

Encouraging Affordable Borrowing

RCT findings on anchoring loan amounts

March 2020



Shift

This report outlines a service improvement trial run by Shift and Fair Finance, funded by the JP Morgan Foundation. Shift is working with Fair Finance to devise and implement Randomised Controlled Trials (RCTs) to improve the impact of their Personal Loan service, which provides more affordable loans to those who are excluded from mainstream finance.

RCTs are widely considered to be the "gold standard for effectiveness research".¹ Comparing two groups which have been randomly assigned reduces the potential that something other than the intervention is driving any change that is observed. We therefore chose to do an RCT in order to find out whether any changes observed through this experiment could be attributed to the treatment.

We began by conducting a literature and landscape review. This fed into a series of workshops with Fair Finance staff in which we identified opportunities to improve aspects of the Personal Loans product which are testable within the timeframe of this project (July 2019 - March 2020).

This first trial sought to assess the effect of online choice architecture on consumer borrowing behaviour. Specifically, we looked at whether reducing the default loan amount displayed on the online calculator seen by applicants immediately prior to submitting an application affects the size of loan requested.

We found that changing the default on the online calculator from £500 to £100 reduced the loan amount requested by 5% and closed the gap between the amount that customers request and the amount they are offered by 22%.

Background

This project seeks to respond to two issues related to acceptance rates:

1. **Affordability:** the insight that many clients apply for more than they can afford and are on average offered 22% less than the amount requested.
2. **Client satisfaction:** the insight that drop-off rates are perhaps influenced by an applicant's disappointment at being offered less than they applied for (between December 2018 and October 2019 just 38% of loans offered to online customers were taken up).

The intervention design draws on the concept of anchoring: the idea that irrelevant information can act as a psychological benchmark which can have a significant influence on customers' decision making. Previous trials in other contexts have shown that clustering decisions around a number that serves as a reference point can affect decision-making and behaviour. For example:

- A **study** in the US found that participants who were auto-enrolled in an employee 401K saving scheme were not only more likely to participate in the scheme than those who were not auto-enrolled, but were also likely to stick with the default contribution rate. The authors explain that "this default behaviour appears to result from participant inertia and from employee perceptions of the default as investment advice".²
- A **trial** by the Dutch regulator which explored the effect of modifying the default amount shown on a credit application form. One group was shown a default amount of €9,000, another €5,000, and a third were presented with a blank field (no default). They found that changing the default affected the distribution of credit amounts requested, with more people applying for credit of €9,000 (4.5%) than when they were shown a default amount of €5,000 (0.4%) or were required to make an active choice (0.7%). However, the average amount requested was roughly the same across the three groups.³
- **Research** in the UK and US which found that increasing the minimum payment amount displayed on a credit card statement results in an increase in the average payment amount.^{4,5}

Intervention

The trial sought to explore the following question: Does changing the default setting of the online calculator from £500 to £100 reduce the amount that new online customers apply for? Ultimately, we want to understand whether this affects uptake and affordability of loans, though this is beyond the scope of this trial.

The intervention focussed on the online calculator that loan applicants use to decide on an amount to borrow. When they have settled on a loan amount and duration, the customer can proceed to the application by hitting the "Apply Now" button. This takes them to the full application form with the values from the calculator auto-filled into the form.

New online borrowers can request between £100 and £1000. The calculator has a default loan amount of £500 when a user lands on the webpage. This default amount continues to be seen for the Control group in our trial. An intervention or Treatment group was randomly allocated to an online loan calculator that was automatically defaulted to show a loan amount of £100. £100 rather than £0 was chosen as the default for the treatment as it is the smallest loan value that Fair Finance currently offers. Screenshots of the landing page of Control and Treatment groups can be seen below.

Trial design and implementation

For a period of just over four weeks, from 6 December 2019 to 8 January 2020, a total of 5,836 new online customers applied for a loan. Of these, 5,833 used the online calculator to start their loan application. The remaining three most likely directly navigated to the application form and so we removed these observations from our analysis.

When a new user arrives on the personal loan webpage they are automatically allocated using a random number generator to either see the Control (£500) or Treatment (£100) default amounts in the calculator. To avoid confusion, a cookie implemented via the website ensures that any return visitors will continue to see the version that they saw on their first visit.

Assessment of the page hits and applications suggests that there was no attrition between Control and Treatment groups. A further check confirms that the randomisation process provided us with comparable groups. For more detail on this, please see Appendix 1.

Control

The screenshot shows the online loan calculator interface for the Control group. The loan amount is set to £500, and the duration of the loan is 52 weeks. The weekly repayment is £15.50, interest is £306, and the administration fee is £30, resulting in a total to repay of £836. The interface includes a "NEW CLIENT" button and an "APPLY NOW" button.

