ The level of migration may have been a little elevated over the 12 months ending in March 2006 due to the severe hurricanes that struck the Gulf Coast in the fall of 2005. However, the effect on aggregate migration rates was probably not large. Excluding CPS respondents who moved due to a natural disaster, inter-state migration would have been 0.08 percentage points lower in 2006, and inter-county within state migration would have been 0.03 percentage points lower.

1980s to the 2000s, the drop in migration since 2006 also cannot be explained by the composition of the population or by group-specific factors. Consequently, we consider a number of economic factors that might have changed the cost or benefit of moving for the majority of the population during this period.

One possibility is that the decrease in migration reflects the usual cyclical decline that occurs during business cycle contractions (Greenwood, Hunt and McDowell 1986, Saks and Wozniak 2007). To assess this hypothesis, Table 3 compares the decrease in migration since 2006 to past business cycles. In both the CPS and IRS data, the current decrease in inter-state migration is about the same magnitude as the 1990 and 2000 recessions, and the decrease in inter-county migration is larger than in these two recessions. However, the current recession did not begin until the end of 2007, and migration began to fall one to two years earlier (depending on the dataset). The magnitude of the drop in migration that coincided with the economic recession (from 2007 to 2010) is somewhat smaller than that of previous recessions, even though the current episode was much worse along many dimensions of the labor market. Thus, the business cycle seems unlikely to be the main explanation for the recent decrease in migration.²⁷

The housing market contraction seems a more likely candidate to explain the recent drop in migration because it began around the same time as the drop in migration. One frequently-proposed mechanism is that when house prices drop considerably, homeowners who owe more on their mortgage than their property is worth will be unable to move (Ferriera, Gyourko and Tracy 2010; Henley 1998). Another possible mechanism is that house price declines heighten concerns about the future value of housing, reducing the incentive for renters to become

²⁷ Actual inter-county migration fell by 0.36 percentage points in the CPS, and by 0.72 percentage points in the ACS from 2007 to 2009. Extrapolating the downward trend from the previous ten years (1996-2006), migration would have fallen 0.23 percentage points from 2007 to 2009 had it followed trend. Based on the previous 20 years (1986-2006), migration would have fallen by 0.25 pp from 2007 to 2009. Therefore, after accounting for the existing downward trend in migration, there is seemingly little additional decline for the cycle to explain.

homeowners and for current homeowners to trade up into higher quality units. Table 3 shows that the recent decrease in migration has been at least as large, if not larger, than it was during the two previous housing market downturns. This result should not be surprising since the depth of the contraction was more severe in the current episode.

Both of the housing-related mechanisms proposed above suggest that migration rates should have fallen more for current homeowners (i.e. individuals who are homeowners in the current year, regardless of whether they were homeowners in the previous year). In both the CPS and ACS, neither inter-state nor inter-county migration rates fell more for homeowners than they did for renters in percentage point terms.²⁸ Recent changes in migration rates of both homeowners and renters have been similar to their longer-run downward trends, suggesting that the housing cycle has not appreciably affected the migration patterns of these groups.

If the drop in migration were driven by the growing share of homeowners with negative housing equity, then we would expect to see migration fall by more in locations with a larger share of underwater mortgages. Figure 3 shows the correlation between the fraction of mortgages with negative equity in 2009:Q3 (the earliest available time period) and the change in migration from 2006 to 2009.²⁹ Since house-lock should prevent borrowers from moving out of their home, we show both out-migration from a state and migration between counties within the same state. Five states had the largest share of underwater mortgages by far, but these states did not experience larger drops in migration than average. Interestingly, migration out of states with

²⁸ However, homeowners have much lower migration rates, so the *percentage* decline in migration was larger for homeowners than for renters.

²⁹ The share of negative equity is estimated by CoreLogic and includes second liens. They do not provide estimates prior to 2009:Q3. When we calculate the share of mortgages with negative equity using loan-level data from LPS Applied Analytics and CoreLogic (neither of which includes second liens), the state rankings of the fraction of mortgages with negative equity is very stable between 2007 and 2010.

a high negative equity share appears to have *risen* a bit more than other states in the CPS, but this result is not evident in the ACS data.

