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The power of light-touch financial education

A demonstration with credit card revolvers

Consumer Financial Protection Bureau

About CFPB research, tools, and resources for financial educators

An essential part of the mission of the Consumer Financial Protection Bureau (CFPB or Bureau) is to empower consumers to take more control over their financial lives. Since the Bureau opened its doors in 2011, we have worked to improve the financial literacy of consumers in the United States and to ensure access to tools, information, and opportunities for skill-building that they need to manage their finances.

The Bureau's principal financial education mandate is set forth in the Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act). The Dodd-Frank Act created the Bureau and mandated the establishment of an Office of Financial Education to "be responsible for developing and implementing initiatives intended to educate and empower consumers to make better informed financial decisions." 12 U.S.C. § 5493(d)(1).

To better help consumers make well-informed financial decisions and achieve their own lifegoals, we at the CFPB have sought to increase understanding of three broad areas: consumer financial behavior, the financial education field, and effective practices in financial education.

We conduct research in these areas to inform the CFPB's own financial education efforts and to share our insights with others who have a common interest in improving the financial well-being of consumers.

The CPFB's goal for its financial education activities is to help consumers move towards financial well-being. In the CFPB's definition of financial well-being, consumers:

- have control over day-to-day, month-to-month finances
- have the capability to absorb a financial shock
- are on track to meet financial goals, and
- have the financial freedom to make choices that allow one to enjoy life

To learn more, visit the Resources for Financial Educators webpage at consumerfinance.gov/adult-financial-education

To get regular updates on CFPB research, tools, and resources for financial educators, sign up for the CFPB Financial Education Exchange (CFPB FinEx) by emailing CFPB_FinEx@cfpb.gov.

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1. Executive summary

Consumers face many complex financial decisions throughout their lives. People make daily low-stakes decisions, such as whether to buy a cup of coffee and how to pay for it; and infrequent high-stakes choices, such as how to finance a home purchase. There is such a range of choices and tasks to be managed in today's complex financial marketplace that it can seem overwhelming.

The aim of financial education is to help consumers make informed decisions about how to manage choices in their own financial lives to achieve greater financial well-being.[1] However, up to this point, there has been a lack of rigorous research on how best to provide this financial decision-making help and support effectively. CFPB-commissioned research on financial coaching has demonstrated how to help low-income consumers improve their savings, debt, credit, and handling of financial stress, using an individualized, one-on-one financial education approach.[2]

The CFPB has consistently noted that consumers need both in-person supports for financial decision-making, which might be called "high touch," and also "high-tech" (or "low-touch")

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[1] CFPB, *Financial well-being: The goal of financial education* (January 2015), *available at* http://files.consumerfinance.gov/f/201501_cfpb_report_financial-well-being.pdf.

[2] Brett Theodos, Margaret Simms, Mark Treskon, Christina Plerhoples Stacy, Rachel Brash, Dina Emam, Rebecca Daniels, & Juan Collazos, *An Evaluation of the Impacts and Implementation Approach of Financial Coaching Programs* (Urban Institute, October 2015), *available at* urban.org/research/publication/evaluation-impacts-and-implementation-approaches-financial-coaching-programs.

approaches that can make the decision-making process easier for consumers, leveraging the cost efficiencies of technology to do so at scale. Light-touch approaches that reduce the need for consumers to absorb, retain and apply extensive knowledge – such as reminders, commitments, and preset defaults – have been used successfully by financial educators.[3] These methods lessen the cognitive demand on consumers, reducing the "hassle factor" of making good decisions.[4]

One example of this low-touch approach is rules of thumb.

Rules of thumb are also known as "heuristics."[5] They are mental shortcuts that simplify decision-making. These rules may be consciously or unconsciously held, and their simplicity can make them easy to remember and apply.

Decision-making research has explained how people use heuristics in making a variety of decisions, both large and small, in other areas.[6] For instance, rather than memorizing the FDA food pyramid, a person could simply remember to fill half of one's plate with vegetables in order to eat a healthier diet.[7]

One of the great appeals of low-touch approaches to financial education is that they can be delivered at a low average cost per participant. Low-touch approaches typically achieve low average costs by reaching significant scale, spreading fixed development costs over large numbers of people served, and dramatically reducing marginal costs.

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[3] See, for example: Dean S. Karlan, et al, *Getting to the Top of Mind: How Reminders Increase Saving* (National Bureau of Economic Research, July 2010), *available at* www.nber.org/papers/w16205; Mindy Hernandez, *Applying Behavioral Research to Asset Building Initiatives* (Corporation for Enterprise Development, April 2011).

[4] Ibid.

[5] Gerd Gigerenzer & Wolfgang Gaissmaier, *Heuristic Decision Making* (Annual Review of Psychology, 62:451-92, 2011).

[6] Ibid.

[7] *USDA Replaces Food Pyramid with 'MyPlate' in Hopes to Promote Healthier Eating* (Washington Post, June 2, 2013), *available at* https://www.washingtonpost.com/national/usda-replaces-food-pyramid-with-myplate-in-hopes-to-promote-healthier-eating/2011/06/02/AGRE16HH_story.html.

Can rules-based guidelines have significant potential as a financial education tool? To find out, the CFPB commissioned an original research study, *An Evaluation of the Impacts of Two "Rules of Thumb" for Credit Card Revolvers*.[8] In this study, two specially developed guidelines reminding consumers to be cognizant of credit card usage were tested with a large group of credit card revolvers. The guidelines were delivered by email, web banner, and on refrigerator magnets, to randomly selected individuals within this group. A number of outcomes were tracked (such as credit card balance, usage and payments, deposit account balances, and credit profiles) to see what effects the rules had.

