commonwealth

Rules of Thumb for
Student Loan Repayment

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Executive Summary

Student debt is the second highest contributor to overall consumer debt, behind mortgage debt. Going into debt in order to obtain a college degree is often viewed as a smart investment, particularly considering that college graduates who work full-time earn about $17,500 more annually than their counterparts with high school diplomas. But for many student loan borrowers, the acquired debt becomes burdensome to pay and may, in fact, lead to greater financial hardship. Given the ubiquity of student loan debt and the potential impact it has upon many milestones in life, it is important to develop a way to help people better manage student loans.

Traditional forms of financial education, such as student loan entrance and exit counseling, have proven immemorable and unimpactful. Alternative and innovative solutions are needed, including rules of thumb. Rules of thumb are simple, memorable, actionable, broadly applicable, and inexpensive to produce and disseminate. They provide consumers with a concise direction regarding a behavior to take that is associated with a positive outcome.

Given the ubiquity of student loan debt and the potential impact it has upon many milestones in life, it is important to develop a way to help people better manage student loans.

Through a previous partnership with the Consumer Financial Protection Bureau (CFPB) and the Urban Institute, Commonwealth implemented a test of rules of thumb with members of a credit union with revolving credit card debt. The research revealed a positive impact on the balances of the credit borrowers who had received rules of thumb. Given these promising results about the impact of rules of thumb for credit card revolvers and their low cost, Commonwealth was interested in exploring the impact of rules of thumb on borrowers of non-revolving debt. Commonwealth decided to study rules of thumb for student loan borrowers given the enormity of the challenge.

With its partner, American Student Assistance (ASA), Commonwealth undertook a process that included selecting a behavior of focus and targeting borrowers; drafting and finalizing rule wording and graphics with consumer input; determining a delivery channel; and piloting four rules of thumb over the course of nine months with nearly 10,000 borrowers who were either in repayment or were delinquent.

By looking at administrative as well as survey data, Commonwealth attempted to understand whether borrowers in normal repayment could be influenced by rules of thumb to pay a bit more than their minimum due, and whether delinquent borrowers could be influenced by rules of thumb to make any payment. The results were inconclusive due to the challenges of the quality of the data that we were able to collect and the e-mail delivery channel for the messages. Commonwealth believes that additional tests of rules of thumb are still warranted since they hold the promise of a low-cost, effective solution to financial challenges faced by millions.

Introduction

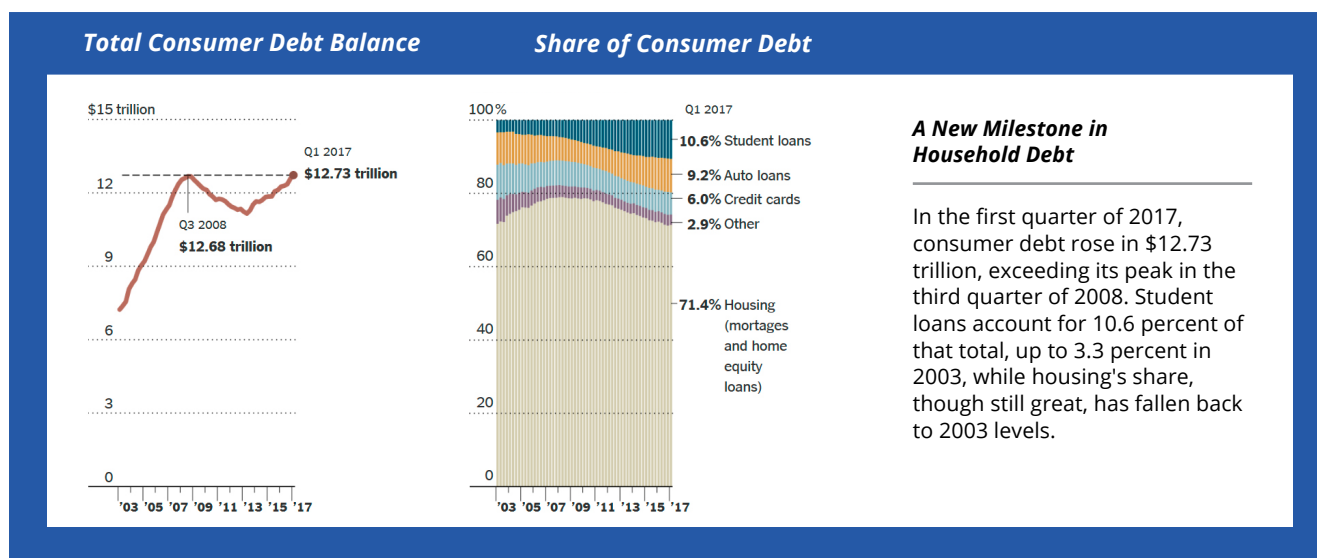## The Consumer Challenge of Student Debt

While the benefits of having a college degree are vast, financing a college education can be challenging. Grants, scholarships, and work-study opportunities all help fund a college education, but for many students, a significant source of college funding comes from out-of-pocket contributions and loans[1]. Student debt, a form of non-revolving debt, also known as installment debt, is the second highest contributor to overall consumer debt, behind mortgage debt. Unlike revolving debt, in which a line of credit can be replenished upon pay-off, non-revolving debt is finite – it is typically repaid through regular monthly installments of a fixed amount calculated relative to the length of the loan in the terms of pay-off.