To explore further, we regress state migration rates from 1981 to 2010 on an indicator for the 2007-2010 period and an interaction between this indicator and the share of mortgages with negative equity in 2009:Q3 (regressions using IRS data end in 2008 instead of 2010). The regressions control for state and year fixed effects, the unemployment rate, the logarithm of average household income, the age distribution of the population, and state-specific linear time trends.³⁰ As shown in Table 4, we find no evidence that migration rates were lower in the recent period in states with a larger share of underwater mortgages. In unreported results, we also find no evidence that the migration rate of homeowners falls more than that of renters in high negative equity states compared to other states, as we would expect if house lock were reducing migration. Although research on this topic is still ongoing, preliminary studies by other researchers have also found little evidence that house lock has reduced migration or raised unemployment in the past several years (Farber 2010, Valetta 2010).

To see if other aspects of the housing market contraction—such as a diminished desire to invest in housing—may have suppressed migration, we estimate similar regressions as in Table 4 but interact the post-2006 indicator with the peak-to-trough decline in existing home sales or the peak-to-trough decline in house prices.³¹ We find no evidence that migration fell more in the recent period in states with larger declines in housing market activity as measured by sales or prices.

³⁰ All control variables are calculated from the CPS. Results are mostly similar when excluding the state-specific time trends, except that migration into states with a high negative equity share fell more than in other states. There is no reason for this result to be related to house-lock.

³¹ We use annual averages of home sales and prices to smooth out noise in the data and restrict the peak to be between 2004 and 2006 and the trough to be between 2007 and 2009. Not surprisingly, the peak-to-trough decline in house prices is highly correlated with the fraction of mortgages with negative equity.

As a final way to assess the various reasons underlying the recent decline in migration, we examine the answers to the question “Why did you move?” that is asked of migrants in the CPS. Because these responses vary substantially from year to year, we calculate averages for 2003-2006 and 2007-2010 (see Table 5). Among inter-state migrants, the reasons for moving that fell the most between these two periods are “attend/leave college,” “change in marital status,” “other family reason,” and “natural disaster.”³² Decreases in job-related and housing-related reasons are small—no detailed job-related reasons contracted during this period and the only housing-related category that shrank noticeably was “other housing reasons.” By contrast, the fraction of inter-county, within state migrants that moved “to own home, not rent,” for “new or better housing,” for a “better neighborhood” or for “other housing reasons” decreased markedly. Thus, the housing market might have exerted some downward pressure on within-state migration, although not for longer-distance migration. An important caveat to this analysis is that people may move for a variety of factors and consequently asking them to choose a single reason may be misleading. In addition, the large variability of the responses from year to year might mask important higher-frequency changes in reasons for moving.

In summary, we find little evidence that the decrease in migration since 2006 is related to demographic/socioeconomic or cyclical factors. The small roles for the labor and housing market should not be surprising based on the migration rates shown in Figure 1, because the recent change in migration appears to be a continuation of a downward trend rather than something specific to the recent period. Therefore, it appears that researchers studying changes in migration should focus on factors that might have led to a secular decline since the 1980s, rather than factors specific to recent years.

³² The decrease in the “attend/leave college” category disappears if we restrict the sample to respondents over 35, although it is still appreciable among respondents between age 25 and 35. The change in migration due to a natural disaster is a result of the Gulf Coast hurricanes in 2005.

V. International Comparison

A generally accepted, stylized fact is that internal mobility rates are higher in the United States than in European countries and other advanced economies, although most comparisons relate to data through the early 1990s at best (e.g. Long 1991 and Greenwood 1997).

Historically, international comparisons have been difficult due to data limitations and conceptual difficulties in forming a common definition of internal mobility.³³ As a result, many studies compare only a small number of countries for which common mobility statistics exist (e.g. Canada and Australia in Newbold and Bell, 2001; US, Great Britain and Sweden in Long et. al. 1988). It is only more recently, with the advent of Euro-area wide surveys which report data on internal mobility, that researchers have been able to make more consistent comparisons across countries (Bohin et. al. 2008).

Nonetheless, the lack of ideal data has not prevented researchers from speculating on the causes and consequences of the apparently higher levels of internal mobility in the US relative to Europe. Explanations for higher US mobility include housing-related reasons (cheaper housing and limited government regulation of housing markets), long-standing cultural reasons (the US as “a nation of immigrants” and thus more predisposed to moving, or that young adults in the US traditionally leave home at an earlier age), and that the larger geographic area of the US facilitates mobility (Long 1991). Some have speculated that ease of mobility in the US relative to Europe has contributed to the relatively high and persistent unemployment in Europe (Oswald 1999), as mobility frictions may impede re-equilibration of the labor market.³⁴ Indeed, Bohin et.

³³ Mobility questions are rarely uniform across surveys and Censuses and measures of migration are based on movement between political units of varying sizes in different countries.

