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Consumer Behaviors in Financial Markets: Financial Crisis and Policy Implications

By [Sumit Agarwal](#)

Research Director, CAMRI and Dean's Chair & Professor, Departments of Economics, Finance and Real Estate, NUS

In light of the 2008 meltdown in the subprime mortgage market and the subsequent financial crisis, there is a growing concern that consumers are ill-prepared to make sound decisions in an increasingly complex financial environment. Numerous examples from around the globe come to mind – social security privatization, under-participation in retirement plans, lack of sufficient portfolio diversification, choosing the right mortgage, subprime mortgages and optimal refinancing timing. Let me focus on one particular example. Banks routinely advertise that they have hundreds of different types of credit cards with varying interest rates, fee rates, and reward options – food & beverage, travel, auto, gas, and hotel rewards. To choose the right card that best suits a consumer's needs seems like a daunting task.

Hence, some people argue that in this complex environment consumers make incorrect financial decisions that ultimately lead them to incur high interest and fee payments. Others, however, argue that financial intermediaries are extracting excess rents from their customers. Most agree that consumers need education in financial planning and financial literacy. To provide further insights on these issues, this article will summarize some of my research on consumer's behavior in financial markets, and provide some policy recommendations for the future, especially in light of the financial crisis.

Specifically, I investigate questions such as: (i) Do consumers make mistakes in choosing credit contracts? (ii) If yes, do they learn from their mistakes? (iii) Do financial mistakes vary by age? Is financial decision making related to cognitive abilities? Does financial counseling and education help them make better financial decisions?

Looking at consumer's choice between two credit contracts, one with an annual fee but a lower interest rate and the other with no annual fee but a higher interest rate, my paper with Chomsisengphet, Liu and Souleles (2006) find that 40 percent of consumers made a mistake in choosing the optimal credit contract. For a small minority of the consumers, these mistakes cost them hundreds of dollars in excess interest payments. The good news is that over time, consumers learn from their mistakes. And the larger the costs, the more likely consumers will correct the mistakes.

Next, studying late payments, credit limit payments, and cash advance fees of credit card borrowers, Driscoll, Gabaix, Laibson and I in a 2008 paper show that over a four-year period, credit card fees payments drop by 75 percent. However, we also find that consumers' hard-earned knowledge does not persist and, over time, consumers tend to forget about the fee payments. These results suggest that experience produces learning, but only when the feedback is recent.

Trying to understand as to who makes these mistakes, Driscoll, Gabaix, Liabson and I find in a working paper written in 2009 that younger and older borrowers are more prone to make financial mistakes. We find that the age at which consumers are least likely to make financial mistakes (which we describe as the "Age of Reason") is around their 53rd birthday. The findings were consistent across an array of credit instruments - three kinds of credit card fee payments, credit card interest payments, and interest rates on credit cards, mortgages, auto loans, home equity loans and credit lines, and small business. We hypothesize that this may be a consequence of the trade-off between "experiential capital" and "analytical capital" (cognitive ability). The young have high analytical capital, but little experience. The old have substantial experience, but declining analytical ability. To further study this issue in detail, Mazumder and I in 2010 directly link the cognitive ability measures as represented in the AFQT scores and consumers' ability to make financial decisions. We find that consumers who have higher math and verbal language scores are less likely to make balance transfer and home prices estimation mistakes.

If financial illiteracy drives suboptimal (or welfare-reducing) financial behavior, then improving literacy could increase consumer welfare.¹ A growing literature investigates whether financial

¹Surveys find that a shocking proportion of consumers, both in the U.S. and in other countries, fail basic financial literacy tests. Many adults do not understand the difference between compound and simple interest; the characteristics of financial assets such as stocks and bonds; the benefits of portfolio diversification; or the important features of their own mortgages, Social Security and pension plans.

education programs are effective in improving financial literacy and financial behavior. Though the evidence is mixed, it appears that some financial education programs do improve the behavior and outcomes of their graduates. The effects appear to be strongest for the most financially vulnerable, especially those with low incomes and levels of education. However, the relationships among financial education, financial literacy, and financial behavior and outcomes are not straightforward. Some financial education programs improve financial literacy, but not financial behavior; others lead to improved behavior and outcomes without improving financial literacy; and still others do not appear to be effective at all.