The study found that exposure to one of the two financial guidelines led to lower credit card balances.[9] The group of participants who received the guideline during a six-month period showed, on average, a lower credit card balance than a similar group who did not receive any guidelines during that time. Though the average reduction in credit card balances resulting from exposure to the rules was modest, the findings suggest that rules-based messages hold promise as a low-cost, scalable method of financial education. These low-touch messages were provided at low cost – well under $1 per recipient. The fact that one rule had no statistical effect, and that the guidelines worked best with consumers age 40 and under, underscores the importance of getting the right rule for the right consumer. Further, rates at which consumers in the study opened the email show that consumers are interested in tips and information to help manage their credit cards more effectively.

Taken together, the results suggest that financial rules-based guidelines hold promise as a simple, cost-effective way to improve certain consumer financial outcomes and that these interventions are well worth further investment and investigation.

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[8] The Urban Institute, and their subcontractor the Doorways to Dreams Fund, conducted this research under contract with the CFPB, after selection through a competitive solicitation (contract number CFP-12-Z-00006, Task Order 0002).

[9] The full study, hereinafter referred to as the Urban Institute's Report, is: Brett Theodos, Christina Plerhoples Stacy, Margaret Simms, Katya Abazajian, Rebecca Daniels, Devlin Hanson, Amanda Hahnel, & Joanna Smith-Ramani, *An Evaluation of the Impacts of Two "Rules of Thumb" for Credit Card Revolvers* (Urban Institute, May 2016), *available at* http://www.urban.org/research/publication/evaluation-impacts-two-rules-thumb-credit-card-revolvers.

2. Background

Prior to this CFPB-commissioned study, there was some existing evidence that providing financial guidelines to consumers can work as well or better than more detailed and complex financial education in some situations. However, prior studies had not tested the effectiveness of guidelines on changing financial behavior among consumers in the U.S. One study found training in simple, practical rules of thumb resulted in significantly improved financial practices among micro-entrepreneurs in the Dominican Republic, relative to traditional financial literacy training.[10] Another recent study showed that training in either traditional financial education or in financial rules of thumb led to similar outcomes for financial knowledge and self-efficacy, though they were not tested for their effect on ultimate behaviors.[11]

The low-touch approach of rules of thumb contrasts with higher touch forms of financial education. Financial coaching is a customized, one-on-one approach to financial education that is based on the unique goals and perspective of each consumer who participates in it. Financial coaches deliver their services in a personalized way that reflects the individual viewpoint of each

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[10] Alejandro Drexler, Greg Fischer, & Antoinette Schoar, *Keeping It Simple: Financial Literacy and Rules of Thumb* (Centre for Economic Policy Research, CEPR Paper 7994, 2010).

[11] William Skimmyhorn et al., Assessing Financial Education Methods: Principles vs. Rules-of-Thumb Approaches (Journal of Economic Education, 47:3, July 2016).

participant.[12] In comparison, light-touch rules-based messages attempt to briefly guide many individuals toward a similar goal using one low-cost intervention.

Financial guideline rules are often learned from family and friends, the media, and one's immediate social circle.[13] Even when consumers are aware of financial rule statements to follow (for instance, "save 10% of your income"), they can find the rules hard to implement. As a result, consumers adapt their financial rules to their personal circumstances in order to make them actionable, or treat the rules they know as aspirational.[14] Finding rules-based guidelines that are broadly applicable and appropriate to every consumer's circumstance can be challenging.[15]

Rules of thumb have been shown to work particularly well with decisions that are repetitive and frequent.[16] Since credit card usage and payment decisions recur on a regular basis, guideline-based education may be especially appropriate for improving consumer decisions about credit card use. The need for consumer support in this area is apparent. For example, one in three U.S. households carries a month-to-month credit card balance. [17] Average credit card debt per

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[12] Brett Theodos et al., *An Evaluation of the Impacts and Implementation Approach of Financial Coaching Programs* (Urban Institute, October 2015), *available at* urban.org/research/publication/evaluation-impacts-and-implementation-approaches-financial-coaching-programs.

[13] CFPB, *Consumer Voices on Financial Rules to Live By* (March 2016), *available at* http://files.consumerfinance.gov/f/201603_cfpb_rules-to-live-by_consumer-voices-report.pdf

[14] Ibid.

[15] Ibid.

[16] William J. Baumol & Richard E. Quandt, *Rules of Thumb and Optimally Imperfect Decisions* (The American Economic Review, 54:2, March 1964).

[17] National Foundation for Credit Counseling, *2016 Consumer Financial Literacy Survey* (April 2016), *available at* https://nfcc.org/wp-content/uploads/2016/04/NFCC_BECU_2016-FLS_datasheet-with-key-findings_041516.pdf. Other reports show even higher estimates. See, for example: Board of Governors of the Federal Reserve System, *Report on the Economic Well-Being of U.S. Households in 2015* (May 2016), *available at* https://www.federalreserve.gov/2015-report-economic-well-being-us-households-201605.pdf.

borrower rose to $5,247 in the second quarter of 2016.[18] Yet, there is little research identifying useful guidelines for credit card usage, and few memorable rules that relate to credit card use.[19]

Managing revolving credit card debt successfully is integral to having control over day-to-day, month-to-month finances. This is one of the key pillars of financial well-being.[20] Financial well-being is the state of being wherein a person can fully meet current and ongoing financial obligations, can feel secure in their financial future, and is able to make choices that allow enjoyment of life. Carrying less credit card debt may help people keep more control of monthly finances, contributing to supporting consumers in attaining the security and sense of freedom of choice that are the hallmarks of financial well-being.