³⁴ In an unpublished manuscript, Oswald (1999) hypothesizes that lower migration due to higher homeownership can help explain why unemployment is higher in Europe compared to the US, but further research has generally not supported this claim (Green and Hendershott 2001).

al. 2008 finds a strong association across countries between internal mobility and the frequency of job changes over one's lifetime.

Two recent developments in data availability for the Euro area have facilitated more careful comparisons of internal mobility between European countries and the US. The first is a 2005 wave of the Eurobarometer—a Euro-wide survey on a variety of topics, with a sample size of around 1,000 per country—which included questions on mobility, allowing the calculation of one-year mobility rates across countries.³⁵ Using this source, in Figure 4 we compare one-year mobility rates in 2005 for 26 European countries to the one-year mobility rate in 2005 for the US. Confirming the commonly-held wisdom, the US mobility rate is significantly higher than the mobility rate for most European countries—US mobility by this measure is about twice as large as mobility in most European countries outside of Northern Europe. Also evident is that mobility rates tend to be higher in Scandinavian countries and in Great Britain than in other European countries, and that mobility in some of these countries (Denmark and Finland) slightly exceeds the US mobility rate.

Second, the European Labor Force Survey—for which summary data for some European countries is available from the start of the decade through 2005—asks respondents about their mobility over the previous year. The difficulty of defining comparable geographic units is partially mitigated by defining internal mobility as movement within a country between NUTS2 (Nomenclature of Territorial Units for Statistics, Subdivision 2) units. The population of a NUTS2 ranges approximately from 800,000 to 3,000,000—roughly comparable to the population of many US states. We have used publically available summary statistics on within-

³⁵ The most recent Eurobarometer wave that asked questions on change of residence was 64.1, which was collected in September and October of 2005. The tabulation in Figure 4 is derived from question A4, which asks the respondent “what year did you move in [to your current residence]?” Hence, these mobility rates should be interpreted as a move of any sort (across country, within country, etc.). The US mobility rate in the table is similarly calculated.

country, inter-NUTS2 mobility to compare internal mobility in 15 European countries to inter-state mobility in the US. Mobility rates for these countries were either flat or slightly increasing during the first half of the 2000s, but still generally remain below inter-state migration estimates for the US.³⁶

In addition, we have examined Canadian cross-province mobility provided by Statistics Canada, and mobility between nine regions in England from the British Office for National Statistics.³⁷ In Canada, inter-provincial mobility was mostly flat from 2000 to 2008 and stepped up in 2009, and it remained substantially below US inter-state migration throughout the 2000s. By contrast, the level and trend in inter-region mobility in the U.K. was similar to the IRS measure of US inter-state migration; inter-region U.K. migration decreased from 2.3 in 1999 to 2.0 in 2008.

Conclusion

By most measures, internal migration in the United States is at a thirty year low. Migration rates have fallen for most distances, demographic and socioeconomic groups, and geographic areas. The decline in migration is not a particular feature of the past five years, but has been relatively steady since the 1980s. Consequently, cyclical downturns in the housing market and/or labor market are unlikely to be the main drivers of the recent drop in mobility. Moreover, we find little evidence that a rising share of homeowners with negative equity has reduced migration rates. More generally, similar reductions in migration rates of both homeowners and renters seem to rule out many explanations related to the housing market.

³⁶ The only exceptions are that, cross-NUTS2, within-country migration rates for Denmark and Hungary are slightly higher by 2007 than the US inter-state mobility rate.

³⁷ The populations of the nine regions range from 2.5 to 8 million, according to the most recent (2001) British Census. For comparison, the population of the median state in the 2000 US census was 4 million.

Despite the steady decline in migration, the commonly held belief that Americans are more mobile than their European counterparts still appears to be true.

The causes of falling internal migration rates are not fully understood. The widespread nature of the decrease suggests that the drop in mobility is not related to demographics, income, employment, labor-force participation, or homeownership. The downward trend appears to have begun around the 1980s, pointing to an explanation specific to the past three decades. In addition, the secular decline appears to be specific to the US experience, since internal mobility has not fallen in most other European economies or in Canada (with the U.K. as a notable exception).

