



Imperfect information and the housing finance crisis: A descriptive overview

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ABSTRACT

We now know that the subprime market presented consumers with sub-optimal choices that they took, and that it contained many market imperfections. The interesting question, then, is what were the sources of imperfections. In the spirit of providing an introduction for this special issue of the Journal of Housing Economics, this paper discusses possible sources of market failure. Market imperfections in the Mortgage Finance System are classic: asymmetric information and agency problems. But we argue that the asymmetries and agency problems were not one-sided, but rather involved a multiple set of problems that need to be addressed.

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1. Introduction

Economists have traditionally found choice to be unambiguously good. The idea is simple: as the choice set gets larger, consumers cannot be worse off, because at worst extra choices become irrelevant. Better yet if the choices are produced without benefit of government subsidies. Because of this, economists tend to look at such innovations as subprime mortgages as welfare improving. Many commentators have expressed this view, including former Federal Reserve Chair Alan Greenspan, who noted in testimony:

“where once marginal applicants would have simply been denied credit, lenders are now able to quite efficiently judge the risk posed by individuals and price that risk appropriately...

...Improved access to credit for consumers, and especially these more-recent developments, has had significant benefits. Unquestionably, innovation and deregulation

have vastly expanded credit availability to virtually all income classes. Access to credit has enabled families to purchase homes, deal with emergencies, and obtain goods and services. Home ownership is at a record high, and the number of home mortgage loans to low- and moderate-income and minority families has risen rapidly over the past five years. Credit cards and installment loans are also available to the vast majority of households².”

More recently, however, behavioral economics has been exploring the fact that agents do have limited capacity to process information, and can therefore wind up worse off when confronted with too many choices.³ Market failure, moreover, is not controversial within economics for existence, but rather for the appropriate policy response to it. We now know that the subprime market presented consum-

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² See Remarks by Chairman Alan Greenspan at the Federal Reserve System's Fourth Annual Community Affairs Research Conference, Washington, D.C., April 8, 2005. The ellipsis is used for brevity: the remarks within the ellipsis emphasize that consumer worries about the use of technology for underwriting are largely misplaced. Available at <http://www.federalreserve.gov/boarddocs/speeches/2005/20050408/default.htm>.

³ See, e.g., Gabaix and Laibson (2004).

ers with suboptimal choices that they took, and that it contained many market imperfections. The interesting question, then, is what were the sources of imperfections. In the spirit of providing an introduction for this special issue of the Journal of Housing Economics. Market imperfections in the Mortgage Finance System are classic: asymmetric information and agency problems. But we argue that the asymmetries and agency problems were not one-sided, but rather involved a multiple set of problems that need to be addressed.

The asymmetric information problems flow between borrowers and brokers, aggregators and rating agencies, and investors and issuers. Along with these classic market failure issues, increasing competitiveness in the mortgage market may have aggravated these problems. All this said, it remains possible that the subprime market increased homeownership on net in the United States, at least for the consensus default rates expected. But it is not necessarily the case that the expansion of homeownership implies that the subprime market was welfare improving.

This paper has two parts. First, we look at the various agents involved in the mortgage transaction—including borrowers, brokers, originators, and investors—and their incentives. These incentives may help reveal how the subprime crisis became so large, and inform the appropriate policy responses going forward.

2. Agents and their incentives

2.1. Borrowers—Heterogeneous

Within the realm of the traditional conventional-conforming market, borrowers are relatively homogenous in terms of down-payments and credit scores as measured by FICO. Any variations tend to result in modest differences in default and prepayment probabilities that are reasonably well understood by the market. This is why traditional conforming mortgages may be placed into pools that sell as commodities in a very liquid securities market. In contrast, jumbo loans are tranching for credit. The Government Sponsored Enterprises' (i.e., Fannie Mae and Freddie Mac) ability to provide a corporate guarantee replaces this credit tranching to provide liquidity for the conforming market. The market performs fairly close to a market with com-

plete information. The reason for this is that conforming, prime mortgages are highly standardized: borrowers fill out a standardized loan application, appraisers use a standardized appraisal form, and borrowers provided standardized documentation for income and assets. Because Fannie Mae and Freddie Mac hold or guarantee millions of loans, they effectively have a large data set with which to calibrate models of mortgage default.

The GSEs use econometric models to estimate a probability functions; a general form of this function is $P(d|X, \Theta)$, where X is a set of explanatory variables and Θ is a set of parameters that maps the X s to delinquency and default probabilities. If the model is well specified, and the X s have large explanatory power, it is difficult for borrowers to have an information advantage over lenders: the distribution of unobserved characteristics of borrowers will wither be small or irrelevant. One of the things that allowed the GSEs to specify their models well is that they rationed loans: only borrowers whose measured X s were above a certain standard were given loans, which also created homogeneity among the borrower pool. From the perspective of Holmstrom's (1979) classic model of informational asymmetry, even uninformed agents could borrow in the prime market and investors could invest in the prime market with confidence: there was a sufficient flow of information to produce something close to a full information equilibrium.

By contrast, borrowers in the subprime market are highly heterogeneous and the differences are not fully transparent. The subprime market originally served as a market for those who had equity in their house, but because of unemployment, hardship, or even over-use of credit found themselves shut out of the traditional mortgage market. For example, Weicher (1997) concludes, "These data [on the characteristics of subprime borrowers] suggest that subprime home equity borrowers are basically the same sort of people as other homeowners and are able to make informed judgments about what is in their own best interest." Because of the higher default risk, heterogeneity in this group of borrowers is likely higher.

Fig. 1 shows that if the one measured characteristics that is available of all borrowers, subprime borrowers have a greater variation in FICO scores, in part, of course, be-

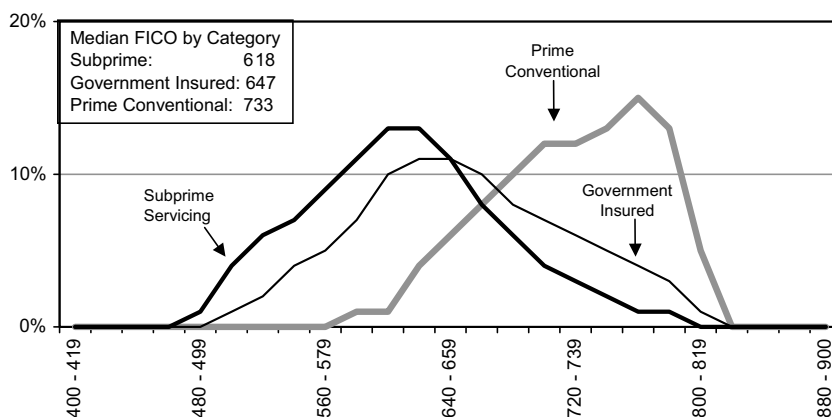


Fig. 1. Distribution of borrower FICO scores in outstanding loans as of December 2006.

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