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## **The Mortgage Illusion**

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Homebuyers compare the monthly rental payment and the monthly installment of a mortgage when deciding to buy a house. They are more likely to buy a house if the mortgage monthly installment is lower than the monthly rental payment. Our results are robust to ownership bias and homebuyers' budget constraints.

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# The Mortgage Illusion

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## EXTENDED ABSTRACT

Buying a house is perhaps the most important financial decision that households face. For most American homeowners, housing is the most valuable asset in their balance sheet. Many factors influence the housing decision, making it a complex and difficult task to many potential homebuyers. In addition, there are limited opportunities to learn from taking a mortgage. As a result, households are often uncertain about their housing decisions. When people are uncertain about a choice, they draw upon cues to help them arrive at a decision (Slovic 1995; Payne et al. 1999). These cues that people use are sometimes difficult to justify normatively. Previous research has shown that indeed housing decisions might be based in market inefficiencies (Brunnermeier and Julliard 2008; Case and Shiller 1988; Genesove and Mayer 2001; Simonsohn and Loewenstein 2006).

In this paper, we show that potential homebuyers compare the monthly rental payment (R) and the monthly installment of a mortgage at a fixed rate (M) on two equivalent houses when deciding to buy a house. Consumers are more likely to buy a house if the mortgage monthly installment is lower than the monthly rental payment.

In the first study, we manipulate the size of the difference between the monthly installment and the monthly rental payment by changing the maturity of the mortgage. We observe that people are more likely to buy the house in the longer maturity condition such that the monthly installment is lower than the monthly rental payment.

In the second study, participants answer eight scenarios, four in which the monthly mortgage installment is lower than the monthly rental payment and another four in which the opposite holds. The order of the questions is randomly assigned. Results are consistent with the mortgage illusion effect and they cannot be explained by monthly budget constraints. Participants become more likely to buy only when the mortgage installment becomes lower than the rental payment and not in the other conditions. This indicates that the effect is not caused by a desire to pay less but by a desire to pay less than rent.

We run another four experiments that aim to check the robustness of our results. In experiment 3, we narrow the gap between the monthly rental payment and the monthly mortgage installment to 5 dollars and yet find that people are more likely to buy when the monthly mortgage installment is lower than the monthly rental payment. Experiment 4 adds a condition in which the monthly rental payment is the same as the monthly mortgage installment in order to elicit the baseline preference of participants. We observe that people are indeed more likely to switch from buying to renting around the threshold, when the monthly mortgage installment M is equal to the monthly rental payment R. Experiment 5 measures several potential individual biases that could be related to the mortgage illusion. Only the immediacy bias and the long-term discount factor significantly correlate with the mortgage illusion, i.e., more impatient individuals are more likely to incur the mortgage illusion. We also observe that the mortgage illusion is lower among stock investors, full-time students, and married individuals. Experiment 6 shows that a financial education intervention is not effective at reducing the mortgage illusion effect.

We also observe the mortgage illusion in the field using the data from the Panel Study of Income Dynamics (PSID). The PSID provides on the dollar amount panelists pay monthly for rent or for

their mortgage between 1993 and 2013. We identified 2,943 panelists that bought a house in the period of the panel (i.e., between 1993 and 2013) and used to rent before the house purchase. M-R, the difference between the first monthly mortgage installment and the last monthly rental payment. Panelists' M-R concentrates around zero, which is consistent with the mortgage illusion effect. These results suggest that panelists seem to use a threshold for the monthly mortgage installment that is around the monthly rental payment they used to pay. Of course, there are many confounding factors in the PSID analysis, which preclude us to identify the mortgage illusion effect. One of the contributions of our paper is to identify it by running experiments in a controlled environment.

Decisions depend on a comparison of potential outcomes with a reference point, which are constructed narrowly (Kahneman and Tversky 1979). Reference points can be based on past outcomes or some aspiration level. For instance, people betting on horses would really like to break even for a given day and end up making longer shots at the end of the day (McGlothlin 1956). Similarly, cab drivers are highly motivated to achieve a targeted daily income and end up going home too early in a particularly profitable day (Camerer, Babcock, Loewenstein, and Thaler 1997). Along the same vein, home buyers use the monthly rental payment as a reference point to decide whether to buy a house – and fail to consider that these expenses are part of a longer stream of payments.

The mortgage illusion is also consistent with anchoring, i.e., the fact that people's estimates can be affected by a highly accessible number. For instance, when uncertain about the price of a product, people anchor to a certain reference number and adjust very little from that initial number. The adjustment is often insufficient because people stop when they are no longer certain that they should adjust further. Movers arriving from a more expensive city end up renting pricier apartments than those arriving from cheaper cities (Simonsohn and Loewenstein 2006), which is consistent with anchoring to their original city's house prices.

These biases arise because of cognitive limitations. When individuals struggle to find an answer to a decision problem and substitute the solution to a related simple problem (Kahneman and Frederick 2002). Rather than employing a discounted cash flow analysis, homebuyers resort to the simpler mortgage illusion when deciding whether to buy a house. Households who follow the mortgage illusion might end up defaulting on mortgages, worsening their balance sheets and their employment prospects.

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