Going into debt in order to obtain a college degree is often viewed as a smart investment, particularly considering that college graduates (ages 25-32) who work full-time earn about $17,500 more annually than their counterparts with high school diplomas. But for many student loan borrowers, the acquired debt becomes burdensome to pay and may, in fact, lead to greater financial hardship. As of 2015, more than 41 million Americans owed an average of $28,973 in student loans, collectively owing more than $1.2 trillion in debt[2]. Nearly 25 percent of loan borrowers are currently defaulting or delinquent on their debt, forming a collective total of $175 billion in unpaid debt[3].

The consequences of defaulting on loans are also considerable. Within 15-30 days of a missed payment, borrowers can begin accruing late fees. Within 90 days, unpaid payments are reported to consumer credit bureaus, so a borrower's credit score may begin to suffer[4]. Federal student loans default after nine months of missed payments, while most private loans default after 4 months[5]. The consequences of having delinquent loans include wage garnishment, tax withholdings, and future ineligibility for student loans[6]. Unfortunately, the fastest way to settle delinquent loans is to pay them off, which may not be possible for many borrowers.

The risk involved in borrowing to pay for a college education is greater for low-income students. Bachelor's degree holders from low-income backgrounds start their careers earning only about two-thirds as much as those from higher-income backgrounds[7] and the burden of the debt may snowball, with consequences for other life opportunities. Having a significant source of debt makes saving or investing for a financially secure future more difficult and impedes individuals from making desired life choices that involve critical financial decisions, such as buying a house, getting married, or starting a family[8].

Given the ubiquity of student loan debt and the potential impact it has upon many milestones in life, it is important to develop a way to help consumers better manage student loans.

Source: Federal Reserve Bank of New York via the New York Times, https://www.nytimes.com/2017/05/17/business/dealbook/household-debt-united-states.html

[1] http://news.salliemae.com/files/doc_library/file/HowAmericaPaysforCollege2014FNL.pdf
[2] http://files.consumerfinance.gov/f/201509_cfpb_student-loan-servicing-report.pdf
[3] http://ifap.ed.gov/perkinscdrguide/attachments/1314PerkinsCDR.pdf
[4] http://www.usnews.com/education/blogs/student-loan-ranger/2015/07/22/a- timeline-of-federal-student-loan-delinquency-default-consequences
[5] http://www.consumerfinance.gov/paying-for-college/repay-student-debt/#Question-1:federal:yes
[6] https://myfedloan.org/manage-account/about-your-account/default-delinquency.shtml
[7] http://www.brookings.edu/blogs/social-mobility-memos/posts/2016/02/19/college-degree-worth-less-raised-poor-hershbein
[8] http://www.asa.org/site/assets/files/3793/life_delayed.pdf

Rules of Thumb for Student Loan Repayment

While students who borrow loans directly from the federal government are required to do "entrance counseling" and "exit counseling" as part of the terms of their loan, these roughly 30-minute self-guided modules – which provide information ranging from the terms, conditions, and benefits of the loan(s) to repayment options and personal money management – do not have a significantly positive effect. Evidence for this comes from a survey conducted by American Student Assistance, which found that up to 43 percent of student loan borrowers report receiving no education on student loan repayment, despite the fact that such counseling is mandatory[9]; while such counseling is being delivered, it is not remembered by the students.

Student loan entrance and exit counseling resembles something akin to traditional financial education, which research has found to have no substantial impact[10]. And yet because the challenge of non-revolving debt, and student loan debt in particular, is so intractable, identifying alternatives to traditional financial education should be viewed as urgent. One plausible alternative to traditional financial education are rules of thumb. The term 'rules of thumb' has an origin in the thumb as a tool of measurement; however, today's evolved definition generally refers to simple heuristics that are useful as a reference for particular situations. Ultimately, we think of rules of thumb as being characterized by four primary criteria: they are simple, memorable, actionable, and broadly applicable within a common context. Additionally, rules of thumb typically represent a small cost to produce and distribute.

Previously, Commonwealth – in partnership with the CFPB and the Urban Institute – studied the impact of rules of thumb on credit card debt. With the support of Arizona Federal Credit Union, which provided access to anonymized data regarding the credit usage and balances of its customers, the study's investigators found a positive impact on the balances of the credit borrowers in the sample (balances decreased) who had received rules of thumb via website banners, email, or a physical magnet. Given these promising results about the impact of rules of thumb for credit card revolvers and their low cost, Commonwealth was interested in exploring the impact of rules of thumb on borrowers of non-revolving debt. Given the enormity of student debt, Commonwealth chose to target new rules at student loan borrowers. While the results of a pilot test of these rules are less conclusive, understanding both how to reach borrowers to mitigate the challenge of non-revolving debt, and the role of alternatives to financial education, such as rules of thumb, continues to be a worthwhile priority.

