



# Credit Card Market Study

## Annex 4: Behavioural trials

July 2016

## Overview

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1. This annex outlines how we plan to conduct trials to change consumer credit card repayment choices. The trial is being designed informed by the behavioural economics literature and will examine whether changes to the way repayment options are presented and the information consumers have about the benefits of repaying quicker can encourage consumers to make more active repayment choices expected to result in significantly and sustainably higher credit card repayments. This annex covers:
  - The aims of the trial;
  - Data analysis of credit card repayments; and
  - A review of behavioural economics and psychology influencing consumer repayment decisions.

## Trial aims

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2. This trial is aiming to test if we can get consumers to actively engage when choosing the amount to repay on their credit card, and by doing so achieve two observable shifts in credit card repayments:
  - Achieve a significant and sustainable reduction in the proportion of repayments at the contractual minimum;
  - Achieve a significant and sustainable increase in the nominal value of credit card repayments across credit card users (excluding credit card transactors and those in persistent arrears).
3. We are intending to trial a number of treatments and observe the extent to which this results in consumer benefits such as lower interest charges, faster repayment of debt, improvement in customers' creditworthiness, and reducing the likelihood of default.
4. If the trial is effective at achieving its objectives of increasing credit card repayments this will be assessed against a wider portfolio of consumer outcomes. This is focused in particular on examining potential unintended consequences, such as consumers taking out higher cost debt elsewhere, going into arrears on other products or self-reporting significantly increased financial distress.

## Data analysis of credit card repayments

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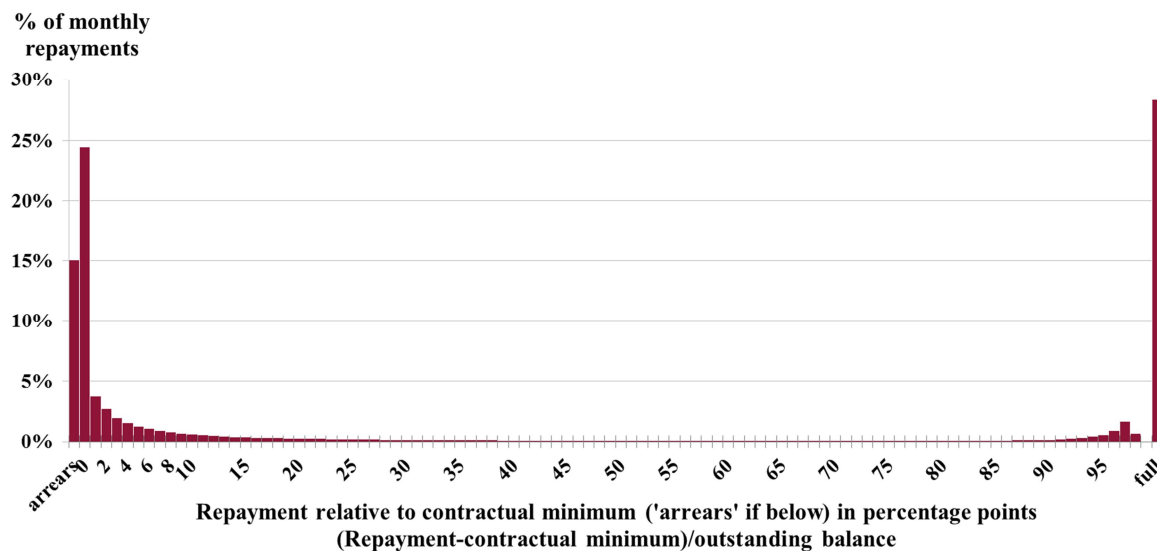
5. Using the account-level data the FCA collected as part of the market study, figure 1 shows the distribution of credit card repayments in 2014 which follows a similar pattern to that found in US data by Keys & Wang (2014).<sup>1</sup> Of credit card repayments in 2014, our analysis finds approximately:
  - 28% fully repaid outstanding balances (bar labelled 'full' in Figure 1);
  - 25% made repayments at the contractual minimum (bar labelled '0' in Figure 1)<sup>2</sup>;
  - 15% did not meet the contractual minimum (bar labelled 'arrears' in Figure 1);

<sup>1</sup> Keys, Benjamin J. & Wang, Jialan (2014) Perverse nudges: minimum payments and debt paydown in consumer credit cards  
[https://www.economicdynamics.org/meetpapers/2014/paper\\_323.pdf](https://www.economicdynamics.org/meetpapers/2014/paper_323.pdf)

<sup>2</sup> This includes repayments which exactly match the contractual minimum as well as those who repay less than 1 percentage point above the contractual minimum.

- 32% paid above the contractual minimum but less than the full outstanding balance.