Rules of thumb are simple, easily implemented decision-making shortcuts. They are useful, actionable guidelines that simplify complex or time-consuming decisions. They are not intended to be strictly accurate in every situation, but still yield a reliably "good enough" solution under a wide range of circumstances.[21] Evidence has shown that heuristics can be a successful technique for improving decision-making in many areas, producing accurate judgments at low cost.[22]

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[18] TransUnion, *Q2 2016 Industry Insights Report* (Aug 2016), *available at* http://newsroom.transunion.com/credit-card-popularity-soars-as-133-million-consumers-now-possess-at-least-one-card-with-a-balance. Other reports show even higher estimates. See, for example: Meta Brown, Andrew Haughwout, Donghoon Lee, & Wilbert van der Klaauw, *Do We Know What We Owe? Consumer Debt as Reported by Borrowers and Lenders* (October 2015), available at https://www.newyorkfed.org/medialibrary/media/research/epr/2015/EPR_2015_comparisons_brown.pdf.

[19] Brett Theodos et al., *An Evaluation of the Impacts of Two "Rules of Thumb" for Credit Card Revolvers* (Urban Institute, May 2016), *available at* http://www.urban.org/research/publication/evaluation-impacts-two-rules-thumb-credit-card-revolvers.

[20] CFPB, *Financial well-being: The goal of financial education* (January 2015), *available at* http://files.consumerfinance.gov/f/201501_cfpb_report_financial-well-being.pdf.

[21] Gerd Gigerenzer & Wolfgang Gaissmaier, *Heuristic Decision Making* (Annual Review of Psychology, 62:451-92, 2011).

[22] Ibid.

3. Overview of the study

This study used a randomized controlled trial design. Randomized controlled trials are considered to be the most rigorous method for testing the impact of interventions under real-world conditions. They involve randomly assigning participants into different groups so there are two or more identical groups, some of which receive treatment and others who receive none (the control group).[23] Any difference in outcomes between the groups can then be attributed to the treatment or lack of it. This approach enables researchers to isolate the effect of treatments.

The study began with the creation of two new guidelines aimed at aiding consumers to decrease their revolving credit card debt.

The impact of exposure to these rule statements on consumers' credit card account management was then rigorously tested on a large sample of credit card revolvers (N = 13,957), defined as those who carried a credit card balance month to month. All the revolvers who participated in the study were consumers who held credit accounts at Arizona Federal Credit Union (Arizona Federal), a large credit union based in Phoenix, Arizona.

Beginning in December 2014, the rules-based guideline statements were delivered to different groups of participants by different combinations of mail, email, or the financial institution's

[23] CFPB, *Rigorous evaluation of financial capability strategies: Why, when and how. Perspectives from the field* (January 2014), *available at* http://files.consumerfinance.gov/f/201401_cfpb_report_rigorous-evaluation-financial-capability.pdf.

website, over a period of six months. Consumers were randomly assigned to receive one of the two rule statements, or no rule statement in the control group. The researchers could not observe whether the participants actually read the guideline messages, but could identify which participants were exposed to the rules.

De-identified anonymous account and credit data were analyzed before treatment, during the six month treatment period, and for six months after the messages were stopped, to determine the impact of being exposed to the guideline statements on various financial outcomes.

We provide more information about each of these steps, below. Please see the study report for full details.[24]

3.1 Two original guidelines

The rules-based messages were created through an extensive process that included an in-depth literature review of financial rules of thumb and a series of iterative interviews with consumers. We chose credit card behavior as the focus of the rules due to the frequent, repetitive nature of decisions consumers make in the course of managing their credit card spending and payments.

We[25] developed research-based criteria to guide the creation of the rules statements – for example, a good rule of thumb is simple and memorable – which led to the development of four candidate rule statements. Each of these rule statements underwent seven rounds of in-depth

[24] The Urban Institute's Report is: Brett Theodos et al., *An Evaluation of the Impacts of Two "Rules of Thumb" for Credit Card Revolvers* (Urban Institute, May 2016), available at http://www.urban.org/research/publication/evaluation-impacts-two-rules-thumb-credit-card-revolvers.

[25] The terms "we" and "ours" refer, from this point forward, to the full research team who worked on the rules of thumb study, including personnel from CFPB, the Urban Institute, and Doorways to Dreams Fund.

consumer interviewing, focusing on conceptual content, text choices, and graphic elements of delivery.[26]

Two rule statements were ultimately chosen for the study:

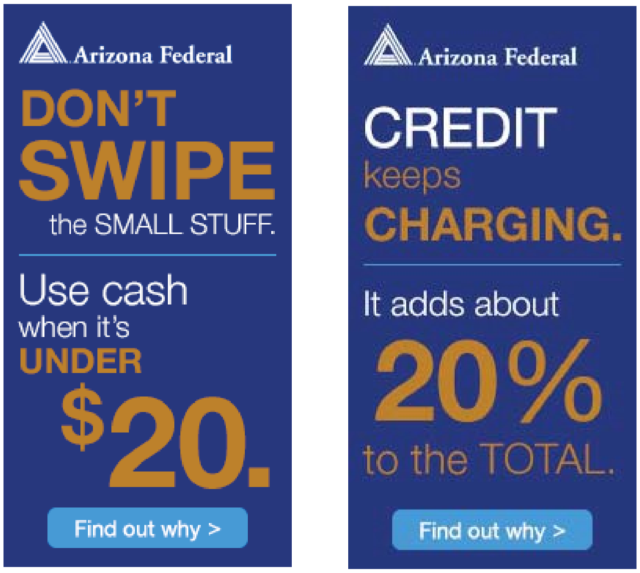
- Don't swipe the small stuff: Use cash when it's under $20
- Credit keeps charging: It adds approximately 20% to the total

The figures used in the rule statements – the "$20" amount ("use cash when it's under $20") and the "20%" figure ("it adds approximately 20% to the total") – were derived from a combination of national database statistical averages; average account data from the study's participant pool; and consumer iterative testing. The $20 amount resonated well with consumers, who reported that $20 was an amount of cash they felt comfortable carrying. Two sets of calculations of interest paid on average outstanding credit card balances – one based on national data, and one based on Arizona Federal data – yielded estimates of 22% and 16%, respectively; consumer testing suggested that the term "about 20%" would be the easiest to recall and therefore the most plausible estimate to use for the guideline.[27]

[26] Doorways to Dreams (D2D) Fund led the effort to create and refine the two rules of thumb. They have documented their process for developing rules of thumb in a *Designing Rules of Thumb Toolkit* (D2D Fund, September 2016), *available at* http://www.d2dfund.org/research_publications/designing_rules_of_thumb.

[27] For details on the method of calculation for the figures used in these rules, please see the Urban Institute's Report, p.17-18.

FIGURE 1: EMAIL VERSION OF BOTH RULES



The guidelines were distributed to participants via email, web portal banners, and refrigerator calendar magnets. See Appendix A for images of the three delivery methods.

3.2 Who were the rules tested with?

After developing the rules, the researchers held a rigorous selection process to find a cooperating financial institution, one who was interested in finding ways to help their customers (or members, in the case of a credit union) manage their financial health.[28] This field research partner needed to have a large base of credit card revolvers and the technological capacity to

[28] The Urban Institute conducted an invitation process for institutions to indicate their interest in volunteering as research field partner for the study. The Urban Institute developed research-driven selection criteria and evaluated all interested institutions against this criteria. Arizona Federal Credit Union was selected as a result of this evaluation process. Arizona Federal was unpaid for their participation in the study. For further details on the selection criteria and process, please see the Urban Institute's report.

implement the research design. Arizona Federal Credit Union (Arizona Federal) met or exceeded all of these criteria. Nearly 14,000 participants (N = 13,957) were in the randomized controlled trial study.

The financial institution identified credit card revolvers to whom they could send the guideline messages. Account holders who carried a balance on their credit card for at least two of the six months prior to the start of the study were considered to be credit card revolvers.[29] All participants in the study, for both treatment and control groups, were Arizona Federal credit card revolvers who fit that definition.

The characteristics of those who participated in the study proved to be especially important in understanding the results we obtained. They were typically infrequent card users with "parked" debt who made relatively few purchases under $20 and had fairly stable financial lives. This impacted the effect we could expect to obtain in response to the rule messages.

Participants were typically married homeowners, age 40-50. Most had at least one child. Their average income was generally a bit higher than the average income in the Phoenix metropolitan area. They had fairly good credit standing (average of 699) and reliable on-time payment history pre-intervention, typically making at least one on-time payment per month on their card.[30]

[29] This definition of "credit card revolver" was based on the definition of revolver used by Arizona Federal, as well as the definition in the Credit Card Accountability, Responsibility, and Disclosure (CARD) Act. Arizona Federal identified revolvers as those who carry a balance more than 2 months out of the past 12 months. The CARD Act defines a revolver as someone who is required to make a payment but does not pay their balance in full for any two consecutive months. The CARD Act definition allows for the possible inclusion of revolvers who might intentionally choose to revolve for a month in order to take advantage of deep discounts from annual holiday sales, for example; we wanted to minimize the inclusion of those who strategically revolve on occasion in order to maximize their net benefit. Lastly, we had only 6 months of pre-intervention data available. Therefore, we designated revolvers as those people who revolved at least 2 out of the 6 pre-intervention months. For more on the CARD Act, please see: CFPB, *CARD Act Report: A Review of the Impact of the CARD Act on the Consumer Credit Card Market* (2013), *available at* http://files.consumerfinance.gov/f/201309_cfpb_card-act-report.pdf.

[30] For further details on participants' demographic characteristics, please see the Urban Institute's Report, Ch. 5.

The participants carried, on average, a balance of $4,872 on their Arizona Federal credit cards at baseline. Card balances mostly fell between $1,000 and $8,000, with about one in four carrying credit card debt over $8,000. Prior to the study, participants seemed to primarily pay down only new purchases and interest, paying off a small fraction of their total balance statement monthly.

Participants did not use their cards heavily, making an average of five card purchases per month prior to the treatment. Less than one in five participants used their credit card more than eight times per month, and one in three made virtually no purchases each month before the study began. Altogether, our sample of revolvers began the study as infrequent users of their credit card who tended to “park” their debt.