Exploring reasons for the downward trend in internal migration within the U.S. since the 1980s is clearly an important direction for future work. One possibility is that technological advances have allowed for an expansion of telecommuting and flexible work schedules, reducing the need for workers to move for a job. Indeed, the fraction of workers who report working from home has risen from 2.1 percent in the 1980 Census to 4.1 percent in the 2009 ACS. A second hypothesis is that locations have become less specialized in the types of goods and services produced, making the types of jobs available more similar across space. Carlino and Chatterjee (2002) show that the population has indeed become more deconcentrated both across and within metropolitan areas in the postwar period. A related idea is that the distribution of amenities has become more homogeneous across locations, making residence in any particular city less attractive. Finally, it is possible that increased frictions in labor search—perhaps related to the well-documented rise in returns to work experience—have reduced mobility for a broad segment of the population. Researchers should consider these ideas, as well as other potential explanations, in further work.

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Table 1
Five-Year and Life-Time Migration Rates

| | 1980 | 1990 | 2000 | 2009 |
|--|------|------|------|------|
| 5-year migration | | | | |
| Cross-region | 5.46 | 5.11 | 4.57 | -- |
| Cross-state | 9.86 | 9.58 | 8.67 | -- |
| Cross-MSA | 11.9 | 12.3 | 11.7 | -- |
| Cross-county | 19.8 | 19.5 | 18.6 | -- |
| Life-time migration (US natives only) | | | | |
| Cross-region | 18.0 | 18.3 | 18.3 | 17.5 |
| Cross-state | 31.1 | 31.9 | 32.0 | 31.0 |

Note. Data for 1980-2000 are from the Decennial Census; data for 2009 are from the American Community Survey. Cross-county migrants are defined as moving across any state boundary; cross-state migrants have moved across any state boundary.

Table 2
Annual Inter-State Migration by Demographic and Socioeconomic Group

| | 1981-2010 | 1981-1990 | 1991-2000 | 2001-2010 |
|--|-----------|-----------|-----------|-----------|
| Sex | | | | |
| Male | 2.5 | 3.0 | 2.5 | 1.7 |
| Female | 2.3 | 2.8 | 2.4 | 1.7 |
| Age | | | | |
| 1-13 | 2.5 | 3.1 | 2.5 | 1.8 |
| 14-17 | 1.7 | 2.1 | 2.0 | 1.2 |
| 18-19 | 2.9 | 3.5 | 2.8 | 1.7 |
| 20-24 | 5.4 | 5.8 | 5.2 | 3.6 |
| 25-34 | 4.0 | 4.4 | 3.9 | 3.0 |
| 35-44 | 2.1 | 2.6 | 2.3 | 1.5 |
| 45-64 | 1.2 | 1.5 | 1.5 | 1.0 |
| 65+ | 0.9 | 0.9 | 1.0 | 0.7 |
| Education | | | | |
| Less than high school | 1.4 | 1.5 | 1.4 | 1.0 |
| High school | 1.5 | 3.0 | 1.8 | 1.2 |
| Some college | 2.2 | 3.0 | 2.3 | 1.5 |
| College degree or higher | 3.1 | 4.0 | 3.4 | 2.1 |
| Race/ethnicity | | | | |
| White, non-Hispanic | 2.5 | 3.0 | 2.6 | 1.8 |
| Black, non-Hispanic | 2.0 | 2.4 | 2.3 | 1.7 |
| Hispanic | 1.5 | 1.9 | 1.6 | 1.3 |
| Asian | 2.3 | 4.2 | 3.0 | 1.8 |
| Other | 3.1 | 3.5 | 3.7 | 2.1 |
| Nativity | | | | |
| Native, both parents native | 2.0 | -- | 2.4 | 1.8 |
| Native, at least one parent foreign born | 1.5 | -- | 1.7 | 1.4 |
| Foreign born | 1.7 | -- | 2.2 | 1.5 |
| Presence of children in the household | | | | |
| None | 2.5 | 3.1 | 2.8 | 2.0 |
| At least one | 2.2 | 2.6 | 2.1 | 1.4 |
| Income | | | | |
| Lowest quintile | 2.4 | 3.0 | 2.7 | 1.9 |
| Second quintile | 2.3 | 2.9 | 2.5 | 1.8 |
| Third quintile | 2.3 | 3.1 | 2.5 | 1.7 |
| Fourth quintile | 2.1 | 2.7 | 2.3 | 1.6 |
| Highest quintile | 2.1 | 2.6 | 2.3 | 1.6 |
| Employment status | | | | |
| Employed civilian | 2.3 | 2.9 | 2.4 | 1.6 |
| Military | 19.5 | 20.3 | 16.6 | 13.3 |
| Unemployed | 4.7 | 5.3 | 5.0 | 3.5 |
| Not in the labor force | 2.1 | 2.2 | 2.1 | 1.5 |
| Homeownership | | | | |
| Owner | 1.2 | 1.5 | 1.4 | 0.9 |
| Renter | 4.6 | 5.8 | 4.8 | 3.5 |

Note. Each cell reports the percent of the population that moved in the previous year as reported in the Current Population Survey. Nativity is only available from 1994 onwards. Employment status and homeownership are measured in the current year.

