

# Testing the Effectiveness of Consumer Financial Disclosure: Experimental Evidence from Savings Accounts\*

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## Abstract

Disclosure—the practice of providing information to support decision making—has been widely mandated in public policy but is routinely ignored by consumers and subject to obfuscation by firms. Yet most evidence on the effectiveness of consumer financial disclosure stems from borrowing decisions (where optimality is hard to characterize) or from lab experiments (where subjects do not have competing demands on their attention). In this paper, we provide field evidence from randomized-controlled trials with 124,000 savings-account holders at five UK depositories. Treated consumers received varying degrees of salient information about alternative products, including one with their current provider that strictly dominated their current savings product. Despite the switching process taking 15 minutes on average and the moderate size of average potential gains (\$190 in the first year), switching at baseline is rare (0.5% in our largest trial). We find that pessimistic beliefs about the costs and benefits of switching drive inattention to disclosure, significantly limiting its effectiveness, motivating explicit disclosure-design rules, and demonstrating the nature of deposit stickiness.

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# 1 Introduction

In practice, consumer choice is sticky. Across an array of decisions cited below including insurance, utilities contracts, pension plans, mortgage choice, and others, individuals act as if they are reluctant to optimize. The stickiness of bank deposits in particular has featured prominently in recent empirical banking models (e.g., Drechsler et al., 2018). Such inertia poses a challenge for consumer disclosure, the (often mandated) practice of providing information to consumers to support their decision making. Informational disclosures have been one of the most popular types of regulatory intervention in retail financial markets across the world. Yet, owing to a variety of practical and methodological challenges, little is known about how the delivery of disclosures actually affects financial behavior. In particular, attempts to assess disclosure effectiveness generally suffer from a joint-hypothesis problem, where the researcher must both model optimal choice and measure deviations therefrom. For example, estimates of whether mortgage or credit-card disclosures are effective are confounded by the problem of first needing to determine what the “right” debt choice is for a given consumer in order to be able to learn whether the disclosure has moved decisions closer to that optimum.<sup>1</sup>

In this paper, we use results of a large-scale field experiment to evaluate the effectiveness of various disclosure designs aimed at supporting consumer choice across savings products—a financial setting where normative statements about optimal choices are relatively straightforward to make. As we discuss below, a key virtue of our design is that we analyze the behavior of consumers presented, among other things, with the opportunity to switch to an equivalent savings account from their current provider that differs only in the amount of interest it pays.<sup>2</sup> At a minimum, apart from the time cost (15 minutes on average) and cognitive cost (reduced in some trials) spent to switch products, switching to a higher-paying equivalent

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<sup>1</sup>See, for example, Medina (2018), who finds that interventions that induce debt repayment can cause financial distress elsewhere on household balance sheets.

<sup>2</sup>As we detail below, this internal switching option allows consumer to keep the same ATM and branch network, etc.

product at the same institution should strictly dominate doing nothing. However, despite modest gains from switching (an average increase in first-year interest income of \$190), only 8.9% of consumers at baseline take any action to move their savings account balances.

Our trials are intended to address frictions consumers face when making discrete decisions. In a rational inattention framework, consumers may be inert when they believe that the net benefits of action to be small or that a signal of the magnitude of those net benefits will be imprecise or costly to obtain (Gabaix, 2019). Experimental variation allows us to examine the importance of (i) increasing the return on attention by simplifying and improving the precision of comparison across products, (ii) lowering switching costs through process improvements, and (iii) increasing attention to the switching decision itself to promote active choice. If the non-monetary cost of information acquisition has led to rational inattention, then providing information through mandated disclosure has the potential to improve consumer outcomes. However, if easily acquired salient information on opportunities to increase interest income does not materially affect consumer behavior, this points towards behavioral frictions limiting the usefulness of disclosure. For example, if the source of inertia is the psychological cost of focusing on financial decisions, then mandated disclosure may even overwhelm consumers with an onslaught of notices and fine print.

Cash savings accounts are the most popular formal household savings vehicle in the UK: 93% of consumers have a savings account amounting to total holdings of £700 billion (Financial Conduct Authority, 2015), equivalent to 37% of UK GDP.<sup>3</sup> Instant-access savings accounts, in particular, are among the simplest financial products—they are usually not used for routine transactions and their primary feature is the interest rate payable on the balance (although we discuss other relevant dimensions of product differentiation below). Robust deposit insurance also means that counterparty risk is a non-factor for the majority of consumers—UK depositors’ savings accounts are currently insured against bank failure up to £85,000. Yet even though most consumers report being most concerned with obtaining

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<sup>3</sup>According to SCF data, 51% of U.S. households had a savings account in 2016 with aggregate holdings around \$2 trillion.

the highest possible interest rate (Financial Conduct Authority, 2015), significant differences in interest rates persist on similar accounts both across providers and within providers across nearly identical products. Many providers offer higher interest rates on a marketed set of accounts (known as the “front book”) while reducing the rates on legacy accounts (“back book”). In principle, higher front-book rates may persuade consumers, especially those with back-book rates, to switch. Although there is significant heterogeneity across providers, we find that switching is not widespread—most consumers seldom switch their savings accounts and thereby forgo higher interest earnings.

By experimentally varying disclosures consumers receive about their savings account and the switching process, we are able to draw conclusions about the origins of deposit stickiness and inattention to mandated disclosures. To inform policy discussions, the UK Financial Conduct Authority partnered with five retail financial institutions to conduct randomized-controlled trials (RCTs) testing the extent to which disclosures about comparable product interest rates would be useful to consumers. Over 124,000 savings account holders were randomly assigned into treatment and control groups, and we collect rich administrative data on account balances, demographics, and switching behavior from each of the five financial institutions. Consumers in the treatment groups received various forms of information about their account. For a subgroup of consumers, we conduct follow-up surveys to supplement our analysis of behavioral responses to trial interventions with direct explanations for consumer behavior. In this straightforward disclosure setting with a relatively simple financial product free of many of the confounds present studying other markets, we test the importance of disclosure design at supporting optimal choice. Comparisons of outcomes for treatment and control groups within each trial provide internally valid estimates of the absolute importance of various frictions in the optimization process. Comparing effects across trials, each operating in a different context with a different customer mix, allows us to benchmark the external validity of our experimental results.

Testing how disclosure actually works in practice is most externally valid in the field,

where, among other important considerations, disclosure has many competitors for consumer attention.<sup>4</sup> While the typical disclosure may apprise consumers of a particularly unlikely state of the world, we test one with quantifiable and certain impacts on interest income. Although an observational comparison of baseline switching rates across providers with varying customer mixes and contexts can be informative, a RCT further permits controlling consumer selection by precisely manipulating disclosure across treatment and control in a way that permits robust comparison across design alternatives. Because treatment groups are on average identical to control groups (by virtue of random assignment) except for the amount and form of information they receive about their savings account product, we can causally attribute any differential account switching to the disclosure they receive and understand the relative importance of each component of inattention.

Previewing our results, even among consumers that were provided with reliable information about more attractive interest rates (including at the same provider), there is still a low level of switching. While we find interesting heterogeneity in effectiveness across designs, the average disclosure increases switching behavior by 0.7 percentage points, from 8.7% in the control group to only 9.5% in the treatment group. Survey results complement our precisely estimated, small effects of disclosure with evidence on consumer inattention, beliefs, and preferences over non-price features. In particular, consumers report overly pessimistic beliefs about whether they could earn significantly higher interest income by switching and how time consuming the switching process will be. Given these beliefs, many consumers report ignoring the disclosure, failing to update their priors on the net benefits of reoptimizing their savings account and highlighting how unlikely it is for traditional informational disclosures to help consumers in real-world settings.

What are the strongest drivers of consumer inertia and sticky deposits? Our results are most consistent with models with a fixed-cost of attention rather than a search cost incurred for each price quote attained. Process improvements (Trial 3) and well-timed reminders (Trial

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<sup>4</sup>See Harrison and List (2004) for a discussion of the virtues of field versus laboratory experiments.

4) led to modest increases in switching. The just-sign-here return switching form increased switching to 12% from a baseline of 3%, and timely emails and text messages increased switching by 4-5 percentage points. Particularly prominent disclosures—e.g., readable front-page information on better available products (Trial 1)—had marginal positive effects, raising switching from 3% to 6%, while disclosures not on the front page of a mailing had no effect (Trial 2).

We find only weak evidence for individual-level heterogeneity in these effects. For example, the sensitivity of switching behavior with respect to the level of interest income is limited. One obvious explanation is that when a low amount of money at stake (account balance  $\times$  potential interest rate gain), it doesn't take a high opportunity cost of time to justify not switching, and those with the highest balances may face the highest opportunity cost of time. We find at best mixed evidence for this explanation; switching is inconsistently higher among retired depositors and even among the highest balances in our sample, switching remains low. The timing of a reminder relative to the interest rate decline also matters somewhat. Reminders were more effective when sent shortly before the rate decrease, compared to other timing (Trial 4) even though the monetary gains to switching are nearly identical just before and after a rate decrease.

The rest of the paper proceeds as follows. Section 2 contextualizes our study in the relevant literatures on the efficacy of informational disclosure, consumer mistakes, and rational inattention. Section 3 provides background on our experimental design. We describe our data and conduct balance tests for each trial in Section 4. Sections 5 and 6 present our experimental and survey findings, respectively. We conclude in Section 7.

## 2 Context in Literature

A significant literature spanning industrial organization, behavioral economics, household finance, law, and marketing critically examines consumer disclosure regulations in many

consumer markets.<sup>5</sup> These papers provide mixed evidence for disclosure effectiveness, highlighting cases of both disclosure successes and failures. If lacking information is a significant reason for sticky (and perhaps suboptimal) consumer choice, disclosures have potential to affect decisions. However, much of the disclosure literature seeks to explain variation in disclosure effectiveness with ex-post arguments contrasting estimates across designs and domains. In contrast, we experimentally vary disclosure design for a single product with a relatively clear hierarchy of consumer benefits, allowing us to make causal assertions about the relative importance of disclosure content and design features in generating benefits for consumers.

