



Housing Finance Policy Center Lunchtime Data Talk

The Decline in Geographic Mobility and Implications for the Mortgage Market

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September 21, 2016

Declining Migration within the U.S.: the Role of the Labor Market

Raven Molloy, *Board of Governors*

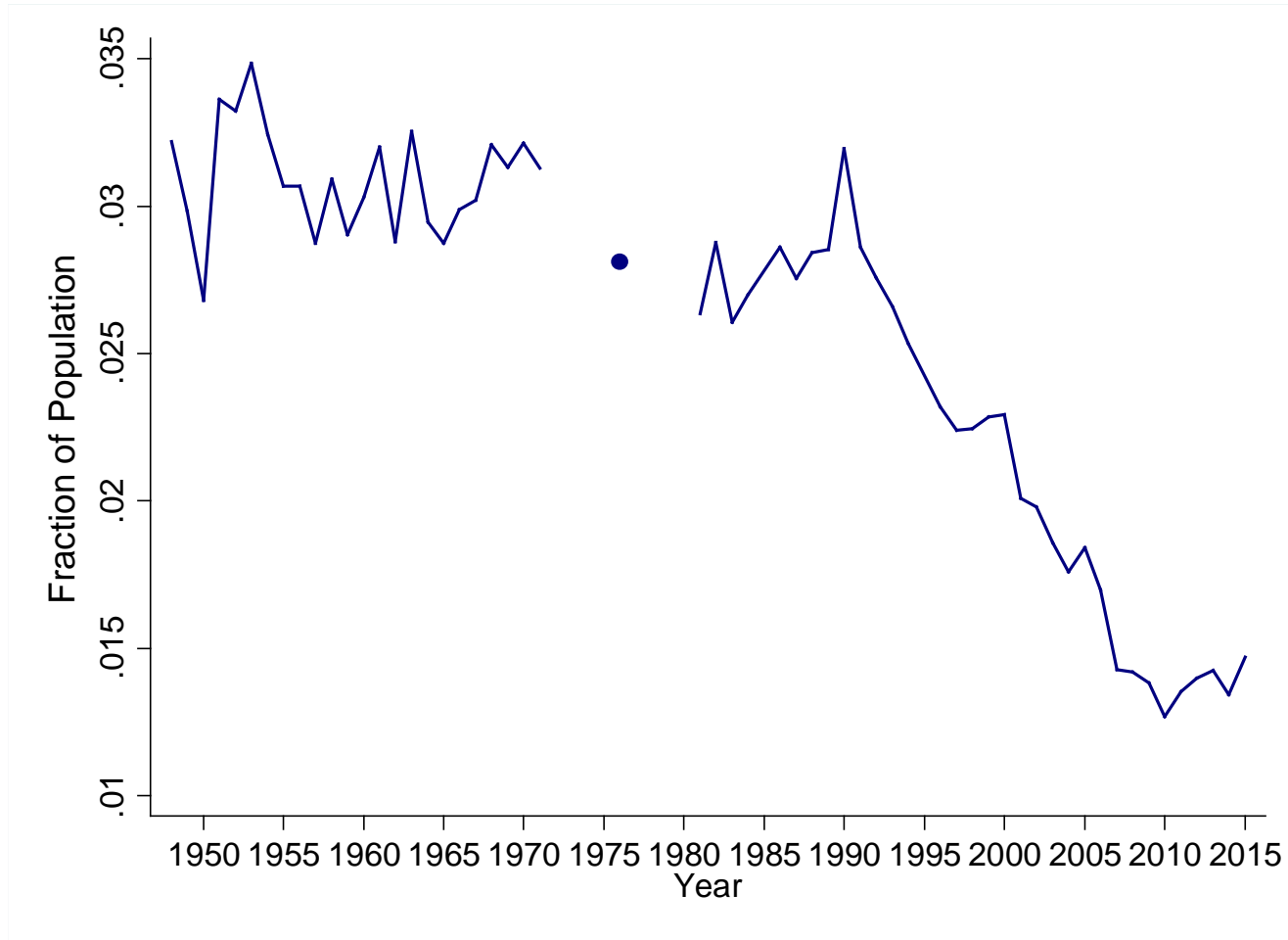
Christopher L. Smith, *Board of Governors*

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Long-Distance Migration rates within the US are falling

Fraction Moved Across States



Source: CPS-ASEC

Why do we care?

- Long-distance moves frequently involve a change in one's local labor market, so there are implications for the labor supply.
- Migration decline could imply that labor markets are less flexible, implying a reduction in aggregate economic efficiency.
- Or, there could be less need to move across labor markets, implying that the aggregate labor market is actually more efficient than it used to be.

Why do we care?

- Beyond labor markets, understanding the reason for this decline is essential for determining its implications for wellbeing.
 - If the cost of migration has risen, people might not be living in utility-maximizing locations.
 - Or the benefits of investing in local social networks might be greater.

Why do we care?

- In order to understand the causes of this trend, it would help to know more about the types of people and locations where migration declines have been most pronounced.

Agenda for today

- Measurement issues
- Show trends for a variety of demographic and socioeconomic groups; and by location.
- Estimate the contribution of observable characteristics to the aggregate trend.
 - Observables can only explain less than $\frac{1}{4}$
- Evidence on a number of other common explanations
 - Empirical support is weak

Agenda for today

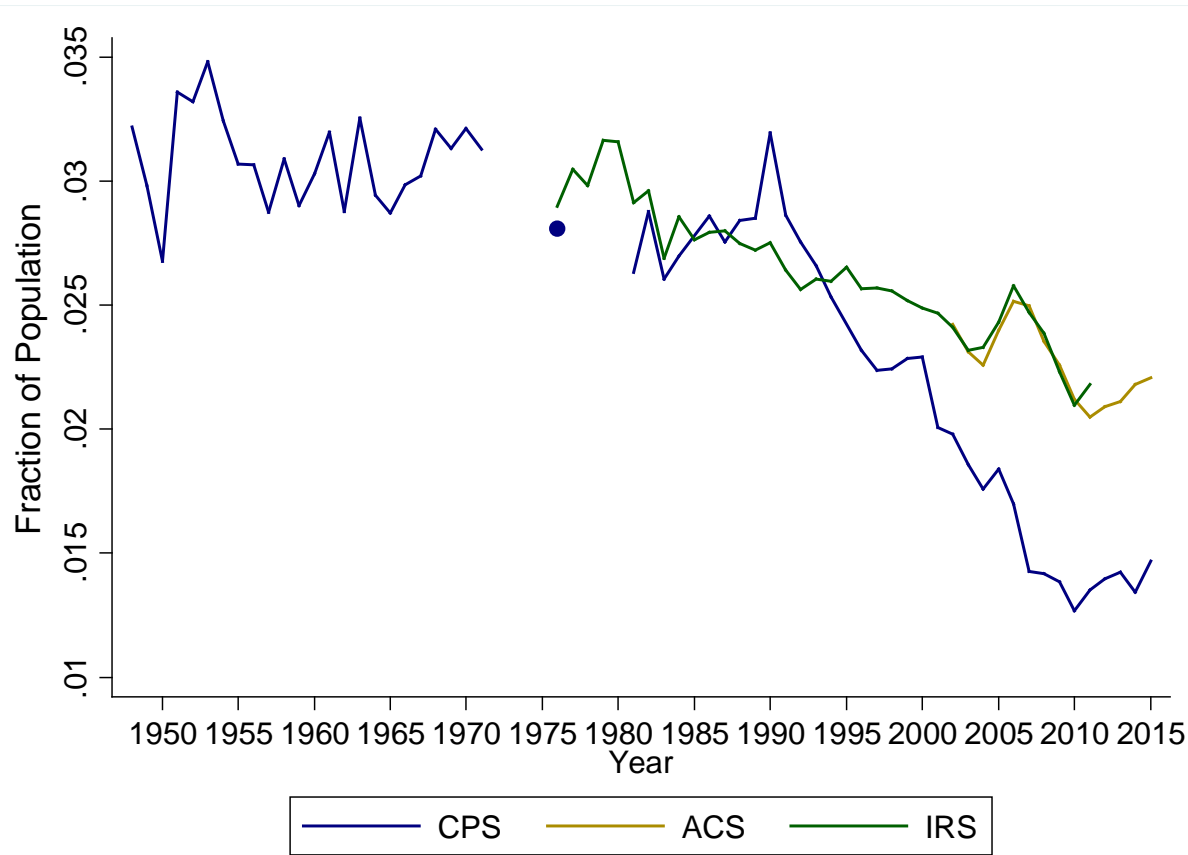
- Draw a connection between the trend in migration and a concurrent downward trend in labor market transitions.
 - The trend in job changing has probably caused the trend in migration.
- We still don't really understand the causes of these trends, but further work should look to the labor market...

Measurement issues

Three commonly-used datasets:

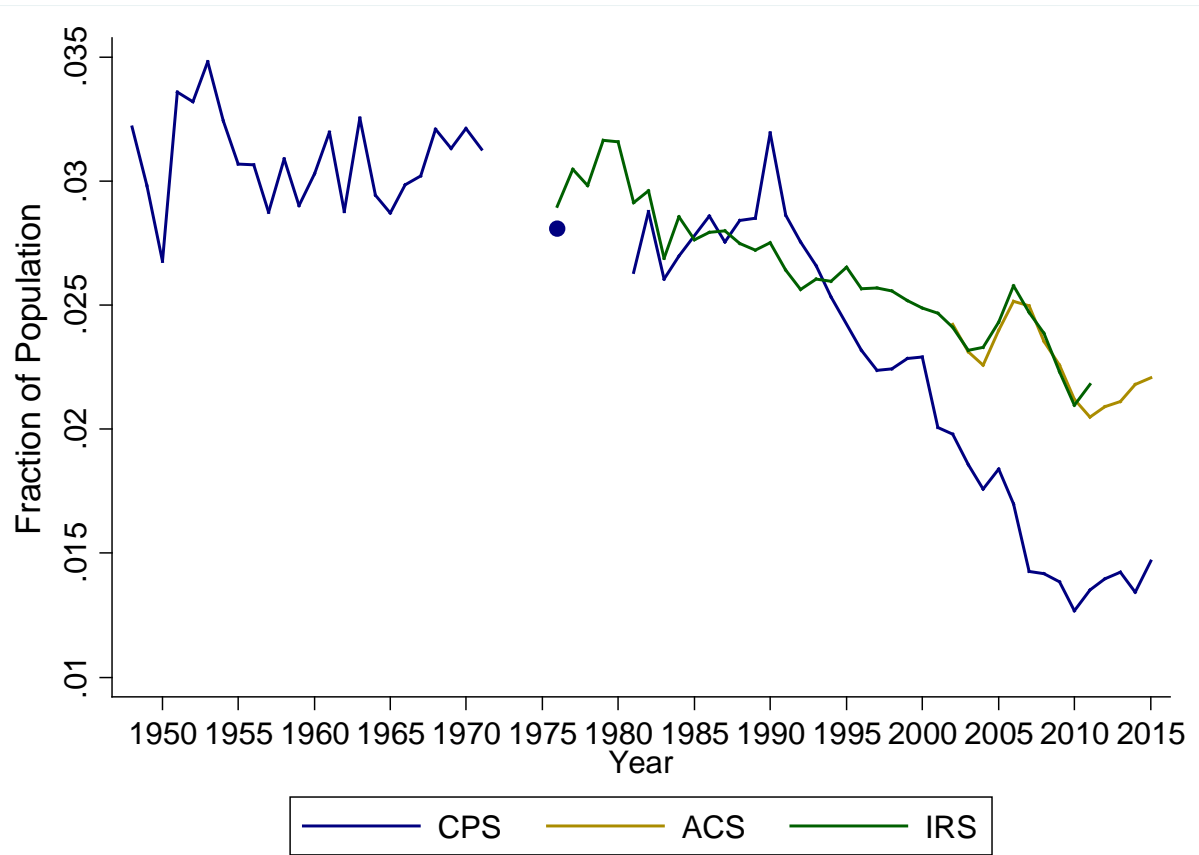
- Current Population Survey (1948 to present)
 - Survey of 60,000 to 100,000 households, each March asks people where they lived 1 year ago
- American Community Survey (2001 to present)
 - Survey of about 3 million households, asks people where they lived 1 year ago
- Internal Revenue Service (1975 to 2011, 2011 to present)
 - Tabulated from address changes of tax filers (not a sample)
 - Disadvantages: Address of the tax filer may not be the residence and not everyone file taxes

Measurement issues



- All show that migration has been falling, although by different amounts.
- Declines seem to have begun in the 1970s or 1980s.

Measurement issues



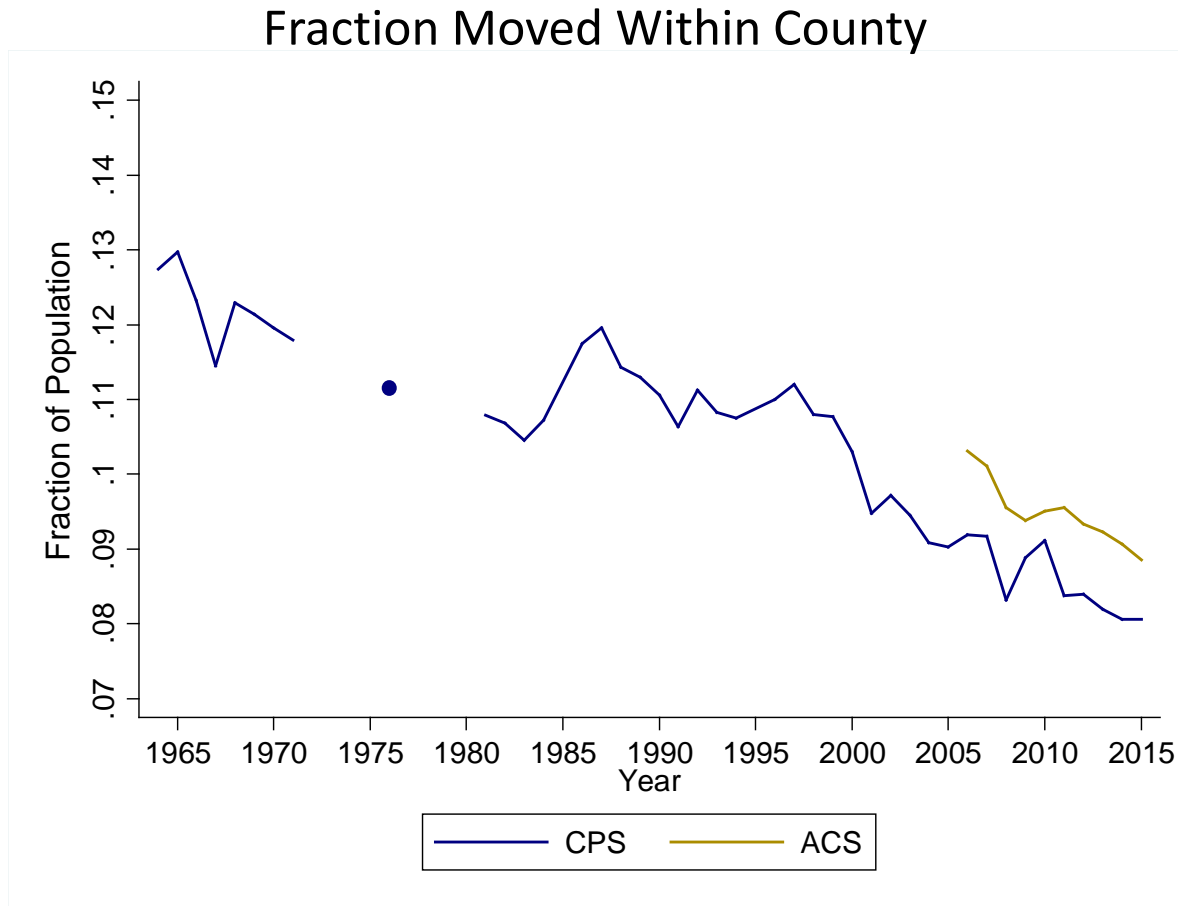
- The level of migration in the CPS is much lower than the ACS.
- Odd because the design of the CPS is very similar to ACS.

Measurement issues

- Similarity of ACS and IRS leads us to suspect mis-measurement in the CPS, but there is no easy explanation.
 - Probably not survey non-response or changes in the survey instrument/question.
 - Not related to imputed values.
- We still use the CPS a lot because it provides the longest time-span of individual-level data.

Other distances

- Migration across shorter distances is falling too.



Demographics and other characteristics

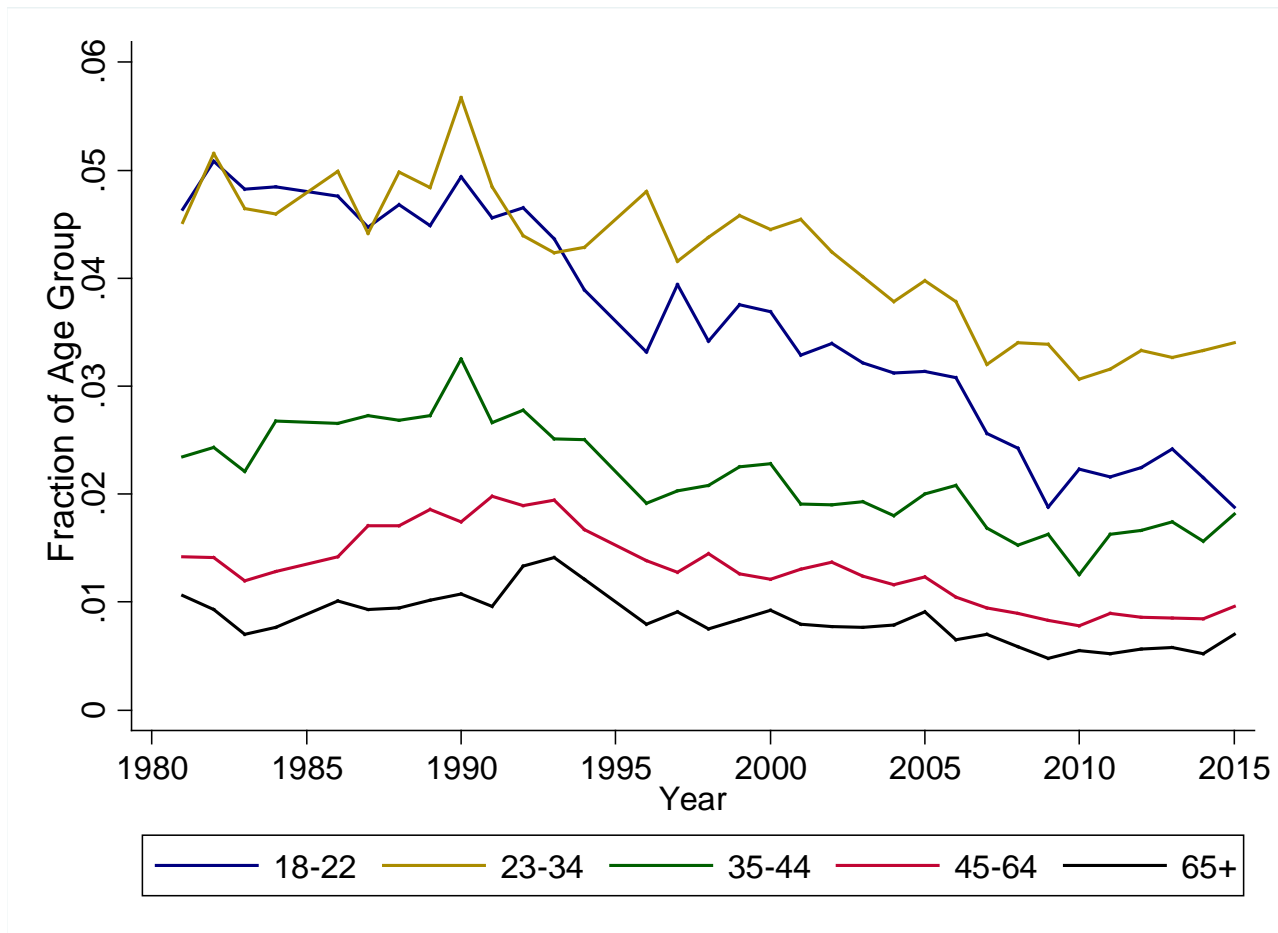
- Some types of people tend to move more frequently than others, so it is natural to expect changes in the composition of the population to affect the trend in aggregate migration.
 - Older people move less, and their population share is growing
 - Homeowners move less and (until recently) the homeownership rate was rising.

Demographics and other characteristics

- Other research has found only a limited role for demographics (Cooke 2011; Kaplan and Shulhofer-Wohl, forthcoming; Hyatt and Spletzer 2013).
- Why? Interstate migration has been falling for most demographic and socioeconomic groups.
- It has also been falling in all regions of the US and states.

