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# Benefits left on the table: Evidence from the Service members' Civil Relief $\operatorname{Act}^{\bigstar}$

Benjamin L. Castleman<sup>a</sup>, Richard Patterson<sup>b,\*</sup>, William Skimmyhorn<sup>c</sup>

<sup>a</sup> University of Virginia, Charlottesville, VA 22904, United States

<sup>b</sup> United States Military Academy, West Point, NY 10996, United States

<sup>c</sup> The College of William & Mary, Williamsburg, VA 23187, United States

# ABSTRACT

In this study we test whether behaviorally-motivated informational interventions can lead individuals to utilize consumer financial protections. Specifically, we use a large-scale randomized controlled trial to test whether gain/loss framing and reminder messaging can lead servicemembers in the United States Army to utilize an interest-rate protection outlined in the Servicemember Civil Relief Act (SCRA). While we find that reminder messaging increases engagement with informational materials, we find no differences in engagement across gain and loss framing. Furthermore, we find that information provision has no effect on servicemember credit outcomes, regardless of how SCRA protections are framed or whether email reminders are sent. We run a second experiment to explore what factors may be limiting the efficacy of our interventions and find that low engagement with emails and significant attrition throughout the application process are likely to contribute to our results. Taken together, our results suggest that financial education or information interventions offered via email face significant challenges to their effectiveness even when the apparent benefits seem large.

## 1. Introduction

The federal and state governments invest billions of dollars each year in non-entitlement public financial benefits and protections intended to support lower-income Americans and other vulnerable populations. Various studies demonstrate that these benefit programs can lead to improved private and social outcomes (e.g. Kane, 2003; Kreider et al., 2012; Murray & Mills, 2014). These social welfare-increasing effects notwithstanding, challenges to ensuring efficacy and optimal utilization among eligible populations are substantial. These challenges include poor awareness and distant and/or uncertain benefits from participation (Karlan, McConnell, Mullainathan, & Zinman, 2016; Milkman, Beshears, Choi, Laibson, & Madrian, 2013; Stockwell et al., 2012), complex choice environments and challenging enrollment processes (Kling, Mullainathan, Shafir, Vermeulen, & Wrobel, 2012; Madrian & Shea, 2001), and hassles associated with applying for public benefits (Bertrand, Mullainathan, & Shafir, 2004; Hastings & Weinstein, 2008). Policy makers and researchers thus have sustained interest in evaluating strategies, including education, to increase visibility, understanding, and take-up of public benefits programs among potential recipients.

A growing body of research demonstrates that the application of

behavioral economics principles that make it easier for people to access financial benefits can lead to improved outcomes for individuals. Such policies include changing default options (Madrian & Shea, 2001), prompting pre-commitment (Thaler & Bernartzi, 2004), and reminding people of previous commitments (Karlan et al., 2016). There is more to learn about these behavioral economic approaches as they relate to well-being though, given other settings where interventions produced no effects (i.e., 401(k) matching utilization in Choi, Laibson, & Madrian, 2011) or the potential for potentially offsetting effects (i.e., automatic enrollment in retirement plans and debt outcomes in Beshears, Choi, Laibson, Madrian, and Skimmyhorn (2018).

Paralleling these applied behavioral economics strategies has been substantial efforts to provide financial education to and increase financial literacy among economically disadvantaged populations. The results have varied. Meta-analyses of research on financial education suggest different levels of effectiveness: Kaiser and Menkhoff (2017) and Miller, Reichelstein, Salas, and Zia (2015) document beneficial effects but Fernandes, Lynch, and Netemeyer (2014) suggest less impact for typical financial education programs. Reviews of the causal effects of financial education are similarly divided, with Lusardi and Mitchell (2014) suggesting important effects and Hastings, Madrian, and Skimmyhorn (2013) suggesting more skepticism.

Corresponding author.

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E-mail addresses: castleman@virginia.edu (B.L. Castleman), richard.patterson@usma.edu (R. Patterson), bill.skimmyhorn@mason.wm.edu (W. Skimmyhorn).

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More recent research and analysis helps explain these apparent differences. First, one common observation across these reviews is the lack of experimental or quasi-experimental studies with high quality data on outcomes. In fact, the most rigorous recent empirical studies provide encouraging evidence on the effects of financial education: improved debt outcomes for new Army soldiers (Skimmyhorn, 2016a), beneficial downstream credit outcomes from high school personal finance and mathematics courses (Brown, Grigsby, van der Klaauw, Wen, & Zafar, 2016), and improved credit outcomes for young adults from high school financial education mandates (Urban, Schmeiser, Collins, & Brown, 2018). The present study addresses these methodological concerns by using random assignment and administrative data.

Second, a number studies suggest that financial education is less likely to be effective when individuals face distal, complex financial choices or have to complete multiple actions related to improving their financial well-being. Such challenges have led to calls for more "just-intime" financial education (e.g. Fernandes, Lynch, & Netemeyer, 2014; Mandell, 2006), though the causal evidence on this approach is limited. Our study attempts to overcome these challenges with clear information on the costs of inaction and assistance in completing the benefit registration process.

Finally, given the significant heterogeneity within large populations and the potential for this heterogeneity to explain different empirical results (e.g., Annamaria, Pierre-Carl, & Mitchell Olivia, 2017; Lusardi & Mitchell, 2014), we briefly review existing research related to military populations. Skimmyhorn (2016a) documents the effectiveness of an 8hour financial education course on debt and savings outcomes for new enlisted soldiers, though the debt reductions only persist for one year and the savings increases arose in part from enrollment assistance. Skimmyhorn, Davies, Mun, and Mitchell (2016) provide experimental evidence on the effectiveness of different financial education methodologies on student learning at West Point, but they lack data on behavioral outcomes. Finally, Skimmyhorn (2016b) uses National Financial Capability Study data to show that military members are more likely to have positive savings behaviors but more problematic credit and debt behaviors than comparable civilians. Taken together, this research suggests a potentially promising environment for additional financial education interventions, and it informed the design and execution of the current study.

Within both the behavioral economics and financial education literatures, information-only interventions have typically been less effective. While there are some instances of informational interventions leading to positive private or social outcomes, e.g. providing Medicare Part-D eligible individuals with personalized information about cost savings available for prescription drug purposes, the preponderance of informational interventions had very small or null impacts. Information alone does not appear to affect important financial decisions with respect to retirement savings in 401(k) (Choi et al., 2011) or other employer plans (Carter & Skimmyhorn, 2018). Nor has providing information about financial benefits available to defray the costs of pursuing postsecondary education affected students' enrollment decisions (Bergman, Denning, and Manoli, 2017; Bettinger, Long, Oreopoulos, & Sanbonmatsu, 2012; Bird, Castleman, Goodman, & Lamberton, 2017), or nudges encouraging individuals to shop in an Affordable Care Act Marketplace (Marzilli Ericson, Kingsdale, Layton, & Sacarny, 2017).

We contribute to the literature on informational interventions designed to provide financial education and increase take-up of public financial benefits by experimentally investigating several behaviorallyinformed strategies to increase military servicemember take-up of financial protections available to them through the Servicemembers' Civil Relief Act (SCRA). The SCRA financial safeguards to active duty servicemembers, including a six percent interest rate cap on financial obligations (e.g. credit card debt, auto loans, etc.) incurred prior to their service. Creditors are required to forgive interest payments that accrue at a rate above six percent for the duration of servicemembers' enlistment within the Armed Forces. To receive the interest rate protection, servicemembers must notify each individual creditor and document their service.

We designed an intervention to address the informational and behavioral obstacles inherent in SCRA utilization and enable more servicemembers to receive the financial protections for which they are legally entitled. The intervention provided potentially timely and salient information as a form of education by informing new servicemembers of the SCRA, the eligibility criteria, the potential benefits, and the required action steps for benefit use. We focused our outreach on members of the United States Army most likely to have the opportunity to capitalize on SCRA interest rate protections: enlisted soldiers with less than five years of active duty service as of November 2016 (n = 280,541).<sup>1</sup> Our outreach consisted of emails sent to servicemembers' official military email address; this is the one form of contact information that we could access and use centrally across the Army.

We designed several treatment variations to test different mechanisms that might influence whether servicemembers applied for their SCRA interest rate cap projections. One variation was a gain vs. a loss frame, building on a substantial body of lab- and field-based experiments demonstrating that people are more likely to take action when faced with a potential loss than they are to pursue a potential gain (Tversky & Kahneman, 1991). The loss frame emphasized the money servicemembers lose each month in interest payments above six percent by not taking advantage of the SCRA interest rate cap protection, whereas the gain frame emphasized what soldiers could save each month by taking advantage of these protections. We crossed the gain/loss frame with a reminder variation: Servicemembers assigned to this condition received several additional emails reminding them to take action on their SCRA benefits, both to overcome servicemembers' limited attention - especially amidst pressing military obligations-and to support soldiers to form more concrete implementation intentions. We provide a copy of our intervention materials in Appendix A and describe further in the intervention design section below - along with a more detailed description of our experimental design and accompanying randomization.

Similar to some prior informational interventions designed to deliver financial education, we find that our outreach to servicemembers about their SCRA financial protections did not affect soldiers' credit outcomes (our primary outcomes of interest). Servicemembers who received the loss frame and the reminders had statistically-equivalent total debt, credit card balances, and average credit interest rates as servicemembers who received the gain frame, did not receive reminders, or who were in a business-as-usual control group that did not receive any outreach. Nor do we find evidence of differential impacts of the overall outreach or specific treatments for sub-groups of servicemembers we pre-specified in our analysis plan.<sup>2</sup> The most likely explanation for these results is the low rate of email opening, which may be a function of the sensitivity of personal financial issues as well as the military's vigilant information security environment that continually educates servicemembers on spam, phishing, email scams and other email threats.