Many economic decisions exhibit inertia in the sense that after initial product choices, demand across alternatives becomes inelastic.<sup>6</sup> A rich literature on rational inattention in macroeconomics (e.g., Sims, 2003) offers an explanation for inertial behavior, e.g., not optimizing one's savings account rate.<sup>7</sup> However, while it may be that in many settings the foregone utility from not reoptimizing is uncertain and relatively small (Sallee, 2014), even when reoptimizing based on the information content of disclosures has the potential to increase the utility of a given choice, there are several impediments to effectual disclosures.

For choices consisting of repeated interactions, switching costs including convenience costs and the loss of value of complementary choices inhibit changing providers ex-post (Farrell and Klemperer, 2007), motivating our inclusion of an option to retain one's current provider. Financial literacy (Calvet et al., 2009; Lusardi and Mitchell, 2014) is likely a necessary condition for effective financial disclosure, although we do not find evidence that account

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<sup>5</sup>A complete treatment of these literatures is outside the scope of this paper; see Dranove and Jin (2010) and Ben-Shahar and Schneider (2014) for comprehensive surveys of disclosure-related research.

<sup>6</sup>See Samuelson and Zeckhauser (1988), Abaluck and Gruber (2011), Choi et al. (2011), Ericson (2014), and many others for inertia in health insurance and retirement plan decisions. Andersen et al. (2017) and Keys et al. (2016) provide recent evidence on mortgage refinancing reticence, and Grubb and Osborne (2015) and Della Vigna and Malmendier (2006) document evidence of stickiness in cell-phone plan choice and gym memberships, respectively. Ater and Landsman (2013) document the slow learning of retail deposit account holders. Calem and Mester (1995) and Ponce et al. (2017) show existing credit-card borrowers have cross-price elasticities near zero. Hortaçsu et al. (2017) find consumers reluctant to switch to an otherwise identical lower-cost utility provider.

<sup>7</sup>See DellaVigna (2009) and Gabaix (2019) for surveys of the limited attention literature in behavioral economics.

holders with larger balances are more likely to respond to disclosures. Work in behavioral economics on commitment-problems provides evidence for the prevalence of procrastination and the difficulty of completing intended tasks, and we test treatments that provide salient follow-up digital reminders.<sup>8</sup> Consumers may also choose to ignore even costless information about alternatives to avoid cognitive costs such as the disutility of feeling overwhelmed by the complexity of pricing (Sallee, 2014; Grubb, 2015; Haushofer, 2015) or the disutility of the bad news that a current product generates under-market returns (Karlsson et al., 2009; Olafsson and Pagel, 2017; Andries and Haddad, 2017).

Closer to the mandated disclosure setting we study, two recent studies have experimentally tested disclosure effectiveness in the Mexican credit-card market. Ponce et al. (2017) find that credit-card borrowers in Mexico are insensitive to disclosures about the interest rates of available alternative credit cards. Directly testing Truth-in-Lending-Act-type disclosures, Seira et al. (2017) conduct an RCT with high-risk credit-card borrowers in Mexico and find very small effects that they attribute to consumer inattention. Our study adds to these papers testing disclosure effectiveness using field experiments in several ways. By looking across several providers at depositors as opposed to borrowers, our setting allows clear normative predictions about dominating choices among plausibly financially savvy households in a developed economy. Whereas it may not be obviously optimal for high-risk borrowers to reduce their debt levels, many savings depositors in our setting could obtain a higher interest rate worth hundreds of dollars risk free in the first year alone by spending a few minutes asking their bank to costlessly relabel their savings account to qualify for a materially higher interest rate.<sup>9</sup> Note, too, the results of Medina (2018), who shows that directing consumer attention toward paying down debt may decrease welfare by leading to an increase in otherwise avoidable overdraft fees. Our savings setting helps here, too, as the externality

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<sup>8</sup>An established literature documents the importance of default choices in retirement plans (e.g., Choi et al., 2011) because consumers in general seem reluctant to make active choices. See DellaVigna (2009) for a survey of the self-control literature.

<sup>9</sup>See also Kulkarni et al. (2018), who use quasi-experimental variation to contrast the effects of contract standardization and discourse in the Chilean personal loan market.



of reclassifying savings to a higher-paying savings account is plausibly zero.

A long banking literature documents the stickiness of both deposit pricing and deposit balances, and our experimental and survey results speak to many of the mechanisms at play. Flannery and James (1984) and Hutchison and Pennacchi (1996) find deposit flows to be under-sensitive to interest rates, and our results on inattention provide a key reason why in addition to the liquidity function of deposits (Nagel, 2016). Kahn et al. (1999) examine bank's price-posting strategies, modeling banks' slow adjustments to deposit pricing as optimal given the limited recall of retail depositors. We provide direct evidence for limited recall in our survey section, showing a general unawareness of own and market interest rates and that even when provided benevolently designed, salient information about interest rates, consumers struggle to recall receiving information about their account. Kiser (2002) examines the role of self-reported switching costs in predicting switching behavior, finding particularly high switching costs (and low levels of switching) among people on the ends of age, geographic mobility, and income spectrums. Our results complement this literature on consumer inertia and are most consistent with consumer optimization models wherein consumers must first pay a fixed cost to open the reoptimization decision before searching across alternative choices. Most recently, Drechler et al. (2017, 2018) study the implications of sticky deposits for the pass-through of monetary policy and banks' exposure to interest rate risk. We provide microeconomic evidence on why deposits are sticky, tracing deposit stickiness to inattention arising from consumer beliefs and preferences over non-price features, even among consumers with substantial foregone interest income.

The potential importance of disclosure design also poses a risk to successful policy implementation by increasing the scope for non-robust regulations to be undone. Grubb (2015) and Persson (2018) find endogenous complexification responses by firms to be an additional obstacle to first-best decision making. While disclosure may un-shroud important attributes (a la Gabaix and Laibson, 2006), firms endogenously obfuscating the disclosure or complexifying the information set may be able to blunt any benefits of disclosure. C el erier and Vall ee

(2017) find evidence of issuers endogenously increasing the opacity of structured securities marketed to retail investors.<sup>10</sup> Johnson et al. (2018) show how consumer suspicions about the veracity of mortgage advertising can inhibit take-up of otherwise attractive offers. Other studies test for the importance of various advertising design features in stimulating loan demand (Bertrand et al., 2010; Ferman, 2015; Kulkarni et al., 2018). Acknowledging the difficulty of asserting optimal consumer behavior in their setting, Bertrand et al. (2010) focus on evaluating advertising persuasiveness and consumer demand instead of whether advertising design features matter for consumer benefits.<sup>11</sup> Even in our setting, where products are largely one-dimensional, confusion is likely to be low, and discloser credibility is high, we find significant scope for firms to (intentionally or not) obfuscate mandated disclosures through disclosure design, e.g., by burying information on the back page of annual statements.<sup>12</sup> Such potential responses by firms have motivated disclosure policy to often specify detailed design elements such as font, font size, and placement. Prominent examples of formatting specifications in US lending policy include the Truth In Lending Act, the CARD Act, and the prescribed HUD settlement form for residential mortgages.

Finally, this paper contributes to a broad literature documenting consumer financial mistakes and the potential role of disclosures or reminders in preventing them. Much of the literature on consumer financial mistakes focuses on credit cards, e.g., Ausubel (1991), Agarwal et al. (2015), Keys and Wang (2018), Jorring (2018), and Gathergood et al. (2019). However, credibly documenting consumer mistakes entails a high burden of proof given the challenge of modeling and estimating optimal behavior in complex real-world settings. For example, the mortgage refinancing rule of Agarwal et al. (2013) requires several simplifying

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<sup>10</sup>Jin et al. (2018) find in a lab setting that disclosing parties choose complex disclosure designs more than half the time when forced to reveal harmful private information. Recent work in accounting finds similar responses: firms adjusting information presentation when investors have limited attention (Hirshleifer and Teoh, 2003) and external attention from institutional investors driving the frequency but not quality of voluntary disclosures by target firms (Abramova et al., 2018).

<sup>11</sup>See also the public finance literature on salience (e.g., Finkelstein, 2009 and Chetty et al., 2009), which demonstrates the important role of price information delivery design in affecting consumer demand.

<sup>12</sup>In a classic illustration of such responses, a UK judge specified the font size and prominent website placement for Apple’s mandated apology to Samsung for patent infringement after Apple’s initial apology was posted in small print, using unclear language, in a remote area of their website (Leach, 2012).

assumptions about preferences, transaction costs, unobserved heterogeneity, and probability distributions to approximate an optimal option exercise rule. Borrowing high-cost debt could be optimal at low levels of consumption (with high marginal utility) and acute liquidity needs (Medina, 2018). In many settings, optimal choice is not obvious. Optimality is more straightforward in a savings setting where reoptimization transaction costs are close to zero (Stango and Zinman, 2009; Karlan et al., 2016). Even in our simplified setting, we cannot identify mistakes per se without knowing switching costs and beliefs, although the survey evidence in section 6 suggests the former are negligible when there is an option to switch to another savings product with the same provider. When consumers do not believe attention to be worthwhile, disclosure will fail to be impactful.

### 3 Experimental Design

Partnering with five UK depositories, we tested multiple disclosure designs in a range of field trials. Each financial institution helped to complete one trial for a total of five trials. See Table 1 for a harmonized overview of the five trials and Appendix Figures 1-8 for redacted example disclosures. All trials were conducted with customers who held an easy-access savings account with one of the partnering UK financial institutions at the time of random assignment. Customers in both the control and treatment groups were experiencing an already-scheduled rate decrease in three trials (Trials 2, 4 and 5) and were already on a relatively low rate in two trials (Trials 1 and 3). Trials 1, 2 and 3 provided customers with forward looking information about interest rates currently available to them. The trials varied in terms of the situation in which the customer received the disclosures (whether at the point of an interest rate decrease) and the specific disclosure designs tested within each trial.