Figure 1. Distribution of UK credit card repayments in 2014 relative to the contractual minimum<sup>3</sup>



- The research of Gathergood, Stewart et al. (2016), which used a sample of UK credit card data, found the distributions of repayments to be noticeably different for credit cards depending upon whether they are signed-up to a direct debit. Their research showed that approximately 75% of consumers identified as being 'systematic minimum repayers' had a direct debit set to the contractual minimum.<sup>4</sup> Their analysis found that for credit card accounts with direct debits set to the contractual minimum the full balance was almost never repaid.
- The FCA's analysis has shown the majority of repayments are not made by direct debit, however, this repayment channel has grown in popularity over the last five years - especially direct debits set to the contractual minimum. As of January 2015, approximately 42% of credit cards made repayments via direct debit and 31% via direct debit set to the contractual minimum.
- From analysing the data collected as part of the market study and speaking with credit card lenders, we know there are significant variations across credit card lenders in the take up of direct debit as the primary means of payment. Of those who do not repay via direct debit the payment mechanism also varies significantly between lenders. This is most noticeable for the use of mobile apps, which firms have reported is a growing channel for credit card repayments. However, not all credit card providers currently have this repayment channel.

<sup>3</sup> Analysis uses credit card data from 5 million customers as used in credit card market study affordability analysis. This distribution excludes repayment months where credit cards were charged-off or had no activity (£0 statement balance and £0 spending).

<sup>4</sup> Recreating the definition used in the Credit Card Market Study Interim Report as customers who made 9 or more minimum repayments a year while incurring interest costs.

## Behavioural economics & psychology of repayment decisions

9. Based on the framework set out in FCA Occasional Paper 1 and the academic literature reviews commissioned as part of the credit card market study the FCA is designing remedies based on the behavioural biases we expect are likely to impact consumer credit card repayment decisions.<sup>5</sup>

### Anchoring

10. If consumers were 'economically rational', making decisions after accurately assessing all relevant current and future costs and benefits, their financial choices would be unaffected by how information is presented (Campbell et al., 2011 & Campbell, 2016).<sup>6</sup> Literature on this topic indicates that consumers do not always appear to make economically rational decisions and are affected by how repayment options are presented. In particular, consumer decision making can be affected by 'anchoring' whereby the presentation of particular pieces of information, which could be intended to help consumer's choices or may be random, heavily bias the decisions taken (Tversky & Kahneman, 1974, Mussweiler & Strack, 2000, Ariely, Loewenstein & Prelec, 2003).<sup>7</sup>
11. Research by Neil Stewart, corroborated by subsequent research, found that consumer repayment choice appears to be influenced by the minimum repayment option which anchors repayments downwards (Stewart, 2009 & Navarro-Martinez et al., 2011, Jiang & Dunn, 2013, Which, 2015).<sup>8</sup> This research finds the lower the

<sup>5</sup> Erta, K. & Hunt, S. & Iscenko, Z. & Brambley, W. (2013) Applying behavioural economics at the Financial Conduct Authority. Financial Conduct Authority Occasional Paper No.1, April 2013.

<https://www.fca.org.uk/static/documents/occasional-papers/occasional-paper-1.pdf> & Agarwal, S. & Zhang, J. (2015) A review of credit card literature: perspectives from consumers. Annex to FCA Credit Card Market Study, October 2015.  
<http://www.fca.org.uk/your-fca/documents/market-studies/ms14-6-2-ccms-review-of-credit-card-literature>

<sup>6</sup> Campbell, J. & Jackson, H. & Madrian, B. & Tufano, P. (2011) Consumer Financial Protection. *Journal of Economic Perspectives* 25 (1): 91-114

[https://dash.harvard.edu/bitstream/handle/1/9887620/JEP\\_consumer\\_financial\\_protection\\_11.pdf?sequence=1](https://dash.harvard.edu/bitstream/handle/1/9887620/JEP_consumer_financial_protection_11.pdf?sequence=1)

Campbell, J. (2016) Restoring rational choice: The challenge of consumer financial regulation. National Bureau of Economic Research (NBER) Working Paper No. 22025, February 2016.  
<http://www.nber.org/papers/w22025>

<sup>7</sup> Tversky, A., & Kahneman, D. (1974). Judgment under uncertainty: Heuristics and biases. *Science*, 185, 1124-1130.

[http://psiexp.ss.uci.edu/research/teaching/Tversky\\_Kahneman\\_1974.pdf](http://psiexp.ss.uci.edu/research/teaching/Tversky_Kahneman_1974.pdf)

Mussweiler, T., & Strack, F. (2000). Numeric judgments under uncertainty: The role of knowledge in anchoring. *Journal of Experimental Social Psychology*, 36, 495-518.

[http://soco.uni-koeln.de/files/JESP36\\_2000.pdf](http://soco.uni-koeln.de/files/JESP36_2000.pdf)

Ariely, D., Loewenstein, G., & Prelec, D. (2003). "Coherent arbitrariness": Stable demand curves without stable preferences. *Quarterly Journal of Economics*, 118, 73-105.