[9] http://www.asa.org/wp-content/uploads/2017/06/life_delayed_whitepaper_2015.pdf
[10] https://www.brookings.edu/research/financial-literacy-what-works-how-could-it-be-more-effective/

Designing a Pilot to Test Rules of Thumb

Identifying a Pilot Partner

In order to test the impact of rules of thumb on student loan borrowers, Commonwealth needed to access student loan borrowers currently in repayment. Fortunately, we were able to partner with American Student Assistance (ASA). ASA is an innovative nonprofit that is developing new products and services, partnerships, and philanthropic programs to help guide kids through the process of selecting the right education path and bridging the education-to-workforce gap. For example, ASA programming provides: guidance on the best ways to pay for school; personalized student loan help to make borrowing and repayment decisions tailored to individuals; and money management advice and straightforward budgeting tools to build financial skills.

Among ASA's large audience are a subset of student loan borrowers who are in repayment. ASA, which had its origins as a student loan guarantor[11], maintains communications with borrowers for whom they served as guarantor, as well as borrowers from colleges with which it currently partners to provide its array of educational services. In collaboration with Commonwealth, ASA was able to identify a sample of borrowers who met the criteria of being in repayment and within three years of separation from their educational program.

Selecting a Behavior of Focus and Target Borrowers

Prior to approaching ASA, Commonwealth engaged in a process of discovery to better understand the specific challenges faced by student loan borrowers and the opportunities to address those challenges; the process used was one that had proven effective in our previous test of rules of thumb. We conducted in-depth interviews with eight borrowers and, based on analysis of the information gathered in that process, identified seven distinct phases that might be experienced by borrowers following loan origination: in school; in the grace period; detached repayment – i.e., overwhelmed and not very aware of repayment obligations; struggling repayment – i.e., aware of student loan payment obligation, but it is a low priority; non-payment-- i.e., refusing to or unable to make payments; recovery – i.e., renewed commitment to make payments; and committed repayment – i.e., adhering to the repayment schedule and obligations and aware of consequences for not doing so. Subsequently, we considered behavioral interventions – vis-à-vis rules of thumb – that corresponded with the different phases and challenges therein.

Understanding the challenges allowed us to target rules of thumb at specific behaviors hypothesized to mitigate the challenges. Target behaviors we considered included:

- Prepayment (in school)
- On-time payment (repayment)
- Read FAQs/Contact Servicer
- Prepayment while in repayment
- Pay Biweekly (repayment)
- Partial payment (repayment)
- Prepayment in grace

We had several conversations with ASA in order to narrow down the list of behaviors to four that we thought we might study. Factors considered included possible unintended consequences of the preceding behaviors, access to data needed to measure behaviors, and severity of consequences for not exhibiting the behavior. After narrowing to four possible behaviors, we conducted a survey to get borrower feedback; based on responses to that survey, which included questions around the likelihood of taking prescribed actions, we chose two behaviors to pursue.

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[11]*A loan guarantor guarantees that a loan will be repaid. It functions as a source of financial collateral on behalf of students – who typically have little credit history, no permanent sources of income, and no property to use as collateral – for the lender.*

Chosen Behaviors

Prepayment while in repayment

Encouraging borrowers to prepay their student loans when they are already obligated to pay a minimum monthly amount is inspired by two data points: one, that many borrowers have volatile incomes, and two, that many borrowers already prepay bills, including student loans. Borrowers had mixed reactions to this idea. Some borrowers had prepaid their student loans at some point in the past; many had prepaid some type of bill in the past. Borrowers liked the idea of saving money on interest charges by paying more upfront, so we decided on constructing a rule around the notion of paying more than the minimum required amount.
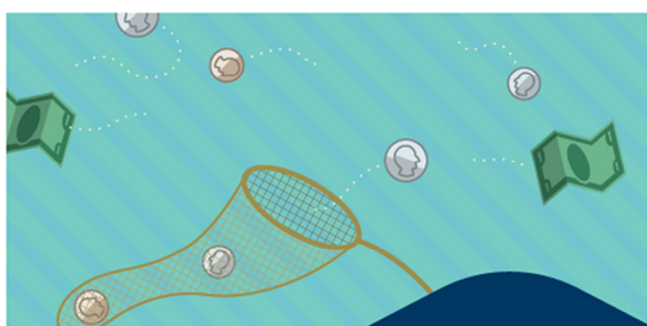
Partial payment during repayment

Surprisingly, most borrowers did not know that they could make a payment for less than the minimum payment required. Although borrowers should of course be encouraged to make the full payment whenever possible, we think that encouraging borrowers to pay as much as they can when they cannot afford the full amount is likely to keep them more engaged with the repayment process and their servicer while avoiding unnecessary accumulation of interest charges. In order not to unintentionally move borrowers who were making full payments into lower amounts, we decided to target delinquent borrowers with this message: paying something is better than paying nothing. Further, we decided to target borrowers 60 to 120 days delinquent. Borrowers 30 days or less delinquent may be the result of an oversight; on the other hand, 120 days is the start of a serious delinquency and those borrowers are already receiving extensive communications, so an additional one might be overlooked. We intended to target borrowers in danger of more serious trouble, but not there yet.