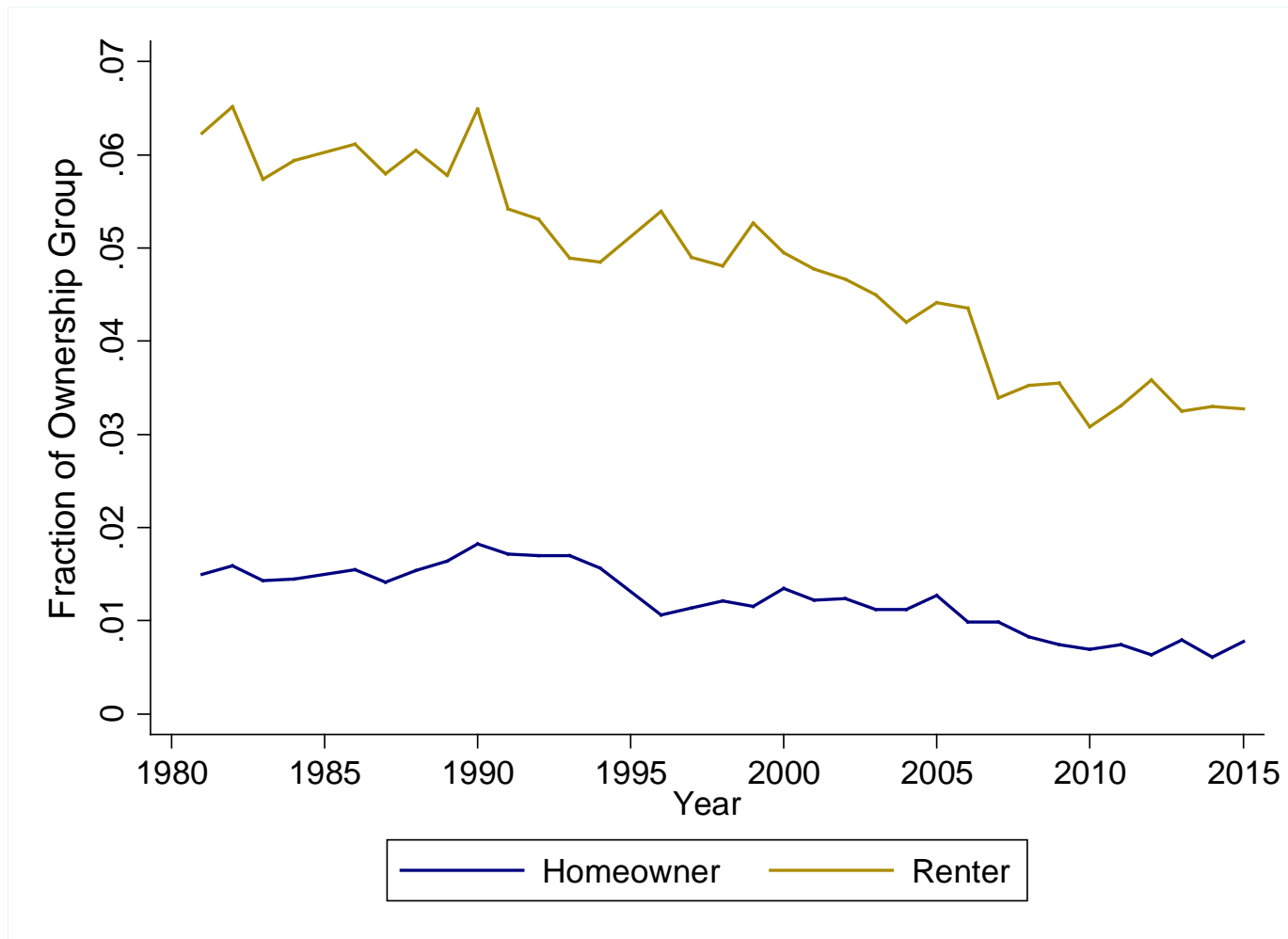
Demographics and other characteristics

Interstate Migration by Age



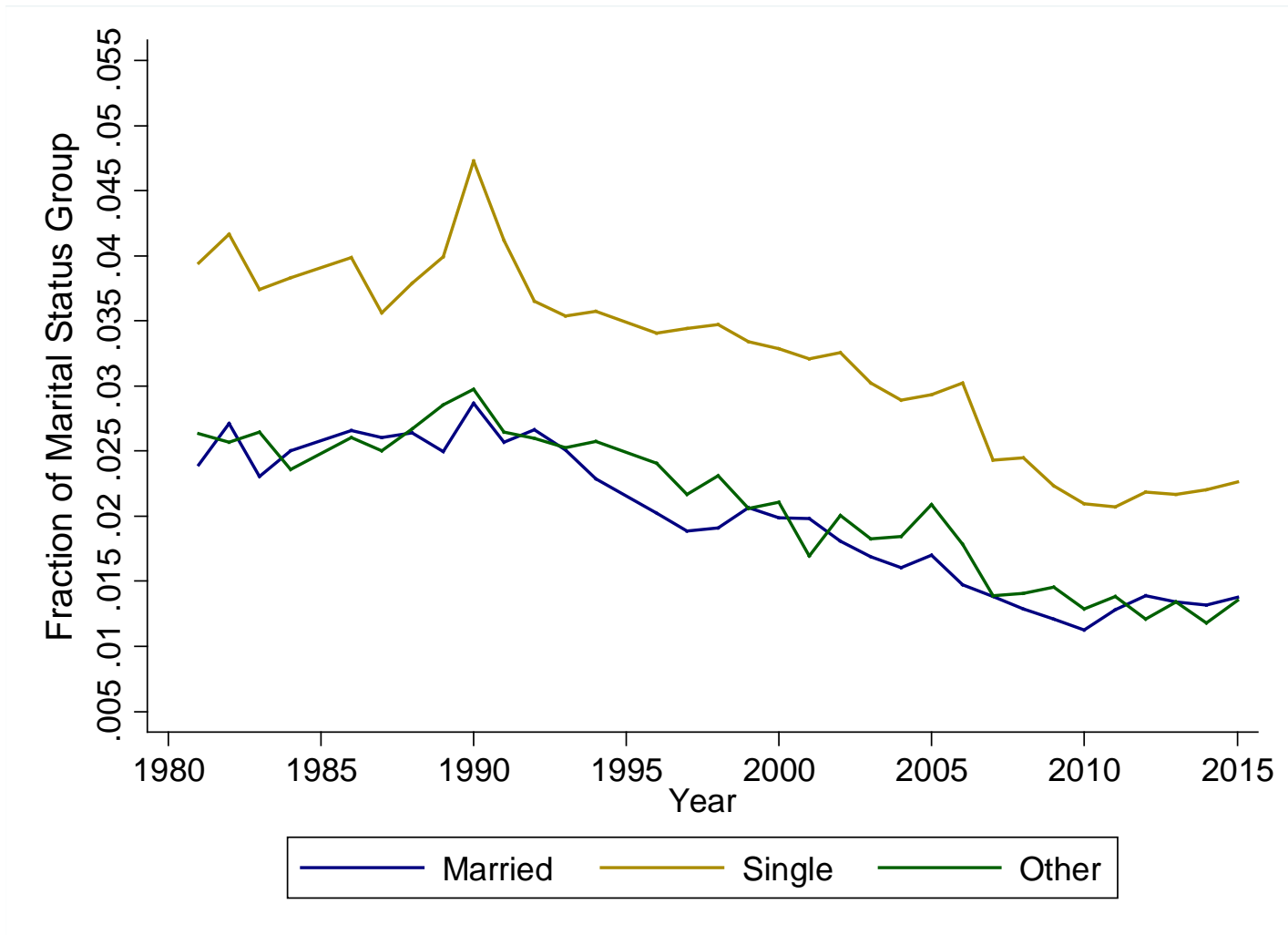
Demographics and other characteristics

Interstate Migration by Homeownership



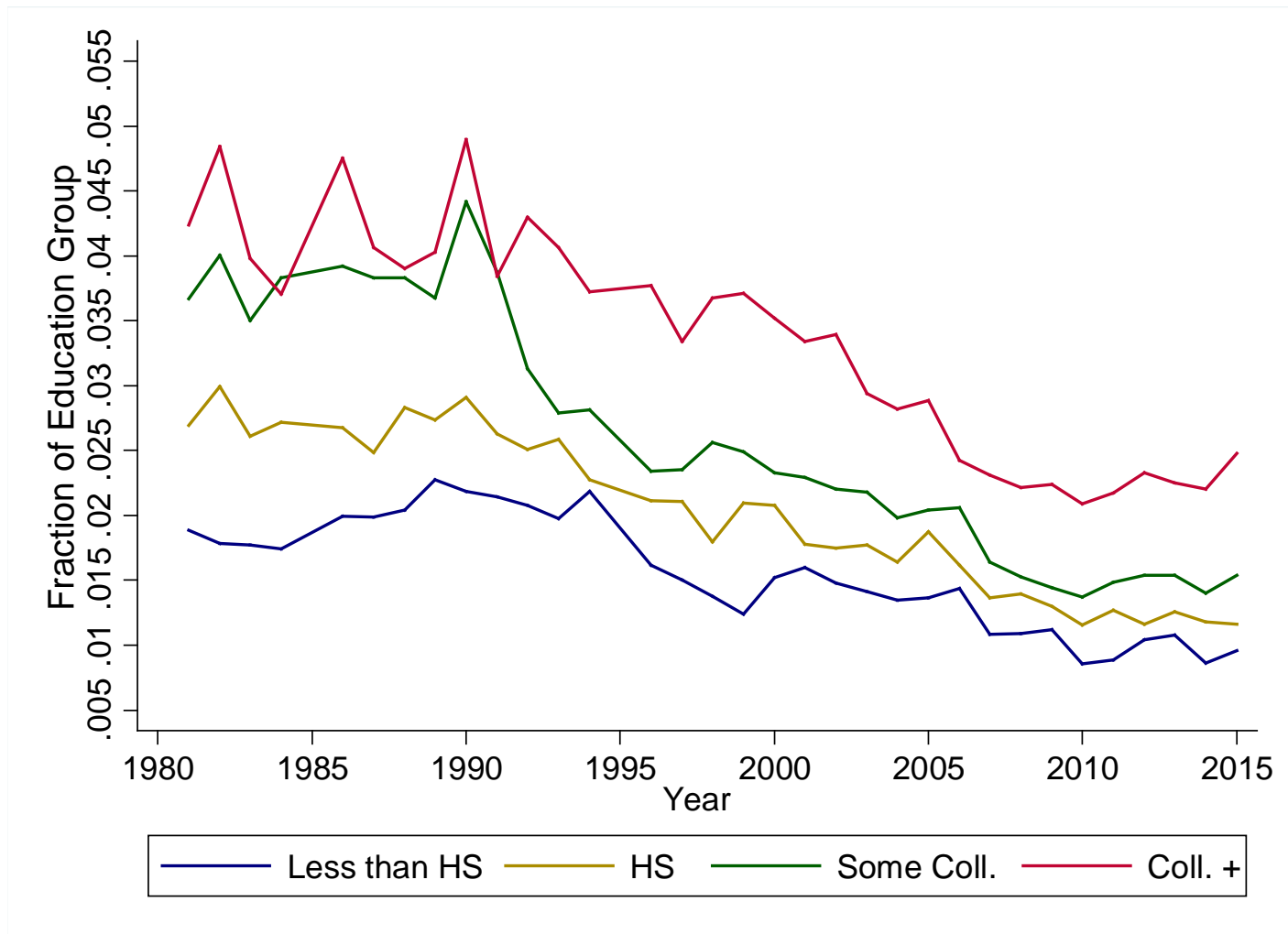
Demographics and other characteristics

Interstate Migration by Marital Status



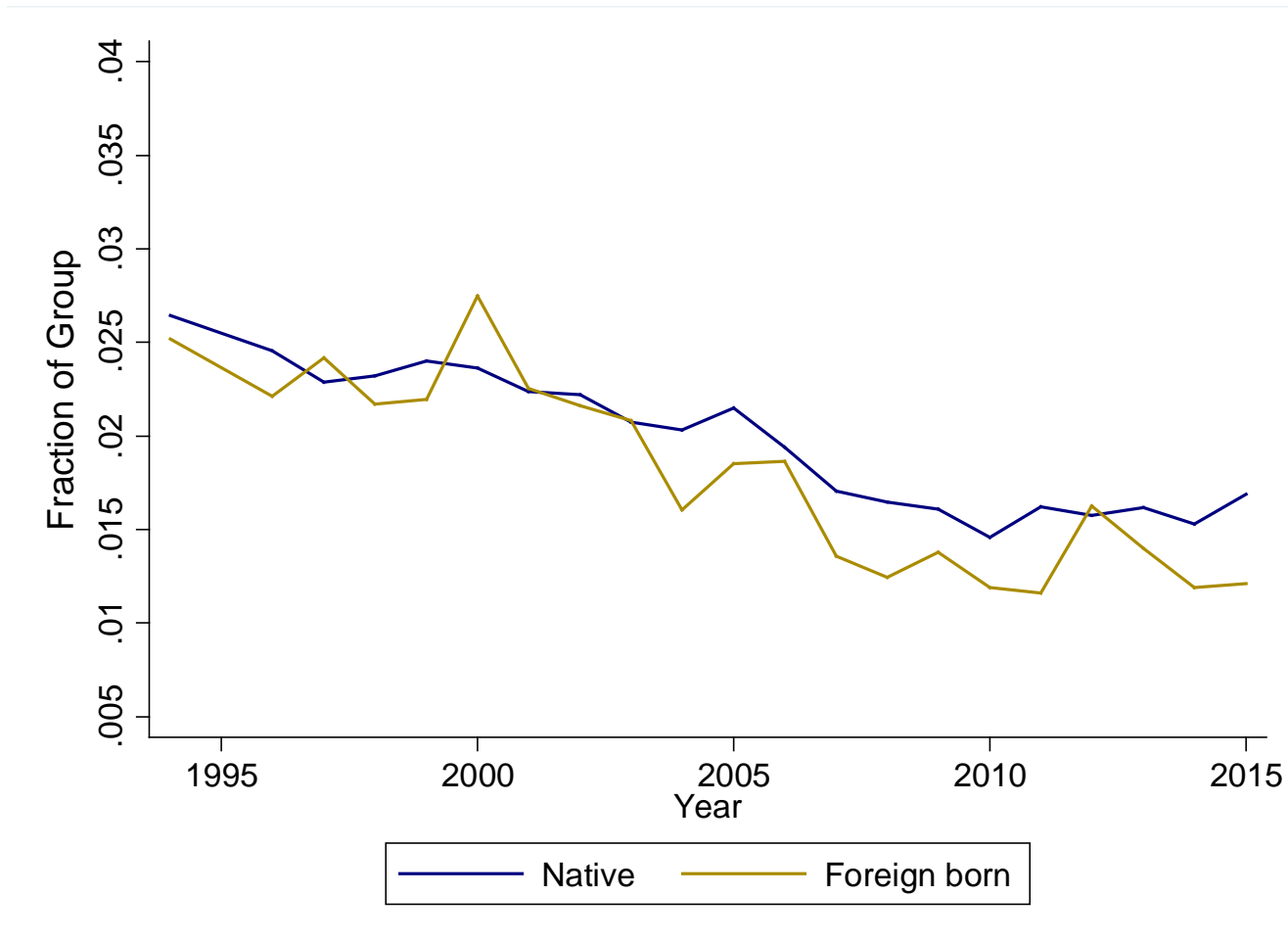
Demographics and other characteristics

Interstate Migration by Education



Demographics and other characteristics

Interstate Migration by Nativity



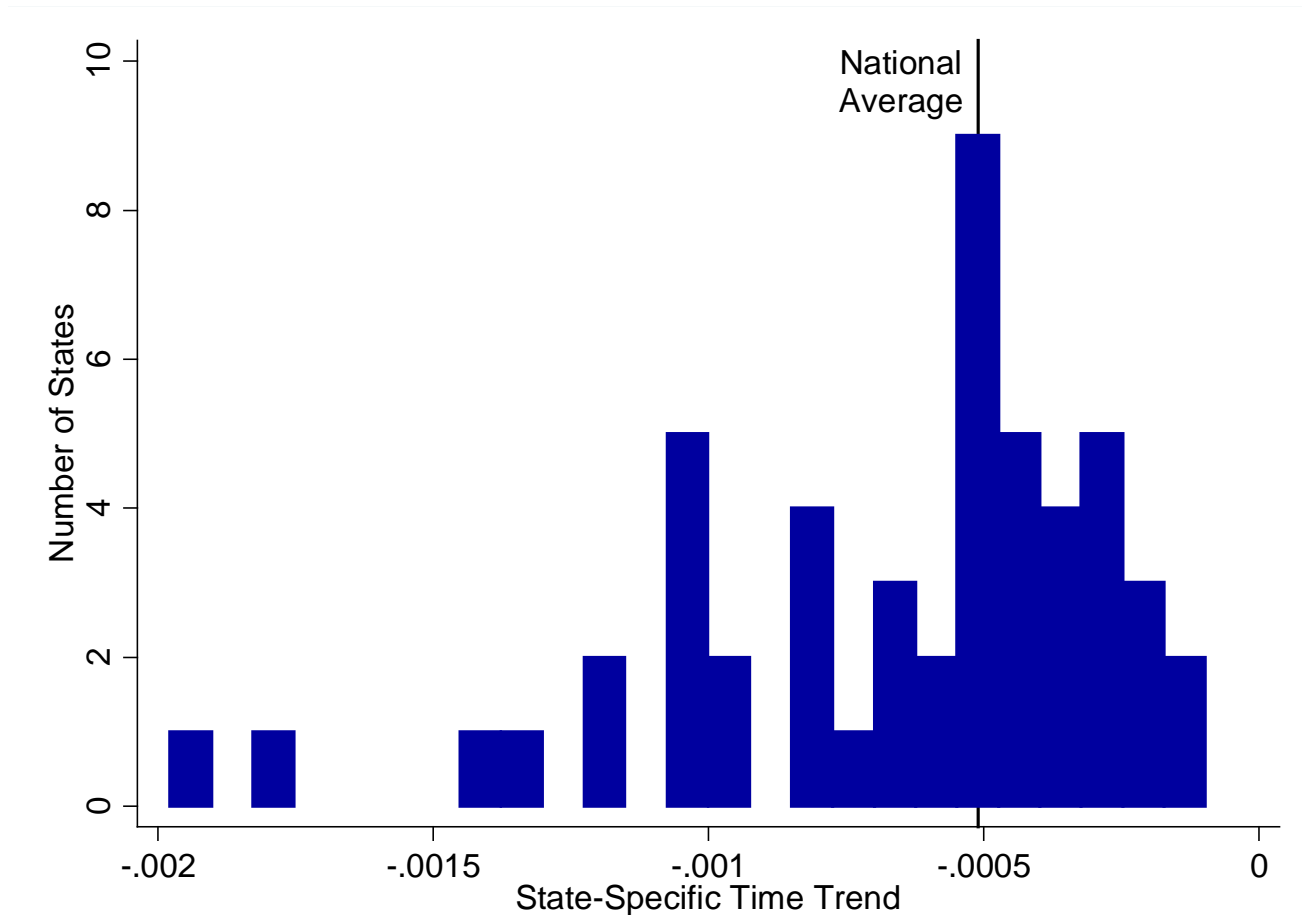
Demographics and other characteristics

Interstate Migration by Industry



Demographics and other characteristics

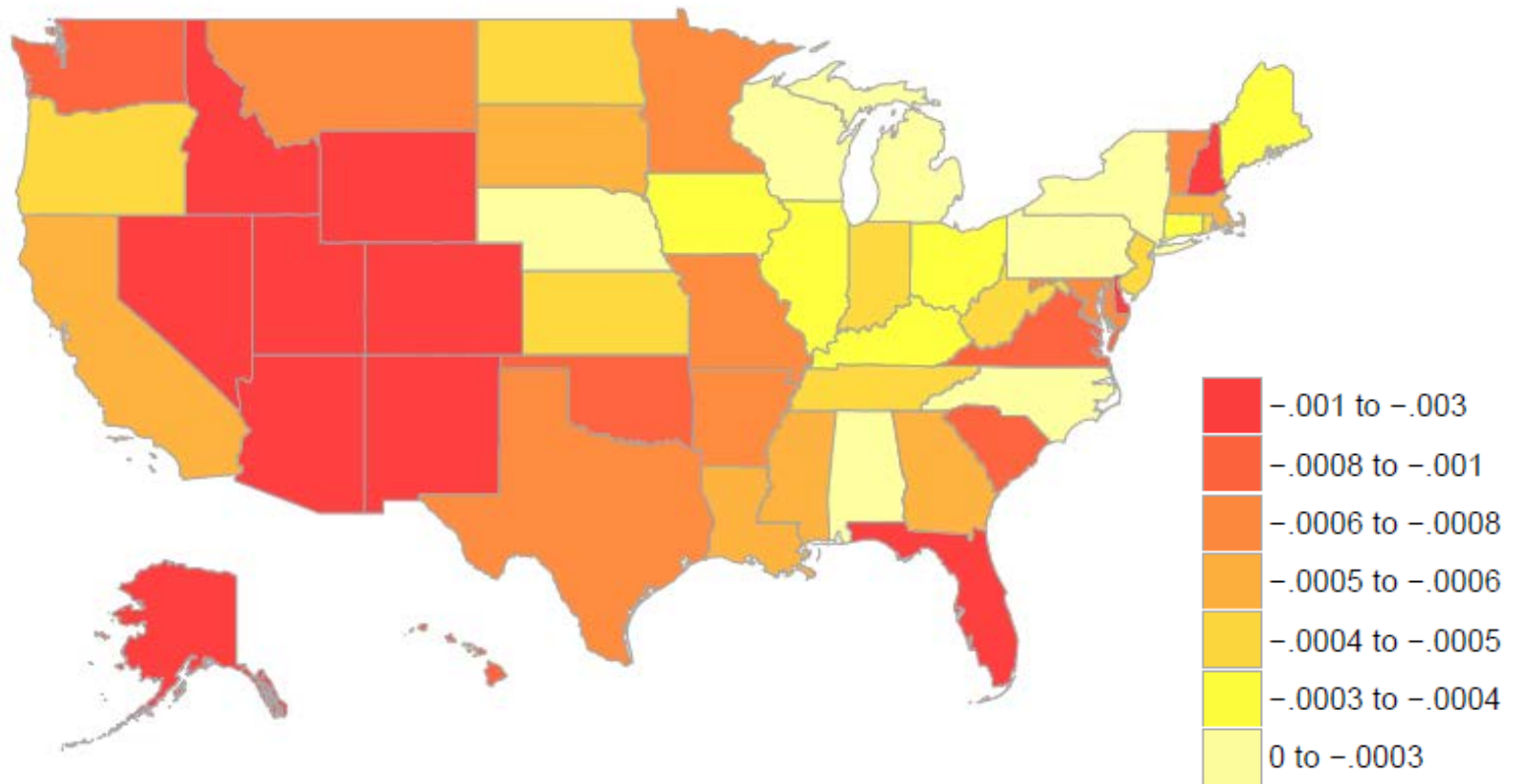
Trend in Interstate Migration by State



Note. State-specific trends are estimated by regressing the fraction of residents that moved into the state on a time trend. Source: CPS-ASEC.

