Leibniz Institute for Financial Research SAFE
Sustainable Architecture for Finance in Europe

# SAFE Finance Blog

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## How does the design of debt repayment schedules affect household borrowing?

Many borrowers focus on the initial monthly mortgage payment rather than minimize the life-time costs of the loan, even when they could afford to do otherwise. As a result, new financial products with delayed debt repayment can substantially increase households' willingness to borrow

One of the most important features of the mortgage contract is the repayment schedule. Traditionally, most mortgages force the borrower to gradually repay the mortgage and build wealth in the form of home equity. During recent decades, however, financial innovation has created a wide variety of alternative mortgage products that allow households to delay mortgage repayment (Cocco, 2013). Perhaps the most famous example is the *interest-only mortgage*, which became popular in the mid-2000s, jumping to roughly 25 percent of mortgage originations in the United States prior to the 2008 financial crisis (Amromin et al., 2018). Such mortgage contracts remain popular in many European countries and, in recent years, have seen increased interest as governments try to address the recent increase in the cost-of-living. Recent research shows that interest-only mortgages reduce monthly payments but also result in less wealth accumulation due to delayed mortgage repayment (Bernstein and Koudijs, 2023). Further, many commentators have suggested a close link between interest-only mortgages and rising mortgage debt (see, for instance, the New York Times article, How Countrywide Covered the Cracks).

### Impact of interest-only mortgages on household borrowing

Despite the important role of the repayment schedule, we have little evidence of how this key feature of the mortgage contract affects household borrowing. There are at least two contrasting views. On the one hand, interest-only mortgages relax credit constraints, helping constrained households to borrow when they expect income or house prices to grow (Piskorski and Tchistyi, 2010; Cocco, 2013). On the other hand, many commentators have suggested that consumers may suffer from behavioral biases that lead them to increase borrowing due to low initial payments. According to this theory, constrained and unconstrained consumers may both prioritize a low monthly payment, which is highly salient, rather than minimize the net present value of future interest payments (Argyle et al., 2020). While we already have clear evidence on the first mechanism, we know little about the latter.

In a recent paper, we investigate the role of behavioral biases that may affect mortgage choice above and beyond the standard economic factors, such as credit constraints. More specifically, we exploit a policy reform in Sweden that eliminated interest-only mortgages for borrowers with loan-to-value (LTV) ratios above 50 percent. In the data, we find that many homebuyers make larger down payments following the reform, while existing borrowers extract less equity.

Figure 1 shows the distribution of loan-to-value ratios at the time of mortgage origination during the years before and after the policy reform in 2016. The three top panels show the distribution prior to the reform, while the three bottom panels show the distribution after policy implementation. Following the reform, many households cut their borrowing to obtain an LTV ratio of exactly 50 percent, allowing them to qualify for an interest-only mortgage. Using a difference-in-bunching estimator, we find that borrowers reduce their LTV ratios by 5 percent in response to a one percentage point higher average amortization rate, indicating that mandatory mortgage repayment lead to lower borrowing.

