



Technical annexes

Supplement to CP14/10

July 2014

Contents

Foreword

- 1 Impact of the cap on HCSTC supply
- 2 Impact of the cap on HCSTC competition
- 3 Impact of the cap on HCSTC demand

Foreword

- 1.1 These technical annexes are published as a supplement to our Consultation Paper on proposals for a price cap on high-cost short-term credit (CP14/10).
- 1.2 The annexes contain statistical data and analysis which has been used to help inform development of our proposals for a cap.
- 1.3 Copies of our Consultation Paper and this document are available to download from our website: www.fca.org.uk.

Technical Annex 1: Impact of the cap on HCSTC supply

Introduction

To assess the impact of different cap levels and cap structures, there are three key analytical questions to address:

1. What happens to firms and their lending decisions as a result of the cap?
2. What options are there for consumers who no longer have access to HCSTC?
3. Are these consumers better or worse off as a result?

This Technical Annex sets out our approach to answering the first of these questions. Questions two and three are substantially covered in Technical Annex 3 (Demand analysis). Technical Annex 2: Competition analysis takes the supply analysis set out here as an input, and considers the behavioural responses of firms to the cap, and the resulting impact on HCSTC competition.

There is a degree of overlap between each of these technical annexes. Where relevant, we have made any links to other documents explicit, and as a result there are a number of cross-references to other documents within this Technical Annex.

In general, a cap on the cost of HCSTC borrowing will reduce the revenue firms can earn from loans, which is expected to reduce the profitability of HCSTC lending. Consequently, there are three key “static” effects that our supply analysis seeks to investigate and quantify:

- First, if the cap lowers the prices that HCSTC firms can charge, firm revenues will fall (HCSTC customers will pay less).
- Second, for some loans these revenue reductions will be such that it is no longer profitable for firms to offer those loans, leading to fewer loans being written overall (and some customers losing access to the HCSTC market).
- Third, the resulting volume of loans that each firm is willing and able to provide may not be sufficient to cover the costs of operation for some firms: a further

impact of the cap is that firms may find it unprofitable to continue to provide HCSTC loans at all i.e. may be at risk of market exit.

This Technical Annex describes the work we undertook to quantify these impacts. For clarity, this Technical Annex describes the “static” impacts of the cap on HCSTC suppliers i.e. in the absence of any behavioural response from firms. Potential behavioural responses to the cap will reduce the effects shown, and are described in detail in Technical Annex 2. The static impacts presented here are used as an input to this further assessment.

This Technical Annex first describes the framework we have used to model the impacts of the cap i.e. how we estimate firms’ decision making process under different levels and structures of cap. We then describe in Chapter 2 the data we have used in order to estimate firms’ decisions, and we use this data to describe key features of the HCSTC market in Chapter 3. We then present a summary of our modelling methodology in Chapters 4 & 5, and set out our modelling results in Chapter 6.

In describing our approach, we have sought to provide a non-technical explanation. A more technical specification of the model has been included as an Appendix to the main body of this Technical Annex.

Our data covers 2012 and 2013. When we use the supply model to analyse the impact of the cap, we assess what the impact of the cap would have been on the data provided to us. We then infer that the results we see will hold when the cap is put in place from January 2015 (following other judgements made regarding firm responses, as discussed in Technical Annex 2).

Our final assessment of the impacts of the cap on firms and consumers, extrapolated to the market, and considering the impact of potential responses to the cap, can be found in the cost benefit analysis that accompanies the main consultation paper.

Contents

1. Modelling framework

- 1.1. The framework for HCSTC firms' decision making process
- 1.2. Choice of modelling approach
- 1.3. Supply modelling approach: high-level overview

2. Firm data and adjustments made

- 2.1 Data sources and coverage
- 2.2 Data collection, cleaning and preparation
- 2.3 Baseline adjustments
- 2.4 Management accounts

3. HCSTC descriptive statistics

- 3.1 Features of the HCSTC market
- 3.2 HCSTC revenues
- 3.3 HCSTC costs
- 3.4 HCSTC contributions

4. Supply model methodology

- 4.1 Estimation of firms' decision-making processes
- 4.2 Adjusting revenues and costs
- 4.3 Running the model

5. Exit model methodology

- 5.1 Identifying firms at risk of exit from the market
- 5.2 Sensitivities considered

6. Results

- 6.1 Impacts of different levels of the cap
- 6.2 Analysis of the recommended option
- 6.3 Impact on customers at different levels of the cap

Appendix 1: Detailed technical methodology

Appendix 2: Assumptions

1 Modelling framework

Our supply model quantifies the extent to which firms would still be willing to offer HCSTC loans under the constraint imposed by the cap. In order to estimate this, the model aims to estimate the decision-making process of each firm, to gauge the impact of the cap.

HCSTC firms operate different business models, and have different approaches to decision-making. We have created firm-specific models for each firm to account for this. However, at a high-level there is a common framework that each firm operates within. While the implementation of the supply model is different for each firm in our sample, the overall structure of the model is consistent across firms.

This Section sets out the high-level framework we have used to assess how firms make their loan decisions, and the resulting impact that the cap will have. This provides context for the choices we made when collecting data and building our model.

1.1 The framework for HCSTC firms' decision making process

Firms form expectations about customer profitability when deciding whether to offer loans

Importantly, at the point firms decide whether or not to grant a loan, they cannot predict with certainty whether the loan will be repaid. As with any form of lending, there is a possibility that a HCSTC loan is not repaid in full on its due date. The loan may be repaid early or late, it may only be partially repaid, and it may never be repaid.

This repayment behaviour affects the revenues the firm is able to recover, and ultimately the *expected* profitability of the loan at the point of application. The uncertainty varies from borrower to borrower, and all HCSTC firms have a range of customers with associated levels of risk, unique to each customer.

Further, when deciding whether to offer loans to applicants, firms also consider the expected profitability of any *subsequent* loans the applicant may take out with the firm in the future, as a consequence of being granted the loan currently being applied for. In other words, firms may choose to offer loans to customers even where they expect the loan being applied for to be unprofitable. This would be

justified where the expected profits from future lending exceed any expected losses the firm expects to incur from the current loan.¹

Firms employ a range of strategies to form their expectations on loan profitability. Approaches vary from sophisticated credit scoring models that make use of detailed customer information, to simple trial-and-error methods whereby the firm first advances a small loan to a customer, who, if they repay their initial loan, becomes eligible for larger loans. In general, past repayment behaviour is a good predictor of future repayment behaviour, meaning there is much less uncertainty for firms when deciding whether to offer repeat loans, compared to first-time loans.

The probability of default is closely related to profitability

Simulating the process that firms use to formulate their expectations is a key element of our model. Our modelling of firms' decision-making process is based on the information that we received from firms, and uses only the information that would be available to firms at the point they make lending decisions.

At the point of the lending decision, we assume firms consider the (expected) costs and revenues that are directly associated with the loan: the loan decision will *not* depend on overhead costs or other costs not directly attributable to individual loans.

By far the most significant element of cost attributable to loans is the cost associated with default. Default costs vary significantly between customers, in contrast to the majority of other elements of cost. A HCSTC firm's profit maximising strategy is to lend to all customers whose expected cost of default is lower than the expected total revenue the lender expects to earn from that loan, based on the information available to it.² For a given loan application, customers with a lower probability of default are expected to be more profitable than customers with a higher probability of default.

The impact of the cap will be to reduce the expected profitability of loans

A cap on the cost of HCSTC borrowing will limit the potential revenues a firm can earn from each loan. For every loan on which the cap bites, loans will become less profitable, and those loans with the highest probability of default will have the

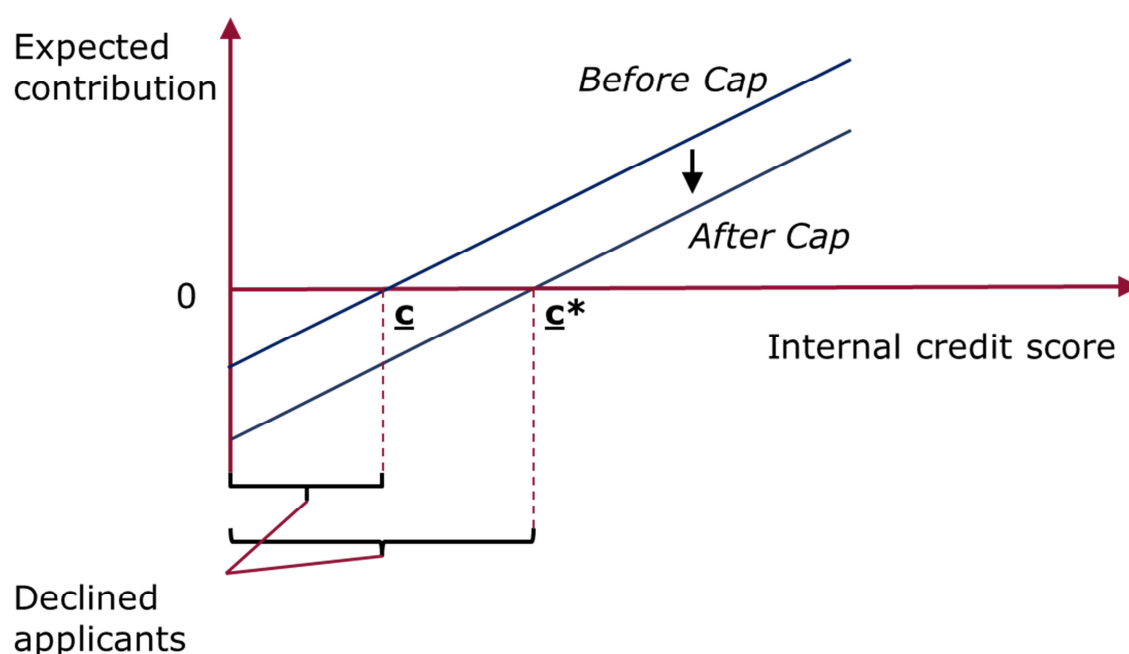
¹ HCSTC firms and CRAs confirmed this is an accurate representation of how decisions are made in a number of discussions we held with them, throughout our analytical work.

² In practice, we expect the majority of overhead costs to be variable in the medium-term. Firms will also consider the expected costs and revenues associated with repeat borrowing. For simplicity, we do not discuss these issues in our description of the modelling framework. As explained in detail in Chapters 4 & 5, these other costs and revenues have been formally included in our model, and do not affect the general arguments we present here.

greatest risk of becoming unprofitable overall (as they are currently least profitable), suggesting that firms' least profitable customers will face the greatest risk of losing access to the HCSTC market. More profitable customers will pay less for their HCSTC loans, and the firms' total revenue and total profitability will be reduced.

To help illustrate this impact, Figure 1 below provides a stylised example for illustrative purposes.³ The vertical axis measures the expected contribution⁴ of a customer, and customers are ordered by their credit score on the horizontal axis, with higher credit scores (lower probability of default) placed towards the right of the axis. Customers with higher credit scores have a lower probability of default, leading to higher expected contributions.

Figure 1: Illustration of impacts of cap on contribution and applicants, for an illustrative HCSTC firm



Before a cap, the profit maximising strategy for a firm is to lend to all customers with positive expected contributions (to the right of point c on the x-axis). The cap reduces the expected profitability of each customer as described above, equivalent to a downward shift in the curve shown.

The profit-maximising strategy of the firm is unchanged following the cap: it remains to lend to all customers with positive expected contributions. However, the impact of the cap is to lower the expected contribution of all loans, and diagrammatically to

³ In practice, customers are not affected uniformly by the cap as shown, as profitability is not perfectly correlated with credit score. This does not affect the general principle shown here.

⁴ Contributions here defined as total revenues, less costs attributable to individual loans. This does not include fixed costs.

move the point at which expected contributions become positive to the right: from point \underline{c} to point \underline{c}^* .

The impact of the cap is therefore that customers between \underline{c} and \underline{c}^* are no longer offered a loan from the firm. Customers to the right of \underline{c}^* pay less for their HCSTC loans.

Quantifying the distance between \underline{c} and \underline{c}^* for each firm modelled, and exploring the implications of the change in each customer's expected profitability are the two issues at the heart of our supply side model.

1.2 Choice of modelling approach

HCSTC firms make lending decisions by forming expectations about *customer* profitability, not just the expected profitability of a particular loan. They form these expectations by collecting relevant information about each customer, and use this to determine whether or not to offer a loan.

To estimate this decision-making process, we required a model based on the loan-level data that would also allow us to form a judgement about profitability at customer-level. To do this, rather than estimating the impact of the cap using a 'top down' approach at firm-level, we used a 'bottom up' approach, building from loan-level data that provided a view of the costs and revenues associated with each loan written. To form a view about customer-level profitability, we used data that would allow us to identify and track customers over time (and ultimately across firms), covering a two-year period.

We also needed the model to use the customer information available to lenders at the time of the application, not information that may subsequently have helped refine their assessment. For this reason, we asked firms to provide us with the information available to them at the time of each lending decision, including credit scores.

Finally, we needed the model to allow us to achieve a representative view of the HCSTC market. For that reason, we chose the sample firms with a view to provide broad coverage of the HCSTC market, and the different business models that exist in the market today.

Our supply model is based on a detailed loan-level dataset containing data on all revenues and direct costs for nearly 20 million HCSTC loans written in 2012 and 2013. This data was sourced from eleven HCSTC firms. In addition, we had access to HCSTC firms' management accounts, and less detailed loan-level data from a further

26 firms. In total, we received information from around 100 firms, which was used in our analysis.

Our model reflects firms' different decision-making processes. Each firm has a unique business model, and consequently the cost and revenue structures differ for each firm. We see this in the data provided to us, and adopted a firm-specific approach in our model.

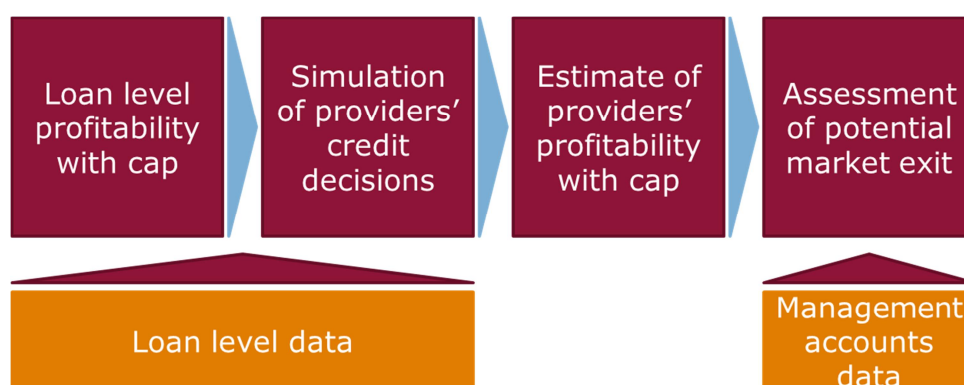
The data allows us to estimate the decisions of each firm, based on the actual pattern of lending we see in the data (in 2012 and 2013). Or equivalently, the model estimates the impact of the cap on the loans written in 2012 and 2013. When using the model to estimate the impact of the cap, an important assumption being made is that this decision-making process would remain unchanged following the introduction of the cap.

1.3 Supply modelling approach: high-level overview

Figure 2 below provides an overview of our implementation of the supply model. We use the loan-level data to calculate what the contributions of loans in the dataset would have been had a cap been in place. This is done by setting revenues as the maximum allowable under the cap (in instances where revenues in the data exceed these allowable maximums).

We then simulate whether firms would have granted each loan. This allows us to estimate the impact of the cap on firms' profitability. Estimated profitability impacts are then used to assess whether each firm is at risk of exit from the market, for which we also use information from firms' management accounts, provided to us by firms.

Figure 2: Supply modelling approach: high-level overview



Throughout our modelling we control for some of the changes that will take place in the HCSTC market between the coverage of our data and the introduction of the cap

at the beginning of 2015. The most important of these are the introduction of new rules governing refinancing and CPAs introduced in July 2014. These changes are discussed in detail in Chapter 2 below.

The supply model described in this Technical Annex produces a view of the 'static' impact of the cap on firms. At this stage of the analysis, we do not attempt to model firms' potential responses to the cap. Such responses could include, for example, changes in firms' product ranges, distribution channels or other non-price aspects of firms' offerings. Each firm's decision-making processes and / or risk tolerances could themselves also change. These potential responses are considered separately in Technical Annex 2 and use the static impacts described in this Technical Annex as an input.

The static impacts presented here imply that firms would make decisions in the same way following introduction of the cap. Under this static view, each firm's only available response to the revenue restrictions introduced by the cap is to increase the thresholds above which they are willing to offer loans i.e. the impact of the cap is to reduce the number of loans offered.

We have intentionally created this static view of the impact of the cap. Arguably, any response that firms would make to the cap would be made with the intention of mitigating the impacts of the cap on their business relative to the static results shown (in other words, they would seek to increase revenues, profits, and lending volumes). In addition, we would expect the remaining firms in the market to gain customers from any firms that exit, which would reduce the impacts shown. Consequently, the static impacts presented can be viewed as a conservative (or 'worst case') scenario, in terms of the impact on HCSTC firms.⁵

⁵ This is discussed in more detail in Technical Annex 2.

2 Firm data and adjustments made

Our model is based on a broad range of data that we collected from HCSTC firms. In addition, we have had access to some of the analysis conducted by the Competition and Markets Authority (CMA) in the course of their market investigation into payday lending.

This Chapter describes our approach to data collection and data handling, and is structured as follows:

- 2.1 Data sources and coverage of sample data
- 2.2 Data collection, cleaning and preparation
- 2.3 Description of firm data
- 2.4 Baseline adjustments
- 2.5 Management accounts

2.1 Data sources and coverage of sample data

2.1.1 Detailed loan-level data was collected from 11 firms

The aim of our data collection was to build a detailed loan-level dataset of HCSTC loans with a broad coverage of the market. To do this, our sample includes HCSTC loans issued by a range of different firms, allowing the model to gauge the impacts of the cap on a range of business models, loan types, and customers.

We worked closely with the then Office of Fair Trading and Competition Commission⁶ to formulate our data request and to identify the firms that we contacted in the course of our data collection.

The initial firm selection process was based on the OFT's data on HCSTC firms' revenues. Given the concentration of the HCSTC market, and the fact we expected our request to be resource-intensive for firms to provide, we decided it would be proportionate to send our main data request to a small number of firms, concentrating on larger HCSTC firms. We chose to engage with smaller firms through trade bodies and a market questionnaire.

The bulk of our data was supplied by eight companies, representing eleven firms (operating units). These account for the majority of the HCSTC market by number of customers and revenues. They also offer a diverse range of products. The data from these eleven firms captures a broad range of diverse business models, products and customers.

⁶ These organisations have subsequently merged to form the Competition and Markets Authority

In addition to the detailed data provided by the eleven firms, we sourced a more limited set of customer data from a further 26 firms. These firms were selected on the basis that they were active in the market at the time of the data collection, and that the OFT's revenue data suggested these firms had HCSTC turnover in excess of £500,000 in 2011.

Together, these 37 firms accounted for over 99% of the HCSTC market by revenue in 2013, according to our data.

2.1.2 Interaction with firms

We requested the detailed loan-level information through a formal information request, and firms were given an opportunity to comment on a draft of the request. Firms submitted data using Excel templates which we provided, which helped to standardise the format of the information we collected

Throughout the process, we were in contact with the firms, who were able to help with a number of data queries. In a number of instances, updated data was submitted to us. Of the detailed loan-level data collected, **it was only possible to use data from eight of the eleven firms in our model**, as explained in Section 2.2.2 below.

2.2 Data collection, cleaning and preparation

This Section describes the process we employed for collecting, checking, and cleaning the data received from firms. We also describe the process through which we prepared the data for use in the supply model.

2.2.1 Data collection

The main data request to the eleven firms had a number of component parts, designed to ensure we were able to form a detailed understanding of the impact of the cap on each firm. The component parts were as follows.

- a. **Customer lists:** a list of customers who had applied for payday loans (successfully and unsuccessfully) in 2012 and 2013.
- b. **Transaction data for *successful* loan applications:**
 - o loan details (including loan amount, duration, numbers of top-ups, refinancing, late payments, product type);
 - o accrued revenues (broken down into sub-categories with a record of when adjustments to the loan duration and/or principal amount had occurred);

- costs directly attributable to each loan;
 - reference to the loan approval process a customer went through, and the credit score given to that customer at the time of application; and
 - application details (including any self-reported information also provided by the customer at the time of the application).
- c. **Transaction data for *unsuccessful* loan applications:** a limited subset of the fields requested for successful loan applications, covering the details of the loan application and customer, and the stage at which the application was declined.
- d. **Loan approval process data:** a detailed explanation of how firms decided whether to accept or decline a loan application, including decision drivers, the credit score cut-offs used by firms, and how these changed over the sample period.
- e. **Product data:** a description of each of the products offered by the firm over the sample period, and the characteristics of each product.
- f. **Monthly overhead costs data:** a monthly summary of any category of cost incurred as a result of HCSTC provision, but not directly attributable to a loan. Monthly overhead costs by cost category were provided. The data request also required firms to reconcile the sum of these costs to their statutory accounts. The detail of how directly attributable costs were allocated was required, as was an estimate of the cost of capital applying to the HCSTC business.
- g. **Management accounts:** required to cover the period from January 2011 to the latest available, at the time of the data request. Statutory accounts were also requested.
- h. **Supplementary documents:** a number of documents were requested, including:
- detail of the expected impact of recent and forthcoming rules regarding CPAs and refinancing, making explicit whether firms had already made changes that would be visible in the data provided, and, if so, the dates of any changes to enable us to analyse the impact;
 - a list of stores for high street firms; and
 - the classifications used to define loan status.

We met each firm to discuss the data request, and in advance of these meetings we provided a draft data request for comment. Where possible, we used Competition

Commission data (and did not ask firms to provide this to us again) to reduce the cost of data collection to the firms. However, our new and distinct analysis did require new and separate data to be provided to us.

Another data request was sent to a further 26 firms. This data request was primarily made to allow us to track HCSTC customers across different firms, and to help with scaling impacts to the market. We have also used this data in some of the descriptive statistics presented in Chapter 3, and it was used for the CRA analysis described in Technical Annex 2. The data request covered a list of customers who took out HCSTC over the sample period and basic transaction-level data regarding these products (date loan written, loan amount, and initial borrowing duration).

2.2.2 We were unable to resolve data issues for three of the eleven firms

We asked firms to provide the required data using templates that we had supplied. Firms provided the data using these templates in a variety of electronic formats. They also submitted detailed management accounts, and we took care to reconcile firms' loan-level data to their management accounts. This is described in more detail below.

Throughout the data cleaning process we identified several issues with the data, including incomplete data, internal inconsistencies in the data, and corrupted data observations. We engaged with the firms extensively throughout our analysis and resolved most of the issues we identified with the data either through clarifications on the interpretation of the data, or through data resubmissions. In the course of our work some firms resubmitted updated data, up to four times.

Some data quality issues could not be satisfactorily resolved in the time available to us. Where there were missing key data for individual loans, we sought to impute this data. Where individual observations (loans) were either corrupt or contained clearly incorrect data, we excluded these from our analysis. In total, these exclusions accounted for less than 0.01% of the loans used in the supply model.

2. We were ultimately unable to use the data provided by three of the eleven firms who provided detailed loan-level data. The reasons for the exclusion of these firms were as follows:
 - One firm's data had a high proportion of missing revenue data for loans. This meant the data was unusable for our modelling purposes.
 - One firm's data contained inaccurate or incomplete transaction date data. This meant the data was data unusable for our modelling purposes.

- One firm's lending strategy appeared to result in losses for nearly all of its loans. This meant that we were unable to sensibly calibrate our supply model to estimate the lending decisions of that firm.

We do not consider that the exclusion of these three firms from our model affects the applicability of our findings to the HCSTC market, or the conclusions we draw from our supply and exit analysis.

2.2.3 Data preparation

Following data cleaning, we prepared the data for use in our supply model. This involved a number of steps:

- First, we carried out a series of steps to create input variables for the model on a consistent basis. This involved various manipulations of the base data, for example to account for missing values, and to create a number of loan revenue and cost variables. We also included a measure for the cost of funds advanced to customers. This was set to 10.3% of the average outstanding principal of the loan.⁷
- Second, for each firm we generated credit score variables where firms did not provide us with their internal credit scores, or where the internal credit scores provided by the firm did not have sufficient discriminatory power for estimating the risk of default.
- Third, for modelling purposes, we created a number of credit score bands. Depending on the volume of loans in our data, we created 100 bands, or 50 bands.

Our data preparation process is described in further technical detail in Appendix 1 to this Technical Annex. The motivation behind steps two and three are discussed in more detail in Chapter 4.

2.2.4 Adjustments for refinanced loans

In some of the data provided to us, refinanced loans were treated as separate loans. For modelling purposes, we treated these loans together with the original refinanced loan as a single loan. Further detail is provided in Appendix 1 to this Technical Annex.

⁷ The 10.3% is the WACC rate used by the CMA in its market investigation to payday lending. We tested the sensitivity of our modelling results with cost of funds at 15% of the average outstanding balance, and found that the results were not sensitive to this assumption.

2.2.5 Adjustments for 'topped up' loans

We define a 'top up' where there is an agreed increase of principal during the life of an existing loan, without a change in duration. On this basis, around 15% of all loans written by online firms were topped up in 2012 and 2013.

Where loans in the data had been topped up, for the purposes of our modelling we treated the top-up element (i.e. the increase in principal) as a new loan and asked firms to resubmit data on that basis.

Two firms submitted data with topped up loans recorded as a single loan. For these firms, we calculated the weighted average principal lent (weighted according to the durations of the initial and topped up loan) and replaced the recorded principal with this amount.

2.3 Baseline adjustments

Our data covers 2012 and 2013. When we use the supply model to analyse the impact of the cap, we assess what the impact of the cap would have been on the data provided to us. We use these results to assess what will happen when the cap is put in place from January 2015 (following other judgements made regarding firm responses, as discussed in Technical Annex 2).

In order to project forward a view of the data (in the absence of the cap) in 2015 we made changes to the 2012 and 2013 data to reflect a number of rules governing the provision of HCSTC loans that we announced in February 2014. These rules came into force on 1st July 2014, and:

- limit the number of rollovers on a loan to a maximum of two; and
- limit the number of continuous payment authority (CPA) repayment attempts to two, and ban partial CPA attempts.

These rules are expected to have a significant effect on HCSTC firms, before the cap is implemented. We have therefore adjusted the data provided by firms to assess *what the impact would have been* on 2012 and 2013 data, had these rules been in place. We make no other adjustments to the data provided to us.

We set out an estimate of the impact of these rules in CP10/13, based on the information available to us at the time. More information is now available to us, and we have updated our estimates (shown here) accordingly.

2.3.1 Interaction with firms

At the time of analysis, these rules were yet to come into effect. While some firms had started to adjust to be compliant with the rules, this process had, for many

firms not yet been completed. For all firms, we expect a period of adjustment and learning to take place in response to the new rules. This means that any adjustments made to business models in response to the new rules will not have been fully incorporated. In other words, at the time of our analysis, the impact of these rules was still subject to much uncertainty.

We asked firms to include the impact of any adjustments made as part of the main data request to them. This did not, however, allow us to create an accurate estimate of impacts. We subsequently wrote to firms to formally request estimates of their predicted impact of the rules, based on the information available to them. Several firms have conducted trials to establish the impact of the new rules and their ability to respond and shared the conclusions of these trials with us. Others were unable to provide estimates.

Based on further face to face discussions with firms and industry representative bodies, we wrote to firms a third time⁸, setting out our proposed approach to adjustment, and offering a final opportunity to provide us with updated estimates and adjustment methods. We then finalised the adjustments.

2.3.2 **Method of adjustment**

CPAs

The impact of the CPA rule is to limit the amount that firms can collect through CPAs. Through discussions with firms, we chose to model the impact of the CPA rule separately for each firm. The approaches we followed fall into two categories:

- Some firms gave us an estimate of how much of the funds they currently collect with the *third and subsequent CPA attempts* they expect to be able to recover (through alternative collection mechanisms) after the introduction of the new rules. We calculated a CPA adjustment for each loan having more than two CPAs following this approach, consistent with the totals provided to us by the firms;
- Some firms gave us an estimate of the funds currently collected through *all CPA attempts* that they expect to be collecting after the introduction of the new rules. We calculated a CPA adjustment for each loan with CPAs following this approach, consistent with the totals provided to us by the firms.
- Some firms provided no information. In these cases, we made a judgement as to the impact of the CPA rules, based on the reported impacts on other firms.

⁸ On the 28th May 2014.

In calculating the CPA adjustments, we used the recovery rates provided by the firms. Recovery rates ranged between 60% and 65% of revenue from third and subsequent CPA attempts, and between 90% and 96% of all CPA attempts.

We note that some firms report much smaller impacts of the new limits on their revenues than others. We took the view that if some firms can find new ways to limit the impacts, we expect others to do the same over time, and adjusted accordingly. This led to a revised set of CPA adjustments, which we used in our analysis of the cap.

Rollovers

The limit on the number of rollovers has the impact of reducing the revenue available from loans that are currently rolled over more than twice. We define all revenue from the third rollover onwards to be at risk for all loans granted, but in practice firms will seek to recover this revenue through other mechanisms, for example by increasing the size and duration of loans offered.

The amount of this revenue that firms told us they expect to be able to recover differs, and we discussed recovery rates separately with each firm. The range of recovery rates provided to us was 95% to 99%. Three of the eight firms reported that this adjustment was not applicable to them, given they have never allowed rollovers, or did not allow more than two rollovers. We made no further adjustments to these recovery rates provided to us.

2.3.3 Scale of adjustments made

In the case of both the CPA and rollover adjustments, we made adjustments to the base data by restricting revenues in our data, to the levels that would have been achieved had the rules been in place in 2012 and 2013.

To estimate the impact this revenue reduction would have on each firm, we used the supply model to estimate the number of loans that would no longer be granted, given these revenue reductions. All cap impacts were assessed against this baseline position, and results in this Technical Annex are presented on that basis. As described above, for the purposes of our modelling we have used the adjusted baseline assumptions. Firm-specific adjustments were applied, leading to the impacts shown in Table 1 below. These impacts represent the total impact across all of the eight firms in our supply model.

Table 1: Impact of adjustments to baseline

Baseline adjustment scenario	Change in revenue (a)	Change in contribution (b)	Change in value of loans (c)	Change in number of customers (d)	Change in volume of loans (e)
Baseline assumptions provided by firms	-20%	-26%	-7%	-13%	-7%
Adjusted baseline assumptions	-6%	-11%	-3%	-5%	-3%

Source: FCA supply model

Notes

- a. Percentage change in fees and charges following baseline adjustments, compared to no adjustments.
- b. Percentage change in contribution (total revenue less costs allocated to loan-level) following baseline adjustments, compared to no adjustments.
- c. Percentage change in total loan principal following baseline adjustments, compared to no adjustments.
- d. Percentage change in number of customers that receive loans following baseline adjustments, compared to no adjustments.
- e. Percentage change in volume of loans granted following baseline adjustments, compared to no adjustments.

The adjustments restrict the revenues available to firms, and as a result revenues fall for the loans granted, and in some cases revenues fall to such an extent that it is no longer profitable to offer loans. As shown, our modelling suggests that the levels of loan contributions (across all firms in the sample) would fall by around 10%, compared to the data provided to us by firms. Around 5% of customers would no longer receive a loan.

2.3.4 Comparison with previously published estimates

In CP10/13, we published a cost benefit analysis (CBA) which included estimates of the impacts on lending and consumers that would arise from the CPA and rollover limits. The CBA estimated that up to 30% of firms might exit following introduction of the new limits, corresponding to a reduction in lending up to £750m and between 23% and 32% of customers being affected.

These impacts were much bigger than the estimates presented here. At the time of publication (of CP10/13), firms had not started trialling different business models and collection strategies that would enable them to recover some of the revenues at risk under the limits i.e. revenues generated from more than two CPAs and two

rollovers. As a result, at the time we made the very conservative assumption that all those revenues would be lost, generating the impacts shown. The difference therefore between the two sets of estimated impacts result from firms adapting their business models sufficiently to recover (some proportion of) these revenues.

2.4 Firms' management accounts and overheads

2.4.1 Management accounts

As a check of the robustness of the financial data being used in the model, and to provide a way of cross-checking the loan-level data provided to us, we built a series of accounting cross-checks into our data requests. The additional data requested and the extent of follow-up questioning sought to balance the accuracy required by our final analysis, with the burden on firms of providing further information to us.

As part of the data request, loan-level revenue and cost data, and firm-level overhead costs were primarily submitted on an accruals basis. We also asked firms to provide management accounts to us on an accruals basis.

We asked for the most detailed set of management accounts routinely prepared by each firm relating to the HCSTC segment of their business, and for an income statement, balance sheet and cash flow statement. Where the management accounts included other business segments we asked that either additional details or full segmentation of these costs be provided. This allowed us to conduct a full reconciliation of direct revenues and costs back to the submitted loan-level revenue and cost data.

Most firms' business was entirely encompassed by the definition of HCSTC. In these cases the HCSTC management accounts were comparable to statutory accounts.

For a small number of firms some other areas of the business needed to be excluded to provide a view of the HCSTC business. In these cases we followed up with firms to confirm how their accounts should be reconciled.

The biggest difference between the loan-level data and firms' management accounts results from the recording of bad debt. Bad debt is measured on a loan-by-loan basis as the difference between the revenue earned against and the total cash collected. In contrast, bad debt in company accounts is prepared on a prudential basis as an estimate of the value of revenue that has a probability of more than 50% of being recovered. We were unable to directly reconcile these two measures. We note that bad debt recorded in the financial accounts is typically far larger than observations based on the historic loan-level data in our sample.

Another aspect considered in the reconciliation process was differences due to revenues in our data not being recognised in management or statutory accounts (for reasons of prudence and in line with IAS 18 which provides guidelines on revenue recognition). Some of this revenue was included in our data in order to give a more accurate view of historic revenue earned from customers. For example, revenue earned on bad debt fees and charges may not be recognised as revenue in company accounts if it is improbable that the economic benefits will flow to the seller. However, it was important to include this revenue for modelling purposes when estimating firms' decisions under the cap.

The timing of accrual basis of revenue recognition in company accounts could mean there were some differences between the sum totals for each year's loan-level data and the figures in the management accounts. For example a loan with a start date of 31st December 2012 would be included in the 2012 period in our supply model, but on an accruals basis the bulk of the revenue is earned over the course of the loan, in this case in 2013.

For the reasons described above, we were unable to fully reconcile loan-level data to management accounts for all firms. We discussed this issue with firms on a number of occasions in our attempts to reconcile the two data sources. Overall, we are satisfied that any discrepancies that remain do not materially affect our conclusions, and that the (loan-level) data is appropriate to use in our model. As discussed further in Section 5, we also make some specific adjustments to our firm exit analysis to account for any potential uncertainties arising from the remaining discrepancies. All these adjustments, and the assumptions used, went through a detailed quality assurance process.

3 HCSTC descriptive statistics

The data we received from firms provides us with a detailed view of the HCSTC market in 2012 and 2013. This Chapter presents a number of summary statistics for the HCSTC market, based on the data submitted to us. The information presented here is a subset of the information available to us, and which we used to analyse the market and design the cap.

Unless otherwise stated, statistics relate to the data submitted to us by the eleven firms we requested detailed data from. While we were ultimately unable to include three firms in our supply model (as described in Chapter 2), we are able to use the data submitted by all eleven firms to construct the descriptive statistics presented here.

The descriptive statistics present views of the data submitted to us, after data cleaning and preparation but before any baseline adjustments (described in Chapter 2) were made. We generally present statistics for loans issued in 2013 since this is the most recent year in the sample data, and we provide commentary where there are significant differences in 2013 compared to 2012.⁹

3. Due to the commercial sensitivity of the information, we present averages only, aggregated to all high street firms and all online firms in the sample.

3.1 Features of the HCSTC market

3.1.1 Firm business models

We observe a range of business models in the HCSTC market in our data. Firms differ in the channels used to acquire applicants, the product features and value propositions offered to customers, the mix of new and repeat customers in their loan portfolios, and in the pricing structures used.

Five of the largest 30 firms (by revenue), and three of the eleven firms that provided detailed data to us, provide HCSTC loans through high street stores. These 'high street' firms typically also deliver other products and services through their high street stores. All other firms offer HCSTC loans online.

As set out in Table 2 below, online is by far the largest HCSTC distribution channel, representing over 80% of customers, revenues and loans written. There were

⁹ A loan is defined as a 2013 loan if it was written within the 2013 calendar year. For loans written and not ended, we have information on that loan up to January 31st 2014.

around 16 million loans granted to 2.3 million individuals¹⁰ across 2012 and 2013. The average HCSTC loan was around £260 for 30 days, with loans written online being larger on average, but of similar duration when compared to loans written through the high street channel.

Table 2: Overview of sample HCSTC loan data (2012 and 2013)

Loans issued in 2013	Online	High Street	Total/Ave
Number of firm-customers (m)	2.0	0.4	2.4
Number of loans granted (m)	6.5	1.6	8.1
Value of loans granted (£m)	£1,882	£264	£2,145
Average principal	£289	£169	£266
Average initial duration (days)	31	29	30
Revenues (£m)	£759	£131	£890
Loans issued in 2012	Online	High Street	Total/Ave
Number of firm-customers (m)	2.2	0.4	2.6
Number of loans granted (m)	6.8	1.4	8.2
Value of loans granted (£m)	£1,935	£216	£2,151
Average principal	£285	£155	£261
Average initial duration (days)	29	30	29
Revenues (£m)	£854	£137	£990

Source: firm data provided to FCA (eleven firms, of which three high street, combined 2012 and 2013 figures, pre-baseline adjustments)

Comparing 2013 to 2012, the number and value (i.e. principal) of loans written was similar, while the average principal and initial duration both rose slightly (by around £5 and 1 day respectively). Total revenues for loans written in 2013 were around 10% lower than in 2012.

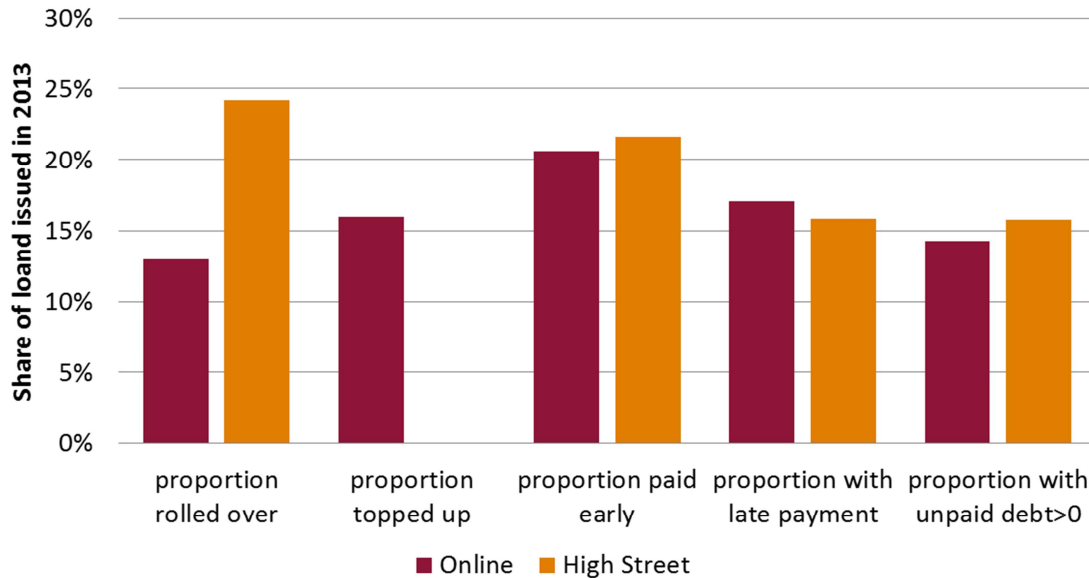
In addition to providing summary statistics, our data also describes the use of different product features throughout the sample period, including rollovers, top ups and refinancing. This is shown in Figure 3 below.

The data shows that loans written on the high street are more likely to be rolled over, compared to online loans. Top ups are only offered by a small number of the

¹⁰ Number of individuals who were issued loans in 2012 and 2013 across the eleven sample firms i.e. adjusted for people who are customers of more than one firm and so smaller than the sum of the firms' customers.

online firms in our sample, and make up around 15% of all loans written in both 2012 and 2013. Overall, the proportion of loans that rolled over fell slightly from 2012 to 2013, driven by a significant reduction in the number of rollovers in the high street.

Figure 3: Loan dynamics: specific product features (2013)



Source: firm data provided to FCA (eleven firms, of which three high street). Figures for loans issued in 2013 pre-baseline adjustments.

Notes: Late payments defined as number of loans with one or more late payment indicated including any instalment loan with late payment of one or more instalments. Unpaid debt defined as any unpaid debt at the end of the sampling period (Jan 31st 2014)

The proportion of customers making payments after the agreed due date, or who failed to repay all of their debt, is similar across high street and online firms. However, a slightly higher proportion of high street loans have unpaid debt, compared to online. The overall proportion of loans with late payments fell from 21% in 2012 to 17% in 2013.

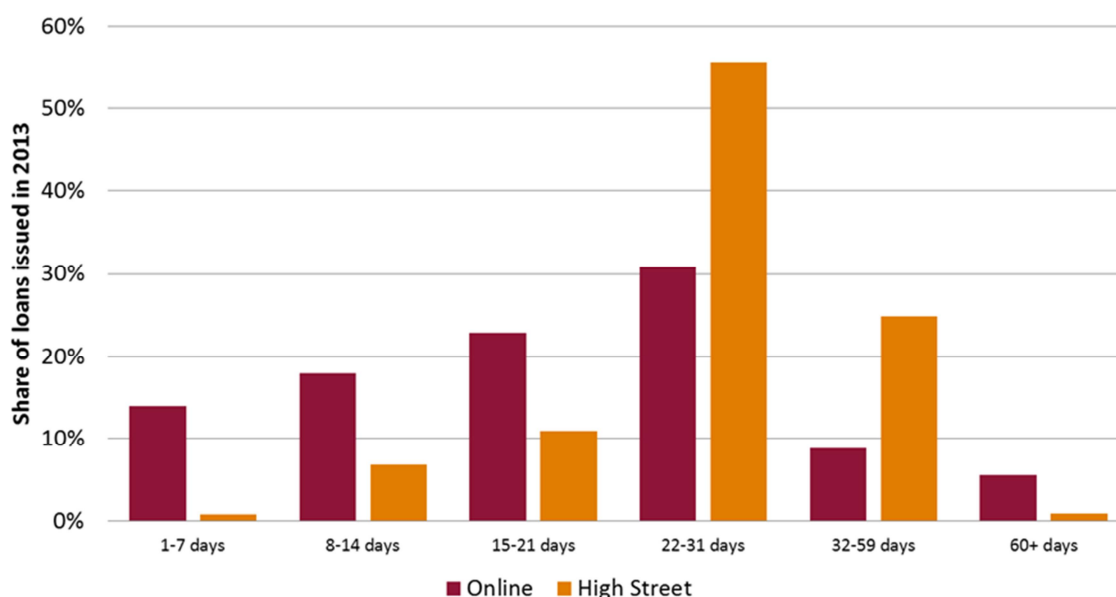
Around 20% of loans are repaid early by customers, with early repayment being particularly prevalent for instalment loan products. Early repayment increased slightly in 2013 compared to 2012.

3.1.2 Loan durations

The average initial duration of loans is around 30 days overall. As shown in Figure 4 below, a significant proportion of loans with online firms are for very short durations, with more than 10% of loans written by online firms lasting less than one week. In contrast, high street loans are much more concentrated around durations of 22-31

days and a greater proportion of loans with durations longer than 31 days are issued by high street firms in our sample.

Figure 4: Proportions of loans by initial loan duration (2013)



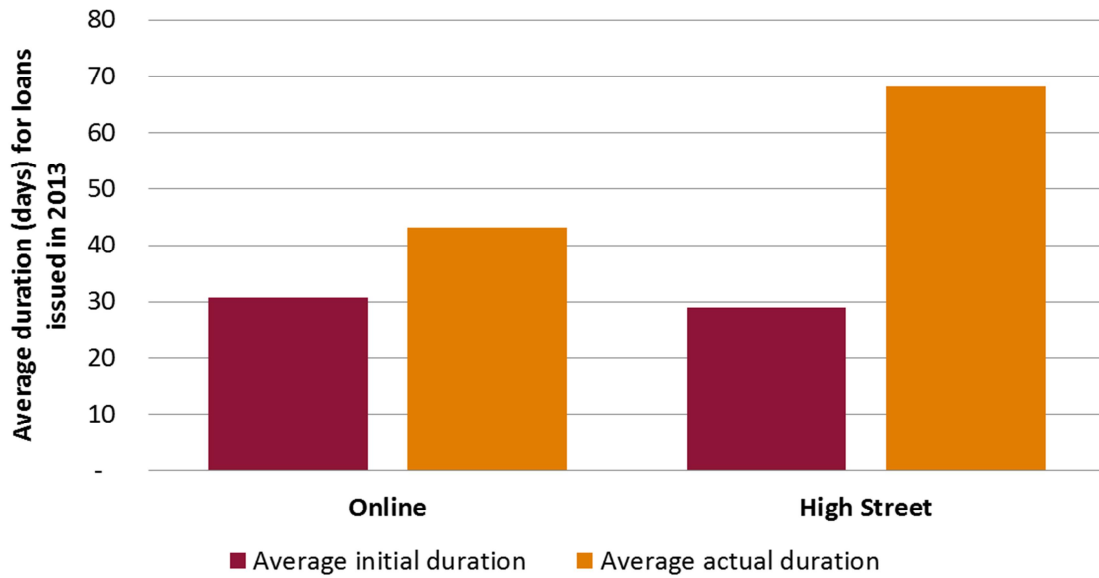
Source: Firm data provided to FCA (eleven firms, of which three high street). Figures for loans issued in 2013 pre-baseline adjustments.

Our data also shows that the average *actual* duration of loans is typically greater than the *initial* loan duration agreed, for both online and high street firms.¹¹ This reflects the fact loans can be rolled over and refinanced, and that a significant proportion of loans are not repaid in full on the originally agreed due date.

Figure 3 above showed that rollovers are particularly prevalent on the high street, and we see this reflected in actual duration in Figure 5 below. For the high street, average actual duration is around 70 days – more than double the average initial duration of 30 days. While actual duration for online firms also exceeds initial duration, the effect is much less pronounced (43 days, compared to 30 days).

¹¹ The way in which actual duration is recorded for loans in default varies from firm to firm, and the dates at which firms write off loan, and / or sell debts to third parties differs. A small proportion of loans in our sample (0.2% in 2012 and 3.5% in 2013) were still defined as active at the end of 2013. For any active loans, we assume actual duration equals the higher of the initial duration and the duration we observe in our data.

Figure 5: Average loan duration (2013)



Source: firm data provided to FCA (eleven firms, of which three high street). Figures for loans issued in 2013, pre-baseline adjustments.

3.1.3 Instalment loans

In contrast to single repayment loans (sometimes referred to ‘payday’ loans), ‘instalment loan’ products are paid back in multiple repayments over an extended period. The average initial duration of instalment loans in our data was around 250 days. Instalment loans were offered by three firms in our sample in 2012 and 2013, and made up a small but growing proportion of the market. Around 3.5% of loans granted in 2013 were instalment loans.

In contrast to HCSTC loans overall, the actual duration of instalment loans is considerably *shorter* than initial duration, being 126 days in our sample, as many customers repay in full before the agreed due date. In our data we observe that a greater proportion of instalment loans taken out in 2013 were repaid early compared to 2012.

The average principal for instalment loans is close to twice the average principal of other (non-instalment) HCSTC loans, at around £460 per loan. When expressed as a proportion of initial principal, instalment revenues are lower, but these revenues accrue over a considerably longer period.

3.1.4 Repeat use

A high and increasing proportion of HCSTC loans were written to repeat customers in 2012 and 2013. As shown in Figure 6 below, there is a distinct and consistent

downward trend in the proportion of loans to 'new to market' customers over this period.

Figure 6: New and repeat customers, market-level (2012 and 2013)



Source: firm data provided to FCA (37 firms, pre-baseline adjustments).

Our data allowed us to match individuals across firms, to create a view of the pattern of loan usage across the HCSTC market.¹² On average, our data suggests individuals took an average of around five HCSTC loans per year overall. While we observe individuals taking loans from more than one firm, within the firms in our sample customers take out between three and four loans with the same HCSTC firm per year on average.

Loans to repeat customers are on average for higher amounts than the loans granted to new customers.

3.2 HCSTC revenues

3.2.1 Revenue composition

The firms in our sample record many different components of revenue, variously described and applied. For the purposes of this Technical Annex we have grouped HCSTC revenues into three components as follows:

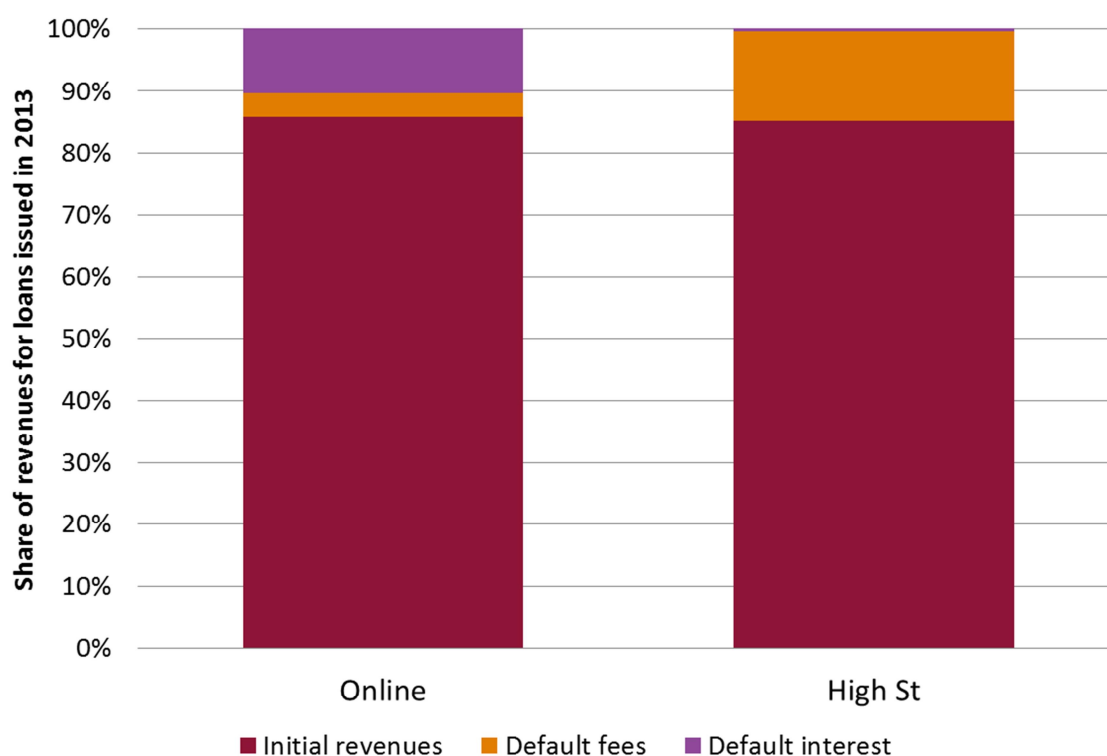
¹² We were able to match individuals across our wider sample of 37 firms, covering over 99% of the HCSTC market by revenue.

- a. **Initial revenues:** all interest and fees charged when paying back on time and when refinancing. These include contingent fees such as rollover fees and top-up fees, plus other non-contingent fees including administrative charges and fixed charges.
- b. **Default fees:** revenues contingent on the customer being in breach of their loan contract, often referred to as 'late fees'.
- c. **Default interest:** interest and fees charged on sums that are overdue, excluding late fees.

Figure 7 shows the mix of these revenues, split by distribution channel. Initial revenues make up the majority (over 80%) of HCSTC revenues. Default fees and interest are only applicable if payments are not made on time, and so are only applied to a subset of loans. The proportion of revenues from default fees is higher for high street firms, compared to online firms, but the overall proportion of default revenue is similar across online and high street firms.

Default interest covers accrued interest and charges on loans after the due date, and like default fees are only charged on a subset of loans in our data. Firms vary in their policies on whether and for how long interest is accrued post due date, as noted above.

Figure 7: Composition of revenue (2013)

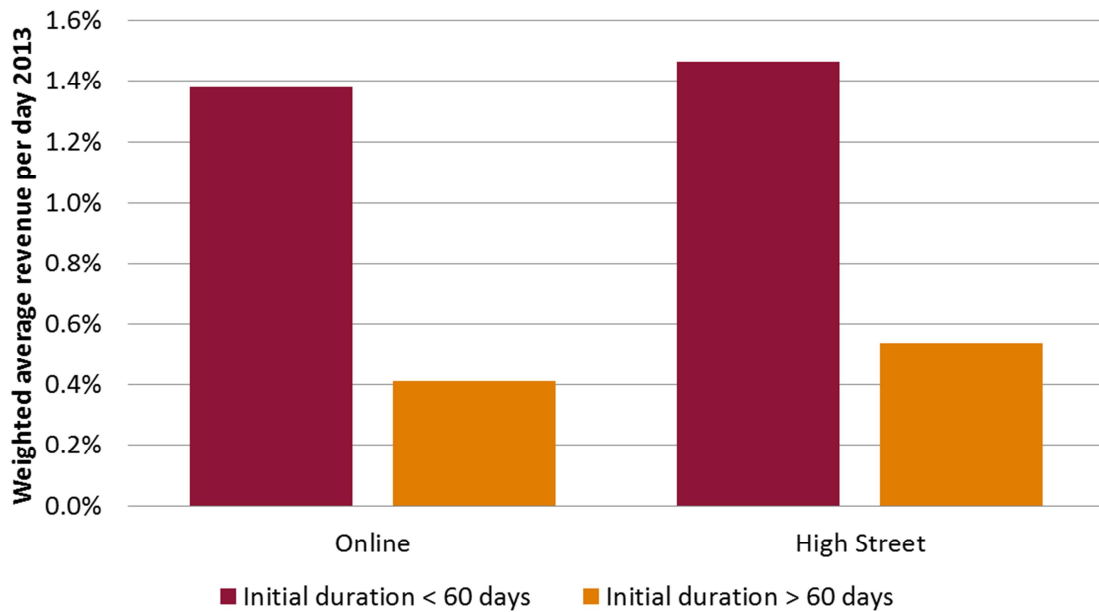


Source: firm data provided to FCA (eleven firms, of which three high street). Figures for loans issued in 2013, pre-baseline adjustments.

3.2.2 Total revenues by duration

In the remaining parts of this Chapter, we show revenues expressed as an equivalent rate per day of actual loan duration, calculated by dividing the sum of total loan revenues by the sum of actual duration times principal for each loan. On this basis, we observe considerable variation in revenues. As shown in Figure 8 below, loans with longer initial durations have lower equivalent daily revenue, both for high street and online firms.

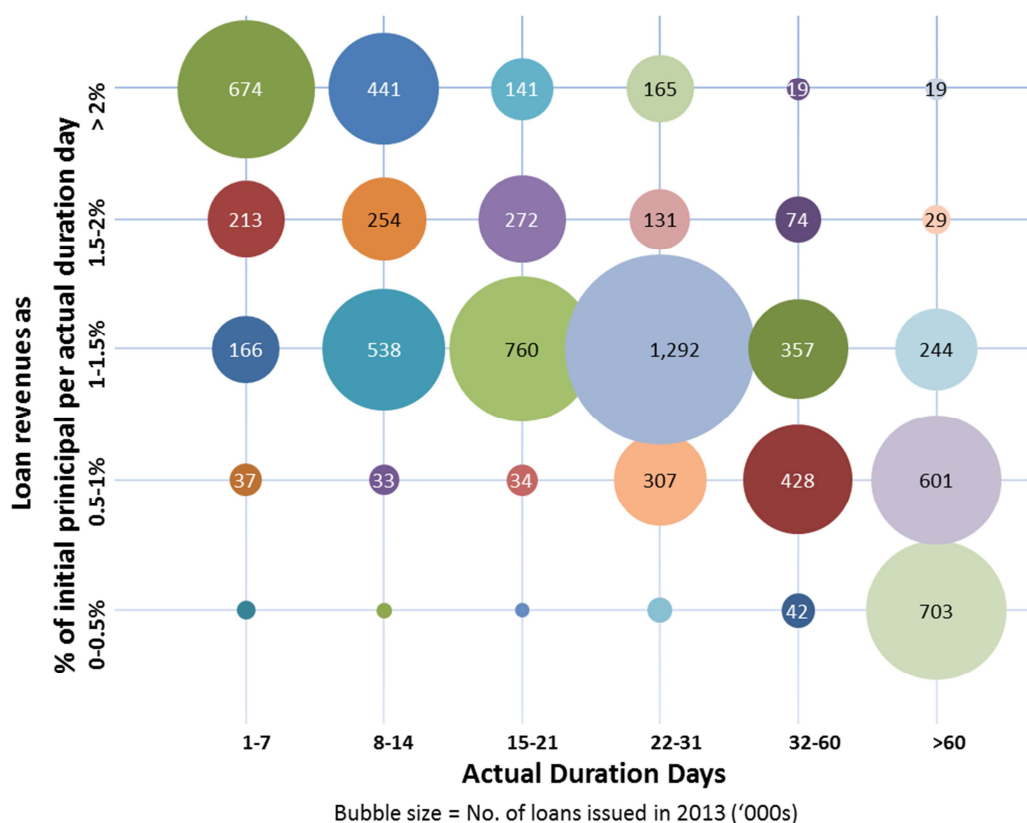
Figure 8: Total loan revenues (2013)



Source: firm data provided to FCA (eleven firms, of which three high street). Figures for loans issued in 2013, pre-baseline adjustments.