Demographics and other characteristics

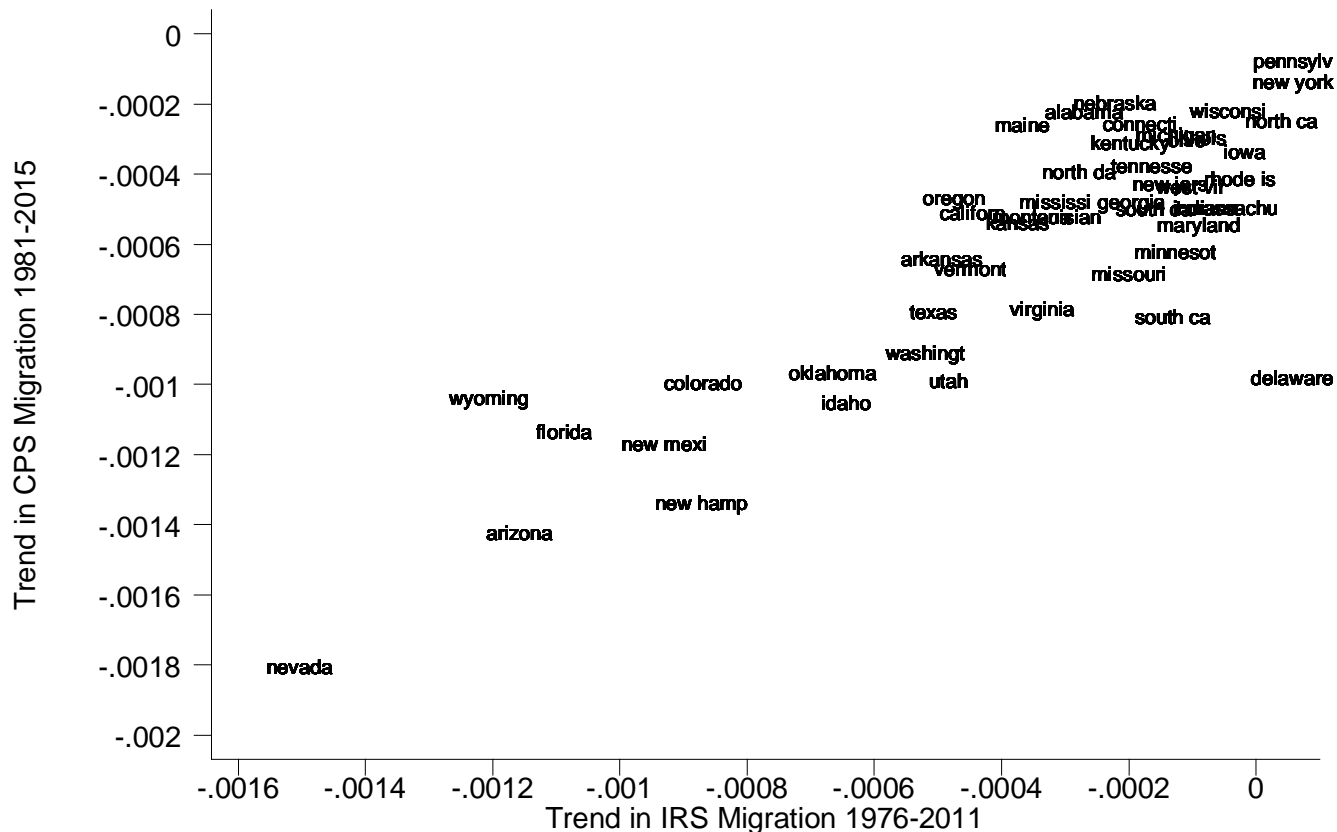
Trend in Interstate Migration by State



Note. State-specific trends are estimated by regressing the fraction of residents that moved into the state on a time trend. Source: CPS-ASEC.

Demographics and other characteristics

Trend in Interstate Migration by State: CPS vs IRS



Note. State-specific trends are estimated by regressing the fraction of residents that moved into the state on a time trend. Source: CPS-ASEC and IRS.

Demographics and other characteristics

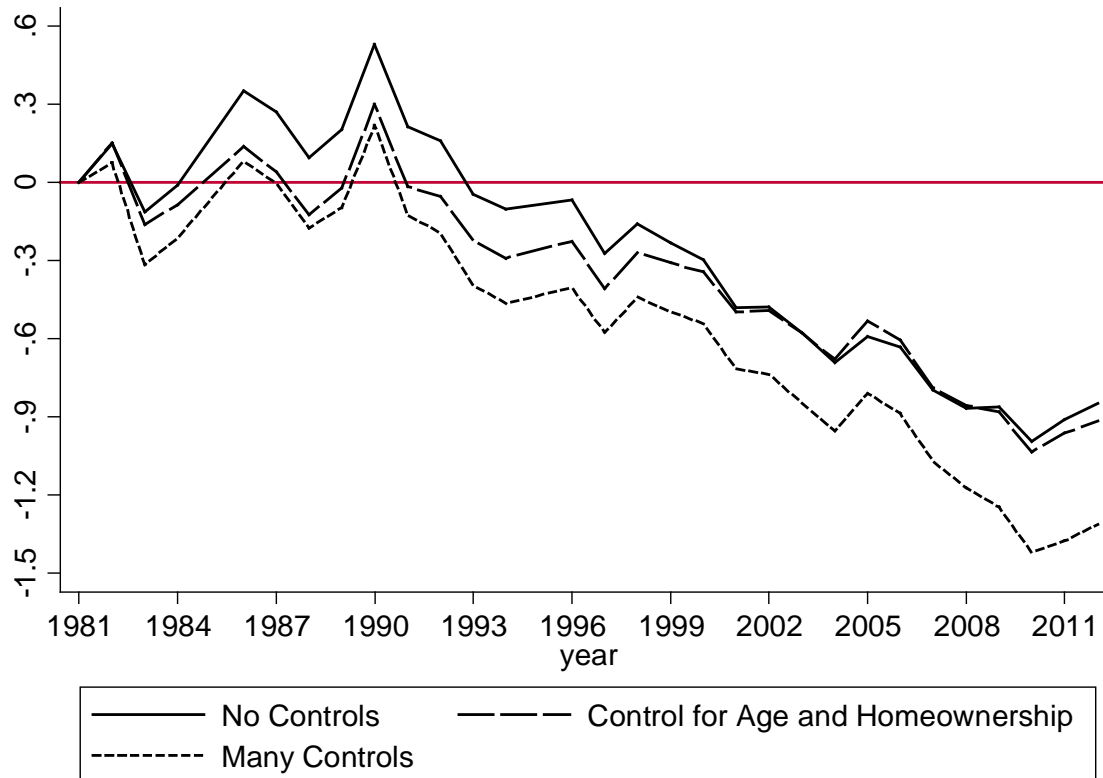
- We can formally assess the role of observable characteristics by regressing a migration indicator on year indicators and observed characteristics.

$$Y_{it} = \beta X_{it} + \Delta\delta_t + \varepsilon_{it}$$

- The coefficients on the year indicators reveal a counterfactual aggregate migration rate if the characteristics of the population had remained fixed.
- Characteristics: age, homeownership, education, sex, race, marital status, presence of children, real income, employment status, self-employment status, metropolitan status, and Census division.
- Use CPS data 1981-onward.

Demographics and other characteristics

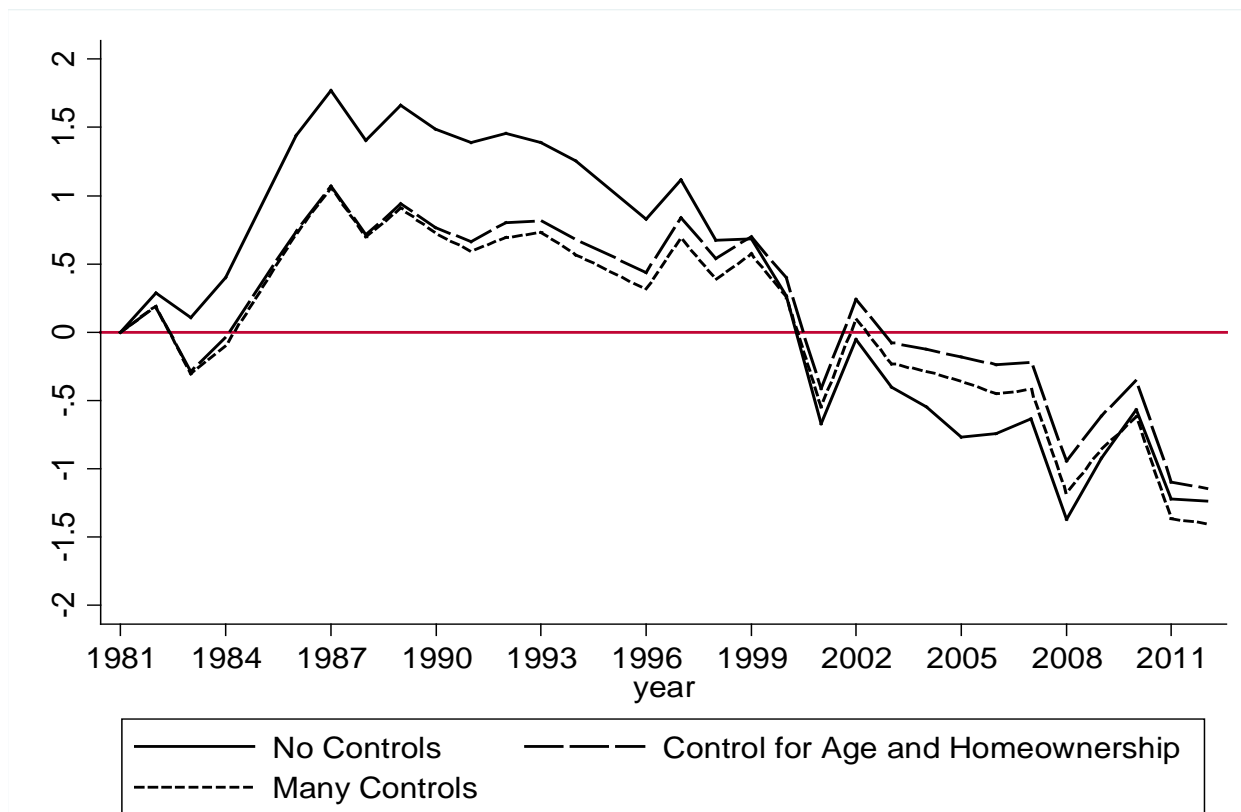
Interstate Migration



Note. Each lines shows the coefficient estimates on year indicators where the dependent variable is interstate migration. “Many controls” includes age, homeownership, sex education, race, income, marital status, presence of children, employment status, self-employment status, metropolitan status, and Census division. Source: CPS-ASEC.

Demographics and other characteristics

Within County Migration



Note. Each lines shows the coefficient estimates on year indicators where the dependent variable is within-county migration. “Many controls” includes age, homeownership, sex education, race, income, marital status, presence of children, employment status, self-employment status, metropolitan status, and Census division. Source: CPS-ASEC.

Beyond demographics

Other common explanations:

- Dual-career households
- Land use regulation
- Telecommuting
- Occupational licensing
- Health insurance

Dual-Career Households

- Rise in dual-earner households had ended by the 1980s
- Most proxies for dual-career households only find a small fraction of such households.
- Migration fell substantially for other households.

	<u>Population Share</u>		<u>Interstate Migration Rate</u>	
	<u>1981-1989</u>	<u>2002-2012</u>	<u>1981-1989</u>	<u>2002-2012</u>
Both spouses employed	30.5	30.1	1.9	0.9
All other	69.5	69.9	3.1	1.9
Both prof/tech occupation	2.1	2.8	3.2	1.4
Other prof/tech occ.	13.5	16.6	3.8	2.2
All other	83.1	79.0	2.6	1.4
Both college or more	4.5	7.9	1.8	1.0
Other college or more	14.2	18.2	2.5	1.6
All other	78.9	70.5	2.9	1.5
Spouses have similar incomes	22.6	28.3	2.5	1.2
All other	77.4	71.7	2.8	1.6

Land Use Regulation

- Migration has fallen substantially even into states with low house values and/or relatively lax land use regulation

	<u>Population Share</u>		<u>Interstate Migration Rate</u>	
	<u>1981-1989</u>	<u>2002-2012</u>	<u>1981-1989</u>	<u>2002-2012</u>
Median house value				
Above average	14.7	14.0	2.2	1.6
Below average	85.3	86.0	2.9	1.7
Land Use Regulation				
Above average	19.1	16.7	2.0	1.4
Below average	80.9	83.3	3.0	1.7

Telecommuting

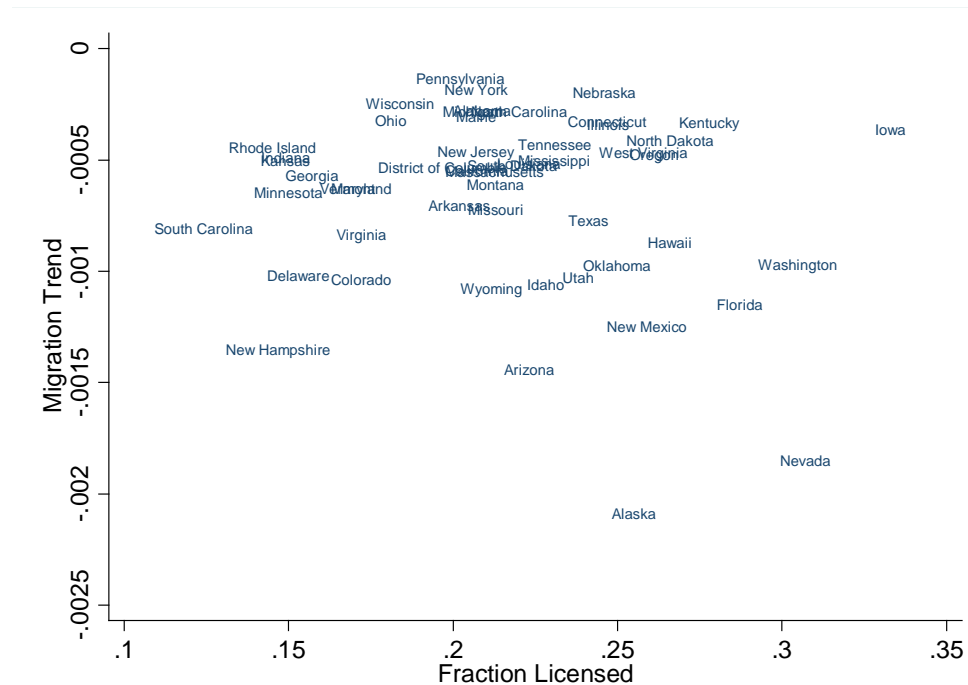
- Advances in mobile technology and communications has made it easier for people to work remotely, perhaps allowing them remain in the same state even if they start working for a distant employer.
- The fraction of people who telecommute is too small
- In the 2014 ACS, only 4.6 percent of workers reported working at home, up from 2.3 percent in the 1980 Census.

Occupational Licensing

- The fraction of workers required to hold a state license in order to perform their job has risen from 5 percent in 1950 to 20 percent in 2008 (Kleiner and Krueger 2013).
- The need to obtain a new license might prevent people from moving across state lines.

Occupational Licensing

- But the downward trend in migration has not been steeper in states with more workers that require licenses.



Note. Trends are coefficients on a linear time trend where the dependent variable is interstate migration. Fraction licensed is from a 2013 household survey. Source: CPS-ASEC for migration data; Kleiner (2015) for fraction licensed.

- Other research has found little effect of licensing requirements on mobility (DePasquale and Stange 2016).

Health insurance related job lock

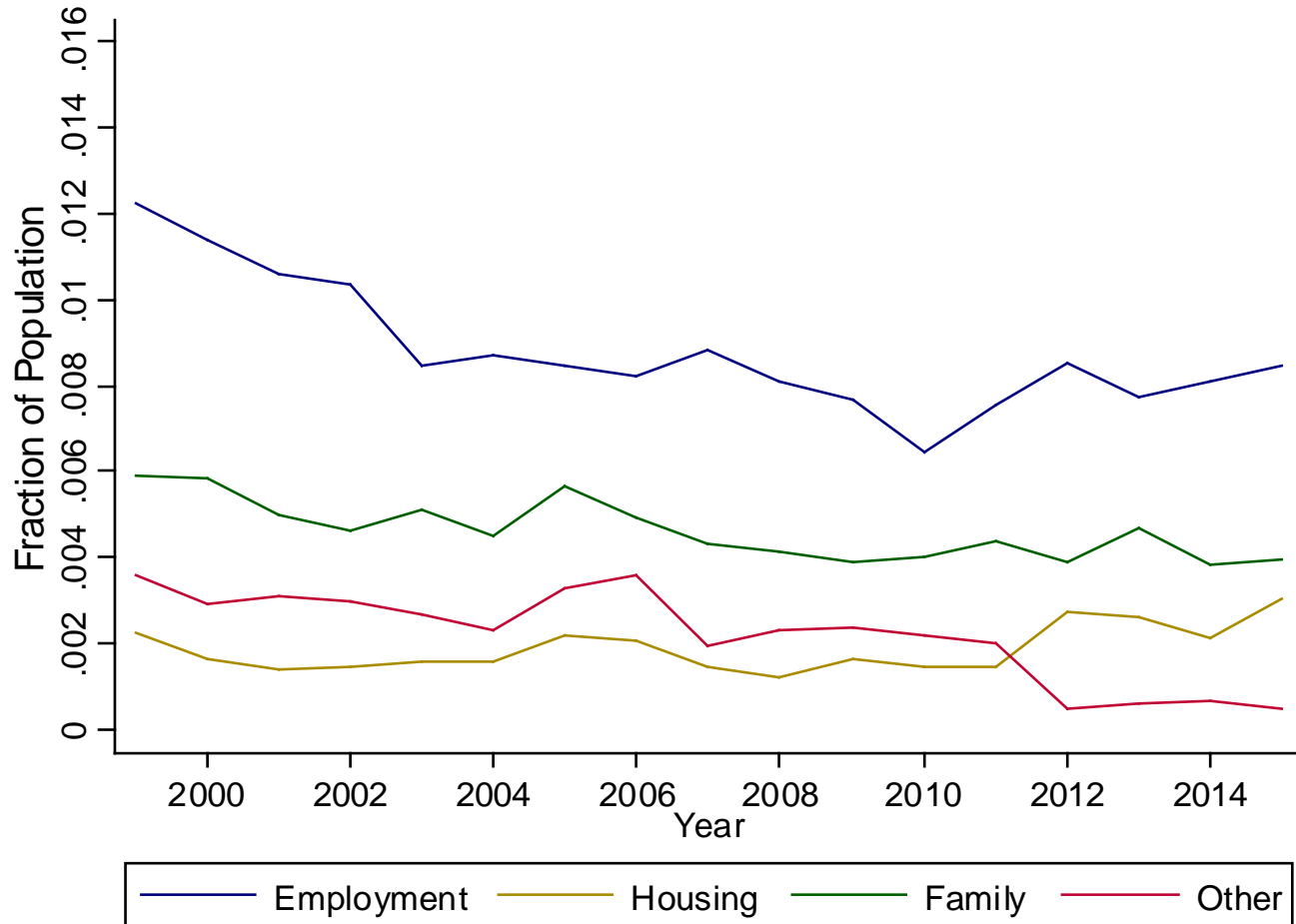
- The fraction of workers in a household where someone has employer-provided health insurance has not risen.
- Migration declines are similarly-steep for people in households where no one has employer-provided health insurance.