Table 3
Change in Annual Migration Rates
(Percentage Points)

| | Inter-State | | | Inter-County, Within State | | |
|-----------------|-------------|-------|-------|----------------------------|-------|-------|
| | CPS | IRS | ACS | CPS | IRS | ACS |
| 2006-2008 | -0.28 | -0.19 | -0.24 | -0.61 | -0.26 | -0.24 |
| 2006-2009 | -0.31 | -- | -0.38 | -0.62 | -- | -0.34 |
| 2006-2010 | -0.44 | -- | -- | -0.62 | -- | -- |
| 2007-2010 | -0.20 | -- | -- | -0.29 | -- | -- |
| Business cycles | | | | | | |
| 1990-1992 | -0.42 | -0.19 | -- | -0.16 | -0.15 | -- |
| 2000-2002 | -0.33 | -0.08 | -- | -0.41 | 0.00 | -- |
| Housing cycles | | | | | | |
| 1988-1992 | -0.09 | -0.19 | -- | -0.13 | -0.13 | -- |
| 1978-1983 | -- | -0.29 | -- | -- | -- | -- |

Note. Sources are the Current Population Survey, the Internal Revenue Service and the American Community Survey. CPS and ACS statistics are calculated from micro-data and exclude imputed values and individuals living in group quarters.

Table 4
Correlation of Change in Migration with Negative Equity

| | In-migration | | Out-migration | | Cross-county, within-state |
|---|-------------------|-------------------|-------------------|-------------------|-------------------------------|
| | CPS (1) | IRS (2) | CPS (3) | IRS (4) | CPS (5) |
| (Share of HH with neg. equity in 2009Q3) X (post-2006) | -0.003 (0.009) | -0.005 (0.003) | 0.010 (0.004) | 0.010 (0.004) | 0.000 (0.004) |
| Post-2006 dummy | -0.002 (0.002) | 0.001 (0.001) | -0.008 (0.003) | -0.003 (0.001) | -0.003 (0.002) |
| Unemp. rate | -0.042 (0.025) | -0.117 (0.017) | 0.051 (0.026) | 0.075 (0.013) | -0.001 (0.023) |
| Ln(avg. household income) | -0.003 (0.006) | 0.003 (0.003) | 0.003 (0.004) | 0.007 (0.002) | -0.001 (0.006) |
| Share 18-24 | 0.011 (0.027) | 0.010 (0.014) | 0.014 (0.023) | 0.001 (0.006) | 0.053 (0.018) |
| Share 25-34 | 0.037 (0.022) | 0.002 (0.013) | 0.011 (0.022) | 0.007 (0.006) | 0.046 (0.016) |
| Share 65+ | 0.008 (0.023) | 0.021 (0.015) | 0.002 (0.021) | 0.012 (0.009) | 0.005 (0.019) |
| N | 1470 | 1472 | 1322 | 1472 | 1470 |
| Weighted mean of migration rate: | 0.022 | 0.028 | 0.023 | 0.028 | 0.027 |

Regressions are state-year regressions of migration rates on year and state fixed effects and state time trends, and covariates listed above. The sample period is 1981-2010 for the CPS sample and 1977-2008 for the IRS sample. All covariates are calculated from the CPS. Standard errors clustered at the state level are in parentheses. Regressions are weighted by the state population in the CPS sample, and by the sum of mover and stayer exemptions in the IRS data. Weighted mean of the share of households in a state with negative equity in 2009Q3 is 0.19.