Percent of households

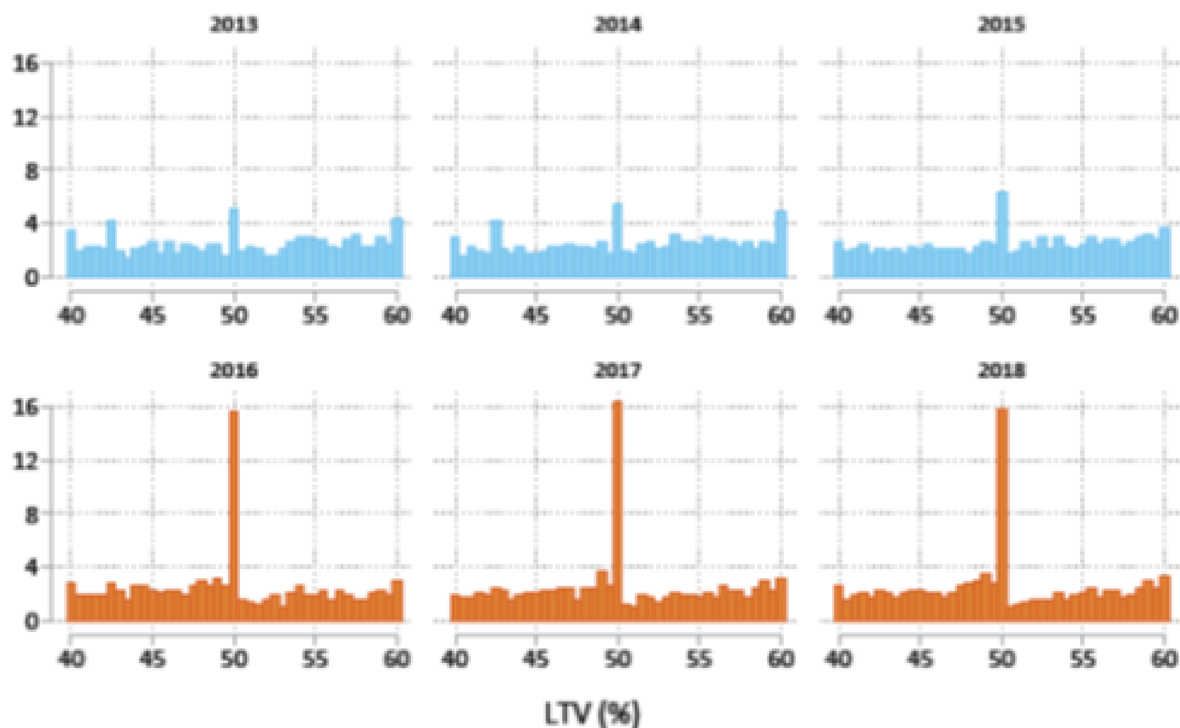


Figure 1: LTV distributions around the amortization requirement threshold at 50 percent. The figure plots the percent of borrowers per loan-to-value bin for each year. Pre-requirement years are marked with blue in the top row, and post-requirement years featuring a minimum 1% amortization rate for LTV above 50 are marked with orange in the bottom row.

Interestingly, the reduction in borrowing is driven by relatively wealthy households with substantial additional borrowing capacity. After examining various potential explanations, we ultimately conclude that credit constraints are not the primary driver of our results. (Indeed, most borrowers can take out substantially larger mortgages, up to a maximum LTV ratio of 85 percent.). We also find no evidence for differences in interest rates, mortgage approval, collateral assessments, and refinancing costs due to the policy. Thus, our empirical results cannot be explained by credit constraints or other supply-side factors.

### Households see amortization as a cost, not as a form of savings

Why do so many borrowers choose to make larger downpayments to avoid monthly amortization payments? To better understand household preferences for debt repayment, we develop a theoretical framework to clarify the various mechanisms that may lead wealthy, unconstrained households to avoid amortization payments. We're able to differentiate between alternative theories based on the fact that most of the excess mass at the 50 percent threshold is generated without missing mass above the threshold. Based on this analysis, we ultimately find that the mechanism most consistent with our results is that borrowers view amortization payments as a cost.

Our results complement a recent literature that documents "monthly payment targeting" in consumer lending. Most recently, Argyle et al. (2020) study the US auto loan market and find that many borrowers try to minimize the monthly payment rather than minimize the lifetime cost of the loan. As a result, many households choose contracts with lower initial payments and higher lifetime costs, even when they could afford to do otherwise, a concept called "Net Present Value (NPV) neglect" following Shu (2013). To the best of our knowledge, we are the first to provide evidence of NPV neglect in mortgage choice.

### Conclusions

Our findings have important implications for understanding household preferences for debt repayment, which has appeared as a key policy variable in recent discussions around macroprudential policies. For example, while the United States has taken a hard stance against interest-only mortgages since the 2008 mortgage crisis, the United Kingdom has gone in the opposite direction, recently encouraging banks to offer more interest-only mortgages to counteract rising borrowing costs. In addition, several countries allowed borrowers to pause amortization payments during the Corona pandemic.

Our results show that many borrowers, even those not financially constrained, do not wish to amortize their debt and are willing to borrow less to get an interest-only mortgage. This finding helps to explain the popularity of interest-only mortgages and similar products in countries that allow them. We show that this type of preference amplifies the impact of mortgage market innovation on household borrowing in the aggregate and increases lifetime interest costs at the individual level. A better understanding of these preferences is crucial for both consumer protection agencies concerned about the welfare effects of new financial products, as well as macroprudential regulators concerned about aggregate debt levels.

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