	<u>Population Share</u>		<u>Interstate Migration Rate</u>	
	<u>1981-1989</u>	<u>2002-2012</u>	<u>1981-1989</u>	<u>2002-2012</u>
Employer-provided health insurance in household	64.8	64.3	2.7	1.5
All other	35.2	35.7	3.0	1.8

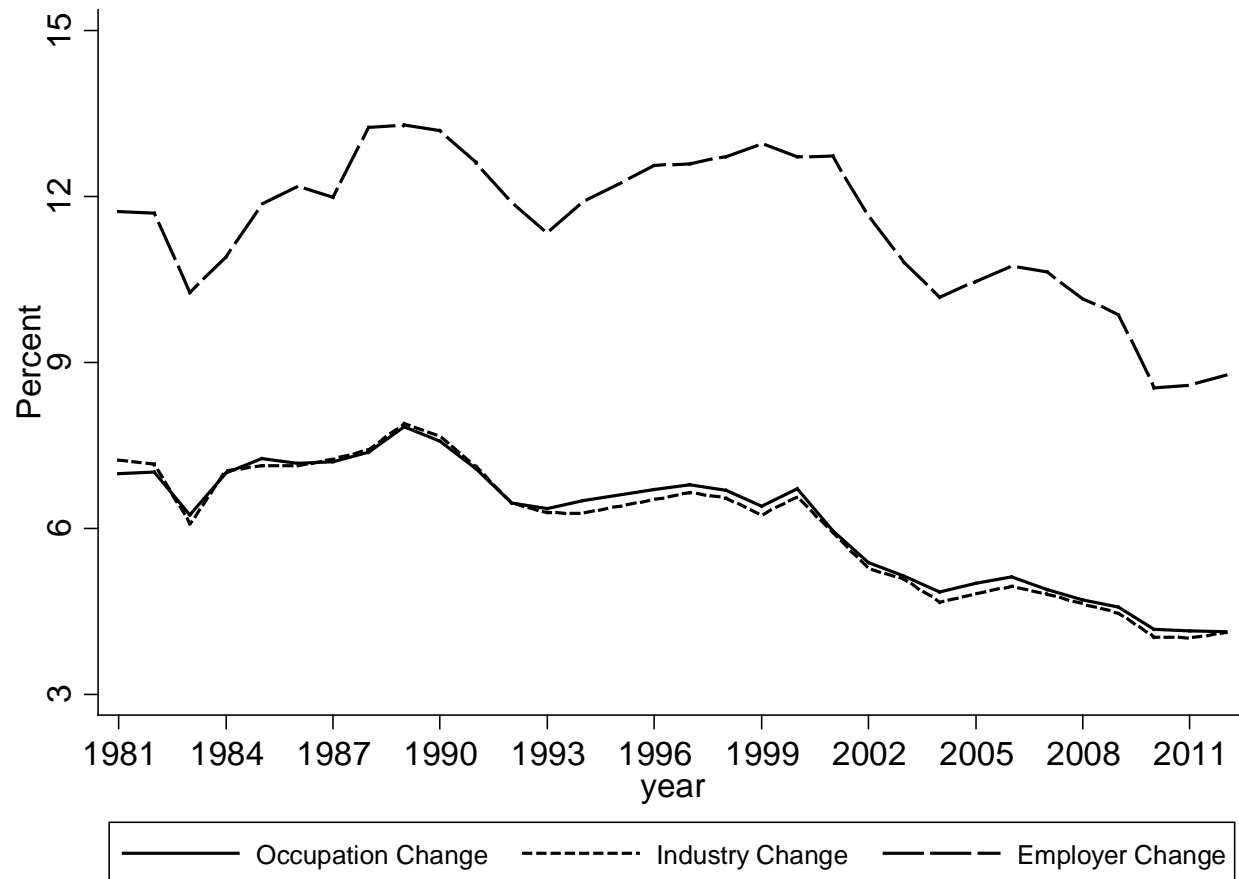
Looking toward the labor market

1. Long distance moves most often job related.
2. Labor market transitions are also declining.
 - This trend is also not related to demographics.
3. Strong cross-state relationship between changes in job transition rates, migration rates.

1. Interstate migration strongly job-related



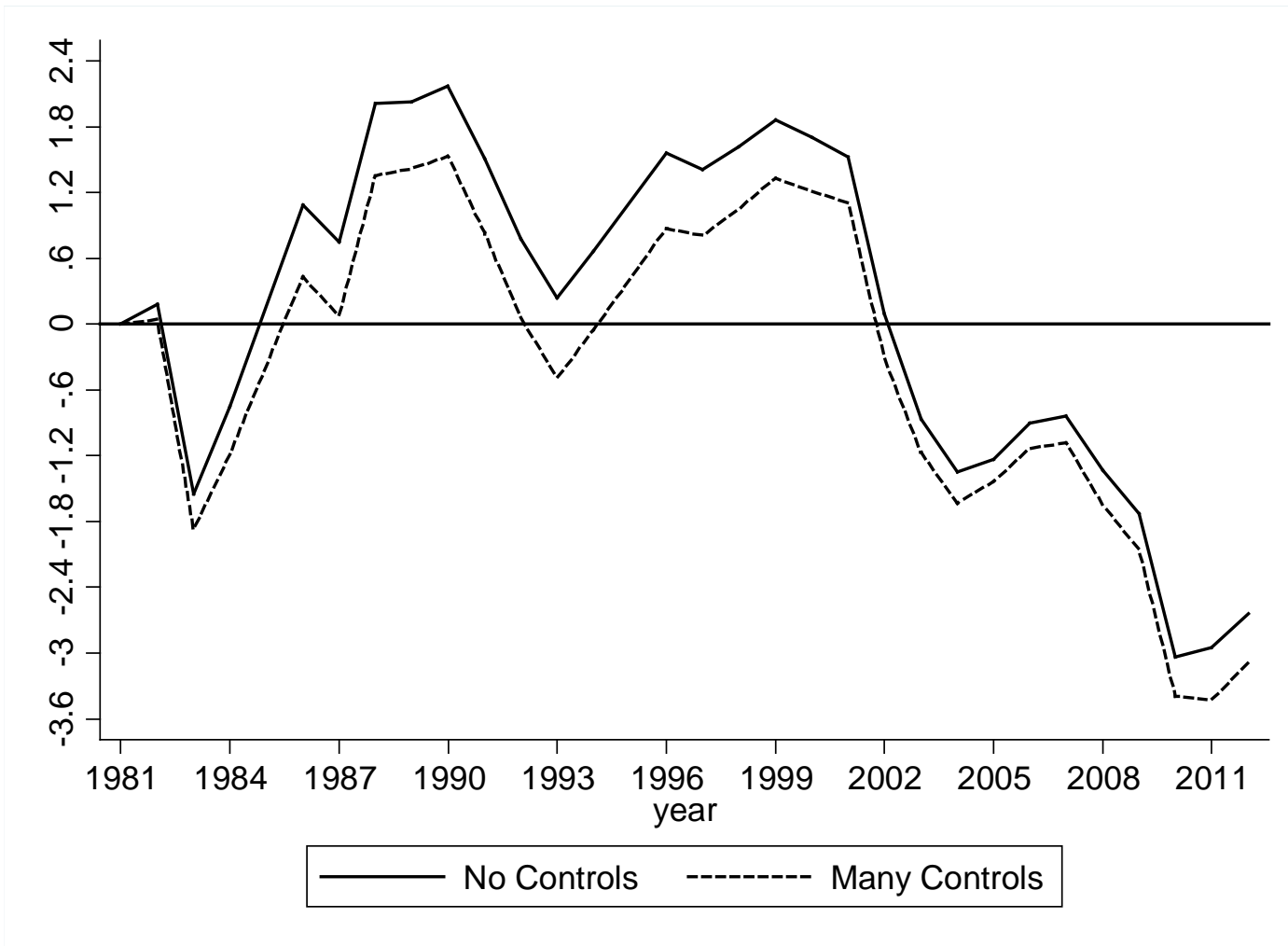
2. LM transitions are also declining



2. LM transitions are also declining

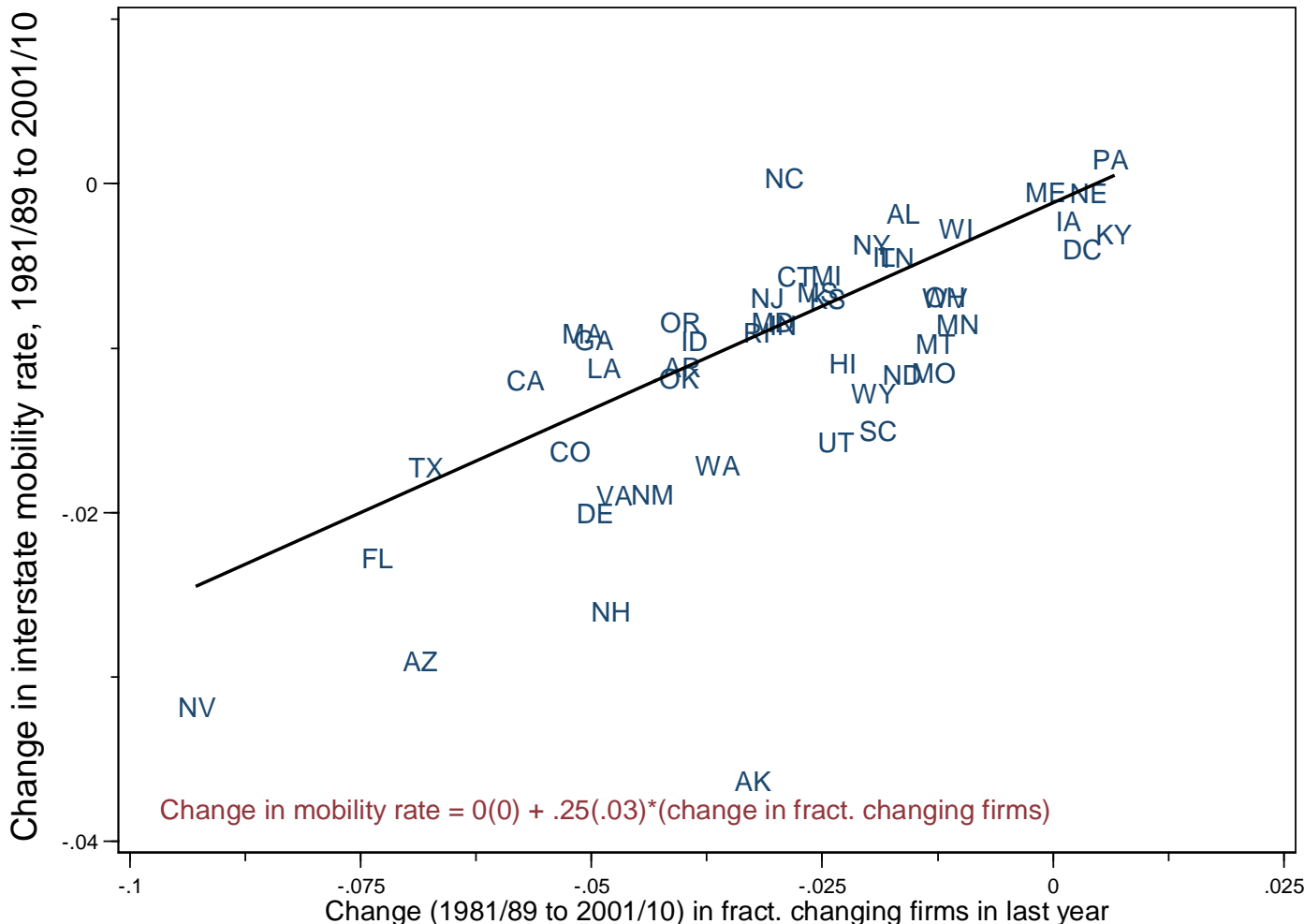
- Other measures of churning have also fallen
 - Downtrend in job creation and destruction rates since at least 1990, from BED and JOLTS data (Davis, Faberman, Haltiwanger 2012)
 - Downtrend in job creation, job destruction, hiring and separations since 1990s (Hyatt and Spletzer 2013)
- Limited success explaining downtrend
 - Aging has modest effect on aggregate job transition rates, can't explain much of the downtrend (Fallick and Fleischman)
 - No role for composition of labor force or employers (Hyatt and Spletzer 2013)

2. Decline in job transitions not explained by observables



Note. Labor market transition is defined as a change in employer, change in occupation, or change in industry. Source: CPS ASEC

3. Cross-state relationship between trends in job transitions, migration



Source: CPS ASEC

3. Cross-state relationship between job transition rate, migration rate

$$mig.rate_{st} = \beta (avg.job.trans.rate_{st}) + \gamma X_{st} + \alpha_s + \phi_t + \psi_s time_t + \varepsilon_{st}$$

	CPS	IRS
% changing firm since prev. year	0.06** (0.01)	0.04** (0.01)
% changing industry since prev. year	0.05 (0.04)	0.04* (0.02)
% changing occupation since prev. year	0.05 (0.01)	0.00 (0.02)
Actual change in mig. (1981-1989 to 2002-2009)	-1.11	-0.43
Decline accounted for by changes in job transitions	-0.50	-0.24

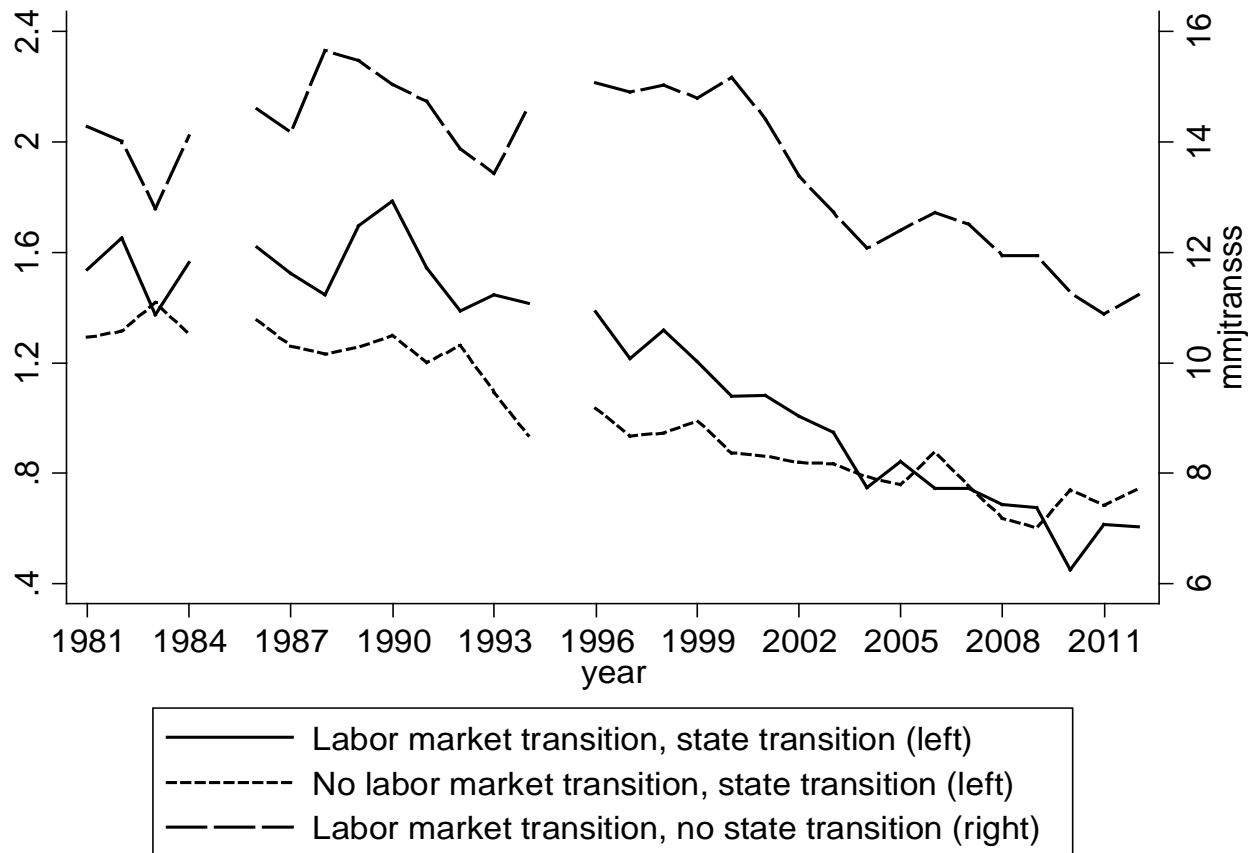
Note. X includes %<24, %>64, % HS degree or less, %homeowner, wage inequality, %middle-skilled jobs, % mfg, % emp. provided health care, % both spouses employed, %male, %employed, %white, %black, %married, %hh w/ children.

In sum, the downward trend in interstate migration has coincided with a downward trend in labor market transitions. What is the direction of causality?

Direction of causality?

- Decline in migration probably not causing the decline in job transitions because:
 - Job transitions are falling even for individuals that remain in the same state.

Direction of causality?



Note. Labor market transitions are a change in employer, a change in occupation, or a change in industry. Source: CPS ASEC

Direction of causality?

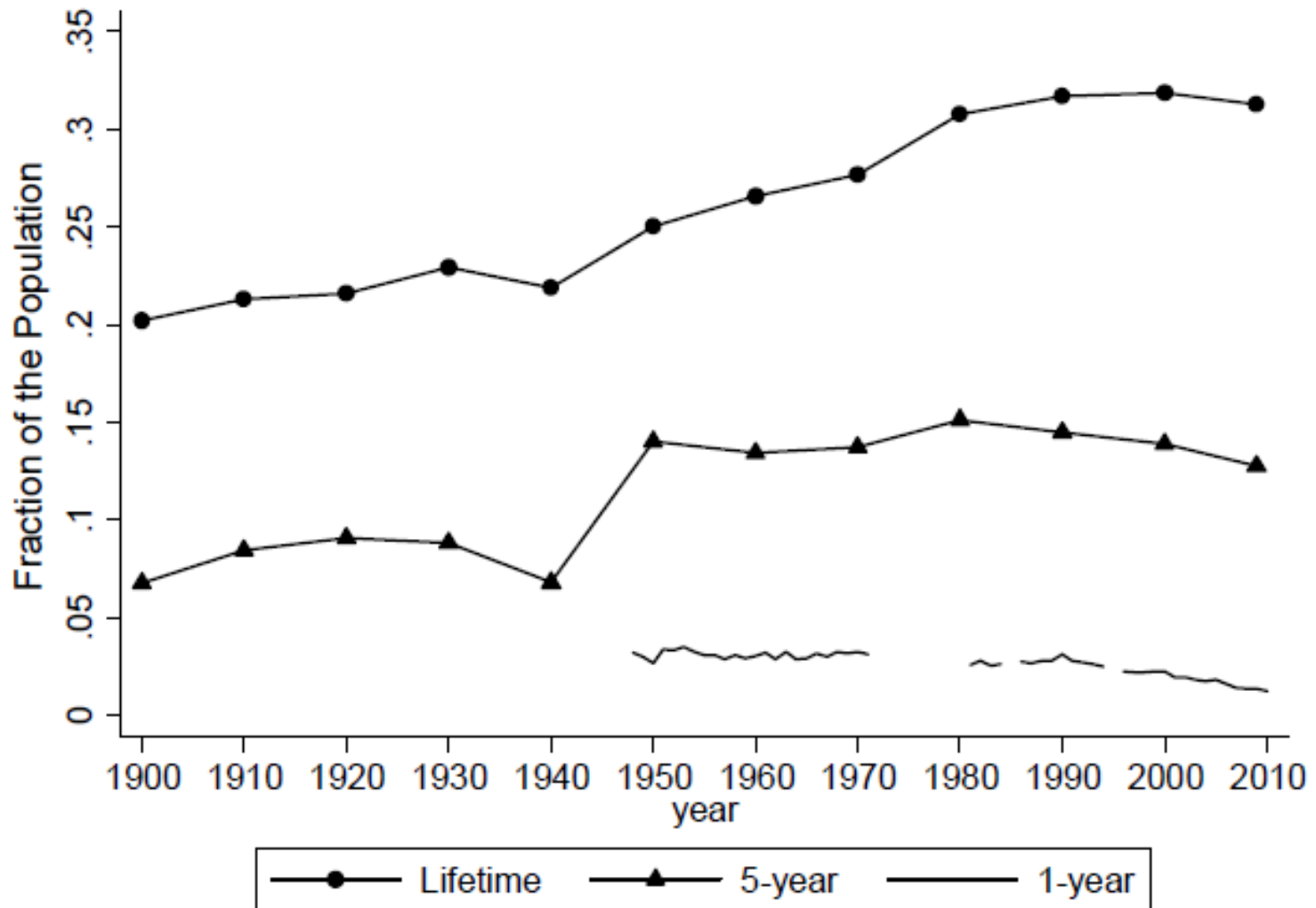
- Decline in migration probably not causing the decline in labor market transitions because:
 - Migration flows are too small:
 - In the CPS, percentage of population that changed employers fell by about 4 percentage points, while percentage that changed states fell by 1 percentage point.
- Search for explanations rooted in the labor market.