Customers in the reverse-page switching box trial (2) and in the reminder trials (4 and 5) faced an interest-rate decrease to a level that was significantly below the average of what new customers could obtain. In these trials, the firms sent letters to customers informing them

of the old and new interest rates and some general contact details for further information no later than 60 days before the interest rate decrease, in accordance with EU regulatory requirements. In the reverse-page switching box (2) and the SMS reminder trials (5), the rate decrease applied to all customers holding the particular type of the account and occurred on the same date for everyone. In the digital reminder trial (4), the rate decrease occurred a fixed period of time after the individual account opening date and was part of the account terms and conditions. Customers in the front-page switching box (1) and the switching-form trials (3) faced no interest rate decrease but were already receiving an interest rate that was significantly below market average of what new customers could obtain. These customers received no other specific communication in advance of the information sent out during the trial. In the remainder of this section, we provide additional details on the design of each trial.

In Trial 1, consumers were already on a low rate and were due to receive their annual statement in autumn 2015. Customers were randomly selected into five equally sized groups. The control group received an annual statement with no additional information on the front page. For treatment groups, different information was added to the front page of the annual statement depending on the treatment arm. This included a simple encouragement to shop around for another account (Appendix Figure A1); a comparison of the currently applicable rate with the highest rate available on a comparable account with the current provider (best internal rate); the best internal rate with the same provider and the average of three highest rates on comparable accounts with competitors (best competitor rates); and a final variant which added a graphical illustration of gains from switching (Appendix Figure A2). The monetary gains used in the illustration were based on an illustrative balance of £100, £1,000 or £10,000, depending on which was the next lowest to the customer's actual savings balance at the time (for example, for an actual balance of £250 the illustration was for £100). We excluded customers with balances lower than £100.

In Trial 2, customers at the time of disclosure had rates close to market rates and were

being notified of an impending rate decrease.<sup>13</sup> All letters were sent more than two months ahead of the rate decrease. Customers were randomly assigned to one of five equally sized groups: a control group and four treatment groups. The control group received a letter which notified the customer of the rate decrease on all affected instant-access accounts early summer of 2015 (Appendix Figure A3). The control letter included no additional information about internal or external rates. The treatment groups received additional information on the back page of the letter, formatted into a call-out box (referred to as the “switching box”) with a graphical comparison of interest rates. Each treatment group received information about the best available interest rate with the current provider. The four treatment groups differed by whether the disclosure was personalized and whether it included information on the best competitor rates (the average of the three highest rates on comparable accounts), for a total of four possible combinations. The two non-personalized treatments (one displaying external rates and one not) had an illustration of monetary gains from switching based on an assumed balance of £5,000, and the personalized disclosures used each individual’s balance at the time of mailing to illustrate the gains (see Appendix Figure A4).

Trial 3 featured a disclosure bundled with a switching-process improvement designed to lower both the expected time cost of switching and its uncertainty. In addition to providing information as in Trials 1 and 2, we test the effect of providing a form that can be completed and returned to the firm in order for the customer to be switched to an identical, “front book” product paying a better rate at the same provider. In August 2015, the provider sent a one-off mailing to encourage long-standing customers to switch to an equivalent internal account with a significantly higher rate. The customers were selected randomly into two equally sized groups. The control group received a letter with a switching box that included the best internal rate and the best competitor rate as noted above, as well as potential gains from switching based on a non-personalized balance example (£5,000). The treatment group received the same letter, but with a tear-off return switching form pre-filled for a switch to

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<sup>13</sup>Customers who had opted out of marketing communications were excluded from this trial.

the best internal rate and a prepaid, addressed envelope (Appendix Figure A5).

In Trials 4 and 5, we test the effect of timely repetition of informational disclosures through reminders sent via email or SMS. In Trial 4, we test email or SMS reminders sent to consumers who held accounts that experienced scheduled rate decreases during June-September 2015.<sup>14</sup> Customers were randomly selected into three equally sized groups. The control group received only an initial letter sent at least 60 days before the rate decrease, as mandated by current regulation. Two treatment groups were then issued either an email reminder or an SMS reminder in addition to receiving the same mailing as the control group. The email reminder was similar in its content to the letter sent to all groups (Appendix Figure A6). It included information about the previous and new interest rates, and in addition to the initial letter it included the best interest rate available on a comparable account with the firm. The SMS reminder was shorter and included no information on interest rates (Appendix Figure A7). Due to logistical constraints we sent the reminders on one actual date to all customers, as it was not possible to randomly allocate reminders to be sent at different points of time. Each customer account had an interest rate decrease date which was within eight weeks before and seven weeks after the date of sending the reminders.

In Trial 5, we test the effect of an SMS reminder around the time of a rate decrease in early summer 2015.<sup>15</sup> Customers were randomly selected into one of five groups. The control group received no further communication following the initial letter sent 60 days or more before the rate decrease. Customers in the four treatment groups received an SMS reminding them of the rate change, one week before, one week after, or on the day of the rate decrease (Appendix Figure A8). For those receiving the SMS on the day of the rate change, the SMS either encouraged switching or said that there was no higher rate on a comparable product

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<sup>14</sup>The trial sample consisted only of customers who all had an email address and a mobile phone number on record. Over 90% of customers in the sample had both email and phone number on record. The partnering institution reported that around 2% of email reminders and around 10% of SMS reminders could not be delivered due to invalid records.

<sup>15</sup>All customers in the trial had a mobile phone number on record. The partnering institution evaluated that around 8% of reminders were not delivered to customers in the treatment groups due to invalid phone number records.

available. Each treatment group included 16% of the trial sample and the control group included the remaining 35% of the sample. Customers who switched between assignment and the due date of the reminder still received the reminders and were retained in the sample to ensure that the comparison of effects of timing is consistent across all treatment groups.

## 4 Data and Balance Tests Across Treatment and Control

We collected detailed administrative data from each bank that includes account balances, account closures, and new account openings before, during and after the trial intervention. The dataset also provides us with age, gender, account age, mobile and online banking behavior, whether each consumer held a checking account at the same bank and the number of other financial product holdings. We oversampled consumers with large balances in all trials relative to the market to ensure sufficient power to detect switching behavior among consumers with ample financial motivation to do so. However, we included customers with lower balances in order to contrast the applicability of our findings across customers with varying degrees of forgone interest income.

Descriptive statistics for each trial are shown in Table 2. The sample size of each trial varies depending on the number of treatments tested and the available customer base. The length of the observation period also varies due to practical constraints, however our results are robust to considering different observation horizons. Average age, average savings balance, proportion of customers who have their current account with the same bank, and average account age varies across trials, in line with our understanding of the different customer mixes across the five providers as summarized above.

As shown in Table 3, the means of key demographic statistics are well balanced across treatment and control groups, as expected given random assignment of customers into trial groups. In some instances, equality of means of age, account age and gender are rejected individually at 5% significance level, although the differences in means are not practically significant. For Trials 1-4,  $p$ -values for the test that all variable means are equal suggest that

the key customer demographic variables are equally distributed across treatment and control groups. While the joint test rejects the equality of means across treatment and control for Trial 5, the magnitude of the significant differences are economically small (six months and one month differences in depositor age and account age, respectively).

The primary outcome we are interested in is switching. We define switching as when customers convert, close, or substantially empty their savings account. A conversion is when an account is changed from the existing, back-book interest rate to a new, front-book product available at the same provider. In such a case, the old account is closed and the new account with new terms is created instantaneously, with the new account inheriting all of the product attributes of the former except for the savings product label and the associated interest rate. Individuals are also able to open a new account with the same firm and start saving in that account or withdraw their money and use it for any other purpose. We consider an account switched if 95% or more of the balance recorded at the start of the trial is withdrawn from the account. When customers convert their account to another instant-access savings product or open a new instant-access savings account with the same firm, move some money into it, and empty their old account, we define this action as *internal switching*. We define all remaining switching that does not fall into internal switching as *external switching*, including cases where, for example, the depositor converted their savings account to an investment account with the same firm. Internal and external switching are mutually exclusive and always sum up to *any switching*. Where our measures overlap, we record the latest action as the final action. For example, if a customer first converts an account and then closes the converted account, we classify that as external switching.

The distinction between internal, external, and non-switchers is helpful because we observe the post-disclosure interest rate only when customers switch internally (internal switchers) or if they do not switch (non-switchers). Potential outcomes include transferring the balance to an account outside the firm or a different type account with the incumbent firm (such as a certificate of deposit) or withdrawing the money and spending it or investing else-



where. When an option for internal switching to a higher-paying rate exists, at a minimum, internal switching dominates not switching (subject to switching costs). Of course, an even better option may exist for the household than internal switching, motivating our focus on any switching, defined as internal or external switching. Again, but for the disutility of the switching process (and processing of and deliberation about the disclosure), any switching should be optimal for consumers with an option to internally switch.

To understand consumer choices of accounts, it is useful to consider the relative attractiveness of internal and external switching given the rate differentials and the potential costs involved in switching. In all trials, the interest rate customers would receive if they took no action following the trial treatments is no higher than 0.5% per year. Within each provider, the difference between the applicable rate and the highest available internal rate ranges from 0.2% to 0.9%. The best competitor interest rates are comparable for all trials and ranges between 1.08-1.35% and the incremental gain from external switching compared to internal switching ranges from 10 to 60 basis points.

However, the incremental cost of external switching may be substantially higher than the cost of internal switching. Switching to another provider could involve (1) search and evaluation of alternative brands and product features, (2) the operational cost of time spent opening the new account and transferring funds, and (3) an ongoing convenience cost of monitoring the account and/or having different level of service, such as the presence of a network of branches. In contrast, internal switching would involve a simplified version of (2) and almost none of (1) and (3) such that fully attentive and informed households may well prefer internal to external switching despite more attractive interest rates available to external switchers.