Extending our initial work, we conducted a subsequent experiment to investigate *why* the information did not affect soldiers' take up of SCRA. A year after the initial study, we repeated the treatment arms of our study among 131,182 servicemembers who either (1) were previously in the control group or (2) joined the Army after our initial randomization. In this subsequent experiment we did not have a business-as-usual control group, focusing instead on identifying the stage in our program

<sup>&</sup>lt;sup>1</sup> Although SCRA benefits apply to servicemembers of all experience levels, we hypothesize that those with fewer years of service are (1) less likely to be aware of the SCRA and its protections, (2) more likely to be aware of which creditors they were making high-interest payments to at the time they started their service and (3) more likely to be able to locate contact information for these creditors.

<sup>&</sup>lt;sup>2</sup> Our registered analysis plan can be found at https://www.socialscienceregistry.org/trials/1683. Accessed 5/14/2018.

where we may have failed to reach, engage or motivate servicemembers. Specifically, we compared read-receipts, image-loading in emails, visits to our SCRA project website, and website-based activity across our four treatment conditions. This follow-up study generates three insights. First, we find no differences in web engagement across loss and gain framing, which suggests that the gain/loss framing of financial information may have limited effects on behavior. Second, we find substantially higher engagement among those who receive reminders, suggesting information providers can significantly improve their influence by repeated engagement with their target population. Third and finally, we find significant attrition at every step of the SCRA application process. In order for our treatment emails to directly lead a servicemember to receive SCRA benefits, they must (1) receive the email, (2) visit the study website (3) click link and print letter to creditors, (4) click link and print proof of military service, and (5) send the letter and orders to their creditor (which is unobservable). Our treatments lead 5.63-10.42% of servicemembers to send a read receipt for their emails, 0.47-1.94% to visit our website, and only 0.11-0.42% to click the link to both the letter to creditors and their proof of military service. These results suggest that efforts to reduce the number of steps between information provision and individual action are likely to increase program effects.

The remainder of our paper is organized as follows: Section 2 explains the details of the SCRA program, Section 3 describes our study population and research design, Section 4 reports our results, and Section 5 concludes.

# 2. The Servicemember Civil Relief Act

The Servicemember Civil Relief Act provides legal protections to active duty members of the U.S. military against adverse consequences that may arise due to their service. Its stated purpose is to "provide for, strengthen, and expedite the national defense by protecting servicemembers, enabling them to 'devote their entire energy to the defense needs of the Nation." (50 U.S.C. app. §502) These protections include but are not limited to stays in civil administrative matters, setting aside default judgments, the right to terminate select contracts (e.g., automobile and home leases, cell phone contracts), stays of foreclosures and repossessions, and domicile protections. The most recent SCRA (50 USC App §§501–596), was enacted in 2003 and amended in 2004, replacing the Soldiers' and Sailors' Civil Relief Act (SSCRA) of 1940, but it is still often referred to as the "Soldiers' and Sailors' Act." The law applies to more than 1 million servicemembers at any given time, to more than 18 million living veterans at some point in their lives, and to approximately 40 million veterans since the law's inception.<sup>3</sup> Given this legal scope, long history, and affected population, the SCRA is one of the largest consumer protections laws in history. Unfortunately, very little is known about its utilization or effectiveness.

One unique and potentially valuable protection of the SCRA is the reduced interest provision, which enables servicemembers to reduce to 6% the interest rate on any individual or joint debt held when an individual enters active duty.<sup>4</sup> We focus our attention on this provision given that interest rates for common types of soldier debt (e.g., credit

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cards) are often much higher than 6% and that many soldiers enter service with significant amounts of debt. While we lack data on the exact credit balances for which SCRA protections would apply, more than 88% of our matched sample has some debt balance with the credit bureau and more than 67% have active credit card balances in the month prior to our intervention. In a related setting, Skimmyhorn (2016) documents that 67% of new Army enlistees have debt balances in the year prior to their military entry and 55% have credit card balances during the same period. Both facts suggest that SCRA protections may provide meaningful financial assistance, but many servicemembers are likely to miss out on these protections if they do not request these protections from creditors.

Current reviews suggest that little is known about SCRA utilization, but that a better understanding of SCRA take-up would have important social welfare implications (Carlson, Nelson, & Skimmyhorn, 2015). To our knowledge, there has been no academic research on utilization of the SCRA interest rate reduction provision in particular, or efforts to encourage eligible servicemembers to utilize their SCRA benefits more generally. However, several U.S. GAO reports (GAO 2012, 2014, and 2016) document low utilization rates for SCRA benefits related to mortgages and student loans, and they highlight a lack of data collection and program evaluation by the Department of Defense and the military services with regards to SCRA benefits.<sup>5</sup> Both facts further motivate our study.

Although filing for SCRA benefits seems to be of clear benefit for soldiers with preexisting credit card debt, research suggests that minor hassles can significantly reduce take-up of valuable social programs, and that fairly simple messaging campaigns can improve take-up of important government programs. For example, Bhargava and Manoli (2015) find that sending potential earned income tax credit (EITC) claimants letters with information about EITC enrollment significantly increased participation in the program. Similarly, Barr and Turner (2015) find that letters about Pell Grant eligibility significantly increased college enrollment among unemployment insurance (UI) program recipients during the Great Recession. Other recent evidence suggests that sending multiple reminders to individuals to apply for government programs, such as filling out the Free Application for Federal Student Aid (FAFSA), can also significantly increase action and improve individual outcomes (Castleman & Page, 2015).

# 3. Study design

# 3.1. Study population and data

Our potential study population includes the 280,541 active-duty enlisted Army servicemembers who, as of November 2016, had served in the Army for five or fewer years. We collect demographic information for our sample—including age, sex, race, education, marital status, parental status, education level, and Army rank—from Army administrative records. The characteristics of these servicemembers are described in column 1 of Table 1. Of these 280,541 servicemembers, we were able to link 195,094 to post-intervention credit report records.<sup>6</sup>This population is described in column 2 of Table 1. We further restrict our analysis sample to the 129,745 individuals with positive levels of debt, as measured by an individual's credit bureau file, prior to the study intervention. Our primary analysis sample of 129,745

<sup>&</sup>lt;sup>3</sup>Living Veteran estimates can be found at the U.S. Census Bureau site: https://www.census.gov/newsroom/facts-for-features/2017/veterans-day.

html. Accessed May 7, 2018. Estimates of the total number of Veterans in U.S. history can be found at the Veteran's Administration website: https://www.va.gov/opa/publications/factsheets/fs\_americas\_wars.pdf. Accessed May 7, 2018. The latter figure could be an overestimate since it counts service by an individual in multiple wars as multiple observations, but it is more likely to be an underestimate as it only counts wartime service (omitting all servicemembers who did not serve during a war) and it does not include any service since 2001 in the Global War on Terror.

<sup>&</sup>lt;sup>4</sup> There are limits to these protections: they are generally limited to the period of active duty service, though mortgage protections extend for one year following release, and they do not cover debt incurred after entry.

<sup>&</sup>lt;sup>5</sup> The highlights section of GAO-14-221 concludes, "GAO's current finding that many servicemembers did not appear to be taking advantage of the SCRA interest rate cap appears to reaffirm that DOD's SCRA education efforts could be improved and that an assessment of the effectiveness of these efforts is still warranted."

<sup>&</sup>lt;sup>6</sup> While we are unable to verify why 30.4% of our sample does not match, it is likely that a significant fraction do not match because they have not established any credit. Compared to matched servicemembers, non-matched servicemembers are more than two years younger and 30% less likely to have attended any college.

Table 1

Summary statistics.

	All (1)	Has credit data (2)	Has credit balance (3)	Interest 6% + (4)
Age	22.366	23.040	23.486	24.125
Female	0.161	0.128	0.131	0.131
Black	0.224	0.243	0.236	0.223
Hispanic	0.158	0.136	0.144	0.154
White	0.529	0.555	0.547	0.546
Other race/ethnicity	0.089	0.066	0.074	0.077
Married	0.333	0.396	0.462	0.517
Has children	0.195	0.237	0.280	0.313
No diploma	0.043	0.045	0.043	0.040
High school	0.806	0.792	0.771	0.747
Some college	0.077	0.083	0.095	0.111
Bachelors +	0.069	0.074	0.087	0.098
AFQT score	59.251	59.897	60.379	61.561
Years of service	1.843	2.251	2.486	2.727
Army rank	3.272	3.595	3.767	3.923
Has credit data	0.695	1.000	1.000	1.000
Has credit interest data	0.369	0.530	0.718	1.000
Has any debt	-	0.880	1.000	1.000
Total debt	-	24,235	30,239	39,067
Has any credit debt	-	0.665	1.000	1.000
Credit card balance	-	2063	3098	5039
Credit interest rate	-	8.604	9.393	15.706
Ν	280,516	195,094	129,745	53,581

All reported means are from pre-study characteristics. AFQT Score is out of 100. Army rank varies between E1 (lowest) and E9 (highest). Credit interest rates are a calculated six-month average interest rate on revolving debt.

servicemembers, described in column 3 Table 1, have an average age of 23.5, are 13% female, 24% black, and 14% Hispanic. Approximately 46% of servicemembers in our analysis sample are married and 28% have children. Most of this sample has only completed high-school or less (81%) and only 9% have completed a four-year degree. Because many individuals fail to pay off credit debt monthly, we also conduct analysis on the 53,581 individuals for whom we have credit interest data and who have an average credit interest rate greater than 6%. These individuals are those who are most likely to be able to benefit from the 6% interest rate cap outlined in the SCRA policy. Perhaps surprisingly, these individuals are older, more educated, and have higher cognitive ability than those in our primary analysis sample.