<http://people.duke.edu/~dandan/Papers/PI/CA.pdf>

<sup>8</sup> Stewart, N. (2009) The cost of anchoring on credit card minimum repayments. *Psychological Science*, 20, 39-41.

[http://wrap.warwick.ac.uk/2552/1/WRAP\\_Stewart\\_D8573940-070409-stewart\\_2009.pdf](http://wrap.warwick.ac.uk/2552/1/WRAP_Stewart_D8573940-070409-stewart_2009.pdf) &

Navarro-Martinez, D. & Salisbury, L. & Lemon, K. & Stewart, N. & Matthews, W. & Harris, A. (2011) Minimum required payment and supplemental information disclosure effects on consumer debt repayment decisions. *Journal of Marketing Research*: November 2011, Vol. 48, No. SPL, pp. S60-S77.  
<http://journals.ama.org/doi/abs/10.1509/jmkr.48.SPL.S60>

Jiang, S. & Dunn, L. (2013) New evidence on credit card borrowing and repayment patterns. *Economic Inquiry*: January 2013, Vol. 51, Issue 1, pp. 394-407.

<http://onlinelibrary.wiley.com/doi/10.1111/j.1465-7295.2012.00456.x/abstract;jsessionid=B922A5B3AFDBD57CEA38BA2720C63A90.f03t02>

Which (2015) Credit card briefing.

<http://www.staticwhich.co.uk/documents/pdf/which-briefing-into-the-credit-card-market-418203.pdf>

required minimum repayment, the lower the actual repayment made. It also finds evidence that the presence of a minimum repayment option being displayed had a large effect reducing the repayment amounts. These effects were so large that additional disclosure alongside displaying the minimum repayment option did not eliminate the negative effects arising from the minimum repayment anchor.

### **Which? research on consumer understanding of minimum repayments**

In 2015 Which? carried out a survey of 2,218 adults living in Great Britain to examine their understanding and perceptions of minimum repayments.

The research showed that most credit card users do not understand the cost implications of repaying the minimum or how long it would take to pay off debts at this level. When informed that a £500 balance would take more than 12 years to clear through minimum repayments, approximately three quarters (73%) of minimum repayers reported that this was longer than they had expected. The research also found that there was very little understanding of the cost implications of such a balance.

The research also found that those who choose to repay the minimum for their own cards do not understand the concept. Half of all minimum repayers (48%) thought that the minimum repayment level is recommended by their credit card provider, whilst half (50%) also considered that most people repaid the minimum amount.

### **Present-biased consumers**

12. Behavioural literature has repeatedly shown how consumers often make decisions to provide gratification 'now' and postpone costs until later (Laibson, Repetto & Tobacman, 2007).<sup>10</sup> Such decision-making is time-inconsistent and incoherent with traditional, economic rational economic models of consumer behaviour and instead requires behaviourally-informed models of consumer behaviour as proposed by Laibson (1997) and analysed in Heidhues & Koszegi (2010), Shui & Ausubel (2005) & DellaVigna & Malmendier (2004).<sup>11</sup> Consumers are tempted to repay less of their debt now and put off repaying more debt until later with the result being increased

<sup>9</sup> Which (2015) Credit card briefing.

<http://www.staticwhich.co.uk/documents/pdf/which-briefing-into-the-credit-card-market-418203.pdf>

<sup>10</sup> Laibson, D. Repetto, A. & Tobacman, J. (2007) Estimating discount functions with consumption choices over the lifecycle. National Bureau of Economic Research (NBER) Working Paper 13314, August 2007.

[http://scholar.harvard.edu/files/laibson/files/estimating\\_discount\\_functions\\_with\\_consumption\\_choices\\_over\\_the\\_lifecycle.pdf?m=1360041246](http://scholar.harvard.edu/files/laibson/files/estimating_discount_functions_with_consumption_choices_over_the_lifecycle.pdf?m=1360041246)

<sup>11</sup> Laibson, D. (1997) Golden eggs and hyperbolic discounting. Quarterly Journal of Economics, 112 (2): 443-478.

<http://harbaugh.uoregon.edu/Readings/Time/Laibson%201997%20QJE,%20Golden%20eggs%20and%20hyperbolic%20discounting.pdf>

Heidhues, P. & Koszegi, B. (2010) Exploiting naïveté about self-control in the credit market. American Economic Reviews, Vol. 100, No. 5, December 2010.

<https://www.aeaweb.org/articles?id=10.1257/aer.100.5.2279>

Shui, H. & Ausubel, L. (2005) Time inconsistency in the credit card market. Working Paper.