Where to from here?

- Factors affecting the slowdown in firm formation.
- Compensation changes within firms.
- Changes in perceived riskiness of working in a new organization.

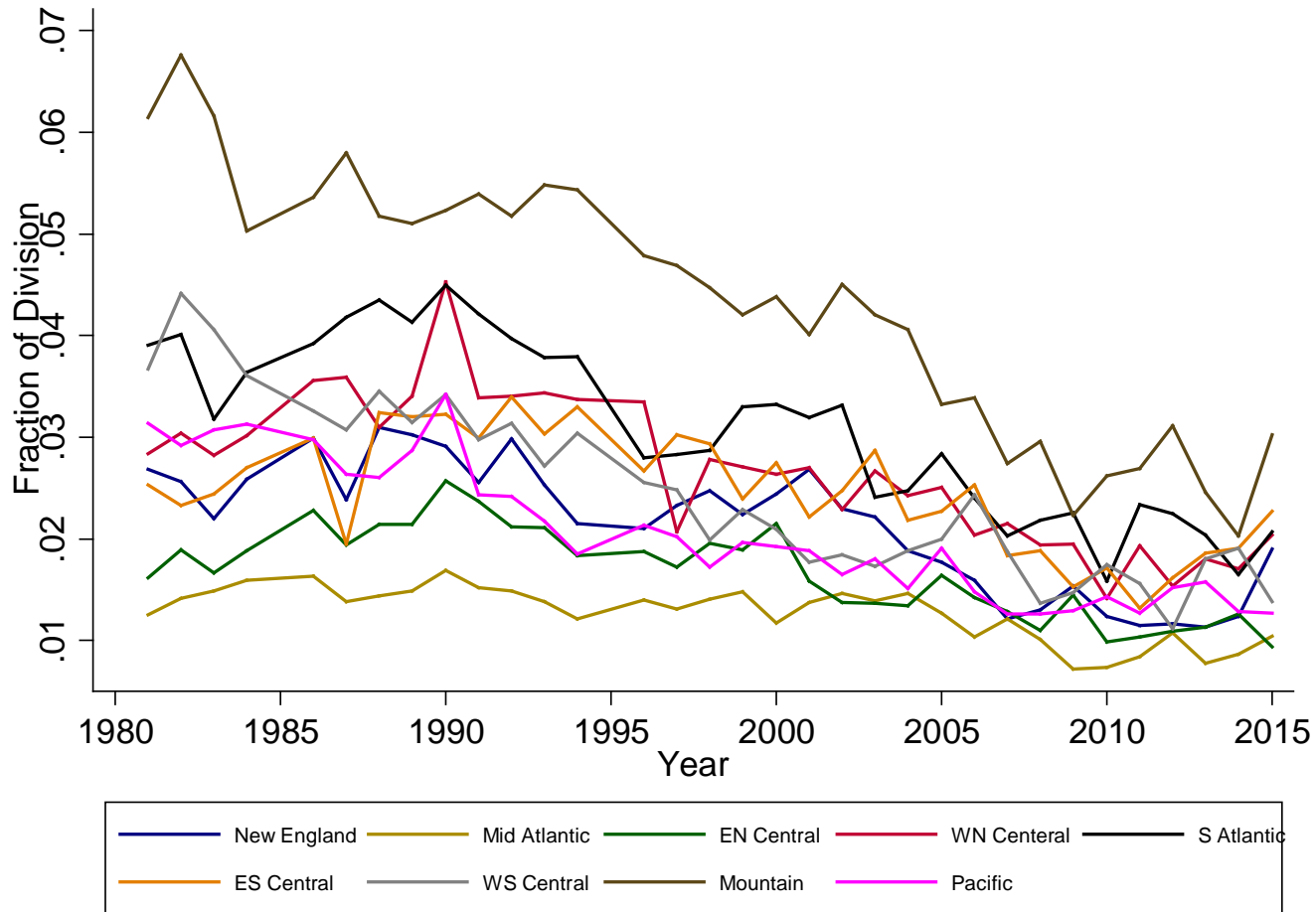
Thank you!

Figure 1
Inter-State Migration Rates Since 1900

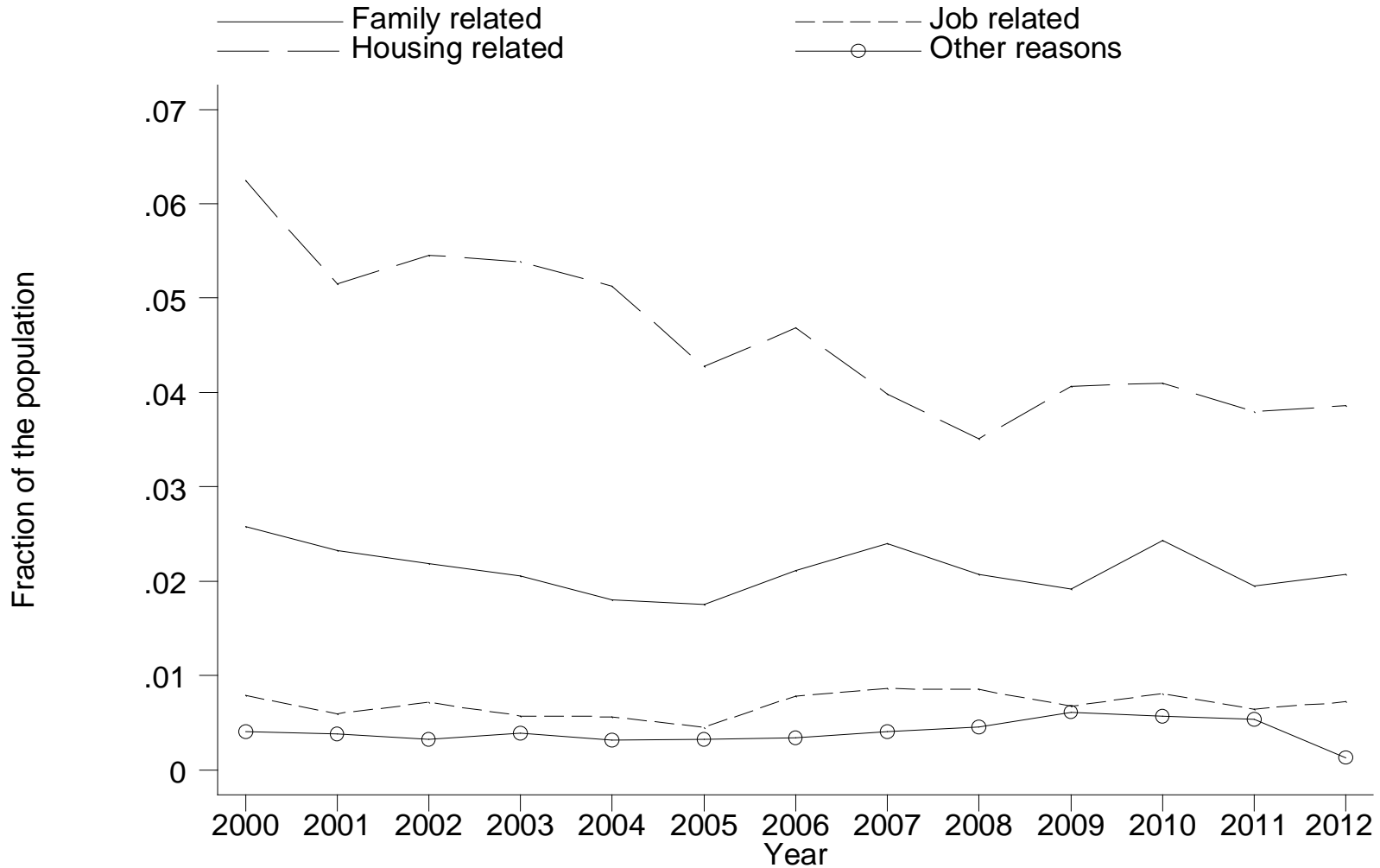


Demographics and other characteristics

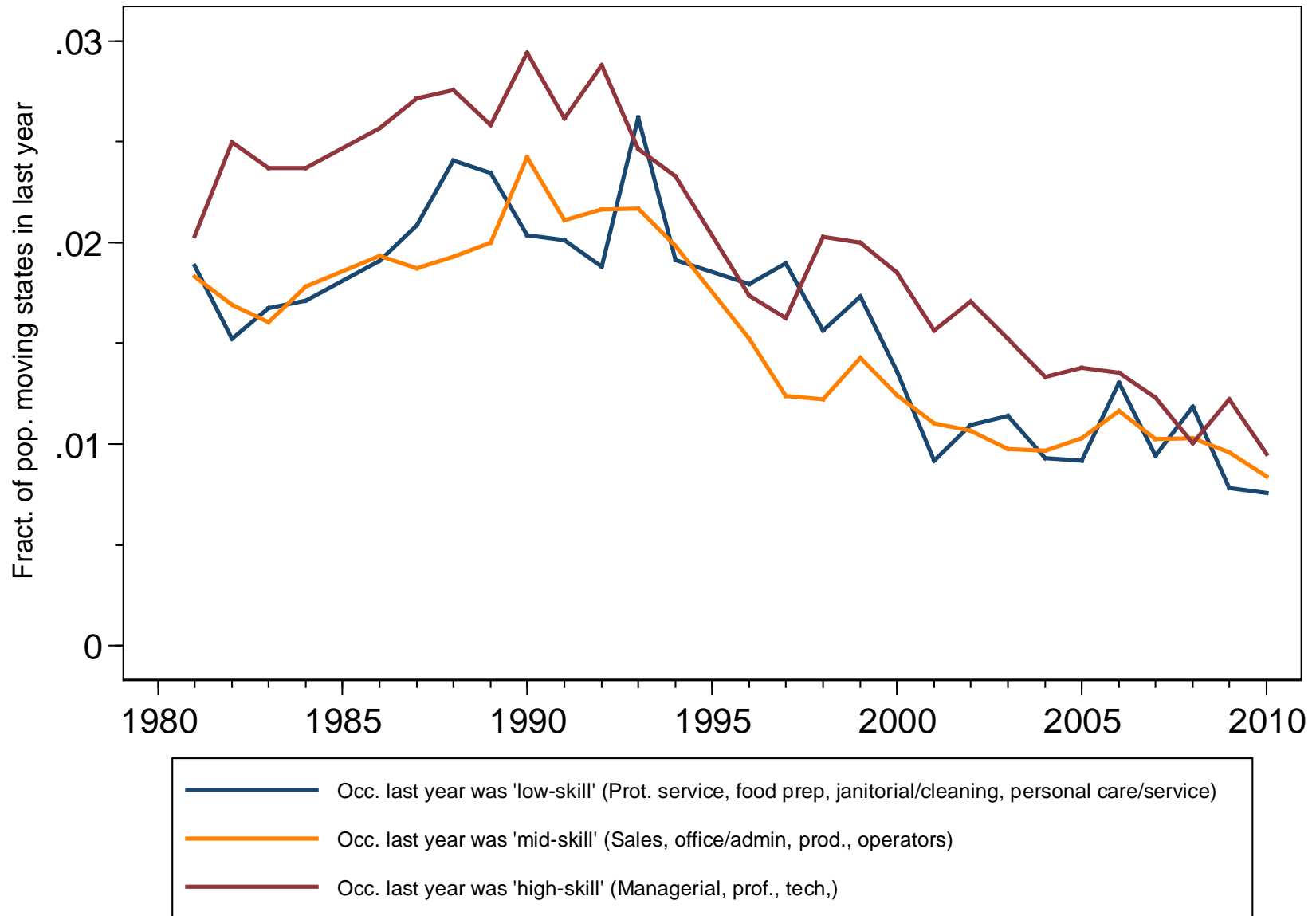
Interstate Migration by Census Division



Reasons for within county migration



A role for changing ind./occ. mix?



Role of employer-provided health insurance

- Rising cost of health care
 - Migration has fallen for households without employer-provided health insurance.

	<u>1981-1989</u>	<u>2002-2012</u>
Interstate migration rate		
Household with employer-provided insurance	2.7	1.5
Household with no emp.-provided insurance	3.0	1.8
Share of households with employer-provided insurance	64.8	64.7

Table 1
Five-Year and Life-Time Migration Rates

	1980	1990	2000	2009
5-year migration				
Cross-region	5.5	5.1	4.8	--
Cross-state	9.9	9.6	8.9	--
Cross-MSA	12.0	12.1	11.4	--
Cross-county	19.8	19.5	18.6	--
Cross-PUMA	--	21.3	22.2	--
Cross-commuting zone	13.7	13.5	12.9	--
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. Authors' calculations. Estimates for 1980-2000 are from Decennial Census microdata; estimates for 2009 are from American Community Survey microdata. Cross-county migrants are defined as moving across any state boundary; cross-state migrants have moved across any state boundary. Region refers to the four Census regions: Northeast, Midwest, South, and West. See footnote 2 for description of how cross-commuting zone mobility is calculated. Calculations by authors using Census microdata.

Changing between supervisory and non-supervisory occupations





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The Decline in Homeowner Mobility and Implications for the Market

Sam Khater

VP & Deputy Chief Economist

Overview

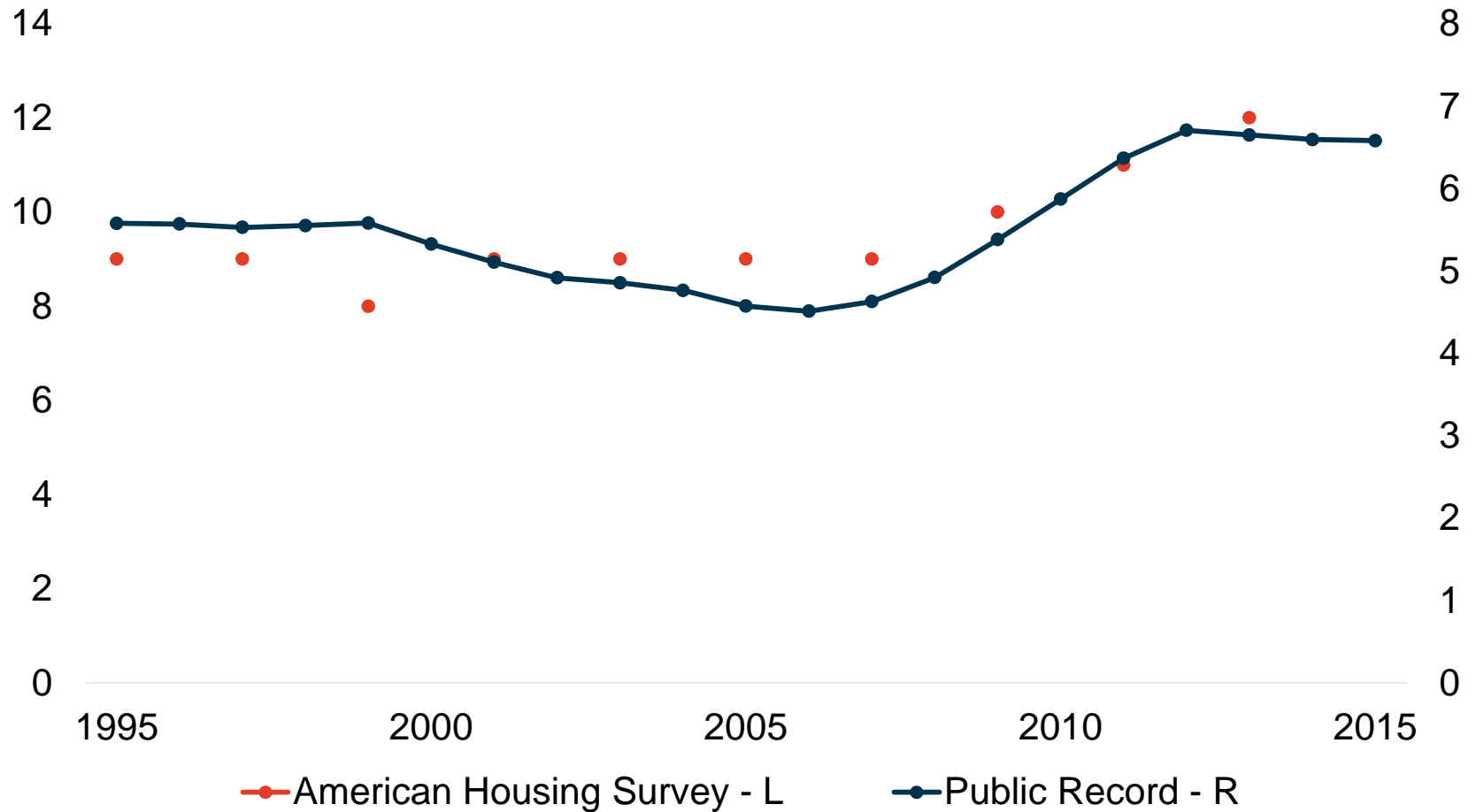
- ‘New’ source of demographic data to analyze homeowner mobility, length of tenure, and migration data
- Homeowner mobility significantly decreases during recessions and never recovers
- Mobility increasingly occurring within same metro with large interstate declines
- Sellers leaving high appreciation and buying in lower appreciation areas
- Mobility significantly declined in rising rate environment, but there’s hope
- Economic, mortgage market and policy implications of lower homeowner mobility

Public Records vs Census Survey Data

- Census - Covers owners and renters and has deep, rich detail. CPS has long history but sample size is small (~ 60k) and only ACS has enough detail for small areas. Both are annual datasets released with lags.
- Matched Public Records – Public records only covers owners/investors, excludes renters. Thin detail on owners/investors. High frequency monthly data, very large data set down to very small areas. Matched public records merged with consumer marketing data to provide identify the sales and purchase transaction.
- Matched public records can serve as a compliment to Census data and used together to show more timely and geographically comprehensive picture of migration patterns for real estate transactions.
- This approach used in medical research for to track exposure to environmental hazard. To my knowledge not used in economic or demographic research.