Participants also made relatively few card purchases under $20, prior to the treatment. Only 20% of the sample made more than three purchases per month under $20; and 60% made virtually no purchases under $20 each.

Altogether, this picture of the credit card revolvers in the study suggests that they had “parked” the debt on their Arizona Federal credit card, and otherwise rarely used the card. Accordingly, there may have been an upper limit to the degree to which the rule messages could have had an impact with this particular group. In fact, even among the relatively small group of most frequent card users in our sample (10 purchases per month or more), there was no significant impact of the rules on purchases, or on card balance.

3.3 How did we test the rule statements?

Participants were randomly assigned to receive one of the two rules, or to be in the control group.[31] They were also randomly assigned to receive their rule statement through at least one of three delivery channels:

- web portal banners (on their account login page);
- emails (up to twice per month); or
- mailed refrigerator magnet with the rule statement printed on it.

Participants in the control group received no messages or interventions (beyond the communications they would have typically received otherwise from the financial institution).

The delivery of the rule statements took place during the first six months of 2015. Participants who received email or web banners had the option to click through to a webpage with more detailed information on the rule statements. Refrigerator magnets were mailed to participants at the beginning of the study period.

De-identified anonymous data from credit, checking, and savings accounts, as well as credit records, were collected before, during, and after the six-month treatment, and analyzed by the Urban Institute.

[31] Each Arizona Federal revolver was assigned a unique ID number, which was in turn randomly assigned to one of the treatment or control conditions. The sample was stratified on age and number of months revolved, in order to ensure that customers were assigned to each group in proportion to their share of the overall group. Stratification improves the results of randomization; it prevents ending up with groups with too few cases. Balance checks were done to verify that each strata was equally represented in each treatment or control group.

4. What we learned

4.1 Card balance decreased

Participants who were exposed to the rules had lower credit card balances in the six months during which the rules were sent. All of this effect was observed among those who saw the "under $20" rule ("Don't swipe the small stuff: Use cash when it's under $20"). These participants showed, on average, a 2% lower credit card balance on their Arizona Federal credit card, compared with participants who were not exposed to the rules. When participants were exposed to this rule, their card balances were, on average, $104 lower than the balances they had prior to being able to see the message.[32]

This was a small but statistically significant difference. The participants who received the rule showed, on average, a decreased balance, compared with those in the control group (who may have shown some decrease in balance, but not as much as those who got the rule). The control group of participants was virtually identical to the "treatment" group, apart from the chance to

[32] Please see the Urban Institute's Report for all details of the study.

see the rules.[33] Therefore, we can conclude that the lower balances for participants that were exposed to the rules would not have taken place in the absence of having the chance to see the rules.[34] In other words, this statistically significant difference means that we can attribute the change in card balance to the effect of being exposed to the rules.

The results of the study clearly suggest that being exposed to a rules of thumb-based statement can be effective in helping to lower card balances. Why we obtained this result, however, is less clear-cut.

4.2 Payments and purchases

Generally, credit card debt can be reduced either by spending less with one's card, or by paying down more of the card balance. However, the study did not detect any statistically significant changes for credit card purchases or payments under either rule.[35] While this may be due, in part, to measurement issues (see the section on population, below), these findings make it challenging to explain exactly why card balances were reduced when participants received the rule statements.

In addition, the "adds 20%" rule gave a reminder about the cost of using credit without specifying what to do ("Credit keeps charging: It adds approximately 20% to the total"). This left the actions that participants might take in response to the "adds 20%" rule up to the discretion of the participants.

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[33] Treatment and control group means were statistically indistinguishable at baseline on a host of descriptive variables, with only a few minor exceptions. This indicates that random assignment to groups was successful. Please see the Urban Institute's Report for details.

[34] Please see the Urban Institute's report for full details of the research design.

[35] There were no differences found in amount purchased, number of purchases, number of purchases under $20, or percentage of purchases under $20 on participants' Arizona Federal credit card. There was also no effect detected on total card payment amount, percentage of card balance paid, or whether a late payment was made on the card.

The study found no evidence of substituting one form of payment (cash or debit) for another (credit card) from within the revolver's accounts at Arizona Federal. Receiving the guidelines had no detectable effect on the amount held in savings; and had no effect on net savings (savings account balance minus credit card balance). No effects were found for checking or savings account withdrawals or deposits, or for number of debit card transactions below $20, either.

While the data did not allow for a full picture of all assets and spending that may have taken place outside of the home financial institution's accounts, it was possible to evaluate from credit report data whether participants substituted the use of one credit card for another. However, we found no effect on participants' aggregate debt on all revolving trades, which includes debt from accounts outside Arizona Federal.[36]

There was also no evidence that the participants whose balances decreased after receiving the rule actually used cash more often (or credit less often) for small purchases (i.e., those below $20).

4.3 Younger revolvers

For younger participants, exposure to either guideline led to, on average, a 5% reduction in credit card balance, compared to their control counterparts. Card balances for participants age 40 and under were lower by an average of $173 (for the "cash under $20" rule), and an average of $160 (for the "adds 20%" rule), relative to the controls, after having had the chance to see the rules. Since this difference did not occur in the control group, this reduction in balance can be attributed to exposure to the messages.