Figure 9 below shows a further breakdown. Here, the x-axis splits loans into buckets by their actual duration, and the y-axis splits loans by their equivalent daily interest rate. This shows that the shortest loans (1-7 days duration) have the highest equivalent revenues per day. The longest loans (>60days) have the lowest revenues per day.

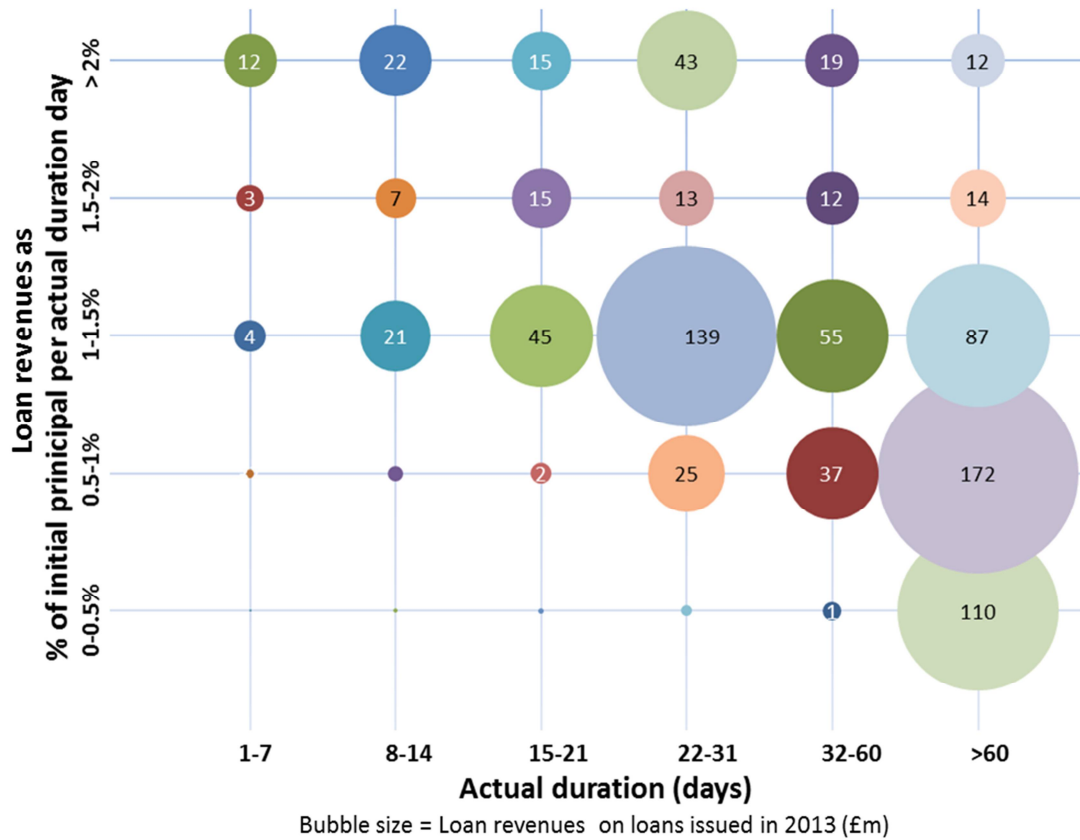
Figure 9: Volume of loans, split by duration and equivalent daily revenue (2013)



Source: firm data provided to FCA (eleven firms, of which three high street) Figures for 2013, pre-baseline adjustments. The colouring of bubbles conveys no meaning. This chart includes all revenues including all up-front fees, contingent fees, default fees and default interest, where charged.

As shown in Figure 10 below, if we split the total revenues earned in the same way, we see that longer loans earn a greater proportion of overall revenues for the sample firms compared to shorter loans. This is consistent with Figure 9, as while revenue per day is lower, longer loans accrue revenues over a greater number of days.

Figure 10: Total revenue, split by duration and equivalent daily interest rate (2013)

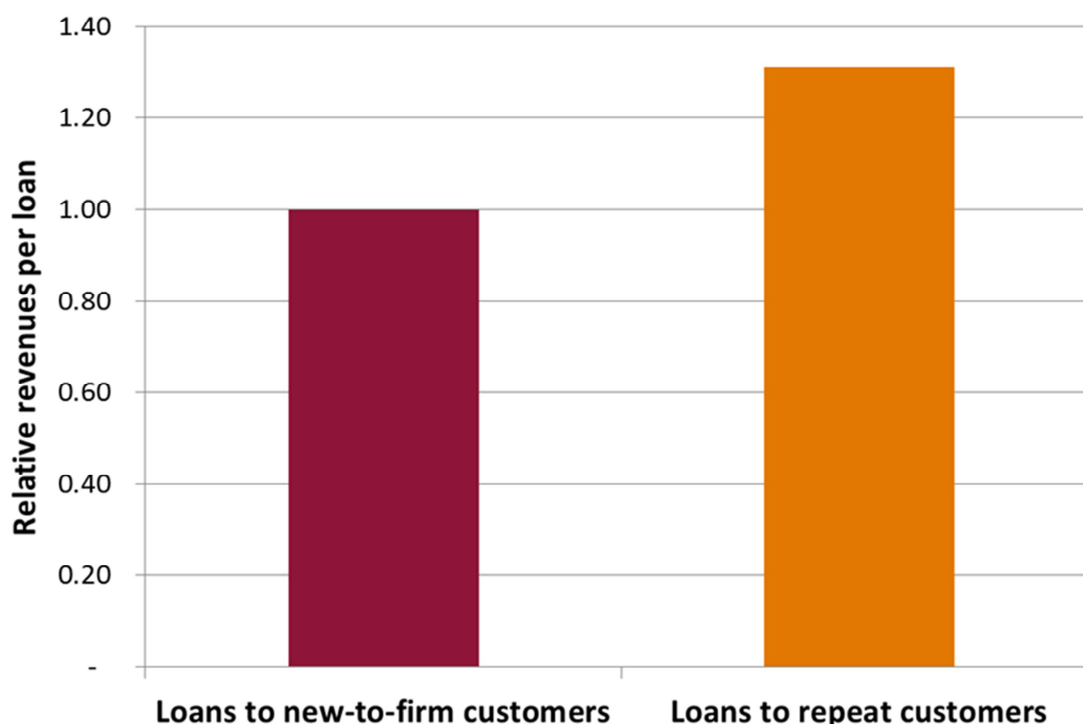


Source: firm data provided to FCA (eleven firms, of which three high street). Figures for loans issued in 2013, pre-baseline adjustments). The colouring of bubbles conveys no meaning. This chart includes all revenues including all up-front fees, contingent fees, default fees and default interest, where charged.

3.2.3 Repeat loans

The sample data shows that loans to a repeat customer earn higher revenues than loans to new customers. The increase changes by firm and the revenues per loan differ by firm, but the pattern across firms is consistent and shows an uplift in revenues for a repeat loan of 30% compared to revenues for new-to-firm customers. In part this is likely to be driven by the fact repeat loans are on average larger (in terms of principal) compared to first-time loans. This is shown in Figure 11 below.

Figure 11: Average revenue, repeat loans and loans to new customers (2013)



Source: firm data provided to FCA (eleven firms, of which three high street). Figures for loans issued in 2012 and 2013, pre-baseline adjustments.

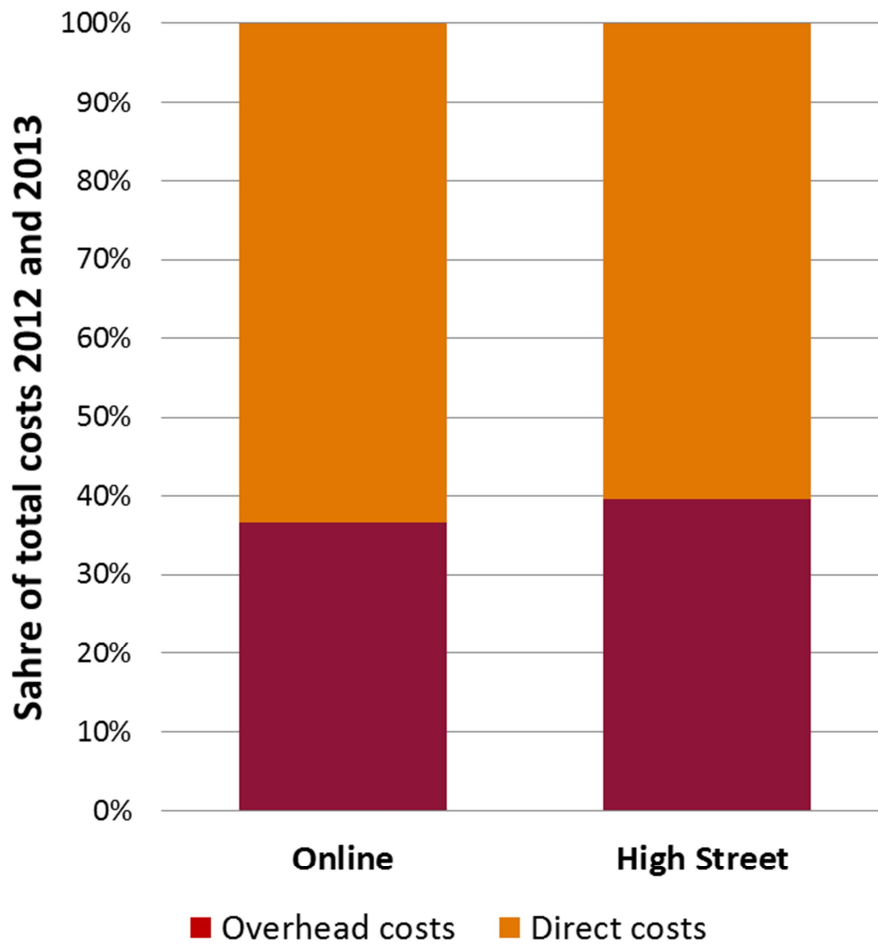
3.3 HCSTC costs

3.3.1 Total costs

The eleven firms that submitted data to us reported overall costs of around £870m per year for 2012 and 2013. Based on the cost allocations provided by firms, around 60% of these costs were directly attributable to loans granted, and of these 'direct costs', over 80% related to the cost of unpaid debt. The remainder of this Section provides a more detailed summary of the cost data we received.

We define the remaining 40% of costs not directly allocated to loans as 'overheads'. Further details of the process used to clean the data we received, and reconcile loan-level data to management accounting data is provided in Section 2 above.

Figure 12: Direct and overhead costs (2012 and 2013)



Source: Firm data provided to FCA (eleven firms, of which three high street) Combined 2012 and 2013 figures.

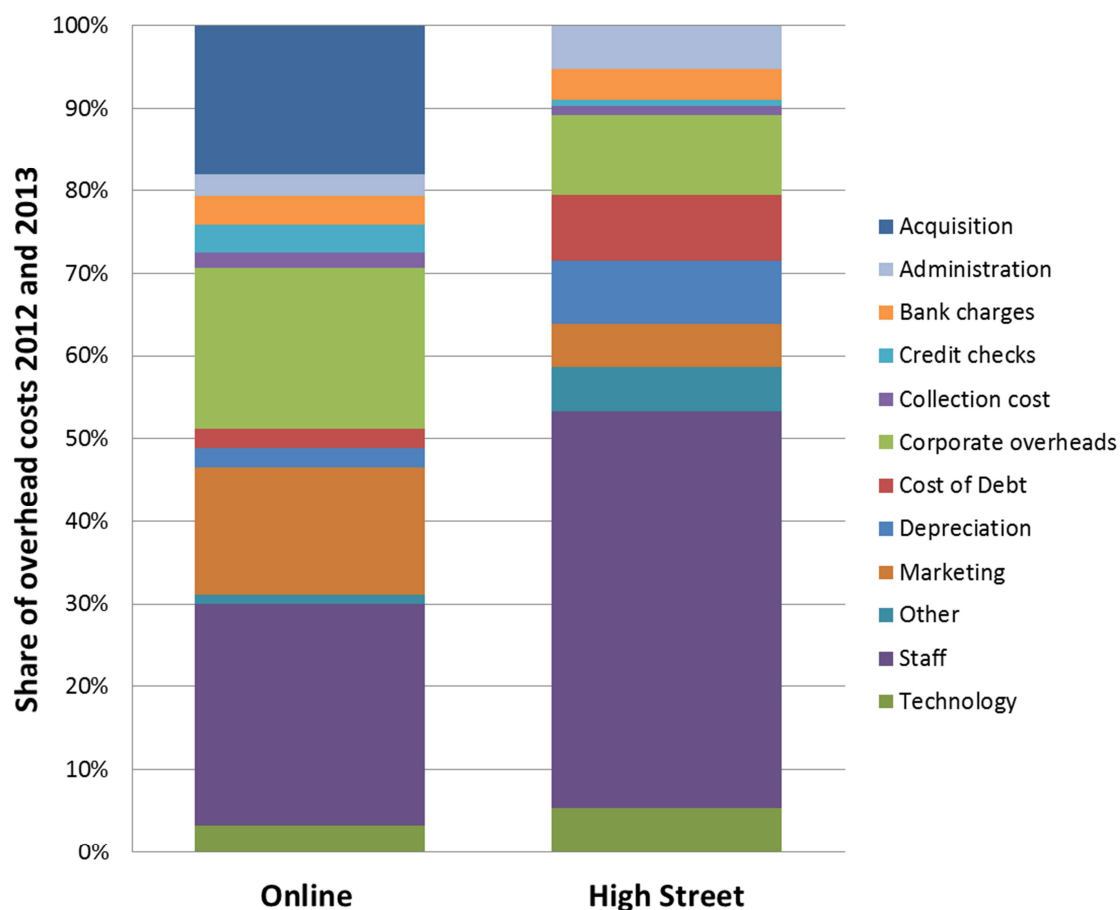
As shown in Figure 12, there is relatively little difference in the split between direct and overhead costs for high street and online firms, although high street firms have a slightly higher proportion of overheads compared to online firms. Overheads in 2013 were slightly higher compared to 2012, but the magnitude of this difference is small.

3.3.2 Overhead costs

The cost data submitted to us can be further split to provide a more detailed breakdown of overhead costs. As shown in Figure 13, staff costs are the largest single component of overheads for both online and high street firms. Staff costs are a larger component for high street firms, making up over 40% of overheads, compared to around 26% of overheads for online firms.

For high street firms, property costs represent around a further 20% of overheads, compared to less than 2% for online firms. For online firms, corporate overheads represent a much greater proportion of overheads, compared to high street firms.

Figure 13: Breakdown of overhead costs (2012 and 2013)



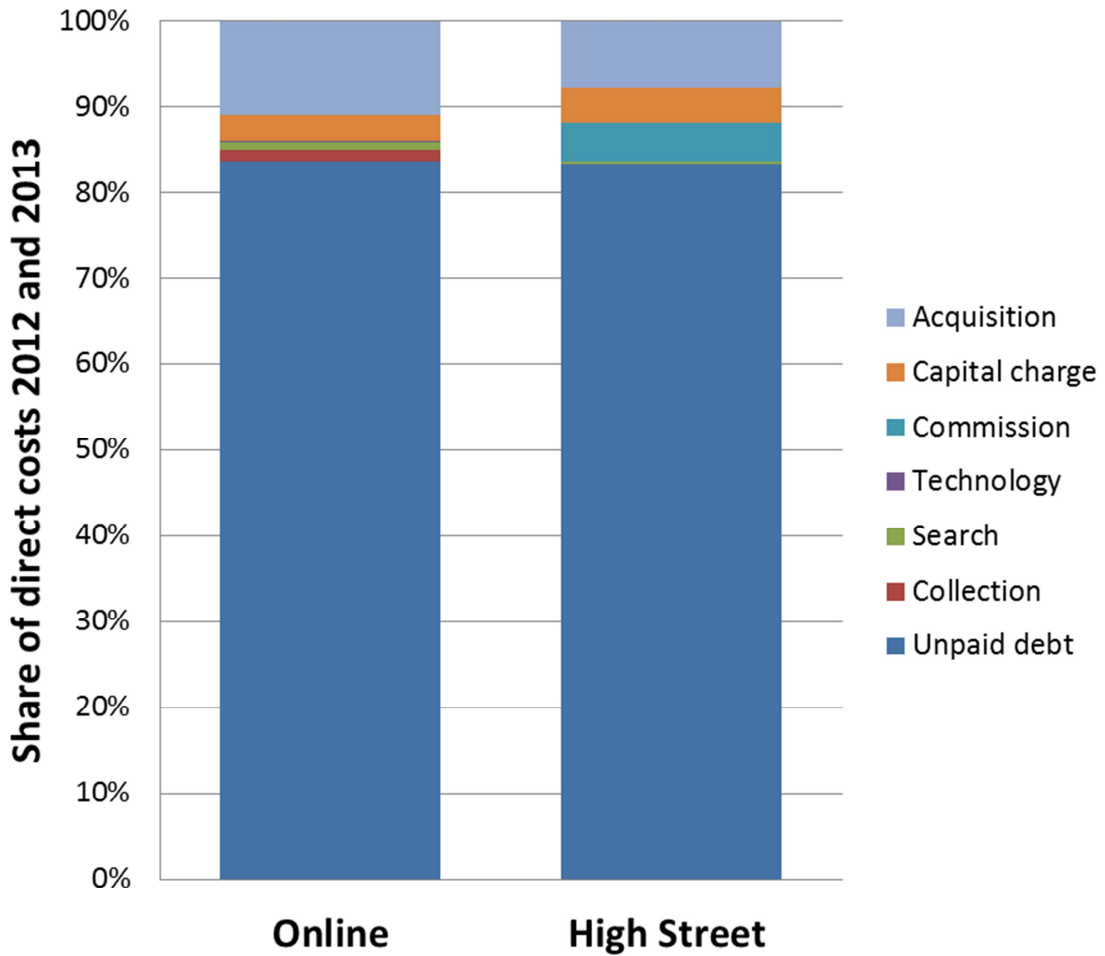
Source: firm data provided to FCA (eleven firms, of which three high street). Combined 2012 and 2013 figures, pre-baseline adjustments.

3.3.3 Firms' direct costs

Direct costs include all costs that are directly attributable to loans, as allocated by firms. In general, firms had different approaches to cost allocation. The data shown in Figure 14 below have been aggregated to show online and high street firms overall, and hence represent averages.

The single biggest component of direct cost is unpaid debt, representing around 83%. As a proportion of direct costs, unpaid debt is almost identical for online and high street firms at around 83%. Acquisition costs are the next biggest element, representing just over 10% of direct costs. This is slightly lower for high street firms compared to online, but high street firms also pay a significant amount of related 'commission costs'.

Figure 14: Composition of direct costs (2012 and 2013)



Source: firm data provided to FCA (eleven firms, of which three high street). Combined 2012 and 2013 figures, pre-baseline adjustments.

3.4 HCSTC contributions

We define the ‘contribution’ of a loan as the total revenue associated with the loan, less the direct costs allocated to it in our data. Table 3 below shows the average contribution per loan, for various types of loan in 2012 and 2013.

As shown, contributions per loan have on average fallen in 2013 compared to 2012. Loans online have higher contributions compared to high street loans, and loans to repeat customers have significantly higher contributions compared to loans to new customers. Loans that are topped up or rolled over have higher contributions on average.

Significantly, where loans are not repaid contributions are negative, in contrast to the positive contributions earned when loans are repaid in full. The negative

contributions from loans with outstanding unpaid debt are more than twice the magnitude of the positive contributions from loans repaid in full.

Table 3: Average contributions per loan (2012 and 2013)

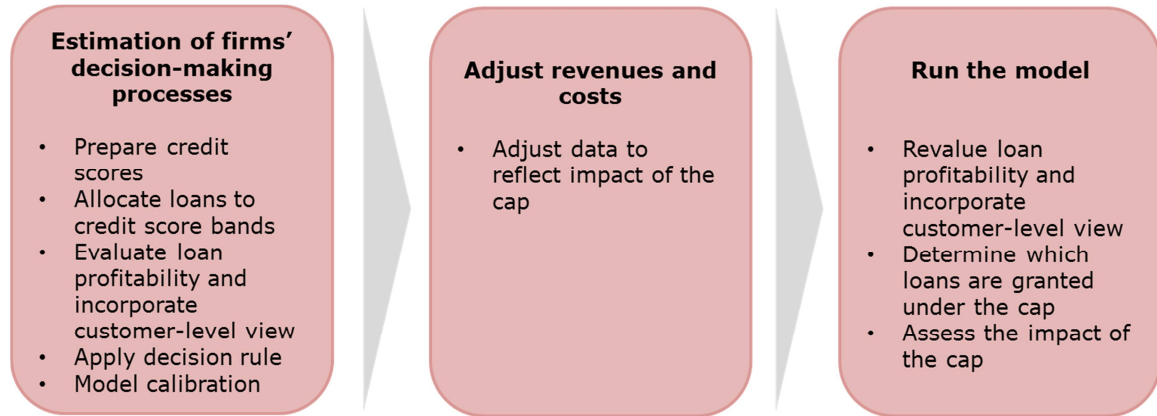
	2012	2013
Online	£75	£57
High Street	£53	£39
No rollover	£25	£23
Rollover	£198	£171
No top-up	£49	£38
Top-up	£119	£99
No late payment	£57	£47
Late payment	£60	£40
No unpaid debt	£94	£85
Unpaid debt	-£184	-£198
Non-instalment	£48	£39
Instalment	£161	£111
First-time	£45	-£7
Repeat	£69	£58

Source: firm data provided to FCA (eleven firms, of which three high street). Figures for loans issued in 2012 and 2013, pre-baseline adjustments.

4 Supply model methodology

This Chapter describes how our supply model estimates the impact of the cap. Figure 15 below summarises our approach.

Figure 15: Supply model overview



Broadly, we use the data provided by firms to construct a model that estimates firms' decision-making processes. We calibrate our model in the absence of a cap or other baseline adjustments based on the data provided to us. To estimate the impact of the cap, we then adjust (on a loan-by-loan basis) the revenues firms are able to earn, and estimate which loans would be made under the cap, based on this adjusted data. This provides us with estimated cap impacts.

This Chapter follows the structure set out in Figure 15. It provides a non-technical overview of our approach. Further technical detail of the approach is included as an Appendix to this Technical Annex.

4.1 Estimation of firms' decision-making processes

4.1.1 Preparing credit scores

The supply model estimates firms' decision processes, under different constraints (different caps). Firms decide whether to grant loans based on the expected contributions they expect each loan to provide, and firms assess this by estimating the 'creditworthiness' of each applicant based on relevant information collected for this purpose.

An important function of the model is therefore to estimate creditworthiness.¹³ To do this, we use a credit scoring approach: for each loan application in the dataset, we

¹³ Some firms in our sample attempt to directly predict profitability rather than creditworthiness. As default risk is the main component of profitability, and as modelling profitability directly would have required us to estimate a model for each cap scenario separately, we chose to model creditworthiness for all firms in our sample.

create and allocate a credit score that represents the customer's risk of default i.e. that could be expected by the firm at the point of the loan application.¹⁴

Constructing the credit score

For modelling purposes, we define the relationship between credit score and the probability of default as follows:

$$\text{score} = 1000 * (1 - PD)$$

where *PD* is probability of default for a given loan.

We estimate the probability of default for each customer through regression analysis, using a number of explanatory variables submitted to us by firms.

Choice of explanatory variables

In the data submitted to us, some firms provided the internal credit scores they used to decide whether to grant each loan. Provided these scores performed well in estimating customers' probability of default, we used these internal scores in our model.

Some firms do not use formal credit scores, and some of the credit scores supplied by firms did not perform well in estimating customers' probability of default. In these cases, we constructed our own credit score for use in our model.

We tested a number of different variables for use in developing our credit score estimates. The explanatory variables we tested are summarised in Table 4 below, and the process through which variables were chosen for each scoring model is discussed in detail in the technical Appendix to this Technical Annex.

¹⁴ Numerous credit scoring methodologies exist, and credit scores can be expressed in many different ways. Commonly, credit scores are set on a 1,000 point scale, although scoring mechanisms exist that provide less granular scores. Typically, a higher score represents a lower probability of default.

Table 4: Explanatory variables used in scoring models

Variable	Description
Used to create all scores	
Customer age	Age of customer (in years) on loan application date (capped at 80 years)
Distribution channel	Online or store
Final internal credit score	The final internal credit score provided by the lender. The lender may not use these scores, and sometime the lender sources these scores from a 3 rd party provider
Flag for missing final internal credit score	Flags those observations for which the final internal credit score variable is missing from our dataset
Monthly rent	Customer's monthly rent/mortgage repayment
Initial loan principal as a proportion of customer's monthly income	The initial principal of the loan divided by customer's monthly income
Natural logarithm of initial principal	Natural logarithm of initial principal
Initial duration	Initial duration of the loan
Natural logarithm of initial duration	Natural logarithm of the initial duration of the loan
Natural logarithm of customer's monthly income	Natural logarithm of customer's monthly income
Number of dependants	Number of dependants
Marital status	Customer's marital status
Employment status	Customer's employment status
Non-behavioural variables used for behavioural score	
Flag marking unreported rollovers	An unreported rollover is defined as a situation when, on the same day or on the previous day, a borrower has repaid another loan with the firm but the subsequent loan has not been marked as a rollover. ¹⁵
Relative value of unreported rollover	Unreported rollover principal relative to the principal of the previously repaid loan.
Flag(s) for other product(s)	Flag constructed for each product type, set to 1 if, at the time of writing a loan, the customer had another active loan with the firm.
Behavioural variables used for behavioural score¹⁶	
Flag for late payment	Flag for loans with a late payments (or late fees)
Flag for CPA	Flag for loans with CPA attempts
Flag for at least two CPAs	Flag for loans with at least 2 CPA attempts

¹⁵ This flag is only considered when building the credit score. It is not considered for the purposes of making adjustments for refinanced loans, as described in Chapter 2.

¹⁶ Behavioural variables were evaluated in several versions, based on the information from the last loan, last 3 loans, and all previous loans. In case of last 3 loans and all previous loans, we also consider two further alternatives: average case and worst case.

Flag for at least three CPAs	Flag for loans with at least 3 CPA attempts
Collections through CPAs relative to loan principal	Value of collections through CPAs in relation to the initial principal.

Distinguishing between new and repeat applicants

The relevant information available to a firm at the point of application is different, depending on whether a loan has previously been provided to the applicant. For repeat applications, previous repayment behaviour is an important predictor of future repayment behaviour. Accordingly, we see in our data that most firms differentiate returning customers from new ones, even though the scoring approaches adopted by firms are different.

To account for this, when we calculate credit scores we distinguish between first time and repeat applicants. We use an 'application score' when a customer applies for their first loan with a lender, and a 'behavioural score' for repeat loan applications. The key distinction between the two is that the former relies on data the lender can collect from the applicant and other third party sources (such as credit reference agencies), while the latter also takes into account the borrower's past behaviour with the lender.

4.1.2 Allocating loans to credit score bands

Once credit scores have been created for each loan in the data, we rank each loan by its credit score. We then group these ranked loans into a number of credit score bands.

The main motivation for creating these bands is to more accurately estimate the decision making process of each firm. When an application is received, firms will construct a credit score, and form an expectation about the contribution generated by granting that loan. The firm cannot know with certainty the outcome of any individual loan, but can form expectations that on average will be correct for larger groups of (similar) loans. Based on this process, loans with positive expected contributions will be granted, and those with negative expected contributions will be declined.

In our data, we are able to see the exact contribution generated by each individual loan. When constructing the model, there was therefore a danger we would be able to use this information to build a model with greater predictive power (for the loans in our sample) than firms are able to achieve. This would be undesirable, given our objective is to estimate firms' actual decisions.

To mitigate this risk, we create credit score bands, estimate the average values (of contributions, etc.) for each credit score band, and then run our model at band-level, based on the calculated band-averages. Depending on the volume of loans for

each firm in our sample, we create 100 bands, or 50 bands. This allows us to more accurately estimate firms' decisions.

4.1.3 Incorporating a customer-level view

Our modelling is based on the assumption that firms seek to maximise the lifetime profitability of lending to customers. This means that in deciding whether to grant a loan, each firm will factor in the likelihood of future lending and the profitability of this future lending.

Potential future lending is incorporated into our model using a 'migration matrix' approach. The migration matrix represents how much, on average, each customer is expected to borrow in the future, and how the risk of lending to that customer might evolve over time. Combining that information with expected profitability we can evaluate the expected profitability of future lending.

We model this by defining 'customer quarters', with a 'zero quarter' defined as the quarter in which the first loan is made. Each loan is then allowed to generate lending opportunities in future time periods, captured by calculating an expected net present value (NPV) of future cash flows for each loan.

We calculate the NPVs by modelling a discrete-time Markov-chain stochastic process. We estimate the transition parameters for this process using the pattern of lending observed in the data, which shows us the costs, revenues and contributions of every loan taken out by each customer, and the customer's credit score at the point of each loan.

We use this to calculate for every loan, the expected NPV of contributions of future lending. This NPV is used when the model calculates the expected contributions for each loan i.e. when determining whether each loan would be granted or not. Further technical detail on our approach to modelling future borrowing behaviour is included in the technical Appendix to this Technical Annex.

At this point in the process, for each firm we have each loan in the data ranked by credit score, grouped into credit score bands, and for each loan an expected contribution, which incorporates the net present value of all future lending.

4.1.4 Applying the decision rule

The decision rule for each firm is to grant loans with positive expected contributions, and decline loans with negative expected contributions. At this point, the data within the model provides a view that enables us to apply this decision rule.

As discussed above, to allow for the uncertainty that firms face in practice, we evaluate the decision rule at band-level i.e. we calculate average contributions for

each credit score band. Our model grants loans to *every loan in the band* where the band overall has a positive expected contribution, and declines *every loan in the band* where the band overall has a negative expected contribution.

4.1.5 Model calibration

The aim of our model is to estimate the lending decisions of each firm. In the absence of any cap or other adjustments, our model should accept and decline a similar volume and proportion of loans to that seen in the raw data provided to us, and this is an important check used when developing the supply model.

Where the modelling approach outlined above leads to differences in the volume or value of loans granted compared to the loan portfolios seen in the raw data, we apply a calibration to adjust for these differences.

We implemented the calibration by estimating how many bands with negative average contributions are granted by each firm in the raw data, and ensuring the same proportion are granted under the cap. This has the effect of accepting or declining more credit score bands (or equivalently, changing the implied credit score lending threshold for each firm within the model). Overall, our model performs well and only a small degree of calibration was required.¹⁷

This calibration is important to ensure that the model accurately estimates the lending decisions of firms within the sample. At this point the model is able to take input loan-level data, determine which loans to grant, and recreate actual loan portfolios of firms, based on the (unadjusted) data provided to us.

4.2 Adjusting revenues and costs

To estimate whether loans would be granted under a particular cap, we first need to estimate what revenues would be allowed under that cap. To do that, for each cap considered we adjust the revenue for each individual loan in the data, such that the loan becomes compliant with the cap.

Throughout the modelling, we consider a cap consisting of three components. These are:

- **Initial cap** – maximum allowable cost to the borrower per day of the loan term, as a proportion of the initial principal;

¹⁷ The calibration adopted impact decisions mostly for first time applicants. For five of the eight firms modelled, calibration was less than 2% (i.e. we adjust one credit score band or make no calibration). For returning customers, a very small calibration was required for one firm only.

- **Default cap** – maximum allowable total default charges that can be charged to the borrower; and
- **Total cost of credit cap** – maximum allowable total cost of the loan, including all costs to borrower, expressed as a proportion of the initial principal.

For the purposes of making adjustments, there are two categories of loans in the dataset to consider: those that were paid on time and in full, and those that were not. The adjustment approach for each type of loan differs.

For loans paid on time and in full, if the revenue in the data is less than the maximum allowed under the cap, we make no adjustments. If the revenue earned is greater than the level allowed under the cap, we set the revenue as the maximum revenue allowed under the initial cap or the total cost of credit cap (depending on which of these binds first).

For loans that do not pay on time and in full, we follow the same general procedure. However, we also estimate the maximum allowable default revenue and adjust this where necessary, before taking into account the maximum revenues allowed under the total cost cap.

This provides us with an adjusted set of data that specifies the allowable revenues for each loan in the dataset, given the constraint imposed by the particular cap being considered.

4.3 Running the model

4.3.1 *Determining which loans are granted under the cap*

To estimate which loans are granted under each cap, the model applies the same decision rule described above, following the adjustments made to revenues. These adjustments affect the expected contributions of each loan, and the expected (NPV) contributions of all associated future lending. This decision rule is again evaluated at band-level.

All the parameters estimated within the model remain constant under all cap scenarios, and constant relative to the values estimated using the raw data. This includes:

- the credit scores calculated for each loan;
- the credit score bands to which each loan is allocated;
- the transition probabilities used to calculate NPV future lending contributions;
- future lending and repayment behaviour of customers within the data; and

- the calibration factors used.

This is an important aspect of the modelling approach. These parameters are all estimated using the raw data submitted to us. We estimate the impact of different caps under the assumption that none of these parameters change in response to the cap.

4.3.2 Assess the impact of the cap

At this point, the model describes whether each loan in the dataset is granted in any given scenario: based on the raw data, with different baseline adjustments, and under different caps. For each scenario modelled, we aggregate the variables of interest (revenues, customer numbers, number of loans, contributions etc.) to provide a firm-level view. We can view impacts across all the dimensions covered by the data e.g. by loan size, loan duration, customer age, etc.

To estimate the impact of the cap, we compare the revenues, volumes and contributions for each firm under the cap being assessed, to the equivalent values with no cap in place.

5 Exit model methodology

5.1 Identifying firms at risk of exit from the market

The supply model described in Chapter 4 provides a view of which loans would be granted under each cap and the level of overall contributions (revenues less direct costs attributable to loans) each firm would be able to generate from those loans. At this point, there is no consideration of whether this level of contributions would be sufficient to meet the overall costs of operation (including firm overheads), and consequently whether the firm would be at risk of exit from the HCSTC market.

If a firm did exit, as well as having a direct impact on that firm and on HCSTC supply, it could have a potential impact on the level of competition remaining in the HCSTC market, which we have a duty to consider. It may further impact the volume of loans granted overall and the number of customers able to access HCSTC loans, plus the volume of loans and contributions of all the remaining firms in the market, if customers switched to these remaining firms.

For our analysis, it is therefore very important to consider the potential impact of the cap on firm exit. This Chapter describes the approach we took in relation to firm exit. On summary, we compare firms' contributions against their overheads, under different cap scenarios.¹⁸ We do this for each of the eight firms in our sample (representing 83% of the market), and extrapolate results to the remaining 17% of the market by matching firms not modelled to the most similar firm in our sample.

Contributions are generated by the supply model, as described in Chapter 4. Overheads are taken from each firm's management accounts. We do not include the cost of capital related to fixed assets in the overhead figures used for the exit analysis, because:

- a. the way in which some of the HCSTC firms are incorporated in larger corporate entities makes it difficult to robustly assess the capital employed in the HCSTC element of the business; and
- b. there is significant variation in the stated level of capital between similar firms in our sample, leading us to be less confident in the figures provided to us.

We note that for most firms, the cost of capital employed (other than the capital employed in the principal advanced, which is directly accounted for in the supply model) is a minor element of the overall cost base.

¹⁸ Contributions incorporate (our adjusted) baseline adjustments for CPAs and rollovers, as described in detail in Chapter 2.

5.1.1 Flexibility of overheads

Under each cap considered, the supply model describes contribution levels which are associated with different volumes of loans. When comparing contributions to overheads, it is therefore important to consider the extent to which the overheads reported in management accounts would be different, were loan volumes to change.

In general, we expect overheads to be reasonably fixed, but we recognise there may be some degree of flexibility, for example it could be possible to achieve efficiency savings in response to reduced revenues following the cap, or through a restructuring of the business in response to the reduced revenues.

The extent to which overheads are in practice flexible is uncertain. To account for this, in our exit modelling we compare contributions to three different views of overheads. This can be viewed as providing a sensitivity to our results, in that we assess potential exit using a range of different views of overheads.

We have used the following views:

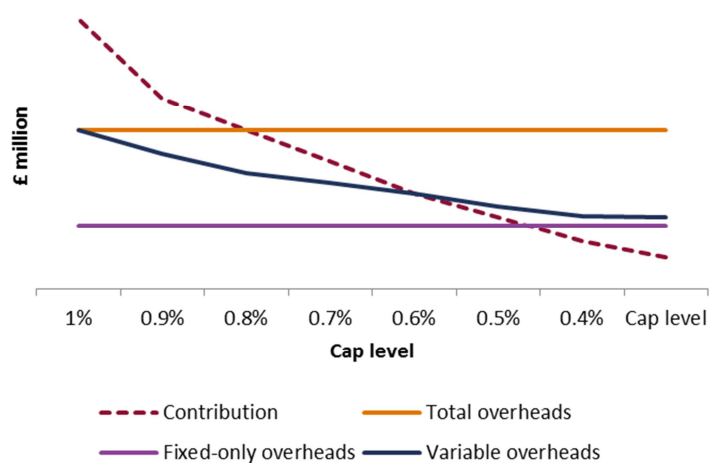
- a. **Total** – current overheads as reported in management accounts, with no adjustments.
- b. **Fixed** – current overheads less a 20% efficiency saving across all overhead cost categories (excluding cost of debt and acquisition cost, which some firms include in overheads).
- c. **Variable** – current overheads reduced to account for the reduction in lending volume and value implied by the cap, using each firm’s assumptions on the proportion of overhead costs that would vary with lending volumes.

In each case, as contributions from the model relate to 2012 and 2013, we compare against the total of 2012 and 2013 overheads when assessing whether firms are at risk of exit.

5.1.2 Estimating the risk of firm exit (modelled firms)

To assess the likelihood of firm exit we compare contributions at different cap levels against the three views of overheads described above. Figure 16 below provides an illustrative example of our approach.

Figure 16: Comparison of contributions and overheads, illustrative example



Source: Illustrative only

In the medium-term, we assume that firms require contributions to be greater than or equal to overheads, in order to remain in the market. This provides an upper bound estimate of the level of contributions required by each firm in order to remain. We note that based on the information provided to us, more than one of the eight firms have contributions less than overheads, before considering the impact of the cap.

Where a firm's contributions are greater than or equal to overheads, we assume that firms will continue to operate in the HCSTC market. Firms who are unable to cover their overheads are considered potentially at risk of exit.

5.1.3 Further adjustments

In our analysis, we have also considered whether firms may in fact choose to remain in the market, even where we estimate that contributions are lower than overheads. There could be a number of reasons why this might be the case, including the following:

- a. Firms' management accounts may not reconcile perfectly with our loan-level data (for example due to difficulties allocation firm costs between HCTSC and non-HCSTC business lines).
- b. Firms may have the potential for cost savings greater than the 20% figure used in our analysis, particularly those with higher costs relative to others in the market. Alternatively, rather than cost reductions, such firms may have the potential to generate more additional revenue compared to other firms that may already be operating (more) efficiently.

- c. Firms that are part of larger groups and/or are engaged in multiple lines of business may choose to invest in the HCSTC element of their business i.e. may be willing to absorb HCSTC losses in anticipation that profitability can be reached in the medium-term, or if HCSTC losses are offset through profits made on complementary products and services.
- d. There are a range of behavioural responses each firm could make in response to the cap that would either increase revenues and contributions, or reduce overheads compared to the values used in our analysis. This is explored in detail in Technical Annex 2.

To allow for these possibilities, we incorporate a 'buffer' before classifying a firm as at risk of exit. We do this by calculating the percentage uplift in contributions that would be needed to meet each of the three views of overheads described above. We then make a judgement about what uplifts in contributions might be possible to achieve. The uplifts could be achieved either by increasing revenues or by reducing costs: we make no judgement as to which of these is more likely.

Choosing the thresholds that might be possible to achieve is subject to uncertainty, and we have made judgements based on the evidence available to us. We have used the following thresholds in our exit analysis:

- a. 50% uplift in contribution compared to total overheads;
- b. 20% uplift in contribution compared to fixed overheads; and
- c. 20% uplift in contribution compared to variable overheads.

We only define firms as being at risk of exit where the uplift in contributions required to meet overheads is greater than the thresholds shown. In this way, even where contributions are lower than overheads, in some cases we do not describe the firm as at risk of exit.

Given the uncertainties inherent in this analysis, we present results on the basis of which firms are at risk of risk of exit, rather than presenting an exact calculation of the number of firms remaining in the market. **Exit results are shown as a range, and should be considered to have margin of error of ± 1 .**

5.2 Extrapolation to the market

The firm exit analysis is conducted for the eight firms used in the supply model. We extrapolate to the market by matching other firms in the market to the most similar firm in the eight firms modelled. This is summarised below:

- a. **Eight firms** provided detailed loan-level data that was used in our supply model. We modelled the risk of exit for these firms using the approach described above.
- b. **Medium firms** (with 2013 HCSTC revenue >£0.5m). These firms provided responses to our market questionnaire, along with recent management accounts. Based on this information, we assessed which of the eight modelled firms each medium firm most closely resembled, according to size, profit levels, and distribution channels used. Where our analysis suggested a modelled firm would be at risk of exit, we assume all the medium firms matched to that firm would also be at risk of exit at that point.
- c. **Small firms** (with 2013 HCSTC revenue <£0.5m). These firms were asked to submit a copy of their management accounts, along with much more limited responses to our market questionnaire. Where possible, we have used this information in our analysis. Again, we matched small firms to an equivalent, larger modelled firm. Where our analysis suggested a modelled firm would be at risk of exit, we assume all the small firms matched to that firm would also be at risk of exit at that point.

5.3 Sensitivities considered

Given the uncertainties involved, we considered a large number of different specifications when building our exit analysis. The three main sensitivities tested are described below. Each has been tested in isolation, and we have not modelled combinations of these sensitivities. In summary, within the sensitivities tested, the number of firms at risk of exit did not change by more than ± 1 . On this basis, we are satisfied with the specification chosen, on the basis that we present results as a range, and that these results should be considered to have margin of error of ± 1 .

5.3.1 Sensitivity to thresholds used

We carried out sensitivity analysis on the level of the (contribution uplift) thresholds used to assess the point at which firms would be at risk of exit. Figure 17 below shows how the results for the numbers of firms classified as 'at risk' of exit are affected the thresholds chosen. More firms are at risk of exit as the thresholds move closer to 0%, and fewer firms are at risk as the cut-offs are set higher. For a given cap level this can affect results by ± 1 .

Figure 17: Sensitivity analysis of cut-offs



Note: Picture shows the impact of changing the cut-offs on the number of firms judged 'at risk' of exit, for a given cap level.

5.3.2 Sensitivity to baseline adjustments

We carried out sensitivity analysis to look at the impact of comparing against baseline and non-baseline adjusted contribution figures.¹⁹ This can affect the firm exit results by ± 1 ; the uplift in contribution needed is higher following the baseline adjustments, which reduce firms' revenue and contribution.

5.3.3 Sensitivity to overhead flexibility assumptions

We carried out sensitivity analysis on the level of overhead flexibility. Increasing the proportion of overheads that are flexible reduces the level of 'fixed-only' overheads, meaning firms would require a smaller uplift in contribution to meet overheads. For a given cap level this can affect results by ± 1 .

¹⁹ The baseline adjustments made are discussed in detail in Chapter 2 above.

6 Results

This Chapter sets out the key results for our supply analysis. Section 6.1 describes the impact of different levels of upfront, default and total cost of credit caps on the total revenue, contribution, customer numbers, and value of lending. Section 6.2 presents detailed results for our preferred option. Section 6.3 describes the results of the sensitivity analysis we have undertaken.

The impact on revenue, contribution, customer numbers and value of lending is calculated based on aggregated results for the eight firms used in the supply model, which account for over 80% of the market (based on 2013 revenues). The results presented do not include extrapolation to the overall HCSTC market. When designing the cap, we have considered the impact of the cap on all firms in the market.

The results shown are static impacts i.e. they do not consider the responses of firms to the cap. In general, we would expect these responses to limit the impact of the cap compared to the static results shown. Firms' responses to the cap, and the resulting impacts, are discussed in more detail in Technical Annex 2.

6.1 Impact on firms at different cap levels

The impact of different caps is shown as a proportional change, compared to the uncapped baseline. As described above, we use an adjusted baseline for this purpose that incorporates the impact of new rules for CPAs and rollovers. Unless otherwise stated, the results below are presented against the baseline adjustments we have made.

The following sub-sections show the impact of different cap levels, compared to the adjusted baseline. Each sub-section contains two charts: the first chart shows the impact of different levels of periodic and default cap, keeping the total cost cap fixed; the second chart keeps the default cap fixed, whilst varying the level of the periodic and total cost caps.

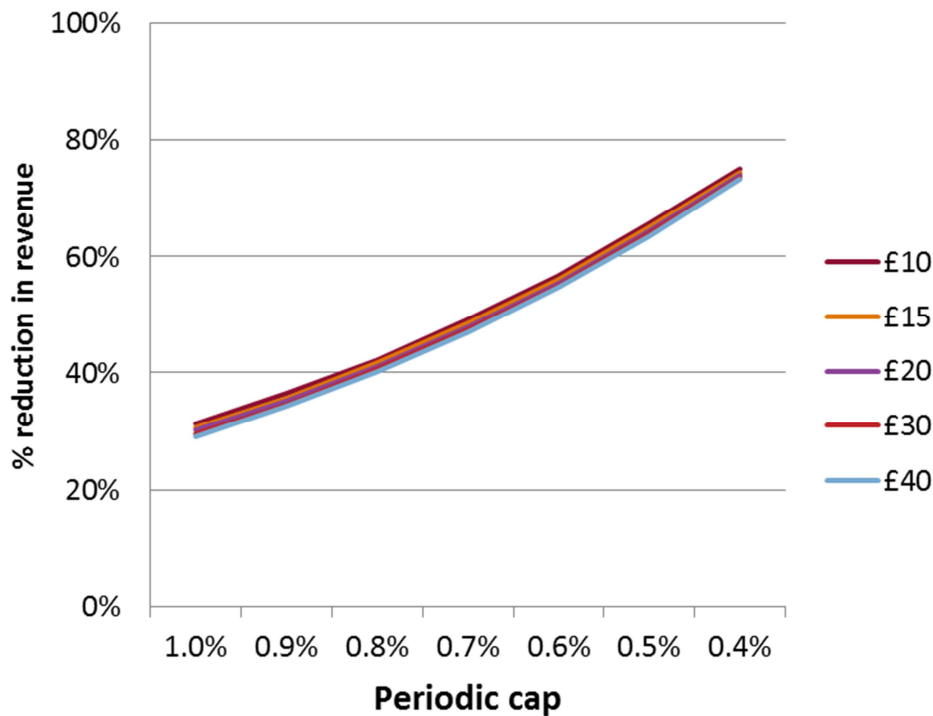
We present results for caps between 1.0% and 0.4% per day, default caps of between £10 and £40, and total cost caps between 50% and 200% of initial principal. The consultation paper describes the process by which this cap structure and the range of possible cap levels were arrived at.

6.1.1 Modelled reduction in revenues

The following two charts show the impact of different cap levels on aggregate revenue for the eight firms modelled. This does not incorporate the exit analysis subsequently undertaken.

Figure 18 shows that the impact on revenue of a periodic cap of between 1.0% and 0.4% per day, modelled with a 100% total cost of credit cap. Varying the periodic cap in this way leads to a reduction of between 30% and 80% in revenues, with tighter caps leading to lower revenues.

Figure 18: Modelled revenue impacts at 100% total cost cap at varying levels of periodic and default caps

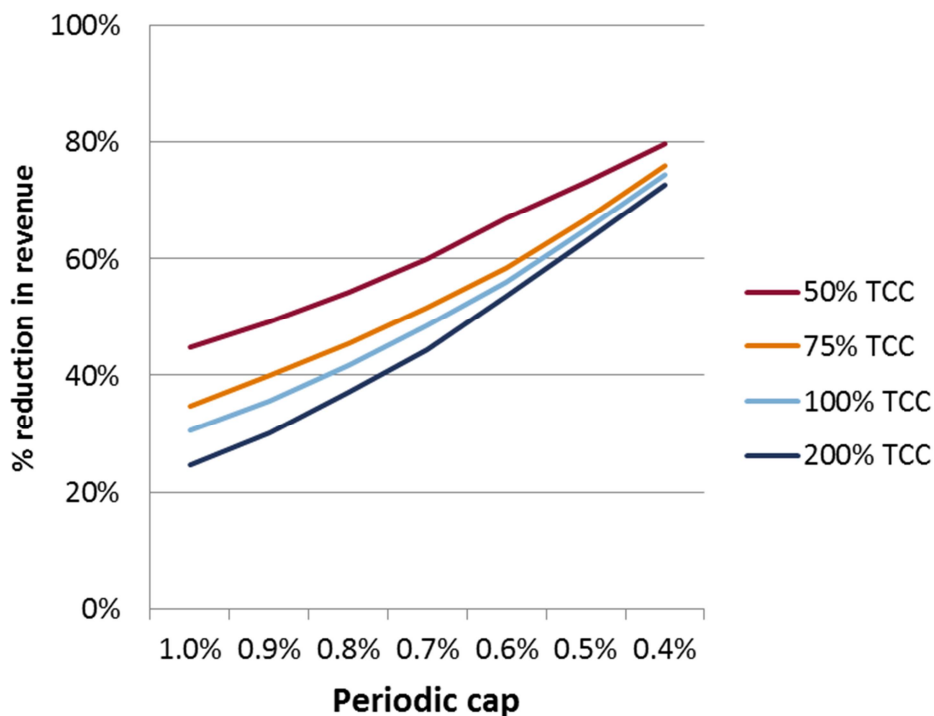


Source: FCA supply model output, eight firms, 2012 and 2013 data, compared against adjusted baseline.

Figure 19 shows the impact on revenues of changing the level of total cost of credit cap between 50% and 200%, modelled with a £15 default cap. Again, the results show that lower periodic caps lead to greater reductions in revenues.

Revenues are also sensitive to the level of the total cost of credit cap: at 50% there is a larger reduction in revenue than at 75%, 100%, and 200% respectively. The gap between 50% and 75% is larger than the gap between 100% and 200%, and the size of the gap between each total cost of credit cap falls as the periodic cap becomes tighter.

Figure 19: Modelled revenue impacts at £15 default cap with varying levels of periodic and total cost caps



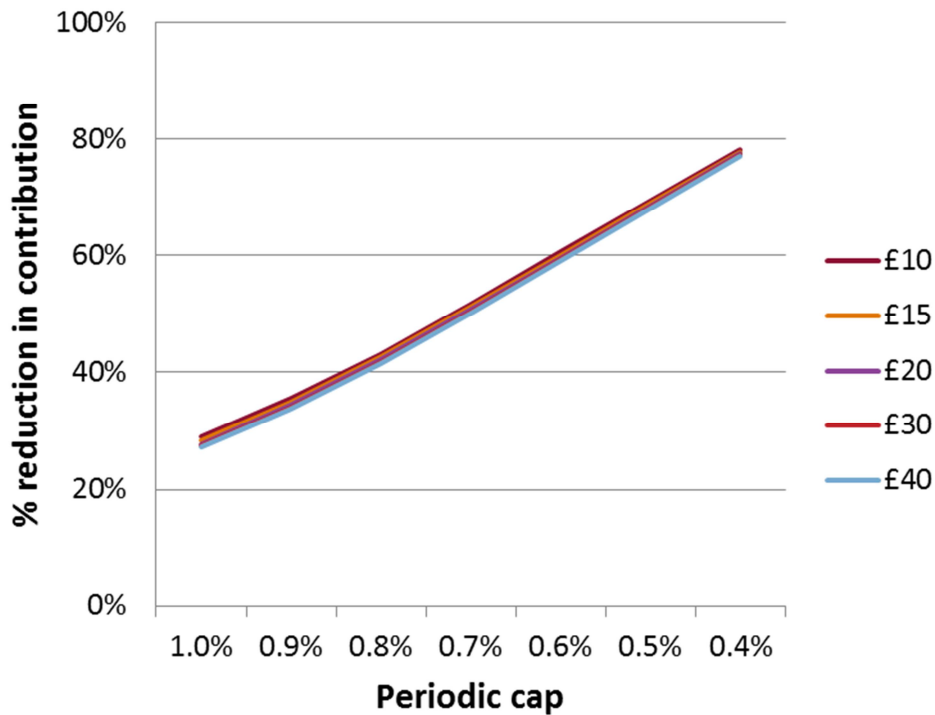
Source: FCA supply model output, eight firms, 2012 and 2013 data, compared against adjusted baseline.

6.1.2 Modelled change in contribution

The following two charts show the impact of different cap levels on aggregate contributions for the eight firms modelled. The results follow a very similar pattern to the impacts on revenue shown above.

As shown in Figure 20, varying the periodic cap from 1.0% to 0.4% per day, modelled here with a 100% total cost of credit cap, reduces contributions by between around 30% and around 80%, with tighter caps leading to lower contributions

Figure 20: Modelled impacts on contribution at 100% total cost cap at varying levels of periodic and default caps

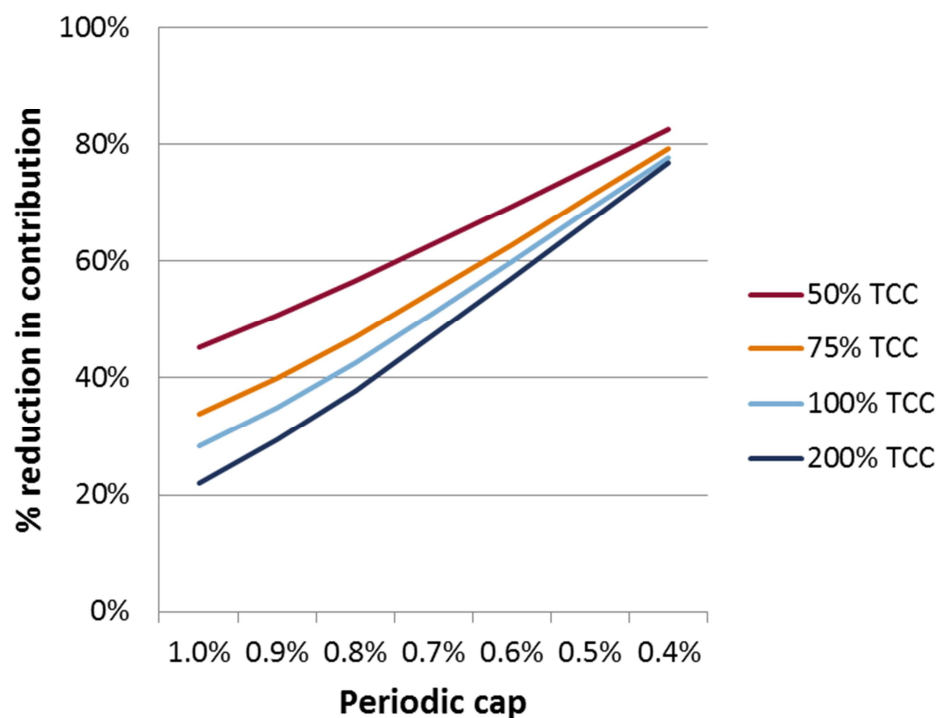


Source: FCA supply model output, eight firms, 2012 and 2013 data, compared against adjusted baseline.

Figure 21 shows the impact on contributions of changing the level of total cost of credit cap between 50% and 200%, modelled with a £15 default cap. Again, the results show that lower periodic caps lead to greater reductions in contributions.

Contributions are also sensitive to the level of the total cost of credit cap: at 50% there is a larger reduction in revenue than at 75%, 100%, and 200% respectively. The gap between 50% and 75% is larger than the gap between 100% and 200%, and the size of the gap between each total cost of credit cap falls as the periodic cap becomes tighter.

Figure 21: Modelled impacts on contribution at £15 default cap at varying levels of periodic and total cost caps



Source: FCA supply model output, eight firms, 2012 and 2013 data, compared against adjusted baseline.