Our survey results (section 6) contain evidence that consumers report a greater willingness to reoptimize their savings product choice given the opportunity to increase interest income with the same provider. However, we acknowledge that we are unable to separate whether this stickiness results from the additional costs (in time and hassle) to switch in-

ternally or a preference for non-price features offered by each consumer’s current provider. Internal switchers report spending less than 15 minutes on the switching process, whereas most external switchers report spending less than 30 minutes on the switching process and up to two hours on shopping for alternative products. In the next section, we will contrast effects on any switching and internal switching to provide revealed preference evidence on the relative attractiveness of internal switching, mindful that consumers may prefer internal switching despite lower available income both because of non-price product features and differential switching costs.

## 5 Results and Analysis

We begin by reporting treatment effects from a linear-probability model of a given switching outcome for individual  $i$  on a treatment indicator  $Treatment_i$  that pools all treatment arms within a trial.

$$Switching_i = \beta \cdot Treatment_i + X_i' \gamma + \varepsilon_i \tag{1}$$

The omitted category is the control group such that the estimated coefficient  $\hat{\beta}$  reports the treatment effect of the disclosure in percentage points. Controls  $X_i$  consist of age (measured in tens of years), age squared, gender, potential gains from switching to the best available external rate (measured in hundreds of pounds), potential gains squared, and an indicator for whether consumer  $i$  also holds a checking account at the same financial institution. Given the random assignment of treatment (by construction and verified in Table 3), our results will be similar regardless of including controls. We include them, however, because they are of independent interest, enhance precision by reducing residual variation, and are useful context for studying treatment effect heterogeneity. We estimate equation (1) separately for each trial and report treatment effects in Table 4 for any switching (top panel) and internal switching (bottom panel).<sup>16</sup>

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<sup>16</sup>The results presented here measure switching behavior as of four weeks after disclosures were received. However, our results are quite similar even when looking at longer horizons.

Column 1 of Table 4 reports the average effect of the disclosures tested in Trial 1, which featured an interest-rate disclosure on the front page of the annual statement. Baseline switching for this trial was small; less than 1% of consumers in the control group switched their accounts in the month following the disclosure. Panel I shows that the treatment increased any switching (internal or external) by 1.9 percentage points, and panel II shows that 1.7 percentage points of this was accounted for by internal switching. This pattern holds across specifications and trials—despite larger gains available at other banks, most switching we document is internal switching, consistent with consumers valuing non-monetary product attributes of savings accounts or a more behavioral explanation such as choice overload, as we discuss below when contrasting the effects of disclosure designs.

Trial 2, which placed disclosures on the reverse side of a regulation-mandated letter informing consumers about an upcoming rate decrease, was generally ineffective. Even though the marginal monetary returns to switching were similar for depositors at both institutions, baseline switching in Trial 2 was five percentage points higher than in Trial 1. While higher control-group switching could be due to the sense of immediacy provided by the looming rate decrease (or other compositional differences across institutions), it is still low in absolute terms at 7.7%, and the disclosure treatment in Trial 2 was even less effective than in Trial 1. Column 2 of Table 4 shows that we cannot reject no treatment effect and can reject disclosure effects on any switching of more than one percentage point and on internal switching of 0.3 percentage points.

The most effective treatment we tested was Trial 3, in which both treatment and control groups received an informational disclosure about their rates and better available rates in a letter. Treatment-group account holders' letters were accompanied by a detachable pre-filled form and a prepaid envelope. Signing and mailing this form would automatically switch an individual's account classification to an otherwise identical savings product with a higher interest rate. Although the control group received an informational treatment similar to the front-page switching box in Trial 1, their internal and any switching rates are 0.5% and

3%, respectively. By contrast, the pre-filled detachable form the treatment group received increases any switching by 9 percentage points (column 3 of panel I) and internal switching by 8 percentage points (column 3 of panel II). We interpret the relative success of Trial 3 at inducing switching as indicative that the cognitive costs or disutility of paperwork (and uncertainty thereabout) is a key component of customer inertia and that salient process improvements have the potential to be effectual.

Trials 4 and 5 are digital in nature with treatment group account holders receiving informational disclosures by email or text message. In both trials, customers received a legally mandated letter informing them of an impending decrease to their savings account rate sixty days before the decrease. Treatment group consumers then received additional reminders by email or text message. In Trial 4, the control-group mean switching is highest (40%), suggesting that these deposits are the least sticky of all the trials customer bases, most likely due to their relatively high balances, young account ages, online banking share, and the sample being selected on having an email address. We explore the role of such heterogeneity across consumers within a trial in section 5.2 below.

The SMS disclosure in Trial 5 has a 1.6 percentage point effect on any switching (column 5 of Table 4). There was no internal switching option for consumers in Trial 5 because the provider only had one type of savings account paying the same rate for everyone in each account-opening cohort. Accordingly, we cannot assume that external switching (the only switching outcome for Trial 5) would dominate doing nothing even if there were no switching costs. It is conceivable that non-price considerations, such as switching account numbers, branch and ATM networks, etc. would cause a customer to incur sufficient disutility as to make not switching in response to a rate decrease to be optimal.

## 5.1 Treatment Effect Heterogeneity by Disclosure Design

To study the various disclosure designs tested in each trial, we reestimate (1) using a full set of treatment dummies  $Treatment_{ik}$  for each treatment  $k$  that was included in the trial  $\mathcal{T}(i)$

in which  $i$  was enrolled.

$$Switching_i = \sum_{k \in \mathcal{T}(i)} \beta_k Treatment_{ik} + X_i' \gamma + \varepsilon_i \quad (2)$$

Here, the effect  $\beta_k$  of design  $k$  represents the percentage-point increase in switching for a given treatment group  $k$  relative to the control group. We estimate (2) for the three trials that had disclosure design variants (1, 2, 4) in Table 5, and alternating columns show effects on any switching and internal switching to check whether some designs were differentially effective at inducing internal switching as opposed to any switching.

For the first trial, there were four treatment arms, each a variant on the design of an informational disclosure situated on the front page of an annual statement. While we reject the null hypothesis that disclosure design doesn't matter by testing whether the treatment effects are equal, even the best treatment effect still had only marginal absolute effects on switching. The Call to Action treatment that did not provide any information about competitor rates, and increased any switching by 0.9 percentage points (column 1) and internal switching by 0.5 percentage points (column 2). While the option to switch internally should strictly dominate not switching (up to the cost of switching), it may be that an outside option dominates internal switching such that any switching is the optimal choice. Although 0.9 percentage points is high in relative terms given the low baseline level of switching for the population of consumers in the first trial (2.6%), it is low in absolute terms given the optimality of the choice and our conditioning on potential gains. In further results in section 5.2, we explore whether these small effects are driven by low average monetary gains from switching.

The other treatment arms of the first trial were more successful, although still ineffective in absolute terms. Interestingly, showing the best internal rate led to more switching (2.9 percentage points higher in column 1) than showing the best internal rate available *and* the best competitor interest rate on savings accounts (1.8 percentage point increase in column 1).

While this difference is small, it is statistically significant and consistent with choice overload models (e.g., Schwartz, 2004). Showing a graph to illustrate a consumer's rate in the context of available market rates increase switching slightly but is still dominated by simply showing the best internal rate. The relative success of various disclosure designs is quite similar when we restrict our attention on internal switching (column 2). Within the treatments of Trial 1, information is valuable and design matters, but even the most effective disclosure design that provides information still moves switching by less than three percentage points.

The second trial had a similar set of treatment arms varying disclosure design as Trial 1 but were mailed to consumers in a different context. The disclosures for the second trial were on the back page of mailing informing them that their savings account interest rate was about to decrease. Despite providing comparable information as the disclosures of Trial 1, with the added urgency of an impending rate decrease and with two treatment arms personalizing the amount of annual gains from switching, we cannot reject that the Trial 2 disclosures had zero effect on either type of switching, irrespective of design. Survey results discussed in section 6 suggest that part of this is low attention to the letter at all, handicapping well-designed disclosure from being effective.

For Trial 4, we find that the email reminder was slightly more successful than the text-message reminder at inducing any and internal switching (5.3 versus 4.2 percentage points, respectively, in column 5). While this could be plausibly attributed to the additional, personalized information content of the email relative to the text message or the relative ease with which a consumer could accomplish account switching once already on a computer instead of a cell phone, the difference between the two coefficients is small and not statistically significant.

## 5.2 Disclosure Effect Heterogeneity by Consumer Attributes

We explore several dimensions of treatment effect heterogeneity to test whether there are groups for which disclosure is particularly effective. In particular, we are interested if knowing

whether the lack of disclosure responsiveness is driven by customers with high opportunity cost of time or low balances, for whom switching costs may be large or switching gains may be small, respectively. Looking at age groups most likely to be retired and balance categories with substantial interest gains allows us to check whether our disclosure’s relative ineffectiveness is plausibly due to purely rational factors such as time costs or low benefits. We pool all treatments within a trial into one treatment indicator and ask whether treatment effects are stronger for several binary characteristics  $W$ . We estimate

$$Switching_i = \beta \cdot Treatment_i + Treatment_i \cdot W_i' \psi + W_i' \alpha + \varepsilon_i \quad (3)$$

where  $\alpha$  is the coefficient on a set of indicator variable for each consumer characteristic including four age categories, four monetary gains categories, and an indicator for whether the depositor also had a checking account at the same institution. The coefficient vector  $\psi$  captures the degree to which the main treatment effect  $\beta$  is different for customers falling into each category described by  $W$ . The omitted age and gains categories are under 40 years old and under £50 in annual gains from switching to the best available interest rate.

We report the results of estimating equation (3) by trial in Table 6. Across all five trials, the control variables have little explanatory power on their own. The youngest and oldest consumers appear the most likely to switch, along with consumers with the highest gains, though the effect of both of these controls is small and of inconsistent sign across the trials. Intuitively, consumers less than 40 years of age (the omitted category) are more responsive to text message-disclosures (column 5) than any other age groups.

Looking at treatment effect heterogeneity across the trials, the preponderance of the evidence shows that disclosure is equally (in)effective for all age and balance levels. Interestingly, consumers who could be expected to have strong loyalty to their current depository because they have a checking account with the same provider are generally more likely to engage in some sort of switching, but are not necessarily more responsive to the treatment.