Final Rules/Designs

Once we determined the two behaviors we wanted to influence with rules of thumb, Commonwealth worked with a copywriter and a graphic designer to come up with several iterations of designs for each behavior, for both rule wordings and accompanying images. Subsequently, we conducted another round of in-depth interviews with borrowers. The interviews probed borrowers for feedback on the wording of the rules (was the meaning clear?), the graphics (were they compelling?), and the sentiment of the rule as a whole (was it actionable? did it evoke a positive feeling?). We took the feedback from the interviews and revised the images and wording before sharing the designed rules with ASA for feedback and buy-in. In order to test the impact of rules that conveyed the same sentiment but were worded differently, we identified two versions for each behavior. Ultimately, the following rules were tested:

Prepayment While in Repayment

Round Up to Pay Down

Paying more than the minimum required reduces your principal more quickly, which saves money on interest. Even a few extra dollars will help in the long run.

Pay More, Owe Less

Paying more than the minimum required reduces your principal more quickly, which saves money on interest. Even a few extra dollars will help in the long run.

Determining Delivery Channel

Our primary constraints when determining a delivery channel for the rules of thumb were threefold: cost, impact on analytical sample, and a mechanism to measure whether the rule had been received. Part of the appeal of rules of thumb is that they can be delivered at a low cost; thus, we excluded labor and resource-intensive delivery channels. While we considered the possibility of testing the rules in multiple channels – e.g., email and a physical mailer – we worried about the impact of introducing channels as additional variables. If the channels varied, additional segmentation would have been required in the analysis, creating the risk that the sample size for each segment would not have been sufficiently large. Finally, it was important for the integrity of the study that we could measure whether the intervention had actually reached its target. If, for example, we had used a physical representation of the rule (e.g., a pencil or T-Shirt), we would not have known whether someone had actually seen the rule each month, and therefore whether it might correlate to their payment behavior.

Ultimately, we ended up using email as our delivery channel, as it met all of our constraints. It represented a negligible cost, it could be implemented for all of the borrowers in the sample, and it allowed for insight into whether the intervention had been received. As the delivery vehicle was not the variable of interest, but rather the rule itself, our objective was to have borrowers see the rule and email allowed us a way to "verify" that. In addition, it capitalized on ASA's existing infrastructure, ability, and willingness to deliver messages.

In an effort to mitigate email fatigue, we varied the subject line of the message each month, while the image and wording in the body of the email remained constant over the course of the intervention.

Description of the Borrowers

The borrowers within our sample had to meet two primary criteria: they had to have graduated or separated from college within the three years prior to the fall of 2016 and, if they were delinquent, they had to be between 60 and 120 days delinquent at the time of sampling. The rationale for the number of days of delinquency was previously described – lower or higher numbers of days delinquent introduced potential complications to the study. The rationale for the three years within separation had to do with a hypothesis about the likelihood of reception to the rules of thumb: it was our belief that rules would be more effective for borrowers who had not yet become entrenched in certain behavioral patterns with respect to loan repayment.

In terms of demographics, the borrowers in our sample can be classified along the lines of gender, age, education level (degree type associated with loan debt) and debt load (average initial principal balance). With respect to gender and age, our sample closely approximated national ratios of representation[12,13]. With respect to education level and debt load, our borrowers skewed towards those who had taken out loans for associate and master's degrees; nearly 48 percent of borrowers had debt associated with the former and 42 percent with the latter. Borrowers with debt associated with a bachelor's degree comprised seven percent of borrowers in our sample[14] and borrowers for one-year non-degree programs comprised the remainder. The average initial principal balance, or debt load, of the borrowers in our sample was slightly lower than findings from recent research that showed the median borrower's debt for her own education was $17,000 in 2016[15]; among the borrowers in our sample, it was $14,000 for delinquent borrowers and $10,000 for those in repayment.

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[12]https://nces.ed.gov/programs/digest/d16/tables/dt16_303.70.asp
[13]http://www.pewresearch.org/fact-tank/2017/08/24/5-facts-about-student-loans/
[14]Nationally, a proportionally greater number of students take out loans to finance bachelor's degrees; however, borrowers for graduate degrees take on significantly more debt.
[15]Ibid.

Evaluation Design

Intended Design

In order to understand the impact that rules of thumb might have on borrowers, Commonwealth designed a simple comparison study. The 10,000 borrower sample was to be split between a treatment group, which would receive the rules of thumb intervention, and a control (comparison) group, which would not. Given the nature of our intervention – i.e., that it was targeting two different behaviors with two different rules, among two groups of borrowers – several levels of divisions of the initial 10,000 borrower sample were necessary.

The sample was first divided by behavior of interest: borrowers in normal repayment and delinquent borrowers. Within each behavior-based group of 5,000 borrowers, a further division was made between those who would be "treated" with the intervention and those who would serve as control for comparison. Finally, the treated borrowers were divided within each behavior among two different rules of thumb (variations of the intervention). The following breakdown resulted:

	Repayment	Delinquent
Treatment: Rule A	1296	1408
Treatment: Rule B	1204	1087
Subtotal	2500	2495
Control	2500	2500
TOTAL	5000	4995

The division of the sample was constructed in order to be able to investigate the following research questions through the pilot test:
- Behavior: Were rules of thumb more effective for repayment or delinquent borrowers?
- Rule Design: Which of the two different rules of thumb for each borrower behavior has a greater impact?

