

# Real Estate Investors and the Housing Market Crisis

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A large and rapidly growing literature has considered a wide range of possible causes of the house price bubble and the mortgage delinquency and foreclosure crisis. In addition to macroeconomic fundamentals and housing supply constraints, much research has focused on the roles of credit availability and home price expectations during the boom, and a declining risk profile of borrowers combined with deteriorating economic conditions and rapidly falling home prices during the bust. Changes in credit conditions, as characterized by interest rates, loan-to-value ratios, mortgage approval rates and underwriting standards have in turn be linked to the proliferation of non-agency mortgage securitization, deregulation and bankruptcy reform. Others have stressed the importance of irrational expectations regarding future price growth and declining home prices, possibly in combination with declining lending standards, as primary drivers of the housing bubble.

While there is general agreement that many of these factors played a role, there is disagreement about their relative importance and about how much of the bubble they can explain. In a recent paper Glaeser, Gottlieb and Gyourko (2011) conclude that much of the housing market event remains unexplained. They point to the possibility that the sharp increase in the number of applicants and borrowers during the boom was accompanied by an increase in borrower risk not fully captured by measured loan and borrower attributes. The analysis of mortgage delinquencies by Demyanyk and van Hemert (2011) suggest that during the dramatic growth of the subprime mortgage market, there was indeed a significant decline in mortgage pool quality, especially for high LTV borrowers, representing a decline in underwriting standards not captured by observed measures.

In this paper we explore one potentially important unobserved factor, the borrower's true motive for purchasing the home. More specifically, we use a new rich dataset to more accurately identify borrowers who were investors rather than owner-occupants and analyze the role investors played in the recent housing bubble. Our focus on investors is motivated in part by the importance of speculative investing in earlier housing bubbles, as well as some preliminary evidence from the literature of high investor activity and delinquencies in the current crisis. In addition, there are indications that the most commonly used measure of buyers' intentions became increasingly

unreliable during the crisis, with many investors misreporting their true occupancy status on mortgage applications.

Investors face different incentives and are considered more risky than occupant-owners as they are more likely to default when home prices begin to fall. Owner-occupants generally plan to live in their homes for a longer term, face higher moving costs (financially and emotionally by disrupting all household members' lives) and therefore do not tend to sell or abandon their homes based on periodic economic downturns or home price drops. On the other hand, investors who do not live in a property, have no moving costs, do not need to find a new place to buy or rent, and are therefore more quickly inclined to sell or default when prices drop.

While a number of studies have documented a growing role of investor activity and their relatively high delinquency rate, two influential papers have played down their importance in the housing bubble. Mayer, Pence and Sherlund (2009) and Gerardi et al. (2008) both suggest that investors accounted only for a relatively small fraction of originations, and their share showed little if any growth during this period. But both studies qualify their conclusions by acknowledging the possibility that investors increasingly misrepresented themselves as owner-occupants during the boom, and the possibility that their unobserved characteristics deteriorated over time.

The latter qualification is important because most of the results on investors in the papers listed above are based on a borrower's self-reported intended owner-occupancy status in loan-level datasets such as HMDA, LP and LPS. If many investors misrepresented themselves, then the growth in the investor shares in mortgage originations and delinquencies may be much higher than has been reported. Moreover, as investors represent a higher risk group, this could imply a deterioration in overall credit quality during the housing boom that was not captured by measured loan and borrower attributes. Their contribution to the mortgage delinquency and foreclosure problem may even be greater than what would be suggested by the higher rates for self-identified investors found in the papers cited above, if those misreporting their true motive for purchasing the home (their true intended occupancy status) represent a higher risk group, for example by being more sensitive to changing housing market conditions and to shocks.

We bring two distinct kinds of data to the analysis of this important question. Our primary source is the FRBNY Consumer Credit Panel (CCP) which comprises an anonymous and nationally representative 5% random sample of US individuals with credit files and all of the

household members of those 5%. In all, the data set includes files for more than 15% of the population, or approximately 37 million individuals in each quarter from 1999-2011Q1. The FRBNY CCP data allow us to overcome some of the difficulties with self-reported occupancy status. Unlike loan-level data, which focus on individual debt contracts and the information used in underwriting them, credit reports are designed to give lenders (and potential lenders) dynamic credit information on individual *borrowers*, including the types and amounts of debt they have outstanding at any point in time. Our panel allows us to track individual borrowers over time, through refinances and moves, where at each point in time we observe all outstanding mortgage loans and non-mortgage debts.

We can use this information to separate mortgage borrowers based on how many distinct first-lien mortgage accounts appear on their credit reports. Since each property can secure at most a single first-lien mortgage, the number of such mortgages on a borrower's credit report is a reliable, non-self reported, indicator of the minimum number of properties a given individual has borrowed against. We explore several dimensions of the behavior of investors in general, using the data on multiple first-lien mortgages as a way of distinguishing investors from owner-occupants. In our analysis we distinguish between different categories of investors; by whether they are holding 2, 3 or 4 or more first mortgages. We also have matched individual mortgage loans from the CCP data to loan-level data from CoreLogic's LoanPerformance ABS database.

Our findings indicate that the proportion of all new purchase mortgage balances originated by borrowers with 2, 3 and 4 or more first-lien mortgages on their credit reports increased from around 20 percent in 2000 to a peak of nearly 35 percent in 2006. The investor share of purchase mortgages also increased faster in Arizona, California, Florida and Nevada as the housing boom peaked, rising from almost 25 percent in 2000 to 45 percent in 2006. The purchase share for borrowers with 4+ first-lien mortgages increased by more than 7 percentage points (or 350%) over this period. From the matched CCP-ABS data we can show the distinction between self-reported owner-occupancy and the borrowers with multiple first-lien mortgages. We find that the gap between these two was large and widening during the boom, and especially in the sand states.

In addition to their increasing prevalence, we are able to show that multiple first-lien holders – whom we refer to as investors - were more likely to use nonprime credit and were far less likely to

move to the zip code of the property. In addition, they are less likely to refinance than those with just a single first-lien mortgage.

While transition rates into early delinquency were lower among investors before 2007, they were much higher in the subsequent period, especially for those with 4 or more first mortgages. We also show that such early delinquencies after 2006 also transitioned into defaults at a much higher rate for investors, with fewer early delinquent loans curing. Hazard models confirm these findings: showing lower average delinquency rates for investors up to 2006, and higher rates since then, especially among those with 4 or more first mortgages. Adding controls for state fixed effects, vintage effects, and loan characteristics leads to subsequent declines in the estimated remaining investor effect, indicating that each set of controls can explain a piece of the higher overall delinquency rates of investors. However, substantial investor effects remain, suggesting that there were additional unmeasured differences between investors and non-investors that put mortgage loans of the former at higher risk of default.