Our pre- and post-study credit report data—including levels of overall debt, credit debt, and credit interest rates—come from one of the national credit reporting agencies. The agency collects individual borrowing, financial, and credit information from a variety of financial institutions including most major credit card companies in the United States. For this study, we merge individual-level credit report data to Army administrative records.<sup>7</sup> Particularly important to our study is the credit bureau's data on an individual's revolving interest rate, which estimates a rolling six-month average interest rate across all revolving credit accounts. Because this estimated revolving credit rate is a rolling six-month average, we take the rate as of seven months after the conclusion of our interventions to ensure our estimates fully capture the effects of our treatments on interest rates. For simplicity, we refer to the rolling average revolving interest rate as the credit interest rate.

Approximately 88% of our matched sample has some kind of debt prior to the study, with the average level of debt (including mortgage and vehicle loans) prior to our intervention is approximately \$24,235 dollars. In addition to overall debt, 66% of our sample has credit debt; with an overall average balance of \$2063. Among servicemembers paying positive average interest rate on credit, the average interest rate payed prior to our intervention is approximately 16%.<sup>8</sup> To put the benefits of the program in perspective, a servicemember making the minimum payment on a pre-service credit card balance of \$2063 with a 16% interest rate would save approximately \$1459 if she utilized SCRA interest-rate protections.<sup>9</sup>

# 3.2. Study treatments

We use stratified randomization at the individual level to assign servicemembers to one of five groups: (1) Control, (2) Gain frame, (3) Gain frame + reminders, (4) Loss frame, and (5) Loss frame + reminders.<sup>10</sup> These five groups have effective sample sizes of 65,318, 32,841, 32,697, 32,760, and 32,950, respectively.<sup>11</sup> Those in the control group are observed in our administrative data, but otherwise unaffected by our study.

The SCRA requires soldiers to provide creditors with a request letter and proof of their military service (e.g., a copy of their military orders) in order to secure the interest rate reduction. Given the literature cited above and our understanding of potential barriers and costs to filing, we designed our intervention to facilitate servicemember filings. Those in the gain frame treatment received an email describing the SCRA interest-rate protections framed as potential gains. Specifically the gain frame email, shown in Fig. 1, uses the subject line "Claim your SCRA financial benefits now," refers to the protections as savings, tells servicemembers that, on average, they could gain over \$3000 during a three-year term, and graphically represents the monetary value of the protections in an upward pointing green triangle. The values in this graphic indicate that a servicemember with \$1000, \$2000, \$5000, or \$10,000 of debt could save \$113.76, \$227.52, \$568.80, or \$1137.60, respectively.<sup>12</sup> Those in the gain + reminders treatment receive an identical email to those in the gain treatment, but additionally receive three reminder emails. These three reminder emails were sent three days, seven days, and fourteen days after the initial email. These emails had slightly different subject lines and added short preambles, but were otherwise identical to the email shown in Fig. 1.13

Servicemembers in the loss frame treatment received an email,

<sup>10</sup> Our sample was stratified by age, sex, race, marital status, number of children, education level, years of service in the Army, and Armed Forces Qualifying Test (AFQT) score categories.

<sup>11</sup> The treatment group sizes including observations with missing credit data are: 93,251, 46,827, 46,679, 46,688, and 47,071 for the control group, gain frame group, gain+reminder group, loss group, and loss+reminder group, respectively.

 $^{12}$  These amounts are based on an assumption of an 18% APR interest and a minimum payment of interest + 1% of principle each month.

<sup>13</sup> For individuals in the gain frame + reminders treatment, the subject line for the first reminder email was "Reminder: Claim your SCRA financial benefits now" and included a preamble: "Have you applied for your Servicemember Civil Relief Act (SCRA) protections yet? If not, write a specific day and time when you can mail in your SCRA protection application: Day \_ Time \_\_\_." The subject line for the second reminder email was "Second Reminder: Claim your SCRA financial benefits now" and included the preamble: "This is your second reminder to apply for Servicemember Civil Relief Act (SCRA) protections. If you have not already done so, pick a time during your weekly routine when you can mail in your SCRA protection application-for instance, on your way home from work." The third and final reminder email had the subject line "Final Reminder: Claim your SCRA financial benefits now" and had the preamble: "This is your final reminder to apply for Servicemember Civil Relief Act (SCRA) protections. You can start saving money right away and receive repayment for any extra interest you have already paid by applying for SCRA protections now."

<sup>&</sup>lt;sup>7</sup> While extensive, the credit bureau debt data is incomplete as it will not capture debt from institutions that do not report to the national credit bureaus (e.g., payday lenders).

 $<sup>^{8}</sup>$  The credit card interest rate constitutes an average of the 6 months prior to our intervention.

<sup>&</sup>lt;sup>9</sup> This calculation assumes a minimum payment of any fees, total interest due, plus 1% of the total balance. A servicemember making the minimum payment with 16% interest would pay a total of \$2,210.16 in interest over 180 months. A servicemember paying 6% interest would pay a total of \$750.95 in interest over 154 months.

# Dear Soldier,

If you entered the military with credit card or other debt, the Servicemember Civil Relief Act (SCRA) allows you to reduce your interest rates to 6% a year. If you have not taken advantage of your SCRA protections, you could be **saving hundreds or thousands of dollars per year.**<sup>1</sup>

You can start saving money right away and receive repayment for any extra interest you have already paid by applying for SCRA protections now.



## You do NOT automatically receive SCRA protections.

To take advantage of the SCRA program, you will need to complete the above process for each of your credit cards or other debts. For legal assistance or more information about your SCRA protections, please visit http://www.oema.army.mil/tmgp21/scra or contact your local legal assistance center: http://legalassistance.law.af.mil/content/locator.php.

Sincerely, Donald G. Salo Deputy Assistant Secretary of the Army Manpower & Reserve Affairs, Military Personnel & Quality of Life

<sup>1</sup>Savings estimates are for first year of debt, assuming card has 18% APR interest rate and cardholder makes minimum payment of interest+1% each month. How the Servicemember Civil Relief Act works: The SCRA requires lenders to limit the interest you pay on debts incurred before military service to 6%. This limit applies from the date you begin active-duty service until 1 year after you termination or release from the military. When you are approved for SCRA protections, your interest rate will be reduced to 6% and you are entitled to be credited for any interest above 6% you have already paid. Active duty servicemembers and those within 180 days of their release from the date your creditors have the option of petitioning a court to show your military service has not materially affected your ability to pay interest above 6%.

<sup>2</sup>Most major credit card addresses are provided in the attached SCRA benefit request letter.

Fig. 1. Gain Email.



# Dear Soldier,

If you entered the military with credit card or other debt, the Servicemember Civil Relief Act (SCRA) allows you to reduce your interest rates to 6% a year. If you have not taken advantage of your SCRA protections, you could be **losing hundreds or thousands of dollars per year.**<sup>1</sup>

# You can avoid losing money right away *and* receive repayment for any extra interest you have already paid by applying for SCRA protections now.



Potential Losses Per Year of Service

You could lose over \$3000 during a three year term!

your pre-service debts:

Three simple steps to receive SCRA protections! For each of



Make a copy of your military orders



Send the SCRA request letter and a copy of your military orders to your credit card company<sup>2</sup>

# You do NOT automatically receive SCRA protections.

To take advantage of the SCRA program, you will need to complete the above process for each of your credit cards or other debts. For legal assistance or more information about your SCRA protections, please visit http://www.oema.army.mil/tmgp41/scra or contact your local legal assistance center: http://legalassistance.law.af.mil/content/locator.php.