Additional research questions to be addressed by administrative and survey data were identified as follows:
- Rule Impression: Do the impacts of the rules persist?
- Borrower Confidence: Do the rules impact whether or not students feel confident about their ability to repay their loans?

The evaluation was designed such that questions could be investigated and outcomes measured by looking at both changes in administrative data and responses in baseline and endline survey data. Further description of data sources follow.

Description of Data

Baseline Data

In order to understand whether the introduction of the rules of thumb changed borrowers' existing behavior, it was necessary to understand the borrowers' characteristics and behavior prior to the intervention. Because we hypothesized that the rules of thumb would result in changes from one month to the next, it was necessary to gather several months of data prior to the intervention. ASA shared three months of data common among all borrowers with Commonwealth before introducing the rules of thumb and differentiating between treatment and control. In addition to static data points like gender, degree program, and age, the baseline data included the principal balance for each borrower for the months of October, November, and December of 2016, as well as the following data points for December:

- Outstanding Principal Loan Balance
- Next Payment Due Amount
- Due Date for Subsequent Payment
- Last Payment Amount
- Last Payment Date

Intervention Data

The data that ASA shared with Commonwealth during the pilot period contained the same data as was included in the baseline, for each of the months of the pilot period. The data points requested – in addition to the aforementioned static ones – were deliberately selected as indicators that would allow for measurement of impact by showing change from month to month. The theory of the intervention was based around change in payment behavior – i.e., making any payment in the case of the delinquent borrower and making higher payments than required in the case of the borrowers in repayment. The theory of change held that the following sequence of events would occur for those treated with the intervention:

Repayment	Delinquent
1. Borrower makes a series of payments in the months A-C prior to the intervention in the amount of X (presumed to be consistent with amount due);	*1. Borrower makes no payments in the months A-C prior to the intervention (presumption based on delinquency);*
2. Borrower sees email with rule of thumb in month D;	*2. Borrower sees email with rule of thumb in month D;*
3. Borrower reflects on next payment due amount and makes decision to add extra to next payment due amount;	*3. Borrower decides to make a payment, albeit not full amount owed;*
4. Borrower makes a payment above the 'next payment due amount' in month D.	*4. Borrower makes a payment in month D;*
5. [repeat steps 2 to 4 for months E-K]	*5. [repeat steps 2 to 4 for months E-K]*

In this schema, the evaluator relies on both the 'next payment due amount' as well as the 'last payment amount' and 'last payment date' to analyze the sequence of events. Did the borrower's 'last payment amount' reflect an amount higher than the 'next payment due amount' in the preceding month? Did it occur on a date after the borrower saw the rule? For the delinquent borrower, the evaluator relies primarily on 'last payment amount' and 'last payment date' to understand whether there was any payment at all, and if so, when it came in relation to receipt of the rule.

Ultimately, the first month of data was corrupt, so the final set of data included the data points for the months of March through September.

Post-Intervention Data

In order to understand the persistence of the impact of the rules of thumb, Commonwealth arranged with ASA to receive the same data points as during the Intervention period for three months following the last month in which the rules were emailed. For reasons not germane to the pilot study, the data was no longer available for the final month intended (December) and it was of limited value for the penultimate month. Thus, Commonwealth ultimately had access to two months of post-intervention data, only one of which was fully usable.

Survey Data

In order to obtain information from borrowers not available in the administrative data, but which would complement it and provide clarification, Commonwealth and ASA deployed two surveys. The initial, baseline survey, was deployed prior to the beginning of the intervention period. The final, endline survey was deployed one month after the final rules of thumb were emailed. While the surveys were similar in content, they varied in their objectives. The baseline survey was sent to all of the borrowers in the sample; it returned about 110 responses. The endline survey was sent only to borrowers in the treatment group and it was incentivized with the chance to earn a gift card from Amazon for completion; it returned about 200 responses.

The purpose of the baseline survey was to gather information from all borrowers about such topics as their confidence with loan repayment; knowledge of the terms of their existing loans; debt and money management beyond the student loan space; and additional demographic information. The purpose of the endline survey was to gather the same information as in the baseline survey – in order to do a pre-/post-comparison – as well as to ask question about the rules of thumb themselves. Questions about the rules of thumb were constructed to measure whether borrowers remembered them, liked them, and acted upon them.

Limitations

Throughout the pilot, we encountered a number of unanticipated challenges with the data. To begin with, the baseline data we received only contained one variable for which there was data in each of the three months. Thus, the 'principal balance' was the only variable that we were able to use to establish a pattern of behavior during the baseline period. This made it challenging to compare the baseline to the intervention period for the repayment sample, as it was not possible to compare any variables other than 'principal balance.'

As we prepared for data analysis, we encountered two additional challenges: the first was the lack of consistency between the respondents to the baseline survey and the endline survey – in the end, only 20 borrowers completed both the baseline and endline surveys, making generalizations to the sample impossible. The second was the lack of data in the period post-intervention. As we effectively had only one month's worth of data following the conclusion of the intervention, it was insufficient to look at long-term effects in any substantive way.