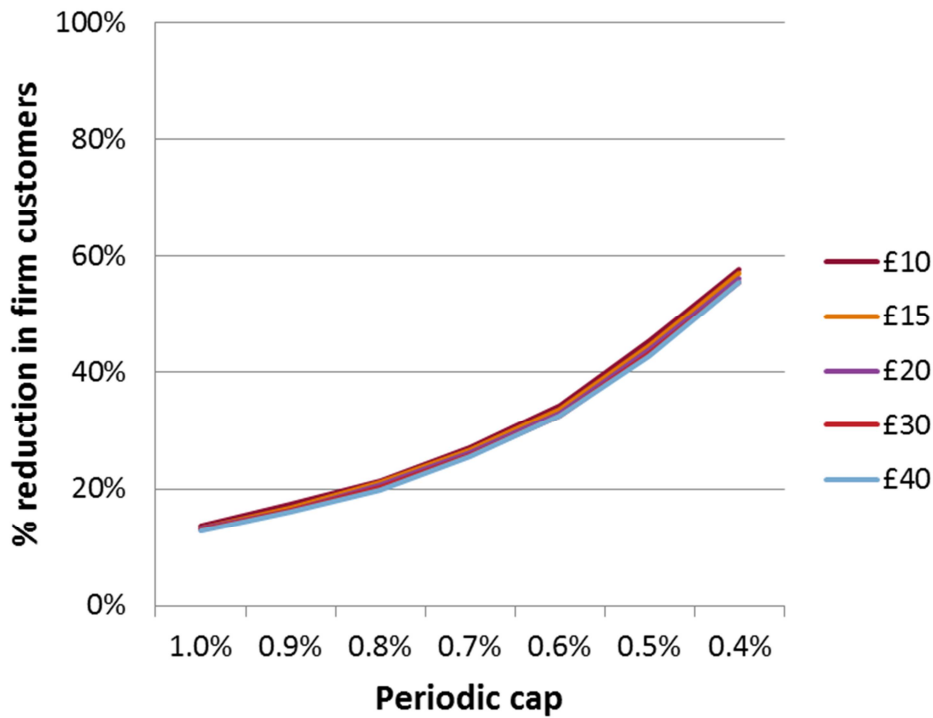
6.1.3 Modelled impact on firm customer numbers

The following two charts show the impact of different cap levels on aggregate firm customers²⁰ for the eight firms modelled. The results follow a similar pattern to the impacts shown on revenues and contributions above.

As shown in Figure 22, varying the periodic cap from 1.0% to 0.4% per day, modelled here with a 100% total cost of credit cap, reduces contributions by between around 20% and around 60%.

²⁰ Firm customers' is defined as the sum of the customers served by each firm, which is greater than the number of unique customers in the market.

Figure 22: Modelled impacts on customer numbers at 100% total cost cap at varying levels of periodic and default caps

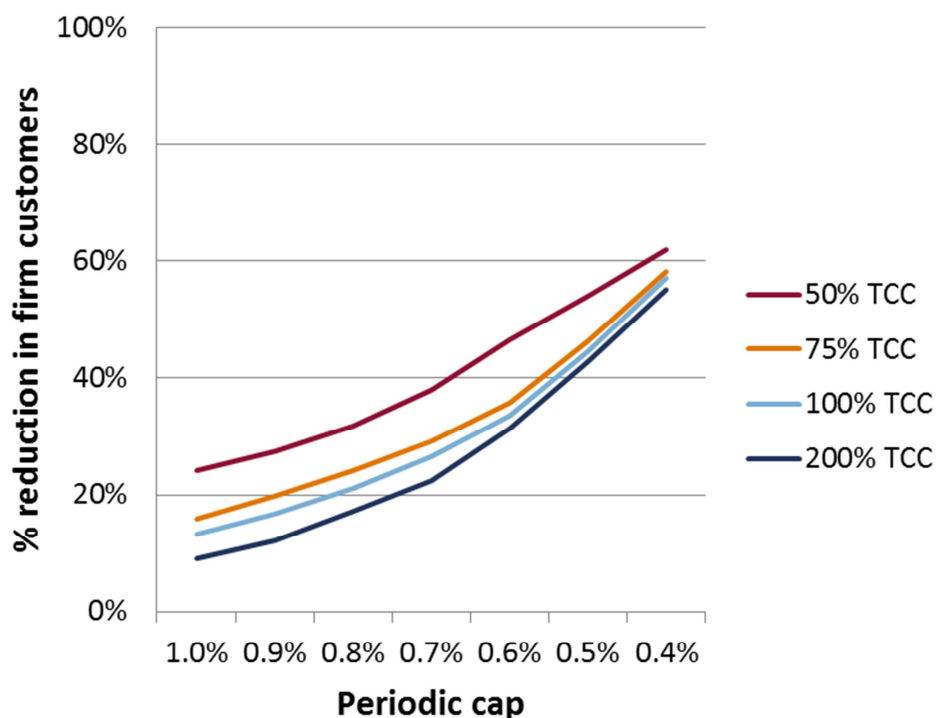


Source: FCA supply model output, eight firms, 2012 and 2013 data, compared against adjusted baseline.

Figure 23 shows the impact on customer numbers of changing the level of total cost of credit cap between 50% and 200%, modelled with a £15 default cap. Again, the results show that lower periodic caps lead to greater reductions in customer numbers.

Customer numbers are also sensitive to the level of the total cost of credit cap: at 50% there is a larger reduction in revenue than at 75%, 100%, and 200% respectively. The gap between 50% and 75% is larger than the gap between 100% and 200%, and the size of the gap between each total cost of credit cap falls as the periodic cap becomes tighter.

Figure 23: Modelled impacts on customer numbers at £15 default cap at varying levels of periodic and total cost caps



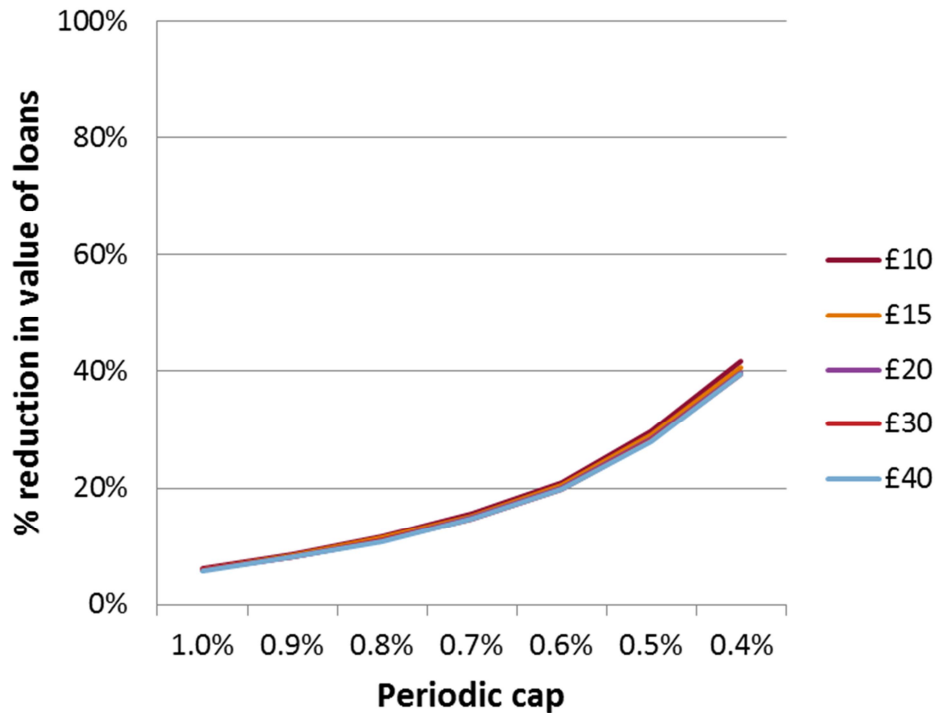
Source: FCA supply model output, eight firms, 2012 and 2013 data, compared against adjusted baseline.

6.1.4 Modelled impact on value of lending

The following two charts show the impact of different cap levels on aggregate value of lending for the eight firms modelled. The results follow a similar pattern to the impact on revenue.

The impact on value of loans ranges from around 10% to around 40% for a periodic cap of between 1.0% and 0.4% per day, with 100% total cost of credit cap. Tighter caps lead to lower lending values.

Figure 24: Modelled impacts on value of lending at 100% total cost cap at varying levels of periodic and default caps

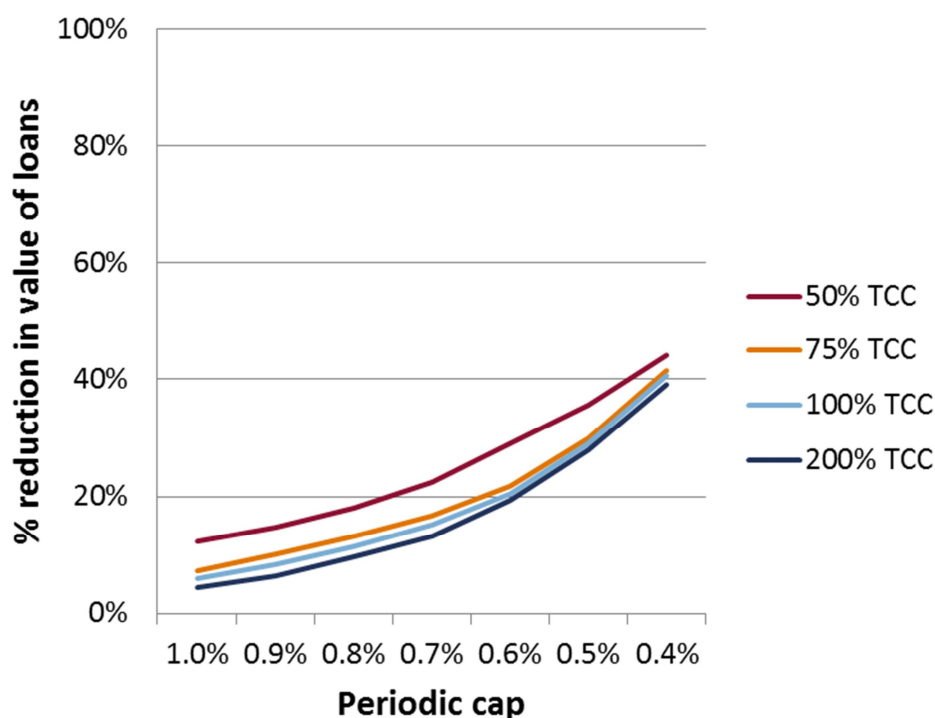


Source: FCA supply model output, eight firms, 2012 and 2013 data, compared against adjusted baseline.

Figure 25 shows the impact on the value of lending of changing the level of total cost of credit cap between 50% and 200%, modelled with a £15 default cap. The results show that lower periodic caps lead to greater reductions in the value of lending.

The value of lending is also sensitive to the level of the total cost of credit cap: at 50% there is a larger reduction than at 75%, 100%, and 200% respectively. The gap between 50% and 75% is larger than the gap between 100% and 200%, and the size of the gap between each total cost of credit cap falls as the periodic cap becomes tighter.

Figure 25: Modelled impacts on value of lending at £15 default cap at varying levels of periodic and total cost caps



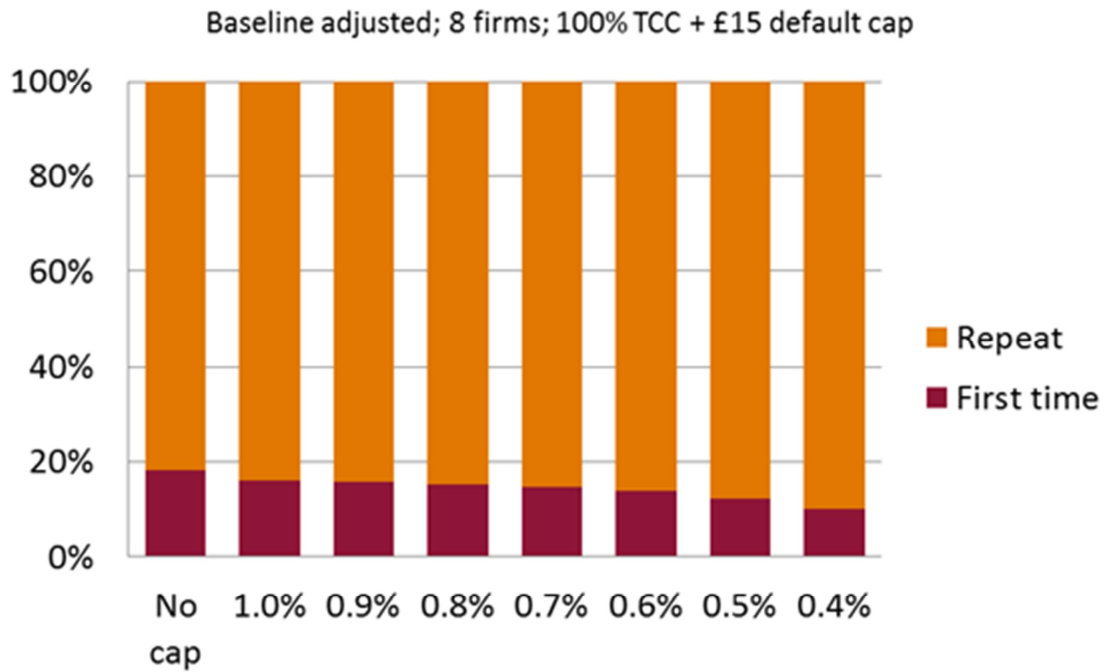
Source: FCA supply model output, eight firms, 2012 and 2013 data, compared against adjusted baseline.

6.1.5 Modelled impact on loans granted

The following charts show split of loan volume between first time and repeat loans, and short, medium and long-term loans under different initial cap levels. The results are shown for a 100% total cost of credit cap and with a £15 default cap. The consultation paper described the process through which these elements of the cap were chosen as the preferred cap structure. Based on the modelling we have undertaken (and as shown above), changing the periodic cap has the greatest impact on the results presented.

Figure 26 below shows the split of loans granted between repeat and first time loans. It shows how the share of total volume from first time loans falls as the periodic cap becomes tighter.

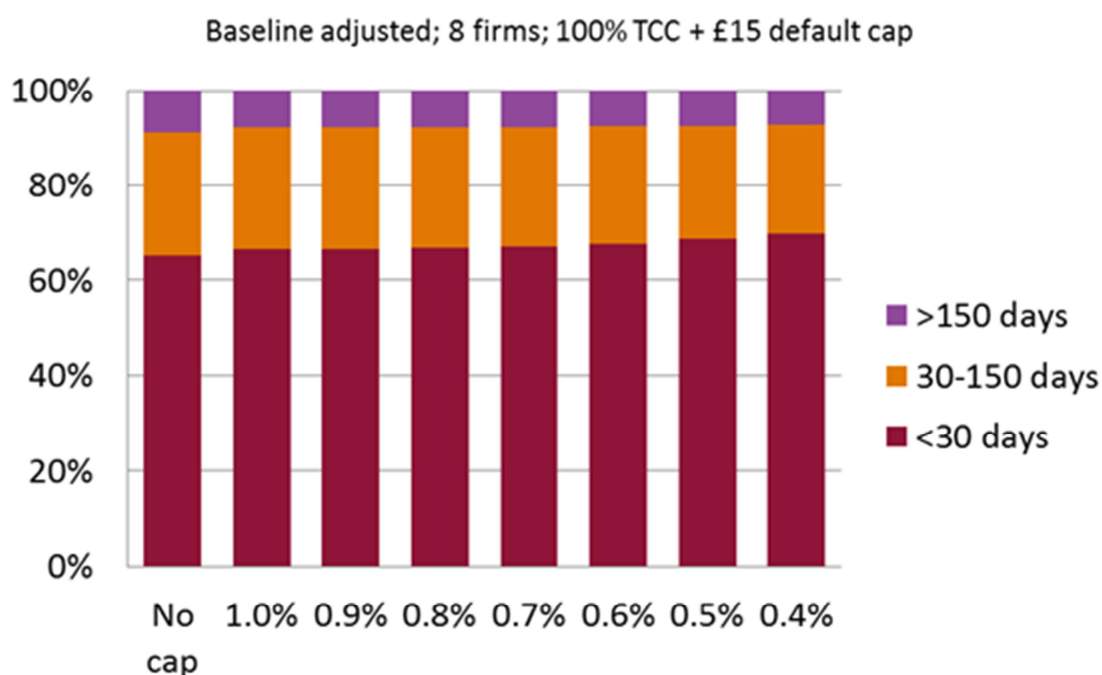
Figure 26: Share of loan volumes, first and repeat loans



Source: Source: FCA supply model output, eight firms, 2012 and 2013 data, compared against adjusted baseline. Does not account for firm exit – implicit assumption that loans are granted by another firm in the market.

Figure 27 below shows the share of loan volume by duration. The share of long term loans falls as the periodic cap becomes tighter.

Figure 27: Loan volume by duration at different cap levels



Source: Source: FCA supply model output, eight firms, 2012 and 2013 data, compared against adjusted baseline. Does not account for firm exit – implicit assumption that loans are granted by another firm in the market.

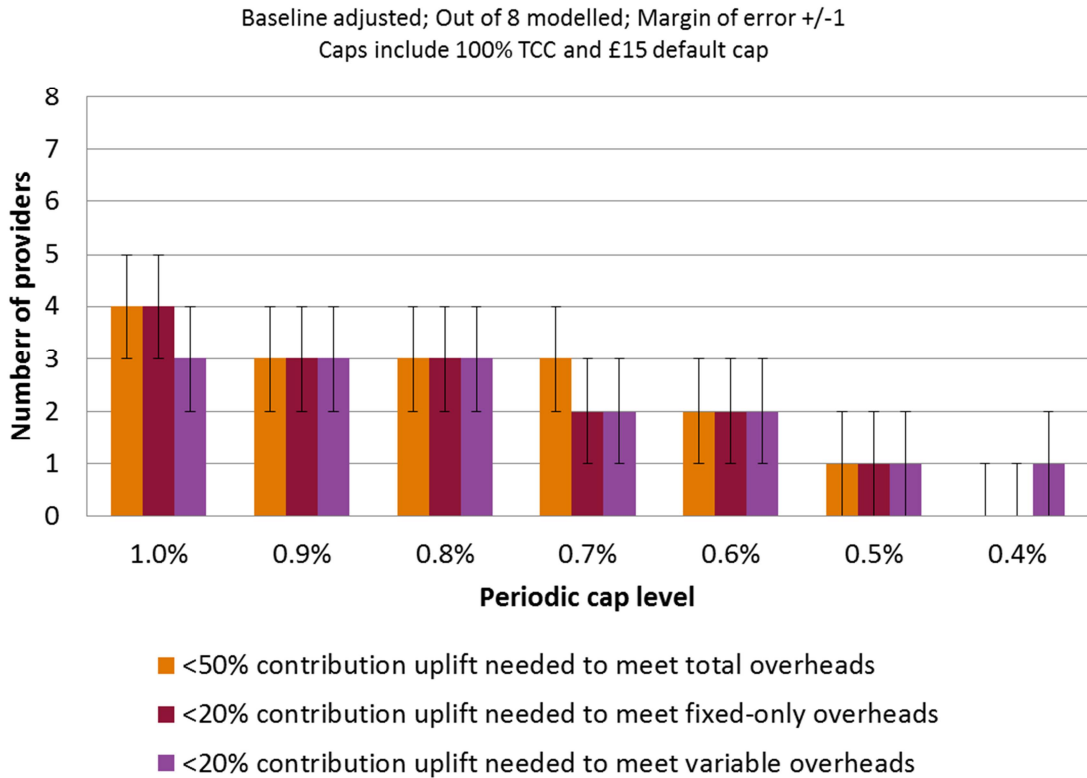
6.1.6 Firms’ likelihood of exit

As set out in detail in Chapter 5, our firm exit analysis looks at the level of contributions each firm is able to generate under each cap, and compares this to overheads as submitted to us in firms’ management accounts. This comparison provides a view of which firms may be at risk of exit from the HCSTC market.

Figure 28 below shows the number of firms considered *unlikely* to be at risk of exit under different cap levels i.e. the number of firms remaining in the market. Three results are presented: one for each view of overheads we have compared to.²¹ The results are shown as a range, and should be considered to have margin of error ± 1 , as reflected in the error bars.

²¹ For further details, see Chapter 5.

Figure 28: Potential remaining firms at different periodic cap levels, 100% total cost cap and £15 default cap



Source: FCA analysis, baseline adjusted contributions, eight firms modelled (six online, two high street).

The number of firms *not* at risk of exit falls as the initial cap tightens: there are 3-4 firms less not at risk at 1.0% cap, 2-3 firms at 0.7% and 1 at 0.5%, (all results ± 1). Table 5 shows the split of firms not at risk between online and the high street; all high street firms are at risk below 1%.

Table 5: Potential remaining firms at different periodic cap levels, 100% total cost cap and £15 default cap

Periodic cap level (100% TCC, £15 default)	Less likely to be at risk (Margin of error ± 1)
0.4%	0 - 1 O, 0 HS
0.5%	1 O, 0 HS
0.6%	2 O, 0 HS
0.7%	2 - 3 O, 0 HS
0.8%	3 O, 0 HS
0.9%	3 O, 0 HS
1.0%	3 O, 0 - 1 HS

Source: FCA analysis, out of eight firms (six online, two high street).

The results presented are based on a total cost of credit cap of 100%. A tighter total cost of credit cap of 75% would have a small impact on firm exit results compared to the 100% cap for three of the cap levels, but would not change the overall conclusions presented here. This is shown in Table 6.

Table 6: Potential remaining firms at different periodic cap levels, 75% total cost cap and £15 default cap

Periodic cap level <i>(75% TCC, £15 default)</i>	Less likely to be at risk <i>(Margin of error ±1)</i>
0.4%	0 O, 0 HS
0.5%	1 O, 0 HS
0.6%	1 - 2 O, 0 HS
0.7%	2 - 3 O, 0 HS
0.8%	3 O, 0 HS
0.9%	3 O, 0 HS
1.0%	3 O, 0 HS

Source: FCA analysis, out of eight firms (six online, two high street).

Extrapolation to the market implies that all medium and small firms are at risk of exit at all levels of cap between 1.0% and 0.4%.

6.2 Analysis of the preferred option

As set out in the main body of the consultation paper, our preferred option for the cap is as follows:

- a periodic cap of 0.8% per day;
- a default fee cap of £15; and
- a 100% total cost of credit cap.

The rationale supporting this option and the process by which we decided upon this option is set out in the consultation paper. This Technical Annex presents the impacts that this preferred option for the cap would have on HCSTC firms in detail. Table 7 shows the static impacts on market revenues, contributions and customers using our *adjusted* baseline assumptions. Table 8: **Firm effects for 0.8% cap, firm baseline** shows the equivalent results, using the baseline assumptions firms submitted to us.

Table 7: Firm effects for 0.8% cap, FCA adjusted baseline

Periodic cap level	Change in revenue	Change in contribution	Change in value of loans	Change in number of firm customers
0.4%	-75%	-78%	-41%	-57%
0.5%	-65%	-69%	-29%	-45%
0.6%	-56%	-60%	-21%	-34%
0.7%	-49%	-51%	-15%	-27%
0.8%	-42%	-43%	-11%	-21%
0.9%	-36%	-35%	-8%	-17%
1.0%	-31%	-28%	-6%	-13%

Source: FCA HCSTC supply side model output; reduction calculated against FCA adjusted baseline; eight firms; cap includes 100% total cost cap and £15 default cap; static impact.

Table 8: Firm effects for 0.8% cap, firm baseline

Periodic cap level	Change in revenue	Change in contribution	Change in value of loans	Change in number of firm customers
0.4%	-74%	-78%	-40%	-55%
0.5%	-64%	-69%	-29%	-44%
0.6%	-56%	-60%	-21%	-35%
0.7%	-49%	-51%	-16%	-29%
0.8%	-42%	-42%	-13%	-24%
0.9%	-36%	-34%	-9%	-19%
1.0%	-30%	-26%	-7%	-15%

Source: FCA HCSTC supply side model output; reduction calculated against firm baseline; eight firms; cap includes 100% total cost cap and £15 default cap; static impact.

At the 0.8% cap level, our static analysis suggests that five of the eight firms would be at risk of exit, with the remaining three firms less likely to be at risk (± 1). In practice, we would expect firms to adjust their business models in response to the cap, and for a greater number of firms to remain. This is discussed in detail in Technical Annex 2.

6.3 Impact on customers at different levels of the cap

This Section outlines the impacts on customers of different levels of the cap, including the number of customers not served and loans not granted, the rate of default that these customers and loans would have had, and average savings per customer.

The impacts presented are based on the outputs of the supply model, and therefore represent static impacts. Firm responses to the cap would be expected to reduce the impacts set out here, as considered in detail in Technical Annex 2.

The customer impacts presented are used as inputs to estimate the impacts of the cap on customers. This is discussed in detail in Technical Annex 3.

6.3.1 Customers and loans not granted

Table 9 shows the impact of different levels of the initial cap on HCSTC customers. As shown, as the level of the cap falls, greater numbers of customers are no longer granted HCSTC loans. This trend holds when viewing the number of customers within our firm-level data, and when matching individuals across firms to provide a view of 'unique individuals'.

As discussed in detail in Technical Annex 3, the probability of default is an important variable when estimating consumer welfare impacts. As shown, at all levels of the cap, the levels of default for those 'marginal' customers²² that no longer get loans as a result of the cap remain high at all levels considered.

Table 9: Customers not served

Periodic cap level (100% TCC, £15 default)	# unique individuals NOT served (000s)	Firm customers NOT served (000s)	Firm customers NOT served (marginal) (000s)	...which would have ever not paid ²³ sample two-year time period (marginal)
0.4%	851	1,962	425	45%
0.5%	600	1,537	383	49%
0.6%	404	1,153	236	53%
0.7%	310	918	193	56%
0.8%	231	725	147	63%
0.9%	185	578	120	64%
1.0%	129	458	458	59%
from baseline of:	2,144	3,440	n/a	n/a

Source: FCA HCSTC supply side model output; 8 firms; cap includes 100% total cost cap and £15 default cap; static impact

²² 'Marginal' customers are those that no longer get loans at a given cap level, but who did receive loans at the previous level considered. For example, moving from 0.9% per day to 0.8% per day would mean an additional 147,000 customers no longer receive a loan, and 63% of these 147,000 customers would have defaulted at some point over the sample period.

²³ 'Not paid' defined as unpaid debt greater than £5.

Table 10 and Table 11 show these customer impacts split out between first time and repeat loans respectively. These show similar trends to those described above for loans overall: at lower levels of the cap, a greater number of loans are not granted. The rates of non-payment are lower for repeat loans compared to new loans at all cap levels.

Table 10: First loans not given

Periodic cap level (100% TCC, £15 default)	First loans NOT given (000s)	First loans NOT given (marginal) (000s)	...which would have incurred late payment charge	...which would have not paid
0.4%	1,758	383	28%	20%
0.5%	1,375	333	29%	23%
0.6%	1,043	193	28%	27%
0.7%	850	178	35%	31%
0.8%	672	108	40%	35%
0.9%	564	109	42%	37%
1.0%	455	455	46%	40%
from baseline of:	2,647	n/a	n/a	n/a

Source: FCA HCSTC supply side model output; 8 firms; cap includes 100% total cost cap and £15 default cap; static impact

Table 11: Repeat loans not given

Periodic cap level (100% TCC, £15 default)	Repeat loans NOT given (000s)	Repeat loans NOT given (marginal) (000s)	...which would have incurred late payment charge	... which would have not paid
0.4%	4,192	1,255	19%	11%
0.5%	2,937	900	22%	14%
0.6%	2,037	533	23%	16%
0.7%	1,504	403	23%	16%
0.8%	1,101	307	29%	20%
0.9%	794	237	26%	17%
1.0%	557	557	26%	18%
from baseline of:	11,929	n/a	n/a	n/a

Source: FCA HCSTC supply side model output; 8 firms; cap includes 100% total cost cap and £15 default cap; static impact

6.3.2 Average savings per customer

We estimate that 1.3 million people per year (89% of individuals who would otherwise be served) will continue to receive loans at a cap level of 0.8%. For these

consumers we estimate that their median saving would be £14 per loan, translating into £250m saving in aggregate per year due to lower prices. These savings are to consumers who pay back on time as well as those who end up paying later than they expected.

Appendix 1: Detailed technical methodology

Chapters 2-4 of the main body of this Technical Annex describe the data adjustments we have made and the modelling approach we have undertaken to construct the supply model. The main body provides a non-technical overview of our approach. This Appendix describes a number of parts of our approach in a greater level of technical detail.

This Appendix mirrors the structure of the relevant Chapters in the main body of the Technical Annex. Each Section heading has an 'A' prefix to the relevant section e.g. Section 'A4.1' provides supporting technical information to Chapter 4, Section 1 of the main body of the Technical Annex.

A2 Firm data and adjustments made

A2.2 Data collection, cleaning and preparation

Initial data cleaning

We asked firms to provide the required data using templates that we had supplied. Firms provided the data using these templates in a variety of electronic formats. Our initial data cleaning process consisted of three stages:

- *Conversion to common format.* We converted the raw data provided by the firms to a common electronic format and standardised the formatting of variables across the firms.
- *Standardising the data.* We made modifications to the raw data provided by firms to ensure that the data was recorded on consistent basis. This involved, for example, ensuring that the components of revenue and cost data added up to the reported totals. In addition, as we did not prescribe the categories to be used for a number of descriptive variables (such as gender, employment status, educational level) in our data request, we standardised these across the firms.
- *Combining datasets.* We asked firms to provide their data in a number of separate tables. The data required for the supply model was contained in three separate tables. In addition, our supply model makes use of further data provided by a credit reference agency (CRA). At this initial stage we combined the data from the separate tables and the CRA into a single dataset for each firm.

Throughout the data cleaning process we identified several issues with the data. These ranged from incomplete data (such as the revenues and/or costs reported in the firms' management accounts not matching those derived from loan-level data), internal

inconsistencies in the data (such as the reported unpaid debt not matching reported principal, revenues and collections), and corrupt observations.

Preparing base inputs

Following on from initial cleaning, to prepare base inputs for the supply model, we carried out a series of steps to create variables on consistent basis.

At loan level, we took the following steps:

- Missing values for revenues, direct costs and number of instalments were changed to zero. This step was required solely for technical implementation of our model, and it did not affect the results of the model.
- A consistent variable for actual loan duration was created. Where actual duration data was incomplete, we replaced missing observations of actual duration with initial duration values. Where data on initial duration was also missing, we replaced it with the mean actual duration for the specific firm and product.
- Loans with non-positive initial principals were excluded. From discussions with firms, we understand these observations relate to various refunds and other corrections. The number of excluded loans for this reason was negligible.
- We created a consistent and unique identifier for each loan across our dataset.
- We created an indicator variable for whether a loan had defaulted. We defined default as where actual duration exceeded initial duration *and* unpaid debt was greater than £5.
- We generated a variable for customer age at loan application. This was calculated as the difference between the loan application date and the customer's reported date of birth. If the customer was more than 80 years old on the loan application date, we restricted the value of the age of customer variable to 80.
- We created a capital charge variable for each loan. This was set as simple annual interest with a weighted average cost of capital (WACC) rate of 10.3% as follows:

$$capital\ charge_i = \frac{loan\ principal_i \cdot actual\ loan\ duration\ in\ days_i}{365} \cdot WACC$$

where *i* stands for a given loan and WACC was set at 10.3%.

- The cost of capital rate we use is not intended to reflect each firm's actual cost of capital, but rather the funding cost of an efficient HCSTC firm. The rate we chose is consistent with the rate used by CMA in their analysis. We note that at any reasonable level of cost of capital the capital charge will not have a significant impact on our modelling results. This is because the short-term nature of HCSTC loans and the high relative magnitude of the other costs of loan provision means that capital charges are not the main element of a loan's direct cost.
- We created a direct cost variable, defined as the sum of unpaid debt, collection costs, credit search costs, technology and computer services costs, commission costs, acquisition costs, and capital charges. The recording of direct costs differs from firm to firm. Some components of direct costs may be omitted by some firms when they do not record costs from a particular component or allocate a category of costs directly to a loan. These differences were reflected in the way in which we analysed firms' management accounts.
- We created a variable for revenue per loan. This was defined as the sum of initial revenues, default fees and default interest (as described in Chapter 3).
- We generated 'customer quarter' variables for each loan. As set out in Chapter 4 of the Technical Annex, we incorporated a view of customer lifetime profitability into our model, and 'customer quarters' were needed for this purpose. Each customer quarter was defined as lasting 91 days. We generated an indicator variable for customer quarters as follows:
 - i. Quarter 0 is assigned to customer's initial loan;
 - ii. Quarter 1 is assigned to all subsequent loans with loan dates 91 days or less from the initial loan; and
 - iii. Quarter 2+ is assigned to any further loans made by the customer.
- We generated variables for average principal and starting credit score (from the first loan application), by customer and by quarter.

At firm-level, we took the following steps:

- We created an indicator variable for whether we use our own credit scores for the firm, or use the firms' internal credit scores. As set out in Chapter 4 of the Technical Annex, we only created our own credit scores for firms that either did not provide us with their internal credit scores, or where these internal credit scores were not able to sufficiently predict the level of default. An 'Area under

receiver operating characteristic' (AUROC) value significantly lower than 0.6 was considered as insufficient discriminatory power.²⁴ We also took into account the level of calibration required in both cases as well as any changes in the scoring system that could potentially significantly affect the appropriateness of directly using the scores provided to us.

- We created a number of credit score bands, used to group loans together for modelling purposes, as set out in Chapter 4 of the Technical Annex. For the largest firms (by volume of loans), we used 100 bands, and for smaller firms we used 50 bands.

'Trial bands'

- Following the construction of our credit scores, we observed that some bands of credit scores produced negative average contributions. However, we observed that in the data, firms had in fact provided loans to these customers. We defined these credit score bands as 'trial bands'.²⁵
- We calculated the proportion of "trial" bands in each quarter. For instance, if we observed 5 out of 50 bands had negative average contributions in the unadjusted data, we defined 10% of bands as "trial bands." After applying the cap, in addition to keeping all bands with positive average contributions, we make a further adjustment to keep the correct proportion of trial bands (with negative contributions) – in this case an additional 10% of bands.

Dealing with refinanced loans

Some firms reported refinanced loans as separate loans, which we treated as single loans. A loan is considered to be refinanced, when the variables "refinanced to" or "refinanced from" indicate that it has been refinanced to/from another loan by that customer.

Loans that have been refinanced are recorded on a separate line in the data submitted by some of the firms i.e. we see a sequence of related loans. We collapsed these entries onto one line for a given loan i.e. we treat all refinanced loans as part of the original loan. The following procedure describes our approach:

- Funds collected through CPAs are added to the first loan in the sequence.

²⁴ AUROC is a common summary statistic of the goodness of credit score as a predictor of a default. The statistic falls between 0 and 1. An AUROC value of 0.5 is interpreted as a random model, and AUROC value 1 is interpreted as the model providing perfect prediction of defaults.

²⁵ Trial bands were used mostly for the first time customers. There are a large number of possible reasons we observe trial bands in practice, including market strategy, and if firms constantly seek improvements in their credit underwriting policies by conducting trials at different levels of credit score cut-off.

- Rollover revenues are added to the first loan in the sequence. The rollover revenues are added up according to the first, second, and subsequent rollover revenue fields on the initial loan.
- Where there is a principal increase exceeding the sum of principal and pre-default revenue of the preceding loan in the sequence, this is considered to be a new loan. For example, if revenue plus principal of the preceding loan is £150, but the principal of the next loan in the sequence is £400, this is considered to be a new loan, rather than an extension of the refinancing sequence.
- All revenues, all direct costs, and unpaid debt are collapsed onto the first loan in the sequence.
- Actual duration of the loan is calculated by taking the difference between the date the initial loan was written and the end data of the final loan in the sequence.
- The number of instalments, number of rollovers, number of late payments, number of CPA instructions issued (both complete and partial payments) are summed and allocated to the first loan in the sequence.
- The initial principal for the sequence is taken from the first loan in the sequence and remains unmodified.
- Only the first loan in the sequence is kept after these adjustments.

Dealing with topped up loans

Top-ups are increases in principal due to additional loan application by the customer. The model collapses all top-ups into a single loan, by generating an average principal from any principal adjustments and repayments recorded.

First, increases of principal at adjustment are calculated, and set at zero for any decreases. Let i denote the loan and j the j -th loan adjustment. With this notation in mind, the principal adjustment is:

$$\Delta p_{ij} = \max\{0, (p_{i,j} - p_{i,j-1})\}$$

for $p_{i,j}$ denoting the principal on loan i at adjustment j .

Similarly, the difference in days between the underwriting of loan and the date of the adjustment in principal is calculated as:

$$\Delta t_{ij} = t_{ij} - t_i$$

where t_i is the date the loan i was written, and t_{ij} is the date of j -th adjustment of loan i . Note that this result is always a positive value of Δt_{ij} .

The average principal of loan i is then calculated as:

$$\bar{p}_i = p_i + \frac{\sum_j (\Delta p_{ij} \cdot (d_i - \Delta t_{ij}))}{d_i}$$

where p_i is the initial principal and d_i the actual duration including all adjustments of loan i . By construction the second term is always positive (non-negative for loans without adjustments), so that $\bar{p}_i \geq p_i$ holds. \bar{p}_i then replaces p_i in the data.

A4: Supply model methodology

A4.1 Estimation of firms' decision making process

A4.1.1 Create credit scores

For modelling purposes, we define the credit score as follows:

$$\text{score} = 1000 * (1 - PD)$$

where PD is probability of default for a given loan.

We modelled the credit risk of a customer using logistic regression. In this model, the probability of default, PD , is expressed as the following function:²⁶

$$PD = \frac{1}{1+e^{-y}}$$

where y is a linear function of explanatory variables, with parameters estimated by logistic regression. These parameters were estimated using the maximum likelihood method using STATA.²⁷

Developing the credit model

In the data submitted to us, some firms provided their internal credit scores (the ones they used to make the decision to grant a loan). Provided these scores performed well in estimating customers' probability of default, we used these internal scores in our model to predict the probability of default.

Some firms do not use formal credit scores, and some of the credit scores supplied by firms did not perform well in estimating customers' probability of default. In these cases, we constructed our own credit score. We built our credit scores using full data sample (without holding some data back 'out of sample' in order to undertake out of sample testing).²⁸

When constructing the credit score we considered the following:

²⁶ Such formulation results in increased probability of default with increases of t .

²⁷ STATA implementation of logistic regression model sometimes does not converge after a large number of iterations. To avoid very long running times, we limited the number of iterations to 500.

²⁸ Out of sample testing would have given us more confidence in the predictive power of the model, but the model would have been based on less data.

- Even though we were scoring loans, we were also interested in a customer view (incorporating possible future lending).
- We needed a common score scale for different products, in particular for products with long and short duration (e.g. 12 months and 1 month). This was required to ensure our estimates of future lending were not affected by changes in product duration.
- Where a customer had multiple loans in a quarter, the score should not change significantly within the quarter (it may evolve but should not be volatile).
- The logistic function used in the model operates most efficiently around *PD* equal to 50%. To adjust for this, it is a common practice in building scoring models to increase the weight of defaulted observations in the sample (either by weighting or sampling) by up to 50%. When using this approach, the resulting *PD* values from the model need to be calibrated, in order to return the true probability of default.

With these factors in mind, we weighted our observations. First, for each defaulted observation we set the base weight as value of the principal.²⁹ Second, we calculated the weight of non-defaulted observations as the value of principal multiplied by initial duration, expressed in months. Durations shorter than one month were set to one month (30 days).

Third, to obtain the final weights for defaulted observations, the base weights for defaulted observations were then multiplied by a rebalancing factor, calculated as the rounded down proportion of the sum of weights calculated for non-defaulted observations, in relation to the sum of base weights of defaulted observations.

The first two of these steps aim to group loans with different durations but similar (monthly) probabilities of default into the same credit score bands. The third step sets the average default rate to around 50%, and aims to maximise the discriminatory power of the model.

Choice of explanatory variables

Where we developed our own credit scores, we chose the explanatory variables for each firm's artificial credit scoring procedure using an automated factor analysis, according to the following steps:

²⁹ In order to obtain integer values, the weights for all observations were additionally multiplied by 3000.

- First, for each potential explanatory variable, we perform a single factor analysis. In order to be considered for inclusion in the model, each potential explanatory variable had to satisfy the following conditions:
 - i. less than 5% of the sample observations are missing;
 - ii. positive dispersion measured as a difference between the 95th and 5th percentile of its distribution;
 - iii. a single factor discriminatory power (of default event) measured by absolute value of Gini coefficient equal to at least 2% (equivalently, AUROC ≥ 51% or AUROC ≤ 49%), using the weights as described above; and
 - iv. statistical significance of the single factor model at level of 0.5%, using the weights described above.

When a variable passed the above tests, we replaced any missing observations with a dummy values,³⁰ and created a flag that observations with missing values had been added to the model.

In addition to the above restrictions, STATA automatically eliminates collinear variables and perfect predictors. (Observations which have been skipped due to elimination of perfect predictor are supplemented with a score perfectly predicting their outcome).³¹

Estimation of the model

We estimated the model using all the variables that passed these tests.

Finally, we calculated the credit score from our multifactor model as the following, monotonous function of *PD* estimated from the model for each observation:³²

$$\text{score} = 1000 * (1 - PD)$$

Assessing the quality of the credit scoring processes

We assessed the performance (discriminatory power) of the model using Gini Coefficient or AUROC (often also referred to as a 'ROC curve') – both measures are directly interrelated.

When credit scores are a good predictor of a default on the loan, the ROC curve will initially be steep, as most high credit scores will not default. The curve will later become

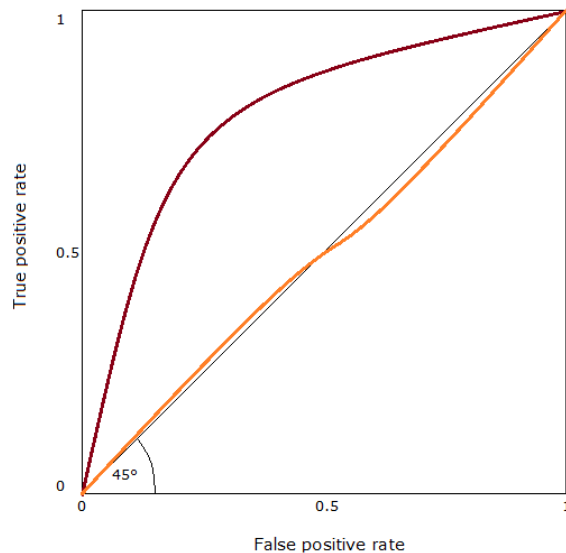
³⁰ We used 99 for categorical variables and 0 for other variables (in particular continuous ones). Due to adding to the model an additional flag marking these observations, the choice of this value has no impact of the regression results.

³¹ Such circumstances appeared for a few observations. Due to very limited occurrence that issue was considered as negligible.

³² As earlier stated, the estimated *PD* value was not calibrated to the actual probability of default.

flatter, as more defaults occur for loans with low credit scores. Where the credit scores have no explanatory power of PD, the ROC follows the 45° line.

Figure 29: Example ROC curves



Source: Analysis of firm data covering 2012 and 2013

A4.1.2 Allocate loans to credit score bands

We grouped the credit scores we calculated for each lender into bands. This means that the observations are evenly distributed into a defined (separately for each lender) number of scoring bands for each quarter. We conducted the banding with the following considerations:

- all observations for the same quarter with exactly the same score are grouped into the same score band;
- observations with higher scores (for the same quarter) cannot be assigned to lower score bands;
- observations with missing scores are grouped to a separate, highest score band (for a given quarter); and
- all score bands have to contain observations (at least 10% of the average number of observations for all score bands in that quarter).

The banding of customers into credit score bands is required to construct our model of customers' borrowing behaviour over time, as our model requires discrete groups of customers with similar credit risk characteristics.

A4.1.3 Incorporate customer-level view

Distinction between new and repeat applicants

Our modelling is based on the assumption that firms seek to maximise the lifetime profitability of lending to a customer. This means that in deciding whether to grant a loan to a customer, the firm will consider customers' expected future borrowing and the profitability of the future loans.

Potential future borrowing is modelled using a migration matrix approach. The migration matrix represents how much, on average, each customer is expected to borrow in the future given their current borrowing.

Use of customer quarters

We consider customers' borrowing in quarters. A 'zero quarter' is formed solely by the first loan to each customer. The first customer quarter starts just after the first loan (or with the beginning of the second loan if it starts before the end of initial loan). Each subsequent quarter lasts 91 days. The quarters are counted independently for each customer. Each loan (together with any rollovers and refinancing that relates to that loan) is attributed to the quarter in which it has been written.

Let l be a subscript referencing each loan in such a way that earlier loans are given lower values,³³ t_l a customer quarter to which the l -th loan has been assigned, c_l the customer to which the l -th loan has been granted, p_l its principal, and d_l its initial duration measured in days. Then, the average loan principal $\bar{p}_{c,t}$ given to the c -th customer in the t -th customer quarter is defined as follows:

$$\bar{p}_{c,t} \stackrel{\text{def}}{=} \begin{cases} \sum_{l \in \{l: c_l = c \wedge t_l = t\}} p_l & \text{if } t = 0 \\ \sum_{l \in \{l: c_l = c \wedge t_l = t\}} \frac{p_l d_l}{91} & \text{if } t > 0 \end{cases}$$

In contrast to the principal, the score of the c -th customer for the t -th customer quarter is assigned based on the score of the first loan written to that customer in that quarter.³⁴ Assuming that s_l is a score of the l -th loan, the score $\bar{s}_{c,t}$ given to the c -th customer in the t -th customer quarter is defined as follows:

$$\bar{s}_{c,t} \stackrel{\text{def}}{=} s_{\min\{l: c_l = c \wedge t_l = t\}} \quad (1)$$

Assumptions on returning customers

The model assumes that a principal $\bar{p}_{c,t}$ lent to customer c in the t -th customer quarter produces an opportunity for additional lending in the subsequent customer quarter(s) to

³³ Differentiating also loans granted on the same day by their order in data.

³⁴ This is possible if within one customer quarter a borrower asks for two or more loans, and the subsequent loans are scored differently. We do not account for this in our modelling.

the same customer, that would not exist if lending in the t -th customer quarter did not occur. The model conservatively assumes that lending to returning customers follows positive lending decisions in the past (or equivalently: earlier declined customers would not ask for further loans, or these would not be granted).³⁵

In our modelling, we assume that lending in the current customer quarter can produce lending opportunities in any future customer quarter, allowing the potential for several quarters with no lending between two loans.

Modified customer quarters

There is no need to consider modification for customer quarters in which we observe no lending. On that basis, let τ denote modified customer quarter after skipping the customer quarters with no opportunity of additional lending and $\delta_{c,\tau}$ denote number of skipped customer quarters between modified customer quarter τ and $(\tau + 1)$.

Let the average principal and score be respectively defined for each customer c with respect to each modified customer quarter and denoted as $\bar{p}_{c,\tau}$ and $\bar{s}_{c,\tau}$ (respectively).

It is assumed that lenders discount future expected cash flows via a quarterly³⁶ discount rate³⁷. It is assumed that the expectation of all cash flows from future lending are proportional to their carrying amount defined by $\bar{p}_{c,\tau}$. Therefore, the expected net present value (NPV) of all future cash flows generated from lending $\bar{p}_{c,\tau}$ after skipping $\delta_{c,\tau}$ customer quarters is equal to the expected NPV of all future cash flows generated by lending of $\bar{p}_{c,\tau}df^{\delta_{c,\tau}}$ at present. This property allows for a further simplification of the model taking into account modified principal $\bar{L}_{c,\tau}$ (representing that carrying value) defined in the following way:

$$\bar{L}_{c,\tau} \stackrel{\text{def}}{=} \bar{p}_{c,\tau}df^{\delta_{c,\tau}}$$

From a purely mathematical perspective $\bar{L}_{c,\tau}$ is used later in the model. It is treated analogously to $\bar{p}_{c,\tau}$.

Score bands

The score bands are assigned to each loan, based on the credit score and modified customer quarters capped at two (with all modified customer quarters above one marked

³⁵ Such conservative approach relating to assessment of potential future borrowing results at the same time in the most aggressive approach with respect to acceptance of the first time customers (even despite losses on their first loan). It has been chosen as the actual approach of lenders seems to be even more aggressive.

³⁶ Assuming that each quarter lasts 91 days.

³⁷ We assume a constant discount rate of 10.3% for all firms.

as '2+'). Assuming that $b(q, s)$ is a function assigning the score bands according to that description for each modified customer quarter τ and score s , and $q(\tau)$ is a function mapping modified customer quarters into capped quarters (0, 1 or 2+):

$$q(\tau) \stackrel{\text{def}}{=} \begin{cases} \tau & \text{if } \tau < 2 \\ 2+ & \text{if } \tau \geq 2 \end{cases}$$

Then, the score band $\bar{b}_{c,\tau}$ given to the c -th customer in the τ -th modified customer quarter is defined as a function of $q(\tau)$ and $\bar{s}_{c,\tau}$:

$$\bar{b}_{c,\tau} \stackrel{\text{def}}{=} b(q(\tau), \bar{s}_{c,\tau})$$

Properties of the stochastic process modelling borrowers' needs

The duplet $(\bar{L}_{c,\tau}, \bar{b}_{c,\tau})$ constitutes realisations (for each customer c) of a stochastic process (L_τ, b_τ) that is modelled and where time is defined by modified customer quarter denoted as τ .

It is assumed that the borrowing need, as well as credit risk assessment in the next modified customer quarter, is dependent only on the borrowing need and the credit risk assessment in the previous modified customer quarter. Therefore, the underlying stochastic process is assumed to be a discrete-time Markov-chain stochastic process. The Markov-chain is also assumed to be stationary after second modified customer quarter.³⁸ It is assumed to be scale invariant with respect to L_τ but not necessary with respect to b_τ .

Construction of migration matrices

Taking into account the properties of the stochastic process described above, and firms' interest in expected NPV, for the purpose of modelling lenders' decisions it is sufficient to consider the expected value of future lending with respect to:

- the customer's credit risk assessment (represented by a score band); and
- the modified principal of previous lending and its credit risk assessment (also represented by a score band).

Due to scale invariance of n_τ , the above relation can be simplified even further by considering just the proportion of expected value of future borrowing in relation to modified principal of previous lending.

Thus, it suffices to represent the parameterisation of that stochastic process in the form of migration matrices between consecutive modified customer quarters constructed in the following way:

³⁸ The most significant differences in the process are between 0 quarter and quarter 1 (due to a different principal base used for 0 quarter) and between quarter 1 and quarter 2.

- rows represent score bands in the beginning quarter;
- columns represent score bands in the following quarter; and
- cells contain expected migrations m_{τ,b_0,b_1} explaining what proportion of £1 lent in the beginning of modified customer quarter τ under score band b_0 is on average lent in the following quarter under score band b_1 .

If B is the number of scoring bands (for each modified customer quarter) then the migration matrix can be represented as:

$$\mathbf{M}_{\tau} \stackrel{\text{def}}{=} \begin{bmatrix} m_{\tau,1,1} & \cdots & m_{\tau,1,B} \\ \vdots & \ddots & \vdots \\ m_{\tau,B,1} & \cdots & m_{\tau,B,B} \end{bmatrix}$$

Mathematically, the expected migration m_{τ,b_0,b_1} can be defined in the following way:

$$m_{\tau,b_0,b_1} \stackrel{\text{def}}{=} E_c \left(\frac{L_{\tau+1}}{L_{\tau}} \mathbf{1}_{\{b_1\}}(b_{\tau+1}) \mid b_{\tau} = b_0 \right)$$

where $\mathbf{1}_A(x)$ is an indicator function defined in the following way:

$$\mathbf{1}_A(x) \stackrel{\text{def}}{=} \begin{cases} 1 & \text{if } x \in A \\ 0 & \text{if } x \notin A \end{cases}$$

As the process is stationary after second modified customer quarter, the migration matrix for each beginning modified quarter greater than one is exactly the same. Therefore:

$$\forall_{b_0,b_1 \in \{1,2,\dots,B\}} m_{2+,b_0,b_1} \stackrel{\text{def}}{=} m_{2,b_0,b_1} = m_{3,b_0,b_1} = m_{4,b_0,b_1} = \dots$$

$$\mathbf{M}_{2+} \stackrel{\text{def}}{=} \mathbf{M}_2 = \mathbf{M}_3 = \mathbf{M}_4 = \dots$$

Migration matrices are then defined in the following way:

$$\forall_{q \in \{0,1,2+\}} \widehat{\mathbf{M}}_q \stackrel{\text{def}}{=} \begin{bmatrix} \widehat{m}_{q,1,1} & \cdots & \widehat{m}_{q,1,B} \\ \vdots & \ddots & \vdots \\ \widehat{m}_{q,B,1} & \cdots & \widehat{m}_{q,B,B} \end{bmatrix}$$

where each element \widehat{m}_{q,b_0,b_1} is estimated as:

$$\forall_{\substack{\tau \in \{0,1\} \\ b_0,b_1 \in \{1,2,\dots,B\}}} \widehat{m}_{\tau,b_0,b_1} := \frac{\sum_{c \in \{c: \bar{b}_{c,\tau+1} = b_1 \wedge \bar{b}_{c,\tau} = b_0 \wedge (c,\tau) \in W_M\}} \bar{L}_{c,\tau+1}}{\sum_{c \in \{c: \bar{b}_{c,\tau} = b_0 \wedge (c,\tau) \in W_M\}} \bar{L}_{c,\tau}}$$

$$\forall_{b_0,b_1 \in \{1,2,\dots,B\}} \widehat{m}_{2+,b_0,b_1} := \frac{\sum_{\tau \in \{2,3,\dots\}} \sum_{c \in \{c: \bar{b}_{c,\tau+1} = b_1 \wedge \bar{b}_{c,\tau} = b_0 \wedge (c,\tau) \in W_M\}} \bar{L}_{c,\tau+1}}{\sum_{\tau \in \{2,3,\dots\}} \sum_{c \in \{c: \bar{b}_{c,\tau} = b_0 \wedge (c,\tau) \in W_M\}} \bar{L}_{c,\tau}}$$

W_M denotes a set of duplets (c, τ) for which the τ -th modified customer quarter, as well as the next customer quarter (not necessarily the next modified customer quarter) is contained in the received dataset.³⁹

A4.1.4 Apply the decision rule

In our modelling, we assume that a loan is given to a given borrower only if that borrower does not have any previously declined loan by the same lender. The model assumes that, before each lending decision that could be taken, the firm performs an analysis of the loan's credit risk, measures it with a score⁴⁰ and ultimately accepts it if its score matches the firm's requirements.⁴¹ The model further simplifies that condition by assuming granularity of score bands. For each score band constructed, either all loans in that score band are accepted, or all are declined.

Let $\bar{a}_{c,\tau}$ denote an acceptance decision of customer c in the beginning of the τ -th modified customer quarter with 1 meaning accepted and 0 meaning declined. As the firms' decision depends directly on the modified customer quarter τ and on the score band $\bar{b}_{c,\tau}$ in that customer quarter, it can be represented in the following way:

$$\bar{a}_{c,\tau} \stackrel{\text{def}}{=} \begin{cases} 0 & \text{if } \tau > 0 \wedge \bar{a}_{c,\tau-1} = 0 \\ a_{\tau}(\bar{b}_{c,\tau}) & \text{otherwise} \end{cases}$$

where function $a_{\tau}(b)$ defines the firms' strategy of accepting loans considering modified customer quarter τ and score band b .

The firms' strategy of accepting loans is dependent on loan profitability and therefore on the cap scenario. The following Sections explain how the profitability is evaluated and how does it lead to the construction of lenders' strategy.

Loan Profitability

Let r_l denote realised profit (which can be negative) from the l -th loan, under the cap scenario being considered. Then, the sum of profit $\bar{r}_{c,\tau}$ from the c -th customer in the τ -th modified customer quarter is defined in the following way:

$$\bar{r}_{c,\tau} \stackrel{\text{def}}{=} \sum_{l \in \{l: c_l = c \wedge t_l = \tau\}} r_l$$

³⁹ τ -th modified customer quarter can be contained only partially if it starts before the beginning time window of the dataset.

⁴⁰ Lenders that do not use credit score directly still have some credit risk assessment processes. It is assumed that the score artificially constructed for them models effectiveness of such processes.

⁴¹ The model does not consider other criteria than the score. Theoretically, all relevant criteria should have been already included in the score. There may in theory be room for considering additional factors, but we did not take this approach.

The model considers profitability $\bar{\pi}_{c,\tau}$, i.e. profit in relation to principal⁴², therefore:

$$\bar{\pi}_{c,\tau} \stackrel{\text{def}}{=} \frac{\bar{r}_{c,\tau}}{\bar{p}_{c,\tau}}$$

In order to consider profitability in this way, the stochastic process described above is extended to the following form:

the triple $(\bar{L}_{c,\tau}, \bar{b}_{c,\tau}, \bar{\pi}_{c,\tau})$ constitutes realisations (for each customer c) of a stochastic process $(L_\tau, b_\tau, \pi_\tau)$

The above extension doesn't change the properties of the stochastic process as the distribution of π_τ is assumed to be a function of $q(\tau)$ and the realization of b_τ . In particular, it means that, conditional on keeping the same score band, the distribution of profitability is the same for each modified customer quarter after the first two quarters (0 and 1).