Sincerely, Donald G. Salo Deputy Assistant Secretary of the Army Manpower & Reserve Affairs, Military Personnel & Quality of Life

Fig. 2. Loss Email.

shown in Fig. 2, which describes forgone SCRA interest-rate protections as losses. In particular, the *loss frame* email uses the subject line "Avoid *losing your SCRA financial benefits now,*" refers to forgone protections as losses, tells servicemembers that they could lose an average of over \$3000 in a three year term, and graphically represents the monetary value of the protections in a downward-pointing red triangle. Those in the *loss + reminders* treatment receive the *loss framing* email along with three reminder emails sent three, seven, and fourteen days after the initial email. Each reminder emails have modified subject lines and preambles, but are otherwise identical to the email shown in Fig. 2.<sup>14</sup>

To receive the interest-rate reduction benefit, servicemembers are required to provide their creditors a letter requesting interest-rate reduction that includes proof of their military service. We directed those who engaged with our treatment to a program website that we designed to facilitate filings for SCRA benefits. The website landing page, shown in Appendix Fig. A.1, informs servicemembers that they are entitled to SCRA benefits and provides them with links to complete a form notification letter, print their orders (proof of military service), find creditor addresses, contact legal assistance, and contact the program office.<sup>15</sup>

# 4. Empirical strategy

In our primary analysis, we estimate the effect of treatment assignment on changes in credit outcomes following treatment including overall debt, credit card debt, and the estimated interest rate paid on credit card debt. We focus on overall and credit card debt because changes in these outcomes are closely related to a servicemembers' financial wellbeing, but the estimated interest rate is our most direct estimate of treatment efficacy.<sup>16</sup> To examine the treatment effects on each of these outcomes,we use Ordinary Least Squares (OLS) to estimate the following equation:

$$y_i = \beta_0 + \beta_1 T_i + \beta_2 V_i + \beta_3 \overline{y_i} + \epsilon_i \tag{1}$$

Where  $y_{it}$  is a credit outcome,  $T_i$  is treatment assignment,  $V_i$  is a

<sup>15</sup> The "complete your SCRA letter" link opens a fillable form letter, shown in Appendix Figure A.2, that allows a servicemember to complete a request letter by filling in their address, creditor address, account number, date of Army service activation, and their signature. The "print your orders" link provides servicemembers instructions on how to access their orders via the Army's electronic records management system (iPERMS) and provides them with an additional link to the iPERMS website. The "find creditor address" link opens a document, shown in Appendix Figure A.3, which lists the addresses of 12 common creditors along with instructions on how to find the address of creditors not listed. The "find legal assistance" link opens the Army's legal assistance locator tool. Finally, the "learn more" link describes which agencies in the Army over Military Personnel and Quality of Life) and manage (Office of Economic and Manpower Analysis, OEMA) the project, and provides servicemembers with information to contact OEMA and legal assistance.

<sup>16</sup> The potential effects of reduced interest rates on levels of debt may be ambiguous, as lower interest rates and an influx of cash could increase an individual's ability or desire to secure new loans.

vector of individual pre-study demographic characteristics, and  $\overline{y_i}$  is the pre-study value of the outcome. We estimate two specifications for each outcome: (1) with only the treatment variables (2) a full vector of control variables including: age, race, marital status, rank, years of service, education level, location, Armed Forces Qualification Test (AFQT) scores, and pre-study credit controls.

In our analyses, we exclude individuals that we are unable to match to credit data in the pre- or post-study periods.<sup>17</sup> Additionally, we exclude individuals that do not have any credit debt prior to the intervention, as they are unlikely to benefit from SCRA interest-rate reductions. In additional analyses, we estimate Eq. (1) while restricting our sample to those with average credit interest rates above 6%, as these servicemembers are the most likely to benefit from SCRA protections.

In addition to our primary analysis, we examine treatment effect heterogeneity by estimating the following equation with OLS:

$$y_{it} = \beta_0 + \beta_1 T_i + \beta_2 X_i + \beta_3 T_i^* X_i + \beta_4 V_i + \beta_5 \overline{y_i} + \epsilon_i$$
<sup>(2)</sup>

This specification is identical to the specification outlined in Eq. (1) except for the inclusion of the variable:  $T_i^*X_i$ . This variable interacts potentially relevant attributes in the SCRA utilization decision with treatment assignments including: AFQT scores, levels of pre-existing debt, education level, and race. In the case of AFQT scores and pre-existing debt, we separate these variables into high and low quantiles and interact the indicator for "high AFQT" or "high debt" with each treatment. For education, we interact whether an individual has attended any college with treatment assignment, and for race we interact whether an individual is non-white with treatment assignment.

To interpret any of our estimates of treatment effects in Eqs. (1) or (2) as causal, our assignments to treatment conditions must be random. To test the randomization assumption, we examine the balance of observable characteristics in Table 2. Table 2 suggests that our randomization approach was effective. Among the 15 characteristics we examine, none significantly vary across treatments. Additionally, we test the balance of our initial randomization sample and high interest rate samples in Appendix Tables A.1 and A.2, respectively. In each case, we find that observable characteristics balance across treatments. Therefore, we are confident that our results capture the causal effects of our treatments on credit outcomes.

Finally, in Eq. (1) we estimate the effects of four separate treatments on three different credit outcomes and in every specification of Eq. (2) we estimate four treatment effects and four interaction effects for each outcome. Between our estimates of Eqs. (1) and (2), we have 56 coefficients of interest. While we do not formally correct for multiple hypothesis testing in our estimates, it is important to note that we would expect approximately 1/10 of our coefficients to be statistically significant in the absence of any real treatment effects, simply by chance. As a result, any single significant coefficient should be interpreted cautiously.

## 5. Results

#### 5.1. Primary results

In our main results, reported in Table 3, we test whether messages and reminders about SCRA interest rate protections can lead people to have better credit outcomes: namely lower levels of overall debt, lower credit debt, and lower average interest rates paid on debt. Further, we test whether framing the SCRA interest-rate protections as a gain or a loss affects credit outcomes. In column 1 of Table 3 we estimate the effect of our four treatments—gain-frame message, gain + reminders, lossframe message, and loss + reminders—on overall level of debt. While our estimates are somewhat imprecise, we find no evidence that any our treatments significantly affected overall debt. Adding demographic and

<sup>&</sup>lt;sup>14</sup> For individuals in the *loss frame* + *reminders* treatment, the subject line for the first reminder email was "*Reminder: Avoid losing your SCRA financial benefits now*" and included a preamble: "*Have you applied for your Servicemember Civil Relief Act (SCRA) protections yet? If not, write a specific day and time when you can mail in your SCRA protection application:* Day \_ Time \_\_\_." The subject line for the second reminder email was "*Second Reminder: Avoid losing your SCRA financial benefits now*" and included the preamble: "*This is your second reminder to apply for Servicemember Civil Relief Act (SCRA) protections. If you have not already done so, pick a time during your weekly routine when you can mail in your SCRA protection application-for instance, on your way home from work.*" The third and final reminder email had the subject line "*Final Reminder: Avoid losing your SCRA financial benefits now*" and had the preamble: "*s is your final reminder to apply for Servicemember Civil Relief Act (SCRA) protections. You can avoid losing money right away and receive repayment for any extra interest you have already paid by applying for SCRA protections now.* 

<sup>&</sup>lt;sup>17</sup> Treatment assignment is uncorrelated with credit bureau record matches.

#### Table 2

# Balance of soldier attributes.

	Control (1)	Gain (2)	Gain + Reminder (3)	Loss (4)	Loss + Reminder (5)	F-stat <i>p</i> -value
Age	23.512	23.484	23.448	23.434	23.529	0.033
Female	0.130	0.133	0.130	0.131	0.133	0.612
Black	0.237	0.237	0.235	0.237	0.233	0.852
Other race/ethnicity	0.073	0.073	0.072	0.073	0.076	0.522
Hispanic	0.143	0.144	0.146	0.144	0.145	0.874
White	0.547	0.546	0.546	0.547	0.546	0.998
Years of service	2.488	2.483	2.478	2.480	2.496	0.746
Married	0.461	0.461	0.460	0.461	0.467	0.638
Has children	0.280	0.278	0.283	0.277	0.280	0.581
No diploma	0.043	0.042	0.043	0.043	0.045	0.724
High school	0.771	0.768	0.776	0.773	0.766	0.101
Some college	0.095	0.098	0.092	0.094	0.096	0.347
AFQT score	60.317	60.416	60.403	60.375	60.444	0.939
Years of service	2.488	2.483	2.478	2.480	2.496	0.746
Army rank	3.767	3.769	3.759	3.757	3.781	0.062
N	43,049	21,685	21,635	21,628	21,748	-

Mean values reported from soldiers from those with positive credit balance. All means are from pre-study characteristics. AFQT Score is out of 100. Army rank varies between E1 (lowest) and E9 (highest). Credit interest rates are a calculated six-month average interest rate on revolving debt.

# Table 3

Effects of treatments on credit outcomes.

	Total balance		Credit balance		Interest rate	
	(1)	(2)	(3)	(4)	(5)	(6)
Gain frame	-409.05	60.09	-10.66	-9.86	-0.0063	-0.0288
	(516.02)	(340.71)	(39.36)	(23.52)	(0.0818)	(0.0700)
Gain + reminders	-22.73	307.34	45.47	39.17	0.0075	0.0481
	(524.42)	(336.09)	(40.74)	(24.04)	(0.0820)	(0.0700)
Loss frame	-520.08	-476.04	-9.09	-2.83	-0.0194	-0.0242
	(517.31)	(332.51)	(39.70)	(24.23)	(0.0821)	(0.0696)
Loss + reminders	346.5723	-266.70	61.28	6.48	0.1410*	0.1107
	(526.09)	(340.87)	(40.27)	(23.25)	(0.0817)	(0.0699)
N	129,745	129,328	129,745	129,328	100,480	92,820
$R^2$	0.0000	0.5825	0.0000	0.6482	0.0000	0.3158
Dependent variable mean	37,072.74	37,107.95	3444.50	3445.16	10.1620	10.4480
Pre-dependent variable	Ν	Y	N	Y	N	Y
Demographic controls	Ν	Y	Ν	Y	Ν	Y

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01. Robust standard errors in parentheses. Demographic variables include: age, sex, race, marital status, parental status, education level, AFQT score, years of service, and rank.