Might low levels of disclosure responsiveness simply reflect a high opportunity cost of time relative to low returns on switching? In only one of the five trials (column 1) can we reject that there is heterogeneity in treatment effects by borrower characteristics. Put another way, even among customers for who the gains of switching are particularly high or who are likely to be retired, the overall effects of our tested disclosures are low.

### 5.3 Treatment Effect Heterogeneity by Disclosure Timing

A unique feature of Trials 4 and 5 is that the timing of disclosures varied with respect to the date of an impending rate decrease. In Trial 4, although all customers received disclosures on the same day, cross-sectional heterogeneity in when this day fell relative to impending rate decreases varied because of heterogeneity in account opening dates and a fixed-length introductory rate period. In Trial 5, treatment-group consumers received SMS reminders of the disclosure on the day of the rate decrease or one week before or after. We explore which groups had the strongest reaction to the disclosure and what timing was the most effective in Table 7. Treatment effects were strongest for emails received 0-2 weeks before the rate decrease in the digital reminder trial, and text-message effects were smallest for reminders received on the day of the decrease in the SMS-only trial.

The presence of any sort of timing effects is curious. Even for customers with large balances, the difference in switching a few weeks early or late is small in monetary terms, and yet customers are twice as responsive to disclosures received immediately before an impending rate decrease as otherwise. We interpret this as evidence of the increased salience of reminders that appear to have a natural deadline attached and may be easier to dedicate the necessary attention. The low effect of text message disclosures on the day of switching may be driven by the likelihood that text messages are read at a time that is inopportune for consumers to take action or resolve to take action in the future and as a medium less conducive to converting into a memorable task. The importance of information acquisition in close proximity to the rate decrease is consistent with results from lab and field experiments in



Tu and Soman (2014), who find that consumers are more likely to take action if consideration thereof occurs before (rather than after) a salient event. That said, even optimally timed reminders have economically small impacts on switching.

Taking stock, we find that best-performing intervention increased switching to a higher-rate paying account by nine percentage points, while the worst-performing intervention had a precisely estimated zero effect on switching. While there is scope to improve disclosure effectiveness through optimal design, we note the converse is also true. Unless every aspect of disclosure design is precisely specified, firms may always have an incentive and scope to tweak design to render disclosure ineffectual, consistent with Grubb (2015) and Persson (2018). Moreover, even among consumers facing a nearly costless task of switching to a nearly identical but strictly dominating internal account with pre-filled out paperwork worth at least £100 in year one, the most optimally designed (or timed) disclosure only increases switching by nine percentage points relative to an already low baseline.

## 6 Survey Evidence

In this section we discuss the key findings of our follow-up surveys. We measure three categories of outcomes: 1) recall of information about the disclosure, 2) responsiveness to the disclosure, and 3) ex-post satisfaction with the individual decision taken. We conducted the surveys with 261 consumers from the Trial 1 sample (the front-page switching box trial) and with 500 consumers from the Trial 2 sample (the reverse-page switching box trial). Both survey samples were largely composed of long-standing customers with low overall propensity to engage with their savings accounts. Of course, given that participation in the follow-up survey was voluntary, respondents are likely to be drawn from the sub-set of customers who are more engaged with their savings. Both surveys were conducted by a research company over the phone within three weeks after we stopped collecting data on trial outcomes. We imposed quotas on the survey sample along two dimensions: observed switching behavior

and starting balance. In line with expectations, around one in ten contacted customers agreed to complete the phone interview which lasted up to 15 minutes.

To ensure a degree of response quality in the survey, we asked customers to indicate which providers they held their savings account with. As an initial quality screen, we terminated interviews with a small number of customers who failed to indicate they had or until recently had an account with the provider in question even after being prompted. We asked customers who were eligible to continue the survey to recall details about the account in question, including basic properties such as interest rate payable and the actions they took. We matched survey responses to the administrative data provided by the institutions. For a substantial share of customers, actions recorded in the administrative data and actions reported in the survey did not match, including under-reporting by those who switched their accounts and over-reporting by those who did not. We interpret this imperfect recall as further evidence that customers did not dedicate full attention to the task of switching, but lack of incentives to report accurately and possible drawbacks in questionnaire design could have also been at play. Given small sample sizes, possible selection into participation, and imperfect recall, we interpret survey evidence with caution and focus on key findings as reported below.

The recall of any recent communication from their provider related to better available interest rates was modest. Approximately 40% of customers in both surveys did not recall the annual statement (Trial 1) or the rate-decrease notification letter (Trial 2). Of those respondents who remembered receiving a communication from their provider, 60% and 75% in the front-page and reverse-page trials, respectively, reported that they did not read beyond the first page or only skimmed the communication. Respondents who remembered receiving the letters found it difficult to recall the details without explicit prompting by the interviewer. When prompted, many control-group and treatment-group respondents were able to recall details of received disclosures. However, many respondents also reported information that they did not in fact receive. Customers in the age group of 60-80 years were most likely to

correctly recall disclosure information (+25 p.p.) and have read the letter in detail (+15 p.p.), relative to customers aged 40 years or younger. Gains from switching or the age of account did not predict whether customers recalled or read the communication in detail.

Customers' awareness was not widespread both of their account's current interest rate and recent changes to the rate. Most respondents were not aware of the interest rate they were receiving on their savings account and the majority of those who estimated the rate upon prompting were overoptimistic, thinking their rate was higher than their actual rate. The most popular motivation for hypothetically considering switching accounts was if there were to be an equivalent product with a higher interest rate available with their current provider. However, a substantial proportion of respondents reported that they were not aware that their provider offered a higher rate on an equivalent account (56% in the front-page trial survey and 58% in the reverse-page trial survey) despite our disclosures being designed to convey this information. Only 4% and 8% of customers in the front-page and reverse-page switching box trials, respectively, indicated their primary consideration in deciding whether to switch their accounts was the availability of a better rate with another provider, consistent with the literature on deposit stickiness (e.g., Drechsler et al., 2018) and our empirical results that most switching was internal switching.

Did the disclosure treatment mitigate this unawareness of opportunities to earn a higher rate with the same provider? In the front-page switching box trial, treatments had a positive and significant effect on the awareness of a better internal rate but not on other survey outcome measures, including the likelihood of thinking about switching, searching for better accounts, and the number of accounts compared. Treatments in the reverse-page switching box trial did not have significant effects on any surveyed outcome, including consideration of switching, awareness of their interest rate, shopping around, and recall of the communication received.

The survey responses also provide a window into how consumers trade off product preferences, the disutility of the switching process, and foregone interest income. Two thirds of

respondents said they would require a minimum gain of less than £100 per year to switch their account. In our survey sample, where the potential gains were significantly higher than average, 26% of customers had £100 or more to gain. While having potential gains lower than the reported cost of switching could explain why many customers did not switch, even among consumers with potential first-year gains well in excess of £100, switching is much lower than 26% (see section 5). Beliefs about the onerousness of shopping and switching seem to matter. Most customers who switched found searching for alternative products as easy or easier than expected. Among those that shopped for an alternative savings product, 80% of customers in the front-page switching box trial and two thirds of customers in the reverse-page switching box trial said they spent less than two hours searching for an alternative account. Those who switched reported an average time spent switching internally of 15 minutes and less than 30 minutes for those who switched to an external provider.

Finally, when evaluating the decision they made, respondents who switched their account reported to be more satisfied than respondents who did not switch their account. Over 80% of switchers reported being fairly satisfied or very satisfied with their decision to switch, while less than half of non-switchers reported satisfaction with their decision to not switch. In summary, survey findings suggest that a large proportion of consumers do not actively engage with choosing optimal savings accounts and do not attend communications from their providers. While the disclosure treatment significantly improved awareness of interest rates, many of those who do engage review the communications quickly and remember only the key aspects. Overall, inattention and inertia seems to harm consumers in this setting. Many consumers overestimate the time cost of reoptimization, forego a magnitude of interest income that they report would be sufficient for them to desire to switch, and end up less satisfied with their decision.

## 7 Conclusion

In this paper, we provide direct evidence from a set of randomized-controlled trials on the effectiveness of consumer financial disclosure in facilitating optimal choice. We study savings accounts, an important and ubiquitous retail financial product with relatively homogeneous features and significant price dispersion, test the importance of disclosure design features, and examine explanations for their role in affecting consumer financial decisions. A key virtue of our experimental design relative to previous work is the ability to address joint-hypothesis concerns with the availability of an otherwise identical alternative product with each consumer’s current provider that has strictly better pricing. We test three main disclosure features: information to aid search and comparison across products, sending reminders to customers to call attention to the disclosure, and a pre-filled, prepaid-postage, mail-back switching form to help make acting on the disclosure easier. Although we find statistically significant effects for many of our disclosures, our interventions had at best modest effects on switching, even among those with substantial financial incentives to switch, the option to retain all non-price features of their current savings product, and who received our most effectively designed disclosure.

Why are deposits so sticky? Our experimental and survey results point to limited consumer attention as inhibiting more widespread benefits from disclosure. In particular, our findings suggest that non-price preferences for providers and pessimistic beliefs about both the returns to shopping around and the inconvenience of the switching process are key reasons for the price-insensitivity of individual deposits. Providing a procedurally straightforward way to take an informed action, designing disclosure to make alternative choices more salient, and complementary disclosure timing each help mitigate the obstacles consumers face and to some extent can each increase switching to better priced but otherwise identical products. Of course, we have not tested every possible design and it is conceivable that there exist significantly more impactful ways to design disclosures. However, when firms have other dimensions of disclosure design left to their discretion, there are simple ways to present re-

quired content that limits its salience to consumers, with the classical example being fine print. Although it is possible that the effects of disclosure would become more pronounced once customers become more habituated to receiving this type of information from their providers, a variety of delivery media (routine statements, special mailings, email, and SMS) failed to have large impacts. Similarly, while in principle a rising interest-rate environment could stimulate active savings product choice by increasing the return on attention, we do not find compelling evidence that consumers with large balances respond differentially to disclosure.