Trends in Length of Tenure in Public Record Similar to Census Surveys

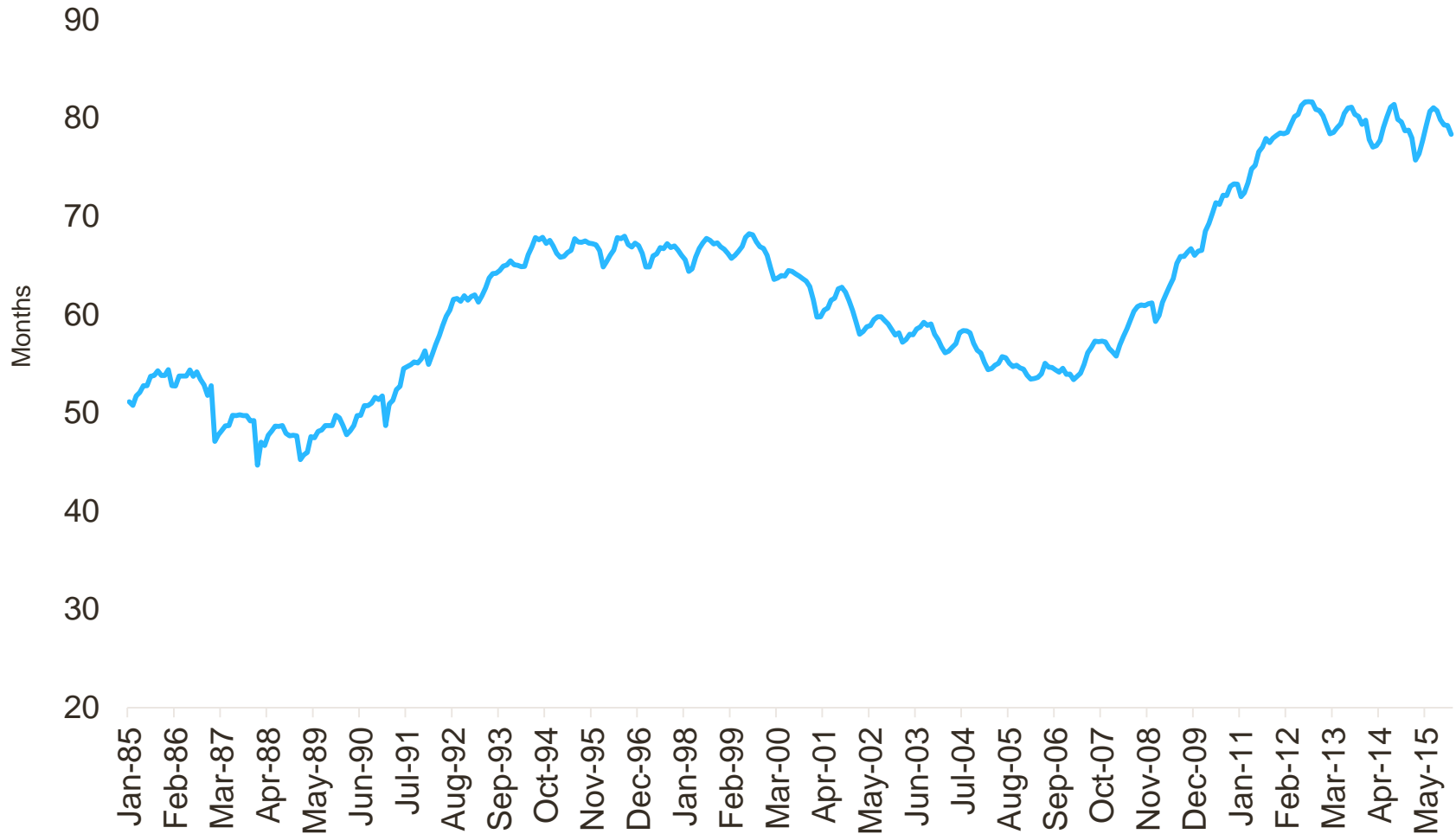
Number of Years A Home Is Owned (Median)



Source: American Housing Survey for the United States, various years (difference between survey year and median year householder moved into unit), CoreLogic public records (length of time between recorded sales on same home).

The Advantage of Public Record is High Frequency Recent Data

Number of Months Between Purchase and Sale



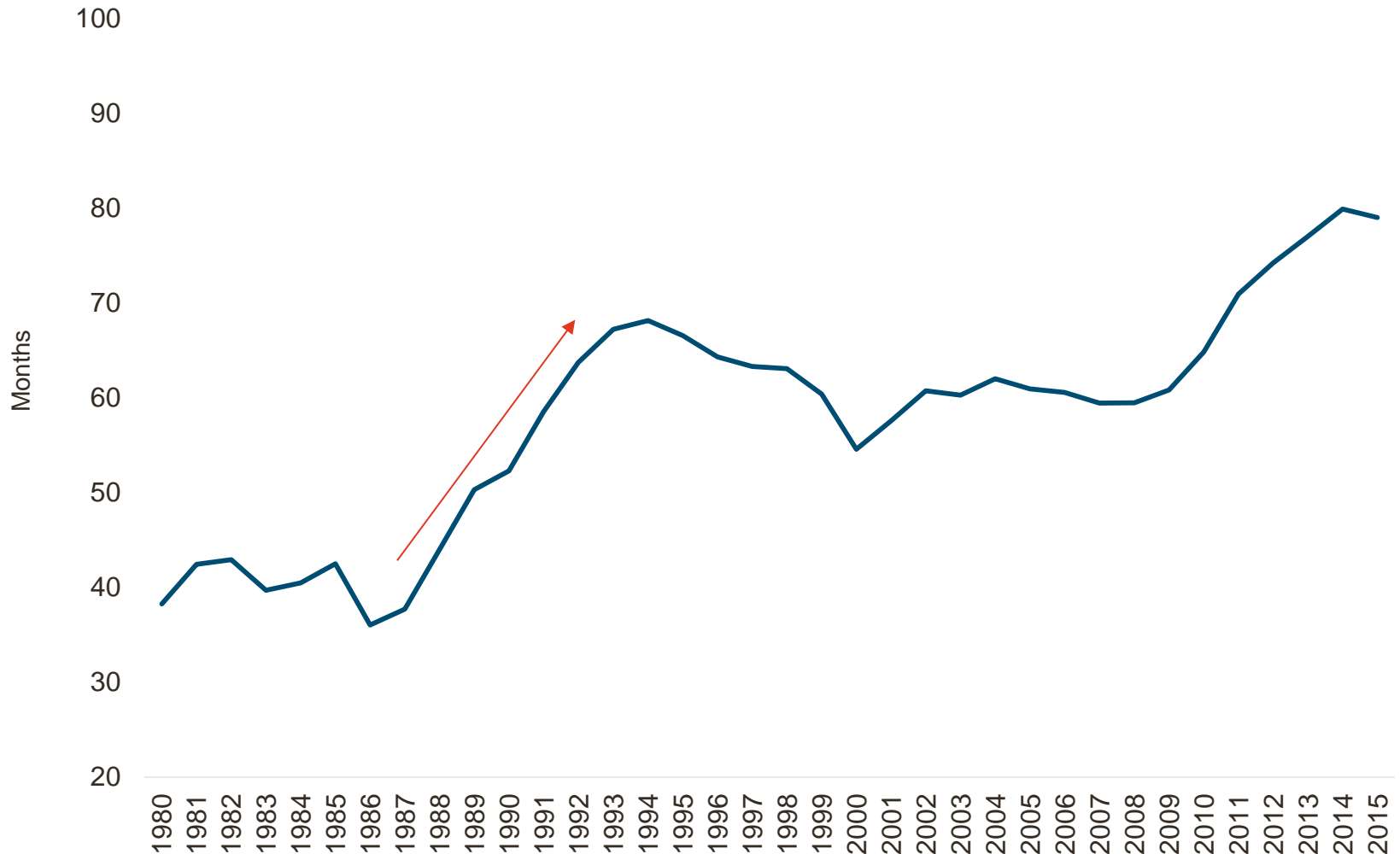
Declining Mobility Correlated to Business and Real Estate Cycle

Number of Months Between Purchase and Sale



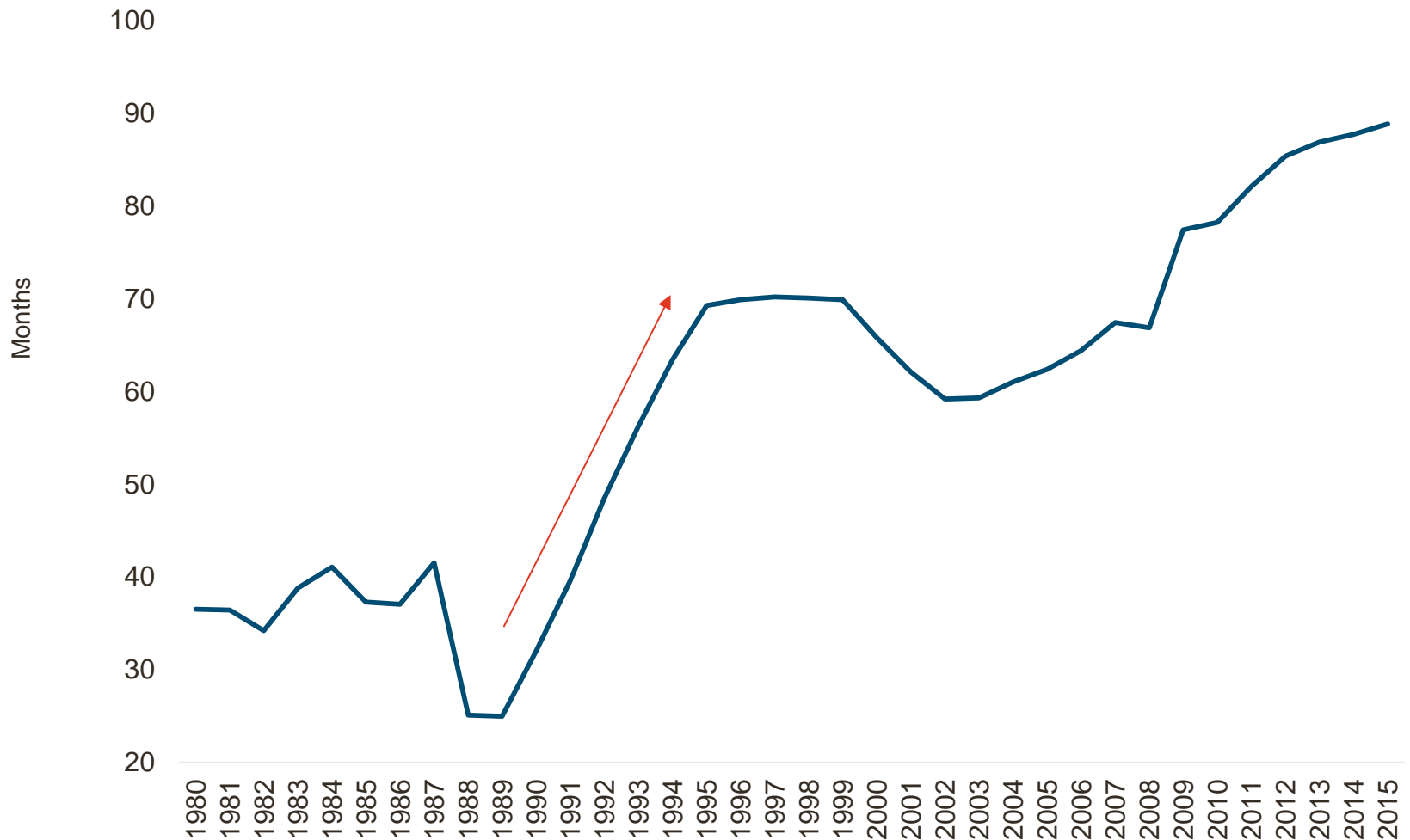
Oil Bust in 80's Led to Much Lower Mobility in Texas

Number of Months Between Purchase and Sale in Texas



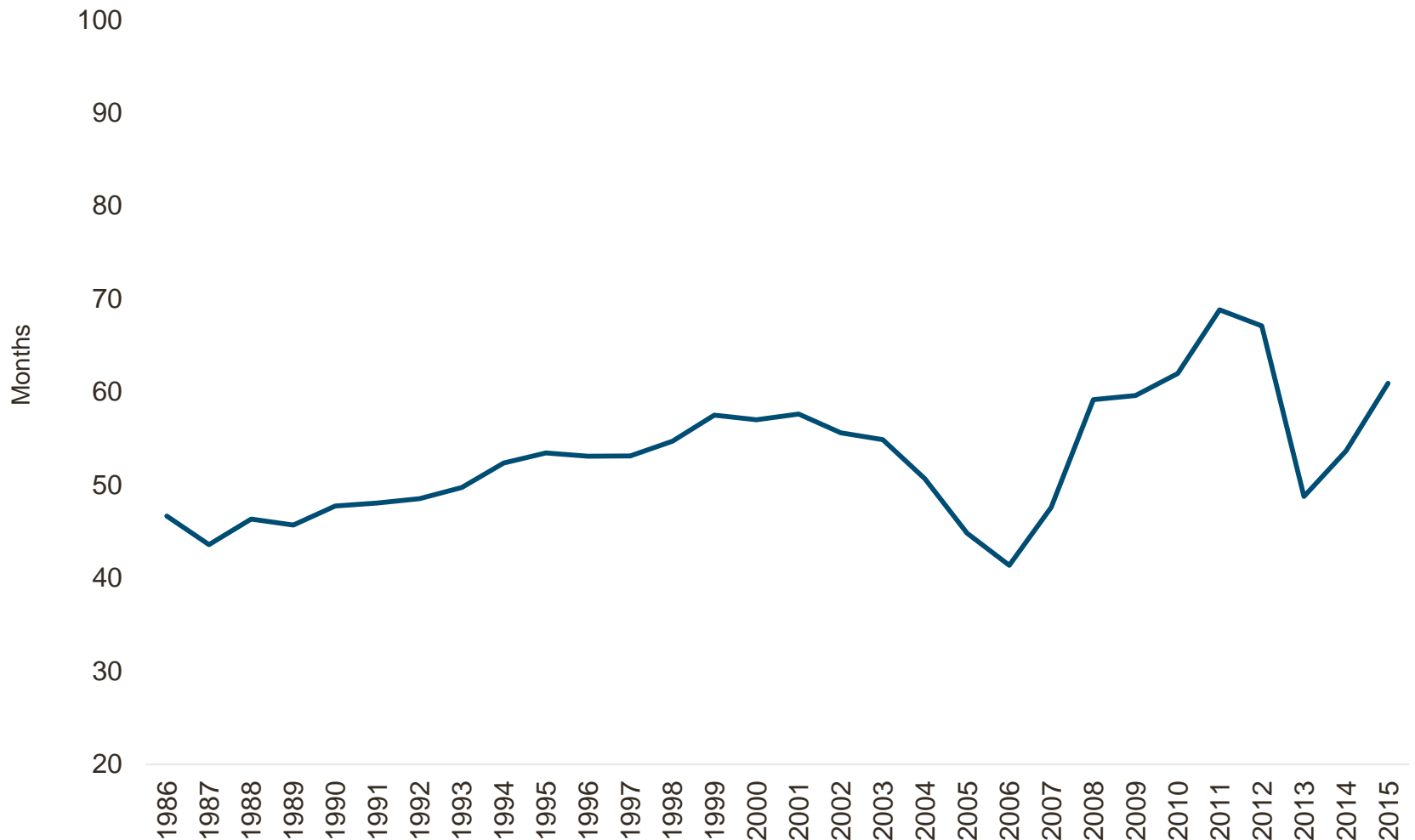
Late 80s Recession Led to Lower Mobility in Massachusetts

Number of Months Between Purchase and Sale in Massachusetts



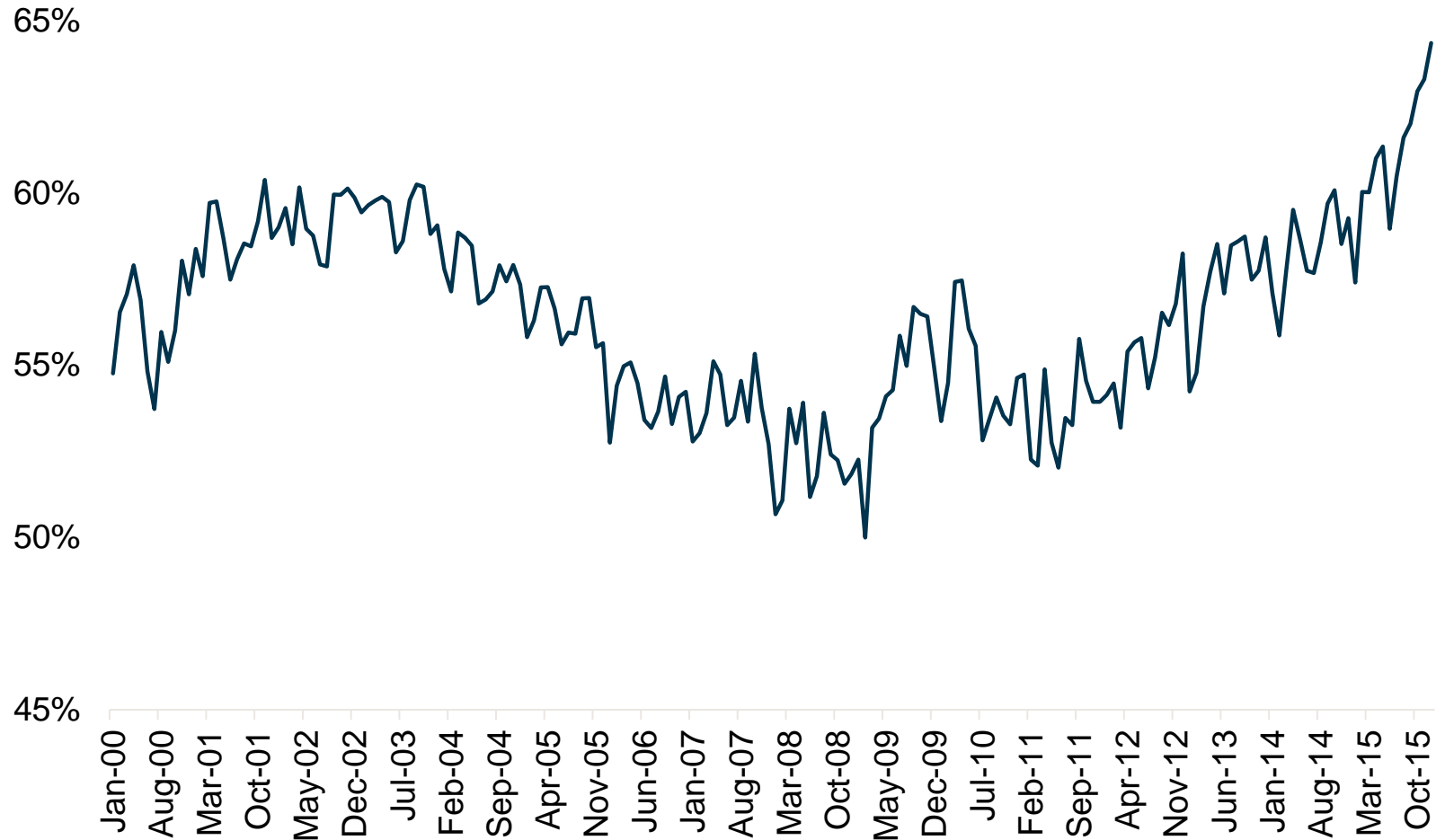
Recession & Real Estate Bust Impact on Nevada Mobility More Muted

Number of Months Between Purchase and Sale in Nevada



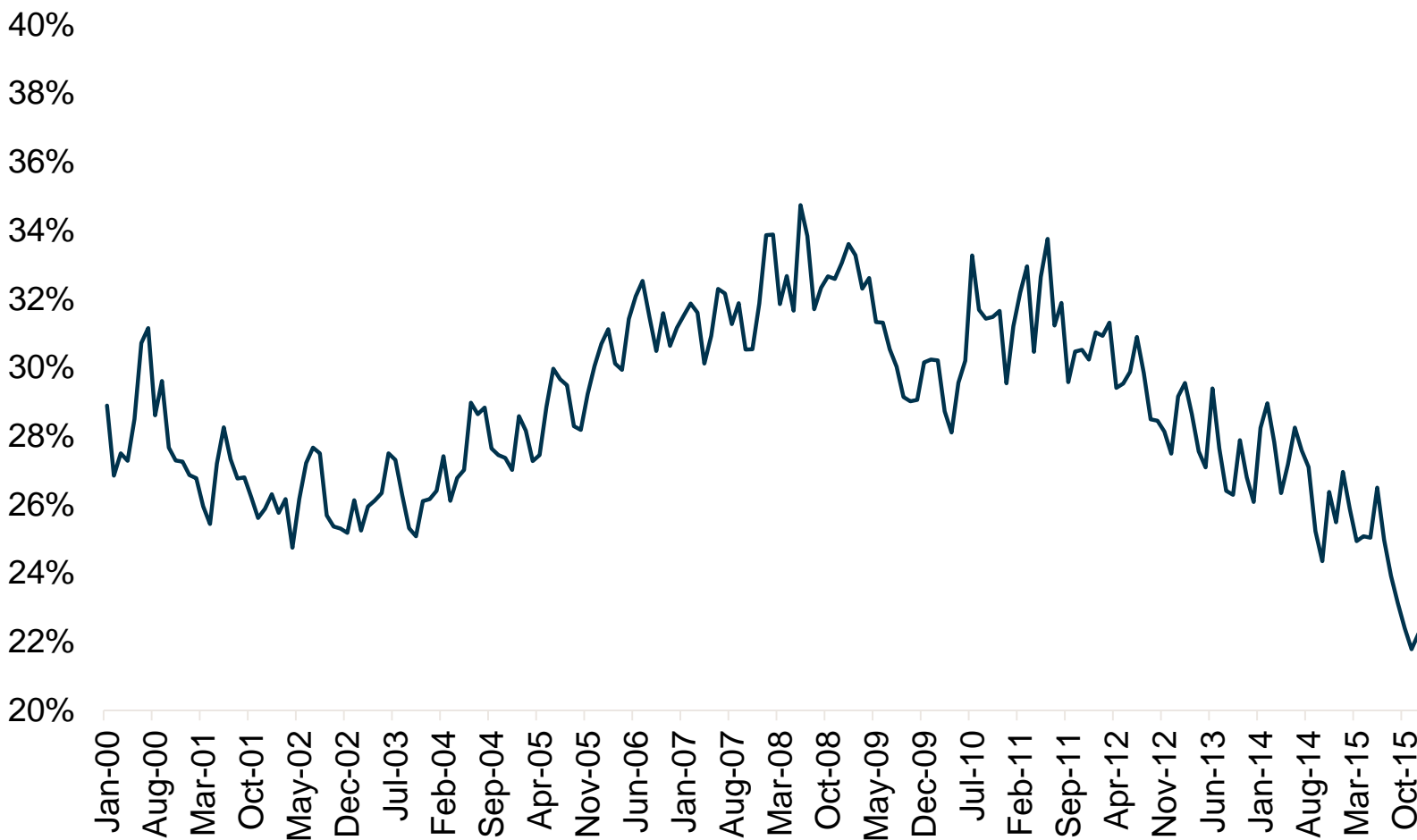
When they Move, Majority Stay in Same Metro