Table 5
Percent of Migrants by Reason for Moving

| | Inter-State | | Inter-County, Within State | |
|------------------------------|---------------|---------------|-------------------------------|---------------|
| | 2003- 2006 | 2007- 2010 | 2003- 2006 | 2007- 2010 |
| Change in marital status | 4.5 | 2.9 | 7.4 | 7.4 |
| To establish own household | 2.9 | 3.6 | 5.7 | 7.9 |
| Other family reason | 20.9 | 19.8 | 15.2 | 14.0 |
| New job or job transfer | 34.3 | 35.6 | 14.1 | 13.8 |
| To look for work or lost job | 5.0 | 5.7 | 2.3 | 3.2 |
| For easier commute | 1.5 | 2.0 | 7.5 | 8.6 |
| Retired | 1.2 | 1.3 | 0.6 | 0.5 |
| Other job-related reason | 4.0 | 5.4 | 2.3 | 3.1 |
| Wanted to own home, not rent | 1.7 | 1.1 | 9.2 | 5.4 |
| Wanted new or better housing | 2.0 | 1.8 | 10.9 | 9.0 |
| Wanted better neighborhood | 1.6 | 2.0 | 4.8 | 3.5 |
| For cheaper housing | 2.1 | 2.7 | 4.4 | 6.6 |
| Other housing reason | 2.6 | 1.7 | 6.5 | 5.0 |
| Attend/leave college | 6.1 | 4.4 | 4.8 | 4.9 |
| Change of climate | 2.4 | 2.7 | 0.4 | 0.4 |
| Health reasons | 2.7 | 2.1 | 1.2 | 1.6 |
| Other reasons | 2.8 | 4.8 | 2.4 | 4.6 |
| Natural disaster | 1.9 | 0.4 | 0.6 | 0.4 |

Note. Data are from the Current Population Survey.