Appropriately so, the sufficiency of disclosure remains a subject of debate. In advocating for robust consumer financial protection, Campbell et al. (2011) conclude that disclosure is beneficial but may not provide enough support in all circumstances. The persistent locality of banking seems puzzling given the national, integrated, online nature of modern banking. Yet our findings that consumers are most responsive to disclosure when afforded the opportunity to switch to an alternative product with their current provider suggest that non-price features such as location remain an important consumer concern. Our qualitative research further indicates that while optimizing disclosure design can improve its effectiveness on the margin, inattention is a fundamental barrier to disclosure usefulness. An implication is that when regulators consider whether to mandate each disclosure independently without accounting for externalities on the salience of other disclosures, the low expected return on attention to any given disclosure can reinforce beliefs about the low value of reading the fine print. Moreover, any reform to disclosure design is likely to improve outcomes only slowly as consumers adjust their expectations on the optimal level of attention. This suggests that beyond testing and optimizing disclosure, regulators could consider a wider set of interventions that are targeted at achieving more substantial improvements in market outcomes. Ultimately, disclosure's diluted efficacy has to be weighed against any distortionary effect of more active policy and the corresponding equilibrium responses by firms.

There may also be unintended distortions from mandatory consumer financial disclo-

asures. Duarte and Hastings (2013) show that consumers may overly fixate on disclosed dimensions at the expense of other product characteristics, and Medina (2018) documents negative externalities of disclosure about one product on the rest of a household's financial portfolio. While this is perhaps less of a concern in our setting because of our focus on saving instead of borrowing, deposit insurance, and the homogeneity of savings products, firms interested in keeping their deposits sticky still have many tools at their disposal. Future research could seek to understand the efficiency of such product differentiation, the reasons behind consumers' (monetarily costly) brand loyalty, and the heterogeneous incidence of pricing models seemingly predicated on consumer inertia. Similarly, theoretical and empirical work could study the fixed (psychological) costs consumers incur when reoptimizing and the general disutility of financial decision-making along with a deeper empirical look at the determinants of consumer inertia.

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Table 1: Overview of Trials

Trial	Treatment details	Rate change	tenure
1 Front-page switching box	Comparison with market rates on front page of annual statement	None	Long
2 Reverse-page switching box	Comparison with market rates on back of rate-change notification letter	60 days after treatment to all customers	Mixed
3 Return switching form	Tear-off form pre-filled to switch to higher rate- paying account with same provider	None	Long
4 Digital reminder	Rate decrease reminder via email or SMS	End of individual bonus period seven weeks before to eight weeks after treatment	Short
5 SMS reminder	Rate decrease reminder via SMS	One week before to one week after treatment to all customers	Mixed

Note: Table overviews five trials, describing the treatment, whether it was accompanied by a change in interest rates, and the approximate customer tenure. “Long” refers to average customer relationships longer than 10 years, and “short” if the average tenure is less than 2 years. See Table 2 for further details in composition across trials.

Table 2: Descriptive statistics of consumers

Trial	Front page	Reverse		Digital	
	switching box (1)	page switching box (2)	Return switching form (3)	(email and SMS) reminder (4)	SMS reminder (5)
Age (years)	59.2 (16.58)	53.2 (17.23)	64.4 (15.92)	52.9 (16.15)	42.4 (13.92)
Male Indicator	0.42 (0.49)	0.41 (0.49)	0.45 (0.50)	0.48 (0.50)	0.52 (0.50)
Checking Account Indicator	0.25 (0.43)	0.80 (0.40)	0.06 (0.24)	0.77 (0.42)	0.98 (0.16)
Account Balance (£)	8,436 (20,788)	7,407 (22,862)	6,812 (18,156)	37,939 (88,633)	24,162 (78,574)
Potential Gains (£)	70.02 (172.54)	82.96 (256.05)	76.29 (203.35)	230.56 (538.50)	198.13 (644.31)
Account Age (years)	13.7 (10.86)	6.7 (1.25)	16.1 (3.99)	1.0 (0.09)	4.7 (2.45)
Number of products with	1.6 (0.88)	4.6 (1.88)	1.6 (1.28)	4.6 (2.55)	5.4 (2.86)
Online Banking Indicator	0.09 (0.28)	0.58 (0.49)	- (-)	0.84 (0.37)	0.90 (0.29)
Mobile Banking Indicator	0.09 (0.29)	0.29 (0.45)	- (-)	0.22 (0.42)	0.30 (0.46)
Observations	61,879	13,261	4,003	15,487	30,202

Notes: Table reports means and standard deviations in parentheses of savings account holder characteristics across each trial. Checking Account Indicator is equal to one if a customer has a checking account at the same institution. Potential gains is equal to depositor's account balance multiplied by the difference between her account's interest rate and the best available external rate. Account age is the number of years each account has been open. Number of products with providers is the number of products including the savings account that a customer has with her institution. Online banking and mobile banking indicators equal one if the customer uses that account feature.

Table 3: Means of demographic variables and tests of equality of means

	Number of Observations	Age (years)	Account Balance (£)	Gender (% male)	Checking account colocated (%)	Account age (years)	Joint test <i>p</i> -value
<u><i>Panel I. Front-Page Switching Box</i></u>							
Control	12,723	59.33	8,685	0.42	0.25	13.76	
Treatment	49,156	59.20	8,371	0.42	0.24	13.71	
<i>Equality p-value</i>		<i>0.45</i>	<i>0.13</i>	<i>0.89</i>	<i>0.12</i>	<i>0.66</i>	<i>0.20</i>
Total Observations				61,879			
<u><i>Panel II. Reverse-Page Switching Box</i></u>							
Control	2,659	53.93	7,359	0.41	0.80	6.74	
Treatment	10,602	53.01	7,419	0.41	0.80	6.71	
<i>Equality p-value</i>		<i>0.01</i>	<i>0.90</i>	<i>0.94</i>	<i>0.99</i>	<i>0.31</i>	<i>0.11</i>
Total Observations				13,261			
<u><i>Panel III. Switching Form</i></u>							
Control	1,999	64.65	6,749	0.44	0.06	16.00	
Treatment	2,004	64.22	6,874	0.46	0.06	16.12	
<i>Equality p-value</i>		<i>0.40</i>	<i>0.83</i>	<i>0.22</i>	<i>0.80</i>	<i>0.35</i>	<i>0.72</i>
Total Observations				4,003			
<u><i>Panel IV. Digital Reminder</i></u>							
Control	5,180	51.86	37,957	0.48	0.79	0.96	
Treatment	10,307	52.02	36,801	0.48	0.78	0.96	
<i>Equality p-value</i>		<i>0.57</i>	<i>0.43</i>	<i>0.56</i>	<i>0.51</i>	<i>0.31</i>	<i>0.66</i>
Total Observations				15,487			
<u><i>Panel V. SMS Reminder</i></u>							
Control	10,200	42.69	25,046	0.53	0.97	4.62	
Treatment	20,002	42.22	23,711	0.51	0.98	4.70	
<i>Equality p-value</i>		<i>0.01</i>	<i>0.16</i>	<i>0.00</i>	<i>0.70</i>	<i>0.01</i>	<i>0.00</i>
Total Observations				30,202			

Notes: Table reports means of consumer attributes for both treatment and control groups for each trial. Equality *p*-values in italics test for the equality of means across treatment and control. The *p*-value in the final column tests for the joint equality of all variable means within a trial.

Table 4: Disclosure Treatment Effect on Account Switching

Trial	Front page switching box (1)	Reverse switching box (2)	Switching form (3)	Digital reminder (4)	SMS reminder (5)
<i>I. Any Switching</i>					
Disclosure Treatment	0.019*** (0.002)	-0.003 (0.006)	0.089*** (0.008)	0.047*** (0.008)	0.016*** (0.003)
Controls	yes	yes	yes	yes	yes
Control-Group Mean	0.026	0.077	0.030	0.400	0.062
R-squared	0.005	0.008	0.034	0.071	0.010
Observations	61,879	13,261	4,003	15,487	30,202
<i>II. Internal Switching</i>					
Disclosure Treatment	0.017*** (0.001)	0.001 (0.001)	0.078*** (0.006)	0.044*** (0.007)	
Controls	yes	yes	yes	yes	
Control-Group Mean	0.009	0.026	0.005	0.267	
R-squared	0.011	0.001	0.043	0.107	
Observations	61,879	13,261	4,003	15,487	

Notes: Table reports heterogeneity in disclosure treatment effects on switching at a four-week horizon by disclosure design. The dependent variable in panel I is any switching, an indicator for whether the depositor switched to a different product with the same provider or withdrew their entire balance. The dependent variable in panel II is internal switching, defined as switching to an different instant-access savings product at the same depository. For the SMS reminder trial, there was no internal alternative such that all switching is other switching. Controls include a quadratic in age and annual potential monetary gains and indicators for gender and having a checking account with the same institution. Robust standard errors in parentheses. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$



Table 5: Treatment Effect Heterogeneity by Disclosure Design

Trial	Front-page switching box annual statement		Reverse-page switching box		Digital reminder rate decrease	
	<u>Any</u>	<u>Internal</u>	<u>Any</u>	<u>Internal</u>	<u>Any</u>	<u>Internal</u>
Switching type	(1)	(2)	(3)	(4)	(5)	(6)
Call to Action	0.009*** (0.002)	0.005*** (0.001)				
Best Internal Rate	0.029*** (0.002)	0.025*** (0.002)	-0.0002 (0.007)	0.002 (0.001)		
Best Internal and Competitor Rates	0.018*** (0.002)	0.017*** (0.002)	-0.004 (0.007)	0.0005 (0.001)		
Best Internal and Competitor Rates + Graph	0.021*** (0.002)	0.020*** (0.002)				
Best Internal Rate, Personalized			-0.006 (0.007)	0.001 (0.001)		
Best Internal and Competitor Rates, Personalized			-0.002 (0.007)	0.001 (0.001)		
Email					0.053*** (0.009)	0.051*** (0.009)
SMS					0.042*** (0.009)	0.037*** (0.008)
Controls	yes	yes	yes	yes	yes	yes
Control-Group Mean	0.026	0.009	0.077	0.026	0.400	0.267
Treatment Effect Equality <i>p</i> -value	0.000	0.000	0.873	0.722	0.228	0.114
Observations	61,879	61,879	13,261	13,261	15,487	15,487
R-squared	0.005	0.012	0.008	0.001	0.067	0.099

