NATIONAL BUREAU OF ECONOMIC RESEARCH, INC.

Household Finance: Research Findings and Implications for Policy

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November 21, 2014

National Press Club
529 14th Street, NW
Washington, DC

Mortgage Rates, Household Balance Sheets, and Real Economy

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Executive Summary

There has been a long-standing debate among economists regarding the effects of monetary policy on the real economy (e.g., Bernanke and Gertler 1995). During the Great Recession, the Federal Reserve reduced short-term interest rates and made large purchases of mortgage-backed securities in an attempt to stimulate household spending and support the prices of assets such as houses. Remarkably, despite their economic importance, empirical evidence on the consequences of these extraordinary policy interventions is fairly limited. In this paper we aim to inform this debate by providing novel evidence on the impact of lower interest rates on mortgage borrowers and broader economic outcomes during the recent economic downturn.

The main challenge confronting researchers studying the effects of lower interest rates on household choices is a credible research design. Factors that impact interest rates also typically affect households and economic outcomes through a variety of other mechanisms. We address this challenge by using a difference-in-differences framework

to study the impact of mortgage rates on households' decisions. Our setting exploits variation in the timing of rate resets of adjustable rate mortgages, originated between 2003 and 2007, with different initial fixed-rate periods. The panel structure of our data allows us to use within-borrower variation before and after the rate resets. We focus on the recent period (late 2007 through 2012) in which the major interest rate indices, such as the LIBOR and one-year Treasury rates, experienced an unprecedented and rapid decline and subsequently remained low for an extended period of time. Due to the rate indexation of ARM contracts, borrowers whose rates reset during this period experienced sizable reductions in monthly mortgage payments. We use the fact that 5/1 ARMs contracts have an initial five-year fixed rate period, while 7/1 ARMs have a seven-year fixed rate period (and reset annually thereafter). In months 61 and 73 of the loan's life, 5/1 ARMs reset to a new interest rate based on prevailing indices, while 7/1 ARMs remain in their fixed rate period. Consequently, monthly scheduled mortgage payments of 5/1 ARM borrowers – the treatment group -- fell on average by about $150 per month ($125 per month during the first year after the reset and $163 per month during the second year, about a 20% relative reduction in monthly mortgage payments). These changes are measured relative to 7/1 ARM borrowers – the control group -- whose mortgage payments are unchanged prior to reaching their first rate reset.

We rely on a comprehensive proprietary dataset belonging to a large financial institution to conduct our empirical analysis. This loan-level panel data on millions of U.S. mortgage borrowers in the agency market has detailed information on loan, property, and borrower characteristics and monthly payment history on mortgage debt. All records in this data have been matched to consumer credit bureau records using borrowers' Social Security numbers.

Unsurprisingly, and consistent with prior work, we find that households subject to lower mortgage rates have lower mortgage default rates. Unlike previous studies, however, we examine the full credit portfolio, and find that households use the additional funds generated by lower mortgage payments to improve their position in the unsecured credit market, with significant declines in outstanding credit card debt, delinquent card

balances, and credit card utilization rates after their mortgage rate resets. We estimate that outstanding credit card debt falls by $616 on average during the first two years of lower rates, and that roughly 18% of the liquidity provided by lower mortgage payments goes toward “saving” in the form of paying down unsecured debts.

We also observe a relative *increase* in the auto debt balances of 5/1 ARM borrowers after the rate reset. Two years after the reset, auto balances of these borrowers increase on average by about $324, which constitutes about 10% of the extra liquidity generated by rate reductions. This additional auto debt is driven by a sizable increase in new auto loan financing, reaching more than 10% in relative terms two years after the mortgage payment reduction.

We identify important heterogeneity in the ability of monetary policy to stimulate households' consumption. Low-wealth borrowers are especially responsive to reductions in mortgage payments, while credit-constrained households use more than 70% of their increased liquidity to deleverage, dampening their consumption response. These findings also qualitatively hold in a sample of less-prevalent borrowers with private non-agency loans.

In the second part of our analysis, we explore the impact of monetary policy on broader economic activity such as housing prices, aggregate durable consumption, and employment. In order to investigate such a connection, we exploit the significant regional heterogeneity in the share of mortgages that are of adjustable-rate type. Consistent with our earlier evidence, we show that regions with a higher concentration of adjustable-rate mortgage loans experienced a significant decline in prevailing mortgage interest rates following a drop in major interest rate indices. Importantly, we find that regions more exposed to mortgage rate declines saw a relatively faster recovery in house prices, increased durable (auto) consumption, and increased employment growth, with responses concentrated in the non-tradable sector.

Our findings have implications for the pass-through of monetary policy to the real economy through mortgage contracts and household balance sheets. In particular, they suggest that by lowering the cost of mortgage credit – the largest debt in the median household's portfolio – recent low interest rate polices may have significantly assisted in the recent recovery. Moreover, household deleveraging by borrowers with sizable credit card debts clearly restricts the ability of monetary policy to stimulate households' consumption. Thus, future polices aimed at stimulating household spending may also consider lowering the cost of credit card debt. Finally, ARMs facilitate a quick transmission of low interest rate polices to households. Their automatic resets circumvent many frictions that prevent modification or refinancing of residential mortgages. Thus, contrary to some popular views, these contracts can offer considerable advantages relative to fixed-rate mortgages (FRMs).