Finally, there was a large amount of missing data over the course of the pilot period; the incomplete data rendered a number of variables un-usable for the analysis. In addition, because of the nature of the data, there were numerous cases that appeared to be so prone with errors that the decision was made to exclude them. ASA relied on the loan servicers[16] to report timely and accurate data to the National Student Loan Data System, from which they accessed it. Logic made errors relatively apparent – e.g., last payment was "$0," but principal balance decreased. As previously mentioned, February data was excluded entirely because of errors. The decision to exclude additional data was made as we neared analysis.

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[16]*A loan servicer is a company that handles the billing and other services related to the loan.*

Composition and Disposition of 'Missing' Data

The final sample for analysis shrunk demonstrably from where it started at nearly 10,000 borrowers. This occurred from both expected attrition and missing data, as well as from the exclusion of data deemed un-usable.

Borrowers in the treatment group received emails from which they were able to opt-out. Due to this form of attrition, the total treatment group decreased slightly from January to September. The more significant drop-off in the treatment group, however, resulted from how a borrower was identified as 'treated.' In order to be 'treated,' we considered only those borrowers who read an email at least once during the intervention. If we included all borrowers who received emails, without accounting for whether or not the email had been opened, our treatment group would look very similar to our control group and thus make comparisons non-meaningful.

For borrowers in both the treatment and control groups, insufficient data for certain variables meant that they had to be excluded from analysis. While the evaluation plan called for using all variables in the dataset, there was such extensive missing or corrupt data that some had to be excluded. ASA confirmed that missing and errant payment data was likely not related in any way to payment behavior, but rather delivery of data from loan servicers.

Description of Data Used in Analysis

Repayment

The final filtered dataset for borrowers in standard repayment comprises data from May to November for the control group (due to aberrant data March to April) and March to November for the treatment group. We used change in principal balance month over month to indicate payment behavior and removed those who did not have full principal balance information month-over-month. Borrowers who had missing principal balance data in any month were removed, so that we could analyze a repayment group of borrowers that each had full payment information available. (If a borrower had principal balance data for 2 months, e.g., but was missing it for other months, we didn't know what was happening in those missing months and it made for a skewed comparison with those with full data.)

Delinquent

We used the 'last payment date' variable to indicate payment behavior. We did not use change in principal balance as an indicator for payment because delinquent borrowers may be paying interest every month, which does not impact the principal balance. All borrowers who had a valid data point for each month for 'last payment date' were included in the analysis.

Measuring Impact

As previously mentioned, monthly datasets had varying degrees of completeness. Because the salient variables differed between the two behaviors of interest (size of payment made vs. any indication of payment made), different rationale was applied to each subsample to determine what sufficient data looked like for analysis.

For the borrowers in repayment, the hypothesis and objective of the rules were to get borrowers to make higher payments than indicated by their bill – i.e., than what was 'due.' Because the variables in the baseline data (in order to see change) consisted only of principal balances, the way we can understand pre-intervention behavior to post intervention behavior is by looking at change in principal balance, where change in principal balance is treated as a payment – over the course of the intervention, what was the average payment made by borrowers and did they have instances of paying more than the average? In order to answer this, cases to be included in analysis required "full data," defined by having no missing data for the principal balance variable over the course of the intervention. Using both of these criteria – "full data" and, in the case of treatment, opened email – resulted in a treatment group of 435 borrowers and a control group of 1597 borrowers for the repayment subsample.

For delinquent borrowers, the hypothesis and objective of the rules were to get borrowers to make payments, even if they were not full payments. By definition, delinquent borrowers are not in good standing (that is, up-to-date on payments), so in most cases, there was no negative change in principal balance (that is, balance either stayed the same or increased from October to December). Nonetheless, some of these borrowers were making payments, but the payment was likely going toward interest and thus not reflected in the principal balance. In order to understand the baseline behavior, then, we identified any borrower who had made a payment in three month-spans (in order to correspond to the principal balance months in the baseline). Because the baseline data only captures the last payment made, if a borrower made payments in the months prior (as far back as October) they were not captured. Using both of these criteria –a valid data point for each month for 'last payment date' and, in the case of treatment, opened email – resulted in a treatment group of 417 borrowers and a control group of 418 borrowers for the delinquent subsample.

Understanding Impact of Rules of Thumb

Challenges with Student Loan Payment

While the evaluation design seemed relatively straightforward, missing data as well as quirks of student loan repayment made measuring outcomes less precise. One of the quirks has to do with how payments are allocated and how that would appear in the data. When a borrower makes a large payment, lenders are required to first put their payment towards any outstanding fees, then interest, and then principal. If one is stuck with a bunch of loans, a single payment could be spread thin and divided among all of the loans; thus, a larger than average payment may not have appeared as such in our data. Similarly, it is possible that borrowers were making payments that were going in part or in full toward interest, in which case there will appear to be no change in principal balance, even if they are paying more than minimum payment or paying anything at all. Finally, some borrowers have due dates in months subsequent to the one immediately following, because they have paid enough at some point in the past to advance the due date; in these cases, the rule cannot be assessed for impact because non-payment might simply be indicative of nothing due.

Findings

The results from the analysis of the impact of rules of thumb on student loan borrowers follow. The results are divided by behavior. The findings are presented as answers to the analytical question, which is based on the research question listed.

