

The Impact of Financial Abstraction on Consumption Behavior

Jeremy Lee

Abstract:

Financial abstraction is the phenomenon where currency becomes less concrete, more abstract. Examples of this are the shift from cash, which is very concrete, to debit, credit, electronic transfers (like Venmo and PayPal), and even to cryptocurrency, with the degree of abstractness increasing with each example. The current hypothesis regarding the effect of financial abstraction on consumption behavior is that as a currency becomes more abstract, people tend to spend more of it. The focus of this research is to identify the actual extent in which consumption behavior is truly impacted by financial abstraction to clarify and confirm the hypothesized effects, ultimately generating data that can be used by the general consumer to understand where their money is going.

Introduction

In the modern world, methods of payment have grown increasingly diverse. Besides tangible cash and coins, today's economy has witnessed the rise of debit, credit, and other intangible forms of currency. Businesses continue to grow more technologically-savvy through the existing acceptance of payment transfer methods like PayPal, and with some other companies now even accepting Venmo. For the individual, this plethora of options for payment methods has potential implications for how money is spent. According to the 2016 Diary of Consumer Payment Choice, reported by the Federal Reserve Bank of Boston, cash, credit, and debit accounted for about 76 percent of the total number of payments, but made up less of the total value of payments (34 percent) than electronic payments (43 percent).¹ The implication here is that with the transition of currency away from tangible exchanges towards electronic and other intangible exchanges, consumption behavior changes, most likely resulting in an increase in consumption. This phenomenon has been coined as financial abstraction, in which the abstractness, or intangibility, of a currency influences the spending habits of that currency. The purpose of this research proposal is to obtain the resources necessary to investigate the extent to which financial abstraction really does influence consumption behavior.

¹ Claire Greene and Scott Schuh, "The 2016 Diary of Consumer Choice," *Consumer Payments Research Center* No. 17-7 (December 2017).

Related Work and Motivation

The original motivation for this proposal came from a TedTalk by a financial consultant named Adam Carroll. He spoke directly about abstraction in the context of his children playing Monopoly. When they used the fake Monopoly money, they were quite liberal in their spending because their cash reserves were inconsequential. Carroll set up another version of the game but used real money instead of the normal Monopoly money. Almost instantly, the spending habits of his children changed to be much more conservative and cautious, as the stakes became much higher and their currency became less abstract.² This is a very simple but effective way to describe the nature of financial abstraction.

Other foundational works in the field of behavioral economics and currency include Richard Thaler's article entitled "Mental Accounting Matters" and "The Denomination Effect" by Priya Raghurir and Joydeep Srivastava. Both of these articles investigate the various complexities of our mental interpretations of money and currency. Thaler discusses how the differences in how we mentally track our financial activities influences our future decision making.³ Raghurir and Srivastava discuss how different denominations of the same monetary value can influence our perception and treatment of the currency.⁴ The constant theme throughout these works, that is, the effects of

² Adam Carroll, "When Money Isn't Real: the \$10,000 Experiment," filmed July 2015 at TEDxLondonBusinessSchool, London, England, video, 15:40, <https://www.youtube.com/watch?v=VB39Jo8mAQ&t=823s>.

³ Richard Thaler, "Mental Accounting Matters," *Journal of Behavioral Decision Making* 12, no. 3 (September 1998): 183-206.

⁴ Priya Raghurir and Joydeep Srivastava, "The Denomination Effect," *Journal of Consumer Research* 36, no. 4 (December 2009): 701-713.

psychological interpretations of money on future choices and behaviors, both drives and enhances the motivation behind my investigation into financial abstraction.

The central piece that was missing from most of the existing research is the incorporation of abstract currencies. Much of the research described mental differences between physical currency, but rarely compared physical to nonphysical currency. One study that was done that did investigate the abstractness of currency was done by Michael Cohen and Marc Rysman entitled "Payment Choice with Consumer Panel Data". Cohen and Rysman tracked grocery store purchases to examine people's choice between cash, check and card.⁵ Using credit and debit is technically a step towards abstraction, but the bounds of abstract currency have rarely been pushed to understand the true effect of abstraction on consumption behavior.

Methods

For my investigation into the extent of financial abstraction, I would ideally carry out a study in which participants would sign up to allow me to track their purchases. Either through obtaining and keeping all of their receipts as they went about their lives for a currently undefined timeframe, or through a live payment tracking application, I would figure out a way to be able to follow all of their purchases.