[http://eml.berkeley.edu/~webfac/dellavigna/e218\\_f05/ausubel.pdf](http://eml.berkeley.edu/~webfac/dellavigna/e218_f05/ausubel.pdf)

DellaVigna, S. & Malmendier, U. (2004) Contract design and self-control: theory and evidence. Quarterly Journal of Economics, 119 (2): 353-402.

[http://eml.berkeley.edu/~ulrike/Papers/qjec\\_119\\_2\\_353\\_0.pdf](http://eml.berkeley.edu/~ulrike/Papers/qjec_119_2_353_0.pdf)

interest costs of borrowing. Analysis by Agarwal et al. (2015) of the US CARD Act disclosures on statements designed to address this issue found these only slightly increased repayments; however, there may be more salient ways to present information to be more effective.<sup>12</sup>

### Capital One trials to encourage consumers to sign-up to higher direct debits

Capital One has conducted a series of randomized controlled trials (RCTs) to examine the effectiveness of different ways to encourage credit card customers to repay more than the contractual minimum.

A screenshot of one of the treatments tested is displayed. This was sent as an email to a sample of consumers who had paid the contractual minimum, or close to it, in at least 5 of the last 6 months. This treatment resulted in 12% of consumers switching to a higher direct debit and these consumers increased average payments by 73%.

The screenshot shows an email from Capital One with the subject line "GET YOUR BALANCE INTO BETTER SHAPE". The email is addressed to "Dear Jon," and explains that paying more than the minimum will help reduce the balance and interest. It offers two options: a fixed £15 payment or a custom amount. A comparison box shows that paying £15 instead of the minimum of £7.36 would pay off 4x faster and reduce interest by 82%. The email concludes with a thank you and the name of the Head of Customer Service, Richard Rolls.

**Capital One**  
the card in your corner®

Account Number  
\*\*\*\* \* 1234  
Find out more about  
safety & security

**GET YOUR BALANCE INTO BETTER SHAPE**

**THE QUICKER WAY TO CLEAR YOUR BALANCE**

Dear Jon,

You've been making your minimum payment for a while, but paying more will help you get your finances in better shape and reduce your balance. Plus, bigger payments mean you pay less interest.

Around 7 out of 10 Capital One customers do exactly that, so why not join them by simply choosing a new monthly amount you know you can afford? We'll then automatically update your Direct Debit to the new amount.

**£15 >>** **Enter your own amount >>**

**PAYING A LITTLE MORE CAN MAKE A BIG DIFFERENCE**

Your balance on 13th July was around £208.62. Your last minimum payment was £7.36. Simply **increasing your monthly payment to £15** will make a big difference\*:

**PAY OFF 4x FASTER** **PAY 82% LESS INTEREST**

As your balance reduces, your minimum payment reduces. By choosing to pay a fixed amount each month your balance will reduce faster.

You can always go back to making minimum payments in the future, so why not try a new payment today?

**£15 >>** **Enter your own amount >>**

We'll make the change to your Direct Debit from your payment due around 31st July 2016.

If in future your new Direct Debit isn't enough to cover your minimum payment, we'll take the minimum so you always pay enough.

Thanks for being a Capital One customer.

Richard Rolls,  
Head of Customer Service

<sup>12</sup> Agarwal, S. & Chomsisengphet, S. & Mahoney, N. & Stroebel, J. (2015) Regulating consumers financial products: Evidence from credit cards. Quarterly Journal of Economics, 130 (1): 111-164. <http://qje.oxfordjournals.org/content/130/1/111.full.pdf?etoc>

### Inertia and limited attention

13. Consumers can suffer from inertia, failing to take action, and inattention, having limited capacity for decision making and may not pay full attention to the decisions they need (FCA Occasional Paper 7, Andersen et al., 2015).<sup>13</sup> In the credit card market we are concerned that groups of consumers may not be making active choices of repayment amounts and instead defaulting to choose the minimum repayment option, particularly when making repayments via direct debit. This may result in high borrowing costs and limited paydown of credit card debts.

<sup>13</sup> Adams, P. & Hunt, S. & Vale, L. & Zaliaskus, R. (2015) Stimulating interest: Reminding savers to act when rates decrease. Financial Conduct Authority Occasional Paper No. 7.

<https://www.fca.org.uk/static/documents/occasional-papers/occasional-paper-7.pdf>

Andersen, S. & Campbell, J. & Meisner-Nielsen, K. & Ramadorai, T. (2014) Inattention and inertia in household finance. Evidence from the Danish mortgage market.

<https://www.aeaweb.org/aea/2015conference/program/retrieve.php?pdfid=515>

**Financial Conduct Authority**



© Financial Conduct Authority 2016  
25 The North Colonnade Canary Wharf  
London E14 5HS  
Telephone: +44 (0)20 7066 1000  
Website: [www.fca.org.uk](http://www.fca.org.uk)  
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