# Table 4 Effects of treatments on credit outcomes, high interest rate sample.

	Total balance		Credit balance		Interest rate	
	(1)	(2)	(3)	(4)	(5)	(6)
Gain frame	-277.73	111.33	-34.20	-34.05	-0.0002	0.0150
	(903.39)	(600.65)	(73.20)	(43.07)	(0.0943)	(0.0851)
Gain + reminders	174.11	368.27	114.83	55.25	0.1410	0.1517*
	(903.52)	(575.75)	(75.95)	(42.93)	(0.0950)	(0.0856)
Loss frame	-1317.23	-921.43	-124.41*	- 54.55	0.0805	0.0671
	(887.28)	(562.92)	(72.55)	(43.06)	(0.0952)	(0.0853)
Loss + reminders	130.02	-439.18	59.87	3.56	0.1191	0.1192
	(907.91)	(593.19)	(74.66)	(41.64)	(0.0938)	(0.0842)
N	53,581	53,424	53,581	53,424	53,581	53,424
$R^2$	0.0001	0.5826	0.0002	0.6695	0.0001	0.1928
Dependent variable mean	46,979.97	47,024.29	5420.67	5424.52	13.9419	13.9455
Pre-Dependent variable	Ν	Y	Ν	Y	N	Y
Demographic controls	Ν	Y	Ν	Y	Ν	Y

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01. Robust standard errors in parentheses. Sample limited to service- members who have estimated pre-intervention revolving credit interest rates at or above 6%. Demographic variables include: age, sex, race, marital status, parental status, education level, AFQT score, years of service, and rank.

#### Table 5

SCRA program engagement patterns.

1 0 0	0 1			
	Gain	Gain + reminder	Loss	Loss + reminder
	(1)	(2)	(3)	(4)
Read receipt	0.0563	0.1041	0.0577	0.1036
Any engagement	0.0121	0.0464	0.0115	0.0411
Visit site	0.0050	0.0195	0.0048	0.0190
Download forms	0.0011	0.0042	0.0011	0.0039
Download all	0.0005	0.0020	0.0006	0.0020
N	32,705	32,823	32,764	32,890

Observations are from servicemembers included second round study. "Any Engagement" identifies an individual who (a) viewed the email in HTML with images, or (b) visited the SCRA website. "Visit Site" counts all unique IP address visits to the website. "Download Forms" identifies whether individual clicked links to access both the letter to creditor and followed linked to download or ders. "Download All" identifies whether individual clicked links to access the letter to creditor, followed linked to download orders, and downloaded link to list of creditor addresses.

#### Table 6

Balance of soldier attributes.

	Read receipt	No read receipt	T-stat <i>p</i> -value
Age	24.95	22.75	0.000
Female	0.237	0.146	0.000
Black	0.292	0.224	0.000
Other race/ethnicity	0.089	0.069	0.000
Hispanic	0.165	0.178	0.001
White	0.454	0.529	0.000
Married	0.463	0.295	0.000
Has children	0.285	0.164	0.000
No diploma	0.035	0.054	0.000
High school	0.707	0.821	0.000
Some college	0.073	0.036	0.000
AFQT score	62.50	58.32	0.000
Years of service	2.525	1.427	0.000
Army rank	3.821	2.935	0.000
Has any credit debt	0.613	0.506	0.000
Credit balance	3148	2285	0.000
Credit interest rate	9.27	8.89	0.006
Ν	10,534	120,357	-

Observations are from servicemembers included second round study. Credit information is only available for the servicemembers who were in the control group in the first round study. We observe "Has credit interest" for 63,088 servicemembers, "Credit balance" for 49,590 servicemembers, and "Credit interest rate" for 30,571 servicemembers.

pre-study debt level controls in column 2 improves our precision, but does not change our conclusion: none of our interventions significantly affect overall levels of debt.

In columns 3 and 4 of Table 3, we estimate the effects of our treatments on credit debt without controls and with control variables, respectively. In each case, we find no significant effects of our treatment on credit outcomes.<sup>18</sup> Furthermore, we estimate fairly precise null effects of our treatments on credit balances: when controlling for observable characteristics, we can rule out any of our treatments decreasing credit balances by more than \$60 or increasing credit balances by more than \$90.<sup>19</sup> While we do not find any evidence of treatment

effects on overall or credit debt, it is possible that servicemembers could receive the SCRA benefits, but spend the benefit in a way that does not reduce their debt. To more directly test whether servicemembers take advantage of the interest rate reduction provision in the SCRA, we estimate the effect of our treatments on estimated credit interest rates in Columns 5 and 6 of Table 3. Similar to our previous findings, we do not find any evidence that our treatments reduce credit interest rates. In column 5, we find that the gain frame, gain + reminders, and loss frame had no statistically or economically significant effect on credit interest rates. Our estimate of the effect of loss + reminder suggests in column 5 that this treatment may actually slightly increase interest rates. However, once controls are included in column 6, no treatment group has significantly different credit interest rates from the control. Our estimates in column 6 are precise enough to rule out reductions or increases in interest rates of more than a quarter of a percentage point for any of our treatments.<sup>20</sup>

# 5.2. Subsample and heterogeneity analyses

One possible reason for our null results is that our results are attenuated by the presence of servicemembers who do not have pre-service debt and, therefore, are unable to benefit from SCRA protections. In Table 4, we estimate the effects of our treatments on a population who are paying average interest rates on credit cards above 6% and may be more likely to be eligible for SCRA interest rate protections. In Table 4, we find that our treatments do not affect credit outcomes, with two minor exceptions. In column 3 we find that the loss frame may slightly reduce credit balances by \$124.41 (significant at the 10% level), but this effect becomes statistically insignificant when observable characteristics are controlled in column 4. In column 6, we find that the gain + reminder treatment may actually increase average interest rates by 0.15 percentage points (significant at the 10% level). While our estimates are more imprecise than those found in Table 3, we arrive at the same conclusion: there is no evidence that any of our treatments significantly improve credit outcomes.

To further explore whether our treatments may have affected certain populations, but not others, we our estimates of Eq. (2) with treatment assignments interacted with high levels of credit debt, interest rates, education level, and by race/ethnicity in Appendix Tables 3–6, respectively. In these tables we find a couple of treatment coefficients (3/192) are significantly different from the control at the 5% level, but no patterns that suggest that our any treatments have a meaningful effect on credit outcomes for those with high or low levels of debt, high or low interest rates, those with or without any college education, or those from minority or non-minority racial and ethnic groups.

### 5.3. Mechanisms

Our results suggest that our treatments did not improve general credit outcomes nor credit outcomes for any group we identified in our pre-analysis plan. Given the scale of this study and evidence that similar messaging approaches influence outcomes in other contexts, we devised a follow-up study to better understand what was driving our main results. In November of 2017, we replicated the email treatments outlined in Section 3, but with better email web tracking capabilities. To construct the sample, we took the 131,182 servicemembers who were either in our control group (and had not left the Army) or who had joined the Army between our initial study and November 2017 and randomly assigned them to either the gain, gain + reminder, loss, or

<sup>&</sup>lt;sup>18</sup> To test whether our results are sensitive to outliers, we estimate equations I and II using quantile regressions and regressions that omit the top 5% of observations in terms of the pre-intervention outcome variable. We find that both approaches generate outcomes that are similar to our primary results and yield the same conclusions.

 $<sup>^{19}</sup>$  A The 95% confidence interval for each of our point estimates in column 4 of Table 3 is (-\$55.96, 36.24), (-7.95, 86.29), (-50.32, 44.66), and (39.09 52.05) for our gain-frame message, gain + reminders, loss-frame message, and loss + reminders treatments respectively.

 $<sup>^{20}</sup>$  from the 95% confidence interval for each of our point estimates in column 6 is (-0.166, 0.108), (-0.089.0.1853), (-0.161, 0.112). and (-0.026, 0.248) percentage points for our gain-frame message, gain + reminders, loss-frame message, and loss + reminders treatments respectively.

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*loss* + *reminder* treatment groups. We did not employ a control group in the follow-up study because we were unable to obtain credit bureau outcomes for this sample.

In this follow-up study, we tracked whether the servicemember (1) sent a read receipt in response to our email, (2) loaded the graphics in our email, (3) visited the program website, or (4) clicked on the specific links within the website. While we are unable to tie outcomes 2–4 to individual servicemembers, we are able to identify unique IP addresses to understand patterns of engagement across treatment groups.<sup>21</sup>

We report the patterns of web engagement in our follow-up in Table 5 and test differences across treatments in Appendix Table A.7. The patterns outlined in Table 5 help explain why our treatment are not affecting credit outcomes. In the first row of Table 5 we examine patterns of servicemembers sending "read receipts" across treatments. Read receipts are triggered when a servicemember opens an email, is prompted to select " yes" or "no" to sending a read receipt, and chooses "yes." While the "read receipts" do not measure whether a servicemember read our email, they provide a lower bound on whether servicemembers opened our email.<sup>22</sup> We find that only 5.63% and 5.77% of servicemembers in the gain and loss treatments send read receipts respectively, indicating that our emails may not have been effective at reaching many of our target population and that framing does not have a statistically significant effect on read receipts. While our intervention emails were sent from an official military account, with approved and recognized branding, they may still have been perceived by some as potentially untrustworthy. The Army and DOD maintain an active information security posture that makes salient many forms of spam, phishing, scams, and other threats. Moreover, despite our use of servicemembers' official email addresses (which allowed us to successfully deliver 97.03% of our emails), many junior servicemembers are not required to use email for their work and may simply not access their email regularly. An additional challenge is the fact that the financial issues inherent in the emails and SCRA program may be perceived by some servicemembers as private issues that they do not wish to share with their employer.

