



## Lending Standards in Mortgage Markets

The mortgage crisis that exploded in the summer of 2007 made a few major issues apparent: First, the value of the U.S. housing stock was substantially lower than most believed. Second, the number of nonperforming loans was much greater than lenders had estimated. Third, the poor performance of real estate loans had a dramatic effect on banks' balance sheets, exposing them to serious solvency issues. These events have had major negative ramifications, both in the financial markets at home and around the world. Many have blamed banks for keeping lending standards too loose. But how loose were they?

Many dimensions could be used to analyze the evolution of credit standards for mortgage loans. A very simple statistic to compute is the percentage of loan denials in the total pool of mortgage applications. For example, an increase in the denial rate could be interpreted as mortgage brokers and banks tightening the lending standards.

Since 1999 the Home Mortgage Disclosure Act (HMDA) has registered data regarding mortgage applications, denials, and originations by type of purchase in the United States. The chart shows the evolution of the fraction of loan denials relative to applications by loan type. In addition, the chart includes house price appreciation as measured by the Case-Shiller Home Price Index. The Case-Shiller Index is normalized to match the scale of the denial rates. The chart suggests some interesting observations: First, according to the Case-Shiller data, national house prices nearly doubled between 1999 and 2006. That figure represents a roughly 10 percentage point annual appreciation (not adjusted for inflation) for the period and close to 15 percentage points during the peak of the bubble. Second, after the economic recession began in 2001 the index for total loan denial rates was at its lowest point between 2002 and 2003.

Interestingly, in 2004, denials increased by 33 percentage points relative to their 2002 low, all the way up to 75 percentage points for 2007 relative to the 2002 low point. This increase suggests that credit started to tighten well before 2007. Most of the increase in total denials came via refinancing loans—not through new home purchases or special loan programs funded by the Federal Housing Administration (FHA) or the Veterans Administration (VA). This is consistent with the fact that around 2003 the flow of new home buyers was already very small and most new loans came via refinancing and equity extraction. The rapid increase in denials suggests two intertwined points: One, lenders were concerned with the risk worthiness of borrowers at all levels, and two, homeowners were continuing to overvalue their homes.

While the HMDA data seem to suggest that lenders did the right thing by tightening standards and increasing denials, the ongoing financial crisis and the historically high level of delinquencies and foreclosures seem to suggest that after loosening the reins so greatly, they neither tightened them enough nor did they act quickly enough.

—Carlos Garriga

**Mortgage Denial Rates by Loan Type**