The model evaluates a short-term decision strategy under which loan should be granted if its expected profitability is non-negative. As the profitability depends only on the capped quarter and the score band in that quarter, so too does expected profitability. The estimation of expected profitability is denoted as $\hat{\pi}_{q,b}$ and is calculated in the following way:

$$\forall_{\substack{\tau \in \{0,1\} \\ b \in \{1,2,\dots,B\}}} \hat{\pi}_{\tau,b} := \frac{\sum_{c \in \{c: \bar{b}_{c,\tau} = b \wedge (c,\tau) \in W_R\}} \bar{r}_{c,\tau}}{\sum_{c \in \{c: \bar{b}_{c,\tau} = b \wedge (c,\tau) \in W_R\}} \bar{p}_{c,\tau}}$$

$$\forall_{b \in \{1,2,\dots,B\}} \hat{\pi}_{2+,b} := \frac{\sum_{\tau \in \{2,3,\dots\}} \sum_{c \in \{c: \bar{b}_{c,\tau} = b \wedge (c,\tau) \in W_R\}} \bar{r}_{c,\tau}}{\sum_{\tau \in \{2,3,\dots\}} \sum_{c \in \{c: \bar{b}_{c,\tau} = b \wedge (c,\tau) \in W_R\}} \bar{p}_{c,\tau}}$$

assuming that W_R denotes a set of duplets (c, τ) for which the τ -th modified customer quarter is contained in our dataset.

Therefore, the short-term decision strategy can be specified in the following way:

$$\forall_{\substack{\tau \in \mathbb{N} \\ b \in \{1,2,\dots,B\}}} a_\tau^{\text{Short}}(b) \stackrel{\text{def}}{=} \begin{cases} 1 & \text{if } \hat{\pi}_{q(\tau),b} \geq 0 \\ 0 & \text{if } \hat{\pi}_{q(\tau),b} < 0 \end{cases}$$

Customer profitability

We model firms' behaviour using an assessment of customer's lifetime profitability. Under this approach customers' ability to generate profits from a unit of credit has been considered quarter by quarter in order to explain why firms may accept losses on loans to first-time applicants.

⁴² It is worth stressing that this is the original principal and not the modified one.

The following properties are important for our approach:

- Customer lifetime profitability is dependent on the lending strategy of the firm (loans that are not granted generate neither profits nor losses).
- The scale invariance of L_τ together with volume independence of π_τ (on top of some potential, indirect dependence that could be conveyed by b_τ) guarantees that either *all* loans for a given modified customer quarter and score band in that quarter have non-negative expected profitability, or *none* do.
- The stationary property of the stochastic process (after the second modified customer quarter) allows us to conclude that the optimal (profit maximizing) lending strategy requires taking exactly the same decision for the same scoring band in modified customer quarter 2, as in all subsequent modified customer quarters. Therefore, the decision generating function $a_\tau(\bar{b}_{c,\tau})$ can be specified as $a_{q(\tau)}^{Long}(\bar{b}_{c,\tau})$. Furthermore, under any such decision rules, the expected profitability of a unit of lending is exactly the same for each modified customer quarter starting with modified customer quarter 2, if the initial score band remains the same.
- The decision rule $a_{2+}^{Long}(b)$ has to be evaluated before the decision rule $a_1^{Long}(b)$ as the customer profitability of the loans granted in modified customer quarter 1 depends on the decision rule $a_{2+}^{Long}(b)$, whereas the customer profitability of the loans granted after modified customer quarter 1 does not depend on the decision rule $a_1^{Long}(b)$. Similarly, the decision rule $a_1^{Long}(b)$ has to be evaluated before the decision rule $a_0^{Long}(b)$.

Impact of the lending strategy

Let the decision strategy $a_b^{Long}(b)$ be given. M_{2+} therefore represents the expected values of borrowing needs in the next modified customer quarter (after modified customer quarter 2), conditional on the score band in that quarter (in the respective column) for an unit of lending for each beginning score band (in the respective row). In order to obtain a modified migration matrix M_{2+}^* representing, instead of expected borrowing needs, the expected lending under a given decision rule $a_{2+}^{Long}(b)$, the following multiplication has to be applied:

$$M_{2+}^* \stackrel{\text{def}}{=} M_{2+} A_{2+}$$

Where A_{2+} is a $B \times B$ dimensional matrix having 0 values outside its diagonal defined in the following way:

$$\mathbf{A}_{2+} \stackrel{\text{def}}{=} \begin{bmatrix} \mathbf{a}_{2+}^{\text{Long}}(1) & \cdots & \mathbf{0} \\ \vdots & \ddots & \vdots \\ \mathbf{0} & \cdots & \mathbf{a}_{2+}^{\text{Long}}(B) \end{bmatrix}$$

Similarly, matrices M_1^* and M_0^* having corresponding interpretation but with respect to migration from modified customer quarter 1 and 0 (respectively) are defined as:⁴³

$$\mathbf{M}_1^* \stackrel{\text{def}}{=} \mathbf{M}_1 \mathbf{A}_{2+}$$

$$\mathbf{M}_0^* \stackrel{\text{def}}{=} \mathbf{M}_0 \mathbf{A}_1$$

Where A_1 is derived as:

$$\mathbf{A}_1 \stackrel{\text{def}}{=} \begin{bmatrix} \mathbf{a}_1^{\text{Long}}(1) & \cdots & \mathbf{0} \\ \vdots & \ddots & \vdots \\ \mathbf{0} & \cdots & \mathbf{a}_1^{\text{Long}}(B) \end{bmatrix}$$

Consequently, the modified estimates of migration matrices M_{2+} , M_1 and M_0 are defined respectively:

$$\widehat{\mathbf{M}}_{2+}^* \stackrel{\text{def}}{=} \widehat{\mathbf{M}}_{2+} \mathbf{A}_{2+}$$

$$\widehat{\mathbf{M}}_1^* \stackrel{\text{def}}{=} \widehat{\mathbf{M}}_1 \mathbf{A}_{2+}$$

$$\widehat{\mathbf{M}}_0^* \stackrel{\text{def}}{=} \widehat{\mathbf{M}}_0 \mathbf{A}_1$$

Expected customer profitability for capped quarter 2+

The next step is to calculate expected customer profitability $\theta_{q,b}$ for a unit of lending in capped quarter q for each beginning scoring band. Using vector notation of profitability variables:

$$\forall_{q \in \{0,1,2+\}} \boldsymbol{\theta}_q \stackrel{\text{def}}{=} \begin{bmatrix} \theta_{q,1} \\ \vdots \\ \theta_{q,B} \end{bmatrix}$$

$$\forall_{\tau \in \{0,1,2\}} \boldsymbol{\Pi}_{q(\tau)} \stackrel{\text{def}}{=} \begin{bmatrix} E(\pi_\tau | b_\tau = 1) \\ \vdots \\ E(\pi_\tau | b_\tau = B) \end{bmatrix}$$

$$\forall_{q \in \{0,1,2+\}} \widehat{\boldsymbol{\Pi}}_q \stackrel{\text{def}}{=} \begin{bmatrix} \widehat{\pi}_{q,1} \\ \vdots \\ \widehat{\pi}_{q,B} \end{bmatrix}$$

Assume a unit of lending exists in some modified customer quarter after quarter 1 and beginning score band b . The immediate, expected gain from that lending is $E(\pi_\tau | b_\tau = b)$. However, that unit of lending has the potential to transform into some further lending in the next modified customer quarter as described by the b -th row of migration matrix

⁴³ A_{2+} is applied to migration matrix M_1 as it refers to score bands after the migration (therefore to score bands of capped quarter 2+ rather than to score bands of capped quarter 1).

M_{2+}^* . Let $\mathbf{1}_b^T$ denote a horizontal vector of dimension B having 1 on its b -th coordinate and 0 on all other coordinates. The expected profit in that quarter, after discounting it with the discount rate df , can be calculated as:

$$profit_1 := df \mathbf{1}_b^T M_{2+}^* \Pi_{2+}$$

However, each score band to which it could have migrated to can produce additional lending in the following quarter. Therefore, the expected profit in the following quarter (after discounting) can be calculated as:

$$profit_2 := df^2 \mathbf{1}_b^T M_{2+}^* M_{2+}^* \Pi_{2+}$$

This reasoning could be repeated for each consecutive quarter, leading to the following discounted stream of revenue:

$$\theta_{2+,b} = \mathbf{1}_b^T \Pi_{2+} + df \mathbf{1}_b^T M_{2+}^* \Pi_{2+} + df^2 \mathbf{1}_b^T (M_{2+}^*)^2 \Pi_{2+} + \dots$$

Repeating the above reasoning for each coordinate of θ_{2+} , and reorganizing, we obtain:

$$\theta_{2+} = (\mathbf{I} + df M_{2+}^* + df^2 (M_{2+}^*)^2 + \dots) \Pi_{2+}$$

Then, assuming the infinite series $\mathbf{I} + df M_{2+}^* + df^2 (M_{2+}^*)^2 + \dots$ converges, the vector of expected customer profitability for capped quarter 2+ can be calculated as:

$$\theta_{2+} = (\mathbf{I} - df M_{2+}^*)^{-1} \Pi_{2+}$$

Therefore, the vector of estimates of expected customer profitability $\hat{\theta}_{2+}$ for capped quarter 2+ is calculated as:

$$\hat{\theta}_{2+} := (\mathbf{I} - df \hat{M}_{2+}^*)^{-1} \hat{\Pi}_{2+}$$

Decision rule for modified customer quarter 2+

The above formula has a hidden dependency on the decision rule $a_{2+}^{Long}(b)$ i.e. changing that decision rule even for one score band will impact expected customer profitability for all other score bands. In order to resolve this interdependency, we assumed that firms should first decline loans in lower score bands.

To implement this, the following algorithm was developed in order to determine the decision strategy $a_{2+}^{Long}(b)$:⁴⁴

- 1) start with the acceptance of all score bands;
- 2) evaluate estimates of expected profitability;

⁴⁴ It could happen that, after declining a new score band, an earlier declined score band becomes profitable (locally violating expected behaviour). However, we did not adjust our model to allow for this.

- 3) find the lowest score band with negative estimate of expected profitability that is accepted; and
- 4) if there is no such score band – finish the algorithm. If there is such band, set the decision for the corresponding score band to 'reject' and return to step 2).

After running that algorithm, the long-term decision strategy for capped quarter 2+ will satisfy:

$$\forall_{b \in \{1,2,\dots,B\}} a_{2+}^{Long}(b) = \begin{cases} 1 & \text{if } \mathbf{1}_b^T \hat{\boldsymbol{\theta}}_{2+} \geq 0 \\ 0 & \text{if } \mathbf{1}_b^T \hat{\boldsymbol{\theta}}_{2+} < 0 \end{cases}$$

Expected customer profitability and decision rule for capped quarters 0 and 1

Once the expected customer profitability for capped quarter 2+ is known, the expected profitability for modified customer quarter 1 can be evaluated as the sum of loan profitability for that quarter and discounted, expected customer profitability of future lending in modified customer quarter 2 (already calculated). Therefore:

$$\boldsymbol{\theta}_1 \stackrel{\text{def}}{=} \boldsymbol{\Pi}_1 + df \mathbf{M}_1^* \boldsymbol{\theta}_{2+}$$

The vector of estimates of expected customer profitability $\hat{\boldsymbol{\theta}}_1$ for modified customer quarter 1 is then calculated as:

$$\hat{\boldsymbol{\theta}}_1 \stackrel{\text{def}}{=} \hat{\boldsymbol{\Pi}}_1 + df \hat{\mathbf{M}}_1^* \hat{\boldsymbol{\theta}}_{2+}$$

And the long-term decision strategy for the modified customer quarter 1 can be specified as:

$$\forall_{b \in \{1,2,\dots,B\}} a_1^{Long}(b) \stackrel{\text{def}}{=} \begin{cases} 1 & \text{if } \mathbf{1}_b^T \hat{\boldsymbol{\theta}}_1 \geq 0 \\ 0 & \text{if } \mathbf{1}_b^T \hat{\boldsymbol{\theta}}_1 < 0 \end{cases}$$

The modified customer quarter 0 is evaluated in the similar way. Therefore:

$$\boldsymbol{\theta}_0 \stackrel{\text{def}}{=} \boldsymbol{\Pi}_0 + df \mathbf{M}_0^* \boldsymbol{\theta}_1$$

$$\hat{\boldsymbol{\theta}}_0 \stackrel{\text{def}}{=} \hat{\boldsymbol{\Pi}}_0 + df \hat{\mathbf{M}}_0^* \hat{\boldsymbol{\theta}}_1$$

$$\forall_{b \in \{1,2,\dots,B\}} a_0^{Long}(b) \stackrel{\text{def}}{=} \begin{cases} 1 & \text{if } \mathbf{1}_b^T \hat{\boldsymbol{\theta}}_0 \geq 0 \\ 0 & \text{if } \mathbf{1}_b^T \hat{\boldsymbol{\theta}}_0 < 0 \end{cases}$$

Appendix 2: Assumptions

In the course of developing our supply model, we have made a series of assumptions to streamline our modelling and to deal with issues arising from incomplete or inaccurate data. Each of these assumptions is described in the relevant part of the Technical Annex. These assumptions are also collated here for ease of reference.

Assumptions underpinning our modelling framework

- The relevant counterfactual for the introduction of a cap on the cost of HCSTC borrowing is the actual HCSTC lending in 2012 and 2013 adjusted for changes in rules governing HCSTC lending that are introduced in July 2014.
- The eight firms that we have modelled form a representative sample of HCSTC lenders, and it is reasonable to extrapolate from these firms to the whole of the HCSTC market.

Assumptions underpinning our modelling of HCSTC firms' behaviour

- Firms seek to maximise the lifetime profit generated by each customer. This means that firms are willing to accept losses on some customers' initial loans with the expectation of being able to earn sufficient profits on these customers' subsequent loans to offset the losses.
- In making lending decisions, a firm evaluates the expected revenues generated over the lifetime of the customer against its expected costs to serve the customer over the customer's lifetime.

Assumptions underpinning customer behaviour

- Customer behaviour is not expected to change following the introduction of the cap. This means that while the same total amount repaid by the customer could support a higher level of borrowing following the introduction of a cap, customers are not expected to borrow more.

Assumptions underpinning the creation of counterfactual

- The rules limiting the use of CPAs in collecting repayments and the number of times a loan can be refinanced have the effect of reducing revenue and increasing costs for loans for which repayments were collected with more than two CPAs in 2012 and 2013. This means that profitability of these loans is reduced, which in turn means that some of these loans would not have been granted had the rules been in place.

- The magnitude of these effects is expected to be similar across firms, since all firms are expected to be able to adjust their operations in similar ways to mitigate against the effect of the rules.
- The loans that would not have been issued had the rules been in force can be identified using the same methodology that is used to identify loans that are not issued following the introduction of the cap.

Assumptions on the first-order effects of the cap on individual loans

- The loan-level revenue a lender earns from a customer from an individual loan following the introduction of the cap is the lowest of:
 - the revenue before the cap; or
 - the maximum allowable revenue following the introduction of a cap.

Assumptions underpinning our modelling of HCSTC firms' lending decisions

- Lenders treat customers with similar observed characteristics in the same way.
- Customers can be grouped together based on their probability of default.
- For lenders that provided their internal credit scores that measure customers' probability of default these scores are the most appropriate mechanism for grouping customers.
- For lenders that did not provide us with their internal credit scores, we simulated the lender's lending decisions by constructing artificial credit scores, and used these scores for grouping customers.
- Firms will refuse loans to customers strictly in the order of their expected lifetime profitability, starting with the customers with lowest levels of expected lifetime profitability. This is consistent with the assumption of firms' seeking to maximise the profit earned from a customer over the lifetime of the customer.

Assumptions underpinning our modelling of HCSTC firms' cost base

- Costs that the firms allocated to individual loans are strictly scalable with the value and volume of lending, and the unit costs will not vary with scale. In other words, we assume that the costs lenders have allocated to individual loans will not change following the introduction of a cap.
- The cost to lender of the funds lent out is 10.3% per year. This is in line with the CMA's estimate of the efficient cost of capital for payday lenders.

Assumptions underpinning our assessment of firm exit

- Analysis based on an assessment of the firms' contribution from HCSTC loans towards overheads, under different cap scenarios, for the eight firms in the supply model.
- Contribution is calculated as revenue less direct costs, and varies between cap levels.
- We use the contribution amount that includes baseline adjustments for new CPA and refinancing rules.
- Overheads are taken from each firm's management accounts and are not varied across cap levels, nor adjusted to account for any changes caused by baseline adjustments. We use the total of 2012 and 2013 overheads to compare with contribution, as contribution is calculated over a two-year period.
- Direct costs used to calculate loan contributions include a cost of capital related to lending. For the purposes of exit modelling, we do not include a cost of capital related to other fixed assets that make up firm overheads.
- Three levels of overhead calculated:
 - **Total** – current overheads, no adjustments
 - **Fixed-only** – current overheads less a 20% efficiency saving across all overhead cost categories (excluding cost of debt and acquisition cost, which some firms include in overheads).
 - **Variable** – current overheads reduced to account for the reduction in lending volume and value implied by the cap, using each firm's assumptions on the proportion of overhead costs that would vary with volume of lending.
- Firms that continue to cover overheads after the cap will remain in the market.
- Firms whose contributions do not cover overheads are considered potentially at risk of exit. We apply a buffer before classifying a firm as 'at risk' of exit. We calculate the difference between contribution and overheads as the percentage uplift in contribution that would be needed to meet overheads. A cut-off is applied; if the uplift needed is more than this cut-off then the firm is judged 'at risk', if the uplift is less than this cut-off then it is judged not at risk. Three different uplifts are calculated – one to meet total overheads, one

to meet fixed overheads, and one to meet variable overheads. These cut-offs are set at 50% (vs. total overheads) and 20% (vs. fixed and variable overheads). Sensitivity analysis on the level of these cut-offs shows the results have margin of error ± 1 .

- We consider firms remaining to be those that are not classified as 'at risk' of exit.

Assumptions relating to missing or incomplete data

- When a data item was missing in the loan-level transactional data submitted by firms, we:
 - calculated the value based on other data items relating to the same loan. For example, some firms did not provide data on total revenues relating to a loan, but provided a breakdown of the revenue to its component parts;
 - imputed the value based on other similar loans advanced by the firm. This was relevant for some observations where data on the actual duration of the loan was missing; and
 - deleted the observation in the small minority of cases where the necessary information could not be calculated or imputed.

Technical Annex 2: Impact of the cap on HCSTC competition

1 Introduction

To assess the impact of different cap levels and cap structures, there are three key analytical questions to address:

- What happens to firms and their lending decisions as a result of the cap?
- What options are there for consumers who no longer have access to HCSTC?
- Are these consumers better or worse off as a result?

Questions 2 and 3 are substantially covered in Technical Annex 3: Demand analysis. Question 1 is in part covered in Technical Annex 1: Supply analysis. Both of these technical annexes present our view of the impacts of different caps in the absence of responses from consumers or firms to the cap.

In practice, the answers to these questions depend not only on the results of our static analysis, but also on the magnitude of responses of both consumers and firms. We expect firms to make changes to their business model to mitigate the impacts of the cap (to adapt to the cap), and consumers may respond to the cap in a number of ways, including to price changes, and to any other changes to product offerings brought about by the cap. It is therefore important to consider these responses, and to assess the extent to which the identified impacts of the cap are sensitive to any changes in behaviour.

This Technical Annex presents the analysis we have undertaken in relation to the relevant behavioural responses. We consider firm responses to the cap, and also set out our assessment of the impact of the cap on HCSTC competition, accounting for these responses. We describe our approach, the data and evidence we have used, and present relevant findings. Ultimately, we present our view of HCSTC competition following implementation of the cap in January 2015.

The overall rationale for making the draft rules in relation to the cap is to secure an appropriate degree of protection for borrowers against excessive charges. In carrying out our general functions, including making rules, we have a competition duty to promote effective competition in the interests of consumers. To the extent compatible with our consumer protection duty and objective here, we must act in a way to promote the

competition duty. The competition analysis presented here is an important part of our analysis, and was considered in detail when designing the cap.

We have built the competition duty analysis into the design of the price cap rules, as described in this Technical Annex and, in particular, in Chapter 5 of the consultation paper.

2 Methodology

Scope of competition analysis

The scope of this competition analysis is to focus on material changes from market participants as a result of FCA regulation, the price cap rules, or market trends that may change the nature of competition in the HCSTC market. On this basis, we focus on the following:

- baseline adjustments to account for regulatory changes;
- firms' responses to the cap;
- consumer responses to the cap; and
- substitution to and from other credit markets, as a result of the cap.

We describe each of these in turn.

Static data adjustments

As described in Technical Annex 1, we collected detailed data from eleven firms, covering loans written in 2012 and 2013. The starting point for the competition analysis presented in this Technical Annex is a view of what the HCSTC market will look like in January 2015. To bridge from the data provided, to the market in January 2015, we make a number of data adjustments, including reflecting the impact of regulatory changes that will be implemented prior to 2015. This is explained in detail in Technical Annex 1.

Where we rely on CMA analysis, we summarise and refer to relevant material

The CMA has conducted competition analysis as part of their ongoing investigation into payday lending.¹ We have been in contact with the CMA throughout our work, and the CMA has provided information under the relevant statutory gateway for confidential information under the Enterprise Act 2002, in addition to further guidance where appropriate. Where we considered that areas of analysis would replicate analysis undertaken by the CMA without adding significant additional insight or value, we have not replicated this work. In these instances we use the CMAs findings as relevant evidence. We have relied on this and other supplementary information gathered as part of our work when reaching our own conclusions. Where this is the case we have clearly noted the source material used.

Nevertheless, all findings and conclusions presented in this Technical Annex are our own.

¹ <https://www.gov.uk/cma-cases/payday-lending-market-investigation>

We do not expect significant behavioural responses from HCSTC consumers

We consider the extent to which consumers will respond to the cap in detail in Technical Annex 3. Evidence suggests any consumer response to changes in prices brought about by the cap will be limited, consistent with previously published research. As set out below, based on the evidence received from firms we do not expect firms to target new groups of customers, following the cap. While in theory lower prices following the cap could attract new customers to the market, we do not expect this effect to be significant. As a result, we do not expect a material inflow of new customers to the HCSTC market as a direct result of the imposition of the cap.

Therefore, while consumer behavioural responses could in theory affect HCSTC competition, after considering the available evidence we do not expect consumer responses to have a material impact on competition.

For this reason, our competition analysis focuses on the responses of firms.

We expect limited substitution between HCSTC and non-HCSTC markets

In principle applying a cap in the HCSTC market could have impacts on other substitute markets, and on suppliers and consumers in those markets. In practice, after considering the available evidence and CMA analysis, we expect there to be limited substitution between HCSTC and other credit markets. The extent to which HCSTC customers switch between HCSTC and other credit markets is explored in more detail in Technical Annex 3.

For this reason, our competition analysis focuses on the responses of HCSTC firms to the cap.

3 Approach

To assess how the cap will affect firms, we use detailed loan-level data and management accounts submitted to us by firms. This forms the basis of our static analysis, and is an input to the competition analysis set out in this Technical Annex. To assess how firms will respond to the cap, we use a number of additional information sources:

- firm's responses to a market questionnaire;
- comparison of static model outputs to firms' management accounts; and
- our own research and economic analysis.

These additional information sources are described in further detail below. To assess the impact of firms' responses on competition, we also used relevant CMA analysis.

Market questionnaire

HCSTC firms must apply for authorisation between 1 December 2014 and 28 February 2015, and will be subject to detailed scrutiny, including against our threshold conditions. Our best estimate of the number of firms currently offering HCSTC (not necessarily as their core business) or have plans to do so in the near future is around 400, many of which are franchisees.

We sent a questionnaire to 151 HCSTC firms to ask them about their ability to change different elements of their business model and working practices in response to the cap, and how feasible any changes would be. We received 92 responses from firms active in the HCSTC market.

Of these 92 firms, ten small firms (with HCSTC revenue <£0.5 million) told us that they were not planning to remain active in January 2015. We do not expect a significant volume of entry between now and January 2015. Based on responses to the questionnaire, around one third formally reported they are uncertain whether they will remain active following the cap. In practice, we expect that all firms will consider their future operation in the HCSTC market once the details of the cap are announced.

The questionnaire covered a number of areas, including potential changes to:

- target customer groups, acquisition channels, and marketing strategies;
- relationships with lead generators;
- credit assessment processes and relationship with credit reference agencies (CRAs);
- risk tolerances and credit lending thresholds;
- prices;

- products offered;
- non-price factors including service levels;
- innovation; and
- arrears collection and debt recovery processes.

A summary of responses is included as an Appendix to this Technical Annex. The large majority of firms told us that their response to the cap would be dependent on the level and structure of the cap (which was at that point unknown to them). It would be easy for firms to change their pricing structures, and many firms were already launching new products. Beyond these changes, it would be difficult to amend other aspects of the business model e.g. debt collection practices, acquisition channels used etc.

On this basis, beyond price and product changes, we infer that firms' main responses to the cap will be to change credit lending thresholds in response to the reduced revenues allowed under the cap. A large number of firms will be at risk of exit following introduction of the cap.

Static model outputs and firms' submitted management accounts

The static model shows the impact the cap would have on each firm, in the absence of any response from them. We use this to assess the impact on each firm's loan portfolio, which differs significantly by firm.

These static outputs do not take into account overheads, which firms must meet to remain operational. Firms submitted detailed management account information to us that shows the levels of overheads associated with their business. We later use this to assess the impact of the cap on each firm's overall profitability as part of our exit analysis. In our exit analysis, we assess how and in what way firms would be affected by the cap, and then assess how much firms need to alter their business in order to remain in the market. This is explained in detail in Technical Annex 1.

FCA research and economic analysis

Finally, throughout our work we gathered additional evidence, for example by conducting our own desk research and through discussions with the CMA and other relevant experts in the UK and in other jurisdictions.

As part of their response to our market survey, firms told us the responses they expected to make as a result of the cap. When judging whether these reported responses were credible, we checked whether the reported responses had been made in other relevant cases (e.g. where price caps had been introduced in other jurisdictions, to the extent cross-country

comparisons were valid), and whether responses appeared consistent with existing industry trends.

4 View of HCSTC competition: January 2015

As part of its ongoing investigation into payday lending, the CMA has set out in detail its view of how competition works in the HCSTC market. Our own work has provided us with additional information, which is relevant for assessing competition in the HCSTC market and we refer to both our analysis and that of the CMA.

In our assessment of competition from January 2015, we are projecting forward a counterfactual against which to assess the impact of the cap. January 2015 is less than one year away. While forthcoming regulatory changes are expected to have an impact on the market, we largely expect the HCSTC market to work in a similar way to at present. This is explained in detail below.

HCSTC business models and supply chain

HCSTC firms form part of a wider HCSTC supply chain of firms providing a number of connected associated services. All HCSTC firms must undertake the following basic activities in order to operate in the market:

- acquire loan applicants;
- collect relevant customer information and decide whether to offer each applicant a loan. Decisions made on the basis of incomplete information i.e. at the point of the loan decision, firms do not know whether the applicant would default if granted the loan, and must make a judgement about this. There is particularly uncertainty for first-time applicants (first time for the particular firm);
- transfer funds to successful loan applicants; and
- recover payments from borrowers, including the principal lent, plus additional fees and charges levied.

There are a number of different approaches used to conduct these functions. HCSTC firms can acquire potential customers through a range of channels, and may advertise directly to customers, and/or use third party lead generators to drive applicant volume. Some firms operate online, and others operate through the high street using their retail premises.

All firms have an IT platform to record loans made, and the majority of firms reach their lending decision through use of an IT platform. These platforms are available commercially. In addition to collecting information directly from applicants, the majority of firms use third party CRA information to some degree to inform their lending decisions, and many have developed bespoke internal credit scores using supplementary information collected from applicants.

HCSTC customers must have a UK bank account to access an HCSTC loan. Online firms transfer funds directly to user bank accounts, whereas high street loans may be provided by cash or by cheque (a bank account is still required). Payment collections are typically attempted by Continuous Payment Authority (CPA) in the first instance, with a mixture of CPA and manual collection strategies used thereafter e.g. contacting customers through telephony, email, SMS etc. to request repayment.

Firms have different approaches to collection and debt recovery. Some firms keep these activities entirely in-house, while some use third party collection agencies. Some firms choose to sell bad debt to external parties where amounts are outstanding for long periods.

HCSTC business models in 2015

As described, a variety of different HCSTC firm business models currently exist. We observe a number of factors in the HCSTC market that may have an influence on future business models. First, we observe a number of trends in the market. As the market matures, we observe more loans being written to repeat customers. We have also started to see firms offering longer-term products, with a general trend towards loans of more than one month duration, and away from loan durations of less than one month.

Second, we already observe the impacts of recent regulatory changes. As set out in CP10/13 and Technical Annex 1, we previously announced a number of rules governing the provision of HCSTC loans in February 2014. These rules came into force on 1st July 2014, and:

- limit the number of rollovers on a loan to a maximum of two; and
- limit the number of CPA repayment attempts to two, and ban partial CPA attempts.

These rules are expected to have a significant effect on HCSTC firms, before the cap is implemented, and we already see changes in the data submitted to us.

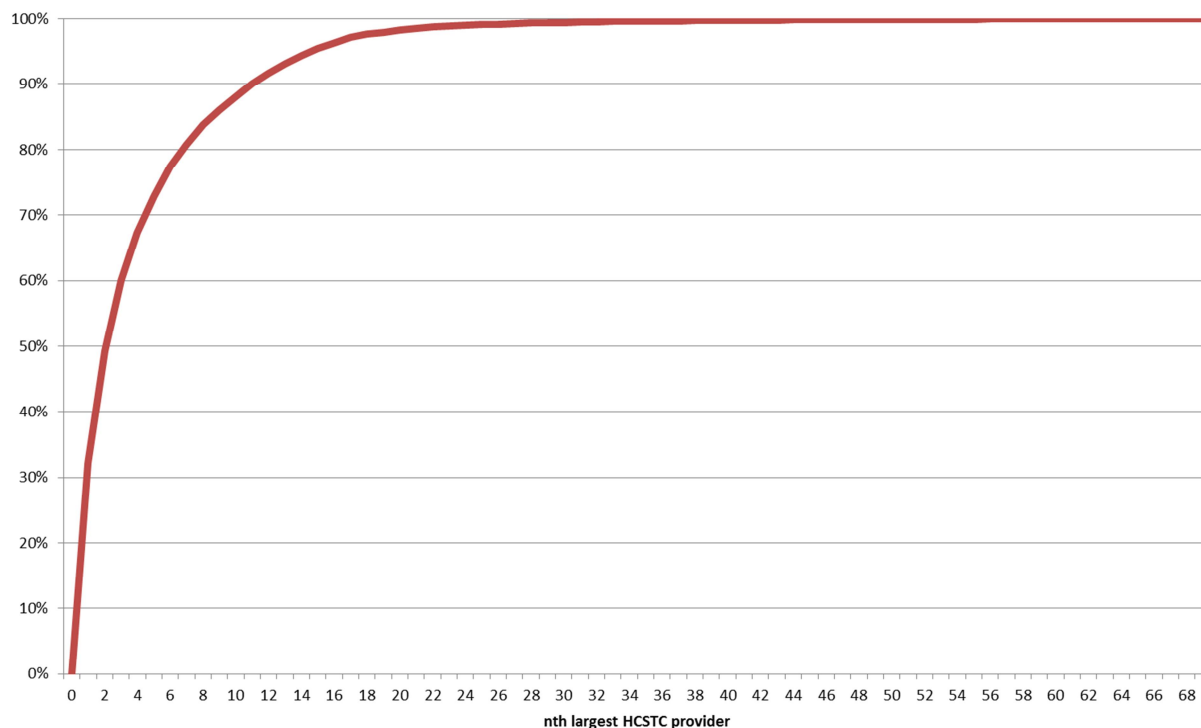
While these changes affect firms, we do not consider that any of these changes materially affect the business models that firms use to operate their business. We expect all of the different models we see today to continue to exist in January 2015, at the point when the cap is implemented (less than one year away). The baseline including these rules in force from 1st July 2014 is the basis from which we assess the impact of the cap.

It is possible that some firms may choose to exit the HCSTC market, or otherwise change their business models after the publication of these draft rules, but prior to implementation of the cap i.e. between now and 2015. While this is a possibility, we have not considered this in detail for the purposes of setting the baseline against which to assess the impact of the cap. Rather, our analysis would consider these firms to exit or make other changes post-cap.

HCSTC supply

The HCSTC market is concentrated.² Our data suggests that in 2013, the largest ten firms collectively represent around 90% of total revenues.³

Figure 1: cumulative market share (by revenue, 2013)



Source: FCA calculations based on data submitted by HCSTC firms

Online lending in 2013 was larger in both volume and revenue terms, compared to the high street. Of the total market, online revenues represented 83% of total HCSTC revenues. The CMA investigation contained information from 2008-2012 inclusive and our analysis is consistent with the CMA's findings.

With regards to the profitability of HCSTC firms, the CMA observed that:⁴

"Based on our analysis in 2012 the adjusted operating margin was around 20 per cent for the major payday lenders with online lending substantially more profitable than high street lending. We estimate that the adjusted operating margin delivered by online lenders was 24 per cent, with high street lenders achieving an adjusted operating margin of...zero per cent excluding one high street lender which was excluded due to incomplete cost information.

² In 2013, the market had a HHI of over 1,500.

³ Of the 90 firms that responded to our survey, 70 provided usable accounting data, from which our view of the market is constructed. The 10 firms that did not provide data are small firms, and we do not believe their omission from this analysis affects the conclusions drawn.

⁴ <https://www.gov.uk/cma-cases/payday-lending-market-investigation#working-papers>

Our analysis indicates a wide range of operating margins among the other high street lenders with two high street lenders generating significantly negative operating margins in 2012.”

The information provided to us, including management accounts is consistent with this view. A small number of online firms made significant positive returns in 2012 and 2013, while the majority of firms made low returns. Online firms made higher returns compared to high street firms, and the high street overall (i.e. the HCSTC elements of high street businesses) did not appear to be profitable, based on the management accounts provided to us.⁵

Recent changes to HCSTC supply

We observe a number of changes to HCSTC suppliers that will affect our view of the market in 2015. Dollar Financial has recently entered into an agreement to be acquired by Lone Star Funds,⁶ but continues to operate. Compared to the data the CMA used in their analysis, a number of firms have since chosen to leave the market. Most notably, Cheque Centres have ceased operating both their online and high street HCSTC businesses, both of which had significant market shares.

Further, in response to our market questionnaire, 10 smaller firms indicated they plan to exit the HCSTC market before January 2015, and a further 23 report they are uncertain. None of the largest 35 firms (representing over 99% of the market by revenue in 2013) indicated they were planning to leave, although three told us they were uncertain, and were waiting to see the impact of the cap.

In addition, our new rules on rollovers and CPAs came into force on 1 July 2014 which will have a significant impact on the market ahead of January 2015.

We previously estimated the impact that these rules would have on the HCSTC market.⁷ As part of our analytical work in relation to the price cap, we have gathered detailed data for 2012 and 2013, a period in which some firms have already started to adjust to the new limits. Firms have also provided us with an update of how they expect the rules to affect their business. On this basis, we have made adjustments to the data used to assess the impact of the cap; we have made a number of baseline adjustments, which are discussed in detail in Technical Annex 1.

⁵ HCSTC is one of a range of products and services offered through high street stores, and overhead costs must be allocated accordingly. Our approach to cost allocation is described in detail below.

⁶ <http://ir.dfqglobalcorp.com/phoenix.zhtml?c=177357&p=irol-newsArticle&ID=1914992&highlight=>

⁷ <http://www.fca.org.uk/static/documents/policy-statements/ps14-03.pdf>

HCSTC supply in 2015 (prior to implementation of the cap)

On the basis of the information provided to us, we expect HCSTC supply in January 2015 to look similar to that described for 2013 above. We anticipate the market will remain concentrated, with online remaining the dominant channel of distribution.

We further anticipate that a number of active firms may choose to exit the market prior to January 2015. However, none of the largest 35 firms representing over 99% of the market by revenue have indicated they will leave, and on this basis we think HCSTC supply will look similar to 2013.

2015 market definition (prior to implementation of the cap)

The CMA established a definition of the HCSTC market relevant to its assessment of competition as part of its ongoing investigation. Broadly, this states that:

- there is a single, national HCSTC market, incorporating online and the high street; and
- firms of other forms of credit provide little competitive constraint on HCSTC firms, and there is limited substitution between HCSTC and other credit products.

It was not necessary to define separate markets for different types of products falling within the HCSTC market.

We collected evidence through conversations with firms, and analysed the responses to our market questionnaire. This evidence was consistent with the CMA's findings that online and the high street form part of the same market, based in part on evidence that more than half of all high street customers have either used or have considered using an online firm.⁸ We consider that a sufficient number of customers can switch easily, and consequently that firms operating in each distribution channel exert competitive pressure on one another i.e. that high street and online form part of a single, national market.

On this basis, the additional evidence we have collected as part of our investigation leads us to agree with the CMA's market definition.

2015 customer demand

The CMA's findings suggest that HCSTC customers are not significantly sensitive with respect to charges applied after the repayment date. With respect to prices charged up to the repayment date, information is available to consumers, but there are concerns over the ability of customers to use this information to undertake price comparisons:

"Despite information on headline rates generally being available on lenders' websites or in the shops of high-street lenders, customers' ability to use this information to identify the best-value payday loan is impeded by the complexity associated with

⁸ https://assets.digital.cabinet-office.gov.uk/media/5397ef3c40f0b6101d000003/Summary_of_provisional_findings_report.pdf

making effective price comparisons given variation in product specifications and pricing structures across lenders, and the limited usefulness of the annual percentage rate in facilitating comparisons between payday loans. Existing price comparison websites, which might otherwise help customers compare loans, suffer from a number of limitations and are infrequently used.

Customer demand is particularly insensitive to fees and charges incurred if customers do not repay their loan in full on time. Customers tend to be less aware of these potential costs of borrowing than they are of the headline interest rate when choosing a payday loan provider. This is in part because over-confidence about their ability to repay the loan on time can cause some customers to pay only limited attention to these costs when taking out their loan. Even where customers seek to anticipate the costs associated with late repayment, the information generally provided about such costs is significantly less complete, less easy to understand and/or less prominent than information on headline rates. It can therefore be difficult for customers to estimate, and so make effective comparisons about, the likely cost of borrowing if they do not repay their loan in full on time.”⁹

The CMA also find a very limited degree of shopping around:

“Our customer survey indicated that more than half of all payday loan customers do not shop around at all prior to taking out a loan. High-street customers are particularly unlikely to compare different lenders’ products before taking out a loan. Where customers do shop around prior to taking out their loan, they most commonly report doing so using information on lenders’ websites.”¹⁰

Rather than compete on price, the CMA find that competition is typically focussed on non-price factors:

“... lenders have on a number of occasions introduced new products or made changes/innovations to their products in the period since 2008. On many occasions this appears to have been done with the aim of ameliorating their offer and differentiating themselves from rivals.”¹¹

The nature of 2015 HCSTC competition

For the reasons set out above, for the purposes of our analysis we consider HCSTC consumers to be relatively insensitive to price, and we consider that the extent to which firms compete on prices is limited. We do not expect this to change by the point the cap is introduced in 2015: we expect that competition will continue to be focussed on non-price elements.

We are aware that the CMA have proposed a number of remedies to improve price competition, including the creation of an independent price comparison website.¹² However,

⁹ Ibid

¹⁰ Ibid

¹¹ https://assets.digital.cabinet-office.gov.uk/media/5329df7eed915d0e5d00032f/140131_competition_in_product_innovation.pdf

¹² <https://www.gov.uk/government/news/payday-borrowers-paying-the-price-for-lack-of-competition>

any remedies will not be in place by January 2015, and will not have had sufficient time to impact the degree of price competition we see today.

Innovation in the HCSTC market has to date centred around speed of transmission of funds, incremental improvements to firms' credit scoring models, and increased use of mobile telephony as an acquisition channel. We expect research activity and innovations to continue to be centred on these elements of the HCSTC product.

Absent a price cap, we expect levels of profitability in the market would have fallen in 2015, compared to levels seen in recent years, following regulatory interventions such as changes to CPAs and rollovers. However, as set out above we do not expect this to materially affect the supply of HCSTC: while we accept a number of firms may exit the market, firms representing over 99% of the market by revenue have indicated they will be operating in January 2015 (albeit before the details of the price cap had been announced).

5 Firm responses to the cap

Compliance with the cap

The cap applies to all products falling within our definition of HCSTC. When considering the impact of the cap on the HCSTC market, we have based our analysis on the assumption that firms are compliant with the cap.

The rules have been drafted with potential for avoidance in mind, for example, including within the caps charges made by certain credit brokers and for ancillary services. The definition of charges used is very wide, as is the definition of HCSTC. While we are aware that firms may design products to seek to avoid the HCSTC definition at present we think the definition is appropriate. We discuss this issue further in Chapter 6 of the consultation paper.

While successful cap avoidance would have a potentially significant impact on the market, we do not expect such avoidance activity to take place to a significant extent. In our judgement the cap will act effectively within our powers, and we have made our design decisions on this basis.

Static impact of the cap

The cap will set a limit on the total cost of credit that can be recovered from a HCSTC loan:

- a total cost cap of 100% of the principal applying to all interest fees and charges;
- a cap on all interest and fees charged when paying back on time and when refinancing of 0.8% per day; and
- a default cap of on charges payable on default of £15, and interest charged on the amount of credit unpaid at the initial rate on principal (0.8% per day).

We considered a range of different levels of cap, both to assess the impact of the caps on firms and customers and also to assess the impact on competition of the different levels and structure. Table 1 below sets out the impacts on HCSTC firms of different cap levels, according to our static supply model:

Table 1: Static supply model impacts

Initial cap	Change in revenue	Change in contribution	Change in value of loans	Change in number of firm customers
0.4%	-75%	-78%	-41%	-57%
0.5%	-65%	-69%	-29%	-45%
0.6%	-56%	-60%	-21%	-34%
0.7%	-49%	-51%	-15%	-27%
0.8%	-42%	-43%	-11%	-21%
0.9%	-36%	-35%	-8%	-17%
1.0%	-31%	-28%	-6%	-13%

Source: FCA supply side model static analysis; eight firms (six online, two high street), calculated against FCA-adjusted baseline, results for different initial cap levels with 100% total cost cap and £15 default cap.

These are the static impacts that the cap would have had on firms’ 2012 and 2013 loan books. As described in detail in Technical Annex 1, these have been estimated by assuming firms’ operational processes would not change in response to the cap. Instead, firms’ response to the cap would be limited to raising lending thresholds, and tightening lending criteria i.e. firms would reduce the number of loans granted, on the basis that those loans would no longer be profitable post-cap.

Firm exit

Building from the supply model analysis, we also considered the point at which firms would decide to exit the HCSTC market in response to lower revenues. The static analysis estimates contributions per loan ¹³ (based on revenues and costs directly attributable to individual loans) under different caps. Broadly, the supply model estimates that loans would continue to be granted where loan contributions remain positive.

At the firm-level, there are a series of further overhead costs that firms must cover in order to remain profitable. Again, as set out in detail in Technical Annex 1, we compare loan contributions to the overheads provided to us by firms to assess whether firms would be at risk of exit from the market. We then extrapolate results from the eight modelled firms (representing over 80% of the market) to all other firms in the market.

On this basis, because our analysis suggests that a number of online and high street firms are at risk of exit at cap levels at 1% or less, we assume all small and medium firms would also be at risk of exit for caps of 1% or less. Initial cost caps lower than 0.8% risk leaving only one firm in the market, or closing down the HCSTC market.

¹³ Contributions defined as loan revenues collected, less costs allocated to specific loans. Firms’ approach to cost allocation differs, and we have used the allocations provided to us by firms. Further detail can be found in Technical Annex 1.

If the initial price cap were set at 1%, our modelling suggests all high street suppliers would be at risk of exit.

Table 2: Static exit model impacts

Cap level	Firms at risk of exit, split by size ⁶			Total number of firms remaining (Online, HS) (Margin of error ± 1)
	Firms that provided detailed usable cost and revenue data 83% of market (Margin of error ± 1)	Other medium firms covered in market questionnaire 16% of market	Other small firms covered in market questionnaire 1% of market	
0.4%	7 - 8	100%	100%	0 - 1 O, 0 HS
0.5%	7	100%	100%	1 O, 0 HS
0.6%	6	100%	100%	2 O, 0 HS
0.7%	5 - 6	100%	100%	2 - 3 O, 0 HS
0.8%	5	100%	100%	3 O, 0 HS
0.9%	5	100%	100%	3 O, 0 HS
1.0%	4 - 5	100%	100%	3 O, 0 - 1 HS

Source: FCA supply side model static analysis; eight firms (six online, two high street), calculated against FCA-adjusted baseline, results for different initial cap levels with 100% total cost cap and £15 default cap.

Importantly, where our analysis suggests firms may be at risk of exit, whether firms will in fact exit in practice is uncertain. There are a number of reasons why firms may choose to remain in the market, even where our analysis suggests contribution levels are insufficient to cover overheads, as reported to us. For example, if HCSTC loans are provided alongside complementary products and services, which is especially relevant to high street HCSTC firms,¹⁴ firms may still have an incentive to continue providing HCSTC loans at a loss, if this helps to drive revenues in other related parts of the wider business.

Expected firm responses to the cap

This static analysis does not address firms' responses to the cap. In reality, we can reasonably expect a range of offsetting responses from firms, to minimise the impact of the cap. The degree to which any mitigation activity by firms would successfully offset the impacts of the cap is uncertain, and we have sought to assess the magnitude of the changes that would be required to materially affect the static results.

¹⁴ For example, high street firms may also offer buy-back, pawnbroking, cheque cashing, and other related services.

As set out above, we considered a large number of potential responses that firms could make following the implementation of the cap, and we explored these in depth with existing firms through our market questionnaire. There are also a number of existing industry trends that we observe and which may influence the extent to which firms are able to (a) absorb any reductions in revenues and contributions as a consequence of the cap; and (b) respond to the cap by changing their business models and operating practices.

Based on the evidence collected, the feedback we received from firms, and our own analysis, we considered four behavioural responses in detail:

- changes to pricing, to move some prices up to the level of the cap (our data indicates some loan revenues are below the theoretical maximum allowable i.e. 100% of principal for every loan granted);
- changes to loan book characteristics:
 - a. fewer loans to new customers; and
 - b. changes to loan durations;
- changes to acquisition costs; and
- customers switching to remaining firms.

We also assessed the impact of increasing loan volumes for each firm.

The main focus of our analysis was whether changes to these characteristics would be sufficient to change the cap level at which firms would be at risk of exit. These are discussed in turn.

Pricing to the cap

Firm responses indicate that four of the eleven firms that submitted detailed data to us have made changes to prices (interest rates and other charges) in the two years prior to our market questionnaire. These changes include both increases and reductions in prices. Further, six medium-sized firms in our sample have made changes to headline interest rates in the same period, again covering price increases and reductions. All firms in our sample said they expected to change prices following the introduction of the price cap. Further details of firms' responses are provided in Appendix 1 to this Annex.

All firms will need to change their prices following the cap, and many firms will need to change their pricing structures. The incremental cost to dynamically adjusting pricing structures in response to the cap is therefore expected to be low.

Evidence suggests that consumers are relatively insensitive to price, and that price competition is limited. Therefore, when considering pricing responses, while firms will

consider expected customer's reactions to changes in price, they would not expect price changes to lead to significant changes in the volumes of loan applications received.

To model the impact of a price response following the cap, we modelled a scenario in which all firms charge the maximum allowable revenue under the cap, for every loan. Our data indicates that there are a number of loans in the market where revenues are lower than this theoretical maximum, and so such a response would increase the revenue firms are able to achieve, relative to the static impacts shown. Equivalently, it would reduce average savings per customer, increase the price some customers pay, and increase the number of loans granted.

There are two reasons to treat the results of this scenario with caution, and which explain why 'pricing to the cap' represents a maximum possible pricing response. First, to the extent that firms have chosen to set lower prices before the cap, it is not clear why this would change post cap. The scenario implies all prices in the market converge to the cap level, whereas in practice we might expect firms with low prices to be subject to further downward pressure following the cap, to maintain current price differentials with other firms in the market.

Second, in practice firms will struggle to achieve the revenue increases implied under this scenario. Even for the same product with the same firm, we see a range of revenues collected on loans currently. This suggests that while two loans may be taken out according to the same pricing structure, it does not follow that the same revenue will be earned on each. Firms will have an element of discretion available to them, and customers too will have some influence over the charges they ultimately pay. We do not expect that to change following the cap.

Finally, as part of their investigation into payday lending, the CMA plan to introduce remedies to encourage price competition. To the extent these are introduced and are effective, this too will limit the potential for all firms to price at the maximum allowable under the cap.

The following table shows the firm exit analysis results for the price to the cap scenario, compared to the static results.

Table 3: Price to the cap: impact on firms' risk of exit

	Number of firms remaining – online and high street (margin of error ± 1)	
Initial cap level	Static results	Price to the cap scenario
0.4%	0 - 1 O, 0 HS	1 O, 0 HS
0.5%	1 O, 0 HS	2 O, 0 HS
0.6%	2 O, 0 HS	2 O, 0 HS
0.7%	2 - 3 O, 0 HS	2 - 3 O, 0 HS
0.8%	3 O, 0 HS	3 O, 0 - 1 HS
0.9%	3 O, 0 HS	3 O, 0 - 1 HS
1.0%	3 O, 0 - 1 HS	3 - 4 O, 1 HS

Source: FCA supply side model static analysis; eight firms (six online, two high street), calculated against FCA-adjusted baseline, results for different initial cap levels with 100% total cost cap and £15 default cap.

Under this maximum allowable price response there is limited impact for caps under 1%. There is no impact on the number of online firms able to meet overhead costs for caps between 0.6% and 0.9%; whilst one additional high street firm may be able to meet overheads at caps of 0.8% and 0.9%. The impact is within the margin of error under which the static results are reported.

On this basis, while changes to pricing structure may have an incremental impact for some firms, we do not expect firms' pricing responses to significantly change our conclusions on firm exit or market structure based on the static analysis.

Changes to loan books: (a) move to repeat customers

The HCSTC market is a new market, which has undergone a period of rapid growth. In recent years growth rates have fallen:

*"During the 2012 financial year, total payday loan revenue was around £1.1 billion, with lenders issuing approximately 10.2 million payday loans, worth £2.8 billion. These figures represented a 35 to 50% increase on the preceding financial year – depending on the way in which the size of the market is measured – though more recent data indicates that this rate of growth has reduced substantially in 2013."*¹⁵

¹⁵ https://assets.digital.cabinet-office.gov.uk/media/5397ef3c40f0b6101d000003/Summary_of_provisional_findings_report.pdf

As a consequence, we would expect the proportion of loans granted to repeat customers to grow, as fewer viable customers will be taking out loans with firms for the first time. We see this in the detailed data provided to us by firms.

Importantly, repeat loans are more profitable on average compared to new loans. For a firm, new loans have greater risk of default, given there is less information upon which to make a credit decision. A repeat loan is likely to be granted only when the first loan has been repaid. Further, new loans are given to customers who must be acquired, either directly through marketing activities, or via third parties. Both of these require significant marketing or other acquisition costs. In contrast, repeat loans are given to existing customers who already have a relationship with the firm. This requires significantly lower acquisition cost.

To explore the impact that changing the composition of loan books would have on firm profitability, and ultimately firms' risk of exit, we modelled the impact of changing the composition of each firm's loan book, from no loans being written to new customers, to all loans being written to new customers. At each cap level, we were then able to assess whether this would impact each firm's risk of exit. Where a shift of 10% of the loan book or less (e.g. from 75% to 85% of loans being granted to repeat customers) was required, we thought it was reasonable to assume this may be possible to achieve. When assessing the impacts on profitability, we used the existing average contribution levels of new and repeat loans, for each firm.

Our analysis suggests that at the 0.8% cap level, one of the five firms identified as 'at risk' of exit would require less than a 10 percentage point shift from new to repeat lending to generate sufficient contribution to cover overheads. (This is a high street firm.) Two other firms could generate sufficient contribution to meet overheads through a shift from new to repeat lending, but would require a shift of more than 10 percentage points (12-15 and 30 respectively).

On this basis, while changes to the proportion of repeat loans may have an impact for some firms, we do not expect it to significantly change our conclusions on firm exit or market structure based on the static analysis.

Changes to loan books: (b) changes to product duration

In the data, we see a general trend towards loans of longer duration. In the period after our data, we are further aware that product offerings are changing, and in particular that a number of firms are considering, or have already launched instalment loan products (that fall within our HCSTC definition).

Further, one possible impact of the recent affordability rule changes may be for some customers to be given longer repayment timescales. The impact of the cap on rollovers may also be to move the market away from short-term loans, and towards longer durations.

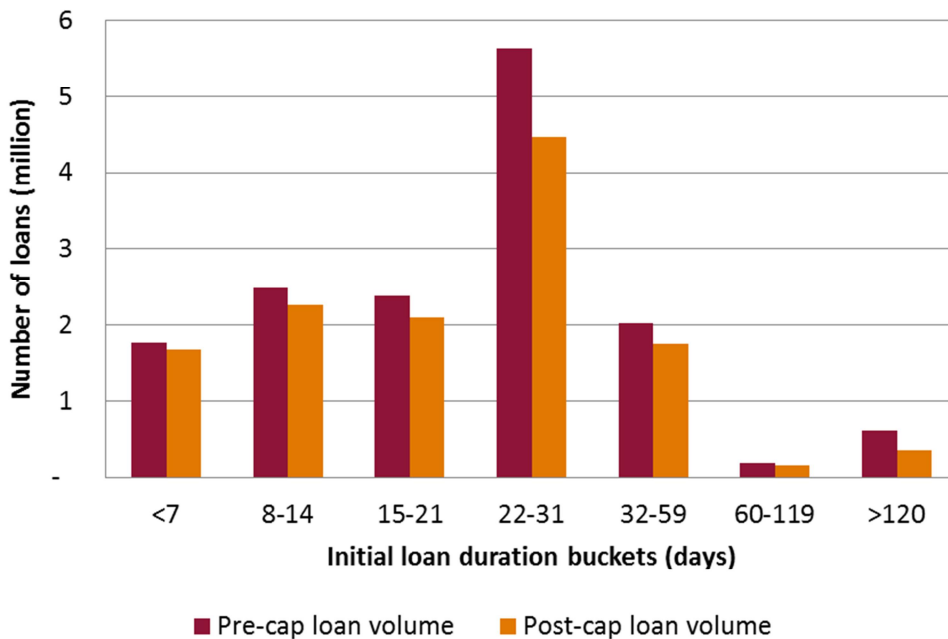
Following the cap, we expected that there will be some impact on the duration of loans. First, the 100% total cost of credit cap is likely to reduce the incentives for firms to offer loans with duration greater than 6-months, on the basis that daily interest after that point will no longer be recoverable.

Further, as set out in the consultation paper, because the initial cost cap is calculated as a percentage of the principal, it could impact on the smallest loans (a few firms offer loans below £50 and about 10% of loans in our sample were for less than £50), particularly over shorter durations (30 days or less). A small fixed element to the initial cost cap could help make these loans viable, but we do not propose this because on balance, we consider that the initial cost cap should be applied in a way that is proportional to the size and duration of the loan, to provide the appropriate degree of protection for consumers.

We see this impact in the outputs of the supply model, as shown in Figure 2 and Source: *FCA supply side model static analysis; eight firms (six online, two high street), calculated against FCA-adjusted baseline, results for different initial cap levels with 100% total cost cap and £15 default cap.*

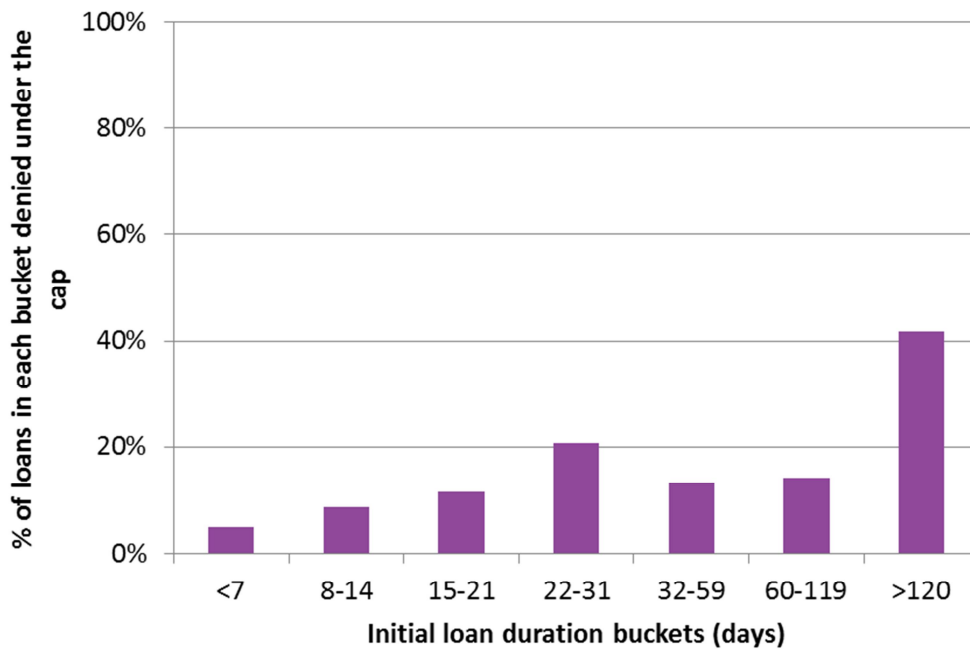
Figure 3 below. The model suggests that over 40% of loans with initial duration greater than 120 days would no longer be granted following the cap.