Amromin, Ben-David, Chomsisengphet, Evanoff and I find little evidence that a state-mandated pre-mortgage counseling program for high-risk borrowers in select Chicago zip codes led to better mortgage choices (2009). However, our study shows how a financial education program can affect outcomes without necessarily improving literacy. We find a significant drop in default rates of mortgages originated in the treated zip codes during the period of mandatory counseling. However, this drop appears to occur because the riskiest lenders and borrowers left the market, not because the remaining borrowers chose better mortgage products. The threat to lenders of increased oversight and potential fraud detection, as well as the perceived cost to borrowers of attending counseling sessions, dramatically reduced both the supply and demand for credit. Borrowers who were able to choose less risky products to avoid counseling did so, and lenders rejected far more loan applications and originated fewer low-documentation loans during the treatment period (activity resumed to normal levels when the program ended). While some borrowers followed the advice provided by counselors, many modified their loans in ways that were contrary to counselor recommendations, and others took out loans they had been told they could not afford. In aggregate, the counseling program did not appear to materially improve loan outcomes for individuals who stayed in the market.

Mortgage and credit counseling programs often include services apart from financial education, such as client advocacy and proactive intervention, which make the effects of financial education difficult to disentangle. One such program is the Indianapolis Neighborhood Housing Partnership (INHP), a voluntary mortgage counseling program evaluated by me in research with Amromin, Ben-David, Chomsisengphet and Evanoff (2010a). Our study finds that, controlling for loan characteristics, borrowers who participated in INHP, some of whom had mortgages originated and serviced by INHP itself, had significantly lower default rates 12 and 18 months after origination. This result is robust to several econometric specifications and to a matched propensity score model. However, while it is clear that INHP's services improved outcomes, it is not clear how much of the effect was due to better loan terms, how much was due to INHP's

proactive interventions when loans became delinquent, and how much was due to improved financial management on the part of borrowers.

Finally, Amromin, Ben-David, Chomsisengphet, Evanoff and I look at financial literacy in India (2010b). We find that a vast majority of the respondents appear to be financially literate – they answer the numeracy, inflation, and diversification questions correctly. The Indian financial literacy level is the same as in Netherlands, but 20% higher compared to the USA. Indians use about 38% of monthly income to cover monthly expenses –they save or invest 62% of their salary on average.

We also observe that there are significant variations across demographic groups. Looking at risk tolerance by gender we see that men tend to be more oriented towards risk than women, with 30% of males being categorized as aggressive growth and only 8.7% for females. This is mirrored on the conservative returns side with 17% of males being conservative compared to 38% for females. The women in the sample also appear to have more education, with 68% of women having more than a graduate education, and only 50% of men having a similar degree. Contrasting salary with risk and education levels, we see that higher income individuals tend to be more educated and seek aggressive growth portfolios. Looking at family size, there does not appear to be a strong correlation between education and number of dependents. However, looking at risk profiles we see that lower risk planners tend to have smaller families. The average number of dependents for low risk planners is 1.45, as opposed to 1.27 for aggressive planners. Combining information about goals, investments, liabilities and insurance policies we can discern some patterns in the data. As the number of goals increases, we find an increase in the number of financial instruments, i.e., an increase in the number of investments, liabilities and insurance policies, with investments showing the largest increase as the number of goals increase. Looking at the distribution products as a function of the number of investments also looks interesting. We find that aggressive growth individuals tend to have more insurance policies. This increase appears to be correlated with the increase in the number of investments, suggesting that the insurance policies may not be as conservative as they initially look.

This line of research has enormous implications for consumers' selection of mortgage products (e.g., floating-rate versus fixed-rate mortgages), mortgage refinancing, no-need-to-decide-anything pension and retiree health care plans, and retirement-savings plans that require financial sophistication.

In this research digest, I have summarized my research that shows that some consumers make financial mistakes but they tend to learn from their mistakes. However, some consumers, both old and the young, are more prone to making financial mistakes, and these mistakes are correlated with cognitive abilities. I also look at the role of financial counseling and education and find mixed evidence. I think that we need continuing research in this extremely important topic, and more specifically, look at Singaporean, Indian, Chinese and other Asian consumers, and compare and contrast their behavior to behavior around the world.

For more information, please contact camri@nus.edu.sg

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