In addition, younger participants showed a very slight, but statistically significant, decrease in card purchases. On average, during the intervention, younger participants had $24 less in card

[36] There was no effect found on aggregate balance on all open trades, aggregate balance for open status trades, and aggregate balance for open status revolving trades. There was no effect found on collections or delinquencies.

purchase amount when exposed to the “adds 20%” rule, compared with their counterparts in the control group. While this minor decrease in credit card purchases is not nearly large enough to account for the average amount by which the younger participants’ card balances decreased, it does suggest that rule exposure led to slightly decreased spending among this group.

This younger group also showed higher savings ($283 on average) when they received the “cash under $20” rule, compared with their counterparts in the control group.

Because average Arizona Federal debt declined and savings rose, this younger group showed higher net savings (measured as savings account balance minus credit card balance) of $479 on average, when they received the “cash under $20” rule, compared with the younger participants in the control group.

This finding indicates that exposure to the “cash under $20” rule statement in particular led to a substantial gain in net savings for this younger group, compared with what would have been the case in the absence of being introduced to the rules.

It is not entirely clear what other factors may explain the increased net savings for this group. It is conceivable that there may have been cash or account activity that occurred outside the participants’ Arizona Federal accounts which was not detectable in credit history.

Still, this apparent gain in net savings for younger participants is a noteworthy outcome for a light-touch exposure to a guideline statement. Participants over age 40 did not show this same statistically significant pattern of increased net savings.

4.4 Credit inquiries and scores

Participants who received the “adds 20%” rule had fewer credit inquiries for participants. These participants seem to have applied for fewer new credit card accounts during the study. Compared with participants in the control condition, participants who were exposed to this rule had, on average, 0.213 fewer credit inquiries, a 9% decrease from the number of inquiries prior to seeing the rules. One possible explanation may be that the “adds 20%” rule may have dissuaded participants from applying for new credit card accounts.

Aggregate available credit was also lower than it would have been without receiving the rules ($679 less for the “adds 20%” rule). However, there were no statistically significant changes in credit utilization, suggesting that there may have been an undetected decrease in aggregate balance as well. There were no significant changes in credit score found due to exposure to the guidelines.[37]

Lastly, participants with credit scores between 670 and 730 drove most of the effects found in the study.[38]

4.5 Delivery channels

There were no statistically significant effects for the delivery channel through which participants received the rule statements. In other words, it made no discernable difference whether participants had the chance to see the guidelines via email, web banner, or refrigerator magnet.

4.6 Email open rates

While we can’t know which consumers opened the emails, we do know that email open rates were very high, indicating lots of interest in the topic of card debt reduction. The overall average email open rate over the course of the six-month study was 31%. In contrast, an email open rate

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[37] Credit utilization is defined as aggregate balance-to-credit ratio for open revolving trades.

[38] Participants were divided into three groups of about equal size, according to pre-intervention credit score: 670 or less; 670-730; and 730 or more. Overall mean credit score was 699. The credit scores for the 670 or less group skewed toward the high end of that range; there were too few participants with poor credit scores (600-649) or bad credit scores (under 600) to examine those groups specifically.

of about 15-20% is typically considered a benchmark of success in U.S. marketing campaigns.[39] Other studies have reported average open rates for marketing emails from the finance and banking sector of around 21%.[40] Open rates for the messages in the study far exceeded this.

During the first month of message delivery, 46% of participants opened the email with the "cash under $20" rule, and 58% of participants opened the email with the "adds 20%" rule. A spike in email opening was seen again during month three, when participants received an email with the subject line "Avoid unnecessary credit costs" (62% for the "cash under $20" rule and 45% for the "adds 20%" rule).[41]

By the end of the six-month treatment period, open rates had tapered off to around 20%, which is still at the high end for a successful email campaign. Email open rates for the two rules were, on average, about the same over the course of the intervention. Landing page[42] visits were higher in the first and third months of the intervention, mirroring the pattern seen with email openings.

[39] *E-mail Marketing Metrics Benchmark Study: An Analysis of Messages Sent Q1-Q4, 2012* (Silverpop: An IBM Company, 2013), available at http://www.silverpop.com/Documents/Whitepapers/2013/WP_E-mailMarketingMetricsBenchmarkStudy2013.pdf.

[40] *E-mail Marketing Benchmarks: Average Statistics by Industry* (Mailchimp.com, retrieved September 28, 2016), available at http://mailchimp.com/resources/research/email-marketing-benchmarks/

[41] Email messages contained a short description of the rule, a static ad containing the rule (with Arizona Federal branding), and a link to an external landing page with more information about the logic behind the rule if the participant wants to learn more. The content of the e-mails differed depending on the rule, but they contained consistent branding and layout. The rule was sometimes featured in the subject line of the e-mail to optimize the penetration rate, although the subject line and content of the e-mail was varied to minimize fatigue. Each subject line sent to participants was used only once during the treatment, and the same subject line text (e.g., avoid unnecessary credit costs) was used equally for each rule.

[42] Participants could navigate to the informational landing page about the rule through a "learn more" button in the e-mails or by clicking on the online banner that displayed the rule on their web portal.

4.7 Cost of delivery

Lastly, one of the most significant findings from the study highlighted the cost-effectiveness of the rule statements. Production and delivery of the messages cost approximately 47 cents per person for email and online methods, and 59 cents per person for physical mailer of the magnet calendar.[43] At well under $1 per recipient, the guideline messages proved to be very low cost to create and distribute, with very minimal marginal costs of including additional recipients to bring the intervention to scale.