Treatment

The screenshot shows the online loan calculator interface for the Treatment group. The loan amount is set to £100, and the duration of the loan is 52 weeks. The weekly repayment is £3.10, interest is £61, and the administration fee is £30, resulting in a total to repay of £191. The interface includes a "NEW CLIENT" button and an "APPLY NOW" button.

Findings

Changing the default on the calculator from £500 to £100 reduced loan amount requested by 5% (4.6%)

Primary findings

We found that the Treatment had a statistically significant effect on the loan amount requested, with customers in the Treatment group requesting loans that were £23.90 (4.6%) smaller than those requested by the Control groups. This is a highly statistically significant finding at the 1% confidence level and means that the intervention had the assumed effect of reducing the size of loan that customers in the Treatment group applied for. For more information, please see Appendix 2.

It's interesting to note that a [similar trial run by the Dutch regulator](#)³ found that, unlike the findings from this trial, the average amount of credit requested remained roughly the same across the three situations they tested (a default amount of €9,000, €5,000 and an unset default).

Secondary findings

Our sample size was only calculated to be able to detect an effect on loan amount requested, not for the effects described in this section. These secondary findings have been included to give Fair Finance some insight into potential other areas of impact and interest. However, the following analysis must be taken with caution.

Loan amount offered

Changing the default on the calculator from £500 to £100 reduced loan amount offered, but this is not statistically significant.

A secondary outcome we were interested in is whether the loan amount that is offered to the customer has changed as a result of the Treatment. We found that the

treatment had a negative impact on the amount offered, but this is not significant at the 5% level. However, this trial was not powered to detect an effect and the sample size of a month's actual approvals is not enough to draw conclusions. That means in this case that we cannot be certain that the treatment does not have an effect on loan amounts approved or that it does have an effect. A further trial with a larger sample size would be able to show with more certainty what effect this intervention had on loan amounts offered.

Difference in requested versus approved amounts
Changing the default on the calculator from £500 to £100 reduced the gap between the loan amount customers request and the loan amount they are offered, and this is statistically significant.

Whilst we were unable to say anything definitive about the effect of the treatment on loan amount offered, we did see a large and significant reduction in the gap between the loan amount consumers requested and the loan amount they were offered. This gap fell from £172 in the Control group to £134 in the Treatment group, a fall of 22%. This difference is significant at the 1% level. This makes sense as the Treatment group is being anchored towards a lower, and perhaps more realistic, loan request. This could help reduce the frustration that consumers feel when being offered loan amounts less than their requested amount.

Approval, decline and drop-off rates

Changing the default on the calculator from £500 to £100 did not have an effect on approval rate, declines, or drop-offs.

There was a possibility that reducing the loan amount requested could improve the chances of individuals being approved for a loan and that drop-offs were lower if the offer amount was closer to the requested amount. We did not find evidence that there is any significant difference in the completion rates between the two groups - the number of contracts that are finalised and agreed with clients six weeks after the end of the trial is 3.05% in the control group, and 3.08% in the Treatment group. However, as above, the experiment was not powered to detect this, and we note there are many factors affecting approval rates beyond just the value of loan requested.

Similarly, we did not find statistically significant differences between the proportion of declined applications in the Control (76.2%) and Treatment (77.0%) groups, or in differences between the amount of drop-off in the Control (20.7%) and Treatment (19.9%) groups. We have sufficient sample size to be confident in these results. There is no difference between control and treatment on these outcomes.

Further exploration

Now that we have confidence that changing the choice architecture of the online calculator in this way reduces the average loan amount requested, Fair Finance is interested in running a further trial or set of trials which are powered to tell us - in statistically significant terms - more about the following questions:



**Amount
offered**

Does changing the default setting on the online calculator reduce the loan amount offered to customers? (As described above, this trial was not powered to tell us about this outcome in statistically significant terms.)



Affordability

If we find that reducing the amount requested also reduces the overall loan value awarded, then does this also feed through to a reduction in missed payments?



**Default
settings**

Do different loan amount default settings (e.g. £0) have a more pronounced effect on loan amount requested?