To make it easier to track the difference in currency types and to control for potential variables like present levels of wealth, I could also try incorporating aspects of a controlled experiment into this mostly observational study by randomly assigning participants to control or experimental groups and then giving each participant an equal

⁵ Michael Cohen and Marc Rysman, "Payment Choice with Consumer Panel Data," *Consumer Payments Research Center* No. 13-6 (June 2013).

sum of money to spend. The control group would get their money in cash, while the experimental group would either get an electronic transfer or even a Venmo payment. Using this method, I could better examine the difference in consumption behavior between cash and electronic currency, as the participants would not need to be spending their own money, and they should feel more at ease with spending in general. After controlling for other potentially biasing variables, any difference in the consumption behaviors between the control and experimental groups could be attributed to the effects of financial abstraction.

Expected Results

Through this study, I do expect to see the experimental group pay more frequently and pay higher sums of money at a time. Physical cash is harder to part with. This is something everybody knows and can relate to. Meanwhile, swiping a credit card or transferring someone money via Venmo is convenient and feels easy. Intuitively, financial abstraction should be influencing people to spend more when they are not using cash.

From the potential results of the study, I would use Stata and other statistical analysis software to run various regressions of spending habits by on currency type. Based on the regression outputs, I would then make estimates and statements about the predicted differences and influences that currency type has on spending habits.

Conclusion

Financial abstraction is the phenomenon that as currency gets less tangible, hence, more abstract, people tend to spend more. This idea is based in the field of behavioral economics, which deals with how psychology can impact economic concepts. Following the foundational ideas of Thaler, Raghurir, and Srivastava in their work on how perception and

understanding of financial activity and currency affects future choices and attitudes, I wish to investigate the extent to which financial abstraction has an effect on consumption behavior. I would do this by carrying out an experiment in which randomly assigned control and experimental groups would be given sums of money to spend. The control group would receive their payment in cash, while the experimental group would receive theirs via electronic transfer, PayPal, or Venmo, and their purchases would be tracked and saved across several months. This info would then be used as data for statistical analysis, which could estimate the possible relationship between currency abstraction and spending habits. I expect to see a positive relationship between abstractness and spending. As currency gets increasingly abstract, spending of said currency should increase as well. This relationship would be delivered in the form of an economic research paper, describing the research methods, the data, and all subsequent conclusions drawn from the experiment.

Budget

Participant Payments: $(\$100 \text{ per month} * 3-4 \text{ months}) * \sim 30 \text{ participants} = \$9,000 - \$12,000$

Timeline

Experiment should last $\sim 3-4$ months for a decent amount of data that can account for time as well as currency abstractness.

Experiment should begin around the middle to the end of the fall semester, as initial college expenditures will have ended, allowing the participants to settle back into their normal spending habits.

Works Cited

- Baumeister, Roy F. "Yielding to Temptation: Self-Control Failure, Impulsive Purchasing, and Consumer Behavior". *Journal of Consumer Research* 28, no. 4 (March 2002): 670-676. <https://doi.org/10.1086/338209>.
- Briglevics, Tamás and Scott Schuh. "This Is What's in Your Wallet...and Here's How You Use It." *Consumer Payments Research Center* No. 14-5 (June 2014).
- Carroll, Adam. "When Money Isn't Real: the \$10,000 experiment." Filmed July 2015 at TEDxLondonBusinessSchool, London, England. Video, 15:40. <https://www.youtube.com/watch?v=VB39Jo8mAQ&t=823s>.
- Cohen, Michael and Marc Rysman. "Payment Choice with Consumer Panel Data". *Consumer Payments Research Center* No. 13-6 (June 2013).
- Greene, Claire and Scott Schuh. "The 2016 Diary of Consumer Payment Choice." *Consumer Payments Research Center* No. 17-7 (December 2017).
- Raghubir, Priya and Joydeep Srivastava. "The Denomination Effect". *Journal of Consumer Research* 36, no. 4 (December 2009): 701-713. <https://doi.org/10.1086/599222>.
- Raghubir, Priya and Joydeep Srivastava. "Debiasing Using Decomposition: The Case of Memory-Based Credit Card Expense Estimates". *Journal of Consumer Psychology* 12, no. 3 (2002): 253-264.
- Shafir, Eldar, Peter Diamond, and Amos Tversky. "Money Illusion". *The Quarterly Journal of Economics* 112, no. 2 (May 1997): 341-374. <https://doi.org/10.1162/003355397555208>.
- Thaler, Richard. "Mental Accounting Matters". *Journal of Behavioral Decision Making* 12, no. 3 (1999): 183-206.
- Wertenbroch, Klaus, Dilip Soman, and Amitava Chattopadhyay. "On the Perceived Value of Money: The Reference Dependence of Currency Numerosity Effects". *Journal of Consumer Research* 34, no. 1 (June 2007): 1-10.