Figure 2: Volume of loans pre and post-cap, by initial duration



Source: FCA supply side model static analysis; eight firms (six online, two high street), calculated against FCA-adjusted baseline, results for different initial cap levels with 100% total cost cap and £15 default cap.

Figure 3: Proportion of loans no longer granted



Source: FCA supply side model static analysis; eight firms (six online, two high street), calculated against FCA-adjusted baseline, results for different initial cap levels with 100% total cost cap and £15 default cap.

The supply model suggests there would be relatively little impact on the number of loans with initial durations less than seven days. This may be the result of a number of factors, including that the model incorporates a customer-level view when assessing loan decisions (the shortest loans may still be granted if they are not profitable, but are expected to lead to future, profitable, lending), and that actual duration typically exceeds initial duration, suggesting that on average firms are able to earn interest revenues over a longer time periods than implied by initial durations.

Moving to loans of different durations would have a significant impact on firms in terms of the products they offer, and the operational processes required to manage their loan portfolio. Further, the data we have collected shows that loans at different durations currently earn different levels of profit for firms. This differs by firm i.e. for some firms loans of less than one month are more profitable than loans of greater than one month, and vice versa.

The extent to which customers may be willing and able to move from one product duration to another is uncertain. To model the impact of changing loan durations, we first assessed the impact of moving all loans greater than five months to a duration of between one month and five months. We then assessed the impact of moving loans of less than one month duration to a duration of between one month and five months.

In all cases, we used the average contributions for loans of less than one month, between one and five months, and greater than five months for each firm. We made no adjustment for volume e.g. we did not convert one greater than five month loan into two (or more) loans of between one and five months. At each cap level, we then assessed whether these shifts would impact each firm's risk of exit. We judged a shift of 25% of the loan book (e.g. from 50% to 75% of loans being between one and five months) to be feasible.

At the 0.8% cap level our analysis suggests that none of the 5 firms identified as 'at risk' of exit in the static analysis could generate sufficient incremental contribution by changing the balance of loan duration to change the exit results, irrespective of the scale of the change required.

On this basis, while changes to loan durations offered may have an incremental impact for some firms, we do not expect firms' responses on loan duration to significantly change our conclusions on firm exit or market structure based on the static analysis (and keeping current loan volumes fixed).

Changes to acquisition costs

Firms' responses to our market questionnaire showed that most firms acquire customers through lead generators, to varying degrees. All of the medium-sized firms in our sample used lead generators. Some firms told us they expected customer acquisition costs to fall

following introduction of the cap, while others expected acquisition costs to rise. Further details are provided in Appendix 1 to this Annex.

Some HCSTC business models rely on direct marketing to attract new customers, which is the case particularly for high street firms. Alternatively, a number of online firms use lead generators to attract leads.

Overall, the management accounts provided to us suggests that acquisition costs are a significant cost element, accounting for around 10% of total costs across firms in our sample.

The impact of the cap is to reduce the available revenue that a firm may earn on each loan made, and to restrict the average contributions per loan. In our judgement, we expect this to reduce the willingness and ability of HCSTC firms to pay for leads i.e. we would expect acquisition costs to fall post-cap, to align to the new levels of revenue and profit available.

A number of firms suggested to us that the impact of the cap would be to increase lead generation costs, and to increase marketing costs, on the basis that fewer loans would be profitable under the cap, meaning the same level of marketing activity would generate fewer loans, increasing average costs on average. While we accept this may be the case initially, in the medium-term we expect firms to adjust. We expect that marketing expenditures are set in relation to the levels of revenue that they can be expected to generate. If the levels of revenue generated fall as a result of the cap, we expect it would be harder to justify existing (or higher) levels of marketing expenditure, and consequently for marketing expenditure to fall – either through lower volumes of marketing activity, or through substitution to lower cost marketing alternatives.

The static impacts presented contain no changes to acquisition costs.

Importantly, the level of acquisition costs will have a significant impact on firms' ability to offer loans i.e. reduced acquisition costs would allow more loans to be made (compared to no change in acquisition costs, given the effect will be to increase average contributions per loan). We would still expect the volume of loans made following these reductions to be lower than pre-cap levels.

To test the impact of reduced acquisition costs, we modelled a 10% decrease in acquisition costs to test the sensitivity of our analysis. The following table shows the firm exit analysis results for this, compared to the static results. Our analysis suggests that there is very little impact from a 10% reduction in acquisition cost (which as described above, translates to a 1% reduction in total costs overall).

Table 4: Changing acquisition costs – impact on firms’ risk of exit

Initial cap level	Number of firms remaining – online and high street (margin of error ±1)	
	Static results	10% reduction in acquisition cost scenario
0.4%	0 - 1 O, 0 HS	0 O, 0 HS
0.5%	1 O, 0 HS	1 O, 0 HS
0.6%	2 O, 0 HS	2 O, 0 HS
0.7%	2 - 3 O, 0 HS	2 - 3 O, 0 HS
0.8%	3 O, 0 HS	3 O, 0 HS
0.9%	3 O, 0 HS	3 O, 0 HS
1.0%	3 O, 0 - 1 HS	3 O, 0 - 1 HS

Source: FCA supply side model static analysis; eight firms (six online, two high street), calculated against FCA-adjusted baseline, results for different initial cap levels with 100% total cost cap and £15 default cap.

On this basis we do not expect changes to acquisition costs to significantly change our conclusions on firm exit or market structure based on the static analysis.

Customers switching to remaining firms

The static model outputs provide a view of how many loans each firm makes under any given level of cap, and as described above, we make a judgement about whether that volume of loans would be sufficient to cover overhead costs. Where this is not the case, we define each firm as being at risk of exit.

Where we judge a firm to be at risk of exit, we expect a number of its loans and customers would switch to the remaining HCSTC firms. At market-level, this would partly offset the reduction in the volume of loans granted, and the number of customers that still have access to the HCSTC market, both of which are important outputs of our analysis. At firm-level, this offsetting increase in volume (through picking up business from those firms at risk of exit) may be sufficient to reduce the risk of exit at particular cap levels.

To incorporate these impacts into our analysis of a cap at 0.8%, we have used the static model outputs and our exit assumptions for the eight firms modelled. For each firm ‘at risk’ of exit at this level, we calculate their average contribution per loan under the cap, and use that to calculate the increase in loan volume each firm would need in order to meet the shortfall of contribution against existing overheads, assuming the average contribution remains constant. For firms where this increase is more than 100% i.e. more than double their existing volume of loans, we judge that they will remain at risk of exit. We then reallocate the loans no longer provided by these firms to the other firms, based on market

share of the remaining firms and assuming all loans are allocated (i.e. customer demand remains constant).

For online firms, we assume all customers would switch to a remaining online firm; for high street firms, we assume all would switch to a remaining high street firm. We assume that the transferred loans generate the average contribution of the new firm, and use this to calculate the increase in that firms' contribution. We then calculate a revised increase in loan volume needed to meet the revised shortfall in contribution.

On this basis, customers switching to remaining firms may increase the number of firms remaining in the market slightly. However, the analysis indicates that this would not significantly change our conclusions on firm exit or market structure, based on the static analysis. Any changes remain within the ± 1 margin of error upon which the static results are presented.

Table 5 below outlines the results of this analysis. Our static analysis suggests five of the eight firms modelled would be at risk of exit at a cap of 0.8% per day. Of these five firms 'at risk' of exit at the 0.8% cap level, three would require an increase in loan volume of more than 100% so are assumed to exit. For the two other firms potentially 'at risk', the reallocation of loans reduces the increase in loan volume required: by five percentage points for the high street firm, and just under ten percentage points for the online firm. As a result the increase in loan volume required by the high street firm falls below 10%, which we consider is plausible. The online firm still requires an increase in loan volume of more than 40%, which we do not consider is plausible.

On this basis, customers switching to remaining firms may increase the number of firms remaining in the market slightly. However, the analysis indicates that this would not significantly change our conclusions on firm exit or market structure, based on the static analysis. Any changes remain within the ± 1 margin of error upon which the static results are presented.

Table 5: Customer switching: impact on firms' risk of exit

	Increase in loan volume required BEFORE switching	Increase in loan volume required AFTER switching
Firm 1 (<i>High street</i>)	13 - 44%	8 - 38%
Firm 2 (<i>Online</i>)	51 - 64%	43 - 55%
Firm 3	110 - 150%	<i>n/a – assumed to exit</i>
Firm 4	400 - 1,000%	
Firm 5	1,200 - 2,500%	

Source: FCA supply side model static analysis; eight firms (six online, two high street), calculated against FCA-adjusted baseline, results for different initial cap levels with 100% total cost cap and £15 default cap. Range reflects three different measures of overheads used in firm exit analysis.

Further changes to volume

Finally, in addition to the specific responses described above, there are likely to be a number of ways in which firms may respond to the cap. In a general sense, firms will seek to increase volume, and/or reduce costs. As a further overall sensitivity check to our market exit analysis, we modelled the impact of increasing the volumes of loans for remaining firms.

To assess whether these volume increases would affect our exit results, we calculated the increase in loan volume that would be needed to meet the shortfall in overheads, based on the average contribution per loan. We then judged that an increase of 10% of loan volumes could be feasible for firms to achieve.

Table 6 below shows the results of this analysis for a cap of 0.8%. Our static analysis suggests five of the eight firms modelled would be at risk of exit at a cap of 0.8% per day. All five of the firms not at risk of exit based on static analysis would require an increase in loan volume of more than 10% to meet overheads: indeed only two of the firms would require an increase of less than 100%.

Table 6: Further changes to loan volumes: impact on firms’ risk of exit

Firm	Increase in loan volume required to meet overheads
Firm 1	10 - 40%
Firm 2	50 - 60%
Firm 3	110 - 150%
Firm 4	400 - 1,000%
Firm 5	1,200 - 2,500%

Source: FCA supply side model static analysis; eight firms (six online, two high street), calculated against FCA-adjusted baseline, results for different initial cap levels with 100% total cost cap and £15 default cap. Range reflects three different measures of overheads used in firm exit analysis.

On this basis we do not expect firm responses to the price cap to significantly change our conclusions on firm exit or market structure based on the static analysis.

HCSTC entry

As part of our work, we also considered the possibility of a new firm, for example a retail bank, entering the HCSTC market. We were made aware that this could be a possibility, and that entry of this nature would have a significant impact on competition in the HCSTC market.

Retail banks or other potential entrants would have the ability to enter the HCSTC market, and there do not appear to be significant operational entry barriers in this market. However, a significant entry barrier would be reputational impact, given the high degree of interest and scrutiny that the HCSTC market is subjected to.

It is possible that a consequence of the price cap is to limit the scrutiny that the market is subjected to in the future. However, based on discussions with HCSTC firms and firms in other related markets, we do not consider that the cap will reduce reputational barriers sufficiently to allow entry from a new firm. Further, the cap will reduce the available revenues and returns available, making entry less attractive once the cap is in place.

On balance, **we consider the likelihood of any new entry to the market to be low.**

Dynamic response conclusions

Online firms

Our static analysis suggests that at a cap of 0.8%, all but three online firms would be at risk of exit. This does not materially change for cap levels between 0.8% and 1.0%. Between 0.6% and 0.8% all but two online firms would be at risk of exit.

At a level of 0.8%, within the sensitivities that we have assessed we do not find a large number of firms would easily be able to move from at risk of exit, to not being at risk of exit. However, there is reason to believe that in practice firms may have more potential to change. In reality, firms will be able to make combinations of changes, rather than the

individual changes considered here. Further, firms may have the scope to make fundamental changes to their business models beyond the changes we have modelled.

Overall, we consider that large online firms will have the potential to make changes that will enable them to remain in the market. This would increase the number of firms, compared to the levels seen in our analysis. It is uncertain whether small and medium firms will have the ability to do this.

In summary, we anticipate that following the cap, a large number of online firms may be at risk of exit, although there will be potential for firms to adjust their business models. We expect the larger online firms to remain, and for the substantial part of the HCSTC market to continue to be served by a small number of online firms.

High street firms

The CMA analysis, and the information provided to us by high street firms suggests that high street profitability is low before the impact of regulatory rules and the cap is analysed. At a cap level of 0.8% per day, we anticipate that all high street firms will be at risk of exit.

The dynamic analysis does not suggest that changes within the sensitivities modelled would be sufficient to change this conclusion.

However, HCSTC is one of a range of services provided from high street store locations. Importantly, where we see a high street firm being at risk of exit, it does not follow that premises would be at risk of closure. Rather, it is likely that stores would continue to operate based on the other products and services offered.

Further, data suggests that for many high street stores, the HCSTC element of the business has made very low or negative levels of accounting profit for a long period. It is possible that even where our analysis suggests high street firms would be at risk of exit, they may continue to offer HCSTC loans as part of the range of products and services offered, in the short-term at least. High street firms may also be able to pick up customers from firms that do exit.

In addition, because high street firms offer HCSTC as part of a range of services, overhead costs must be allocated between these services. We are mindful that cost allocation has proven difficult, and changes to cost allocation assumptions would impact our conclusions. We are also aware that accounting measures of profitability may be low if store locations have opened recently, or where store equipment has recently been purchased. In both cases, profitability may look low as a result of depreciation. If this is the case, we might expect future levels of (accounting) profitability to be higher than the levels recently reported. This may also be the case if remaining firms are able to increase loan volumes through customers switching to them from the firms that do exit.

In relation to all the responses considered, it is not reasonably practicable to provide produce estimates that seek to predict the future post-cap HCSTC market characteristics such as the proportion of future loans that will be instalment loans, loan duration or pricing structures (nor are we reasonably able to estimate them). The degree to which firms will change their business practices and products is subject to a range of uncertainties at this point. Therefore our analysis of the likely costs and benefits of the proposed rules focusses on assessing the magnitude of the changes that would need to occur to materially affect the static results to give our view of the likely impact of firm exit.

6 View of HCSTC competition post-cap

This section sets out our view of HCSTC competition and the HCSTC market following implementation of the cap, and incorporating the firm responses described in detail above.

Market definition

Following the cap, we expect the HCSTC market to remain a national market. The degree of substitution between HCSTC and other credit products will remain limited.

As a consequence of the cap, we anticipate that all high street firms will be at risk of exit. In a scenario in which all high street firms choose to exit the market, only the online part of the market would remain. However, in our judgement there are a number of reasons why high street firms may remain in the market, even when our exit analysis suggests they are at risk of exit. Possible reasons for this include the fact that firms may continue to offer HCSTC at a loss if it complements other profitable products and services, and that firms may have significant scope for efficiency savings.

We anticipate that following the cap, firms may choose not to offer loans of greater than six months. We expect that all remaining HCSTC products are substitutes for one another, and form part of a single HCSTC market.

HCSTC supply

At a cap of 0.8% per day, we expect a large number of firms to be at risk of exit. The market is already concentrated, and substantial exit following the cap would further increase concentration levels.

For online firms, we would not expect this level of supply to significantly reduce competition relative to current levels. The CMA found that while there was some evidence of competition between HCSTC firms on non-price dimensions, the degree of price competition was limited. In any case, with an effective cap the degree of (price) competition is of less relative importance.

We expect price competition will not be lessened in the future because:

- the cap itself will prevent prices rising, if there is upwards pressure due to the oligopolistic nature of the online market in future;
- we expect the degree of non-price competition will not be lessened, on the basis that we expect consumer demand to continue to focus on the non-price aspects of product offerings (such as the speed of access to funds) in the future; and
- as forthcoming CMA remedies will tackle the currently limited degree of price competition that takes place, resulting in potentially greater price competition in the future.

We do not expect the cap to have a material impact on the degree of non-price competition that currently takes place. Finally, in practice we may expect the number of online firms that continue to operate to be greater than implied by our static exit analysis, following changes to business models as discussed above.

For the high street, predicting the number of firms that will continue to operate is subject to uncertainty. It is possible that all the existing suppliers may choose to continue. If a single high street supplier remained, we believe online firms will provide a competitive constraint, and the cap itself will provide a degree of protection for high street consumers. However, the extent to which (some) high street customers are able to switch online is likely to be limited. It is unclear how much of a competitive constraint would be imposed on a single remaining high street firm.

Demand

Price sensitivity

We do not expect the cap to have any material impact on the nature of consumer preferences. Evidence suggests HCSTC consumers are insensitive to default charges, and relatively insensitive to point of sale prices (despite the fact that such prices are easily available). We do not expect this to change following the introduction of the cap.

The CMA have indicated they believe there is potential for greater price competition in the HCSTC market, and have proposed a number of remedies to improve this. We recognise that this could lead to HCSTC customers becoming more price sensitive in the future.

Substitution to and from other credit markets

We do not expect the cap to have an impact on the degree of substitution between HCSTC and other credit markets. Evidence from the demand analysis shows that there is a low degree of substitution between HCSTC and other credit markets. In particular, there is no evidence that consumers respond to lack of access to HCSTC by applying for other forms of credit. CRA evidence shows that at the existing margin of lending, being denied a loan does not raise the likelihood that consumers apply most forms of consumer credit. Indeed, evidence shows that consumers denied loans are less likely to apply for personal loans or credit cards over the following 12-month period and no more likely to apply for any other form of credit.

This finding of low substitution is corroborated in evidence from our consumer survey analysis, described in detail in Technical Annex 3. Survey results show 73% of those accepted for loans at the margin state they would not borrow if they did not get HCSTC. This is validated by the actual actions of those who did not get HCSTC loans (62% of whom did not borrow). A very small proportion of consumers (7% at the margin) state they might borrow from other sources if their HCSTC application was denied, indicating limited

substitution to forms of credit. This response is closely aligned to the actual actions taken by consumers whose applications were denied (10% borrowing elsewhere). Among consumers who do borrow in response to being denied a loan, the main substitute form of borrowing used is borrowing from friends and family.

However, it is possible that under a cap of 0.8%, consumers may be more likely to switch towards substitute forms of credit. As the level of the cap falls, and at a level of 0.8% per day, the cap is expected to exclude consumers with better credit scores from the HCSTC market. These consumers are likely to have a greater ability to substitute to other forms of credit, compared to those with lower credit scores. Survey evidence indicates these consumers are less likely to state they would not borrow and are more likely to state they would use a substitute form of credit such as a bank overdraft or other alternative.

In addition, we do not expect significant customer substitution in or out of the HCSTC market, as a direct result of the cap. While it is possible that some customers may choose to enter if the cap allays safety or reputational concerns that some (potential) consumers may have, we do not expect this to be a significant impact. Similarly, we do not expect HCSTC firms to be able to start targeting entirely new customer groups following the cap.

The nature of competition

Price competition

The cap is designed to allow firms flexibility in the way they design their charging structures, by imposing revenue limits at a high level, rather than for each individual revenue stream. Price competition is currently limited, and is extremely limited in relation to default charges. This is consistent with the CMA's findings as part of their investigation.

The CMA's proposed remedies are yet to be implemented, and consequently the impact of these future remedies is currently uncertain. There may be greater price competition in the HCSTC market in the future. To the extent these remedies are introduced and are successful, the high-level nature of the cap will give firms scope to compete by trying different pricing structures, while remaining within the overall limits imposed by the cap.

Non-price competition

Competition is currently focussed on non-price factors, including speed of access to funds and greater levels of service and access e.g. through mobile telephony platforms. We expect that following the cap, competition will continue to be focussed on non-price factors.

Appendix 1: Market questionnaire response summary

Background

To help us evaluate the ways in which existing HCSTC firms will respond to the price cap, we sent a Market Dynamics questionnaire to a sample of 151 firms we identified as possibly active in the HCSTC market. We asked firms about their ability to change different elements of their business model and working practices. In addition, we asked firms about what changes they and their competitors expected to make in response to a price cap, and how they expected these changes to influence competition in the HCSTC market.

Our sample of firms was identified using the sample of firms that responded to the Competition Commission (now the Competition and Markets Authority) during the course of their investigation, combined with firm data from our Interim Permissions application process. Of the 151 firms in our sample, 30 were specifically selected as they operate under a franchise agreement.

We aimed to be proportionate in the demands we placed on firms over the course of work. For this reason, we sent out two different versions of the market questionnaire that differed in the number of questions and level of detail required, with firms receiving the version appropriate to their size. For firms with annual HCSTC revenue less than £500,000, we asked very few mandatory questions, and asked firms to respond to us on a more detailed basis, if they wished to do so.

'Market questionnaire - Version A' was sent to the eight companies (representing eleven firms) that provided detailed data to us for use in our supply model, many of whom had already provided similar information to the Competition Commission. Where this was the case, we gave firms the opportunity to update or expand on the information they had previously provided. We asked a number of additional questions related to our work.

'Market questionnaire - Version B' was sent to the remaining firms in our sample. We asked firms if they planned to stay in the HCSTC market following expiration of their Interim Permission, and after the introduction of the price cap. Where the answer to either of these questions was "No", firms were not required to complete the remainder of the questionnaire, or provide us with further information. For firms with HCSTC revenue of less than £500,000 in 2013, the only information required was information on any planned changes as a result of the cap and the most recent set of management accounts.

Responses received

Overall, 99 out of 151 firms responded to our questionnaire. Of these 99 firms, seven informed us they were not currently active in the HCSTC market. In addition to the eight companies that submitted detailed data to us, a further 13 firms responded and reported HCSTC revenue greater than £500,000 in 2013. We refer to these firms as “medium-sized” in the remainder of this Appendix. The remaining 71 firms had HCSTC revenue less than £500,000 in 2013.

Table 7 below summarizes the responses of all firms regarding their intentions to stay active in the market at the time of their response to the Market Dynamics questionnaire.

Table 7: response summary

Firms	Currently active in the HCSTC market	Do you plan to be active in the HCSTC market after you are required to apply for FCA authorisation (when your Interim Permission expires)?			Do you plan to be active in the HCSTC market after a cap comes into effect on 2nd January 2015?			
		Yes	No	% Yes	Yes	No	Uncertain	% Yes
Companies that submitted detailed data to us	8	8	0	100%	8	0	0	100%
Firms with revenue >£500,000	13	13	0	100%	10	0	3	77%
Firms with revenue <£500,000	71	57	14	80%	38	10	23	54%
Total	92	78	14	85%	56	10	26	61%

The following section provides a summary of the responses we received. Summaries are presented for each section of our Market Dynamics questionnaire.

Summary of questionnaire responses

1. Background

(Version A: Q1, Version B: Q7-9)

We collected up-to-date information about the firms' group structures, franchise arrangements, and the business they conduct through retail premises. Out of the eight companies that submitted detailed data to us, three conducted part of their business through retail premises. One was operating as franchisor and we sent an information request both to the head office of this company, and to a sample of its franchisees. That company also owns and operates a number of retail stores at the corporate level.

Of the 13 medium-sized firms, one conducted business solely through retail premises.

2. Forthcoming changes in the HCSTC market

(Version A: Q2-3, Version B: Q10-12)

The majority of the eight companies that submitted detailed data to us had already made changes in response to the new rules on CPAs and rollovers at the time of our questionnaire. They planned to make further changes before our rules came into force, in order to reach full compliance with those rules. Two of the firms did not offer rollovers, and were currently unaffected, although one was considering introducing rollovers in the future.

Changes already implemented included: 1) less reliance on CPAs and 2) introduction of stricter rollover limits. The CPA changes were often driven by recent changes to VISA card scheme requirements. Changes planned included a further reduction in the number of CPA attempts and rollovers compared to current levels, moving to Direct Debit repayments for instalment products, and a greater emphasis on customer contact during the collections process.

All of the 13 medium-sized firms had considered (and all but one had implemented) changes to their CPA and rollover policies at the time of our questionnaire. All but one of these firms planned to make further changes before the rules came into force.

3. Competition

(Version A: Q4, Version B: Q13)

All of the eight companies that submitted detailed data to us stated that they compete directly with each other. Retail firms (or retail business lines within firms) did not consider online firms as their main competitors. Three considered they also compete with

unauthorised overdraft, credit card and guarantor loan firms. Generally, firms cited the following criteria for considering another firm to be a competitor:

- similar target customer group and marketing;
- similar short-term liquidity needs addressed by their products;
- similar product features;
- direct competitors for customers in the lead generator market;
- customers use or have used products that the firm offers; and
- the firm is a competitor in overseas markets.

The 13 medium-sized firms listed mainly other medium-sized firms as their competitors, while around half also considered larger HCSTC firms to be competitors. Three of the 13 medium-sized firms also listed unauthorised overdraft, credit card and guarantor loan firms as competitors. One medium sized-firm considered itself competing with home credit firms, but not with other HCSTC firms.

(Version A: Q5, Version B: Q14)

All but one of the eight companies that submitted detailed data to us actively monitor their competitors. Five firms had formal and regular arrangements for monitoring in place. These arrangements included:

- dedicated in-house market intelligence teams;
- commissioned research;
- monitoring competitor advertisements and promotions;
- monitoring on-line customer forums and competitor blogs; and
- mystery shopping exercises.

Two firms monitored competitors' actions on an ad-hoc basis, including monitoring competitor promotions and networking at industry events.

Of the 13 medium sized firms, seven reported some form of competitor monitoring. All these monitoring arrangements were informal and ad-hoc.

(Version A: Q6, Version B: Q15)

All but one of the eight companies that submitted detailed data to us expected their competitors to change as a result of the price cap. They expected the exit of smaller competitor firms, and a move towards instalment products. Two firms considered it would be more difficult to compete with firms of other credit products following the cap, as these products would not be subject to the price cap.

Of the 13 medium sized firms, seven expected their competitors to change as a result of the price cap. The expected changes were predominantly competitor exit, but also included changes to products and pricing. The other medium-sized firms either did not answer this question, or said that any changes in competitors will depend on the structure of the cap.

4. Customer acquisition

(Version A: Q7-8, Version B: Q17)

All but one of the eight companies that submitted detailed data to us acquired a proportion of their customers through lead generators. Five had made changes to their marketing strategy in the two years prior to our questionnaire. These changes indicate:

- a gradual shift towards more direct TV and online advertising;
- reduced reliance on lead generators;
- increased use of pay-per click online advertising;
- more sophisticated online profiling and targeting of customers; and
- a move towards targeting the “near-prime” customer segment.

Firms expected to make changes to their marketing strategies following the cap, and these changes largely follow the existing trends described above. Firms also expected to reduce their overall marketing expenditure, due to lower customer lifetime values as a result of the cap.

Six medium-sized firms in our sample expected to make changes in the two years following our questionnaire. These changes were aimed at reducing customer acquisition costs through improved initial screening of leads, changes to contracts with lead generators, and targeting new customer groups.

5. Brokerage and loan referrals

(Version A: Q9-10, Version B: Q18-19)

All of the eight companies that submitted detailed data to us stated they have a policy of not acquiring customers through credit brokers that charge a brokerage fee. If they do become aware that one of their customers has been charged such a fee, the relationship with the credit broker that referred the customer is terminated. Firms were unaware of any other firms in the market that accept credit brokers who charge a fee to the customer.

All the medium-sized firms in our sample also did not accept credit brokers who charge a fee to the customer. However, three out of 13 firms said they were aware of other firms in the market doing so.

(Version A: Q11, Version B: Q20)

Two of the eight companies that submitted detailed data to us, and five of the medium-sized firms sold customer leads on to third parties, in cases where these leads were not accepted by the firm itself.

(Version A: Q12-13, Version B: Q21-22)

Five of the eight companies that submitted detailed data to us had made changes to their relationships with credit brokers and lead generators in the two years prior to our questionnaire. Firms stated that their contracts with lead generators and credit brokers are constantly under review, and that they monitor the quality of leads they receive through different channels and adjust price and volume of leads acquired accordingly.

Two firms expected to make changes to their relationships with credit brokers and lead generators in the two years following our questionnaire, as a result of lower expected lead prices following the cap. They stated that the nature of these changes will depend on the impact the cap has on the market for customer leads. A further three firms expected to make changes, but said the nature of these changes would depend on the design of the cap.

Five of the medium-sized firms expect that the volume and price of leads purchased will decrease following the cap, and expect to make changes accordingly.

(Version A: Q14-15, Version B: Q23-25)

All of the eight companies that submitted detailed data to us made changes to their loan application process in the two years leading up to our questionnaire. For three of the firms, the changes were minor – including incremental changes to their credit scoring models, customer scorecards and use of CRA data variable. For the remaining firms, the changes were significant and include:

- collecting more customer details;
- improving the accuracy of customer income and expenditure information;
- increased use of CRA data; and
- changes to loan underwriting criteria.

Three of the eight companies that submitted detailed data to us expect to make further changes to their loan application process in the two years following our questionnaire. These changes include more sophisticated customer details verification, for example mobile number and bank account verification, combined with tougher loan underwriting criteria. Three of the eight companies that submitted detailed data to us expect customer lead prices to fall, while one firm expected prices to stay the same or increase, following the introduction of the cap.

Five out of 13 medium-sized firms expected to make changes to their loan application process in the two years following our questionnaire. These changes include:

- collecting more customer details;
- improving the accuracy of customer income and expenditure information; and
- increased use of CRA data.

6. Products and pricing

(Version A: Q16, Version B: N/A)

For single-payment products, of the eight companies that submitted detailed data to us, one firm had a minimum loan amount of £1, and the most common minimum loan amount was £50. No consistent analytical rationale behind the minimum loan amounts was provided to us. Maximum loan amounts were up to £500 for first time customers and varied up to £1,000 for repeat customers, based on the customer's repayment history and credit profile.

(Version A: Q17, Version B: N/A)

For single-payment products, one of the eight companies that submitted detailed data to us only offered loans of fixed 18 days duration. For the majority of the other firms, duration was determined by the date of the borrower's next payday, which was generally less than 31 days.

For instalment products, the customer selected the desired duration from a set of options that varied by firm. These options frequently included three, six and nine months loans. One firm offered a short-term instalment product, with repayments due on the customer's next two or three paydays. The maximum instalment loan duration across firms was generally 12 months or less.

(Version A: Q18, Version B: Q32)

Of the eight companies that submitted detailed data to us, two provided no estimate of the length of their product development cycle. Of the estimates received, the length varied from approximately four months to between 24 and 36 months. Stages in the product development cycle typically included the following:

- customer research;
- market intelligence research;
- product design;
- product performance forecast;
- trial product launch;

- performance evaluation; and
- full-scale product roll-out.

(Version A: Q19, Version B: N/A)

The recent innovations in the HCSTC market cited most frequently were:

- increased repayment flexibility;
- improved speed of application processing and loan disbursement;
- development of mobile application for credit; and
- move to instalment products.

(Version A: Q20, Version B: Q29)

Half of eight companies that submitted detailed data to us did not launch new products in the two years leading up to our questionnaire. Two launched a single new product, and two launched three or four new products. The new products launched during this period were predominantly instalment loans, but a flexible credit product and a small business loan product had also been launched.

(Version A: Q21-22, Version B: Q29-30)

Two of the eight companies that submitted detailed data to us had made a number of incremental pricing changes in the two years leading up to our questionnaire. Six had made changes to their product mix, the most common change being the launch of instalment products. All of eight companies that submitted detailed data to us stated that they expected to make changes to their product mix in the two years following our questionnaire, and that these changes will depend on the structure and level of the cap.

Five out of 13 medium-sized firms made incremental pricing changes in the two years leading up to our questionnaire. Price increases were more prevalent than decreases. Two out of 13 medium-sized moved from single payment to instalment products, and three had added an instalment product to their existing product range. A further four firms said they expected to move to instalment loans in the two years following our questionnaire.

(Version A: Q23, Version B: N/A)

Five of eight companies that submitted detailed data to us expected the level of innovation to decrease following the cap.

7. Debt recovery

(Version A: Q24, Version B: Q33-34)

Debt collection strategies varied significantly among the eight companies that submitted detailed data to us. Common themes include placing customer in arrears a day after missing

a payment and use of external collection agencies. Customers in arrears are classified as bad debt as early as 65, or as late as 180 days following the cessation of repayments. All but one firm used external debt collection agencies at some point of the collections process.

(Version A: Q25-26, Version B: Q35)

All of the eight companies that submitted detailed data to us had made changes to their debt collection strategies in the two years leading up to our questionnaire. The most common changes were:

- changes in the relationship with external collection agencies;
- reduced use of CPAs; and
- changes in the way firms contact customers.

All of the eight companies that submitted detailed data to us stated that any further changes to their debt collections strategies will depend on the structure of the cap.

8. Entry, exit and expansion

(Version A: Q27, Version B: Q36)

All but one of the eight companies that submitted detailed data to us stated that they did not expect entry in the two years following our questionnaire. The one firm that did expect entry stated this will consist of small firms as the market has low barriers to entry.

Five of 13 medium sized firms expected entry following the cap, although at reduced levels.

(Version A: Q30, Version B: Q37-38)

All but one of the eight companies that submitted detailed data to us expected consolidation in the HCSTC market following the introduction of the price cap. The majority expected that smaller firms will be forced to exit, leaving a small number of large firms in the market. Evidence cited in support of this expectation included:

- firms' experience in other jurisdictions that have introduced price caps;
- recent developments in the UK HCSTC market; and
- the importance of operating at an efficient scale in the HCSTC market.

Nine medium-sized firms expected increased consolidation and exit following the cap, predominantly driven by the exit and consolidation of small firms.

9. General comments

(Version A: Q31-34, Version B: Q41-42)

Firms stated that while the cap will lead to cost savings for customers, it will also lead to restricted availability of credit. There was no evidence presented to substantiate which of these impacts will dominate.

Four of eight companies that submitted detailed data to us stated they expected that smaller firms will leave the HCSTC market as a result of the cap. Five medium-sized firms said they expected exit by firms of their size or smaller.

Firms also identified the following possible reactions to the cap:

- stricter loan underwriting standards;
- firms pricing converging at the level of the cap;
- increased minimum loan amounts;
- change in the products offered in the market, in particular a shift to instalment products; and
- offering a reduced product range.

Appendix 1: Market Questionnaire - Version A

1. If any further relevant information has become available since you submitted your response to the CC, please submit this **additional** information to us, clearly indicating which question the information refers to.

1B: FCA questions

Background

2. Please provide details of your corporate structure. This should include the following:
 - a. If your company is part of a group, please provide details of any
 - Subsidiaries;
 - joint arrangements; or
 - associates and structured entities;that hold an interest in your company or in an entity that does hold an interest your company, all the way up to your ultimate parent company.
 - b. Please provide an organogram of the group structure.
 - c. If you have operated as a franchisee of another business, or have been a franchisor of another business with respect to any consumer credit activity, at any point between 1st January 2012 and the 31st of March 2014, please provide each period concerned and a brief description of each relationship.
 - d. Do you provide HCSTC products through retail premises? If yes, please outline the locations of your retail premises.

Forthcoming changes in the HCSTC market

3. Has your firm already started to make changes as a result of the forthcoming FCA caps on CPA and rollover use?
Yes / No
If yes, what changes have you made, and when did you make them?
4. Do you plan to make changes that you have not yet implemented?
Yes / No
If Yes, please describe these planned changes and the reasoning behind these changes, including any alternatives considered.
5. Please provide any additional documents setting out research or analysis which you have performed or commissioned, which estimates the impact of announced regulatory changes on your costs, revenue, and any other relevant aspect of your business. In your answer, please refer to changes including:
 - a. FCA limits to CPA use and rollovers;
 - b. The OFT compliance review;

- c. Impact of the “Addendum to Industry Codes of Practice” and the ‘Good Practice Charter – Payday and Short Term Loans’;¹⁶ and
- d. Any other regulatory or legal changes you consider relevant.

Competition

- 6. Which firms do you currently consider to be your main HCSTC competitors:
 - a. Of those firms currently operating in the HCSTC market?
 - b. Of those firms operating in other credit markets e.g. pawnbrokers, credit card providers, providers of overdraft facilities?
- 7. How do you monitor the activities of your competitors and you use any information you collect?
- 8. Do you expect your main competitors to change following the introduction of a price cap?
Yes / No
If yes, how and why?

Customer acquisition

- 9. Have you made changes to your marketing strategy between 1st January 2012 and the 31st of March 2014?
Yes / No
If yes, please provide supporting evidence, where available, explaining what changes were made and the reasons behind the changes made. In particular, have you made significant changes to:
 - a. The customer groups you target
 - b. The way you market and advertise your HCSTC products (including how this varies by brand, distribution channel and product)
 - c. The amount spent on customer acquisition in total and per customer. If possible, please estimate the magnitude of any change e.g. a 10% reduction.
 - d. How you differentiate your business from competitors
- 10. Do you plan to make changes to your marketing strategy within the next 24 months as a direct result of the introduction of a price cap?
Yes / No
If Yes, please provide supporting evidence, where available, explaining what the expected or planned changes are and the reasons for those expected or planned changes. In particular, as a result of the introduction of a cap do you plan to change:
 - a. The customer groups you target
 - b. The number of customers you provide loans to
 - c. The way you target, market, and advertise your HCSTC products (including how this varies by brand, distribution channel and product)
 - d. The amount spent on customer acquisition in total, and per customer? If possible, please estimate the magnitude of any change e.g. a 10% reduction.
 - e. How you differentiate your business from competitors

¹⁶ <http://www.cfa-uk.co.uk/information-centre/policy-and-publications/publications/>

Brokerage and loan referrals

11. To your knowledge, are your customers ever charged a brokerage fee, either by your firm, or by credit brokers? In your response, please describe the prevalence of such charges, and the range and average level of charges per referral.
12. Are you aware of other HCSTC providers currently operating in the market whose customers are charged brokerage fees? In your response, please describe the prevalence of such charges, and the range and average level of charges per referral.
13. When you receive applications and decide not to offer a loan, do you pass on leads to other firms? If so, please provide:
 - a. A list of the firms to which you have sold leads between 1st January 2012 and the 31st of March 2014
 - b. The average number of leads sold and the average price per lead
 - c. If you share leads within your corporate group (and receive no compensation), the name of the companies you share leads with.
14. Have you made any changes to your relationship with credit brokers and other HCSTC businesses between 1st January 2012 and the 31st of March 2014?

Yes / No

If yes, please provide supporting evidence, where available, explaining what changes were made, and reasons behind the changes made. Please provide evidence of the impact of these changes on:

- a. The total number of applications (both total applications received and successful applications)
 - b. The total amount paid for these references, including the level of payment, and whether payment was per lead, or per successful lead i.e. per loan written.
 - c. The volume and value of referrals from your business to other businesses
15. Do you plan to make changes to your relationship with credit brokers and other HCSTC businesses in the next 24 months as a direct result of the introduction of a price cap?

Yes / No

If Yes, please provide supporting evidence, where available, explaining the expected or planned changes and the reasons for them. In particular, as a result of the introduction of a cap do you plan or expect to change:

- a. The total number of applications (both total applications received and successful applications)
- b. The total amount paid for these references
- c. The volume and value of referrals from your business to other businesses
- d. Any other metric you consider relevant

Loan application process

16. Have you made any changes to your loan application processes between 1st January 2012 and the 31st of March 2014?

Yes / No

If yes, please provide supporting evidence, where available, explaining the changes made, and the reasons behind those changes. In particular, please describe significant changes to:

- a. The steps that a customer must go through in order to receive a loan, including the information that they must provide and what decisions a customer must make during the application.
- b. The minimum, maximum and average time that it takes an applicant to complete the application process and receive a decision.
- c. Your general policy as to which loan applications are approved or refused, and the broad categories of information used in the decision process.
- d. The overall level of risk you are willing to bear
- e. The use of external credit reference agency (CRA) information, including access to and use of real-time information systems
- f. The use of other information informing the creation of internal credit scores
- g. Any other relevant factors

17. Do you plan to make changes to your loan application process in the next 24 months as a direct result of the introduction of a price cap?

Yes / No

If yes, please provide supporting evidence, where available, explaining the expected or planned changes and the reasons for them. In particular, as a result of the introduction of a cap do you plan or expect to change:

- a. The steps that a customer must go through in order to receive a loan, including the information that they must provide and what decisions a customer must make during the application.
- b. The minimum, maximum and average time that it takes an applicant to complete the application process and receive a decision.
- c. Your general policy as to which loan applications are approved or refused, and the broad categories of information used in the decision process.
- d. The overall level of risk you are willing to bear
- e. The use of external CRA information, including access to and use of real-time information systems
- f. The use of other information informing the creation of internal credit scores
- g. Any other relevant factors

Products and pricing

18. How is the minimum and maximum loan amount a customer could be offered by your firm determined, and what are the key determinants of this range? If your answer differs depending on the product offered, please provide a response for each product as appropriate. Please provide supporting evidence.
19. How do you determine the loan durations you offer to customers, and what are the key determinants of this range? If your answer differs depending on the product offered, please provide a response for each product as appropriate. Please provide supporting evidence.
20. Please describe the process through which you develop new HCSTC products (i.e. those falling within the HCSTC definition set out above). How long does it typically take to move from initiating design of a new product to launch of that product?
21. Please describe what you consider to be the main innovations in the HCSTC market between 1st January 2012 and the 31st of March 2014. What impact did these innovations have for customers?

22. How many new HCSTC products have you launched between 1st January 2012 and the 31st of March 2014? For each new product launched:
- what was the trigger for each new product launch e.g. response to change in competitor offer, changes to underlying costs, changes to customer demand, other commercial reasons?
 - Is the product still available today?
 - Did the product perform as expected?

23. Have you made any changes to your product range and pricing levels and/or structure between 1st January 2012 and the 31st of March 2014?

Yes / No

If yes, please provide supporting evidence, where available, explaining what the changes were, and the reasons behind the changes made. This should include specific estimates where available. In particular, please describe changes to:

- HCSTC products offered, (including instalment loans and flexible credit agreements)
 - Any non-HCSTC products offered
 - Pricing levels and structure
 - Quality of service
 - Minimum or maximum loan amounts offered
 - Loan durations offered
 - Any other relevant factors
24. Do you plan to make changes to your product range and pricing levels and/or structure in the next 24 months as a direct result of the introduction of a price cap?

Yes / No

If yes, please provide supporting evidence, where available, explaining the expected or planned changes and the reasons for them. This should include specific estimates where available. In particular, as a result of the introduction of a cap do you plan or expect to change:

- HCSTC products offered (including instalment loans and flexible credit agreements)
 - Any non-HCSTC products offered
 - Pricing levels and structure
 - Quality of service
 - Minimum or maximum loan amounts offered
 - Loan durations offered
 - Any other relevant factors
25. Do you expect the level of innovation in the HCSTC market to change in the next 24 months as a direct result of the introduction of a price cap?

Yes / No

If yes:

- how and why?
- What impact will this have for customers?

Debt recovery

26. Please describe your debt collection strategy, providing supporting documents where relevant. In particular, please describe:
- An overview of the internal debt collection process that starts once a customer is in arrears (please describe how you define when a loan enters arrears)
 - How long debts must be in default to be classified as unlikely to be collected/bad debt
 - The length of time customer details are kept once a loan is classified as bad debt
 - An overview of any internal bad debt recovery process
 - A list of external debt collection agencies you have a contractual relationship with
 - Whether any charges for debt recovery are charged directly to customers whose loan is classed as in default
 - The timing, price and notional amount of bad debt sold to third parties between 1st January 2012 and the 31st of March 2014.

27. Have you made any changes to your debt recovery strategy between 1st January 2012 and the 31st of March 2014?

Yes / No

If yes, please provide supporting evidence, where available, explaining the driver of these changes, and the reasoning behind the changes made. In particular, please describe any significant changes to:

- Use of internal debt recovery processes
 - Use of external debt recovery firms
 - Working definitions of arrears and default
 - Whether any charges for debt recovery are charged directly to customers whose loan is classed as in default
 - The timing, price and notional amount of bad debt
 - Any other relevant factors
28. Do you plan to make changes to your debt recovery strategy in the next 24 months as a direct result of the introduction of a price cap?

Yes / No

If yes, please provide supporting evidence, where available, explaining the logic driving these expected or planned changes. In particular, as a result of the introduction of a cap do you plan or expect to change:

- Use of internal debt recovery processes
- Use of external debt recovery firms
- Working definitions of arrears and default
- The timing, price and notional amount of bad debt
- Any other relevant factors

Entry, exit and expansion

29. Please identify and list, in order of likelihood, any firms that you expect to enter the HCSTC market in the next two years. For each potential entrant, please describe the reasons behind your assessment.

30. What is the minimum level of a cap at which you would continue to operate in the HCSTC market? Please provide your answer in terms of the cost of borrowing £100 for 28 days. If there is a more relevant measure of cost for your business (e.g. cost of borrowing through a 6-month instalment loan product), please provide an answer using this alternative measure, specifying clearly what the measure is, and why it is appropriate for your business. Please provide supporting evidence to explain how you have determined your response.
31. Within this overall cap, are there any restrictions on individual charges (i.e. the cap structure) that would mean you would choose to exit the HCSTC market?
32. In your view, could the introduction of a price cap lead to consolidation
- a. by your firm?
 - b. in the market more widely?

Please explain.

General comments

33. What do you expect your customers' reactions to a cap will be? Please provide supporting evidence to your answer.
34. In your view, what impact will the introduction of a price cap have on
- a. your firm?
 - b. your customers?
 - c. the HCSTC market?
35. Please provide any further material that you feel is relevant, and has not been covered by previous questions. In particular, please provide any available research or analysis into the impact a cap could have on your firm and the HCSTC market (e.g. on profit levels, revenue, costs, operating structures, degree of competition).
36. At this stage, what do you consider to be the most likely changes you will make to your business (if any) following the introduction of a cap? Please provide any further material that you feel is relevant, and has not been covered by previous questions.
37. Based on the knowledge of your firm, HCSTC customers, and the HCSTC market, what do you consider to be an appropriate level for the cap, in terms of the cost of borrowing £100 for 28 days? If there is a more relevant measure of cost for your business (e.g. cost of borrowing through a 6-month instalment loan product), please provide an answer using this alternative measure, specifying clearly what the measure is, and why it is appropriate for your business. Please provide supporting evidence or analysis.

Part 2: Supplementary information

Capital and liquidity

38. Please provide an estimate of the capital employed by your firm in its HCSTC business. Your estimate should include:
- A detailed description of the businesses capital requirements; both working capital and the fixed capital invested in the business.
 - A detailed explanation of how the capital employed has been estimated, including:
 - all calculations;
 - the data from which the estimates have been made; and
 - any assumptions made during the estimation process.
 - If possible please indicate which components of your capital estimate would vary if there was a material change in the scale of your HCSTC business. Please provide an explanation for why each capital component would change and the extent to which it could adjust over 12 months. If there are any critical levels of capital required for a certain level of lending please provide details.
 - If the capital employed differs substantially between different periods please provide as many additional estimates as necessary along with a detailed description of how the level of capital changed and why this was necessary.
39. Please provide a monthly overview of the liquidity needs of the business, between 1st January 2012 and the 31st of March 2014. This should include the following:
- A monthly balance sheet that provides an estimate of the capital being used by the high cost short term credit business
 - Bad debt losses on a cash basis
 - Any other cash flow information available.
40. Please provide a breakdown between equity and debt in your funding structure as of 31st March 2014. In addition, provide a brief narrative description of all changes to your funding structure that have occurred between 1st January 2012 and the 31st of March 2014.
41. Please provide an overview of any capital raising or debt issuance planned within the next 12 months.

Incremental and overhead costs

42. For each cost category included in Table 7 of your previous data submission in response to our formal request for data dated 12th February 2014, please provide a detailed explanation of which costs categories are wholly or partly variable over the course of 12 months, if your business was to:
- Double in terms of revenue
 - Reduce by half in terms of revenue
 - For any cost category made up of both fixed and variable costs please indicate the proportion of cost which are variable over 12 months. Please provide as much supplementary evidence as possible in relation to these discussions.

Appendix 2: Market Questionnaire - Version B

Proportionality assessment

HCSTC activity

1. Do you plan to be active in the HCSTC market after you are required to apply for FCA authorisation (when your Interim Permission expires)?

Yes / No

2. Do you plan to be active in the HCSTC market after a cap comes into effect on 2nd January 2015?

Yes / No / Uncertain

If the answer to either of these questions is “No”, you do not need to respond to further questions. However, please confirm your answers to questions 1 and 2 by submitting a response to us.

3. Was your revenue from HCSTC activities in 2013 (calendar year) greater than £500,000?

Yes / No

If yes, please go to question 7. If no, please answer questions 4 to 6 only.

Questions for firms with HCSTC revenue <£500,000

4. Do you plan to make any changes to your business as a result of a cap?

Yes / No / Uncertain

If yes or uncertain, please describe:

- a. any changes you expect to make to your business as a result of a cap.
 - b. the most important factors that will determine whether you will make changes to your business, including whether and how the level and structure of the cap will influence these changes.
5. Please supply the most detailed set of management accounts available for your HCSTC business. These should be annual accounts, from a recent period – ideally the 2013 calendar year.
6. The main questionnaire (for firms with HCSTC revenue >£500,000) includes detailed questions covering the way HCSTC firms operate, how they have responded to previous changes, and how they expect to respond to a price cap. Please feel free to comment on any of the issues raised in the main questionnaire, or to provide a response to specific questions.

End of questions for firms with HCSTC revenue <£500,000

Questions for firms with HCSTC revenue >£500,000

Part 1: Market dynamics questionnaire

Please provide responses to the following questions. We expect responses to be proportionate to the size and complexity of your firm. We are very interested in your views, so please provide as much detail as you feel is reasonable for your firm to provide. If you have difficulty providing a response to these questions, please contact us for guidance.

Background

7. Please provide an overview of your firm. When did you start offering HCSTC products in the UK?

8. Does your firm provide HCSTC products through retail premises?

Yes / No

If yes, please outline the locations of your retail premises.

9. Is your firm

- a. part of a wider group?
- b. a franchisee of another firm?
- c. a franchisor of another firm?

If the answer to any of the above is yes, please describe your firm's place in the wider group, and provide an organogram of the group's structure.

Forthcoming changes in the HCSTC market

10. Has your firm already started to make changes as a result of the forthcoming FCA caps on CPA and rollover use?

Yes / No

If yes, what changes have you made, and when did you make them?

11. Do you plan to make changes as a result of the forthcoming FCA caps on CPA and rollover use that you have not yet implemented?

Yes / No

If Yes, please describe these planned changes and the reasoning behind these changes, including any alternatives considered.

12. Please provide any additional documents setting out research or analysis which you have performed or commissioned, which estimates the impact of announced regulatory changes. In your answer, please refer as appropriate to changes including:

- a. FCA limits to CPA use and rollovers;
- b. The OFT compliance review;
- c. Impact of the "Addendum to Industry Codes of Practice" and the 'Good Practice Charter – Payday and Short Term Loans';
- d. Any other regulatory or legal changes you consider relevant.

Competition

13. Which firms do you currently consider to be your main competitors:
- Of those firms currently operating in the HCSTC market?
 - Of those firms operating in other credit markets e.g. pawnbrokers, credit card providers, providers of overdraft facilities?
14. Do you monitor the activities of your competitors?
- Yes / No
- If yes:
- How do you monitor competitors i.e. what information do you collect?
 - How do you use the information you collect?
15. Do you expect your main competitors to change following the introduction of a price cap?
- Yes / No
- If yes, how and why?

Customer acquisition

16. What proportion of your customers do you serve:
- Through high street premises?
 - Online?
17. Do you expect the way you acquire customers to change as a direct result of the introduction of a price cap?
- Yes / No
- If yes, do you plan to change any of the following, and if so, how and why?
- The customer groups you target.
 - The way you advertise your HCSTC products?
 - The amount you spend on customer acquisition in total, and per customer?
 - How you differentiate your firm from competitors?

Brokerage and loan referrals

18. To your knowledge, are your customers ever charged a brokerage fee, either by your firm, or by brokerage firms?
19. Are you aware of other HCSTC providers currently operating in the market whose customers are charged brokerage fees?
20. When you receive applications and decide not to offer a loan, do you pass on leads to other firms, and if so do you receive a fee for this?
21. Do you pay credit brokers to pass leads to you?
- Yes / No
- If yes, please estimate the proportion of your loans that came from credit brokers in the past two years, and the average amount paid per lead.

22. Do you plan to make changes to your relationship with credit brokers as a direct result of the introduction of a price cap?

Yes / No

If yes, please describe the changes planned. For example, do you expect to change the volume of leads purchased and the price paid per lead, and if so how?

Loan application process

23. Please describe your loan application process:

- a. What steps does a customer need to go through in order to receive a loan? What information must they provide to you?
- b. How long does the application process take?
- c. How you decide whether a loan should be approved, and what are the most important factors?

24. Do you use credit information to help you make loan application decisions?

Yes / No

If yes:

- a. Do you use external credit reference agency data (CRA)?
- b. Do you create internal credit scores?

25. Do you expect to make changes to (any aspect of) your loan application process as a direct result of the introduction of a price cap?

Yes / No

If yes, please describe the changes planned.

Products and pricing

26. Please describe the HCSTC products you currently provide, and whether you offer top-ups, refinancing including rollovers, or simultaneous loans to customers. In your description of the products you offer, please describe the prices charged (including any fees for optional services and contingent charges e.g. default), and the structure of those charges.

27. Does your firm also provide non-HCSTC products?

Yes / No

If yes, please describe the non-HCSTC products you provide.

28. How do you set the interest rate and other charges for the HCSTC products you provide? For example, do you estimate the expected costs associated with each loan, and add on a margin, and do you take into account the rates set by rival firms?

29. Have you made any changes to your product range and pricing levels and/or structure between 1st January 2012 and the 31st of March 2014?

Yes / No

If yes, what changes did you make, and what was the reason behind the changes made?

30. In the next 24 months, do you expect to make changes to your product range and pricing levels and/or structure as a direct result of the introduction of a price cap?

Yes / No

If yes, what changes do you plan to make, and why?

31. In the next 24 months, do you expect to make any changes to the duration of loans you offer to your customers, or the maximum or minimum amounts available to your customers, as a direct result of the introduction of a price cap?

Yes / No

If yes, what changes do you plan to make, and why?

32. Please describe the process through which you develop new HCSTC products (i.e. those falling within the HCSTC definition set out above). How long does it typically take to move from initiating design of a new product to launch of that product?

Debt recovery

33. How do you recover debts once a loan misses a payment?

34. Do you use external debt collection agencies to recover debt?

Yes / No

If yes, what proportion of your loans do you recover through external agencies?

35. Do you plan to make changes to how you recover debts as a direct result of the introduction of a price cap?

Yes / No

If yes, please describe the changes planned, and the reason for these changes.

Entry, exit and expansion

36. Do you expect fewer firms to enter the HCSTC market over the next two years, as a result of the price cap?

Yes / No

If yes, please explain which firms you consider are most likely to enter, and why.

37. In your view, could the introduction of a price cap lead to consolidation:

- a. by your firm; or
- b. in the market more widely?

If yes, please explain why this is the case.

38. How do you think the pattern of exit will develop in the industry over the next 24 months? Please explain your thinking.

39. What is the lowest level of a cap at which you would continue to operate in the HCSTC market? Please provide your answer in terms of the cost of borrowing £100 for 28 days. If there is a more relevant measure of cost for your business (e.g. cost of borrowing through a 6-month instalment loan product), please provide an answer using this alternative measure, specifying clearly what the measure is, and why it is appropriate for your business.

40. Within this overall cap, are there any specific restrictions on individual charges (i.e. the cap structure) that would mean you would choose to exit the HCSTC market? Please explain.

General comments

41. What do you expect your customers' reactions to a cap will be? Please provide supporting evidence to your answer.

42. In your view, what impact will the introduction of a price cap have on:
- a. your firm;
 - b. your customers; and
 - c. the HCSTC market?

Please provide any further material that you feel is relevant, and has not been covered by previous questions. In particular, please provide any available research or analysis into the impact a cap could have on your firm and the HCSTC market.

43. At this stage, what do you consider to be the most likely changes you will make to your business (if any) following the introduction of a cap? Please provide any further material that you feel is relevant, and has not been covered by previous questions.
44. Based on the knowledge of your firm, HCSTC customers, and the HCSTC market, what do you consider to be an appropriate level for the cap, in terms of the cost of borrowing £100 for 28 days? If there is a more relevant measure of cost for your business (e.g. cost of borrowing through a 6-month instalment loan product), please provide an answer using this alternative measure, specifying clearly what the measure is, and why it is appropriate for your business. Please provide supporting evidence or analysis.

Part 2: Supplementary information

Please provide responses to the following questions. We expect responses to be proportionate to the size and complexity of your firm. We are very interested in your views, so please provide as much detail as you feel is reasonable for your firm to provide. If you have difficulty providing a response to these questions, please contact us for guidance.

Accounts and firm performance

45. Please supply the most detailed set of management accounts available for your HCSTC business. If the most detailed management accounts prepared by your firm also includes financial information for other areas of your business not included in our definition of HCSTC please explain what other business is included, along with an estimate of the proportion of the business which relates to HCSTC. If another less detailed set of accounts would provide information about only those products falling within our definition, please also provide these accounts.

The accounts provided can be yearly but should cover the period from 1st January 2012 to the present. They should include a balance sheet that estimates the capital employed in your firm¹⁷ and an income statement. To help us put the accounts in context, please provide a brief narrative of your firm's financial performance between 1st January 2012 and the 31st of March 2014. If HCSTC as defined above is only one part of your business then please provide reconciliation between your management accounts and your firm's statutory accounts.