Notes: Table reports disclosure treatment effects at a four-week horizon by disclosure design. Each row corresponds to a treatment arm with the indicated disclosure design. Any switching (odd columns) is an indicator for whether the depositor switched to a different product with the same provider or withdrew their entire balance. Internal switching (even columns) is switching to an different instant-access savings product at the same bank. Controls include a quadratic in age and annual potential monetary gains and indicators for gender and having a checking account with the same institution. Robust standard errors in parentheses; \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

Table 6: Disclosure Treatment Effect Heterogeneity by Individual Characteristics

	Front page switching box (1)	Reverse switching box (2)	Switching form (3)	Digital reminder (4)	SMS reminder (5)
Treatment Indicator	0.01*	-0.028	0.065**	0.026	0.016
	(0.006)	(0.018)	(0.026)	(0.023)	(0.022)
Treatment *					
Age 40-60 yrs	-0.0003	0.004	-0.006	0.046**	-0.004
	(0.006)	(0.016)	(0.028)	(0.021)	(0.010)
Age 60-80 yrs	0.009	0.002	0.036	0.055**	-0.000
	(0.006)	(0.017)	(0.030)	(0.022)	(0.013)
Age >80 yrs	0.029***	-0.022	0.017	0.031	0.007
	(0.008)	(0.024)	(0.032)	(0.058)	(0.053)
Gains £50-100	0.006	0.020	0.022	0.026	-0.007
	(0.005)	(0.015)	(0.036)	(0.025)	(0.013)
Gains £100-500	0.003	0.015	0.032	0.001	-0.029***
	(0.005)	(0.012)	(0.023)	(0.020)	(0.010)
Gains >£500	0.007	-0.007	0.005	-0.029	-0.006
	(0.013)	(0.024)	(0.056)	(0.029)	(0.016)
Checking Account	0.005	0.026*	0.011	-0.02	0.015
	(0.004)	(0.014)	(0.036)	(0.020)	(0.022)
Age 40-60 yrs	-0.017***	-0.034**	0.007	0.131***	-0.028***
	(0.005)	(0.014)	(0.012)	(0.017)	(0.005)
Age 60-80 yrs	-0.011**	-0.039***	0.025*	0.245***	-0.022***
	(0.005)	(0.015)	(0.013)	(0.018)	(0.007)
Age >80 yrs	-0.011	-0.012	0.003	0.150***	-0.045***
	(0.007)	(0.022)	(0.014)	(0.048)	(0.016)
Gains £50-100	-0.008**	-0.055***	0.053***	0.034*	-0.032***
	(0.004)	(0.013)	(0.019)	(0.021)	(0.007)
Gains £100-500	-0.003	-0.064***	-0.007	0.063***	-0.036***
	(0.004)	(0.011)	(0.009)	(0.016)	(0.005)
Gains >£500	0.001	-0.046**	0.032	0.180***	-0.032***
	(0.010)	(0.022)	(0.032)	(0.023)	(0.008)
Checking Account	0.011***	-0.015	-0.012	0.093***	0.031***
	(0.004)	(0.013)	(0.015)	(0.020)	(0.011)
Constant	0.037***	0.132***	0.012	0.144***	0.062***
	(0.005)	(0.017)	(0.011)	(0.019)	(0.011)
Treatment Effect Equality <i>p</i> -value	0.0002	0.44	0.27	0.10	0.21
Observations	61,879	13,261	4,003	15,487	30,202
R-squared	0.005	0.013	0.041	0.068	0.014

Notes: Table reports treatment effects, control variable main effects, and treatment-control interactions by trial. Dependent variable is any switching. All controls are indicator variables for the indicated category. Checking account indicates whether the depositor had a checking account at the same depository. P-values test whether all treatment-control interactions are jointly zero. Robust standard errors in parentheses; \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

Table 7. Disclosure Treatment Effect Heterogeneity by Reminder Timing

	Digital (1)	Digital (2)	SMS (3)	SMS (4)
Treatment *				
4+ weeks before	0.018* (0.011)	0.054*** (0.014)		
2-4 weeks before	0.046*** (0.012)	0.025 (0.017)		
0-2 weeks before	0.102*** (0.014)	0.083*** (0.023)	0.019*** (0.005)	0.020*** (0.005)
Day of switch			0.012*** (0.004)	0.013*** (0.004)
0-2 weeks after	0.055*** (0.012)	0.037** (0.017)	0.021*** (0.005)	0.021*** (0.005)
2-4 weeks after	0.054*** (0.016)	0.045* (0.026)		
Cohort Fixed Effects		yes		yes
Controls	yes	yes	yes	yes
Observations	15,487	15,487	30,202	30,202
R-squared	0.073	0.074	0.010	0.010

Notes: Table reports disclosure treatment effect heterogeneity on any account switching by the timing of reminders relative to an interest-rate decrease for the digital trial (email and SMS, columns 1-2) and SMS trial (columns 3-4). Cohort fixed effects consist of fixed effects for each account opening half month (column 2) and date (column 4). Controls include a quadratic in age and annual potential monetary gains and indicators for gender and having a checking account with the same institution. Robust standard errors in parentheses; \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

# Appendix

Figure A1: Example Call to Action Treatment Letter



## Check your account is still right for you.

You've had your <account> for a little while now, and we know how important it is to make the most of your savings. So now might be a good time to consider if it's still the best option, or whether there's another savings account out there that could pay more interest, or suit you better.

Your <account> currently offers

- An interest rate of <x.x%> variable
- <conditions in relation to minimum deposit,
- withdrawals, and frequency of interest
- payments>

## How this account compares,

We have a range of savings accounts available that could get you more from your money. Find out more at <weblink>

## Let us know,

Making the move to another savings account is simple – sign in at <weblink> and select 'renewal options', call us on <phone> or pop in branch. If you'd prefer to carry on saving in your <account> you don't need to do anything.

Figure A2: Example Treatment with Best internal and Market Rates with Graph



**Important Information for you**

**Check your account is still right for you.**

You've had your <account> for a little while now, and we know how important it is to make the most of your savings. So now might be a good time to consider if it's still the best option, or whether there's another savings account out there that could pay more interest, or suit you better.

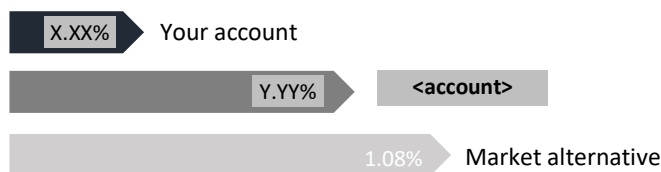
Your <account> **currently offers**

- An interest rate of <x.x%> variable
- <conditions in relation to minimum deposit,
- withdrawals, and frequency of interest payments>
- 

**How this account compares,**

A of 10<sup>th</sup> August the savings account with the most similar features that we can offer is our <account> with an interest rate of < Y.YY% >, but there may be other suitable accounts within our range.

Taking a look at the wider savings market, the three highest-paying easy access accounts across the market on 10<sup>th</sup> August offered an average rate of **1.08% variable**. You can find out more about these options at [www.moneysupermarket.com](http://www.moneysupermarket.com)



**Interest you could earn this year on every £10,000 of savings**

<current savings account>	£X.XX
<alternative internal savings account>	£X.XX(£A.AA more)
Highest paying accounts on the market*	£108.00(£83.00more)

**Let us know,**

Making the move to another savings account is simple – sign in at <weblink> and select 'renewal options', call us on <phone> or pop in branch. If you'd prefer to carry on saving in your <account> you don't need to do anything.

\*Based on an average of the three highest paying equivalent accounts on the market at 10<sup>th</sup> August, 2015 using moneysupermarket.com. Restrictions and exclusions may apply.

Figure A3: Example Rate Change Letter

<Name>  
 <Address 1>  
 <Postcode>

<firm name  
 and address>

<Date>

**Your <A/C name> account rate is reducing in <date> .**

Dear <Name>,

Following a review of savings rates, we're writing to let you know that the interest rate on your <A/C name> account will change from <date>

The rate applied to your <A/C name> account is currently:

Account	Account number	Rate applied on balances from:	AER/gross %	Net %
<A/C name>	<XXXX1234>	£0+	<X.XX%>	<X.XX%>

From 25 August 2015, the variable rate below will apply:

Account	Account number	Rate applied on balances from:	AER/gross %	Net %
<A/C name>	<XXXX1234>	£0+	X.XX%	Y.YY%

As we will be changing the interest rate on your account, you do have the option to close your account or move your money elsewhere without charge. We do offer some other easy access savings accounts that you may be eligible for. **More information on alternative accounts is provided on the back of this letter.**

If you decide to close your account, move your money elsewhere, or want to speak to us about our other savings accounts, we'd be happy to help you. If we don't hear from you before <date>, we'll assume that you've accepted this change.

If you have any questions about this change or would like to speak to <firm name>, please call us on <phone> or visit <weblink>

Thank you for saving with <firm name>.

Yours sincerely,

<name>  
 <position>

Continued overleaf

Figure A4: Example Reverse-Page Comparison Box


**COULD YOU GET A BETTER RETURN ON YOUR <firm name> SAVINGS?**

Your account: <A/C name>

Your balance: <£5,432> as at 30 April 2015

Your new interest rate: X.XX% AER/gross

Account type: <A/C name> - you can withdraw money without charge



<b>Your rate:</b> X.XX% AER/gross	Our best Comparable rate: <A/C name> B.BB% AER/gross (inc. bonus)	Average of 3 of the highest paying account: 1.32% AER/gross (may inc. bonus)
---	---	--

**How does my savings account compare?**

As at 26 May 2015, the highest interest rate available from <firm name> account is B.BB% AER/gross on your <A/C name> (inclusive of <length> introductory bonus of C.CC% AER/gross). The <A/C name> is an easy access account that can only be managed online using internet Banking – you cannot access the account in branch or over the phone.