Percent of Sellers That Stay in Same Metro



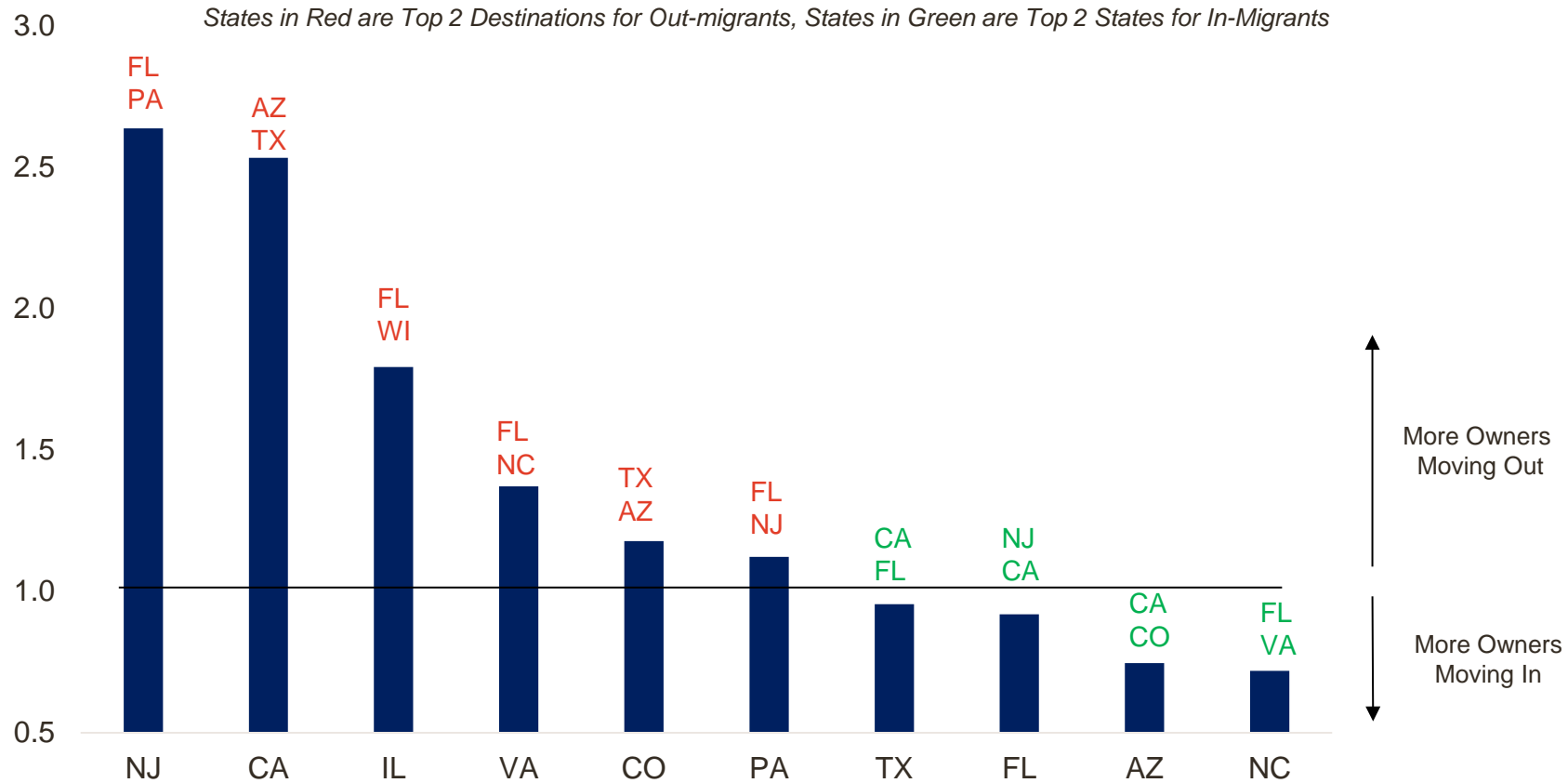
Share Moving Out of State is Declining

Percent of Sellers That Move to Another State



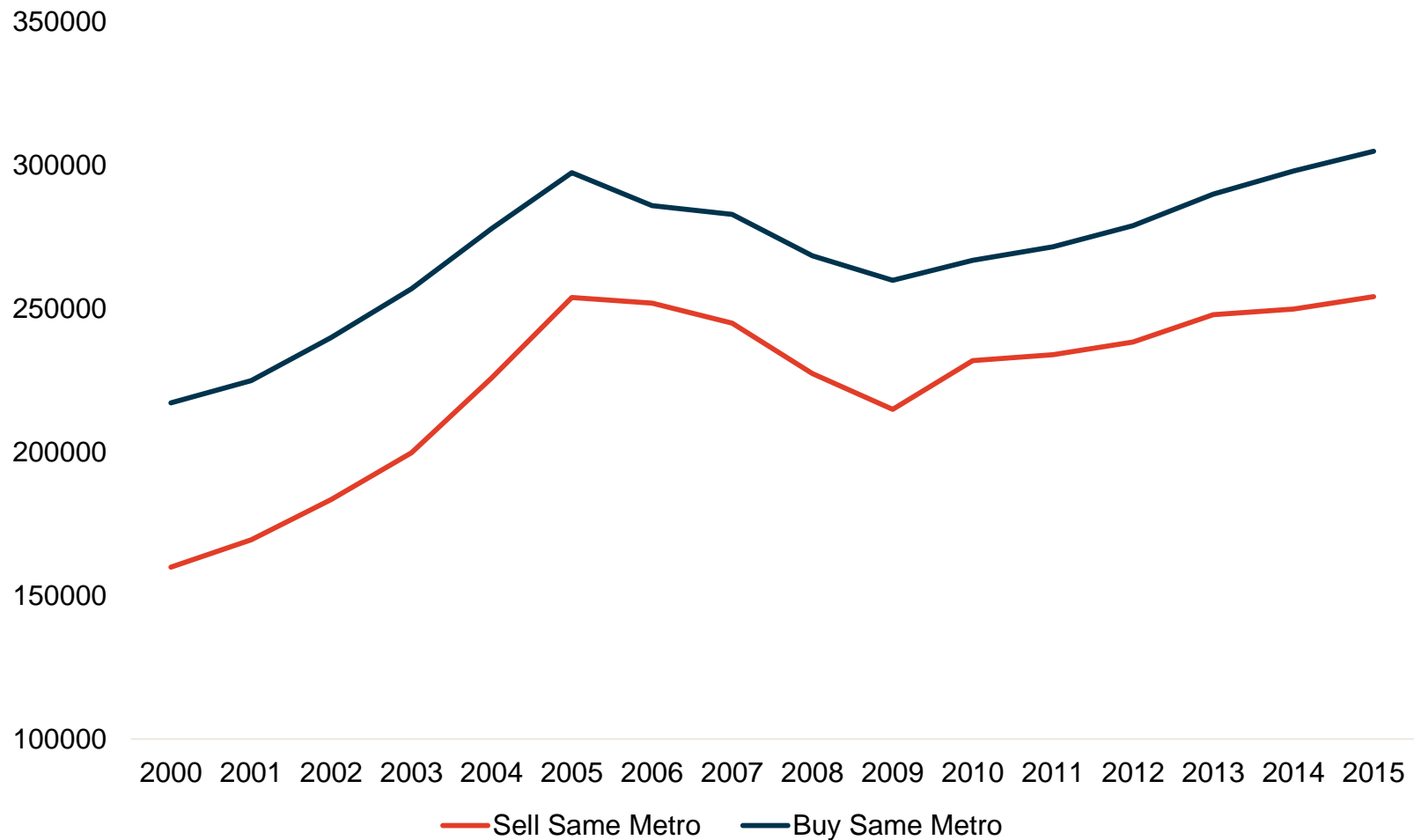
Top 10 States for In & Out-migration

Ratio of Owners Moving Out to Moving In for 2000 to 2015



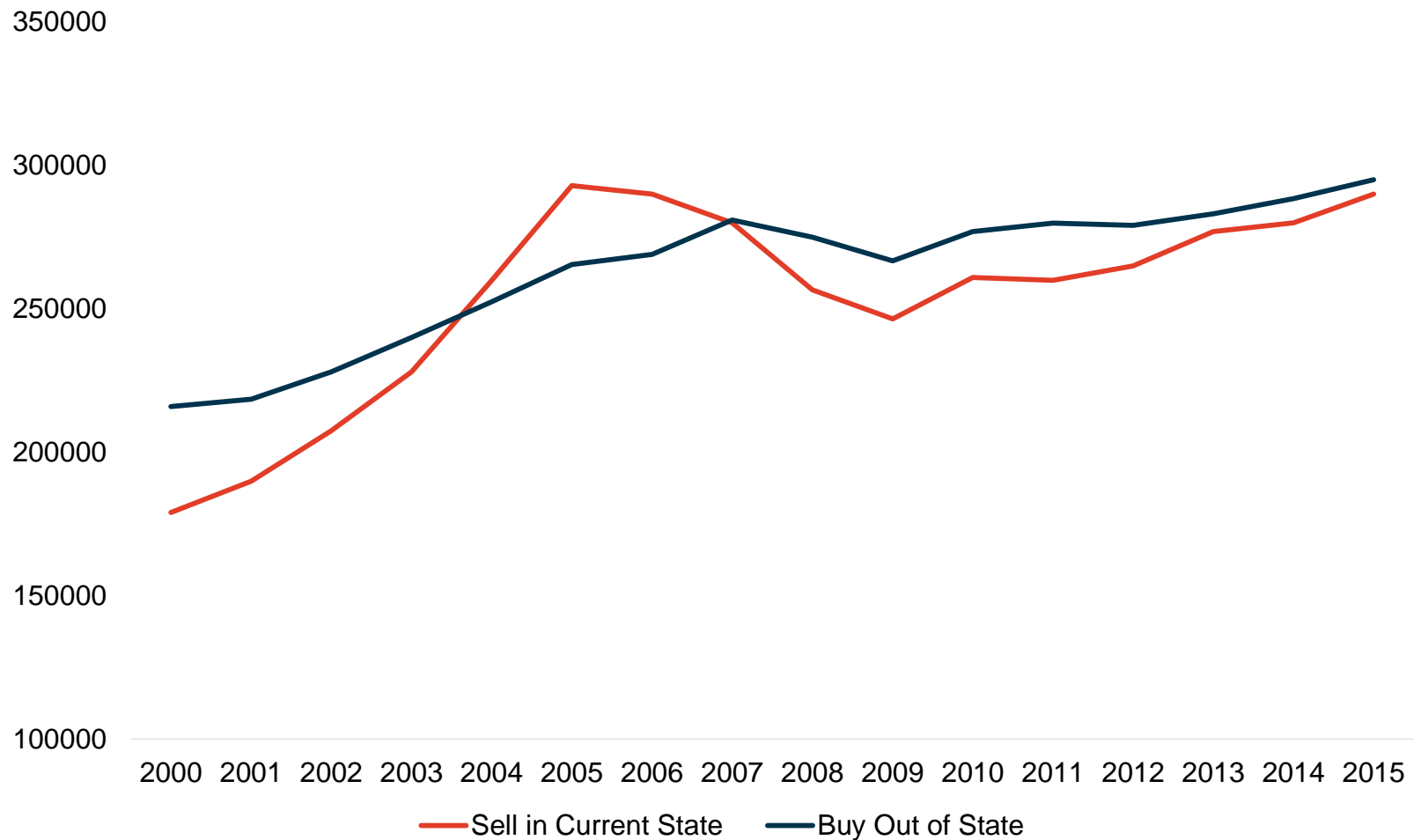
Movers in the Same Metro Pay \$50k More for Subsequent Purchase

Median Price, Sellers and Buyers within Same Metro



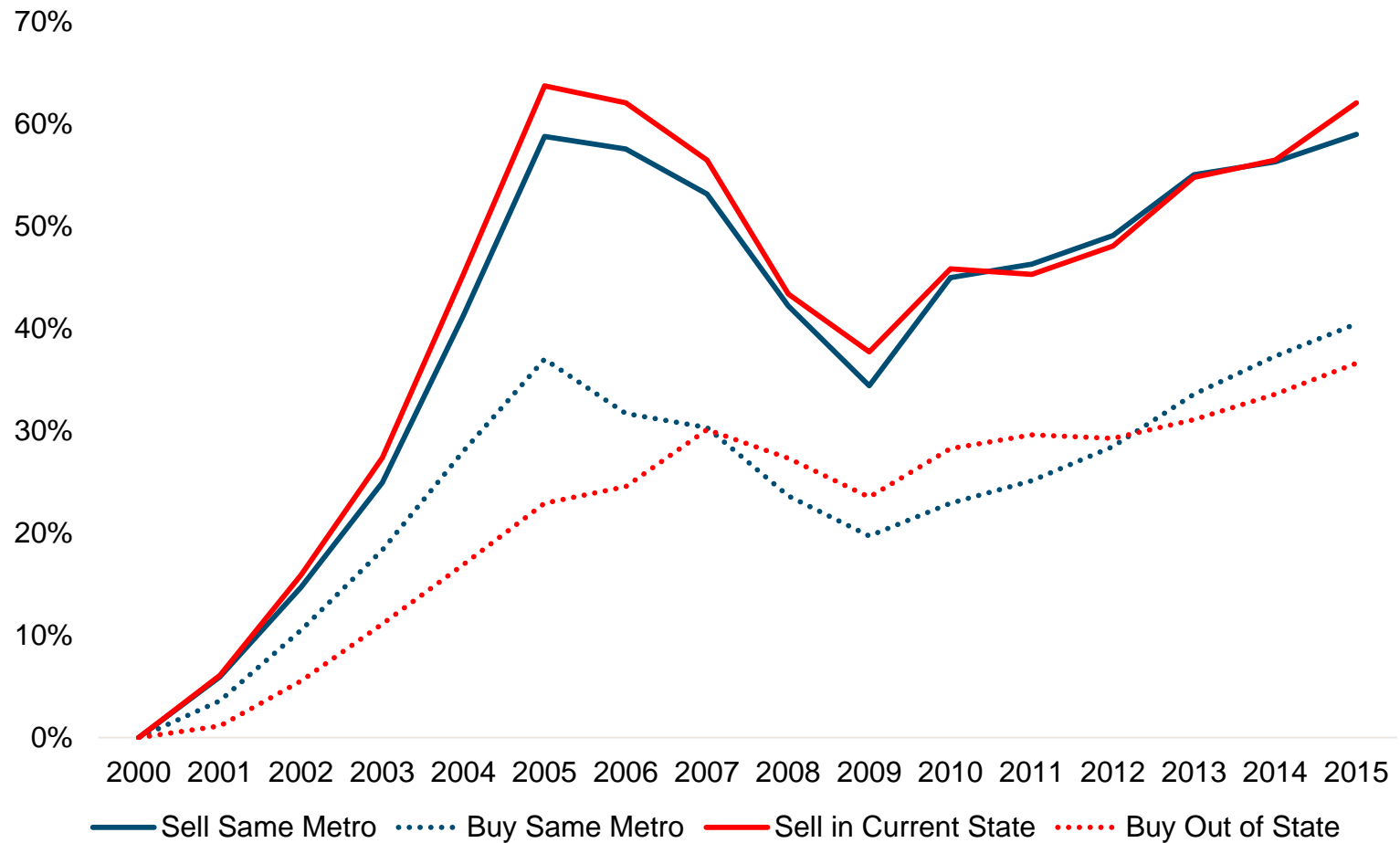
Movers to Different State Pay Roughly Same for Subsequent Home

Median Prices, Sellers that Sell in One State and Purchase in Another State



Movers Are Selling High Appreciation Areas & Buying In Low Appreciation Areas

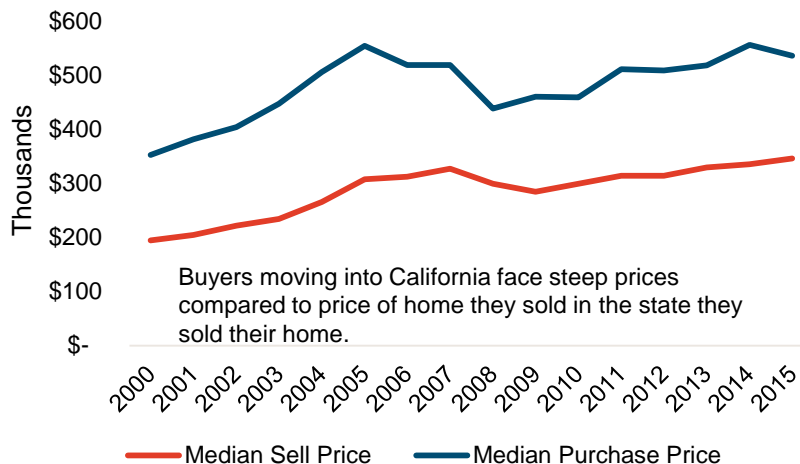
Percent Change in Prices by Type of Move and Destination