Capital and liquidity

46. If your capital structure differs significantly from the information provided in your management account balance sheet, in addition please provide an overview of your businesses capital requirements, both working capital and the fixed capital invested in the business.
47. Please provide a monthly overview of the liquidity needs of the business¹⁸, between 1st January 2012 and the 31st of March 2014. This should include the following:
- a. a monthly balance sheet that provides an estimate of the capital being used by the HCSTC business;
 - b. bad debt losses on a cash basis; and
 - c. any other cash flow information available.
48. Please provide an overview of your firm's debt structure, as described in the management accounts provided.
49. Please provide an overview of any capital raising or debt issuance planned within the next 12 months.
50. Does your firm have a required rate of return e.g. a Weighted Average Cost of Capital?
- Yes / No
- If yes:
- a. What is the required rate?
 - b. How is the rate calculated? For example, is this a cost of capital or return on equity, does it include internal 'hurdle rates' used to estimate performance or evaluate projects?

¹⁷ For example staff, IT, cost of finance, fixtures and fittings etc.

¹⁸ Including cash holdings, credit lines etc.

Incremental and overhead costs

51. For your management accounts, please indicate the proportion of each cost category which is incrementally incurred as a result of issuing a loan to a customer (incremental costs) and the proportion that is not (overhead costs). These percentages should sum to 100%. For example:

Banks charges may form a separate cost category in your management accounts. The majority of these costs may be as a result of the cost incurred when moving funds as a result of loan agreements made. These costs should be classified as "incremental". The remaining costs caused by bank charges incurred operationally by the firm would be classified as overheads. For each month please provide the proportion of cost which are "incremental" and which are "overheads"

May 2012;	Bank Charges	£35,000	Incremental	85%
	Overhead 15%			

52. For each cost category please also provide:
- A description of the cost category
 - An explanation of the way in which the loan causes the cost to be incurred. Please also include any supporting evidence showing how this cost is taken into account when the loan decision is made.
 - Whether the cost can be attributed directly to the loan in question or some form of allocation is necessary.¹⁹
 - For costs which have been allocated please provide details including:
 - all calculations;
 - the size of the pot of costs being allocated;
 - the cost driver used and the data from which the cost driver is drawn; and
 - any other assumptions made during the calculation.
53. For each cost category included in your management accounts please provide an explanation of which costs categories are wholly or partly variable over the course of 12 months, if your business was to:
- Double in terms of revenue
 - Reduce by half in terms of revenue
 - For any cost category made up of both fixed and variable costs please indicate the proportion of cost which are variable over 12 months.

Loan information and customer profitability

54. For each month covered by your management accounts please provide the following information, broken down by type of product:
- The number of new loan agreements made during the period
 - The number of loans paid off during the period
 - The number of loans rolled over during the period
 - The number of loans classified as defaulted during the period
 - The default rates. If possible please provide:

¹⁹ Note: typically costs that require allocation would not be regarded as having been directly incurred and would typically be classified as "overhead".

- The number of loans falling into default during a period divided by the average number of outstanding loans for the period.
 - The default rate for the first, second, third etc. loans that customers take out with your firm.
55. Of the customers who were given loans, if you are able to, please split these customers into four quartiles based on your internal credit score. So for example, the first quartile would be the 25% of customers with the lowest internal credit scores and the last quartile would be the 25% of customers with the highest internal credit scores. For each quartile:
- a. Please split revenues and costs into each quartile using the revenue and cost categories above. If you are only able to do this at total revenue and total cost per quartile, please provide this. Please provide an explanation of the methodology used to allocate revenue and costs to each quartile and provide supporting calculations.
 - b. Please provide the default rate per quartile, please explain how the default rate has been calculated.

If you are not able to provide the analysis in the format requested above, please provide an explanation of any information you have on the profitability of different customers of differing internal credit scores, with supporting analysis or evidence where available.

End of questions for firms with HCSTC revenue >£500,000

Technical Annex 3: Impact of the Cap on HCSTC Demand

Contents

1. Introduction
 - a. Purpose of the Technical Annexes
 - b. Objectives of the Demand Side Analysis
 - c. Scope of the Annex
 - d. Technical Note

Credit Reference Agency (CRA) Data Analysis

2. Background to CRA Data Analysis
 - a. Purpose of Analysis
 - b. Outcomes Included in Analysis
 - c. Justification for Data Choice
3. CRA Data
 - a. Firm Level Loan Data
 - b. CRA Cross-Firm Matching Individuals
 - c. 'First Loan' and 'Repeat Loan' Indicators
 - d. CRA Credit Files
 - e. CRA Credit Scores
4. Econometric Methodology
 - a. Identification and Empirical Strategy
 - b. Regression Discontinuity Design (RDD)
 - c. RDD Application to CRA Data Analysis
 - d. Practical Implementation
 - e. Extrapolation Away From Firm Credit Score Cut-Off Thresholds
5. RDD Results: First-Stage
 - a. 'Fuzzy' First Stage Estimation
 - b. Firm Credit-Score Cut-Offs
 - c. First-Stage Estimation Results
 - d. Illustration of First-Stage Results
 - e. Explaining 'A' and 'B' in the First Stage
 - f. Robustness of First-Stage Process Results

6. RDD Results: Outcome Variables
 - a. Format for Presentation of Results
 - b. Pooled Results: Loan Application Outcomes
 - c. Pooled Results: Credit Portfolio Outcomes
 - d. Pooled Results: Creditworthiness Outcomes
 - e. Pooled Results: Month by Month Analysis
 - f. Overview of Lender-Process Results
 - g. Summary of Results

7. Additional Analysis: RDD Robustness
 - a. Importance of Robustness Testing
 - b. Falsification Test
 - c. Bandwidth Choice
 - d. Density Test
 - e. Kernel Choice
 - f. Summary of Robustness Analysis

8. Extrapolation: Modelling Approaches
 - a. Purpose of Extrapolation Analysis
 - b. Differential Trend Analysis
 - c. Comparison with Stage 3 Denials
 - d. Validity of Extrapolation to Different Groups
 - e. Implications for the Level of a HCSTC Price-Cap
 - f. Impacts at Selected Cap
 - g. Summary of Findings

Consumer Survey Analysis

9. Background to Consumer Survey Analysis
 - a. Survey objectives
 - b. Review of Existing UK Consumer Surveys
 - c. Justification for Consumer Survey

10. Survey design
 - a. Approach to Survey Design
 - b. Survey Group Design
 - c. Survey Sections and Content
 - d. Practical Considerations and Pilot Survey Feedback

11. Data Coding and Collation
 - a. Data Matching
 - b. Data Cosing
 - c. Response Rates
 - d. Sample Selection Tests
 - e. Coding Unlicensed Lending

12. Methodology

13. Analysing the Impact of HCSTC Access

- a. Data Results
- b. Testing Marginal Comparison Groups
- c. Question 1
- d. Question 2
- e. Question 3

14. Analysing Outcomes Under Different Cap Levels

- a. Methodology for Analysing Outcomes
- b. Analysing Outcomes Under Different Cap Levels
- c. Concluding Findings From the Survey Analysis

Bibliography

Appendix Tables

Executive Summary

Purpose of the Technical Annexes

- The technical annexes provide a detailed description of the analysis undertaken to support the price cap decision. The annexes explain the methodology used in the analysis, the data sources, results and interpretation. They also explain how the impacts of alternative price cap scenarios were modelled.
- This 'demand side' annex is accompanied by 'supply side' and 'competition' annexes. Taken together, these describe the complete analytical analysis in support of the price cap decision.

Objectives of the Demand Side Analysis

- The analysis presented in the technical annexes in support of the price cap decision answers three key questions relating to the imposition of a price cap:
 1. What happens to firms and firms' lending decisions as a result of the cap?
 2. What options are there for consumers who no longer have access to HCSTC loans
 3. Are these consumers better or worse off as a result of not getting a HCSTC loan?
- This Demand Side Annex focuses upon Questions 2 and 3. Question 2 focuses upon consumer substitution towards other forms of credit and / or other options in response to being unable to borrow via HCSTC due to the price cap. Question 3 focuses upon whether consumers are overall better or worse off as a result of the price cap denying them access to HCSTC.
- A review of the literature on HCSTC finds that answers to these questions in the existing literature are ambiguous. Some studies find evidence that restricting access to HCSTC causes consumers to substitute towards inferior alternative means of borrowing. However, other studies find very small, or no, evidence for substitution. While some studies find detrimental impacts upon consumers arising from HCSTC use there are also a number of studies which find positive impacts upon consumer outcomes.
- The existing literature is inconclusive in its answers to Questions 2 and 3, and existing studies are typically based on non-UK data and HCSTC market features which differ from a UK setting. As a consequence, this study presents new research to answer these key questions.

Methodology

- To answer the two key questions analysis is presented based upon HCSTC loan application records provided by a large sample of firms in the HCSTC market, individual level credit histories in credit files provided by a Credit Reference Agency (CRA) and a Consumer Survey of approximately 2,000 consumers.
- Firm data provides detailed records for all applicants for HCSTC (both those successful in obtaining loans and unsuccessful in obtaining loans) for the calendar year 2012-2013. Extensive data includes details of the loan application, applicant characteristics, loan decision, loan performance and loan repayment outcomes. Individuals who apply for their first HCSTC loan in 2012-13 are central to the analysis. The core analysis is based on 4.6million applicants.
- CRA matching of individual applicants across firms allows the analysis to follow an individual through their HCSTC market experience. Data from the CRA provides very high quality credit records for the 1.9million loan applicants. These include credit file records, loan application records, analytical data constructed by the CRA for credit scoring models and personal insolvency public records.
- Consumer Survey data is provided by a bespoke survey designed specifically for this project. The survey data complements CRA data by providing additional information on financial outcomes not contained in CRA records, together with a range of additional questions which provide insight into non-financial outcomes for HCSTC applicants.
- A key feature of the data analysis methodology is the comparison on individuals who applied for a HCSTC loan but were narrowly unsuccessful on the basis of their credit score with individuals who were narrowly successful on the basis of their credit score. Analysis shows that these two groups are very similar in a broad range of characteristics; however they vary in their exposure to HCSTC. Under certain assumptions, analysis shows that comparison of these groups can be used to answer Questions 1 and 2.
- Analysis of CRA data addresses Questions 1 and 2 using the comparison approach described above implemented using a statistical method which is known as Regression Discontinuity Design (RDD). This approach is particularly well suited to features of the UK HCSTC market. The attractiveness of RDD also comes from the relatively mild assumptions under which RDD returns valid causal estimates of the 'true' effect of a treatment, in this case HCSTC use. RDD results present clear evidence to address Questions 1 and 2.
- Consumer survey analysis also presents clear evidence in answer to Questions 1 and 2. The construction of the consumer survey is based upon comparison of individuals who are narrowly unsuccessful and narrowly successful in their loan applications on the basis of their credit score. Survey analysis also draws on a representative sample of HCSTC loan users, plus specific sample of HCSTC users with problem debts and habitual borrowers. The survey analysis draws upon a range of survey instruments to understand different aspects of consumer HCSTC use decisions and experience.

Answers to Question 2: What options are there for consumers who no longer have access to HCSTC loans?

- Results show that compared to consumers narrowly successful in a HCSTC application, a narrowly unsuccessful HCSTC application causes consumers to:
 - On average apply for less formal credit. CRA data analysis shows HCSTC denial causes consumers to be 25% less likely to make an application for non-HCSTC formal credit in the 6 months following the application. Survey evidence shows only 11% of narrowly unsuccessful applicants state they chose to borrow using an alternative formal credit source.
 - On average use less formal credit. CRA data analysis show an unsuccessful HCSTC application causes consumers to hold fewer formal credit items and have lower balances on the credit items they hold.
 - In one quarter of cases borrow from friends and family. Survey evidence from consumers narrowly unsuccessful with their HCSTC loan applications finds 29% borrow from friends or family. Among narrowly successful HCSTC loan applicants, 22% state they would borrow from friends and family were the HCSTC loan not available to them.
 - In half of cases, reduce consumption in the short-term. In response to an unsuccessful HCSTC application, approximately 21% of narrowly unsuccessful consumers decide to forego the intended consumption. A further 24% state they have no choice other than to forego the intended consumption. Among those narrowly successful, 24% state they would decide to forego and 31% state they would have no choice but to forego.
- Results also show that:
 - HCSTC loan denial does not cause use illegal lenders. Of 2,000 consumers sampled in the consumer survey, less than 2% stated they borrow from an illegal lending. Comparison of those narrowly successful and narrowly unsuccessful in their HCSTC application shows that those narrowly unsuccessful are slightly more likely to consider borrowing from an unlicensed lender, but this difference is not statistically significant.
 - HCSTC loan denial increases the likelihood a consumer exceeds their arranged overdraft limit in the first month after loan denial. For narrowly unsuccessful HCSTC loan applicants, loan denial increases the likelihood that the consumer exceeds their arranged overdraft limit by 17% in the first month after application. However, in later months loan denial causes a lower likelihood of exceeding an arranged overdraft limit.
 - Consumers with better credit scores have more options. Consumers with higher credit scores who are further away from the cut-off threshold for receiving a HCSTC loan typically have more formal and informal credit options available to them were they to be denied a HCSTC loan.

Answers to Question 3: Are these consumers better or worse off as a result of not getting a HCSTC loan?

- Results demonstrate consumers narrowly denied HCSTC loans are better off as a result of not getting a HCSTC loan compared with consumers who are narrowly accepted for HCSTC. Consumers narrowly denied HCSTC also avoid the high likelihood of late or non-payment on HCSTC loans (see the Supply Side Annex).
 - Results show that HCSTC use causes consumers to miss payment on other credit, exceed their overdraft limit and accumulate default debt. Consumers narrowly successful in their HCSTC application experience a 10% increase in the likelihood of missing non-HCSTC formal credit payments 6-12 months later, an 11% increased likelihood of exceeding their authorised overdraft limit 6-12 months later and a 12% increase in their non-HCSTC credit balances in default.
 - These results show consumers are financially better off as a result of not getting a HCSTC loan. There is a clear pattern over time which shows that in the first few months following loan application, those narrowly accepted for HCSTC experience a decreased likelihood of exceeding their authorised overdraft limit and experiencing a missed payment on non-HCSTC credit. However, this effect reverses after 1-2 months and the likelihood of these negative outcomes rises persistently through the next 6-12 months.
 - A large subset of consumers regret taking loans. Among consumers narrowly accepted for loans, while the majority report they are happy with their decision to use HCSTC, 41% report they regret their decision to use HCSTC. Among consumers who receive loans with higher credit scores, 30% state they regret their decision to use HCSTC. 63% of those narrowly unsuccessful report they think it 'for the best' that they did not get a loan.
 - There is no evidence that HCSTC denial impacts upon overall wellbeing. Analysis of average wellbeing using survey instruments which measure life satisfaction, general wellbeing and financial distress each indicate that loan denies does not lead consumers to report they are worse off. There is also no distributional evidence of large welfare impacts upon a small subset of consumers which might not be detected in average values.
 - There is no evidence that HCSTC denial causes non-payment of household bills. Comparison of those narrowly accepted for HCSTC loans against those narrowly denied HCSTC loans shows that those accepted are slightly more likely to miss paying a household bill and other household financial commitments. This effect is small and is not statistically significant.
 - Consumers with higher credit score also suffer negative effects from HCSTC use. Extrapolating our estimates to consumers with higher credit scores, we also find HCSTC use also causes these consumers to be worse-off. However, the level of detriment suffered by consumers with higher credit scores is lower. These consumers are also less likely to miss payments on their HCSTC loans.

1. Introduction

a. Purpose of the technical annexes

The technical annexes provide a detailed description of the analysis undertaken to inform the price cap decision. Many results are included in the consultation paper and cost benefit analysis. The purpose of the annexes is to describe the technical analyses which produced those results in detail.

This annex describes the 'demand side' analysis and is accompanied by additional annexes which describe the 'supply side' analysis and 'competition' analysis. This division of material between annexes broadly reflects the division of 'demand' and 'supply' analyses undertaken by the FCA. There is some overlap between the annexes, particularly in the sections describing the data used, its collection and formatting. Where relevant the annexes cross-refer the reader to sections in other annexes. The annexes are also accompanied by additional supplementary documents.

b. Objectives of the Demand Side Analysis

The central objective of the demand, supply and competition analysis is to answer three high-level questions illustrated on the slide below. These relate to the impact of a price cap on credit supply (Question 1) and the consequent impact on consumer outcomes and welfare (Questions 2 and 3). The demand side analysis focuses on Questions 2 and 3, which relate to the impact of credit supply changes on consumers. The direct impacts of a price cap are that some consumers will no longer be served by firms in the market and that the price of a HCSTC will change for some, or all, consumers who continue to be served in the market. The principal objective of the demand side analysis is to answer these two questions:

There are three high-level questions that the analytical work will assesses

- 1 What happens to firms and firms' lending decisions as a result of the cap?
- 2 What options are there for consumers who no longer have access to payday loans?
- 3 Are these consumers better or worse off as a result of not getting a payday loan?

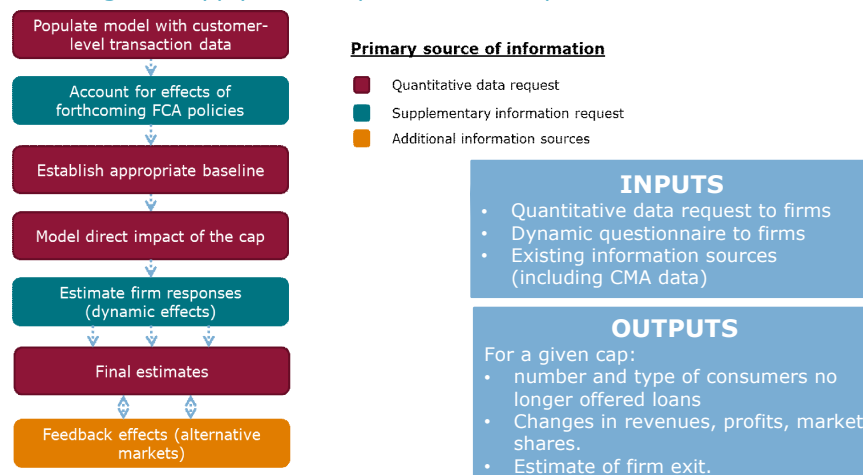
Question 2 addresses the issue of substitution: without access to a HCSTC loan, what will consumers do instead? Options include the use of alternative forms of borrowing to fund consumption, the foregoing either temporarily or permanently of consumption expenditure which would have been funded by the HCSTC, and other options. One possible answer is that consumers would use an alternative form of borrowing to fund the same type and level of consumption as they would have funded with HCSTC. Hence the impact of a price cap would be to change the type of borrowing consumers use. An alternative answer would be that consumers would not consume the good or service which the HCSTC would have financed. In such a scenario intended consumption is either delayed, or foregone.

Question 3 addresses the welfare effects arising from the loss of access to HCSTC. Does enforced substitution away from HCSTC and towards either an alternative form of borrowing, or consumption foregone, or something else, result in better or worse outcomes for consumers? One possible answer to this question is that consumers are worse off as a result of being denied access as their consumption is foregone, reduced or delayed. An alternative possible answer is that consumers are better off as they avoid potentially defaulting on HCSTC, or defaulting on another credit item in order to repay their HCSTC, and would save money through not incurring HCSTC fees and charges.

The high-level approaches to 'supply' and 'demand' analysis are summarised on the slide below:

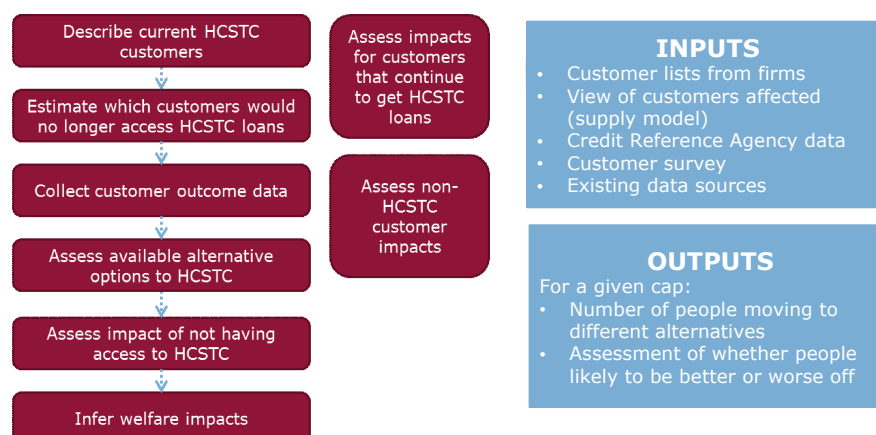
2. What happens to firms and firms' lending decisions as a result of the cap?

Modelling the supply-side response to the cap



3. What options are these for consumers who no longer have access to payday loans? C. Are these consumers better or worse off as a result of not getting payday loan?

Modelling the demand response to the cap



The three questions are each empirical questions and the demand and supply side analysis for the most part uses empirical analysis of recent data to answer them. Specifically, the empirical analysis uses a very large dataset of 16 million HCSTC customer loan application records and HCSTC customer credit files provided by a Credit Reference Agency (CRA) together with a survey of 2,000 HCSTC customers commissioned specifically for this work. The loan application records and CRA provided data covers the period 2012-2013. The survey of 2000 customers draws on a sample of customers who made a loan application in the period July – November 2013.

Our answers to the questions are based on analysis of these data. Therefore, based on an analysis of firm, CRA and consumer survey data, we consider the following questions:

4. What alternative options do we observe consumers using in CRA records and consumer survey responses once they are denied HCSTC, compared with those successful for HCSTC?
5. Do we observe consumers who are denied HCSTC better or worse off in their credit file data and consumer survey responses as a result of not getting HCSTC, compared to those who are granted access to HCSTC?
6. Given the available data, what can we infer from E) about the impact of different levels of a price cap?

The empirical analysis seeks to address these questions directly. More generally, the empirical analysis aims to understand the impact of HCSTC provision and denial on a broad range of consumer outcomes pertaining to substitution and welfare. The analysis is intended to be broad and

extensive, examining a wide range of impacts over various time periods in order to build a rich view of the impact of HCSTC on consumers.

c. Scope of the Annex

In compiling these annexes the FCA has adopted the approach of including as much description of the project research and results as is feasible given legal and practical constraints. The annex describes all of the analysis performed, including results not directly referenced in the Cost Benefit Analysis or Consultation Paper documents. This annex also includes an extensive set of ancillary results and summary statistics. This annex includes a detailed description of the research methodology and data used in the demand side analysis, together with a broad set of results and sensitivity analyses. All stages in the analysis are described in detail, together with some practical explanation of how the analysis was implemented. An extensive array of results is shown. However, it is not feasible to include all results in this document. In particular, a decision has been made to limit coverage in two respects.

Firstly, where statistical estimates are shown for an outcome variable defined over a time interval (typically a time interval since HCSTC application) results are shown only for headline time intervals, typically 0-6 months and 6-12 months. For these types of outcomes results were estimated at month-by-month time intervals, in some cases up to 24 months. However, not all of these estimates are included in this document as to do so would involve in some cases over 20 additional tables of results for the same outcome variables defined over different periods. We describe the sensitivity of results to the selection of time period and in places plot estimates (normally Regression Discontinuity Design (RDD) coefficient estimates).

Secondly, where robustness testing is undertaken we show robustness analysis only for a selection of outcome variables which returned statistically significant results in the initial analysis. The purpose of robustness analysis is to show that statistically significant results are not dependent on particular parameterisations, or specifications of models, or other assumptions. Where outcome variables do not yield statistically significant results under both initial and robustness analysis, these results are of less direct interest (though the non-existence of statistically significant effects may itself be important). Consequently we only report instances where initial analysis produces statistically significant estimates.

d. Technical Note

The technical analysis described in this annex mainly comprises econometric analysis of individual level microeconomic data. The data used takes two forms. Firstly, individual-level financial records provided by HCSTC firms which are matched to credit file records provided by a Credit Reference Agency (CRA). Second, individual-level survey data from a consumer survey commissioned via TNS-BMRB. These data were analysed using econometric models with analysis implemented in STATA®. STATA is statistical software designed for advanced statistical analysis of large data

which is extensively used in statistical analysis, econometric analysis and in the medical sciences. Most of the analysis was conducted within the STATA environment with some analysis also conducted within the MATA matrix analysis environment available within the STATA package. Due to the size of the data used and the computational demands of the econometric analysis undertaken, analysis was implemented on a closed network of high performance computers.

Credit Reference Agency (CRA) Data Analysis

2. Background to CRA Data Analysis

a. Purpose of Analysis

The purpose of the CRA data analysis component of the project is to address questions 5) and 6) above using individual level loan application records provided by HCSTC firms together with financial records provided by a CRA. CRA customer data, commonly known as a 'credit file', contains extensive individual level data on historical credit usage and performance of consumer credit portfolios. A consumer credit file provides a longitudinal view of consumer data, with credit file records typically containing 6 years of historical data.

Credit files are used by lenders as well as other firms to inform decisions on loan applications and applications for other financial products. Information in credit files is typically provided by lenders on a reciprocal basis. CRAs also match in demographic and socio-economic data from public records and other databases. Increasingly, CRAs are also able to match into credit files individual level financial transaction and purchasing data such as that found on current account bank statements.

CRA data is a rich source of data for analysing the financial impact of HCSTC use and denial. CRA data is an appropriate complement to firm data for a number of reasons. Firstly, whereas data provided by an individual firm will typically only contain information about consumer's use of products provided by that firm, CRA data aims to provide correct information on the consumer's credit portfolio. This is particularly important for the analysis undertaken here. Question 5 explicitly refers to the other 'options' consumers' use, which may include substitution onto other credit products. Such behaviour could be observed within CRA data whereas it could not in firm-only data.

Secondly, CRA data allows analysis of the evolution of consumer credit portfolios over time in response to HCSTC provision or denial. Longitudinal data is essential for any analysis of borrowing or saving choices given these are inter-temporal choices. For example, it may be the case that the short-term effects of HCSTC use differ from the medium term effects.

HCSTC use may help consumers to deal with short-term financial distress and lead to medium-term benefits. Alternatively, HCSTC use may lead to a high short-term debt burden with effects which do, or do not, persist in the medium run. Analysing these effects requires longitudinal data.

However, CRA data cannot provide a complete picture of consumer outcomes resulting from HCSTC provision or denial. CRA data is limited to quantifiable outcomes and typically limited to financial and financial-related outcomes. Some financial data of interest, such as information on shadow credit limits, is not contained in CRA data. As a result, in this analysis CRA data is complemented by a consumer survey specifically designed for this analysis which examines financial outcomes not recorded

in CRA records. It also examines non-financial outcomes, as well as consumer experiences and attitudes towards HCSTC access and use.

b. Outcomes Included in Analysis

The outcomes analysed within the CRA Data Analysis can be grouped into 3 broad categories: loan application outcomes, credit portfolio outcomes and creditworthiness outcomes. The first two categories are analysed principally in relation to Question 5 regarding substitute options utilised by consumers when HCSTC are not available. The third category was analysed principally in relation to Question 6 concerning welfare outcomes of HCSTC use and non-use.

Loan application data (across the full range of consumer credit borrowing vehicles available in the market) provides details of loan products customers have applied for, including details of product type, applicant amount and other characteristics of the loan. The amount of detail provided relating to an individual loan application will tend to vary across different CRAs.

Where a customer has applied for loan with a firm which uses credit files provided by a CRA, that CRA will hold detailed records relating to the loan including the loan outcome decision. Where a customer has applied for a loan with a firm which does not use the services of the CRA detailed records will not be held but a record that a loan application has been made will appear on the customer's credit file with that CRA.

Credit portfolio data provides details of the credit products held by consumers and consumer use of those products. A consumer's credit portfolio may include a range of formal credit items, such as credit cards, personal loans and mortgages. CRA credit files should provide a correct view of this portfolio.

Some elements of a consumer's credit portfolio are not included in CRA data. For example, informal borrowing from friends and family or loans from employers would not be included in CRA records. In addition to providing information on products held, the credit file contains information on the level of borrowing on each product and payments made. These records are typically available at monthly frequency for the duration of the product's history on an individual customer's credit file for up to 72 months.

Creditworthiness data provides details of consumer performance on the loan products they hold. This includes delinquency (1-6 months in arrears) and default (non-payment after 6 months in arrears). These definitions are those used by the CRA. The data also includes information on formal and informal forms of personal insolvency including bankruptcy and the use of a debt management plan. Other outcomes contained in customers credit files related to creditworthiness include unauthorised overdraft requests.

c. Justification for Data Choice

In order to undertake high quality analysis primary loan records and credit reference data were used. Assessing the impact of HCSTC use on financial outcomes requires objective, individual level data.

There is some evidence that self-reported financial data from individual or household level surveys is prone to under-reporting (Karlan et al., 2011), hence objective data from administrative sources is preferred for this form of analysis. Individual level records are essential for both an approach to econometric identification and documenting heterogeneity in effects of HCSTC loan use on outcomes across observable characteristics of individual loan users.

3. CRA Data

a. Firm Level Loan Data

The demand side analysis makes use of a subset of the data provided by HCSTC firms in response to the FCA data request. The details of the data request, coverage of the data requested and specific variables submitted, data collation, cleaning and formatting are provided in the Supply Side Annex.

Of the data on loan applications provided by firms,¹ approximately 38% were loan acceptances. 99% of loan application observations included a date of application or acceptance. 86% of loan applications included the date the individual applicant had first applied for a loan with the lender (which included dates before January 2012). Additional details for the coverage of data provided by firms are contained in Table A1 in the Appendix.

b. CRA Cross-Firm Matching Individuals

As some individuals apply to multiple firms, the raw dataset contains observations of the same individual applicants across multiple firms, in some cases many firms. In order to undertake individual-level analysis it is necessary to match these individuals across firms. Individual customer observations are matched across firms by the CRA. This matching is done using individual records for name, address, and date of birth. The main use for this is to match loan applicants to CRA's database in order to obtain the applicant's credit file. The records were used to match individual applicants across firms and then to provide credit files for the analysis.

c. 'First Loan' and 'Repeat Loan' Indicators

A key set of data in the data analysis is the date on which a customer applied made their first application for a HCSTC loan (i.e. first appeared in the HCSTC market) combined data on whether the applicant obtained a HCSTC loan within a following period of time. We term the loan application record on the date on which a customer made their first HCSTC application the 'first loan application'. Subsequent loan applications are termed 'repeat loan applications'. The uses of these data are explained in more detail in the methodology chapter which follows. This section explains how the first loan application records were identified in our data.

The first loan application date is the date on which an individual made their first ever application for HCSTC. We construct this date using firm and CRA data. Using firm data we take the date firms recorded that a customer had first applied for or first taken out a loan (either during 2012-13 or before) and combine this with the earliest dates when loans were applied for period and written in 2012-13. We take the earliest of these records as the first loan date in firm data. We then use CRA credit file data

¹ Loan application data was provided for applications for both first loans and subsequent loans. The majority (89%) of these observations can be identified as relating to the period January 2012- December 2013. The remaining observations come from firms who provided observations outside this period (mainly 2011 – 8%, but also 2001-2010 – 1%; or 2014 – 0.03%) or who did not provide dates for some observations (1%).

to check whether the CRA holds a record of a loan application for that customer which pre-dates the first loan application in firm the firm data. Therefore, for each individual customer, the earliest of firm first loan application dates, firm first loan successful dates, firm dates of loans applied for and dates of loans written and CRA HCSTC application dates was taken as the first date the person appeared in the HCSTC market.

For those customers whose first identified date occurred in 2012/2013 we then identified the date of first application as the minimum of the first date applied for or, if this field was empty, the minimum value for first date written. Where an individual had more than one observation on this first date, a random pick was taken.

Once the first date of application had been identified, we calculated whether the applicant was successful for and took a loan with any lender within various periods from this first date. We describe observations where an individual was successful for and took at HCSTC as 'gotloan' observations. It should be emphasised that this gotloan variable records whether the individual took a loan with any lender, not just the first lender they applied to. This gotloan variable was constructed since the eventual outcomes for an individual was assumed to be more likely to depend on whether they ended up getting a loan within a reasonable time scale of their first application, rather than the outcome of just the first application. This is discussed further in the methodology section below.

Table 1 below provides summary statistics for the 'gotloan' variable constructed over various time intervals from first application. In total there are 1.9m 'first loan' observations relating to unique individuals in the first time applicant dataset.² Among these individuals 50.7% of first time applicants got a loan from their first application, 56.1% got a loan within 7 days of first application. Within 60 days of application 58.8% of applicants got a loan.

Table 1: First Time Applicant Numbers and Loan Success Rates

	Number of individuals	Percentage of first time applicants
All first time applicants	1,856,654	100
Of which:		
Got loan from first application	941,377	50.7
Got loan within 3 days of first application	1,026,315	55.3
Got loan within 7 days of first application	1,041,046	56.1
Got loan within 30 days of first application	1,072,493	57.8
Got loan within 60 days of first application	1,092,030	58.8
Got loan any time in 2012/13	1,170,066	63.0

Source: Analysis of firm data

² Customers who were first time applicants in 2012/2013 accounted for 46% of all applicants in 2012/13 (54% if excluding applicants who did not make it to the credit scoring phase of their application) and 38% of all loans in 2012/13.

d. CRA Credit Files

For each of the 4.6 million individual applicants successfully matched by CRA, the FCA obtained their complete credit file by statutory data request³. The CRA provided their complete credit history in the form of their raw credit file (6 years of data). They also provided a series of additional databases for each matched individual. These were: public records relating to insolvency events, records of credit applications processed by CRA, demographic data provided by credit applications, supplementary credit card records, and CRA-created variables which aggregate information from all of the above. These are described in Table 2 below.

Table 2: CRA Data Categories Summary Statistics

Data set	Contents	Used to calculate	Number of observations	Average number of observations per individual	Number of variables
(1) Public	Data extracted from CRA’s public data base of all county court judgments and bankruptcies (including IVAs): CCJ date, settlement date, plaintiff, amount, type, contact details, etc	Number of insolvency events	890,684	0.2	20
(2) Credit applications	Records of credit applications processed by CRA: application date, type of account being applied for, applicant characteristics, etc.	Number of credit checks made	50,349,852	11.0	12
(3) Non-credit information	Demographic data obtained from credit applications: contact details, marital status and employment status; information on types of bank accounts and debit/credit cards	Demographics	5,120,385	1.1	40
(4) Credit file	Records of individual credit products held from credit firms reporting to CRA: credit limit; balances in default and default status – current and for the past 36 months; monthly repayment amounts and dates	Number of credit products held, number of bad credit events, balances (excluding credit card)	52,253,008	11.4	243
(5) Credit card file	More detailed credit card records – providing end of month figures e.g. balances and limits	Credit card balances, cash advances	5,037,264	1.1	178
(6) CRA-created	CRA’s calculated outputs e.g. balances and number of active credit files by various characteristics, CRA’s calculated credit scores	CRA credit score, demographics	4,578,986	1.0	359

³ This was using Section 165(1) of the Financial Services and Markets Act (FSMA) 2000. The requirement was made for the purposes of, or in connection with, the FCA making rules under Section 137C of FSMA (FCA general rules: cost of credit and duration of credit agreements). Section 165 of FSMA has been applied with the rest of Part II by Article 4 of The Financial Services and Markets Act 2000 (Consumer Credit) (Transitional Provisions) Order 2013, SI 2013/3128

Source: Analysis of CRA data

From datasets (1), (2), (4) and (5), described in Table 2, a series of outcome variables of interest were constructed. A full summary list is provided in Table A2 in the appendix. Here we summarise the categories of variables constructed. These are:

Loan Application Variables: total number of credit applications (which appear as credit 'checks' on customer credit files), plus number of applications by credit types (credit cards, personal loans, revolving credit, home credit, mortgages).

Credit Portfolio Products: total number of credit products held in the customer's credit portfolio, plus number of individual products by type (credit cards, personal loans, home credit, mail order products, hire purchase products, mortgage products, HCSTC products, other products, current accounts, household bill accounts).

Credit Portfolio Balances: total balance of the portfolio plus individual balances on each product type. Total utilisation on all consumer credit types (i.e. excluding mortgage) plus total credit limit on all consumer credit types.

Bad Credit Events: total number of missed (including late) payments on all credit contracts, plus missed payments by credit product type. Variables to indicate worsening overall credit file status, worsening household bill status, and the worst account status on the credit file.

Other Creditworthiness Outcomes: Total balances in default and delinquency. Default and delinquency balances expressed as a proportion of total credit balances. Indicators for personal insolvency events e.g. bankruptcy. Credit score and change in credit score.

In each case the variables are constructed to refer to data over a specific time period. For example, the variable 'bankruptcy' is a 1/0 dummy variable to indicate whether the individual was subject to a bankruptcy order within a period of time after HCSTC application. We typically define these periods as 0-6 months and 6-12 months. The aggregated balance variables were calculated as mean values over the time periods in order to provide an indicator of average levels of balances and to stop missing observations and/or monthly fluctuations from having a large impact on the calculated figures. Where data points were missing in the credit file data observations were recoded as missing (not set to zero).

Constructed variables variously take the form of 'dummy' 1/0 indicator variables to indicate an event e.g. bankruptcy or status on the individual's credit history, 'number' variables which count the number of occurrences e.g. of credit checks, 'balance' variables which indicate an outstanding financial balance, 'log balance' variables which are natural log transformations of the balance variable,⁴ 'level' variables which record the

⁴ The transformation $\log(1+\text{variable})$ was used in order to deal with the large number of 0 observations in the data. This transformation means that a 0-value observation is recorded as 0.

best/worst level of a variable within a time period and 'ratio' variables which record a calculated ratio.

In addition to the list of variables constructed for analysis from raw credit file data, additional outcome variables were constructed from the CRA-created measures (database 6 in Table 2 above). CRA-created data is only available at specific points in time (January 2012, January 2013, March 2014). This implies that the relevant aggregate within the CRA-created file (e.g. total outstanding credit) contains observations only at those specific dates. Variable definitions are provided in Table 3 below.

Table 3: Outcome Variables From CRA-created Variables

Variable name	Variable description	Contains HCSTC accounts?	Origin of variable
default_balance	total value of all default credit accounts Jan/Mar after HCSTC application, given in multiples of £100's	y	(6)
delinquent_balance	total value of all delinquent credit accounts Jan/Mar after HCSTC application, given in multiples of £100's	y	(6)
number_credit_accounts	number of active credit accounts Jan/Mar after HCSTC application, with numbers greater than 9 coded as 9	y	(6)
change_credit_score	change in CRA credit score from the January before HCSTC application to the January (2013) / March (2014) after HCSTC application	na	(6)

Source: FCA

Details of the data cleaning performed on the CRA data is given in Table A3 in the Appendix. Tables A4 to A8 in the Appendix provide summary statistics for all outcome variables. Summary statistics are calculated for period 0-6 months after first loan application date and 6-12 months after first loan application date.⁵ Further summary statistics for different periods are available on request.

e. CRA Credit Scores

The CRA also provided credit scores, which aim to provide an overall view of the individuals' credit worthiness. CRA provided four credit scores:

- Account performance score
- Credit risk screening score
- Probability of default score
- Collections score (estimate of the likelihood that a delinquent account will make a payment within a set time period)

The scores are not market-specific, so are not calibrated specifically for HCSTC loans. CRA provided these scores for three points in time: January 2012, January 2013 and March 2014.

⁵ With the exception of personal insolvency outcomes, which are calculated for a period 0-12 months after first loan application date, due to the rarity of these events.

4. Econometric Methodology

a. Identification and Empirical Strategy

This section explains the econometric methodology used to estimate the impact of HCSTC use on consumer outcomes and welfare. The two 'key questions' which the demand side analysis seeks to answer are:

- A) What options are these for consumers who no longer have access to HCSTC loans?
- B) Are these consumers better or worse off as a result of not getting a HCSTC loan?

These are both questions which ask about the causal effects of HCSTC use on consumer outcomes. Seeking to answer these questions using observational data requires a means of analysing data which allows the researcher to make causal inference regarding the effects of HCSTC use. This raises the econometric identification problem, common to most empirical questions in economics, that the causal impact of HCSTC use upon outcomes of interest cannot be inferred directly from observed average differences in the characteristics of those who do and do not use HCSTC.

This identification problem arises from the fact that the observed characteristics of individuals who use (do not use) HCSTC are not necessarily a good indication of the counterfactual characteristics for those individuals who do not use (use) HCSTC. For example, if we observe individuals with HCSTC exhibiting poor financial characteristics such as high rate of recent missed payments on credit contracts or utility bills and then observe individuals without HCSTC not exhibiting the same poor characteristic, it is not reasonable to infer that use of HCSTC caused the poor financial characteristics among those who do use HCSTC. The two groups may differ in other important characteristics, such as income or credit history, which might affect missed payments on credit contracts or utility bills directly, or which might cause HCSTC use among the group who use HCSTC. Alternatively, use of HCSTC might arise due to a history of poor financial characteristics. It may be that case that the financial situation of those who use HCSTC would be poorer were they not to use a HCSTC.

Faced with this identification problem empirical economists seek an empirical strategy which allows valid causal inference. The key to valid causal inference is an accurately observed counterfactual outcome for the treatment of interest. In the case of HCSTC use, among those who use HCSTC we would ideally observe the outcomes of interest for these customers were they not to use HCSTC holding all other aspects of their characteristics and behaviour constant. If we could observe all outcomes of interest arising from questions A and B for an individual with HCSTC and then for that same individual without HCSTC (all other things hold constant) then we could answer the questions directly. However, we cannot as in reality we only observe individuals with or without HCSTC.

The empirical approach to which modern economic analysis appeals in search of an identification strategy is that of a randomised controlled trial. A randomised controlled trial constructs the counterfactual outcome by taking two (or more) groups of subjects who are on average identical in all characteristics of interest and then subjecting one group to the 'treatment' and the other group to the 'placebo'. As a result, the groups differ only in their assignment to treatment or placebo and the causal impact of treatment can be inferred from the difference in outcomes between the two groups.

In most economic scenarios, undertaking randomised controlled trials is not feasible. Therefore, economists have identified a range of approaches known as 'quasi-experimental' approaches which seek to re-create the identification of randomised controlled trial outside the setting of a trial. For reviews of these approaches see, for example, Angrist and Imbens (1991), Blundell and MaCurdy (1998), Nichols (2007), Blundell and Costa Dias (2009) and Angrist and Pischke (2010). These approaches include analysis of natural experiments using difference-in-differences estimators, matching methods and estimators, use of instrumental variables, discontinuity designs and control function methods.

An extensive literature exists on the impact upon consumer of using HCSTC and the effects of HCSTC bans, price caps or lending restrictions upon consumer outcomes and welfare. This section reviews the relevant literature, focusing on studies written within the last 5 years (for excellent reviews of the earlier literature see Stegman, 2008 and Caskey, 2010). Studies in this literature seek to address the basic econometric identification problem inherent in seeking to estimate the causal impact of HCSTC use, or restrictions on use, upon consumers

The existing literature is dominated by studies using US data. This has arisen for two reasons. Firstly, the HCSTC market developed earlier, faster and more extensively in the US. Secondly, the US has seen the imposition of HCSTC policies creating lending restrictions and/or bans and, importantly, differences in HCSTC policies across states. Unlike the UK, in the US the majority of HCSTC lending occurs through the retail store channel, hence geographic restrictions on the location of HCSTC stores create important differences in supply constraints across states.

Many US studies therefore obtain identification either through exploiting states without and with HCSTC lending bans or restrictions as treatment and control states (e.g. Morgan and Strain, 2008). Alternatively, Melzer (2011) exploits geographic differences in the availability of payday loans. Zinman (2010) uses surveys of consumers before and after the imposition of a cap on the cost of HCSTC loans in the state of Oregon. An alternative approach taken by Morse (2011) is to exploit the differential impact of natural disasters across communities with and without HCSTC lenders. In contrast, Carrell and Zinman (2014) exploit random assignment of military personnel to localities in the US. All of these approaches make use of geographic variation in HCSTC supply.

Findings from these studies on the impact upon consumers of using HCSTC are very mixed. Melzer (2011) exploits exogenous state-wide variation in HCSTC arising in states where HCSTC provision is restricted from the distance a resident within those states would need to travel to a neighbouring unrestricted state in order to access a HCSTC store. One could expect consumer-store distances to arise endogenously within states where lending is allowed (firms locate stores in areas where demand is high), but his identification strategy surmounts this issue by exploiting the existence of states with HCSTC bans. He finds HCSTC access causes increased likelihood of difficulty paying bills plus increased likelihood that a consumer delays needed healthcare expenses in order to meet the cost of HCSTC fees and charges.

Additional studies also find consumer harm from HCSTC use. Skiba and Tobacman (2011), using a Regression Discontinuity Design approach and find that payday loan use increases the likelihood of bankruptcy among a sample of US consumers. Carrell and Zinman (2014) use a unique dataset of US air force personnel and find HCSTC use and finds airmen job performance, readiness and retention falls with use of HCSTC.

Contrasting findings in Morse (2011) shows HCSTC access can be welfare improving to consumers. Morse (2011) uses natural disasters as a community-level natural experiment in zip code data for the state of California. Her approach compares the outcomes for consumers affected by natural disasters, which may induce short-term consumption needs, in zip codes with HCSTC stores compared with those without HCSTC, where zip code areas with and without stores are matched using a propensity score matching method. Triple-difference estimates show HCSTC access decreases the likelihood of foreclosure and petty crime after occurrences of natural disasters.

Evidence on the impact of HCSTC bans is also mixed. A number of studies evaluate the impact of HCSTC bans by comparing consumer outcomes in states which have seen the imposition of bans with consumer outcomes in states without bans. Using this methodology Morgan and Strain (2008) find HCSTC bans cause consumers to switch to 'inferior substitute' forms of borrowing such as bouncing checks, and cause an increase in the bankruptcy rate and increase in consumer complaints about lending practices. Similar results are found in Zinman (2010). Morgan, Strain and Seblani (2011) use a similar methodology and find that HCSTC bans actually cause a decrease in bankruptcy filings, but increase usage of current account overdrafts among consumers. Goldin and Homonoff (2013) find substitution towards pawn-shop lending.

A number of studies find no welfare effects of HCSTC use or the imposition of HCSTC bans, or mixed results. Bhutta (2014) uses state-wide regulatory changes and finds no effects on credit scores, delinquencies or exceeding credit limits. Bhutta, Skiba and Tobacman (2014) also find statistically significant, but economically very small effects arising due to HCSTC use (as do Desai and Elliehausen, 2014). Zaki (2013) finds that HCSTC use improves consumption smoothing among consumers, but also raises

expenditure on short-term temptation purchases such as alcohol and consumer electronics. She further finds the introduction to HCSTC bans reduces consumption smoothing but has no discernible effect on the level of consumption. Taken together, the literature to date is inconclusive on the welfare impacts of HCSTC use and HCSTC lending bans or restrictions.

Our UK setting does not offer geographic variation in HCSTC lending laws that offers the source of identification in many of these studies. Prior to this policy design, there is no geographic restriction on lending. Plus the UK market, unlike the US market, is dominated by online firms for which the geographic restriction on the location of HCSTC stores used by Melzer (2011) is not applicable, nor is geographic variation in location relative to the site of natural disasters as in Morse (2011) or relevance of HCSTC stores for military personnel as in Carrell and Zinman (2008).

Given this, we considered two alternative approaches to identification. The first, potentially applicable to the online lending market, is to exploit technology shocks which create exogenous variation in ease of access to HCSTC loans across customers. Ease of access to online lending varies across consumers by the access to the internet, speed of internet connection and availability of smartphone apps provided by lenders. Identification could be obtained from local broadband rollout, internet connection speed, or type of smartphone brand used by the consumer.

However, this approach is considered infeasible for two reasons. First, local variation in internet access is very limited in the UK where internet coverage is near-universal. While it may be possible to exploit local variation in internet connection speed (e.g. some rural areas only have access to non-broadband internet), the minimum speed requirement necessary to undertake a HCSTC application on a web form is very low and the variation in ease arising from a faster connection is small. Second, choice of smartphone and hence app availability arises endogenously with consumer preferences which may also correlate with preference for HCSTC use. Furthermore, smartphone example we do not know of an available data source which could be accessed to allow us to match these technology shocks to individual or group level data.

The second, which is the approach we adopt for this study, is the approach to identification which is commonly known as Regression Discontinuity Design (RDD). This approach is also used in US data by Skiba and Tobacman (2001) and Bhutta, Skiba and Tobacman (2014). We first explain the general RDD approach and then, in the next section, explain its application to our research questions and data. RDD is particularly suited to the research question under consideration here. For detailed reviews and guides to this approach see Hahn and Van de Klaauw (2001), Nichols, (2007), Imbens and Lemieux (2007), McCrary (2007), Imbens and Kalyanaram (2009), Lee and Lemieux (2010).

Regression Discontinuity Design was first used by Thistlethwaite and Campbell (1960) to estimate the impact of educational awards on future academic outcomes, where educational awards were allocated on the basis of test scores. Their approach to this question was to compare future

academic outcomes for individuals with test scores just below the threshold for receiving the academic award with those of individuals just above the threshold. The idea behind this comparison was that these two groups were very comparable because the only difference between them was the marginal difference in test score which caused those with slightly higher test scores to receive the award and those with slightly lower test scores to not receive the award. With some reasonable assumptions about the allocation of test scores, Thistlethwaite and Campbell (1960) showed that this approach would yield estimates of the effect of educational awards on future academic outcomes similar to those which would be obtained from a randomised controlled trial.

b. Regression Discontinuity Design (RDD)

In recent decades RDD has become a very popular and effective approach to empirical identification in many areas of economics. It is used extensively in the analysis of educational program outcomes (see, for example, Angrist and Lavy, 1999) and has also been used in the analysis of school district boundaries and the impact of electoral outcomes among other topics. The common feature of these topics is in each case assignment to 'treatment' (an educational award, location within a school district, election to a position) involves meeting a particular threshold (a test score, a geographic boundary, a vote quota) and it possible to identify observations on a continuum which lie marginally above and marginally below each threshold.

The attractiveness of RDD also lies in the relatively mild assumptions under which RDD returns valid causal estimates of the 'true' effect of a treatment. In particular, the RDD approach need not assume that treatment arises as good as randomly due to some instrumental assignment, but that randomised variation in exposure to treatment arises from the nature of agents' inability to precisely assign their location around the threshold of interest (Lee, 2008).

The specific identification within RDD can be summarised as follows. RDD is an appropriate research design where the agent receives treatment (e.g. receipt of an educational award) with certainty (deterministic assignment), or with some likelihood (probabilistic assignment), at an observed threshold value based on the score or value of an assignment variable (e.g. test score) and the researcher can observe with certainty and granularity the assignment value and the threshold. When an agent receives treatment with certainty at the threshold then the RDD is said to be 'sharp' in its design. When an agent does not receive treatment with certainty at the threshold but the likelihood of treatment increases then the RDD is said to be 'fuzzy'.

In addition, agents must not be able to precisely manipulate their assignment value around the threshold else a selectivity bias may occur. If precise manipulation cannot occur and the observational requirements are met, then a consequence of this is that variation in the likelihood of treatment near the threshold is randomised as if from a randomised

experiment and RDD analysis can be analysed and tested as if it were a randomised experiment (Lee and Lemieux, 2010).

Implementation of RDD typically proceeds by use of non-parametric estimation of the 'jump' in the outcome variable of interest in the local region of the threshold which determines treatment. One attractive feature of RDD is that this 'jump' in the outcome variable can be illustrated such that the estimated effect can be seen intuitively.

For example, Battistin et al. (2009) estimate the impact of retirement on consumption expenditure using Italian data. In their analysis the treatment of interest is retirement from the labour force and receipt of a retirement pension. The outcome variable of interest is the level of consumption by the household. They exploit a 'fuzzy' RDD using pension eligibility rules within the Italian pension system to obtain exogenous variation in the likelihood that an individual retires and receives a retirement pension. In their sample of data for Italy, eligibility for a pension is dependent upon age and years of seniority alone. Although individuals could choose to retire early, or to postpone retirement, individuals only become eligible for a retirement pension when they are old enough to meet the age and seniority criteria. They show that there is a statistically significant jump in the likelihood of receiving a retirement pension at the age of eligibility; hence they use a 'fuzzy' RDD approach. Using this approach they can derive causal estimates of the impact of retirement on the outcome variable of interest, which is consumption expenditure. For further examples of applications of RDD within the education, labour market, health care and finance literatures see Lee and Lemieux (2010).

c. RDD Application to CRA Data Analysis

Features of the HCSTC loan application process and CRA outcomes under analysis within this research, together with the key questions to be answered by the research, make RDD a well suited research methodology for this project. The 'treatment' under analysis here (HCSTC use) is appropriate for the application of RDD. In this case the assignment variable under question is the credit score assigned to a loan application, the relevant threshold is a firm's credit score threshold and the outcome under analysis is an outcome recorded within CRA data.

A recent study by Tobacman and Skiba (2011) uses RDD to analyse the effects of HCSTC use in US data. Tobacman and Skiba combine firm data from a HCSTC lender with public data on bankruptcy filings to estimate the impact of HCSTC use on the likelihood of bankruptcy. They focus on the impact of obtaining a HCSTC with the specific firm whose data they analyse on the bankruptcy outcome. Their RDD design is 'fuzzy' as some individuals who are successful for loans choose not to take loans, so treatment does not increase deterministically at the credit score cut-off. They find HCSTC use causes an increase in the likelihood of bankruptcy.

RDD is particularly appropriate for the CRA data analysis undertaken here for a number of reasons. Firstly, the CRA data analysis provides a very large number of observations across the credit score distribution both within and across firms. This provides a sufficiently large number of observations close to the threshold. Secondly, the treatment in question satisfies the key requirements of the RDD approach. The 'fuzzy' RDD requirement that the likelihood of HCSTC use increases probabilistically by a statistically significant degree is satisfied. Also, the nature of the loan application process implies that individuals cannot precisely assign themselves to credit scores above or below the threshold. In particular, firm credit score models are not known to individual consumers. Plus credit score models differ across firms so market learning an underlying single credit score model is very unlikely.

On this basis, RDD is adopted as the main empirical approach to CRA data analysis. For robustness, Instrumental Variable (IV) models are also estimated and results shown. Robustness analysis of the RDD results is also undertaken in line with recommendations in Lee (2010).

For the purpose of the RDD approach the specific 'treatment' under consideration needs to be defined. The treatment of interest is HCSTC use and the threshold for identification a firm's internal credit score cut-off. Our interest, however, is not specifically in whether an individual is successful or unsuccessful for a HCSTC loan at the first firm to which they apply. Our interest is in whether they obtain a HCSTC loan, which may be obtained from another lender to which an application is made after the first loan application is denied. In Tobacman and Skiba (2011) the authors use data from one firm and use RDD to model the impact of obtaining a HCSTC loan with that firm only.

However, what is of more economic interest for our analysis is whether the individual obtains a HCSTC loan from any lender within some period of time after their first loan application. The underlying notion here is that at the point of application a customer has some need for a HCSTC loan and, given loans in this market are typically of very short duration compared with the credit market in general, that need is short-term and time specific. Hence the customer is keen to obtain a loan within a few days of first application. The relevant treatment, therefore, is whether the individual obtains a loan with any HCSTC provider within a short period of time. Therefore we use the 'first loan' application outcomes defined over 3, 7, 30 and 60 days as the treatment of interest. We use various dates for sensitivity analysis.

Having defined the 'treatment' variable in this way a key component of the analysis is whether the first-stage of the RDD contains sufficient information to predict getting a HCSTC loan over these periods of time. That is, the validity of the RDD approach hinges on whether the credit score cut-off 'fuzzy' first stage generates a statistically significant jump in the likelihood of getting a loan within these periods. In the next section we show that the 'fuzzy' first stage does meet this criterion. Indeed, we show that whether a customer's first loan application meets the credit score cut-

off threshold with the first firm applied has a very high information content for whether the individual applicant will ever get a HCSTC loan.