Behavior: Prepayment (i.e., pay more than minimum)

Population: Borrowers in Standard Repayment
Rule A: Pay More, Owe Less
Rule B: Round Up To Pay Down

Research Question: Do recipients of the intervention pay more than minimum required compared to non-recipients of the intervention?
- Analytical question: What % of borrowers had a payment higher than 20% of their average payments?
  47% of borrowers in the treatment group and 49% of borrowers in the control group appear to have made at least one payment higher than the minimum required

Research Question: Which of the [four] ROTs implemented in a student loan repayment pilot is most effective?
- Analytical question: Between Rules A and B, which has a greater impact on behavior?
  51.2% of recipients of Rule A made a payment, compared to 44 percent of recipients of Rule B.

Research Question: How does the borrower feel about her ability to pay back her loans now, compared to before the intervention?
- Analytical question (Survey question): How confident are you about your ability to repay your student loans in full according to the schedule provided?
  Among 5 delinquent borrowers who completed both surveys: 2 moved from 'very unconfident' to 'neutral' and 'somewhat unconfident,' respectively.

  Separated by survey: **Of the 60 borrowers who responded to the endline survey, 36 were very or somewhat unconfident, 11 were neutral and the rest were somewhat or very confident; Of the 21 borrowers who responded to baseline, 17 were very or somewhat unconfident.**

Behavior: Partial Payment (i.e., pay something)

Population: Delinquent Borrowers
Rule A: Keep Calm and Pay Something
Rule B: Just Pay Something

Research Question: Do recipients of the intervention **make more payments** than control?
- Analytical question: What percentage of borrowers made payments?
  On average, 33% of borrowers in the control group made at least one payment during the intervention period, compared to 24% of borrowers in the treatment group.

Research Question: Which of the [four] ROTs implemented in a student loan repayment pilot is most effective?
- Analytical question: Between Rules A and B, which has a greater impact on behavior?
  On average, 11.4% of recipients of Rule A made a payment, compared to 13% of recipients of Rule B

Research Question: How does the borrower feel about her ability to pay back her loans now, compared to before the intervention?
- Analytical question (Survey question): How confident are you about your ability to repay your student loans in full according to the schedule provided?
  Among 15 borrowers in repayment who completed both surveys: 5 moved to a higher degree of confidence.

  Separated by survey: **Of the 118 borrowers who responded to the endline survey, 104 were either somewhat or very confident; of the 46 respondents in baseline, 25 were somewhat or very confident, 12 were unconfident and 9 neutral.**

Discussion

The findings from the pilot test were largely inconclusive. Rather than being indicative of the failure of the rules themselves, we believe that challenges with both the delivery channel and of the quality of the data led to the results we found.

The email channel poses unique challenges as a delivery mechanism for rules of thumb. While the emails sent by ASA had a higher open rate than industry averages, the rate still only represented a fraction of recipients. Without seeing the email, a borrower could not be impacted by the rules of thumb. One reason for not opening the email might be a consideration of its origin. While ASA is a respectable organization with a lot of credibility among its peer organizations, its recognition by borrowers is unclear. Further, any communication coming from a loan servicer, or its perceived proxy, may be resented, based on the idea that it is associated with debt. Borrowers we spoke to in preparation for this pilot, as well as external research, indicate that many borrowers feel they were duped into taking on debt in exchange for promises that never materialized[17], especially among those who did not graduate or secure their desired job upon graduation.

Somewhat related to the credibility of the sender is the issue of how closely a recipient may have heeded the content of the email, even if they opened it. Again, in order for the rules to have the intended impact, the message has to be received. If the email was simply glanced at and not attended to, it is likely that its intended message was not absorbed by the recipient. In the case of this study, we have survey evidence to suggest that even if the email was opened it was not necessarily read, as many survey respondents for whom administrative data indicated had opened the email responded to a survey question in the negative – that they had not received the email.

In addition to the inherent barriers of the delivery channel, the challenges presented by incomplete and inaccurate data were significant. Much of the excluded data resulted from errors that originated with the primary sources of the data, which neither Commonwealth nor ASA had the ability to mitigate. There are few work-arounds for addressing data quality issues when data comes from a third party.

Because of these challenges, it is hard to discern the possible impact that the rules might have under different conditions.

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[17] https://www.newamerica.org/education-policy/edcentral/studentloansaredifferent/

Implications for Further Work

Despite the inconclusive results of this pilot, the potential benefits of rules of thumb – they are very cost effective and have many design possibilities – and the dearth of pilot tests on their effectiveness mean subsequent tests are worthwhile. One approach would be to identify a loan servicer with whom to work directly; another might be to explore another type of debt. While student loans have their unique challenges and borrowers have specific negative associations with them, other forms of non-revolving debt, such as mortgages, might be ripe arenas for exploration. Although mortgages comprise the vast majority of non-revolving debt in this country, the debt might seem more worthwhile because, upon paying it off, there is a tangible benefit. Unlike student loans, for which the return is not guaranteed, borrowers who are able to successfully pay off their mortgages end up owning their home. Exploring rules of thumb for borrowers in this arena might result in more positive outcomes. Regardless, it is important to continue to explore ways to support borrowers with non-revolving debt to achieve financial security.

