



Economic Policy Papers

EXECUTIVE SUMMARY

To design mortgage modification policies that successfully stem default and allow borrowers to keep their homes, policymakers need to understand why borrowers default. Is it because they're truly unable to pay, or are they able to pay but have negative equity?

New research finds that both motives were important during the Great Recession, but that ability to pay plays the greater role, accounting for over 60 percent of defaults. Moreover, the analysis—which matches borrowers' income, employment, and assets with their mortgage characteristics and payment status—shows that cash-strapped borrowers are more than seven times as likely to default as borrowers with strong ability to pay.

These findings indicate that when borrowers suffer an income reduction, mortgage modification policies that reduce monthly payments to an affordable range are likely to be effective in preventing future defaults.

Who Defaults on Their Mortgage, and Why?

Policy Implications for Reducing Mortgage Default

Over 60 percent of Great Recession mortgage defaults reflected owners' inability to pay; policies that lower monthly payments would likely reduce future defaults

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Introduction

The dramatic increase in residential mortgage default that occurred between 2006 and 2011 was one of the most important challenges confronting policymakers and economists during the financial crisis and Great Recession. The default rate on all mortgages rose from about 2 percent in 2006 to over 11 percent by 2011, and the default rate on subprime mortgages rose from about 12 percent in 2006 to nearly 30 percent by 2011 (Federal Reserve Bank of Richmond 2012).

Policymakers and lenders launched a variety of programs and loan modifications designed to help homeowners keep their homes. Some programs reduced interest rates or made other modifications to make monthly payments more affordable. Other programs provided principal reductions to reduce the borrowers' debt obligations and thus increase the incentive for borrowers with negative equity to pay and remain in their homes.

Policymakers and lenders hoped that these modification policies would limit foreclosures and thereby prevent further downward spiral in home prices. While some modifications did prevent defaults, allowing a number of borrowers to stay

in their homes, economists have argued more broadly that policymakers struggled to find successful modification formulas that would also limit unnecessary subsidization of those borrowers with full ability to pay (Foote et al. 2010).

Negative equity or unable to pay?

There is broad agreement that designing sensible modification policies requires knowing why homeowners default and the circumstances in which they will. Some economists, lenders, and policymakers believe that “strategic default,” also known as “ruthless default,” was prevalent during the Great Recession (Bhutta, Dokko, and Shan 2017). This refers to a situation in which borrowers who clearly have the ability to pay their mortgage nevertheless choose to default because their debt exceeds the value of the home (negative equity or “underwater” mortgages).

Alternatively, borrowers may default because they’re financially unable to pay their mortgage, and some economists have argued that, indeed, much of the default that occurred in the Great Recession reflected this inability to pay, as unemployment rose and household incomes declined.

To prevent a new wave of defaults and foreclosures in the event of another recession or home price drop, policy design thus depends critically on the relative frequency of these two types of event. There is anecdotal evidence, and limited survey evidence, suggesting that major life events that affect borrowers’ ability to pay (job loss, illness, or divorce) may play an important role in default decisions, but there is no systematic evidence on their importance.

Existing studies of mortgage default have not had access to borrower-level data on employment, income, or household balance sheet variables that are required for measuring borrowers’ ability to pay their mortgage. Instead, researchers have used aggregate variables as proxies for individual borrower attributes that affect ability to pay. This includes using a region’s unemployment rate as a proxy for a homeowner’s employment status or using the region’s divorce rate as a proxy for a negative shock to a homeowner’s income (Deng, Quigley, and Order 2000 and Bhutta, Dokko, and Shan 2017). This research has produced relatively weak evidence supporting ability to pay as a significant determinant of default, but this may simply reflect the fact that the measures of ability to pay used in these studies have considerable measurement error.

Better data, clearer evidence

In “Can’t Pay or Won’t Pay? Unemployment, Negative Equity, and Strategic Default,” Kris Gerardi, Kyle Herkenhoff, Paul Willen, and I (2015) conduct the first study of mortgage default that matches detailed economic data (employment and income, consumption, and borrower assets and debt obligations) for individuals with their mortgage characteristics and their mortgage payment status.¹

This information allows us to first analyze the relative frequency of strategic default compared with default reflecting inability to pay. The analysis calculates each household's ability to pay by measuring the household's after-tax income and then evaluating whether the household has enough resources to cover the mortgage payment while maintaining a reasonable consumption level. We consider two definitions of this consumption level. One is a low, subsistence consumption level defined by the Veterans Administration to be about \$885 per month (in 2015) for a family of four. The other consumption level we consider is the homeowner's previous year's consumption level.