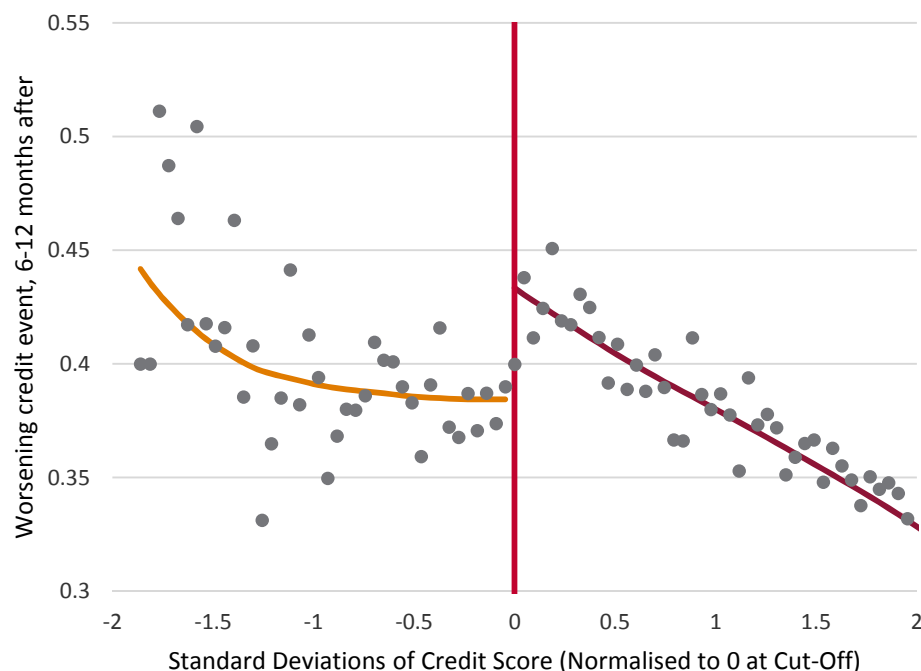
Although we focus on first loan applications for the purpose of identification, this does not mean that the analysis is only interested in first-time customers. We isolate the first loan application record to ensure that customers in our analysis have not received the 'treatment' previously, which may interact with or bias estimates of the impact of HCSTC use from the RDD approach. However, this does not mean the effects we estimate are only attributable to the first-time loan experience of first-time customers in our data. We examine the impact of HCSTC use over a period of up to 2 years. During this period the typical customer in our dataset may take up to 10 HCSTC loans. The treatment effects on the outcome of interest, therefore, may arise due to a combination of loan experiences. Identification of HCSTC use is based on the first loan application due to the ability to exploit the RDD design and availability of credit score data for first loan applications (many firms do not credit score repeat applicants) and the

As an illustration of the RDD analysis of CRA data, Figure 1 below shows an RDD illustration of one outcome under analysis which is presented in similar form to Figure 1 above. The data for this illustration is drawn from a firm within the CRA data analysis sample. The horizontal axis measures the firm credit score, where 0 is the acceptance threshold for receiving a HCSTC loan. The vertical axis measures the likelihood that a customer shows a negative 'credit event' on their credit file on a non- HCSTC credit item in the period 6-12 months after their first HCSTC application. Each data point represents a value of the outcome variable in a bin containing a number of customer records ordered by credit score. The red and blue lines smooth through the bins either side of the cut-off.

As can be seen from the illustration, there is a negative correlation between credit score and the likelihood of a negative credit event 6-12 months after loan application. This is to be expected: individuals with better credit scores are less likely to exhibit negative credit events. However, at the threshold the likelihood of a negative credit event 'jumps' upwards, by around 5 percentage points. There is a clear discontinuity in the relationship between credit score and likelihood of a negative credit event at the HCSTC threshold and this can be characterised as the increased likelihood of a negative credit event due to HCSTC use.

For fuzzy RDDs, the final estimated impact of the HCSTC loan (given by the Local Wald Statistic statistic) is calculated as the jump seen in the outcome at the threshold multiplied by the inverse value of the jump seen in the likelihood of getting a loan at the threshold (for a sharp design this increase in likelihood would equal 1).

Figure 1: RD Example from CRA Data Analysis



Source: Analysis of Firm and CRA data. Graph relates to data for one firm process.

d. Practical Implementation and Inference

The figure above provides intuitive illustration of the RDD approach to identification. They do not indicate the sensitivity of the observed 'jump' in the outcome variable at the threshold to bin size or the construction of the smooth line through the bins. In practice, therefore RDD analysis is implemented econometrically as a parametric or non-parametric regression procedure. RDD can be implemented via an estimated 'jump' in a regression line at the cut-off threshold which determines treatment. However, in many analyses it is not appropriate to assert a linear relationship between the assignment variable and the outcome of interest, as would be the case if using an Ordinary Least Squares (OLS) estimator. Consequently, studies typically employ a more flexible estimator.

When reporting RDD estimates from the analysis, these are presented as Local Wald Statistics from the IV local linear regression procedure (where the denominator of the Local Wald Estimator is the jump in the conditional mean of treatment at the cut-off). Analytical standard errors are computed to calculate the precision of estimates, which are also reported in the RDD estimates.

e. Extrapolation Away From Firm Credit Score Cut-Off Thresholds

The Local Wald Estimator within the RDD procedure returns an estimate of the Local Average Treatment Effect (LATE) at the cut-off. In the context of the CRA analysis, this is the effect of HCSTC use on the outcome variables of interest used to analyse questions C and D, which provide insight for

Questions 1 and 2. These LATE estimates indicate how HCSTC use (or denial) impacts upon outcomes at the credit score acceptance thresholds used by firms in the CRA dataset spanning the period January 2012 to December 2013.

These LATE estimates are useful for understanding the causal effects of HCSTC use at the thresholds seen in the CRA data, but are not directly transferrable to thresholds which might arise as a result of the price cap policy. That is, the analysis provides an indication of the effect on consumers at the existing margin of the market which has arisen by the decisions of firms within the market, but do not directly infer the effects on consumers which might arise as a result of the policy. A key objective of the demand side analysis is to understand the effects on consumers which arise at different levels of the cap, Question 5 in the introductory section. Consequently, the analysis extrapolates the results obtained from the RDD estimates to regions away from existing cut-offs. Further details are provided in the results section.

5. RDD Results: First Stage

a. 'Fuzzy' First-Stage Estimation

This section describes the implementation of the 'fuzzy' RDD approach. In our analysis the RDD approach is described as 'fuzzy' because the credit score cut-off⁶ does not assign loan applications to loans with certainty. Under a 'sharp' design all applications allocated a credit score below the cut-off value would be unsuccessful with certainty and all applications allocated a credit score value above the cut-off would be successful with certainty.

However, in the firm-level data we observe that this is not the case. The credit score cut-off does not create a sharp discontinuity in the likelihood of receiving a HCSTC. Some applications with credit score values below the required cut-off results in individuals received loans, and some applications with credit score values above the cut-off did not receive loans. We elaborate on the reasons for this in more detail in part 5d.

Nevertheless, passing the credit score cut-off increases the likelihood of receiving a loan and hence can be exploited as a 'fuzzy' discontinuity in the likelihood of receiving a HCSTC. That is, the conditional mean of receiving a loan jumps at the credit score cut-off. Given that this arises exogenously, the RDD 'fuzzy' design takes the form of an Instrumental Variable (IV) model in which treatment ('gotloan' in our firm data) is instrumented using an indicator variable for the assigned credit score exceeding the cut-off value.

The following sub-sections explain how firm loan decision models use credit score, estimates for the first-stage IV using credit score cut-offs and reasons for the fuzzy design in our data. The final section also presents some robustness analysis for the first-stage results.

b. Firm Credit-Score Cut-Offs

Lenders in most credit markets typically make loan decisions using a credit scoring process. The credit score process typically operates as follows. A lender receives a loan application from an individual applicant, normally in the form of a completed application form. The lender may then choose to match the information on that application form to an externally provided credit file, such as the CRA credit files used in this project. Other data sources may also be matched into the loan application data. These, taken together, are used to calculate a credit score. The credit score is normally a single numeric value which indicates the willingness of the firm to lend to that individual given their characteristics. Credit scores are used to make the loan accept/denial decision and also to set terms of the loan offered including, price, borrowing limit and duration of the loan.

In the HCSTC market nearly all lenders offer fixed prices on their product offerings. All individuals who are successful for loans are offered loans at

⁶ Credit score cut-offs were taken as recorded in firms' data submissions and cross checked against firm transaction data.

the same basic price (though the APR on any particular loan will depend upon amount borrowed and loan period). Hence the purpose of the credit score is solely to inform a binary choice as to whether the loan is offered, or not. Therefore, in the HCSTC market the credit score calculated by the firm will normally represent an indication of the probability of default. Individuals with good credit scores (low probability of default) will be offered loans, individuals with bad credit scores (high probability of default) will be unsuccessful. The level of credit score required to be successful is known as the 'credit score cut-off'.

It is unlikely that the credit score will be the only variable used to make a loan decision. Firms typically undertake some form of fraud check to eliminate fraudulent applications. Fraud checking services are normally provided by a CRA or other third party in return for a fee. As the fraud check involves a cost to the firm, and this cost is typically higher than the cost of acquiring credit scoring data, firms to undertake the credit scoring decision first and then only fraud check individual applications which pass through the credit score stage.

However, there may be other reasons why a firm chooses not to make decisions purely on the basis of a credit score. In our two years of firm data we see examples of alternative, or supplemental, loan decision processes outside the credit score process. Some examples are:

Lender 1 – applicants were referred to a manual underwriting process if they were unsuccessful at the credit score stage just below the credit score cut-off threshold. Those who were put through to the manual checks typically went on to be given a loan. The original credit score was therefore used to save time by allowing some automatic acceptances, rather than being used to determine who was ultimately given a loan.

Lender 2 – credit score was used along with a profitability measure and minimum approval amount. The interaction of these three measures meant that very few applicants with scores just above the cut-off were eligible to get loans, so there is no significant jump in likelihood at this point.

Lender 3 – the lender undertook significant levels of experimentation around its credit score cut-off, experimenting with various technologies for further screening applicants whose credit scores fall people below the cut-off.

The above examples, plus other cases of loan decisions being made not just on the basis of credit scores, give rise to the 'fuzzy' RDD approach. In addition, as the treatment variable is defined as getting a loan from any lender within a period of time and the assignment variable is the credit score allocated to the first application, some proportion of those unsuccessful with their first-application will get loans within the time period from another lender (or, possibly, the same lender).

c. First-Stage Estimation Results

RDD first stage estimation results are shown by firm and application credit scoring process in Table 4 below.⁷ Each row of the table refers to a separate firm and application credit scoring process within the firm data set. Each of the firms typically had more than one application credit scoring process over the two year period, relating to where credit score thresholds had changed over time, or the calculation or use of the credit score itself has changed over time. In total there are 17 firm-processes with more than 10,000 applicants with credit scores, a credit score cut-off and scores both above and below the cut-off within the firm dataset covering the 8 large operating units submitting full data on application accepts and denials.

Table 4 reports Local Wald Statistics (jumps in likelihoods of getting a loan) from the first-stage RDD estimation in which the outcome variable was 'gotloan7' (getting a loan with any provider within 7 days of first loan application) and the assignment variable was force (normalised distance from the credit score threshold).⁸

As can be seen from the table, for the majority of lender-processes, the first-stage cut-off instrument was statistically significant at the 0.1% significance level (as indicated by ***). This means that the likelihood of getting a loan increases significantly at the credit score cut-off.

The magnitude of the Local Wald Statistic can be interpreted as the change in the likelihood of getting a loan at the credit score cut-off. For LPA the statistic, which is statistically significant at the 0.1% level, takes a value of 0.719. This implies that there is a 72% increase in the likelihood of getting a loan at the credit score cut-off. Lender-processes A to J exhibit increases in the likelihood of getting a loan at the credit score threshold of between 21% and 72% which in each case are statistically significant at the 0.1% level. Other processes exhibit weaker coefficient estimates, or no statistically significant results, indicating that credit scores were not decisive for lending decisions under these processes

Due to the differences between the credit scoring processes and credit score cut-offs both within and between firms, and the corresponding differences in jumps at thresholds, it was determined that it would not be appropriate to pool across all processes for the subsequent analysis. Hence, the second stage discontinuity estimates are all made at the lender-process level.

⁷ Standard errors are not included in the table so that firms can not be identified via inferring sample sizes.

⁸ This specification takes a cut-off of 0 and estimates local linear regression models on both sides of this cut-off, using a triangle kernel. The running variable was specified as the distance from the credit score cut-off threshold normalised by the standard deviation of the firm-process credit score variable.

Table 4: RDD First-Stage Discontinuity Estimates by Lender-Process

Lender-process	Local Wald Statistic
LPA	0.719***
LPB	0.497***
LPC	0.494***
LPD	0.476***
LPE	0.451***
LPF	0.441***
LPG	0.420***
LPH	0.247***
LPI	0.229***
LPJ	0.208***
LPK	0.0279*
LPL	0.0121
LPM	0.00448
LPN	0.00160
LPO	-0.0183
LPP	-0.0394
LPQ	-0.0963*†

Notes: * = 5% significance level; ** = 1% significance level; *** = 0.1% significance level. Table shows estimates only for firm processes with at least 10,000 first-time applicants with credit scores. † Less than 1% of the observations for this firm were above the recorded cut-off point. Source: Analysis of firm data

d. Illustration of First-Stage Results

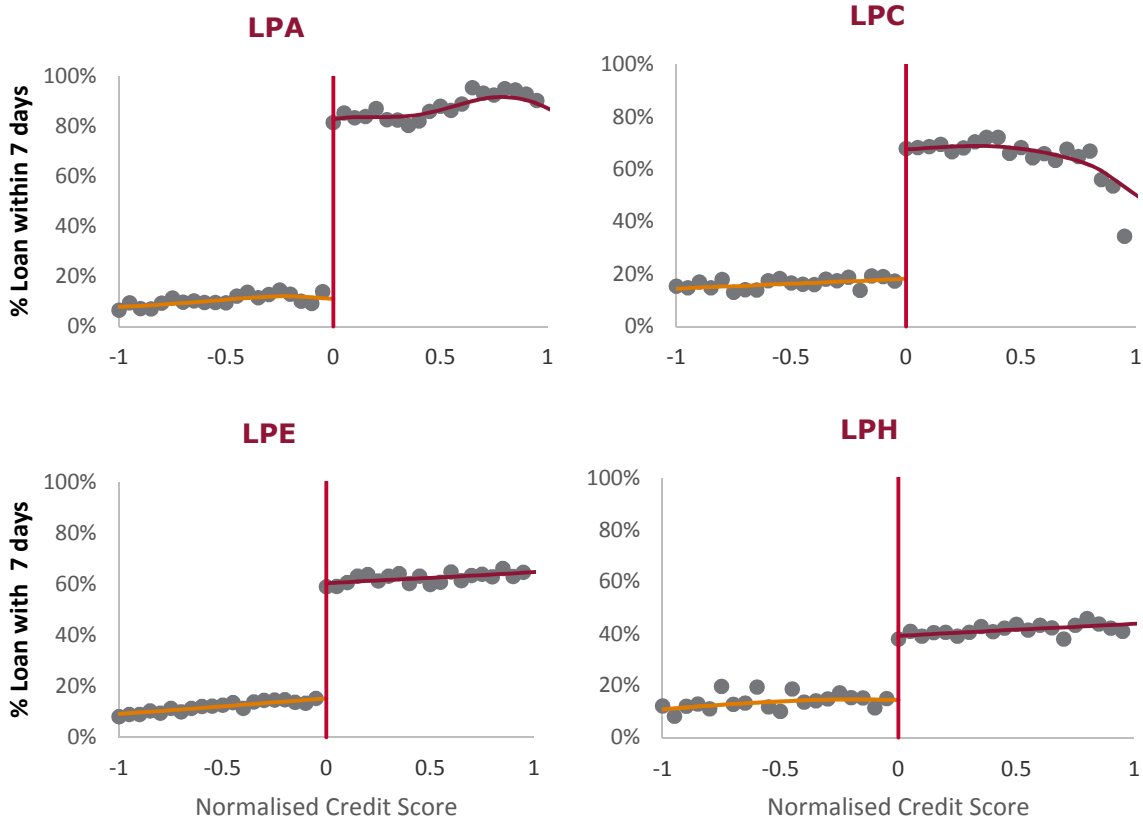
To illustrate the discontinuity in likelihood of getting a loan at the credit score cut-off, Figure 2 illustrates some examples of the relationship between credit score, the credit-score cut-off and the likelihood of getting a loan for four loan processes in the data.⁹

These figures illustrate the likelihood of getting a loan across credit score ranges either side of the lender-process specific credit score cut-off. In each case the horizontal axis show the credit score value where the credit score has been adjusted to a value of 0 at the cut-off value (at 0 value the loan application is credit-score successful) and normalised by the standard deviation of the lender-process credit score. Ranges of the credit score are shown for 1 standard deviation either side of the cut-off value. The vertical axis shows the % likelihood of getting a loan from any lender within 7 days.

As can be seen from the figures, the jump in the likelihood of acceptance varies between lender-process cases. In all cases the level of the line indicated the % likelihood of acceptance at credit score values below the cut-off value is much lower than the level of the line above the credit score value

⁹ Selected as the processes with the largest Local Wald Statistic statistics for the four firms with processes with significant Local Wald Statistic values.

Figure 2: RD First Stage Estimates Example Figures



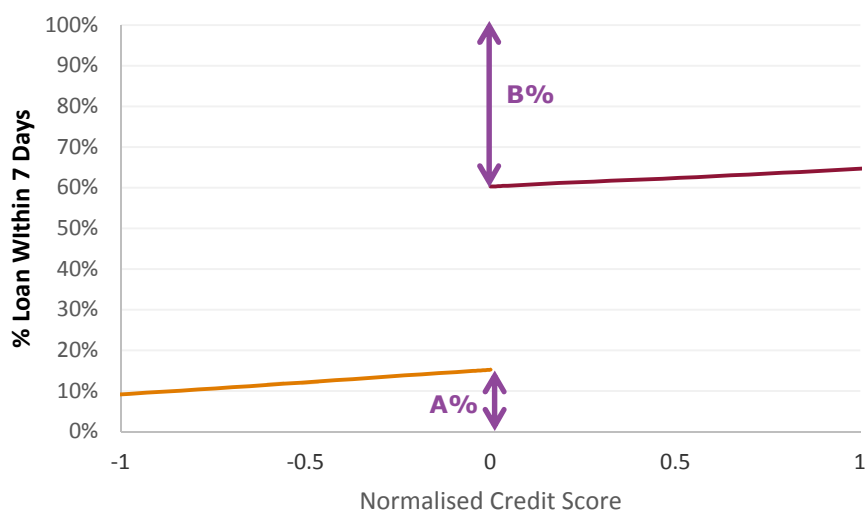
Source: Analysis of firm data. Note: Graph horizontal ranges restricted to +/- 1 standard deviation from the credit score cut-off. Bin sizes standardised across graphs to preserve anonymity.

e. Explaining 'A' and 'B' in the first-stage

As seen in Figure 2, the relationship between the credit score cut-off and likelihood of getting a loan is not 'sharp'. The likelihood of getting a loan at values of the credit score below the credit score cut-off is non-zero (though small). The likelihood of getting a loan at values of the credit score above the credit-score cut-off is below 1.

Figure 3 below presents a hypothetical illustration of the relationship between credit score, cut-off and likelihood of loan acceptance. We can characterise 'credit-score denials who get loans' and 'credit score accepts who do not get loans' as giving rise to vertical heights A and B.

Figure 3: Hypothetical RD First Stage Example



The proportion A includes two categories of individual applicants:

- First, individuals unsuccessful by the first firm they applied to on credit score criteria who subsequently go on to get a loan from another firm (or possibly the same firm) within the next seven days; and
- Second, individuals who would have been unsuccessful by the first firm they applied to on the basis of their credit score, but who were successful by some other criteria, such as a subsequent underwriting process or due to firm experimentation with the credit score threshold.

The proportion B also includes two categories of individual applicants:

- First, individuals who were successful by the first firm they applied to on credit score criteria but who were subsequently unsuccessful by the first firm, possibly as the result of a credit check, and did not get a loan elsewhere (either due to not applying elsewhere or not being successful elsewhere)
- Second, individuals who were successful by the first firm who chose not to take the loan offer from the first firm, and did not get a loan elsewhere (either due to not applying elsewhere or not being successful elsewhere)

f. Robustness of First-Stage Process Results

Results from Table 4 above show that for 10 lender-process combinations the credit-score cut-off generates a statistically significant discontinuity jump upwards in the likelihood that the individual applicant gets a loan within 7 days. To test the robustness of this finding to variations away from the 7-day period, Table 5 below shows first-stage results where the

treatment of interest is defined as 'getting a loan within one month of first application' and 'getting a loan at any time in the 2 year period' (which is labelled 'Ever').

Results are very similar under these changes to the definition of the 'gotloan' variable. For the 10 processes LPA to LPJ the Local Wald Statistic coefficient is in each case statistically significant and positive either for the '1 month' or 'Ever' definition. The magnitudes of the coefficient are lower over the longer time horizons, reflecting the higher likelihood that unsuccessful applicants at the first application (characterised as group 'A' in the previous section) will get a loan elsewhere over a longer time period. Of these 10 processes only one started a month before the end of 2013, so is unsuitable for use in subsequent analysis due to insufficient future time periods. Therefore, a total of 9 processes, shown below as LPA – LPI are evaluated in the second stage RDD analysis. These 9 processes cover d of all first time applicants in our data set and relate to lenders who together account for 78% of first time applicants.¹⁰

Table 5: RDD First Stage Estimates by Period for Definition of 'Gotloan'

Lender-process	7 day	1 month	'Ever'
LPA	0.719***	0.678***	0.620***
LPB	0.497***	0.469***	0.461***
LPC	0.494***	0.464***	0.390***
LPD	0.476***	0.470***	0.467***
LPE	0.451***	0.434***	0.406***
LPF	0.441***	0.429***	0.362***
LPG	0.420***	0.406***	0.333***
LPH	0.247***	0.240***	0.229***
LPI	0.229***	0.222***	0.187***
LPJ	0.208***	0.205***	0.190***
LPK	0.0279*	0.0222	0.0197
LPL	0.0121	0.00363	0.00934
LPM	0.00448	0.00634	-0.00642
LPN	0.00160	0.00188	0.00563
LPO	-0.0183	-0.0121	-0.0146
LPP	-0.0394	-0.0344	-0.0338
LPQ	-0.0963*	-0.0868*	-0.0730

Source: Analysis of firm data * = 5% significance level; ** = 1% significance level; *** = 0.1% significance level.

¹⁰ The other processes representing 59% of first time applicants were not usable in the RDD analysis for the following reasons: 19% did not have credit scores (or all credit scores were the same side of the cut-off); 38% did have usable credit scores but the RDD found insignificant results; and the remaining 3% either had too few individuals with credit scores or were too close to the end of the time period.

6. RDD results: Outcome Variables

a. Format for Presentation of Results

This section presents the main results from the RDD analysis. For each of the nine high quality lender-processes identified in the previous section, RDD estimates for each of the outcome variable were estimated. These were first estimated at the individual lender-process level and then pooled estimates were calculated. To preserve firm anonymity we do not show coefficients from individual lender-process estimates. Instead, we report pooled results in a series of tables below.

The key statistic returned by the RDD analysis is a Local Wald Statistic. This should be interpreted as the change in the outcome variable caused by getting a HCSTC loan at the margin. This increase or decrease in the outcome variable is measured in units of the outcome variable or in cases where the outcome variable is a 1/0 dummy the coefficient represents the change in the likelihood of the outcome. In some cases a cell within a table does not contain a Local Wald Statistic. This indicates that the available sample size was too small to calculate the statistic. This arises either due to low data coverage within the CRA data, or few non-zero observations for level variables in the CRA data.

Results are presented in three categories: loan application outcomes, credit portfolio outcomes and creditworthiness outcomes. In this section the analysis focuses on the statistical significance of the estimated coefficients and the consistency of their direction and magnitude across the different lender-processes. The analysis does not focus on the absolute level of the estimated coefficient or its interpretation relative to a baseline level.

b. Pooled Results: Loan Application Outcomes

This section presents results from the pooled models. In the lender-process estimates the estimated Local Wald Statistic was allowed to vary across lender-processes, whereas in the pooled estimates a single Local Wald Statistic is calculated. Pooled estimates are of interest as they imply an averaged treatment effect across lender-process outcomes. Pooled estimates are calculated as a weighted average of the RDD estimates from the nine lender-processes with adjusted standard errors¹¹. In order to judge the economic significance of the Local Wald Statistic estimate, we also show the mean value of the outcome variable for individuals just below the credit-score cut-off.

¹¹ The weights used to pool the individual RD results were the sample sizes for each of the individual lender-process RDs. The formula for pooling the RD coefficients was $\beta_{pooled} = \frac{\sum_{i=1}^9 \beta_i N_i}{\sum_{i=1}^9 N_i}$ and the formula for pooling the RD standard errors was $SE_{pooled} = \left(\frac{\sum_{i=1}^9 SE_i^2 N_i}{\sum_{i=1}^9 N_i} \right)^{1/2}$. Where β_i are the individual lender-process coefficients, SE_i the related standard errors and N_i are the sample sizes for each lender-process. Lender-process specific weights were chosen, rather than weights related to firm market shares, since differences between application processes at firms mean that it is not necessarily valid to extrapolate from one process used by a firm to all first time applicants at that firm. Rather, weighting just by the number of applicants to the nine processes where RD estimates could be calculated was determined as preferable.

Table 6 below presents pooled estimates for loan application outcomes. In the total applications category the coefficients on the variables for number of credit items checks and the dummy for any credit item checks are both positive and statistically significant at the 0.1% level. The coefficient on the number of credit checks 0 to 6 months after HCSTC use is 0.61. Evaluated against a baseline value of 1.36, this implies HCSTC increases the number of credit checks by 45%. The coefficient of 0.122 on the credit item checks dummy implies the likelihood that a customer makes a credit check increases by 25%.

On which specific credit items do credit checks increase? Coefficient estimates evaluated against mean value show the number of credit card checks increase by 20% in 0-6 months after HCSTC use and the number of personal loan checks increase by 92% at 0-6 months and 76% at 6-12 months respectively.

Taken together, these results show that HCSCTC use causes individuals to make more credit applications for credit cards in the 6 months after HCSTC application and personal loans in the 13 months after HCSTC application.

Table 6: RDD Second Stage Estimates for Loan Application Outcomes					
	Dummy	Time Period 0-6 Months		Time Period 6-12 Months	
		Coefficient	Mean value	Coefficient	Mean value
<i>Total Applications</i>					
# Credit Items	No	0.606***	1.36	0.044	0.8
Any Credit Items	Yes	0.122***	0.49	0.012	0.34
<i>Number of Applications for Specific Credit Products</i>					
# Credit Cards	No	0.069***	0.34	-0.008	0.22
# Personal Loan	No	0.440***	0.48	0.069***	0.23
# Revolving Credit	No	0.004	0.03	-0.008*	0.02
# Home Credit	No	-0.001	0.001	0.001	0.0002
# Mortgages	No	0.000	0.005	-0.001	0.004
<i>Whether Applied for Specific Credit Products</i>					
Any Credit Cards	Yes	0.028***	0.21	-0.005	0.14
Any Personal Loan	Yes	0.187***	0.25	0.032***	0.13
Any Revolving Credit	Yes	0.004	0.03	-0.006	0.02
Any Home Credit	Yes	-0.001	0.001	0.001	0.0002
Any Mortgages	Yes	-0.001	0.004	0.001	0.003

Source: Analysis of firm and CRA data. Notes: * = 5% significance; ** = 1% significance; *** = 0.1% significance

c. Pooled Results: Credit Portfolio Outcomes

The previous section showed that HCSTC use caused an increase in credit card and personal loan applications. Are these applications successful? Do we see an increase in the number of credit cards and personal loans in customer credit portfolios? This section first presents results for the impact of HCSTC use which products customers hold, and then on the level of balances on those products.

Results for credit portfolio outcomes are shown in Tables 7 and 8. Table 7 shows results for credit products held. Table 8 shows results for balances on credit products. Results in Table 14 show that the total number of credit products held increases at both 0-6 and 6-12 months after application. The number of products increases by 1.89 in the 0-6 month period and 2.21 in the 6-12 month period. The baseline average number of products held in these two periods is 4.81 and 5.55 respectively. Hence HCSTC use causes the number of products held to increase by 40% at 0-6 months and 39% at 6-12 months.

For which types of products does HCSTC cause usage to increase? Results for specific product types in Table 7 show that this increase in products held comprises an increase in personal loan products and HCSTC loans at both 0-6 months and 6-12 months after HCSTC use. The average number of personal loan products increases by 40% at 0-6 months and by 38% at 6-12 months. The number of HCSTC loans also increases in both time periods. This reflects the tendency for HCSTC customers to repeat-borrow over time. Results also show no increase in credit card product holdings, indicating that the increase in credit card applications seen in results in the previous section does not translate to an increase in credit card product holdings. The coefficient results also indicate that HCSTC use causes a decrease in mortgage products held. However, as we show in the next chapter, this result is not robust to the falsification tests we present and so should not be interpreted as a true estimate.

Table 7: RDD Second Stage Estimates for Credit Portfolio Products					
	Dummy	Time Period 0-6 Months		Time Period 6-12 Months	
		Coefficient	Mean value	Coefficient	Mean value
<i>All Credit Products</i>					
# Credit products	No	1.89***	4.81	2.21***	5.55
Any Credit products	Yes	0.123***	0.81	0.116***	0.82
<i>Number of Credit Products Held</i>					
# Credit Cards	No	-0.034	0.55	-0.051*	0.6
# Personal Loans	No	0.097***	0.25	0.108***	0.29
# Home Credit	No	-0.007	0.54	-0.047	0.62
# Mail Orders	No	-0.027	0.47	-0.029	0.52
# Hire Purchases	No	0.004	0.06	-0.001	0.06
# Mortgages	No	-0.025***	0.1	-0.019*	0.1
# HCSTC Loans	No	1.90***	0.64	2.24***	0.99
# Other Products	No	-0.009	0.07	-0.006	0.08
# Current Accounts	No	0.025	1.14	0.036	1.19
# Household Bills	No	-0.043	1.3	-0.043	1.43
<i>Whether Specific Credit Products Held</i>					
Any Credit Cards	Yes	-0.019*	0.29	-0.027**	0.31
Any Personal Loans	Yes	0.076***	0.17	0.090***	0.19
Any Home Credit	Yes	0.008	0.17	0.005	0.18
Any Mail Orders	Yes	-0.005	0.25	-0.010	0.27
Any Hire Purchases	Yes	-0.005	0.05	-0.007	0.06
Any Mortgages	Yes	-0.019***	0.08	-0.017**	0.08
Any HCSTC Loans	Yes	0.722***	0.25	0.686***	0.29
Any Other Products	Yes	-0.014**	0.07	-0.014**	0.07
Any Current Accounts	Yes	0.010	0.68	0.012	0.69
Any Household Bills	Yes	-0.001	0.58	0.003	0.61

Source: Analysis of firm and CRA data. Notes: * = 5% significance; ** = 1% significance; *** = 0.1% significance

Results for credit balances are shown in Table 8 below. For each credit balance variable two sets of results are shown: first results from estimates in which the balance variable is entered in levels and second estimates where the balance variable is entered in log values. The log transformation is commonly used in analysis of financial balances where the distribution of balances is commonly log normal. We focus on these estimates here.

Turning to the variables which sum balances across products first, the coefficients on the log of all consumer credit balances (including HCSTC balances) a 0-6 and 6-12 months are both positive. The magnitudes imply that consumer credit balances in total increase by 32% at 0-6 months and 25% at 6-12 months. However, coefficient estimates show this increase in total balances is for the most part attributable to increases in HCSTC balances. These increase at both 0-6 months and 6-12 months after first HCSTC use. Non-HCSTC balances increase at 6-12 months after HCSTC, by 4%, though the coefficient on this variable is statistically significant only at the 5% level.

Results for specific product balances (log values) show that the small overall increase in non-HCSTC product balances at 6-12 months comprises an increase in personal loan balances combined with a decrease in credit card balances. Results above show that HCSTC use causes an increase in credit card and personal loan applications, which results in an increase in personal loan products held. Results in Table 8 show this further translates to a rise in personal loan balances by approximately 35%. However, credit card balances fall on average by around 8%.

Hence the overall increase in credit portfolio balances is net of increases on some credit products plus higher current account holdings, possibly due to transactions activity. Finally, the coefficient on current account balances (log) shows that HCSTC use causes current account balances to increase at 6-12 months, by approximately 12%. This suggests that some of the increase in credit balances is held in transitory balances in current accounts.

Table 8: RDD Second Stage Estimates for Credit Portfolio Balances				
	Time Period 0-6 Months		Time Period 6-12 Months	
	Coefficient	Mean value	Coefficient	Mean value
<i>Sum of Credit Product Balances</i>				
All Consumer Credit	168**	1333	128*	1426
All Non-HCSTC Credit	-62.6	1295	-110*	1365
All HCSTC	170***	30	183***	45
Log All Consumer Credit	1.31***	4	1.06***	4.16
Log All Non-HCSTC Credit	0.046	3.79	0.143*	3.94
Log All HCSTC	2.42***	0.5	2.05***	0.62
<i>Credit Product Balances (Levels)</i>				
Credit Cards	-7.04	215	-5.64	222
Personal Loans	-24.2	289	-13.8	295
Home Credit	2.41	59	2.13	62
Mail Orders	-0.087	40	1.50	48
Hire Purchases	16.9	67	8.05	67
Household Bills	-3.248	56	2.63	68
Cash Advances	-0.005	0.12	-0.008	0.09
Current Accounts	0.769	141	8.58	150
Other	0.960	6.53	-0.763	7.2
<i>Credit Product Balances (Log)</i>				
Log Credit Cards	-0.004	1.02	-0.084*	1.09
Log Personal loans	0.014	0.63	0.248***	0.71
Log Home Credit	0.049	0.62	0.037	0.63
Log Mail Orders	0.008	0.57	-0.006	0.61
Log Hire Purchases	0.037*	0.14	0.009	0.14
Log Household Bills	-0.021	1.35	0.047	1.44
Log Cash Advances	0.000	0.06	0.002	0.04
Log Current Accounts	0.099	1.36	0.165***	1.42
Log Other	-0.011	0.09	-0.001	0.1
<i>Utilisation and Credit Limit</i>				
Utilisation on All credit	-0.041***	0.12	-0.041***	0.13
Credit Limit All Credit	-44.8	1125	-21.5	1150

Source: Analysis of firm and CRA data. Notes: * = 5% significance; ** = 1% significance; *** = 0.1% significance. Estimated coefficients for logged variables are large since they include instances of balances increasing from zero (adjusted to 1 by our transformation) to positive figures in the 10's and 100's, representing a large change in the logged values for these individuals.

d. Pooled Results: Creditworthiness Outcomes

This final section results from the pooled estimates shows results for creditworthiness outcomes. These results are shown in Table 9 for 'bad credit events' (missed payments) and in Table 10 for delinquent and default balances plus personal insolvency outcomes.

Table 9 below shows results for bad credit events, where a bad credit event is defined as at least one missed payment on the credit item within the time period under consideration. Results show that HCSTC causes bad credit events on the sum of all accounts. The coefficients on the number of accounts with bad credit events variable plus the dummy variable for a

bad credit event on any account at 0-6 and 6-12 months all statistically significant at the 0.1% level. The magnitudes of these coefficients imply that HCSTC causes bad credit events to increase by 23% at 0-6 months and 38% at 6-12 months.

Further estimates for the sum of bad credit events on HCSTC accounts and non-HCSTC accounts show that HCSTC use causes HCSTC bad credit events at 0-6 and 6-12 months, but also non-HCSTC based credit events at 6-12 months. The coefficient on the dummy variable for non-HCSTC bad credit events at 6-12 months is 0.05, significant at the 0.1% level. Evaluated against a baseline likelihood of 51%, this implies that HCSTC use causes non-HCSTC bad credit events to increase by 10% at 6-12 months after use.

Results for bad credit events on specific products shows this increased likelihood a bad credit event at 6-12 months on non-HCSTC is caused by bad credit events on personal loan products, where the increase in likelihood is close to 100%. Hence HCSTC use doubles the chance a customer will miss a payment on a personal loan.

Results also show statistically significant coefficients on the variables which capture customers exceeding their overdraft limits and showing worsening credit status on their credit files. The coefficient on the number of occurrences of exceeding overdraft variable is 0.029, significant at the 1% level. Evaluated against the mean value for this variable of 0.27, this implies HCSTC causes a customer to be 11% more likely to exceed their overdraft limit. In addition, the worst account measure on credit and worst account status on all accounts also increase; the latter by approximately 25% at both 0-6 months and 6-12 months. This reflects the declining creditworthiness status caused by HCSTC use.

	Dummy	Time Period 0-6 Months		Time Period 6-12 Months	
		Coefficient	Mean value	Coefficient	Mean value
<i>Sum of Events</i>					
# All Accounts	No	1.05***	4.26	2.04***	5.32
# Non-HCSTC Accounts	No	-0.131	4.09	0.200	4.87
# HCSTC Accounts	No	1.20***	0.18	1.87***	0.45
Any All Accounts	Yes	0.129***	0.5	0.165***	0.54
Any Non-HCSTC Accounts	Yes	-0.001	0.48	0.050***	0.51
Any HCSTC Accounts	Yes	0.360***	0.06	0.360***	0.1
<i>Number of Events on Specific Products</i>					
# Credit Card	No	0.008	0.61	0.009	0.74
# Personal Loans	No	-0.027	0.21	0.280***	0.3
# Home Credit	No	0.044	0.8	0.008	0.88
# Household Bills	No	-0.067	1.23	-0.120	1.4
# Missed Mortgage Payments	No	0.004	0.13	0.008	0.13
# Exceeded Overdraft	No	0.057	1.03	0.170**	1.14
# Mobile Accounts	No	-0.004	0.002	-0.002	0.001
<i>Whether Any Events on Specific Products</i>					
Any Credit Card	Yes	0.000	0.12	-0.004	0.14
Any Personal Loans	Yes	-0.005	0.05	0.082***	0.07
Any Home Credit	Yes	0.003	0.1	0.007	0.11
Any Household Bills	Yes	0.001	0.26	0.009	0.28
Any Missed Mortgage Payments	Yes	-0.001	0.03	0.002	0.02
Any Exceeded Overdraft	Yes	0.025*	0.27	0.029**	0.27
Any Mobile Accounts	Yes	-0.001	0.001	-0.001	0.0004
<i>Worst Account Measures (excl HCSTC)</i>					
# Worsening Credit	No	-0.059	2.03	0.128	2.05
# Worsening Household Bills	No	-0.034	0.75	-0.026	0.71
Any Worsening Credit	Yes	0.008	0.43	0.058***	0.44
Any Worsening Household Bills	Yes	0.005	0.23	0.006	0.23
Worst Account Status	No	0.251***	1.17	0.540***	1.37

Source: Analysis of firm and CRA data. Notes: * = 5% significance; ** = 1% significance; *** = 0.1% significance

Finally, Table 10 shows results for other creditworthiness outcomes, including the value of default balances and personal insolvency events.

Results show HCSTC use causes an increase in delinquency and default balances. Results are shown separately for balances which include and exclude HCSTC. We focus on estimates for balances which exclude HCSTC. These estimates return positive coefficients on the value of default balances and default balances expressed as a proportion of total balances 6-12 months after HCSTC use. The coefficient on default balances at 6-12 months implies default balances rise by £33, or 17%. Default balances as a proportion of total balances rise by 3 percentage points, or 12%.

The coefficients on personal insolvency outcomes show no statistically significant effects, other than a positive coefficient on the bankruptcy variable which is statistically significant only at the 5% level. The coefficients on the credit score variable are both negative and significant at

the 0-6 month interval, indicating that HCSTC use lowers customer credit scores, by approximately 5% in the 12 months after HCSTC use.

Table 10: RDD Second Stage Estimates for Other Creditworthiness Outcomes					
	Dummy	Time Period 0-6 Months		Time Period 6-12 Months	
		Coefficient	Mean value	Coefficient	Mean value
<i>Delinquency and Default Balances incl. HCSTC</i>					
All Default Balances	No	3.46	108	175 ***	218
All Delinquent Balances	No	38.0***	79	40.3***	101
Log All Default Balances	No	0.014	0.93	1.15***	1.56
Log All Delinquent Balances	No	0.332***	0.68	0.284***	0.84
Default Balances as % Total Balances	No	-0.082***	0.17	0.111***	0.29
Delinquent Balances as % Total Balances	No	0.016***	0.09	-0.039	0.11
<i>Delinquency and Default Balances excl. HCSTC</i>					
Default Balances	No	0.588	107	33.2**	199
Log Default Balances	No	-0.020	0.92	0.211***	1.4
Default Balances as % Total Balances	No	-0.012	0.18	0.031**	0.28
Delinquent Balances as % Total Balances	No	-0.009	0.10	-0.0007	0.13
		Time Period 0-12 Months			
		Coefficient	Mean value		
<i>Personal Insolvency Outcomes</i>					
Bankruptcy	Yes	0.001*	0.0002		
County Court Judgement	Yes	0.001	0.002		
Debt Relief Order	Yes	0.000	0.0002		
Insolvency	Yes	0.000	0.0004		
IVA	Yes	0.001	0.00004		
Judgement Order	Yes	0.000	0.002		
Credit Score change	No	-21.61***	-31.72		

Source: Analysis of firm and CRA data. Notes: * = 5% significance; ** = 1% significance; *** = 0.1% significance

In summary, these results present a consistent pattern showing how HCSTC use causes effects on customer's credit behaviour and outcomes. HCSTC use causes an increase in applications for other credit, specifically credit cards and personal loans. Personal loan acceptances cause the number of personal loan products held to rise and balances on personal loan products to rise, by approximately 35%. Credit card balances also fall and current account balances rise.

However, as well as causing an increase in credit use and overall portfolio size, HCSTC use causes bad credit outcomes. It increases the likelihood that customers miss payments on personal loans, increases default balances on non-HCSTC and causes a deterioration in customer credit scores.

e. Pooled Results: Month by Month Analysis

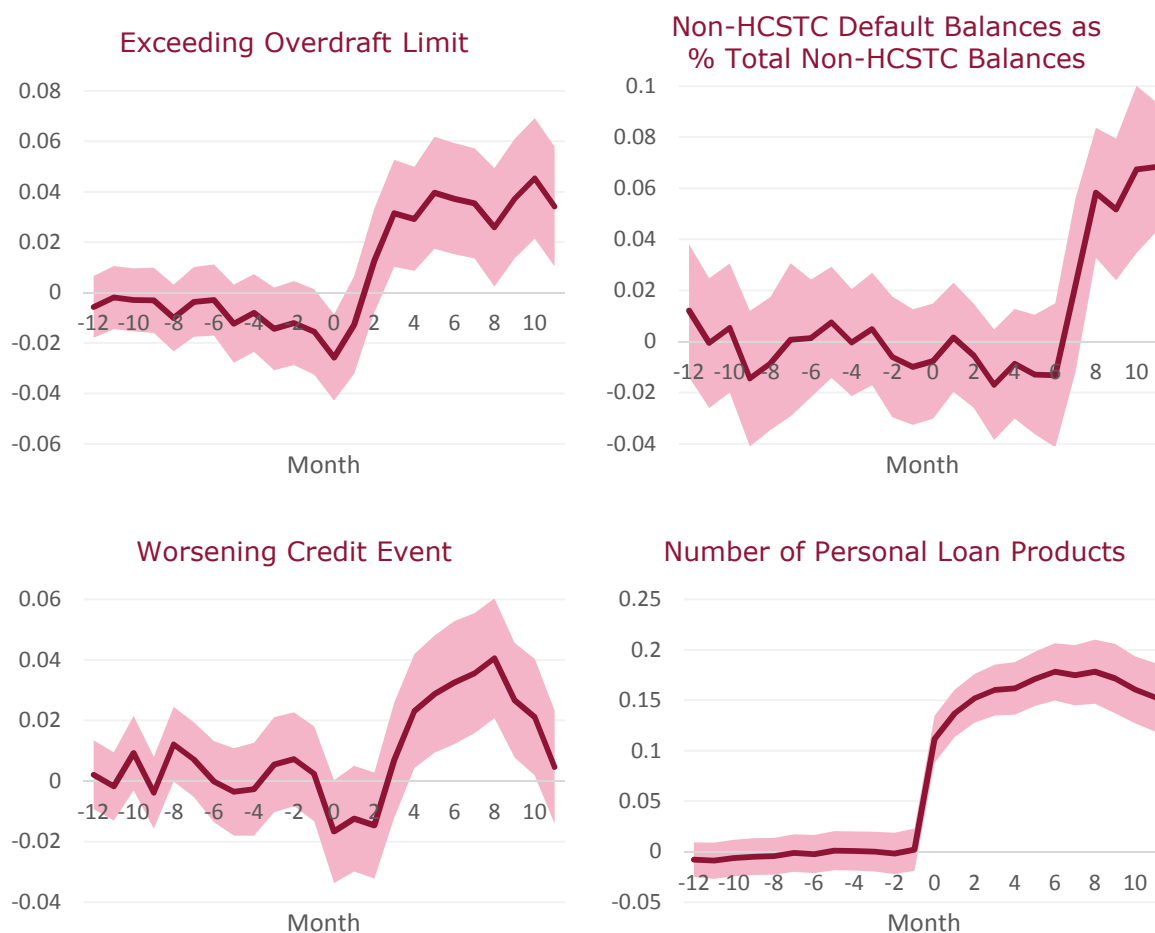
Results shown in the previous table provided coefficient estimates for variables defined at 0-6 months and 6-12 months intervals. In some cases, the coefficients suggest the short-term impact of the HCSTC differs from the medium-term impact.

To gain a more detailed picture of these dynamic effects of HCSTC use, the figures below plot coefficients from RDD estimates where the outcome variable is defined at monthly intervals over a 24 month period from 12 months before the application date to 12 months after the application date. Hence a series of separate RDD models were estimated in which the dependent variable was defined as the outcome observed in month 1 after application, month 2 after application etc. We show these for the variables capturing overdraft limit excesses, non-HCSTC default balances as a % of total balances and worsening credit events. The graphs also show 95% confidence intervals for these coefficient estimates.

For each of the three outcome variables shown below the plot indicates three features. First, in the period before application the coefficient is at or very close to 0: there is no pre-existing difference in the outcome variable across those who do and do not receive loans in the 12 months prior to application. Second, in the first few months after application for each outcome variable the coefficient is weakly negative. This shows that receiving a loan causes reduced likelihood of exceeding an overdraft limit, lower ratio of default balances to total balances and lower likelihood of a bad credit event. Third, in each case the coefficient increases to be positive (and statistically significantly different) after between one and six months.

These results demonstrate dynamic effects arising from use of HCSTC. They support an interpretation that HCSTC provides some short term benefits and acts as a short term stop-gap for consumer finances. However, the fact that each of the variables then sees worsening outcomes thereafter, of a larger magnitude than any of the short term decreases shows that HCSTC use causes longer-term costs to the consumer. The magnitude of these costs exceeds the benefits.

Figure 4: RDD Estimates for Outcomes Defined At Monthly Intervals



Source: Analysis of Firm and CRA data. Notes: Graphs based on pooled results for the 9 “good” processes. Shading shows 95% confidence intervals.

f. Overview of Lender-Process Results

We do not show results from RDD estimates based on individual lender-process samples. Appendix tables A9 – A13 provide a summary of the direction and statistical significance of the RDD coefficient estimates. In these tables each individual cell contains an indication of the direction (denoted by the positive and negative signs) and statistical significance (denoted by the stars) for a Local Wald Statistic coefficient estimated for the outcome variable of interest using the lender-process sample.

The pattern of results show HCSTC use causes statistically significant effects at the 1% level in at least 5 lender-process sample estimates for a set of outcome variables. These can be summarised as:

Loan application outcomes (Table A9): positive effect on the likelihood that the consumers credit file receives a credit check on a non-HCSTC credit item 0 to 6 months after using the HCSTC loan application. This indicates new applications for credit. Looking at credit checks for specific credit types, the likelihood of a personal loan credit check 0 to 6 months after the HCSTC loan application rises, as does the number of credit checks for

those with at least one credit check. This initial evidence, therefore, indicates that use of HCSTC increases credit applications for non-HCSTC forms of credit in the period 0-6 months after application, particularly applications for personal loans.

Credit portfolio outcomes (Tables A10 and A11): in line with increased credit applications, the total number of products held increases 0-6 and 6-12 months after HCSTC application. The log sum of all non-HCSTC balances on consumer credit also rises at both 0-6 and 6-12 months after application. The log sum of HCSTC balances rises 0-6 and 6-12 months after application, plus the number of HCSTC held. For each of these outcomes the coefficients are in each case positive (where statistically significant) implying that HCSTC use causes increases in consumers' balances on other credit items and so raises the overall size of consumers' credit portfolios.

Creditworthiness outcomes (Tables A12 and A13): results show HCSTC use causes the likelihood that a customer experiences a bad credit event on non-HCSTC credit to increase 0 – 6 and 6 – 12 months after HCSTC use. The number of bad credit events also increases at 6 – 12 months. The log sum of delinquent credit balances increases at 0-6 and 6-12 months. The worst account status on all customer credit accounts also worsens 6-12 months after HCSTC use. These results show that HCSTC use increases the likelihood and number of bad credit events, the sum of delinquent balances and the worst status on credit accounts in the period following HCSTC acceptance.

Creditworthiness results show the likelihood of a HCSTC bad credit event and number of events also increases. Given that individuals who do not receive HCSTC loans have zero chance of defaulting on a HCSTC loan, the increased likelihood of bad credit events on HCSTC for individuals who use HCSTC is an expected effect.

Taken together, results from lender-process level estimates reveal a pattern of outcomes caused by HCSTC use. This pattern is that following HCSTC use individuals increase their credit application activity, and this gives rise to credit acceptances evidenced in an expanded credit portfolio containing more credit instruments and larger balances. However, results also show that this leads to bad credit events and accumulation of delinquent balances on credit products. Hence use of HCSTC causes consumers to borrow more but also raises the likelihood of consumers missing payments on their other debts.

g. Summary of Results

In summary, results show a consistent set of outcomes caused by HCSTC use with evidence of dynamic effects. These results are summarised in Table 11 below (only outcome variables which exclude HCSTC are shown in Table 11).

These results can be summarised as:

- Increase in credit applications caused by HCSTC use, at both 0-6 months and 6-12 months. Applications increase in particular for credit cards and personal loans.
- Increase in non-HCSTC balances. In keeping with an increase in applications, credit balances also increase for personal loans.
- HCSTC causes bad credit events, overdraft limit excesses and increase in non-HCSTC default balances. These effects are more pronounced at 6-12 months after application.

These results provide initial answers to question 4) and 5) outlined in the introduction. We repeat these questions and offer initial answers here:

- 4) What alternative options do we observe consumers using once they are denied HCSTC, compared with those successful for HCSTC?

We find no clear evidence for *substitution* towards other credit items or balances in response to HCSTC denial. In contrast, results show HCSTC acceptance causes *complementary* effects by increasing credit applications for credit cards and personal loans in particular. Some shares of these applications are successive as we observe, on average, credit balances increasing for individuals successful for HCSTC.

- 5) Do we observe consumers who are denied HCSTC better or worse off as a result of not getting HCSTC, compared to those who are given HCSTC?

Results show that *consumers denied HCSTC are better off than those successful*. Those denied HCSTC are less likely to default over the coming 12 months compared with those successful. We observe HCSTC use causes increased likelihood of overdraft limit excesses and bad credit events (on non-HCSTC as well as on HCSTC).

Table 11: Summary of Significant RDD Second Stage Estimates for Non- HCSTC Outcomes					
	Dummy	0-6 months		6-12 months	
		Coefficient	Mean value	Coefficient	Mean value
LOAN APPLICATION OUTCOMES					
<i>Number of Applications for Specific Credit Products</i>					
# Credit Cards	No	0.069***	0.34	-	-
# Personal Loan	No	0.440***	0.48	0.069***	0.23
<i>Whether Applied for Specific Credit Products</i>					
Any Credit Cards	Yes	0.028***	0.21	-	-
Any Personal Loan	Yes	0.187***	0.25	0.032***	0.13
CREDIT PORTFOLIO PRODUCTS					
<i>Number of Credit Products Held</i>					
# Personal Loans	No	0.097***	0.25	0.108***	0.29
# Mortgages	No	-0.025***	0.1	-	-
<i>Whether Specific Credit Products Held</i>					
Any Credit Cards	Yes	-	-	-0.027**	0.31
Any Personal Loans	Yes	0.076***	0.17	0.090***	0.19
Any Mortgages	Yes	-0.019***	0.08	-0.017**	0.08
Any Other Products	Yes	-0.014**	0.07	-0.014**	0.07
CREDIT PORTFOLIO BALANCES					
<i>Credit Product Balances (Log)</i>					
Log Personal loans	No	-	-	0.248***	0.71
Log Current Accounts	No	-	-	0.165***	1.42
BAD CREDIT EVENTS					
<i>Sum of Events</i>					
Any Non-HCSTC Accounts	Yes	-	-	0.050***	0.51
<i>Number of Events on Specific Products</i>					
# Personal Loans	No	-	-	0.280***	0.3
# Exceeded Overdraft	No	-	-	0.170**	1.14
<i>Whether Any Events on Specific Products</i>					
Any Personal Loans	Yes	-	-	0.082***	0.07
Any Exceeded Overdraft	Yes	-	-	0.029**	0.27
<i>Worst Account Measures</i>					
Any Worsening Credit	Yes	-	-	0.058***	0.44
Worst Account Status	No	0.251***	1.17	0.540***	1.37
OTHER CREDITWORTHINESS OUTCOMES					
<i>Delinquency and Default Balances excl. HCSTC</i>					
Default Balances	No	-	-	33.2**	199
Log Default Balances	No	-	-	0.211***	1.4
Default Balances as % Total Balances	No	-	-	0.031**	0.28
<i>Personal Insolvency Outcomes</i>					
Credit Score change†	No	-	-	-21.61***	-31.72

Source: Analysis of firm and CRA data. Notes: ** = 1% significance; *** = 0.1% significance. Grey text indicates variables that do not pass falsification tests. † Relates to difference between January before loan and January / March after loan.

7. Additional Analysis: RDD Robustness

a. Importance of Robustness Testing

As with any empirical analysis, an important aspect of RDD analysis is robustness testing. Robustness testing seeks to ascertain whether the results derived from an analysis are robust to changes in the empirical dimensions of the analysis. In the case of RDD a set of robustness tests ascertain whether the estimated 'jump' in the outcome variable observed at the cut-off threshold are spurious.

This section presents a series of robustness tests. First, a set of 'falsification' estimates are presented. These test the assumption of comparability of observations just above and just below the credit-score cut-off threshold by testing for pre-existing differences in the two groups. Second, estimates are presented with varying bandwidths. Third, results from a 'density test' are described. This tests the assumptions that individuals cannot precisely align above the cut-off threshold by estimating whether there is a jump in the density of the assignment variable at the cut-off threshold. Fourth, estimates are presented under alternative kernel estimation.

As the purpose of this analysis is to check the robustness of the significant RDD results, testing is only shown for all outcome variables which returned a pooled estimate which was statistically significant at least at the 1% level of significance, for the nine processes with significant first-stage RDD estimates.

b. Falsification Test

A first test of RDD results is to estimate whether the treatment effect on observed outcomes might be spurious due to underlying 'jumps' in the outcome variable around the cut-off threshold which arise other than from the treatment under analysis. This test is a form of falsification test as it is a test which looks for evidence that something other than the treatment of interest generates the jump in the outcome.

The setup of the falsification test in our analysis is to generate RDD estimates for the outcomes of interest, where the effect of HCSTC use is estimated on the outcomes of interest in the period *before* first HCSTC application. If this analysis returns statistically significant estimates for the outcome variable of interest then results indicate that some pre-existing difference at the discontinuity in the outcome variable exists in the data in the period before HCSTC application. As it is very unlikely that HCSTC use could by some means cause a change in consumer outcomes in the period *before* application, statistically significant results indicate a spurious RDD estimate for the period after loan application.

Results are presented in Tables A14 to A18 in the appendix for credit applications, credit portfolio outcomes and creditworthiness outcomes respectively.

Results for loan application outcomes in Table A14 indicate some spurious results. These mostly relate to lender-process LP6, but there are other examples of statistically significant falsification estimates. In the pooled estimates these relate to home credit outcomes only, for which no statistically significant effect was found in the main results.

Table A15 reports results for credit product holdings. Results here again indicate some spurious estimates, in particular for lender-process 3. In the pooled estimates the coefficients on credit card products and mortgage products are statistically significant at the 1% level. These indicate some pre-existing differences in product holdings for credit cards, mortgages and items classified as 'other' in the period before the HCSTC application. On this basis we infer no causal impact of HCSTC on these outcomes, as shown in the results section Table 11 above. Table A16 reports results for credit product balances. This table indicates some spurious results (at the 5% level) for personal loan balances and the natural log of credit card balances with weaker confidence.

Tables A17 and A18 report results for creditworthiness outcomes. Results for bad credit events indicate no statistically significant coefficients for non-HCSTC outcomes of interest. Results for other creditworthiness outcomes also indicate no statistically significant coefficients.

On the basis of these results we do not attach causal inferences to estimates for mortgage products held, credit card products held, mortgage products held and other products held. These are shown in the previous results Table 11.

c. Bandwidth Choice

RDD estimates using local linear regressions involve a 'bandwidth choice' to determine the bandwidth over which the local linear regression is estimated. Bandwidth choice can induce bias in the estimated coefficients. In general, smaller bandwidths exploit observations close to the cut-off threshold but may be distorted by small bin sizes. Larger bandwidths ensure larger bin sizes, but draw in observations further away from the cut-off threshold and in doing so may over-estimate the true 'jump' in the outcome variable at the cut-off threshold.

As a sensitivity check, Lee (2010) recommends that results are presented under different bandwidth choices. Following this convention, Table 12 below reports Local Wald Estimates under alternative bandwidths. Results from the pooled estimates for various bandwidths shown below. The 'standard bandwidth' is the optimal bandwidth implied by the estimator. Results are presented for one quarter, one half, twice and three times the optimal bandwidth. Results are shown for variables which returned statistically significant coefficient at the 1% level or lower in the pooled analysis.

As can be seen from the estimates, most outcome estimates are robust to variation in bandwidth. For some outcome variables the estimated coefficients become statistically not significant at the 1% or 5% level under tighter bandwidths. This result may arise due to very small bin

sizes. However, where coefficients are no longer statistically significant their direction and magnitudes are consistent, with the exception of some balance variables for which narrow bandwidth specification leads to small sample distortions in these values.

