Did Credit Scores Predict the Subprime Crisis?

By Yuliya Demyanyk

A credit score measures the creditworthiness of individuals or businesses. Lenders increasingly use these scores to assess credit risk; they also use them to calculate how likely it is that borrowers eventually will be delinquent (late with payments) or in default. By design, the higher the score, the less likely it is that a borrower will miss payments or go into default on a loan within one or two years after the score has been calculated.

Bill Fair and Earl Isaac developed the first commercial credit scoring system in 1958. A credit score based on this system has developed into a FICO (Fair, Isaac and Co.) score, and it became a standard measure of consumer credit risk in 1989. Fannie Mae and Freddie Mac recommended the FICO score for use in mortgage lending in 1995. The data for individual credit scores come from the three national credit bureaus and contain information—positive and negative—about how the potential borrower is using credit now and how he has used it in the past.

Given the nature of FICO scores, one might expect to find a relationship between borrowers' scores and the incidence of default and foreclosure during the ongoing subprime mortgage crisis. Analysis suggests, however, that FICO scores have not indicated that relationship: Default rates have risen for all categories of FICO scores and, moreover, higher FICO scores have been associated with bigger increases in default rates over time.

Delinquencies and Defaults in the Subprime Mortgage Crisis

The subprime mortgage market boomed during the first six years of the decade and collapsed in 2007. Many borrowers with subprime mortgage loans could not make timely monthly payments and defaulted on their loan contracts only months after their loans were originated in 2006 or 2007. More precisely, 18 percent of loans that were originated in 2006 and 14 percent of loans that were originated in 2007 were either past due for more than two months or were already in foreclosure within one year after the loans were originated. In comparison, only from 2 to 6 percent of loans originated in years from 2001 to 2005 were delinquent or in foreclosure during the first year after origination.

Researchers, policymakers and the media have offered many explanations for this crisis. The first explanation is the resetting of mortgage rates from low "teaser" rates into much larger adjustable rates for the hybrid mortgages. With higher interest rates, monthly mortgage payments became larger; borrowers could not afford the new payments and defaulted on their loans. The second suggested reason was a tendency for borrowers to refinance into larger loans and take out cash, basically taking out the equity from their homes and spending it. Negative equity could lead to default. A third popular explanation involved loosening the underwriting standards. If borrowers did not pay any down payments, they had nothing to lose in case of adverse personal or economic circumstances, which could make defaults almost costless.

Mortgage Loans Can Be Labeled Subprime for Many Reasons

The term "subprime" describes a loan that in some way is worse than a prime loan. Borrowers may find these loans worse because of high interest rates or high fees that lenders charge. Lenders also may charge exorbitant penalties for late payments or pre-payments. A subprime loan is worse in the eyes of a lender because it is considered riskier than a prime loan—riskier because there is a greater chance the loan will never be repaid—so lenders require those higher rates and fees to compensate for an extra risk, compared to prime loans. And, it can be worse for everybody and for the economy overall if the risk does materialize.

A loan can be called subprime if:

- it is made to a borrower with a poor credit history (such as a FICO score below 620);
- it is issued by a lender who specializes in high-cost loans;
- it became part of a so-called subprime pool of loans, to be traded on a secondary market; or
- it is made to a borrower with "prime" credit characteristics (e.g., a high FICO score) but is a subprime-only contract type, such as a 2/28 hybrid, a product not generally available in the prime mortgage market. (A 2/28 hybrid mortgage carries a fixed rate for the first two years; after that, the rate resets into an index rate [usually a six-month LIBOR] plus a margin.)

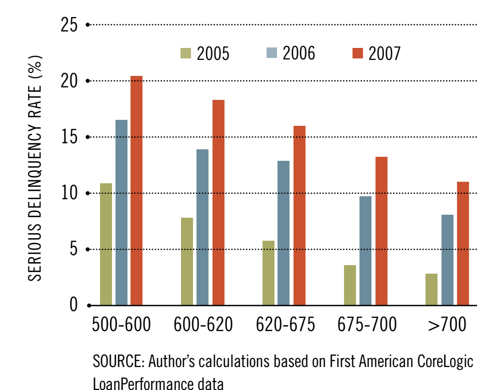
A paper written in 2008 by Yuliya Demyanyk and Otto Van Hemert shows that contrary to popular beliefs described earlier in this article, the subprime crisis did not confine itself to a particular market segment, such as no-documentation loans, hybrid loans, cash-out refinance loans, etc. It was a (subprime) market-wide phenomenon. For example, borrowers with mortgages that carried a fixed-interest rate—the rate that will not reset through the entire term of a loan—had very similar problems to borrowers with hybrid mortgages. Borrowers who obtained a subprime mortgage when they bought a home had the same problems in 2006 and 2007 as those who refinanced their existing mortgages to extract cash. Borrowers who provided full documentation and no documentation followed the same pattern.

Demyanyk and Van Hemert also show that throughout the boom and subsequent collapse of the subprime mortgage market, borrowers with low FICO credit scores were more likely to miss their mortgage payments or default on their loans. However, as the data show, borrowers who took out subprime loans in 2006 and 2007 had higher or similar FICO scores, not lower, than borrowers who took out their mortgages in earlier years.

The figure shows how the serious delinquency rate has changed for five groups of borrowers who had different FICO credit scores when their loans were made. Their mortgage loans were originated in 2005, 2006 and 2007. A mortgage loan is seriously delinquent if a borrower has missed more than two monthly payments, has defaulted on a loan or if the property has gone into foreclosure. Each bar on the graph represents an origination year. The height of each bar shows the percentage of loans that were seriously delinquent within the first year after the loans were originated.

Serious Delinquency Rate of Subprime Loans

ONE YEAR AFTER ORIGINATION BY FIVE CREDIT SCORE GROUPS



SOURCE: Author's calculations based on First American CoreLogic LoanPerformance data

For each group of borrowers, with low and high FICO scores, loans that originated in later years had larger serious delinquency rates one year after origination. Moreover, the higher the credit score, the larger the increase in serious delinquency rates between 2005, 2006 and 2007. For example, for borrowers with the lowest credit scores (FICO scores between 500 and 600), the serious delinquency rate in 2007 was twice as large as in 2005—an increase of nearly 100 percent over the two years. For borrowers with the highest credit scores (FICO scores above 700), the serious delinquency rate in 2007 was almost four times as large as in 2005—an increase of nearly 300 percent. In addition, the serious delinquency rate in 2007 for the best-FICO group was almost the same as the rate in 2005 for the worst-FICO group.

The evidence presented above seems to suggest that the credit score has not acted as a predictor of either true risk of default of subprime mortgage loans or of the subprime mortgage crisis. The subprime mortgage crisis is still a black box, and it requires more analysis to fully understand how the developments in the subprime mortgage market and a subsequent crisis have "subprimed" so many issues that used to be considered fundamental, like credit scoring.

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