Figure 1
Annual Internal Migration Rates

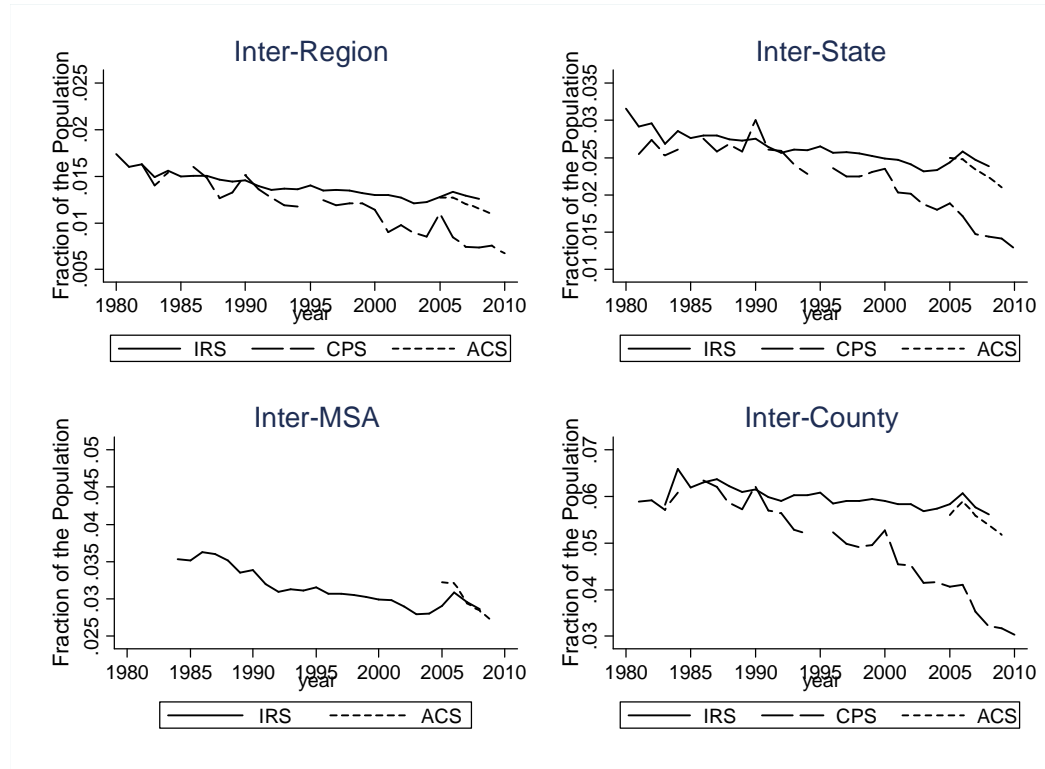
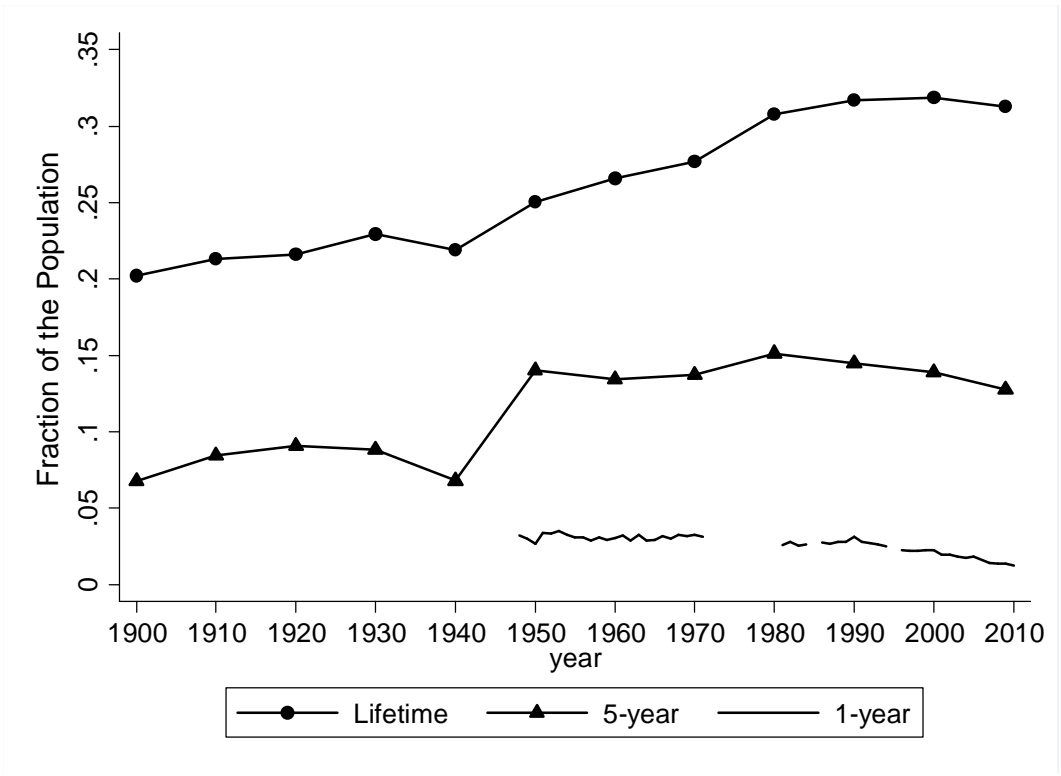
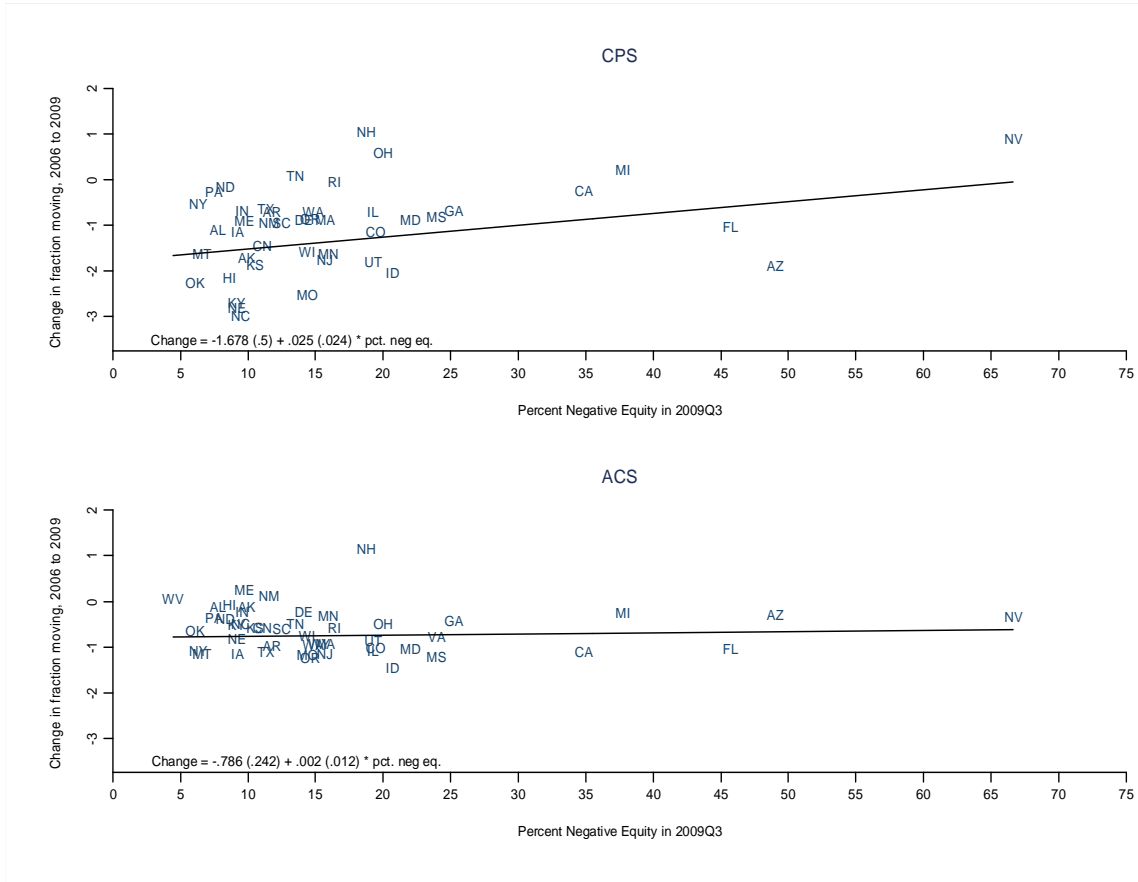