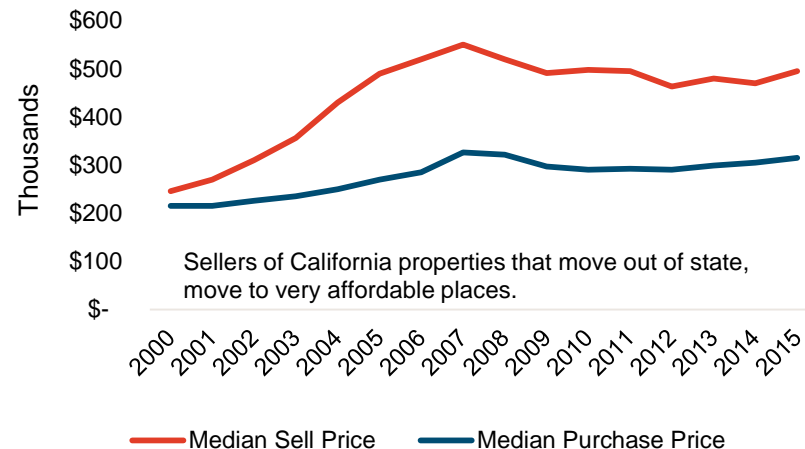
California and Texas Interstate Movers



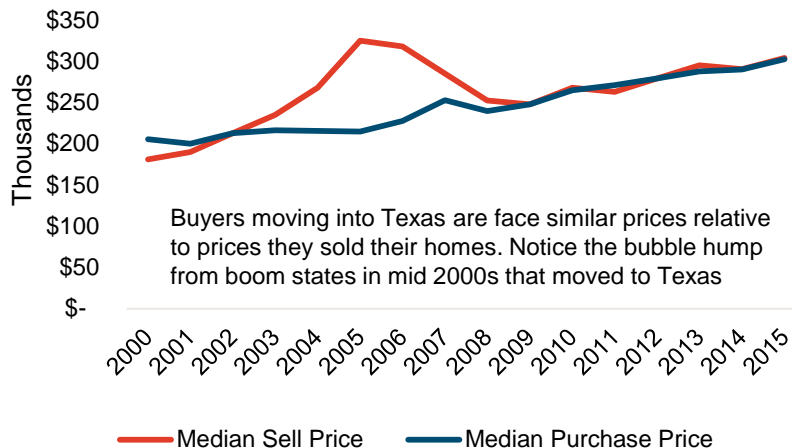
California In-migrants



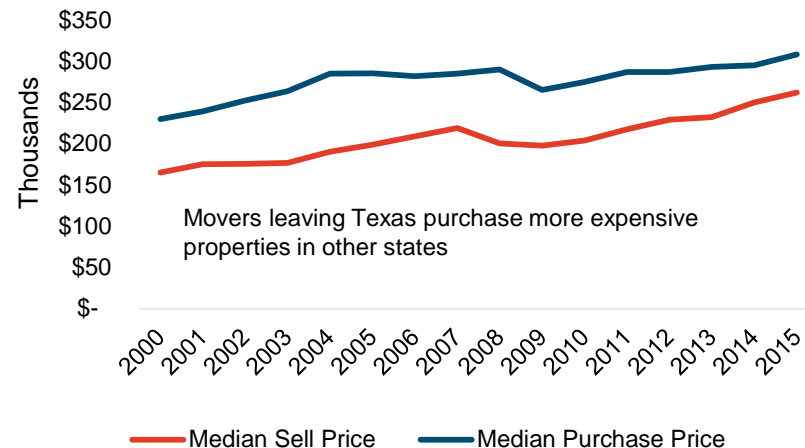
California Out-migrants



Texas In-migrants

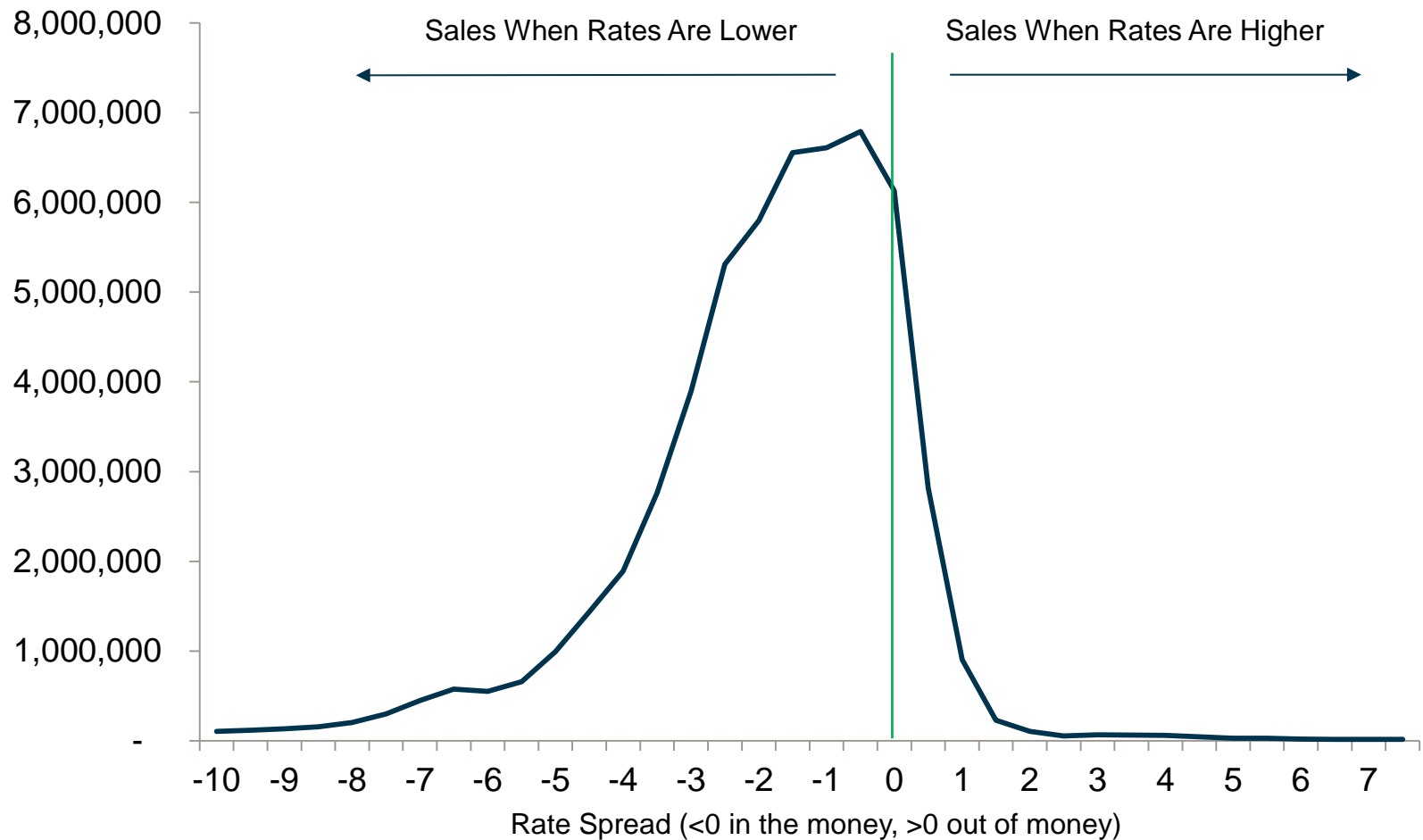


Texas Out-migrants



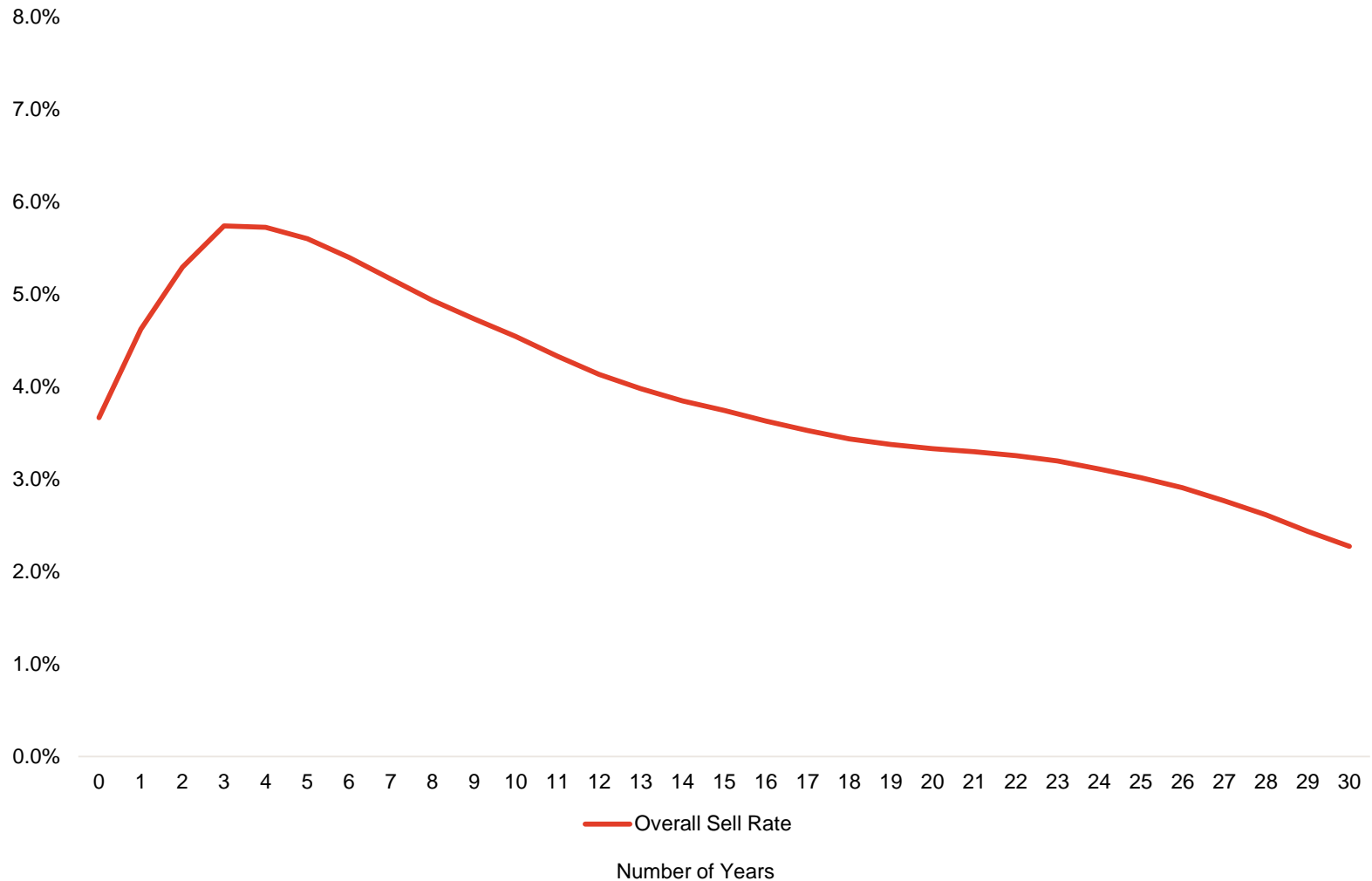
Large Drop Off in Sales as Rates Go Out of the Money?

Number of Home Sales by Change in Mortgage Rate Between Sales, 1976 - 2016



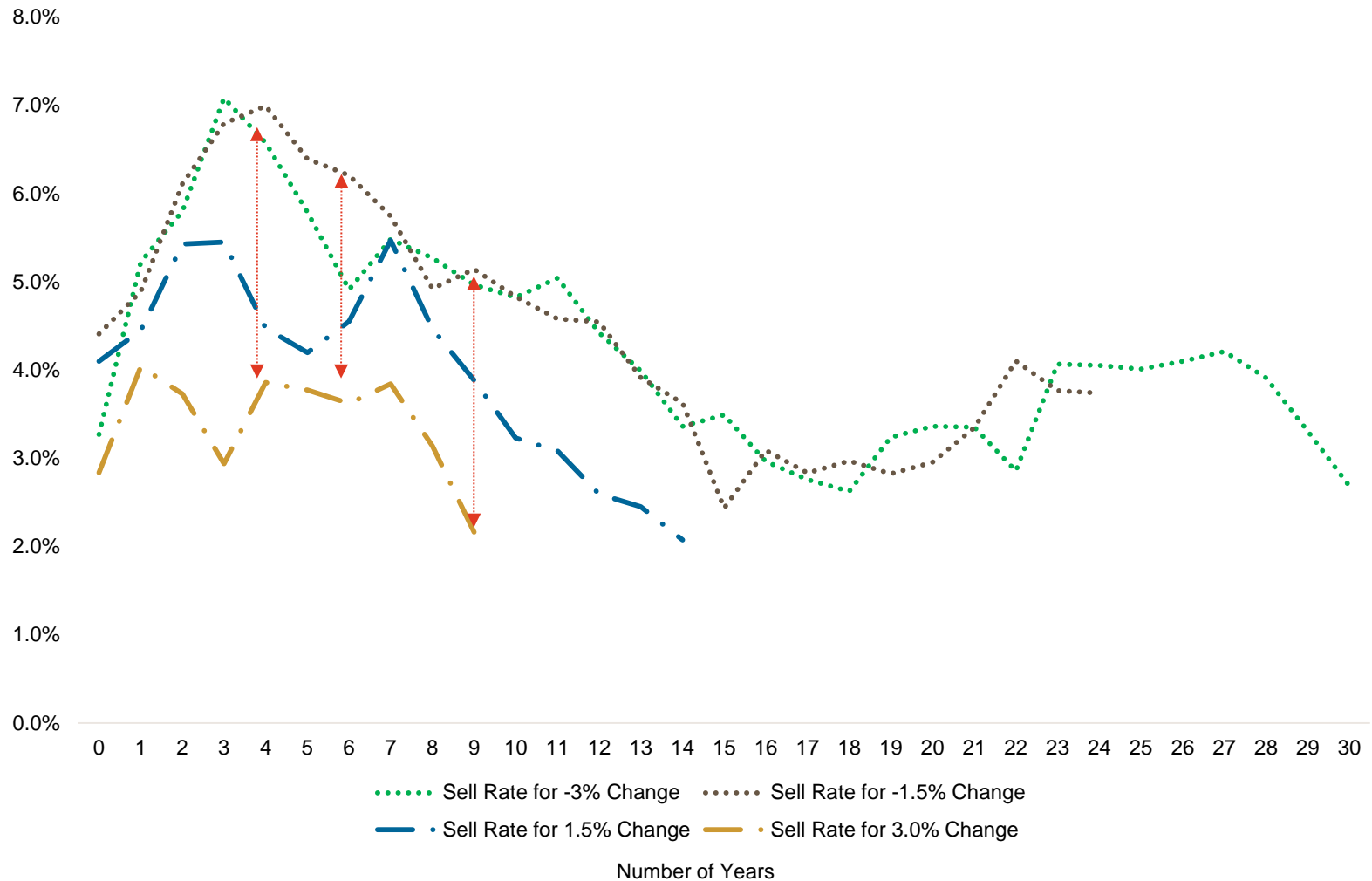
Mobility Rate by Year After Purchase

Percent of Sales by Purchase Year Vintage as Share of Remaining Unsold Homes



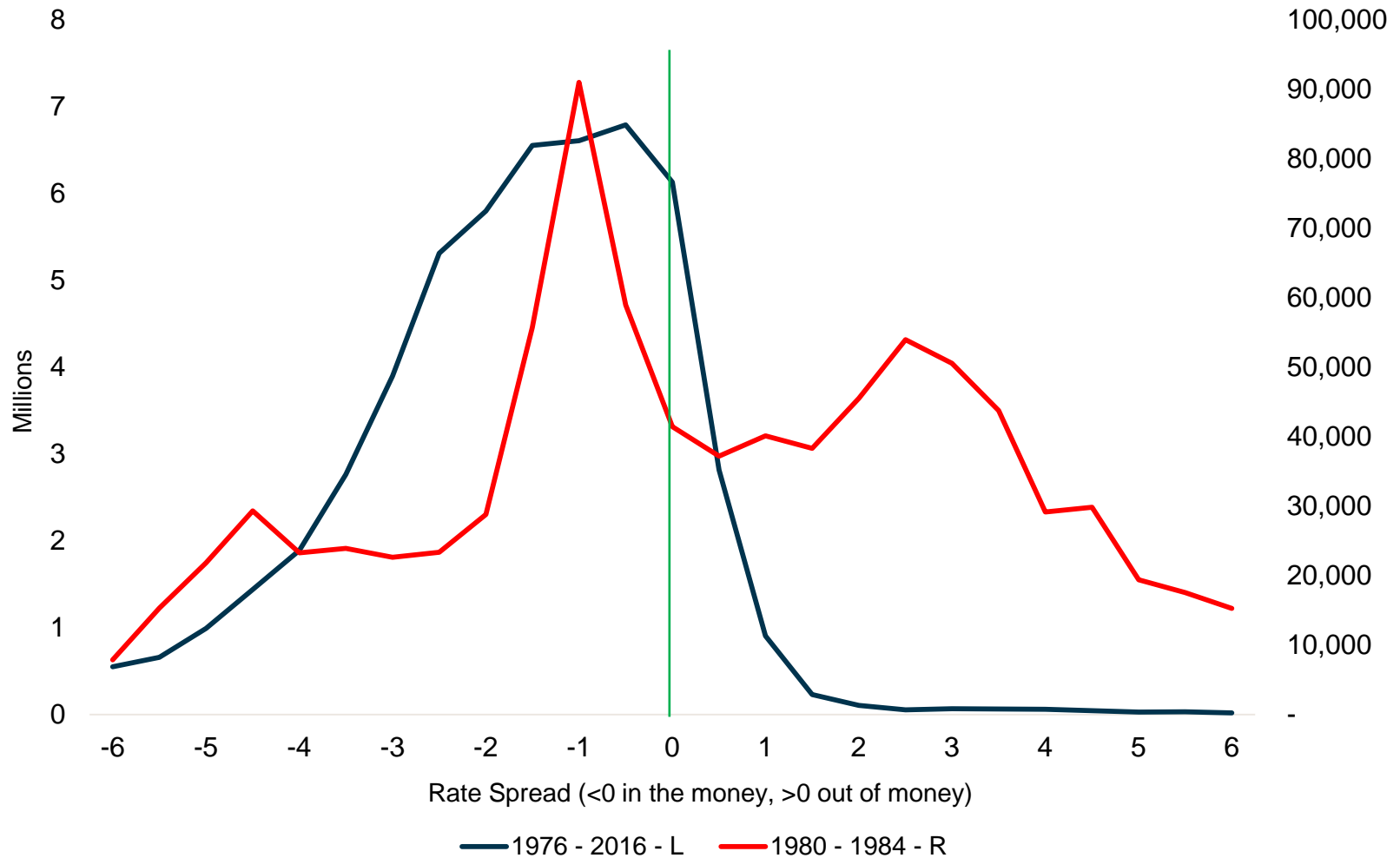
Rising Rates Are a Large Hurdle for Resales

Percent of Sales by Purchase Year Vintage as Share of Remaining Unsold Homes For Rising vs Declining Rate Cohort



Large Drop Off in Sales as Rates Go Out of the Money?

Home Sales by Mortgage Rate for Sale Minus Subsequent Purchase for Sales Between 1976 - 2016



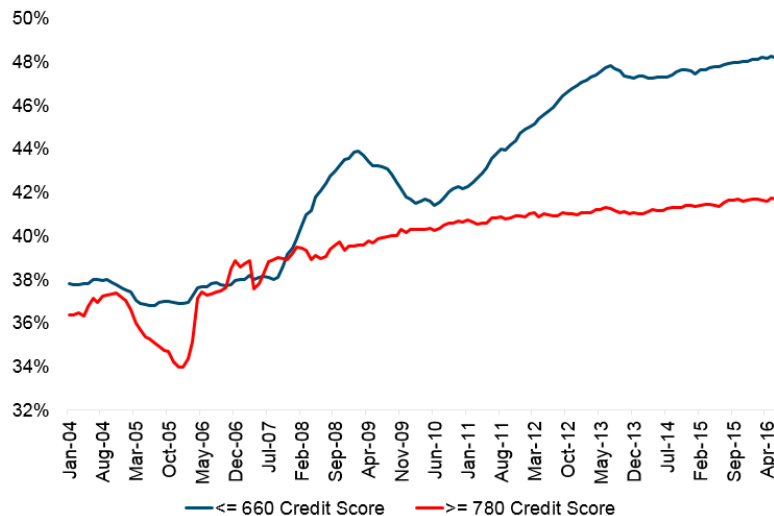
Mortgage Market Implications

- Lower turnover rates means lower purchase loan originations
- Provides more time to build equity, lower default risk & perhaps more 2nd lien demand
- More demand for FRM or longer-term hybrid ARMs to minimize owner interest rate risk
- While mobility declines when mortgage rates rise, don't expect mortgage rates to rise much

Current & Future Work

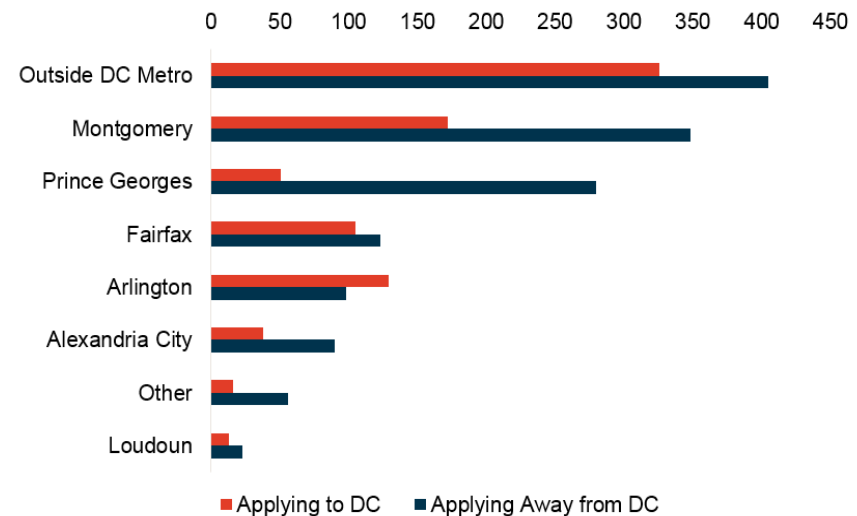
- Migration Using Purchase Mortgage Application
- Single-Family Repeat Rent Index
- Low/Mod Income & Underserved HMDA Real Time Proxy
- Commercial Real Estate Analytics

When They Move Within Metro, Demand Highest in Outer Suburbs
Purchase Application Share for Outer Suburbs, by Credit Score Segment



Source: CoreLogic

Mortgage Demand In and Out of the District of Columbia
Purchase Applicants Jan to June 2016



Where to find more information

<http://www.corelogic.com/about-us/research.aspx>

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All materials from today's talk can be found here: <http://www.urban.org/events>