

## Appendix

### **The Housing Market and Cross-State Geographic Mobility**

To investigate possible correlations between the housing market and mobility, 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. All control variables are calculated from the Current Population Survey. 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. As shown in Appendix Table 1, we find no evidence that migration rates were lower in the recent period in states with a larger share of underwater mortgages.

In other 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.

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 Appendix Table 1 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. 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 noted in the main text, 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.

**Appendix Table 1**  
**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) Post-2006 dummy	-0.003 (0.009)	-0.005 (0.003)	0.010 (0.004)	0.010 (0.004)	0.000 (0.004)
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)
<i>N</i>	1470	1472	1322	1472	1470
Weighted mean of migration rate:	0.022	0.028	0.023	0.028	0.027

*Note:* 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.