We find that about 38 percent of defaulters are strategic defaulters—low home equity (a loan-to-value ratio greater than 90 percent) and ability to maintain their previous year's consumption level if they choose to remain current on their mortgage.

The remaining 62 percent of defaults reflect inability to pay. About 30 percent of defaulters have so few resources that they would not be able to consume at subsistence level if they paid their mortgage, and another 32 percent would not be able to maintain their previous year's consumption level if they had paid their mortgage.

While 38 percent of defaulters appear to do so for strategic reasons, very few—about 4 percent—of the potential strategic defaulters actually do default. We also find that many high-risk borrowers (very low ability to pay and substantial negative equity) choose to pay their mortgage.² This provides a simple explanation for why lenders rarely accommodate borrowers who request a pre-emptive modification, as most high-risk borrowers pay their mortgage with the original terms.

We also evaluate how changes in ability to pay and changes in equity affect the probability of mortgage default. To isolate the relative contributions of these two factors, the analysis controls for other economic and demographic factors.

These results highlight the importance of ability to pay in determining default. We find that borrowers with very low ability to pay are more than seven times as likely to default than borrowers with ability to pay. We also estimate that the effect of unemployment suffered by the household head on the probability of defaulting is equivalent to a 56 percent loss of equity in the home—an indication of the relative importance of the two factors.

Our analysis also shows important interactive effects between ability to pay and strategic factors. For example, the probability of default rises from about 3 percent to 5 percent for a borrower with a strong ability to pay whose home's value declines by about 40 percent. For a borrower with very low ability to pay, however, this same 40 percent home price decline increases default probability from about 11 percent to 17 percent.

Implications for policy design

This study has important implications for designing mortgage modification policies to limit default and foreclosures. Specifically, it indicates that inability to pay is a major cause

of default—accounting for nearly two-thirds of defaults during the Great Recession—and suggests that policies that reduce monthly mortgage payments can substantially raise the number of homeowners who pay their mortgage.

The findings also suggest that current federal guidelines for reducing monthly payments as specified in the Dodd-Frank Act may not be sufficient to substantially reduce foreclosures. The Dodd-Frank program automatically assumes that households are willing to tolerate a drop in consumption that is the same as the income decline that they experience. Our results show that about 32 percent of households who default will not be willing to tolerate such a large reduction in consumption. Consequently, modification guidelines may need to be adjusted along these lines.

Other types of modification policies, such as reducing principal to entice borrowers with negative equity to continue to pay, are likely to be a far more expensive option to reduce default. This is because nearly all borrowers with negative equity, but with the ability to pay, choose to remain current. Consequently, offering principal reductions to those with negative equity may result in very large, unintended subsidies to this group of borrowers.

Endnotes

¹ The data are drawn from the Panel Study of Income Dynamics (PSID), a longitudinal, representative survey of about 5,000 U.S. families that provides detailed data on household socioeconomic and demographic variables. These data are paired with the PSID Housing, Mortgage Distress, and Wealth Survey, which provides detailed information on each household's mortgage. Combining these two surveys enables us to match the PSID household economic and demographic variables with their mortgages.

² Specifically, about 80 percent of borrowers with loan-to-value ratios of 150, and consumption near the VA subsistence level, remain current.

References

Bhutta, Neil, Jane Dokko, and Hui Shan. 2017. Consumer Ruthlessness and Strategic Default during the 2007 to 2009 Housing Bust. *Journal of Finance*. Forthcoming.

Deng, Yongheng, John M. Quigley, and Robert Van Order. 2000. Mortgage Terminations, Heterogeneity and the Exercise of Mortgage Options. *Econometrica* 68 (2): 275–307.

Federal Reserve Bank of Richmond. 2012. U.S. Residential Mortgage Delinquency Rates. Online at https://www.richmondfed.org/~media/richmondfedorg/banking/markets_trends_and_statistics/trends/pdf/delinquency_and_foreclosure_rates.pdf.

Foote, Christopher, Kristopher Gerardi, Lorenz Goette, and Paul Willen. 2010. Reducing Foreclosures: No Easy Answers. In *NBER Macroeconomics Annual*, Vol. 24. Daron Acemoglu, Kenneth Rogoff, and Michael Woodford, eds. University of Chicago Press, pp. 89–138.

Gerardi, Kristopher, Kyle F. Herkenhoff, Lee E. Ohanian, and Paul S. Willen. 2015. Can't Pay or Won't Pay? Unemployment, Negative Equity, and Strategic Default. Working Paper 21630, National Bureau of Economic Research.

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