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[43] Cost estimate includes visual design; copywriting; and delivery of email, web banners, and magnet calendars. Physical mailer cost includes production of magnet calendar with the rule statement on it; Arizona Federal typically mails branded magnet calendars as an end-of-year promotion to customers. Cost estimate excludes cost of the randomized controlled trial study; costs of developing and consumer-testing rules that were not ultimately used in the study; and cost of in-depth consumer interviews to create the rule language. Cost estimate assumes that a financial institution or organization would use rules of thumb that were already created and designed by others, or only design one or two of their own.

5. Conclusions

5.1 Rules-based messages can create behavior change

Overall, the results of the study provide empirical support for the usefulness of rules-based messages as a cost-effective means of helping consumers reduce revolving credit card debt, when the right message is delivered to the right consumers.

While we found generally modest effects in terms of the magnitude of change in card balance, the fact that a statistically significant result was found in a randomized controlled trial indicates that the rule messages caused the effect observed. This finding lends strong support to the assertion that financial guideline messages can be an effective agent of consumer behavior change.

5.2 One size does not fit all

It's important to consider that the rule statements had differential impact on different groups of consumers. One rule seemed to work for this population but the other did not have a significant effect. Also, the rules worked differently for different groups.

After receiving the "cash under $20" guideline, younger revolvers showed a larger and more sustained decrease in credit card balances than the general population of revolvers tested, along with slightly fewer purchases, more savings, and greater net savings (vs. younger controls).

Those with reasonably strong credit scores also seemed to react to the guidelines more readily than those with comparatively higher or lower credit standing in our sample.

Clearly, this demonstrates that rule statements are not "one size fits all." Particular groups of consumers may react differently to the same rule, as we saw in this study. This speaks to the need to customize rules so they fit the particular circumstances of the consumers who utilize them.

5.3 Messages work — even with low engagement

Even when tested with revolvers who, generally speaking, were not actively paying down their debt and rarely used their cards, the "cash under $20" messages still led to a decrease in card balances. The possibility that the effects observed represent a lower bound on the impact of the rules on revolving credit speaks to the potential power of rules-based messages.

Further, revolvers responded to the rule messages based solely on the appeal of the rule messages themselves. Other similar studies often include additional motivators, such as commitment devices, incentives, or goal-setting to encourage follow-through.[44] We obtained a decrease in card balance without any motivational devices besides the messages themselves – and without any apparent consequences to participants for failing to heed the rules. This is a testament to the potential usefulness of guideline messages, even without any additional motivators.

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[44] Karlan and Zinman (2012), for example, added reminders and pre-commitment devices to a simple-goal-setting tool (the Borrow Less Tomorrow, or BoLT, program) – and still found they were insufficient to decrease credit card debt. See: Dean Karlan & Jonathan Zinman, *Borrow Less Tomorrow: Behavioral Approaches to Debt Reduction* (Boston College Financial Security Project, May 2012), *available at* http://crr.bc.edu/wp-content/uploads/2012/05/FSP-WP-2012-1.pdf.

5.4 Proof of concept, but not content

Exposure to the “cash under $20” rule statement did lead to lower card balances – although there was no evidence that participants necessarily followed the *content* of this statement. Participants in the study did not detectably increase their use of cash for purchases under $20 – and yet their card management changed sufficiently to decrease their card balances (and to a statistically significant degree) when they saw the “cash under $20” rule. While there was no evidence that participants followed the advice in the guidelines, the drop in balances does suggest that participants understood the *intent* of the rule statements.

The high rate of email openings reinforces this point; participants paid attention to the topic of how to reduce credit card debt, and followed through on that interest.

5.5 The value of a reminder

While the results of the study did not offer a full explanation as to why exposure to the rule statements led to a decrease in credit card balance, the findings suggest that bringing to mind a relevant topic may have played a role in helping consumers carry out their intentions to pay down their debt. This is in keeping with results from other studies that speak to the value of reminders. For example, reminders via text message have been shown to increase the likelihood that consumers make loan payments on time.[45] Reminders can help consumers commit to

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[45] Ximena Cadena & Antoinette Schoar, *Remembering to Pay? Reminders vs. Financial Incentives for Loan Payments* (National Bureau of Economic Research, May 2011), *available at* http://www.nber.org/papers/w17020.

saving.[46] They can help with following through on providing child support payments.[47] Reminders can even help young adults become more likely to follow through on enrolling in college.[48] This study provides further evidence that drawing attention to a topic may be an effective way to help consumers turn their intentions into actions.

[46] Dean S. Karlan, et al, *Getting to the Top of Mind: How Reminders Increase Saving* (National Bureau of Economic Research, July 2010), available at www.nber.org/papers/w16205.

[47] Administration for Children and Families, Reminders to Pay: Using Behavioral Economics to Increase Child Support Payments(July 2015), available at http://www.acf.hhs.gov/opre/resource/reminders-to-pay-using-behavioral-economics-to-increase-child-support-payments.

[48] Benjamin L. Castleman & Lindsay C. Page, Summer nudging: Can personalized text messages and peer mentor outreach increase college going among low-income high school graduates? (Journal of Economic Behavior and Organization, 115:144-160, July 2015), available at http://dx.doi.org/10.1016/j.jebo.2014.12.008.

6. Implications

6.1 Low-cost, low-touch messages can work

The rules-based guidelines were inexpensive, costing about 50 cents per person to create and distribute to a large group of consumers. Marginal costs of scaling the intervention to reach additional consumers are estimated to be nearly zero. The rule statements fit the definition of a low-touch intervention, and proved effective at reducing debt at a minimal cost.

