Making Sense Out of the Sub-Prime Lending Mess

The housing market's troubles loom like a bank of dark clouds over the whole economy. Many analysts foresee a significant recession this year.

A big contributor to the housing slump came from the emergence of sub-prime lending, an important force that put many former renters into their first home. What precisely do we mean by sub-prime lending? How did it become so important in the home mortgage market? How did several major financial institutions see huge losses on their sub-prime lending exposure?

Lenders classify mortgage loans into four categories – prime, jumbo, near-prime, and sub-prime mortgages.[†] Prime mortgage loans imply a traditional down payment and full financial disclosure by the borrower. Since their birth during the Great Depression, conventional (prime) mortgages proved the backbone of the residential housing market.

Jumbo mortgage loans typically come with prime classification, but they exceed $417,000 that excludes them from qualifying for the guarantee of government-sponsored companies (e.g., the Federal Home Loan and Mortgage Corporation – Freddie Mac, the Federal National Mortgage Association – Fannie Mae, and the Government National Mortgage Association – Ginnie Mae). Temporarily raising this ceiling to $729,750 appears in the recently signed economic stimulus proposal.

Sub-prime mortgages go to those mortgage applicants with the highest default risk (e.g., low credit scores and uncertain income prospects), implying that they require the highest interest rates. The Wall Street Journal reported recently, however, that in 2005 55-percent of sub-prime borrowers owned credit scores qualifying them for prime mortgages. Go figure. Politicians and regulators will need to investigate the extent of steering of qualified prime borrowers into sub-prime loans.

Finally, near-prime mortgages exhibit less default risk than sub-prime borrowers, but cannot qualify for conventional (prime) mortgage loans.

The distribution of mortgage loans hides an important recent trend. About 80 percent of existing mortgages qualify as prime, including jumbos, whereas sub-prime and near-prime mortgages constitute about 14 and 6 percent of the total. Sub-prime lending, however, exploded, rising from just under 10 percent of new mortgages in 2001 to around 40 percent in 2006. This rapid rise in sub-prime mortgage lending reflects questionable practices by the mortgage industry.

Mortgage lenders eased credit restrictions by reducing debt service, at least during the initial years of the mortgage, for sub-prime borrowers by offering reduced, “teaser” mortgage rates, by requiring vastly lower or even no down payment, by allowing interest only mortgages, by permitting borrowers to qualify with little or no financial documentation, and so on.

Such financial innovations opened home ownership to families who, in the past, could not dream of owning their own home. As a result, homeownership rose from just under 64 percent in 1994 to just over 69 percent in 2004.

But, once those teaser rates come due for a reset, many of these sub-prime borrowers no longer can afford the monthly payment and may default. As we know, delinquencies and default rates rose dramatically in recent months.

How did we get into the current troubled situation? Government sponsored companies such as Freddie Mac, Fannie Mae, and Ginnie Mae pioneered residential mortgage-backed securities, which work as follows. Mortgage lenders extend and underwrite mortgages loans. Then, they sell the mortgages to Freddie Mac, Fannie Mae, and Ginnie Mae, who bundle the mortgage debt into so called residential mortgage-backed securities. The interest payments provide the income to service this debt. Initially, mortgage lenders provided a flow of prime mortgages to back the securities issued by Freddie Mac, Fannie Mae, and Ginnie Mae. Risk reduction proves key to the success of mortgage-backed securities – pooling individual risk reduces the average risk in the pool.

This financial innovation removed the old link between housing finance and deposits held at financial institutions. Residential mortgage-backed securities greatly improved the liquidity in the housing finance market. Furthermore, the government sponsored agencies issuing the securities provided an imprimatur of safety. The implicit government guarantee of the securities replaced, to a large extent, the safety of a deposit-based mortgage system.

Debt-backed securities spread to auto loans and credit-card receivables. Eventually, securities backed by sub-prime auto loans appeared. Better credit scoring models made it easier for lenders to evaluate the risks of borrowers and to better price auto loan rates. Finally, successful sub-prime auto lending spread to sub-prime residential mortgage-backed securities.

Government-sponsored agencies, however, do not use non-prime mortgages to back securities. Thus, private-sector institutions, called non-agency residential mortgage-backed securities, entered the sub-prime market. They needed some way to control risk, since they did

not offer an implicit government guarantee. Absent risk control, the required interest rate on sub-prime mortgages would significantly limit the scope of the market.

Another financial innovation, collateralized debt obligations (a financial derivative), allowed the private sector to slice-and-dice the risk. The collateralized debt obligation divides the income stream from the pool of mortgages into sub-streams, called tranches. When defaults occur, the lowest sub-stream with the highest risk feels the pain, followed, in turn, by higher-ranked tranches. That is, each tranche exposes its security holders to a different level of risk. In effect, buyers of collateralized debt obligations choose their own poison.

This superstructure of risk exposure, however, requires accurate methods of forecasting risk. Credit scoring models worked well for sub-prime auto loans. Credit analysts discovered that the unemployment rate drove the credit-scoring model that evaluated sub-prime mortgages.

Unfortunately, two favorable trends existed in the data that calibrated the models – rising home prices and falling mortgage interest rates. Appreciating home prices provided higher equity to qualify for a new mortgage before the interest rate reset occurred. Moreover, lower mortgage interest rates kept debt service more affordable.

Once the mortgage rate started to increase and home prices began falling, the credit-scoring models crashed. By late 2006, investors in sub-prime residential mortgage-backed securities saw that the handwriting was on the wall and the message was not good.

The chickens are coming home to roost.

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† Background information comes from "The Rise and Fall of Subprime Mortgages," by D. DiMartino and J. V. Duca, Federal Reserve Bank of Dallas, Economic Letter, November 2007.

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Edited version appeared in *Las Vegas Business Press*, February 19, 2008.