References ¹ Harrison, E. And J. Lo Cascio (2018) 'Randomised controlled trials - the gold standard for effectiveness research'. BJOG, Vol 125 (No. 13), 1716. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6235704/> ² Madrian, B. and D. Shea (2001) 'The Power of Suggestion: Inertia in 401(k) Participation and Savings Behavior'. The Quarterly Journal of Economics, Vol. 116 (No. 4), 1149 - 1187. Available at: <https://www.jstor.org/stable/2696456?seq=1> ³ Making it easier to borrow responsibly: The effect of online choice architecture on consumer borrowing behaviour' (2019), AFM (Netherlands Authority for the Financial Markets). Available at: <https://www.afm.nl/~profmedia/files/rapporten/engels/making-it-easier-to-borrow-responsibly.pdf> ⁴ Navarro-Martinez, D. et al (2011) 'Minimum Required Payment and Supplemental Information Disclosure Effects on Consumer Debt Repayment Decisions'. Journal of Marketing Research, Vol 48. Available at: <https://journals.sagepub.com/doi/10.1509/jmkr.48.SPL.S60> ⁵ Stewart, Neil (2009) 'The cost of anchoring on credit-card minimum repayments'. Psychological Science, Vol.20 (No.1), 39-41. Available at: <http://wrap.warwick.ac.uk/2552/>

Appendix 1

RCT implementation

Attrition

The first concern in an experiment of this type is that the different Treatments may have a different impact on completing a loan application. Indeed, research by the AFM found that certain framing of loan choices led to significantly fewer applications overall. In such a case the subsequent results would not reflect the different treatments but self-selection into which individuals proceed to complete a loan application. Table 1 provides summary information on the number of page views during this period, the number of subsequent applications and "conversions" (applications/page views). We use a Chi² test to compare whether there are differences in the proportion of conversions between the control and treatment pages. We do not see any significant difference between the two groups in terms of users proceeding to a loan application.

	Control	Treatment	Total
Page views	6112	6226	12338
Applications	2850	2983	5833
Conversion	46.63%	47.91%	47.28%
Difference in conversion		-0.01282	
P value for Chi ²		0.9431	

Table 1: Number of page views, subsequent applications and "conversions"

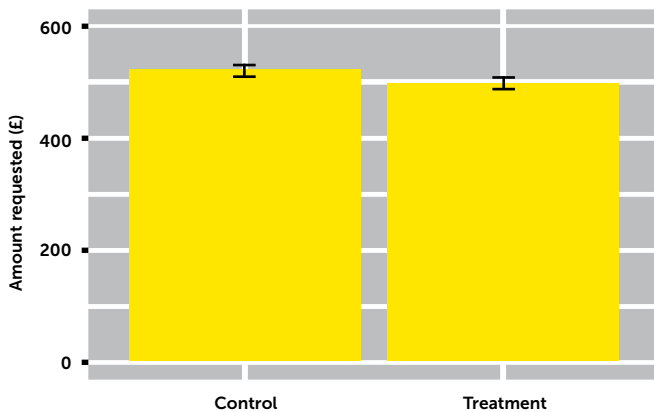
Balance

We observe a number of characteristics about individuals in the trial. To ensure that the random allocation of new users to Control and Treatment groups was successful we can check whether these characteristics are "balanced" between the two groups. We ran statistical tests to check whether there are any differences between the Control and Treatment groups in terms of: age, total income, total expenditures, marital status, nationality, employment status, accommodation type and number of dependents. For all of these variables, we find no difference between Control and Treatment groups.

As there is no apparent difference between the attrition rates or balance rates between the two calculator forms, we can be confident that any changes in loan applications we see are due to and caused by the different anchors.

Appendix 2

Loan amounts requested



Graph: Comparing raw means between Treatment and Control

Our primary outcome of interest is the loan amount requested by individuals in the two groups. Receiving the web page with the calculator with the lower anchor of £100 has a significant (p -value = 0.0009493) and negative impact on the amount requested. Treatment group consumers choose a loan £23.90 smaller than those in the control group. This is a reduction of approximately 5% from the control group average of £522.

	Treatment	Control	Treatment
Sample size		2850	2983
Mean		522.4	498.5
SD		272.6	277.1
Median		500	500
Min/Max		100	100
Max		1000	1000

Table 2: Comparing raw means between Treatment and Control

The figures above compare raw means between the two groups. We have significant additional information about individuals. By using this additional information in a regression we are able to get more precise estimates of the effect of our treatment.

Results remain the same when controlling for individual characteristics. We find that marital status and accommodation type do not have any effect on the loan amount requested. Surprisingly, we find that stated income or stated expenditures also do not have any impact on loan amount requested. We find that age has a positive effect on amount requested. Your nationality (UK, EU, RoW), employment status and number of dependents also have an effect on the amount requested.

We can also look at interaction terms - whether the Treatment is more or less effective for certain characteristics. We find only one significant interaction term - age. Older people are less likely to be affected by our treatment than younger people.



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Acknowledgements

We're grateful to the team at Fair Finance for all their hard work in getting this trial up and running, with special mention to Faisal Rahman, Daniel Forsyth and Michael Stewart. We're also thankful to JP Morgan Foundation for supporting this work, and to everyone who has shared their insight and expertise along the way, including Chuck Howard, Diane Burr ridge, Mike Burshtyne, Will Dobbie and Jeroen Nieboer.