Figure 2
Inter-State Migration Rates Since 1900



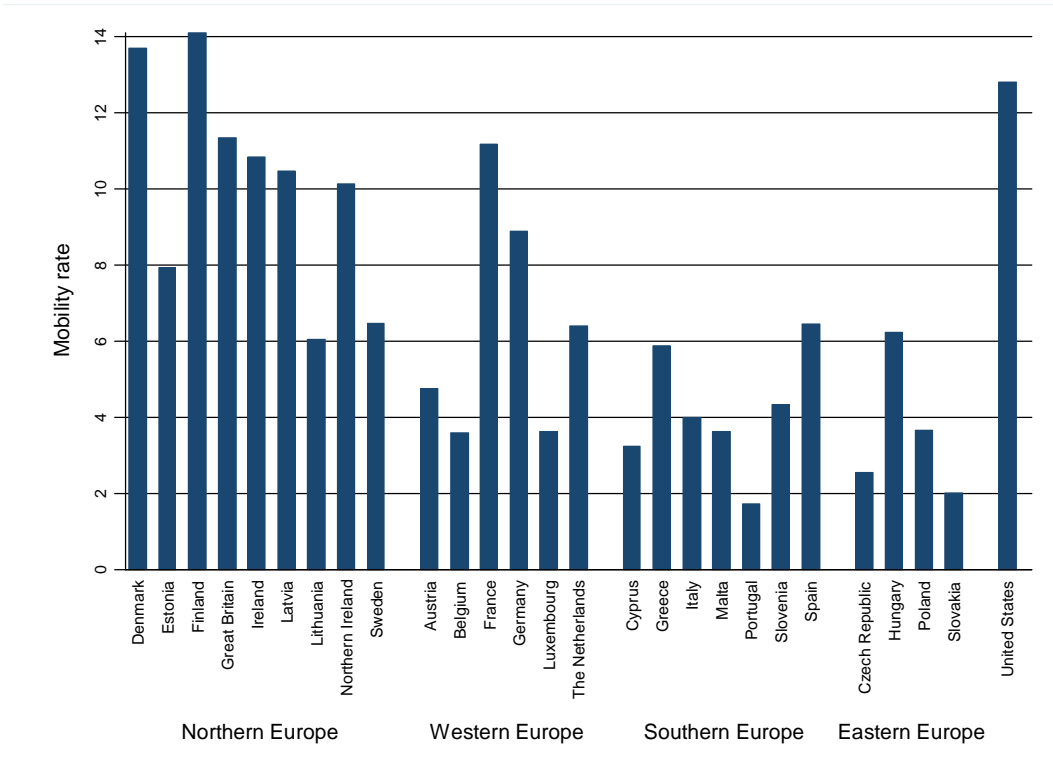
Note. Lifetime and 5-year migration rates are from the denennial Census 1900-2000 and from the ACS for 2009. Five-year migration rates are estimated from the fraction of households with a 4- or 5-year old residing outside of their birth state (Rosenbloom and Sundstrom 2004). Annual migration rates are from the Current Population Survey.

Figure 3
Negative Equity and Changes in Migration 2006-2009



Note: Migration is the sum of out-migration from a state and inter-county migration within the state.

Figure 4
Fraction of the Population in 2005 that Moved Residence in the Previous Year



Source: For European data, Eurobarometer 64.1, distributed as ICPSR #4641. For US data, March 2005 CPS. As Eurobarometer data is derived from a survey administered in September and October of 2005, the responses refer to mobility since the start of the year. European rates in the table have been transformed into 12 month mobility rates by multiplying them by 4/3. Rates are for individuals 16 years and older.