Three of the highest paying easy access account offered by other banks and building societies offer an average rate of A.AA% AER/gross. Price comparison websites can provide information on rates offered by other providers.

**How much more could I earn in interest?**

A balance of £5,432 in a <firm and A/C name> would earn £X.XX this year.

Best comparable <alternative with firm> £Y.YY in total (or £A.AA more) a year.

Average of three of the highest paying accounts on the market: <£xx.xx> in total (or more) a year.

**Moving your money is easy.**

To move your money to <alternative with firm> simply call us on <phone>, visit <weblink> or visit us in branch to find out more. To move your money to an account offered by an alternative provider, open a new account with them and transfer your funds.

Average of 3 of the highest paying accounts currently on offer on the market at 26 May 2015 using moneycats.co.uk. Some restrictions may apply.

Calculations based on interest rates at 26 May 2015 and show interest earned prior to appropriate tax deductions dependent on your individual circumstances and your current tax status. Rates are variable and subject to change. To open an <A/C name> account you must be 16 or over, and have a current account with us.

If you'd like this in another format such as large print, Braille or audio please ask in branch.

**<directions to customers with hearing or speech impairment>**

Figure A5: Example Rate Change Letter with Detachable Switching Form

<logo>

<contact details>

<Title><Initials 1><Surname>  
 <Title><Initials 1><Surname>  
 <Title><Initials 1><Surname>&<Title><Initials 1><Surname>  
 <Address line>  
 <Address line>  
 <Address line>  
 <Address line>  
 <Post code>

September 2015

Dear <Salutations>

Get a better rate of interest on your savings

We are writing to let you know that you can get a better rate of interest on your savings. Your savings are currently in a <account name>, which pays an interest rate of <x.xx%> Gross PA/AER and provides easy access, meaning you can withdraw money without charge. By moving to another of our savings accounts you can earn a better rate of interest and make your savings work harder for you.

How does my savings account compare?

As at <date> 2015, the highest interest rate available from <firm name> on a comparable account is <y.yy%> Gross PA/AER on our <account name>

Three of the highest paying easy access accounts offered by other banks and building societies offer an average rate of <%> Gross PA/AER. Price comparison websites can provide information on rates offered by other providers.

How much more could I earn in interest?

To make it easier to compare the accounts, the following examples all use an account balance of £5,000 based on a Gross interest rate.

- > £5,000 balance in your existing <account name> <£x.xx> per year
- > £5,000 balance in our <account name> <£y.yy> per year
- > £5,000 balance in one of the average 3 highest paying accounts on the market <£> per year

What to do next

If you would like to open an <account name> please contact us. If you have a passbook remember to send to us as well.

If you would prefer to leave your savings where they are that's fine – there is nothing you need to do.

---

<authorisation details>

I would like to switch my savings to the <account name> account

<Deposit account> <Account number>  
 <title><initial><surname>&<title><initial><surname>  
 <title><initial><surname>&<title><initial><surname>

**How much would you like to transfer?**

Either choose "Transfer all" or fill in the amount you want to transfer from your <deposit account>.

Transfer all       Transfer part of my savings    £

**How would you like your interest paid?**    Annually       Monthly

Interest will be paid to the same account as the interest from your <deposit account>. If you would like to change this, please tell us in writing.

<declaration details>

Signature(s)	Date
--------------	------



Figure A6: Example Email Disclosure

Your savings account interest rate is reducing [View this email here](#)  
 This email is intended for %%Title%% %%Last Name%%, %%Postal Code%%.

<logo and firm name>

## Your savings account interest rate is reducing

Dr Tester

The interest rate on your <account> was for <length> and will end soon. From %%closing-date%%, your account will change to an <account> account and the interest rate will reduce, as shown below

Current balance tiers	Current interest rate Gross / AER (variable)	New account name	New balance tiers	New interest rate Gross/AER(variable)
<£X>	<X.XX%>	<account>	<£X.XX>	<Y.YY%>

The interest rate on the <account> is a variable rate, which can be increased or reduced at any time

**You can change to a different savings account at any time.**

Although you can carry on using your account as you do now, you may prefer to open another <account> or <other options>

Account Name		<condition for interest rate tier>	<condition for interest rate tier>
<account>	Interest rate Gross/AER (variable) for <length> on balances <£X>	A.AA%	B.BB%

The interest rates in the table above are correct as at 10 August 2015. This product can be withdrawn from sale at any time.

**If you'd like more information about the full range of options available:**

Visit our website

<weblink>

Find us in branches

Call us

<phone>

<times of availability>

Figure A7: Example Text Message Disclosure

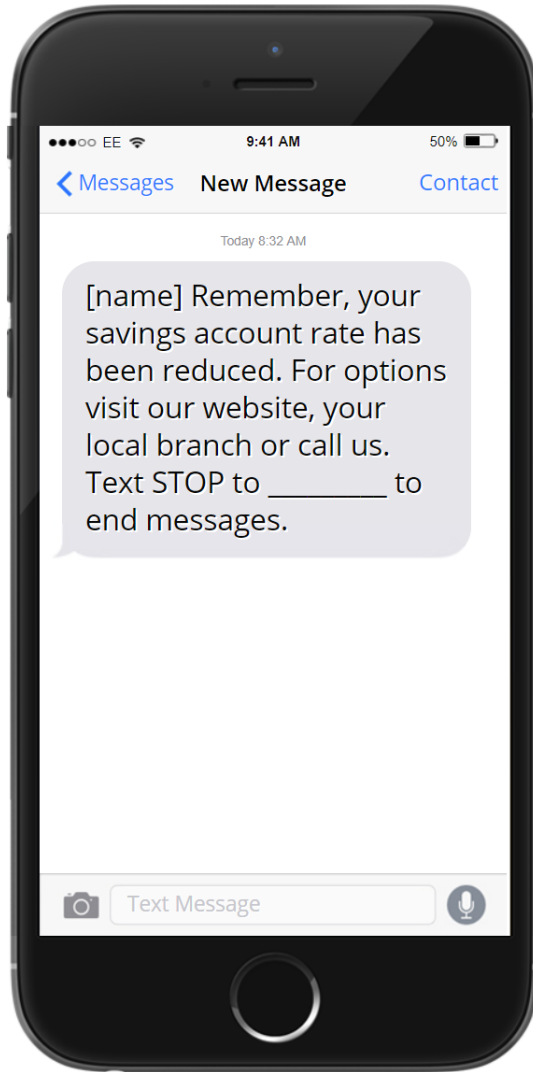
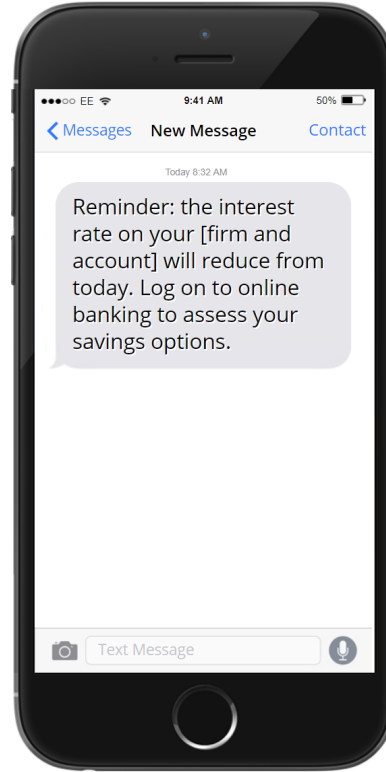
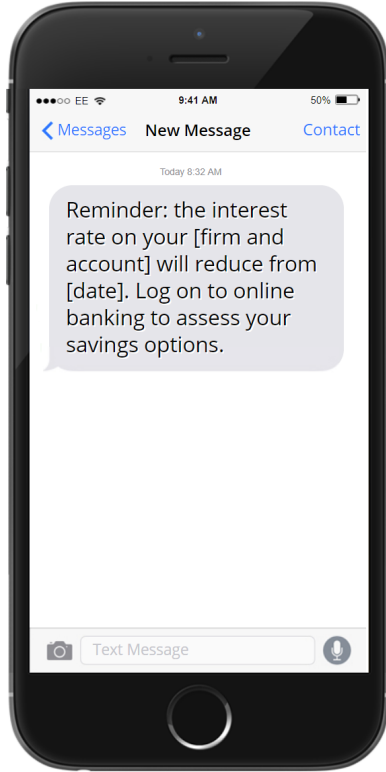
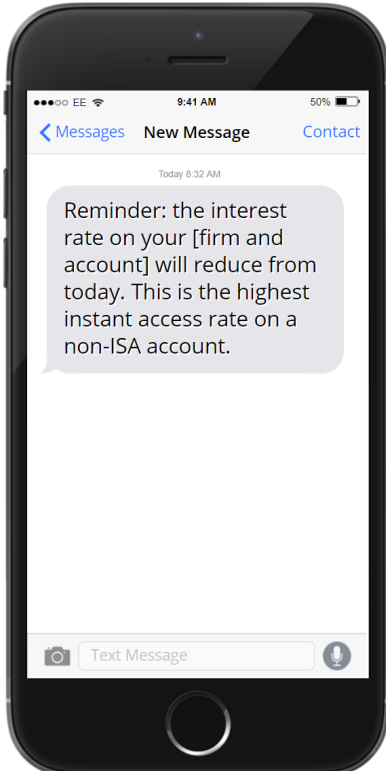


Figure A8: Example Test Message Disclosure with Varied Timing  
One week before rate change Day of rate change, version 1



Day of rate change, version 2



One week after rate change

