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# Risks of Risk-based Pricing of Mortgage Credit

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*Risk-based pricing can have destabilizing effects on regional and national housing markets, as well as the lives of individual households.*

Risk-based pricing is a practice adopted by some mortgage lenders that offers different interest rates or other loan terms to consumers based on the estimated risk that they will fail to repay their loans.

This pricing model was at the heart of the subprime mortgage market, which charged more to borrowers considered to have lower (below prime) credit quality in order to compensate lenders and investors for their greater perceived risk.

It is also behind increases in the price of credit experienced in times and locations of distress.

Increasing the price of credit on borrowers considered higher risk is troubling because of a peculiar feature of credit markets – risk is endogenous to its price; that is, the risk is dependent on its price as much as price is dependent on the level of risk. In auto insurance, for example, a young male pays more because he is at greater risk for an accident. But he is not more likely to have an accident because his insurance is more expensive. By contrast, home loan borrowers with lower credit scores or lower down payments typically pay higher rates. These higher rates increase the burden of any given level of debt, making it more difficult to repay and, therefore, increasing the likelihood of default. Risk-based pricing is often a self-fulfilling prophecy.

## Housing Cycle Effects

The feedback loop created by risk-based pricing is destabilizing to financial markets. For example, credit risk was underpriced in 2006, when rising house prices had increased

lender and investor confidence by suppressing default rates in recent loan vintages. When the housing bubble burst, financial institutions increased rates and fees charged to borrowers, if they were willing to lend at all.

Since 2007, Fannie Mae has added an Adverse Market Delivery Charge and ratcheted up its loan-level price adjustments to cover its risk as the market deteriorated. As a result, fewer households, particularly younger households that might have become first-time homebuyers, had enough savings to meet the higher closing costs or enough income to finance them. Consequently, demand for housing declined, which contributed to the decline in house prices.

This policy of instituting a surcharge during a credit crunch stands in marked contrast with the nation's countercyclical monetary and fiscal policy. The Federal Reserve's Open Markets Committee, for instance, is supposed to "take away the punch bowl just as the party gets going" and stimulate growth during recessions by raising or lowering its target interest rate.

This principal led Congress to enact the Housing and Economic Recovery Act, American Recovery and Reinvestment Act and a variety of measures designed to stimulate growth in a weak economy. But these changes have been partially offset by pro-cyclical credit policies. This may explain why efforts to fight the recession in financial markets have not translated into the real economy.

## Geographical Effects

The same problems with risk-based pricing are evident by geography. Regions are often at different points in their housing and economic cycles, creating geographic differences in credit markets similar to the larger macroeconomic variations over time.

In a survey of urban mortgage financing before the Great Depression, the Brookings Institution noted wide disparities in interest rates created by mismatches in local supply and demand for credit. The authors recommended creation of a new federally chartered organization to finance urban real estate that would equalize mortgage rates across the country:

*"By making it possible... for borrowers everywhere to obtain money on good security at low rates, it would do all that can be done to accomplish [bringing the loan rates of local lenders all over the country to a uniform level] and would complete the work of existing inter-sectional lending agencies in connecting the local mortgage loan market*

*with the great financial reservoirs of the country. It might, in addition, serve as a central market for the purchase and sale of high-grade mortgages with great benefit to the liquidity of this type of security.”* (Gray and Terborgh 1929)

The creation of the Federal National Mortgage Association in many ways fulfilled this proposal and created a liquid, national mortgage market. But the movement towards risk-based pricing has again opened up regional disparities in credit markets.

In 2007, Fannie Mae adopted a policy that required lenders to offer financing at loan-to-value ratios five percentage points below the maximum ratios allowed for selected mortgage products if the property was located in an area identified as declining. And in addition to the general adverse market change, Fannie Mae set state-based charges applicable to Connecticut, Florida, New Jersey and New York.

## Individual Effects

What is true over time and across geographies is also true among individual borrowers. The subprime mortgage mess demonstrates the folly of trying to compensate credit risk with higher prices. Furthermore, attempts to offset higher prices with loan products that shift greater risk to the borrower, such as adjustable interest rates, balloon payments and prepayment penalties, often compound risk. This is the primary reason subprime loans proved so costly to the borrowers that received them and, ultimately, the financial system as a whole.

UNC Center for Community Capital research finds that after accounting for all other observed characteristics, borrowers receiving subprime loans are three to five times more likely to default (Ding et al. 2011). Subprime mortgages combined with adjustable interest rates or prepayment penalties have even higher risk of default.

Disparate treatment of borrowers can, therefore, create the very differences in credit history used to justify a two-tiered market. Spader (2010) models the segmentation of a

hypothetical population with identical underlying risk characteristics but disparately assigned mortgage products associated with different default risks. “Implicit in the simulated model is a feedback loop by which credit scores impact future credit options and thus also the individual’s future credit characteristics and score,” Spader states.

Brevoort and Cooper (2010) provide empirical support from the recent financial crisis. Their analysis of a panel of individual credit records finds that the credit scores of one-third of prime borrowers never fully recover six years after a foreclosure.

The persistence of low credit scores can be partially attributed to ongoing financial distress. While only about 10 percent of prime borrowers were delinquent on a credit obligation five years before foreclosure, the delinquency rate for those same borrowers was twice that level eight to 10 years after foreclosure. Brevoort and Cooper contend, “[T]he foreclosure process may alter a borrower’s financial circumstances in a manner that makes future delinquencies more likely. Mortgage delinquency and foreclosure lower borrower credit scores, thereby reducing access to credit or increasing the costs of access.”

## Conclusion

The use of risk-based pricing mechanisms exacerbate volatility in the housing market by increasing the price of credit in housing downturns, depressed markets and lower credit quality borrowers, which reduces demand for housing.

More uniform pricing across the housing cycle, different housing markets and borrowers can improve stability and maintain affordability.

Government-supported housing finance agencies can pool risk and use average-risk pricing, instead of risk-based pricing, to improve the health of the housing market. *(See the center’s policy brief, Serving Mortgage Market Segments Effectively, for more on this topic.)*