Reminder emails have a statistically significant (at the 1% level) effect on the likelihood of sending a read receipt: 10.41% of servicemembers in the gain + reminders treatment and 10.36% of those in the loss + reminders ever send a read receipt, respectively. Nevertheless, our emails only reach a small fraction of our target population. In the second row of Table 5 we report whether servicemembers actively engage in our program by viewing the image in the email or by visiting our website.<sup>23</sup> Only 1.21% and 1.15% of servicemembers in the gain and loss treatments either view our email images or visit the website. Those in the gain + reminders and loss + reminders treatment engage at significantly higher rates: 4.64% and 4.11%, respectively. However, this is still a small fraction of those receiving emails; as a result few soldiers received detailed information about how to apply for SCRA benefits. In the third row of Table 5 we measure actual visits to the website. Only a fraction of servicemembers visit the website: 0.50%, 1.95%, 0.48% and 1.90% in the gain, gain + reminders, loss, and

*loss* + *reminders* treatments, respectively.

In order to have SCRA interest rate protections instated, servicemembers must send a request letter and a copy of their orders. In the fourth row of Table 5 we track the fraction of servicemembers who take the minimum number of necessary steps to initiate the SCRA interest protections process: downloading a copy of the request letter and linking to iPERMS to download a copy of their orders. We find that only 0.11%, 0.42%, 0.11% and 0.39% of individuals in the gain, gain + reminders, loss, and loss + reminders treatments take these steps. This is fewer than one in four of the servicemembers that visit the website. Finally, it is likely that servicemembers do not know the addresses of their creditor, so the fifth row of Table 5 tracks whether individuals link to the necessary forms and open our list of creditors. We find that only 0.05%, 0.21%, 0.06%, and 0.20% of individuals in the gain, gain + reminders, loss, and loss + reminders, download both forms and lookup a list of creditors. This is approximately one in ten of every servicemember that visit the website. Even if servicemembers click these links, they still must print and mail out forms. In sum, we find that gain or loss framing does not have any significant effects on engagement, reminders have a statistically significant positive effect on engagement, and that there is significant attrition at every possible step along the process. Only a small fraction of servicemembers who initially engage completing the necessary steps to attain SCRA financial protections.

In terms of opening emails and interacting with the website, those that receive three reminder emails have approximately four times the engagement of those that do not receive any emails. One question is whether each of the four emails that servicemembers in the reminder treatment receive (initial email + three reminders) are equally effective at driving engagement or whether the efficacy of interaction dissipates over time. In appendix Table A.8 we document how those in the reminder treatments respond to each of the four emails we send and find no evidence of diminishing responsiveness in terms of email read receipts, engagement, or downloading forms. These patterns suggest that, in low-response rate environments, there may be significant returns to increasing the number of interactions with individuals.

Given the low engagement with our treatment emails, one question is whether those who opened our emails differ significantly than those who do not. In Table 6 we compare the characteristics of servicemembers who do and do not send a read receipt and find significant differences between the two groups. Specifically, we find that, compared to those who do not send a read receipt, those who do send read receipts are older, more likely to be female, more likely to be black, less likely to be Hispanic or white, have more service experience, are more likely to be married and have children, are more educated, have higher cognitive test scores, and have a higher military rank.

While many of the characteristics that are correlated with reading an email are also correlated with greater financial stability, the credit information we are able to observe suggest that those who are most likely benefit from the program are the most likely to send a read receipt. Specifically, servicemembers who send a read receipt are more likely to have credit debt, have much higher credit balances, and have higher average credit interest rates compared to those who do not send a read receipt. One explanation that could reconcile these patterns is that those who have more education, are older, and have higher rank may be more likely to have regular access to their Army email due to their job requirements, but among those who have access to email the servicemembers who would benefit most from the SCRA protections are the ones who are most likely to open our emails.

# 6. Conclusion

This study investigates whether behaviorally-motivated informational interventions can lead individuals to utilize consumer financial protections. Specifically, we use a randomized controlled trial to test whether different messaging strategies can lead servicemembers in the United States Army to utilize an interest-rate protection outlined in the

<sup>&</sup>lt;sup>21</sup> Each treatment email has a unique web link, which enables us to determine the differences in web traffic by treatment. While unique IP addresses cannot be linked to an individual servicemember, unique IP addresses do allow us to identify what actions an individual took after landing on the website.

<sup>&</sup>lt;sup>22</sup> There are three potential ways that servicemembers may view our email but not send a read receipt. First, servicemembers may view the entire email in a preview window. The preview window does not trigger a read receipt. Second, servicemembers can turn "read receipts" off, so they are not prompted to send read receipts when opening an email. Third, servicemembers may be prompted to send a read receipt, but choose "no" when given the option.

<sup>&</sup>lt;sup>23</sup> Individuals who engage in our program do not necessarily come from those who send read receipts. Because we cannot tie email addresses to the program engagement data, we are unable to identify the fraction of those who send read receipts that engage in our program.

Servicemember Civil Relief Act (SCRA). These messaging strategies include framing the SCRA protections in an informational email as gains or losses and sending a single informational email or three subsequent reminder emails. We find information provision has no effect on servicemember credit outcomes, regardless of how SCRA protections are framed or whether email reminders are sent. Our study design does not allow us to address the extent to which the channel through which we communicated-email only-contributed to the null effects we observe. We are not aware of large-scale field experiments studies that have experimentally evaluated the efficacy of email interventions relative to other communications channels, e.g. text messaging. That being said, people now report much lower rates of daily email use than they do other forms of communication, like text messaging (Castleman & Page, 2015). Other large-scale informational interventions that had email as a primary component of outreach also failed to influence desired behaviors, e.g. Bergman, Denning, and Manoli's (2017) intervention providing students in Texas with information about tax credits for higher education.<sup>24</sup> It is possible, therefore, that outreach to service members about SCRA that leveraged additional channels could be more effective, but we cannot speak to this empirically.

To better understand why our interventions failed to generate significant changes in servicemember outcomes, we ran a second randomized controlled trial that included identical treatments to the initial study (and omitting a control), but utilized better tracking of email and website activity. This follow-up study yielded three insights. First, framing SCRA protections as losses or gains does not affect whether servicemembers engaged in our informational materials. Given our ability to detect very small differences in engagement across

# Appendix

Tables A.1–Table A.8. Figs. A.1–A.3.

Table A.1	
Balance of soldier attributes,	full randomization sample

treatments, this finding suggests that there may be significant limitations in employing framing strategies to influence individual behavior in this setting. Second, we find that reminders do significantly increase servicemember engagement. This finding supports a broad literature that finds positive effects of reminders and suggests that limited memory may be a significant factor in why individuals do not take advantage of various financial protections (Castleman & Page, 2015; ideas42, 2017; Karlan et al., 2016). Third, and finally, we find that there is substantial attrition at each step in the benefit application process.

Taking advantage of SCRA benefits, like engaging in many sound financial practices, takes a series of steps. In spite of our efforts to make applying as simple as possible, obtaining SCRA benefits is still an arduous process; servicemembers in our study need to view the email we send, click on a link to visit our website, click on another link to open an SCRA letter template, fill and print the SCRA letter, click on another a link to download their Army service records, login to a portal and print their Army assignment orders, find their creditor's address, and finally, combine the application materials and mail the packet to their creditor. Given that our light-touch and highly scaled nudges do not appear to get servicemembers to overcome the barriers to SCRA protections, more intensive interventions or alternative choice architectures may be required to influence behavior. Specifically, increasing SCRA take-up could require using a similar to approach Bettinger et al. (2012), who successfully increased financial aid receipt and college attendance by providing families with one-on-one help to fill out financial aid applications or working with the Department of Defense and/or Congress to reduce the complexity of SCRA applications.

	Control	Gain	Gain + Reminder	Loss	Loss + Reminder	F-stat <i>p</i> -value
Age	22.369	22.363	22.370	22.337	22.386	0.434
Female	0.161	0.162	0.161	0.161	0.164	0.561
Black	0.224	0.224	0.224	0.224	0.224	1.000
Other race/ethnicity	0.089	0.089	0.089	0.089	0.090	0.877
Hispanic	0.158	0.158	0.158	0.158	0.159	0.995
White	0.529	0.528	0.529	0.529	0.527	0.913
Years of service	1.841	1.844	1.842	1.842	1.847	0.977
Married	0.333	0.333	0.333	0.333	0.335	0.987
Has children	0.195	0.193	0.197	0.193	0.195	0.604
No diploma	0.043	0.042	0.044	0.043	0.044	0.585
High school	0.806	0.806	0.806	0.806	0.803	0.565
Some college	0.077	0.079	0.077	0.077	0.078	0.689
AFQT score	59.256	59.273	59.234	59.269	59.220	0.992
Years of service	1.841	1.844	1.842	1.842	1.847	0.977
Army rank	3.268	3.273	3.275	3.268	3.281	0.331
Ν	93,251	46,827	46,679	46,688	47,071	-

Mean values reported from soldiers in our original randomization sample. All means are from pre-study characteristics. AFQT Score is out of 100. Army rank varies between E1 (lowest) and E9 (highest).

<sup>&</sup>lt;sup>24</sup> The authors also sent postal outreach to individuals in this study.

#### Table A.2

Balance of soldier attributes, credit interest 6% or higher.