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Appendix: Surveys

BASELINE SURVEY

Thinking of the post-secondary program (e.g. college or grad school) for which most of your federal loans were borrowed...

...Q1. What was your enrollment status during the period for which you took loans to finance your education?

- Full-time
- Half-time
- A combination of full-time and half-time

...Q2. Did you graduate?

- Yes
- No

...Q3. Please check how long you were in school (if the amount of time you were in school is less than one year or in some half year increment please round up to the next whole year):

- 1 year
- 2 years
- 3 years
- 4 years
- 5 years
- 6 years or more

Q4. To the best of your knowledge, how many student loan servicers do you currently have? A student loan servicer is a third party responsible for billing.

- 1
- 2
- 3
- 4 or more
- I don't know

Q5. Do you know the names of your student loan servicer(s)?

- Yes
- No
- I know the names of one or more, but not all

Q6.Select all that apply (yes/no):

- I know the current interest rate(s) on all of my student loans
- I know my options for repayment plans
- I have reached out to my servicer to ask a question(s) about my loan(s) in the past six months.
- I am familiar with the term 'deferment' as it applies to student loans
- I am familiar with the term 'forbearance' as it applies to student loans

Q7. Do you have a monthly budget you try to follow? If so, please check what you budget for (check all that apply):

- Housing (Rent, Mortgage, etc.)
- Utilities (Water, Heating, Internet, etc.)
- Healthcare
- Groceries
- Savings (portion of money set aside to have a cash cushion)
- Debt Payments
- Leisure/Entertainment
- Emergency
- I do not have a monthly budget

Q8. Do you know the due date for your monthly student loan payment?

- Yes
- No

Q9. Do you know the amount for your monthly student loan payment?

- Yes
- No

Q10. How confident are you in your ability to repay your student loans in full according to the schedule provided?

- Very confident
- Somewhat confident
- Neutral
- Somewhat unconfident
- Very unconfident

Q11. If you have ever found yourself in the position of not being able to pay a student loan bill, how have you managed that situation? (check all that apply)

- Not applicable
- Borrowed from family/friends
- Contacted servicer to ask about options
- Contacted servicer to seek adjustment to the bill
- Skipped (missed) the payment
- Other

Q12. What debt do you currently have? (check all that apply)

- Student loan
- Car loan
- Mortgage
- Credit card
- Other debt (please specify)

Q13. Rank in order of how you prioritize monthly debt payments:

- Student loan
- Car loan
- Mortgage
- Credit-card
- Other debt (please specify)

ENDLINE SURVEY

[The endline survey contained all of the questions in the baseline, plus the following questions:]

About Rules of Thumb

Q14. Beginning in January, ASA sent monthly emails to you that contained a brief message with specific loan repayment advice (aka a "rule of thumb"). Which rule of thumb did you receive? Each "rule" was set in a design with a clickable button that linked to your servicer.

Please write in your response from memory.

- The rule I received was: _____ [opened-ended text box]
- I received a rule, but I do not remember the rule.
- I did not receive any rule from ASA that matches that description.

Q15. With whom have you shared, or would you be most likely to share, the rule you received? Please check all that apply:

- No one
- Friends
- Co-Workers
- Family

Q16. Please answer the following questions regarding the rule:

a. How understandable is the rule?

- Very easy to understand
- Somewhat easy to understand
- Neutral
- Somewhat difficult to understand
- Very difficult to understand

b. How helpful is the rule?

- Very helpful
- Somewhat helpful
- Neutral
- Somewhat unhelpful
- Very unhelpful

c. How appealing or resonate is the rule to you?

- Very appealing
- Somewhat appealing
- Neutral
- Somewhat unappealing
- Very unappealing

Q17. Which of the following most closely describes the action you took upon receiving the rule indicated in the previous question?

- [I didn't receive a rule and therefore took no action.]
- The rule had no impact on how I pay or plan to pay back my student loans.
- The rule encouraged me to think about how I pay or plan to pay back my student loans, but I did not take action based on it.
- The rule encouraged me to take action.

Q18. Which of the following most closely describes the impression the rule left on you?

- The rule left no impression on me.
- I will likely remember the rule each time I go to make a payment on my loan(s).
- I will likely remember the rule and make it a habit of taking the action it encouraged.
- Other _____ [open-ended]

Demographics

Q19. Which category best describes your race or ethnicity?

- African American/Black
- American Indian or Alaska Native
- Asian
- Hispanic
- Pacific Islander or Native Hawaiian
- White, Non-Hispanic
- Other
- Prefer not to answer

Q20. What is your household income (the amount of money you make each year, and the amount of money your spouse/partner makes each year, if applicable)?

- $0 - $19,999
- $20,000 - $39,999
- $40,000 - $59,999
- $60,000 - $79,999
- $80,000 or more

Q21. Which of the following best describes your current employment status?

- Employed full-time in one job
- Employed at one part-time job
- Employed at multiple jobs (full or part-time)
- A stay-at-home spouse or parent/Homemaker
- Unemployed, but looking for work
- Unemployed and not looking for work
- Full-time student
- Retired
- Prefer not to answer

Q22. Which of the following best describes your marital status?

- Married
- Single, never married
- Divorced or separated
- Widowed
- Unmarried, living with partner
- Prefer not to answer