Consider this in the context of the regularity with which consumers are inundated with financial marketing messages. It has been estimated that, for every dollar put towards financial education in the United States, $25 is spent on financial marketing.[49] Strikingly, the rule statements were able to garner enough consumer attention to have an effect on the actions consumers chose to take, even in an environment with many other financial offers to choose from.

[49] A 2013 report by CFPB found that the financial services industry spends approximately $17 *billion* annually marketing consumer financial products and services, while approximately $670 *million* is spent annually on providing financial education. The $17 billion annual figure for marketing consumer financial products and services does not include marketing of products related to retirement, college loans, and other investments. The $670 million annual figure spent on financial education combines efforts by federal, state, and local governments, financial institutions, nonprofit organizations, charitable foundations, and others. For more, please see: CFPB, *Navigating the Market: A Comparison of Spending on Financial Education and Financial Marketing* (November 2013), available at http://files.consumerfinance.gov/f/201311_cfpb_navigating-the-market-final.pdf.

Rules-based approaches cost little yet still show measurable results in improving financial outcome, offering both tested impact and cost-effectiveness.

6.2 Customize your rules

Clearly, additional research on who the rule messages work for best, and under what conditions, would serve to further our understanding of the potential of this promising approach to financial education. This current study was merely a first step. Further study of these and other rule statements with different consumer populations, along with creating and testing rules on different financial topics, would broaden understanding of how, when, and with whom these low-touch guidelines can be effective.

Determining why the guidelines worked better for younger revolvers would also be worth investigating. Younger consumers in the United States show less inclination to carry credit card debt in recent years, suggesting a generational difference in attitudes towards debt that might help to explain the difference in effects found across age groups.[50]

While determining the mechanism behind why rules-based guidelines had an impact may take additional research efforts, the current study underlines the fact that simple guidelines can be a viable, effective addition to the toolkit of financial educators.

In light of this, finding and crafting rules that can be customized to fit particular consumers, or groups of consumers, may prove a worthwhile exercise for financial educators. Accordingly,

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[50] Nathaniel Popper, *How Millenials Became Spooked by Credit Cards* (New York Times, August 14, 2016), *available at* http://www.nytimes.com/2016/08/15/business/dealbook/why-millennials-are-in-no-hurry-to-take-on-debt.html?_r=0.

working with consumers to develop their own personalized rules-based guidelines could be useful.

6.3 Rules-based messages can be a viable form of financial education

Financial education comes in many forms – from one-on-one financial coaching, to classroom education, to technology-based solutions.

This study establishes rules-based messages as a viable, cost-effective financial education method. The results of the study indicate, thus far, a modest role for rules-based guidelines as a way to provide financial education, but also imply notable potential as a complement to customary financial education methods.

The CFPB is working to identify the approaches to financial education that result not just in greater consumer knowledge about finances, but in real changes in behavior and better financial well-being for consumers. This and other studies demonstrate that financial education can be effective in various forms – and that low-touch, rules-based messages fall on a spectrum of approaches that can support consumer financial well-being.

Appendix

FIGURE 2: E-MAIL VERSIONS OF THE RULES

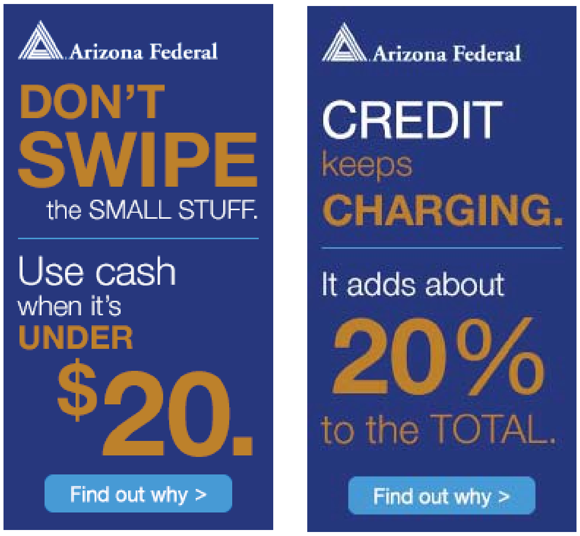

FIGURE 3: ONLINE BANNER VERSIONS OF THE RULES

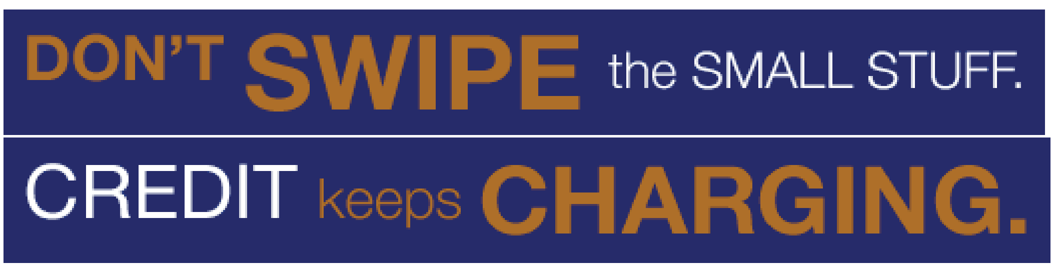

FIGURE 4: PHYSICAL MAILER VERSIONS OF THE RULES