	Control	Gain	Gain + Reminder	Loss	Loss + Reminder	F-stat p-value
Age	24.142	24.137	24.099	24.114	24.115	0.924
Female	0.130	0.132	0.130	0.130	0.135	0.785
Black	0.224	0.221	0.222	0.226	0.223	0.935
Other race/ethnicity	0.076	0.077	0.074	0.076	0.082	0.378
Hispanic	0.154	0.156	0.157	0.153	0.151	0.778
White	0.547	0.546	0.548	0.545	0.545	0.993
Years of service	2.719	2.718	2.730	2.731	2.747	0.633
Married	0.512	0.519	0.519	0.518	0.523	0.494
Has children	0.310	0.317	0.314	0.312	0.315	0.788
No diploma	0.039	0.040	0.040	0.039	0.041	0.907
High school	0.747	0.740	0.749	0.750	0.748	0.617
Some college	0.110	0.117	0.110	0.110	0.109	0.499
AFQT score	61.457	61.638	61.502	61.554	61.751	0.805
Years of service	2.719	2.718	2.730	2.731	2.747	0.633
Army rank	3.923	3.917	3.917	3.914	3.942	0.176
N	17,814	8936	8850	8865	9116	-

Mean values reported from soldiers with estimated credit interest rates at or above 6%. Credit interest rates are taken from an estimate of six-month average interest rate on revolving debt. All means are from pre-study characteristics. AFQT Score is out of 100. Army rank varies between E1 (lowest) and E9 (highest).

# Table A.3Heterogeneity results by debt level.

	Total balance		Credit balance		Interest rate	
	(1)	(2)	(3)	(4)	(5)	(6)
Gain frame	- 394.29	- 89.56	21.35	26.13	0.0064	-0.0472
	(574.45)	(401.90)	(21.63)	(21.31)	(0.1291)	(0.1225)
Gain frame + reminders	-220.53	358.14	30.86	33.62	-0.0723	-0.0029
	(578.43)	(413.60)	(21.25)	(20.92)	(0.1285)	(0.1221)
Loss frame	-741.48	-533.73	5.08	5.86	-0.1055	-0.1023
	(572.30)	(408.27)	(21.19)	(20.82)	(0.1299)	(0.1223)
Loss frame + reminders	116.74	-477.90	18.70	16.98	-0.0358	-0.0244
	(587.95)	(410.85)	(20.94)	(20.63)	(0.1291)	(0.1235)
High debt	23,251.36***	576.82	4476.25***	- 9.55	5.0137***	2.0050***
	(591.38)	(404.24)	(39.96)	(38.99)	(0.0934)	(0.0905)
High debt*Gain	163.26	303.47	-27.15	-72.30	-0.0242	0.0365
	(1014.01)	(681.64)	(69.50)	(47.06)	(0.1615)	(0.1472)
High debt*Gain + Reminder	732.85	-96.44	93.68	11.05	0.1990	0.1043
	(1032.08)	(672.80)	(72.51)	(48.21)	(0.1613)	(0.1469)
High debt*Loss	445.24	113.20	-27.41	-17.26	0.1242	0.1158
	(1014.37)	(664.18)	(69.94)	(48.31)	(0.1621)	(0.1467)
High debt*Loss + Reminder	260.13	414.60	46.77	-20.86	0.2665*	0.2232
	(1030.47)	(679.89)	(70.69)	(46.24)	(0.1612)	(0.1476)
Ν	129,745	129,328	129,745	129,328	100,480	92,820
$R^2$	0.0354	0.5826	0.2184	0.6482	0.0854	0.3278
DepVarMean	37,073	37,107	3444	3445	10.162	10.448
Pre-Dependent Var	Ν	Y	Ν	Y	Ν	Y
Demographic Controls	Ν	Y	Ν	Y	Ν	Y

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01. Robust standard errors in parentheses. High debt is defined by having above the median level of credit debt in the sample or more than \$1470 in credit debt. Demographic variables include: age, sex, race, marital status, parental status, education level, AFQT score, years of service, and rank.

# Table A.4

# Heterogeneity results by interest rate.

	Total balance (1)	(2)	Credit balance (3)	(4)	Interest rate (5)	(6)
Gain frame	- 33.33	138.85	104.97*	14.98	-0.0940	-0.0894
	(950.24)	(642.31)	(60.07)	(39.56)	(0.1137)	(0.1120)
Gain frame + reminders	720.02	774.98	82.53	25.96	-0.0824	-0.0823
	(987.98)	(644.92)	(62.01)	(41.80)	(0.1134)	(0.1114)
Loss frame	- 46.33	43.49	158.08**	56.15	-0.1066	-0.1271
	(971.30)	(651.45)	(62.38)	(42.36)	(0.1128)	(0.1106)
Loss frame + reminders	211.86	- 155.39	80.40	8.87	0.0477	0.0640
	(969.79)	(635.64)	(60.90)	(40.01)	(0.1152)	(0.1134)
High interest	7935.67***	-966.14*	2569.55***	9.76	8.2255***	0.5292***
	(759.93)	(510.23)	(54.11)	(36.78)	(0.0868)	(0.1217)
High interest*Gain	-33.07	140.65	-149.07	-34.12	0.1035	0.1107
	(1305.14)	(873.29)	(94.48)	(58.91)	(0.1490)	(0.1425)
High interest*Gain + Reminder	-391.18	-360.19	35.02	47.94	0.2341	0.2395*
	(1331.89)	(861.34)	(97.79)	(60.44)	(0.1492)	(0.1423)
High interest*Loss	-1160.12	-1256.09	-283.86***	-108.86*	0.1909	0.1912
	(1304.57)	(852.09)	(95.20)	(60.58)	(0.1489)	(0.1415)
High interest*Loss + Reminder	310.49	- 304.06	- 32.53	0.24	0.0912	0.0848
	(1323.44)	(865.91)	(95.76)	(57.87)	(0.1497)	(0.1429)
N	97,259	96,866	97,259	96,866	93,205	92,820
$R^2$	0.0032	0.5764	0.0567	0.6463	0.2337	0.3162
DepVarMean	42,379	42,443	4162	4166	10.43	10.45
Pre-Dependent Var	Ν	Y	Ν	Y	N	Y
Demographic Controls	Ν	Y	Ν	Y	Ν	Y

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01. Robust standard errors in parentheses. High interest is defined by having above the median level of credit card interest or an average monthly rate over 7.3%. Demographic variables include: age, sex, race, marital status, parental status, AFQT score, years of service, and rank.

# Table A.5

Heterogeneity results by college attendance.

	Total balance		Credit balance		Interest rate	
	(1)	(2)	(3)	(4)	(5)	(6)
Gain frame	-179.17	- 39.95	-23.83	-21.65	0.0529	-0.0291
	(502.66)	(332.79)	(40.62)	(24.67)	(0.0933)	(0.0814)
Gain frame + reminders	-654.08	-48.10	17.93	20.64	-0.0065	0.0340
	(496.80)	(325.44)	(41.48)	(24.73)	(0.0931)	(0.0808)
Loss frame	-501.45	- 367.39	-11.55	- 3.56	0.0015	-0.0232
	(498.70)	(326.11)	(40.76)	(25.54)	(0.0933)	(0.0809)
Loss frame + reminders	88.37	-480.23	52.20	-14.98	0.2119**	0.1274
	(507.88)	(332.02)	(41.04)	(24.07)	(0.0930)	(0.0812)
Any college	24,773.42***	3146.85***	1232.02***	-24.53	-1.3255***	-0.6625***
	(1027.20)	(697.13)	(70.92)	(44.03)	(0.1120)	(0.0982)
Any college*Gain	-1808.63	389.97	42.72	65.10	-0.2188	0.0011
	(1726.04)	(1163.18)	(120.38)	(70.53)	(0.1913)	(0.1572)
Any college*Gain + Reminder	4121.78**	1996.99*	183.24	103.40	0.0501	0.0606
	(1846.84)	(1185.56)	(129.55)	(76.19)	(0.1946)	(0.1602)
Any college*Loss	-6.40	-618.73	18.48	2.94	-0.1071	-0.0107
	(1771.49)	(1140.39)	(123.61)	(72.17)	(0.1936)	(0.1560)
Any college*Loss + Reminder	878.09	1019.12	23.31	118.08*	-0.2932	-0.0786
	(1779.61)	(1169.78)	(126.36)	(71.76)	(0.1923)	(0.1578)
N	129,745	129,328	129,745	129,328	100,480	92,820
$R^2$	0.0245	0.5828	0.0106	0.6482	0.0046	0.3155
DepVarMean	37,073	37,108	3444.5	3445.1	10.16	10.45
Pre-Dependent Var	Ν	Y	N	Y	Ν	Y
Demographic Controls	Ν	Y	Ν	Y	Ν	Y

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01. Robust standard errors in parentheses. Demographic variables include: age, sex, race, marital status, parental status, AFQT score, years of service, and rank.

# Table A.6

Heterogeneity results by minority status.

	Total balance		Credit balance		Interest rate	
	(1)	(2)	(3)	(4)	(5)	(6)
Gain frame	159.97	249.92	-56.17	- 49.57	0.0245	-0.0009
	(729.79)	(477.03)	(53.20)	(32.11)	(0.1094)	(0.0927)
Gain frame + reminders	-131.11	484.79	-16.40	15.41	-0.0199	0.0189
	(732.29)	(471.76)	(54.71)	(32.16)	(0.1098)	(0.0929)
Loss frame	-728.86	- 545.92	0.35	3.37	-0.0166	-0.0286
	(722.46)	(463.06)	(53.92)	(33.20)	(0.1101)	(0.0923)
Loss frame + reminders	76.05	-161.56	59.51	14.26	0.0427	0.0197
	(731.66)	(475.99)	(54.95)	(31.54)	(0.1098)	(0.0926)
Minority	- 4194.15***	-678.40*	20.00	109.93***	0.5294***	0.1489*
	(601.74)	(406.52)	(45.72)	(28.39)	(0.0952)	(0.0842)
Minority*Gain	-1247.08	-482.00	100.28	88.01*	-0.0702	-0.0659
	(1025.59)	(679.01)	(79.08)	(47.17)	(0.1646)	(0.1413)
Minority*Gain + Reminder	245.93	- 391.74	136.35*	53.18	0.0581	0.0694
	(1045.66)	(669.88)	(81.94)	(48.45)	(0.1651)	(0.1415)
Minority*Loss	464.64	143.97	-20.84	-13.75	-0.0089	0.0107
	(1031.45)	(663.75)	(79.68)	(48.54)	(0.1650)	(0.1406)
Minority*Loss + Reminder	609.06	-260.14	3.83	-16.04	0.2164	0.1956
	(1050.09)	(679.97)	(80.74)	(46.69)	(0.1643)	(0.1413)
N	129,745	129,328	129,745	129,328	100,480	92,820
$R^2$	0.0012	0.5827	0.0001	0.6481	0.0011	0.3146
DepVarMean	37,072	37,108	3444.5	3445.2	10.16	10.45
Pre-Dependent Var	Ν	Y	N	Y	Ν	Y
Demographic Controls	Ν	Y	Ν	Y	Ν	Y

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01. Robust standard errors in parentheses. Minority race and ethnicities include those who are Black, Hispanic, or those who indicate they are not Asian, Black, Hispanic, or White. Demographic variables include: age, sex, marital status, parental status, education level, AFQT score, years of service, and rank.

# Table A.7 Email and website engagement patterns.

	Read receipt (1)	Any engagement (2)	Visit site (3)	Download forms (4)	Download all (5)
Gain*reminders	0.0479**** (0.0021)	0.0343**** (0.0013)	0.0145*** (0.0009)	0.0031*** (0.0004)	0.0016**** (0.0003)
Loss frame	0.0014	-0.0006	-0.0003	0.0000	0.0001
	(0.0018)	(0.0008)	(0.0005)	(0.0003)	(0.0002)
Loss*reminders	0.0474*** (0.0021)	0.0291*** (0.0013)	0.0139*** (0.0008)	0.0028*** (0.0004)	0.0015*** (0.0003)
Ν	130,891	131,182	131,182	131,182	131,182
$R^2$	0.0074	0.0096	0.0043	0.0009	0.0004
Control mean	0.0563	0.0121	0.0050	0.0011	0.0005

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01. Robust standard errors in parentheses. Omitted category includes those assigned to "Gain" treatment. "Any Engagement" identifies an individual who (a) viewed the email in HTML with images, or (b) visited the SCRA website. "Visit Site" counts all unique IP address visits to the website. "Download Forms" identifies whether individual clicked links to access both the letter to creditor and followed linked to download orders. "Download All" identifies whether individual clicked links to access the letter to creditor, followed linked to download orders, and downloaded link to list of creditor addresses.

#### Table A.8

Response rate to each email.

	Initial email	First reminder	Second reminder	Third reminder
Send read receipt	0.1038	0.1038	0.1092	0.1098
Any engagement	0.0118	0.0094	0.0141	0.0132
Visit site	0.0045	0.0037	0.0066	0.0064
Download forms	0.0011	0.0008	0.0013	0.0014
Download all	0.0006	0.0004	0.0006	0.0007
Ν	65,713	65,713	65,713	65,713

Observations are from servicemembers included in the "Gain + Reminder" and "Loss + Reminder" treatments from the second round study. "Any Engagement" identifies an individual who (a) viewed the email in HTML with images, or (b) visited the SCRA website. "Visit Site" counts all unique IP address visits to the website. "Download Forms" identifies whether individual clicked links to access both the letter to creditor and followed linked to download orders. "Download All" identifies whether individual clicked links to access the letter to creditor, followed linked to download orders, and downloaded link to list of creditor addresses. Responses to each reminder are not mutually exclusive.

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Fig. A.1. Website Landing Page.

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	Rank Last, First
	Address Line 1
	Address Line 2
	Phone: XXX-XXX-XXXX
	Email: email.address.mil@mail.mil
	Date: mm/dd/yyyy
Credit Card Company Name	
Credit Card Company Office	
Creditor Address Line 1	
Creditor Address Line 2	

Re: Request for Reduction in Interest Rate for account number Your account number

Account Number

Sir/Madam:

I have recently been ordered to active duty with the Armed Forces of the United States. (effective: Your BASD ) and therefore request that my monthly obligation with regard to the abovereferenced account, including payments and interest, be reduced pursuant to my rights under the Servicemembers Civil Relief Act (SCRA), 50 USCS Appx §§ 501 - 596. My entry into military service has materially affected my ability to meet this obligation (incurred prior to my order to active duty) at the present interest rate.

The SCRA (50 USCS Appx § 527) set a 6% per annum ceiling on interest charges (including service charges, renewal charges and fees) during the period of a Servicemembers military service for obligations made before entry onto active duty. Thus the balance of my obligation may not have interest charged at a rate greater than 6% after the effective date of my orders. The difference in interest as a result of the reduction, must be forgiven and may not be merely accrued or deferred.

Please ensure that your records are amended/corrected to reflect that my obligation has been reduced to no more than the statutory ceiling rate of 6% as of the effective date of my active duty orders and that any excess charge withdrawn. It is my understanding that certain business entities have reduced their original interest rate to less than 6% as a good faith gesture in support of our country's military personnel and the important mission they serve to the United States. Note that compliance with this law is mandatory now that a request has been made. Failure to comply with such a request can subject a creditor to sanctions. Note also that there are civil and even criminal sanctions for the wrongful repossession of any property for non-payment of an installment obligation.

Thank you in advance for your attention and prompt action to this matter.

Sincerely.

Signature of Servicememeber

Attachment: Military Activation Orders

Fig. A.2. SCRA Form Letter.

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# SCRA Contact Information for Most Major Credit Cards\*

#### American Express

Address: American Express Attn: Servicemembers Civil Relief Act P.O. Box 981535 El Paso, TX 79998-1535

Contact number:1-800-528-4800 Fax: 1-623-444-3000

Address:

Address:

Address:

Attn: LNSSCRA

Navy Federal

PO Box 3000

Attn: SCRA Request

Columbus, Ohio 43218-3240

Merrifield VA 22119-3000

USAA Federal Savings Bank

10750 McDermott Freeway

Contact number: 1-210-531-8722

Online: Link to request benefits online

San Antonio, TX 78288

Fax: 1-800-531-5717

Fax: 1-703-206-3108

Contact number: 1-877-469-0110

Overseas: 1-318-340-3308 (collect call)

Navy Federal Credit Union

Attn: Service Members Civil Relief Act

USAA

Contact number: 1-888-842-6328

PO Box 183240

Chase

Chase Bank

Address: Bank of America Military Benefits Unit P.O. Box 982282 El Paso, TX 79998-2238

Contact number: 1-877-345-0693 Overseas: 1-817-245-4094 (collect call) Fax: 1-866-696-0292 Overseas 1-302-525-5889 (collect call) Email: militarybenefits@bankofamerica.com

Bank of America

#### Citigroup

Address: Citi Customer Service SCRA Unit P.O. Box 790398 St. Louis, MO 63179

Contact number: 1-877-804-1082 Fax: 1-623-444-3000 Email: citisalutes@citi.com

Synchrony Bank\*\* Address: Synchrony Bank PO Box 36958 ATTN: SCRA Department Canton, OH 44735

Contact number: 1-800-232-6954 Fax: 1-855-791-2100 Email: spg.mail@synchronyfinancial.com

# Wells Fargo

Address: Wells Fargo Bank Care of SCRA Request DSR-MAC D1118-02M 1525 West Wt Harris Blvd. Charlotte, NC 28262-8522

Contact number: 1-866-936-7272 Fax: 1-855-872-6262, attn. SCRA Email: wellsfargoSCRA@wellsfargo.com

# Capital One

Address: Capital One Attn: SCRA Request P.O. Box 30285 Salt Lake City, UT 84130-0285

Contact number: 1-855-227-1645 Overseas:1-817-245-4094 (collect call) Online: Link to request benefits online

#### Discover

Address: Discover Financial Services SCRA PO Box 15185 Wilmington, DE 19850-5185

Contact number: 1-877-804-1082 Fax: 1-302-395-8544 Online: Link to request benefits online

#### U.S. Bank

Address: US Bank Military Service Center CN-OH-L2XP 5065 Wooster Pike Cincinnati, OH 45226

Contact number: 1-800-934-9555 Overseas: 1-513-277-5899 (collect call) Fax: 1-855-791-2100 Email:24hrmilitaryservicecenter.shared@usbank.com

World Financial Network National Bank\*\* Address: (Your credit card) PO 182273 Columbus, Ohio 43218

Fax: 1-614-729-3117

\*If you do not see your credit card listed above you can call the number on the back of your card to receive information about where you can send your SCRA request. Be prepared to provide your account number and the name and mailing address for the account holder on file.

\*\*Synchrony and World Financial Network Bank both issue cards under many different brand names. If your card says "Issued by Synchrony" or "World Financial Network Bank" on the back of your credit card, then you can send SCRA materials to the address listed above. If you are unsure, you can call the number on the back of your card to receive information about where you can send your SCRA request.

Fig. A.3. Creditor Addresses.

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