Table 12: RDD Robustness Bandwidth Choice

Outcome	Time period (months)	Pooled Local Wald Statistic Coefficient				
		0.25 x bwidth	0.5 x bwidth	Standard bwidth	2 x bwidth	3 x bwidth
LOAN APPLICATION OUTCOMES						
<i>Number of Applications for Specific Credit Products</i>						
# Credit Cards	0-6	0.0538	0.0749**	0.0685***	0.0776***	0.0803***
# Personal Loan	0-6	0.4287***	0.4418***	0.4403***	0.4484***	0.4998***
# Personal Loan	6-12	0.0701*	0.0746***	0.0685***	0.0480***	0.0451***
<i>Whether Applied for Specific Credit Products</i>						
Any Credit Cards	0-6	0.0039	0.0234*	0.0279***	0.0321***	0.0322***
Any Personal Loan	0-6	0.1800***	0.1861***	0.1867***	0.1901***	0.2008***
Any Personal Loan	6-12	0.0271	0.0362***	0.0316***	0.0270***	0.0221***
CREDIT PORTFOLIO PRODUCTS						
<i>Number of Credit Products Held</i>						
# Personal Loans	0-6	0.1109***	0.1006***	0.0965***	0.0462***	-0.0742***
# Personal Loans	6-12	0.1248***	0.1077***	0.1075***	0.0001	-0.1021***
<i>Whether Specific Credit Products Held</i>						
Any Personal Loans	0-6	0.0872***	0.0782***	0.0757***	0.0526***	0.0044
Any Personal Loans	6-12	0.0968***	0.0881***	0.0898***	0.0409***	0.0061
CREDIT PORTFOLIO BALANCES						
<i>Credit Product Balances (Log)</i>						
Log Personal loans	6-12	0.1774	0.1939**	0.2482***	0.1706***	0.0368
Log Current Accounts	6-12	0.0573	0.1022	0.1649***	-0.0137	-0.1555***
BAD CREDIT EVENTS						
<i>Sum of Events</i>						
Any Non-HCSTC Accounts	6-12	0.0065	0.0342*	0.0503***	0.0421***	0.0471***
<i>Number of Events on Specific Products</i>						
# Personal Loans	6-12	0.1987**	0.2281***	0.2798***	0.3167***	0.3585***
# Exceeded Overdraft	6-12	0.1385	0.0963	0.1697**	0.1799***	0.2245***
<i>Whether Any Events on Specific Products</i>						
Any Personal Loans	6-12	0.0658***	0.0727***	0.0817***	0.0875***	0.0974***
Any Exceeded Overdraft	6-12	0.0175	0.0283*	0.0294**	0.0342***	0.0409***
<i>Worst Account Measures</i>						
Any Worsening Credit	6-12	0.0296	0.0544***	0.0577***	0.0561***	0.0592***
Worst Account Status	0-6	0.2202**	0.2203***	0.2511***	0.2705***	0.3313***
Worst Account Status	6-12	0.4589***	0.4911***	0.5402***	0.5309***	0.6277***
OTHER CREDITWORTHINESS OUTCOMES						
<i>Delinquency and Default Bal. non- HCSTC</i>						
Default Balances	6-12	-12.1295	6.5434	33.1613**	43.9478***	49.3164***
Log Default Balances	6-12	-0.0788	0.0574	0.2114***	0.2618***	0.3620***
Default Balances as % Total Balances	6-12	0.0003	0.0193	0.0306**	0.0446***	0.0604***
<i>Personal Insolvency Outcomes</i>						
Credit Score change†	n/a	-27.02***	-24.43***	-21.61***	-26.29***	-28.63***

Source: Analysis of firm and CRA data. Notes: * = 5% significance level; ** = 1% significance level; *** = 0.1% significance level

d. Density Test

Within the RDD paradigm a possible source of spurious results is the clustering of observations about the cut-off threshold which may indicate individuals manipulating their position in the assignment value. A jump in the density of the assignment variable at the cut-off threshold may indicate that some individuals have both identified the requisite cut-off threshold and manipulated their assignment variable value to meet the criteria of being treated. In such cases the exogeneity of the cut-off threshold may be violated. 'Bunching' of observations just above the cut-off threshold may be of particular concern in economic analysis: in most economic scenarios where there is some cost to improving assignment variable, the optimal assignment variable value will be the minimum value required to be treated.

In the analysis presented here it is very unlikely that individuals would be able to manipulate their assignment value to an accurate degree. While individuals have a clear incentive to improve their credit score, their ability to manipulate their credit score relative to the firm cut-off value is very limited. Firstly, individuals do not know the credit score model of the firm, or the relevant cut-off value. Credit score models differ between firms and are not public information. Given the complex credit scoring algorithms used by lenders in this market and the large information sets on which credit scores are estimated, it is very unlikely that an individual or group of individuals could 'learn' a firm's credit score model. Secondly, individuals do not have perfect ability to improve their credit file record on which basis firms produce (in part) their credit score.

On examination of the density of credit score observations relative to the firm credit score cut-off thresholds, for some lender-processes there is evidence of small increases in density just above the cut-off threshold. We find this increase is mostly attributable to observations for applications to firms made via lead generators. Aspects of the application methods used by lead generators may cause this pattern in the density of observations to arise. However, this does not indicate manipulation of the density variable in a manner which would pose a threat to identification. In pooled estimates there is a small increase in density at the cut-off threshold.

e. Kernel Choice

RDD estimators by default employ a triangular kernel. Estimates in Table 13 below show that coefficient estimates are unchanged with use of a rectangular kernel. The estimates shown in the table provide evidence that the estimated coefficients are not sensitive to kernel choice.

Table 13: RDD Robustness Kernel Choice

Outcome	Time period (months)	Pooled Local Wald Statistic Coefficient	
		Triangular Kernel	Rectangular Kernel
LOAN APPLICATION OUTCOMES			
<i>Number of Applications for Specific Credit Products</i>			
# Credit Cards	0-6	0.0685***	0.0627***
# Personal Loan	0-6	0.4403***	0.4478***
# Personal Loan	6-12	0.0685***	0.0717***
<i>Whether Applied for Specific Credit Products</i>			
Any Credit Cards	0-6	0.0279***	0.0315***
Any Personal Loan	0-6	0.1867***	0.1836***
Any Personal Loan	6-12	0.0316***	0.0322***
CREDIT PORTFOLIO PRODUCTS			
<i>Number of Credit Products Held</i>			
# Personal Loans	0-6	0.0965***	0.0944***
# Personal Loans	6-12	0.1075***	0.1025***
<i>Whether Specific Credit Products Held</i>			
Any Personal Loans	0-6	0.0757***	0.0734***
Any Personal Loans	6-12	0.0898***	0.0898***
CREDIT PORTFOLIO BALANCES			
<i>Credit Product Balances (Log)</i>			
Log Personal loans	6-12	0.2482***	0.2467***
Log Current Accounts	6-12	0.1649***	0.2007***
BAD CREDIT EVENTS			
<i>Sum of Events</i>			
Any Non-HCSTC Accounts	6-12	0.0503***	0.0551***
<i>Number of Events on Specific Products</i>			
# Personal Loans	6-12	0.2798***	0.3010***
# Exceeded Overdraft	6-12	0.1697**	0.2031***
<i>Whether Any Events on Specific Products</i>			
Any Personal Loans	6-12	0.0817***	0.0844***
Any Exceeded Overdraft	6-12	0.0294**	0.0292**
<i>Worst Account Measures</i>			
Any Worsening Credit	6-12	0.0577***	0.0579***
Worst Account Status	0-6	0.2511***	0.2504***
Worst Account Status	6-12	0.5402***	0.5485***
OTHER CREDITWORTHINESS OUTCOMES			
<i>Delinquency and Default Bal. non- HCSTC</i>			
Default Balances	6-12	33.1613**	40.3899**
Log Default Balances	6-12	0.2114***	0.2436***
Default Balances as % Total Balances	6-12	0.0350**	0.0354**
<i>Personal Insolvency Outcomes</i>			
Credit Score change†	n/a	-21.6124***	-20.9282***

Source: Analysis of Firm and CRA data. Notes: * = 5% significance level; ** = 1% significance level; *** = 0.1% significance level

e. Summary of Robustness Analysis

This section has presented various robustness tests which confirm that the central results from the RDD analysis are not sensitive to changes in the empirical setup. Falsification tests show that, while some variables fail the falsification test, these variables are not central to the inference of how HCSTC use impacts upon consumer outcomes and welfare. Estimates for the impact of HCSTC on variables of interest are robust to the falsification test, changes in bandwidth choice and changes to kernel choice. We therefore estimate the following impacts of HCSTC on individual applicants with credit score values in the locality of lender credit score cut-off thresholds. These are shown in Table 14 below:

Table 14: Impacts Around the Current Credit Score Cut-Offs

Outcome variable	Average outcome for those without a loan near the current credit score cut-offs†	Impact of loan for these (percentage point change)	Estimated average outcome with a loan for those near the current credit score cut-offs	Impact of loan for these (percentage change)
Overdraft excess, 6-12 months after Non-HCSTC default balances, 6-12 months after	24.9%	+2.9%	27.9%	+12%
Worsening credit event, 6-12 months after	30.6%	+3.1%	33.7%	+10%
Change in credit score	38.6%	+5.8%	44.4%	+15%
Overdraft excess, 1 month after	-31.7	-21.6	-53.3	+68%
	13.5%	-2.6%	10.9%	-19%

Source: Analysis of Firm and CRA data. † Taken as the current average outcome for those just below the credit score cut-offs.

8. Extrapolation: Modelling Approaches

a. Purpose of Extrapolation Analysis

The RDD analysis provides causal estimates for the impact of HCSTC loan use on outcomes for interest for individuals close to the credit score cut-off, for those firm processes where there is a sufficiently distinct credit score cut-off. The results shown are robust to the specification of the RDD estimates. Taken together, they provide clear evidence that HCSTC use causes consumer detriment at the credit-score cut-off.

A key question for the analysis is whether these effects at the credit score cut-off threshold are also likely to occur away from the credit score cut-off. This is summarised in Question 6 from the 3 key questions for the demand side analysis, which are repeated below:

- 4) What alternative options do we observe consumers using in CRA records and consumer survey responses once they are denied HCSTC, compared with those successful for HCSTC?
- 5) Do we observe consumers who are denied HCSTC better or worse off in their credit file data and consumer survey responses as a result of not getting HCSTC, compared to those who are given HCSTC?
- 6) Given the available data, what can we infer from C) and D) about the impact of the price cap at different levels of the cap in the market in 2015?

The RDD approach is not directly applicable to Question 6. The RDD analysis estimates Local Average Treatment Effects (the treatment effect causally identified at the locality of the credit-score cut-off threshold), for policy design we are very interested in the relevance of these results away from the credit-score cut-off.

The purpose of the extrapolation analysis is to determine this likely impact on people further away from the credit score cut-off threshold. In particular, the analysis is focused upon individuals with better credit scores. The main impact of the HCSTC policy on firm lending models will be to lead firms to adopt tighter credit-score cut-offs (i.e. at higher value of the credit score). If the marginal loan offered has expected profit of zero, lower expected revenue implied by the price cap causes firms need to lend at the margin at a higher likelihood of repayment in order to ensure marginal profit of zero.

In undertaking this extrapolation analysis there are good reasons to think that the impact of HCSTC use on consumers with better credit scores will be different to that upon consumers at the current margin of lending. Consumers with better credit scores are less likely to default upon HCSTC loans, and are generally less likely to default or miss payments on all forms of credit as they are better risks in the credit market. As such, the

likelihood that they experience consumer detriment as a result of HCSTC use is probably lower than for consumers at the current margin of lending.

Two methodologies are employed to provide some indicative evidence of the impact of HCSTC upon consumers away from the credit score cut-off:

1. Trend analysis of outcome variables before and after getting a loan for people falling into different credit score bands.
2. Analysis of the outcomes for those who got a loan and those who did not get a loan (stage 3 denials) for people falling into different credit score bands.

The results of these analyses, as well as indications of the potential biases, are provided in the sections below.

b. Differential Trend Approach

This sub-section presents an approach to extrapolation analysis based upon decomposition analysis of trends in variables of interest across groups of individuals all of whom received a HCSTC loan on their first application, but who differ by their credit score. This approach exploits variation in the pre-application and post-application dynamics of the outcome variables across individual applicants. This analysis is presented for three outcome variables which yielded robust results in the RD analysis: the worsening credit event measure, the dummy indicator variable for overdrawn current account exceeding overdraft limit and the ratio of non-HCSTC default balances to non-HCSTC balances.

The differential trend approach is based upon two features of the data. First, a feature that prior to HCSTC application, the trends in these variables of interest are close to identical across groups of consumers who differ in their credit score. Hence these groups appear to exhibit the same underlying drivers of the outcome variable. Second, at the point of HCSTC acceptance values of the outcome variable diverge across these groups. Low credit score consumers see a change in their trend outcome variable which differs from high credit score consumers. The inference can be drawn that HCSTC has therefore affected these groups differently with respect to the outcome variable.

This analysis is based on two key assumptions. First that the HCSTC use event does not coincide with some other event which would cause the trends in the outcome variables to move differentially across groups. Second, the strong assumption that the impact on the outcome variable arising from the loan is proportionate to the total change in the outcome after the date of application. This assumption can not necessarily be expected to fully hold, the results should be seen to be indicative of the likely trend in impact away from the cut-off rather than exact figures and should be interpreted along with other evidence.

The differential trends approach proceeds as follows: First, at $T=0$ (the month of the application), or in the time period following, we observe a shift in the trend of the variable. Individuals with credit scores just above

and with credit score some way above the firm credit score cut-off threshold both experience a worsening in the outcome variable. This arises due to HCSTC use. Second, there is a divergence between individuals with credit scores just above and with credit score some way above the firm credit score cut-off threshold. Individuals just above the threshold generally experience a larger worsening in the outcome variable compared to individuals some way above the firm credit score cut-off threshold.

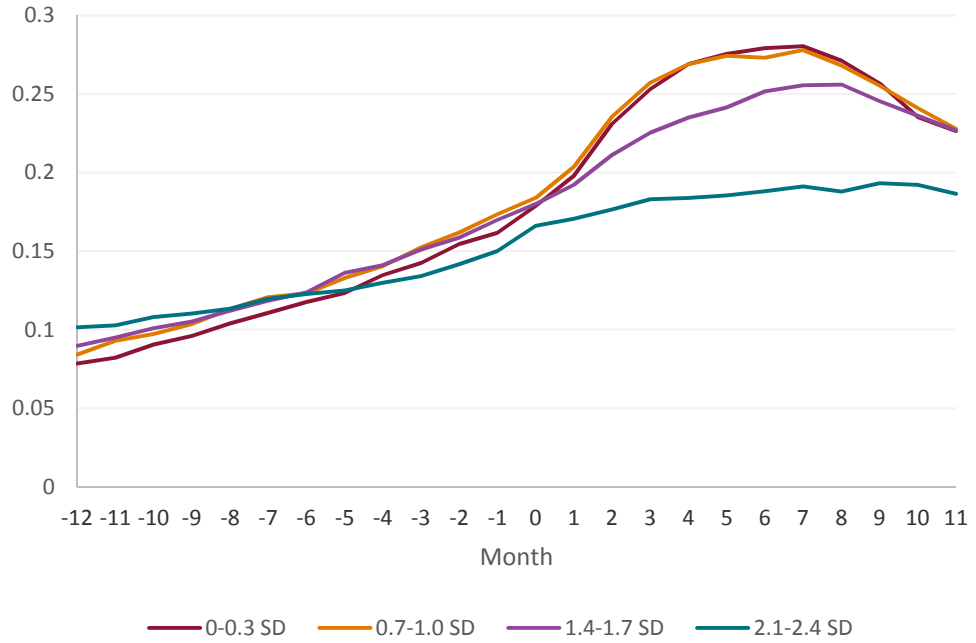
To examine differences in outcomes across individuals with different credit scores, individuals are allocated to a credit score group based on their distance above the credit score threshold. These groups are defined as 0-0.3, 0.7-1.0, 1.4-1.7 and 2.1-2.4 standard deviations above the threshold. At the threshold (i.e. 0 SD above the threshold) probability of default on loans was around 50% for the 9 lender-processes with statistically significant first stage probability jumps, whilst at 2.1-2.4 SD above the cut-off this reduced to very close to 0%. Hence the credit score groupings roughly relate to a scale of probability of defaults from 50% to 0%.

Differential trends in the outcome variables for these groups are shown below in Figure 5. For each outcome variable illustrated in the pre-HCSTC period (-12 to 0 months) the trends in the outcome variable are very similar across all groups. This is most clearly evidence for the 'exceeding overdraft limit' outcome, but is also evident for the other outcome (although there are level differences between groups in the ratio of non-HCSTC default balances, the trends in the outcome for these groups are very similar)

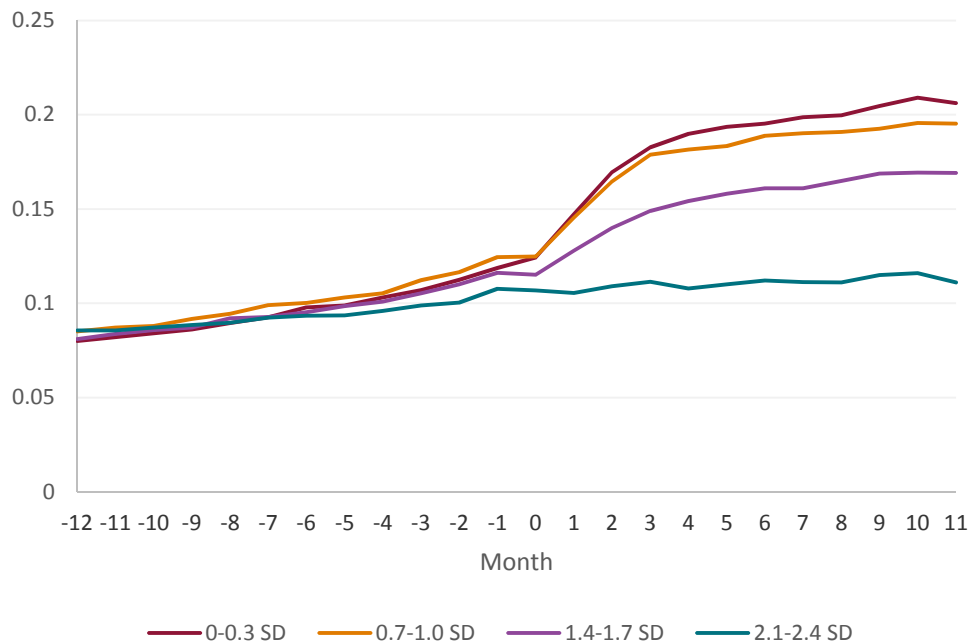
For each outcome variable the HCSTC acceptance is associated with a change in trend for each group and these trends differ across groups. In the case of the 'worsening credit event outcome' the groups with the highest credit scores (group 2.1-2.4) sees a moderate upturn in the likelihood of a worsening credit event of between 0.15 and 0.2 percentage points. For the groups 0-0.3 and 0.7-1 the increase is above 0.25 percentage points. Hence the lower credit score (higher risk) groups sees a larger worsening credit event likelihood in response to HCSTC acceptance. This pattern is also evident for the 'exceeding overdraft limit' and 'non-HCSTC default balance' outcomes.

Figure 5: Trends in Outcome Variables by Credit Score Bands, -12 to +11 Months Following HCSTC Acceptance

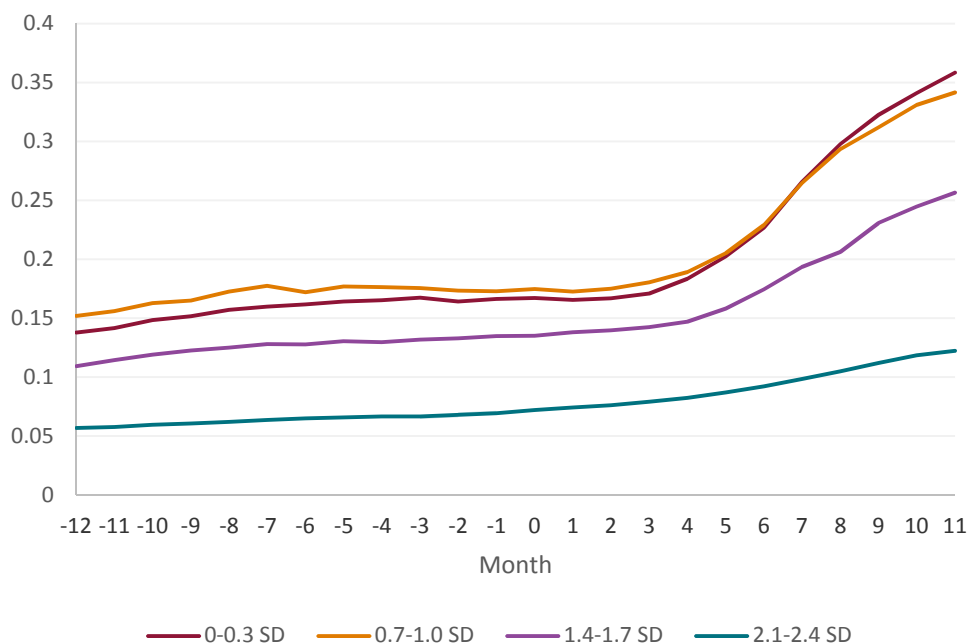
Worsening Credit Event



Exceeding Overdraft Limit



Ratio Non-HCSTC Default Balance



Source: Analysis of Firm and CRA data. Notes: Graphs based on pooled results for the 9 “good” processes.

Based on these ‘differential trends’, we can approximate the impact of HCSTC use on the outcome variable of interest in the following way. First, the slope of each trend line is calculated over the period from 6-12 to 0-6 months before HCSTC first use. Second, the slope is calculated between 0-6 months before and 0-6 months after HCSTC use. The difference between these gradient values is then calculated. Hence if there is no change in slope, the difference value is 0. A positive difference value indicates an upwards gradient shift and vice versa.

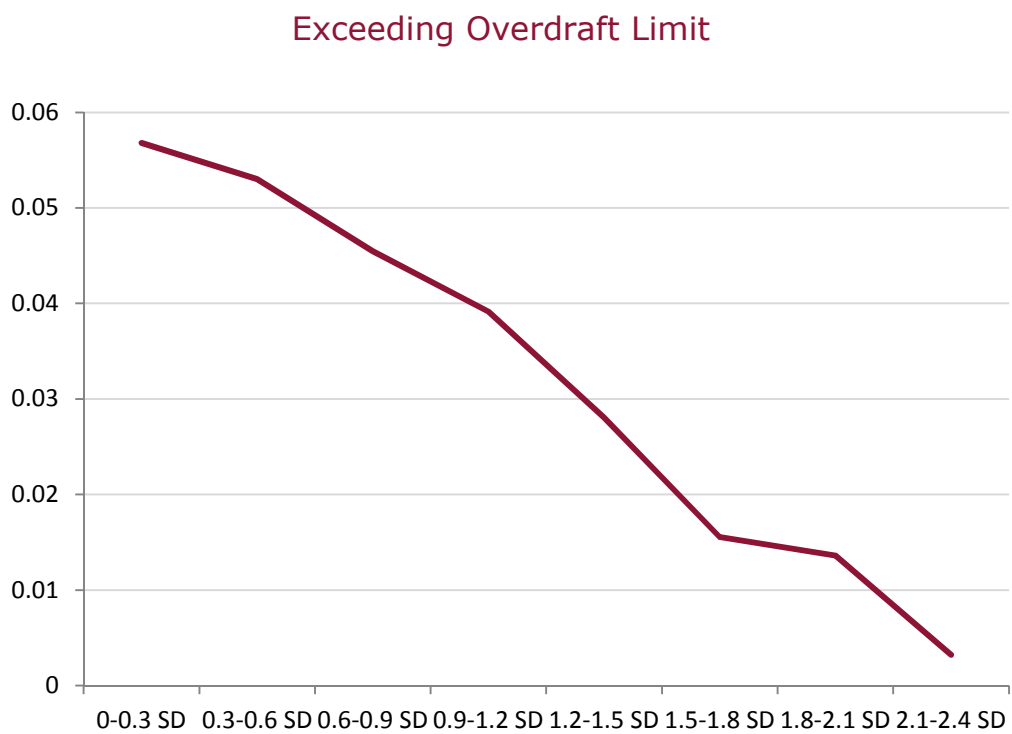
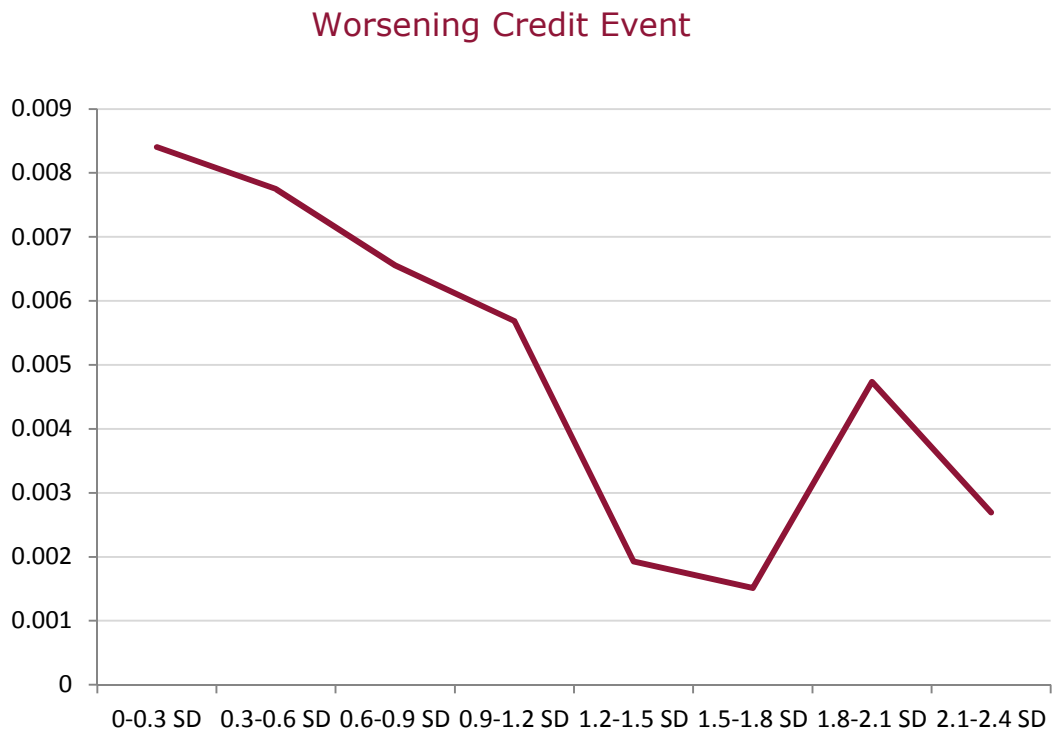
Following this, the Local Wald Statistic estimate from the RDD model can be combined multiplied by the change in slope value to obtain a measure of the (relative) impact of HCSTC use. For example, if there is no change in slope then the calculated statistic is the Local Wald Statistic estimate multiplied by 0. This implies no effect arising from HCSTC use. If the gradient change is +0.5, the implied value is half the Local Wald Statistic estimates, and so on. If the slope change is negative, HCSTC is associated with a lower likelihood of the outcome variable.

Figure 6 below plots these calculated values for a larger number of credit score groups defined over 0.3 standard deviations above the credit score threshold. As can be seen from the estimates, there is a clear negative relationship between credit score group and likelihood that HCSTC use results in a negative outcome for consumers in that group. These extrapolation results suggest the negative impacts of HCSTC use and less for lower risk consumers.

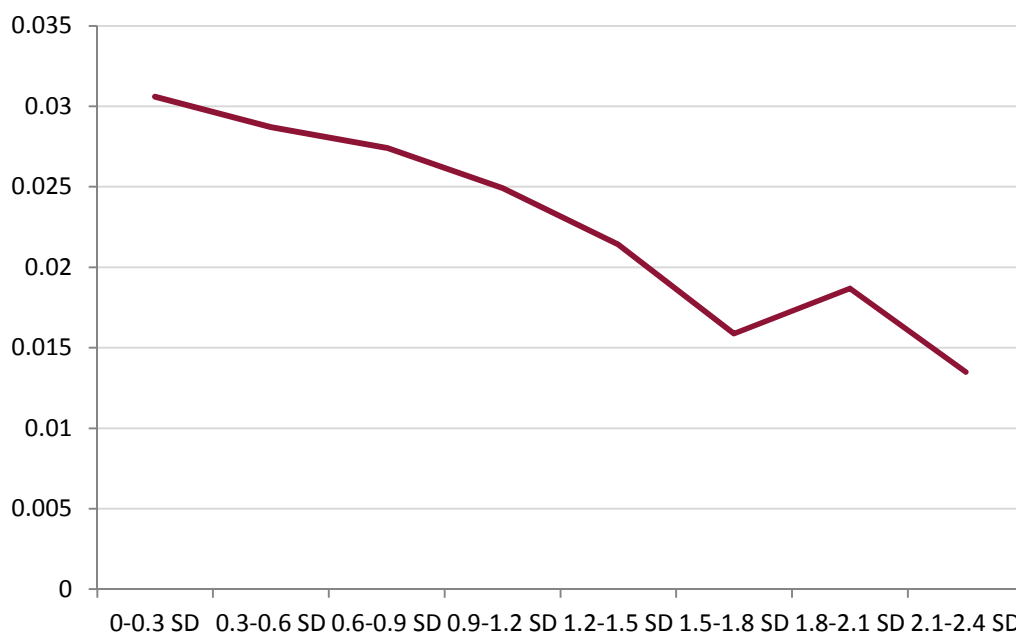
The magnitude of the difference in likelihood of negative outcomes between higher and lower credit score groups is large. For the worsening

credit event outcome, the highest risk (lowest credit score) group at 8 times more likely to experience a worsening credit event as a result of HCSTC use compared with the lowest risk group. For the exceeding overdraft limit outcome the riskiest group are 6 times more likely and for non-HCSTC default balances the impact of HCSTC use for the highest risk group is double that of the lowest risk group.

Figure 6: Differential Trend Extrapolation Estimates



Ratio non-HCSTC Default Balance



Source: Analysis of Firm and CRA data. Notes: Graphs based on pooled results for the 9 "good" processes.

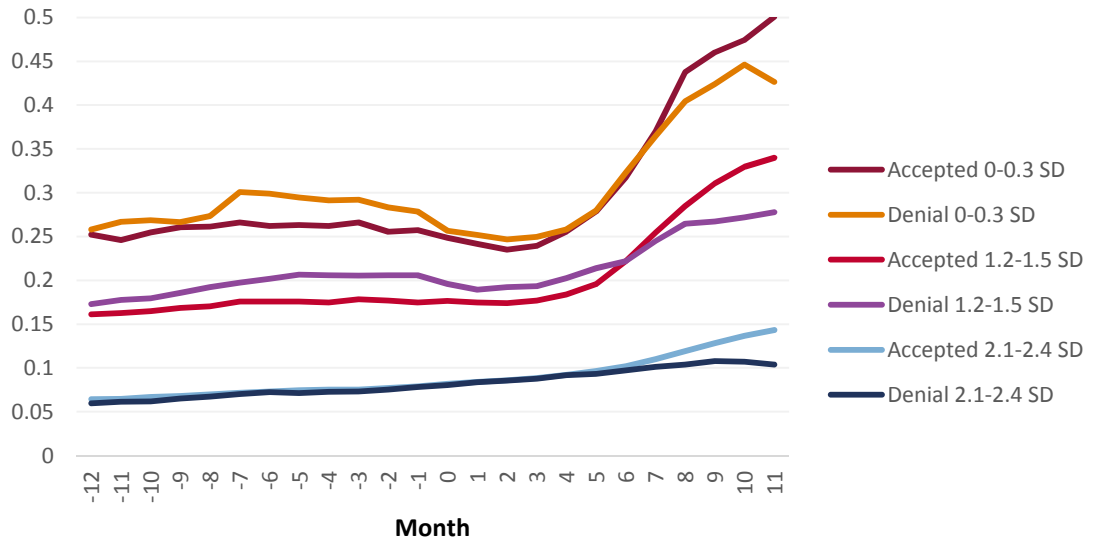
c. Comparison with Stage 3 Denials

This section presents an alternative approach to extrapolation analysis. This alternative approach is based upon an element of the firm lending decision process which we describe as 'stage 3 denial'. As discussed in the RDD analysis, firms typically use a credit score decision process as the (main) process for making loan decisions. However, the credit score process is not the only decision process for loan decisions. As discussed, firms decide to decline a non-negligible share of applications which are successful at the credit score stage.

As a result it is possible to compare the outcomes for applicants in credit score bands above the cut-off point who ultimately did and did not end up being given a loan by that firm. For example, Figure 7 below illustrates the ratio of non-HCSTC default balance over time (from 12 months prior to application through 12 months post-application) for those successful and denied loans by credit score band for individual applicants who were successful at the credit score stage. For example, the lines illustrating 'successful 0-0.3 SD' and 'unsuccessful 0-0.3SD' illustrate trends in non-HCSTC default balances for successful and denied applicants in this credit score group.

As can be seen from the illustration, at each credit score band there is a divergence in outcomes between those successful and unsuccessful for loans, with those successful in each band experiencing a higher default balance 11 months after the loan application.

Figure 7: Stage 3 Denials – Ratio non-HCSTC Default Balance



Source: Analysis of Firm and CRA data. Notes: Graphs based on results for one process.

These differences within group can be interpreted as the impact of HCSTC use on the outcomes of interest at the group level. In order for the results of this analysis to be interpreted as causal impacts at different credit scores, the strong assumption would need to be made that people unsuccessful at the third stage of the application process are comparable to those who were successful at this stage. This is unlikely to be the case, since by definition they were differentiated by the firms at this point.

Indeed, the majority of the checks done by firms at the third stage relate to the identification of fraud, typically including checking applicants’ bank account details and checking their details against fraud registers. This indicates likely important differences between the groups. Therefore, the analysis is only intended to provide a general indication of the magnitude of effects away from the credit score cut-off, to be interpreted in conjunction with all other evidence.

Table 15 below presents comparison statistics for each outcome variables by credit score group. These are calculated by subtracting the average outcome for those who did get a loan in that group from the average outcome for those who did not. These show that in higher credit score groups the difference between the outcome variables for those who did and did not get loans is smaller compared with lower credit score groups.

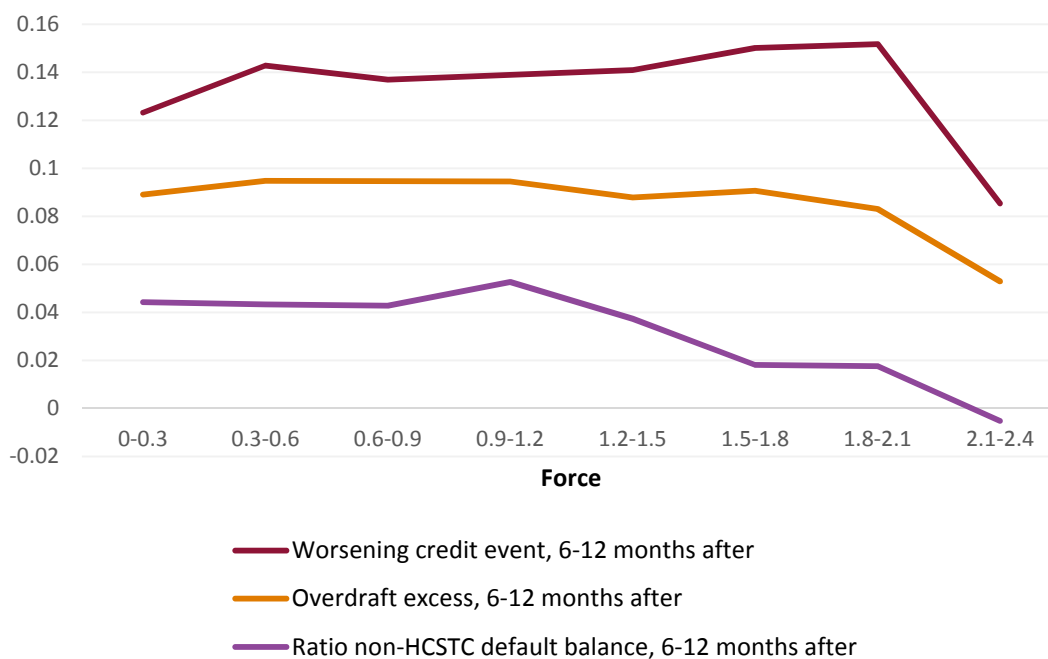
Conditioning upon averages for those who did and did not get loans, which were typically different before the loan application (example given in column (6) of table below and values shown in Figure 11), we see an even clearer pattern of lower differences in outcomes between those who did and not get loans at higher credit scores.

Table 15: Example of Stage 3 Denials Calculation:
Non-HCSTC Default Balance as a Ratio of Non-HCSTC Balance

	Average successful after (1)	Average unsuccessful after (2)	Average successful before (3)	Average unsuccessful before (4)	(1) - (2) (5)	((1) - (2)) - ((3) - (4)) (6)
0-0.3 SD	0.29	0.24	0.15	0.14	0.04	0.03
0.3-0.6 SD	0.27	0.23	0.15	0.13	0.04	0.03
0.6-0.9 SD	0.28	0.23	0.15	0.14	0.04	0.03
0.9-1.2 SD	0.26	0.21	0.14	0.12	0.05	0.03
1.2-1.5 SD	0.23	0.20	0.13	0.12	0.04	0.03
1.5-1.8 SD	0.20	0.19	0.12	0.12	0.02	0.02
1.8-2.1 SD	0.16	0.14	0.09	0.09	0.02	0.01
2.1-2.4 SD	0.11	0.11	0.06	0.07	-0.01	0.00

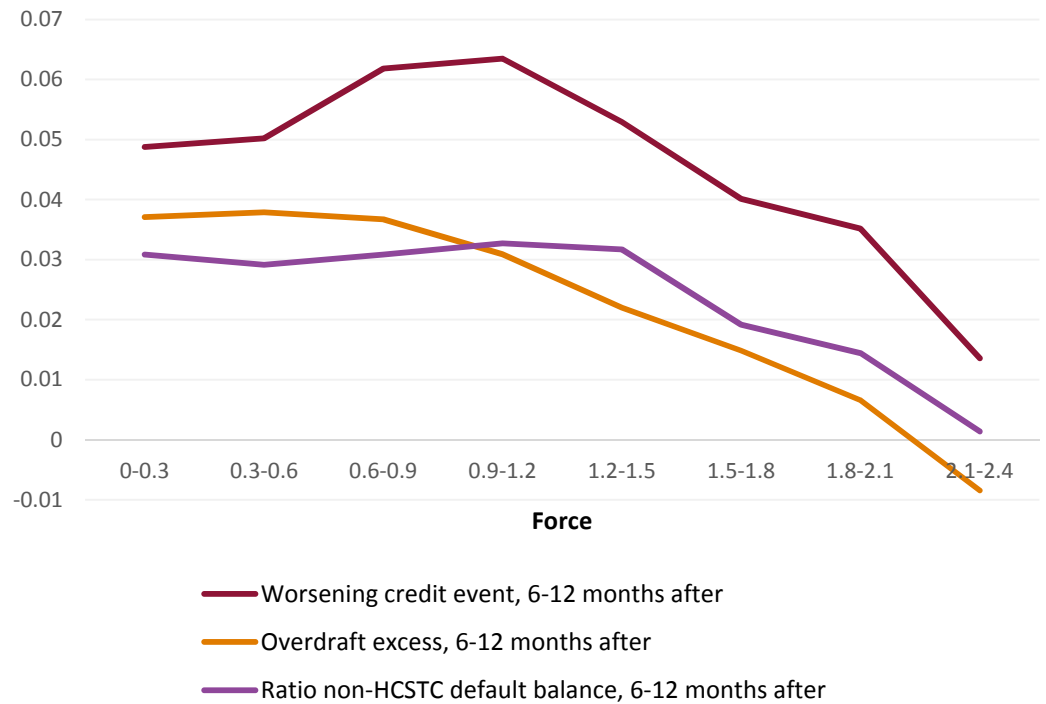
Source: Analysis of firm and CRA data. Notes: * = 5% significance level; ** = 1%; *** = 0.1%. Based on pooled results for the 9 "good" processes.

Figure 8: Stage 3 Denial Extrapolation Estimates - Raw Differences by Loan Acceptance



Source: Analysis of Firm and CRA data. Notes: Graphs based on pooled results for the 9 "good" processes.

Figure 9: Stage 3 Denial Extrapolation Estimates - Difference – in - Differences by Loan Acceptance



Source: Analysis of Firm and CRA data. Notes: Graphs based on pooled results for the 9 “good” processes.

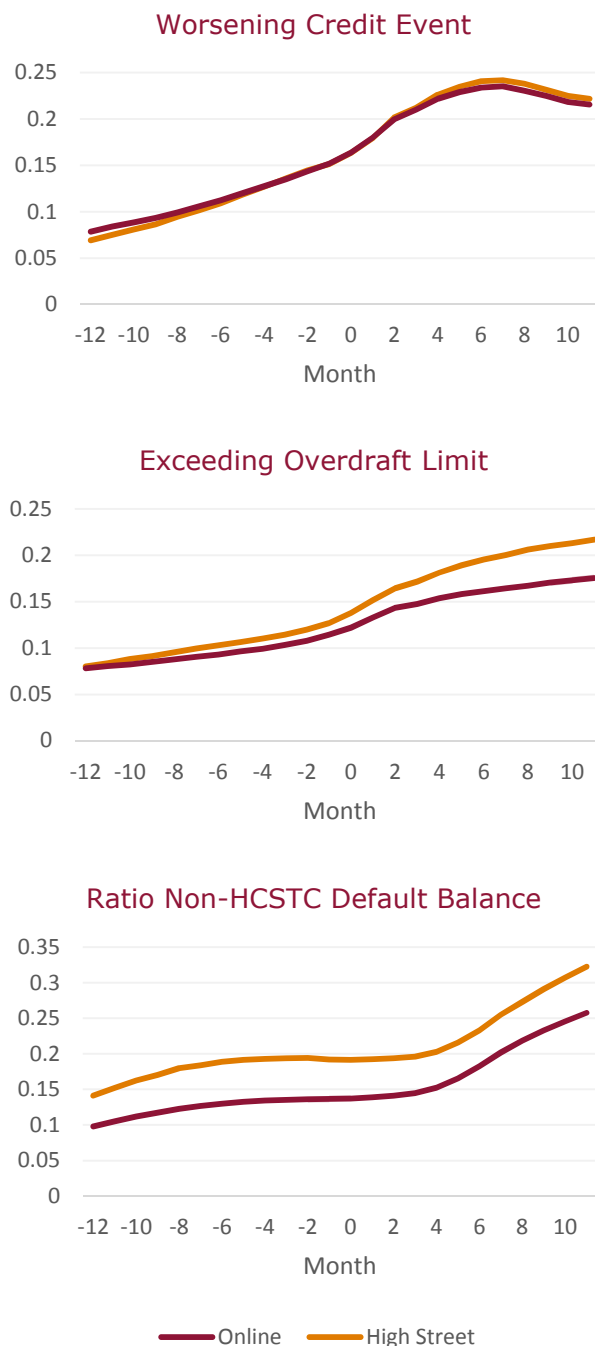
Figures 8 and 9 illustrate these calculations. As with the previous extrapolation estimates, they show a clear pattern that the impact of HCSTC use upon the outcomes of interest is weaker for groups with higher credit scores.

d. Validity of Extrapolation to Different Groups

Sections b and c above present analysis of variation in the impact of HCSTC use by credit score groups. That analysis seeks to establish how the RDD estimates can be applied to understanding the impact of HCSTC use upon individual applicants with credit scores away from the firm credit score cut-off thresholds. This sub-section presents analysis of the variation in impact of HCSTC by online firms compared with high street firms.

This section presents some illustrations of common trends for the outcome variables of interest for online and high street applicants. Figure 11 below illustrates these. Extrapolation from the lender-processes to other firms is explored by comparing the time trends for the 9 usable processes to other online firms, then between online firms and high street firms. The trends across each are very similar. Therefore, it seems reasonable to conclude that the impact of HCSTC is likely to be reasonably comparable across each of the groups, so the results from the 9 processes can plausibly be extrapolated to all processes.

Figure 11: Trend Analysis – Online Applicants Compared to High Street Applicants



Source: Analysis of Firm and CRA data.

e. Implications for the Level of a HCSTC Price-Cap

Results from the analysis presented in sections a. and b. above indicate a negative relationship between individual applicant credit scores and the impact of HCSTC use upon outcomes of interest. This negative relationship implies that individuals with higher credit scores experience a smaller increase in likelihood of a worsening credit event and exceeding their overdraft limit plus a smaller effect on non-HCSTC default balances as a result of HCSTC use.

These results have implications for the impact of a HCSTC price cap. As discussed above, the main impact of a price cap upon firm lending decisions is to lead firms to exclude riskier credit score applications at the margin. The extrapolation analysis shows that individuals with lower credit scores (higher risk) on average experience increased levels of detriment as a result of HCSTC use. Therefore the impact of a price cap is to exclude riskier applicants who would suffer on average higher levels of detriment were they to be successful for a HCSTC loan.

This section quantifies the level of detriment at the margin of lending implied by different levels of the initial period price cap described in the Consultation Paper. The effect of an initial price cap is to induce firms to restrict lending and adjust their margin of lending to a higher credit score (lower risk) level. This implies individual applicants successful at the new margin of lending are lower risk and suffer less detriment as a result of HCSTC use.

In order to quantify these effects, estimates are calculated for the implied effects upon outcomes of interest among individual applicants at the margin of lending for a range of price cap levels. The levels modelled range from an initial cap of 1.0% to an initial cap level of 0.4%. Calculations are based upon a linear relationship between the impact of HCSTC loans on outcomes of interest and credit score levels. The modelled assumption is that at a 50% probability¹² of default the impact of loans is equates to the Local Wald Statistic estimate and this impact is then assumed to decrease linearly until becoming zero for a probability of default of zero.

Taking the observed default rates for the individuals excluded from HCSTC under different levels of cap, aggregated impacts are illustrated in Table 16 below.

Table 16: Extrapolation Estimates – Average Impacts on Groups of People Affected by Caps

Outcome variable	Cap						
	1.0%	0.9%	0.8%	0.7%	0.6%	0.5%	0.4%
Probability of default on first loan	40%	37%	35%	31%	27%	23%	20%
Impact on additional people excluded when moving to the tighter cap:							
Overdraft excess, 6-12 months after	.024	.022	.021	.018	.016	.014	.012
Non-HCSTC default balances, 6-12 months after	.024	.023	.021	.019	.017	.014	.012
Worsening credit event, 6-12 months after	.046	.043	.040	.036	.031	.027	.023
Overdraft excess, 1 month after							
Impact on all people excluded by this cap:							
Overdraft excess, 6-12 months after	.024	.023	.023	.022	.021	.019	.017
Non-HCSTC default balances, 6-12 months after	.024	.024	.024	.023	.022	.020	.018
Worsening credit event, 6-12 months after	.046	.045	.045	.043	.041	.037	.034
Overdraft excess, 1 month after							

Source: Analysis of Firm and CRA data.

¹² Based on a weighted average default rate at the credit score cut-off threshold for the 9 lender-processes.

f. Impacts at Selected Cap

Table 17 below outlines the impacts on the identified measures at the 0.8% price cap.

Table 17: Extrapolation Estimates – Impacts at a Cap of 0.8%

Outcome variable	Current average outcome for those who would no longer get a loan at 0.8% cap	Impact of not getting a loan for these (percentage point change)	Estimated new average outcome for those who would no longer get a loan at 0.8%	Impact of loan for these (percentage change)
Overdraft excess, 6-12 months	32.4%	-2.3%	30.1%	-7%
Non-HCSTC default balances, 6-12 months	31.5%	-2.4%	29.1%	-8%
Worsening credit event, 6-12 months	51.6%	-4.5%	47.1%	-9%
Overdraft excess, 1 month after	14.9%	+2.0%	16.9%	+13%

Source: Analysis of Firm and CRA data.

g. Summary of Findings

This section summarises the findings from the CRA data analysis as a whole, including the results from the extrapolation analysis presented earlier in this chapter and the results of the RDD analysis. Results are summarised in answer to the three key questions which the demand side analysis seeks to address.

- 4) What alternative options do we observe consumers using once they are denied HCSTC, compared with those successful for HCSTC?

There is clear evidence for *substitution* towards other credit items or balances in response to HCSTC denial. In contrast, results show HCSTC acceptance causes *complementary* effects in the form of:

- Increase in credit applications caused by HCSTC use, at both 0-6 months and 6-12 months.
- Applications increase in particular for credit cards and personal loans.
- Increase in non-HCSTC balances. In keeping with an increase in applications, credit balances also increase for personal loans.

The CRA data analysis finds no evidence that consumers denied HCSTC substitute towards other forms of credit, compared with those successful for HCSTC.

- 5) Do we observe consumers who are denied HCSTC better or worse off as a result of not getting HCSTC, compared to those who are given HCSTC?

Results show that *consumers denied HCSTC are better off than those successful*. Those denied HCSTC are less likely to default over the coming 12 months compared with those successful. In particular, in the 12 months following HCSTC application, for those who use HCSTC products:

- HCSTC use causes worsening credit events;
- HCSTC causes individuals to breach their overdraft limit excesses;
- HCSTC causes increase in non-HCSTC default balances.
- There is evidence that in the first few months after HCSTC the likelihood of individuals who use HCSTC breaching their overdraft limit and experiencing a bad credit event *falls* by a small degree.
- There is evidence that for all outcomes HCSTC causes an increased likelihood of detriment in the months following. Overall, these effects are more pronounced at 6-12 months after application.

6) Given the available data, what can we infer from 5) about the impact of the different levels of a cap?

Extrapolation analysis shows that the negative effects of HCSTC are weaker for individuals with better credit scores (i.e. lower risk). Individuals with better credit scores:

- Experience increased likelihood of worsening credit events and exceeding their authorised overdraft limit as a result of HCSTC use, but at a lower magnitude compared with higher risk individuals.
- Experience increased non-HCSTC default balances as a result of HCSTC use, but at a lower magnitude compared with higher risk individuals.
- These imply that individuals with better credit scores suffer less consumer detriment as a consequence of using HCSTC loans.

Overall, the CRA data analysis identifies statistically significant and economically important effects on consumer outcomes arising as a result of HCSTC use. These results are robust to the RDD design. Extrapolation estimates are consistent across differing methodologies and show clear evidence of the impact of HCSTC varying by consumer credit score characteristics.

Consumer Survey Analysis

9. Background to Consumer Survey Analysis

a. Survey objectives

The overarching aim of the consumer survey is to complement the CRA data analysis by focusing on the impact of a price cap on HCSTC upon financial and non-financial outcomes for consumers. Consumer survey data is an important means of insight into the likely impacts of a price cap. The aim of the CRA analysis combined with Consumer survey analysis is to present a complete picture of the impact of a HCSTC price cap on consumers. These chapters describe the survey design and results. They are accompanied by the survey Technical Report and Summary of Findings provided by TNS (see enclosures)

For financial outcomes, CRA data is in principle preferred as a source of objective data for a large sample. Self-reported survey data may include reporting bias and is typically only available for relatively small samples. However, CRA data is not available for all outcomes of interest so survey data is a second-best alternative for data of interest not captured by CRA databases.

The survey component of the analysis seeks to answer the following questions. These questions follow directly from the high-level analytical Questions 1 and 2 set out in the introduction.

Q1. What are the socio-economic characteristics of consumers who apply for HCSTC?

Q2. What options are there for consumers who no longer have access to HCSTC?

Q3. Are consumers better or worse off without access to HCSTC?

A further objective of the survey data analysis is to analyse how answers to these questions vary across consumers by their credit score. This variation is important, as tighter caps are expected to lead firms to deny loans to consumers with lower credit scores (higher risks of non-payment). More generally, it is important to analyse the characteristics of HCSTC users as context for understanding those affected by a price cap policy. An important innovation within the Consumer Survey commissioned for this analysis is the inclusion of individuals who applied for, but were denied, loans from firms as well as individuals whose applications were accepted. This construction allows comparison between those who do and do not use HCSTC.

The first main focus of the survey, summarized in Question 2 above, is to analyse the potential use of substitutes and complements to HCSTC. This analysis seeks to understand how consumers will respond to being denied access to HCSTC – including increased borrowing on formal credit (e.g. overdrafts) and informal credit (e.g. loans from friends or family) or

alternatives not involving additional borrowing such as reduction in consumption.

The second main focus of the survey, summarised in Question 3 above, is to analyse whether consumers will be better or worse-off as a result of the price cap policy. This analysis is structured around three themes.

- Consumer experiences of HCSTC use
- Consumer financial and non-financial outcomes
- Consumer 'focus groups' experiencing or at high risk of experiencing detriment

The first theme is self-reported consumer experiences of HCSTC use. These reveal important information about consumer's own evaluations of the actual or likely impact of being denied HCSTC. These questions are especially important to assess consumers' preferences for borrowing using substitute forms of credit and the potential detriment from reduced access to HCSTC. It is also important to show which options consumers perceive to have available to them.

The second theme is the impact of a price cap on consumer welfare. Consumer welfare cannot be measured directly, but can be inferred indirectly through observed measures of consumption, overall life satisfaction and outcomes such as a household self-reported financial situation. Various survey instruments can be used to measure consumer welfare. These can then be related to observed HCSTC loan use.

Finally, the third theme focused on specific consumer detriment consumer focus groups that might be affected by the price cap policy in different ways compared with the majority of HCSTC users. Consumers who repeatedly use HCSTC ('habitual borrowers') are of particular interest as removing loan access from this group might have differential impacts compared with removing loan access from non-repeat users. For example, habitual borrowers may be more dependent on HCSTC use to finance ongoing expenditure and so may suffer stronger effects if being denied this borrowing option. Alternatively, repeat users may be less likely to default and hence benefit more from the price-cap through lower loan pricing, should they retain access to loans.

Problem debt users are of particular interest as an explicit component of the policy addresses the application of charges and fees to consumers in default. Problem debt users may exhibit negative welfare effects arising from 'debt traps' or persistent periods within default. This group may particularly benefit from the components of the price cap which limit the interest and fees incurred by those who late-pay on HCSTC repayments.

b. Review of Existing UK Consumer Surveys

This section briefly reviews two recent UK consumer surveys of the HCSTC market (a high-level overview is provided in table 18). These surveys were undertaken to meet specific objectives, which differ from those of this project. However, they provide useful background to HCSTC clients and their loan use.

Table 18: Summary of Existing Surveys of HCSTC Users

	PFRC University of Bristol Report for BIS, 2013	Competition Commission, 2014
Number of consumers interviewed	1,451	1,500
Sampling approach	Representative sample of HCSTC loan users with high-street oversampled compared to its market share	Representative sample of HCSTC loan users
Overview of questions covered	Socio-economic circumstance, reasons for using HCSTC loans, substitution, HCSTC loan costs, what would do without	Socio-economic circumstance, reasons for using HCSTC loans, shopping around, substitution, HCSTC loan costs, what would do without

The PFRC University of Bristol Report (2013)

The Personal Finance Research Centre (PFRC), University of Bristol Report (2013) was commissioned by the Department of Business, Innovation and Skills (BIS) to provide updated evidence on the likely impact of introducing cap on the total cost of credit in short-term credit markets, on both lenders and consumers.

As part of this work a consumer survey was designed and analysed by the PFRC and undertaken by TNS-BMRB. In addition to online and retail payday lending, the survey covered pawn broking and home credit. As part of this report there were also 17 depth interviews with consumers and analysis of the ONS Wealth and Assets Survey (WAS).

The questionnaire focused on answering the following research questions:

- What are the socio-demographic characteristics of high-cost credit consumers?
- What is the financial situation of high-cost credit consumers?
- What are the general consumer views and attitudes towards the high-cost credit sector?
- Based on most recent loan taken out, what was the consumer decision-making process from taking out a loan to repaying the loan?
- What is the consumer satisfaction with high-cost credit?
- What are the self-reported impacts of high-cost credit?

The report found that the socio-economic characteristics of retail HCSTC users were noticeably different from online HCSTC users – with a greater proportion of the latter group being younger, non-White, social tenants and on low-incomes.

In addition, the survey found that consumers report awareness of the costs of HCSTC borrowing and would still be willing to use these products if the price were higher. Results also showed a strong link between HCTSC use and consumers having financial difficulty, although the direction of causality in this relationship was not established.

The survey research found that the majority of consumers use HCSTC for everyday expenditures and to pay household bills. Without access to credit this survey found that the majority of consumers would've forgone expenditure or borrowed from a friend or relative.

The Competition Commission Survey (2014)

The Competition Commission commissioned a consumer survey as part of its market investigation into the competitiveness of the payday lending sector in 2014, following a market investigation reference from the OFT.

The research was aimed at exploring the way consumers perceive the payday lending market, their decision process and the factors that influenced them when they take out credit.

- Characteristics of payday loan borrowers;
- Consumer perceptions of the market and which products compete for their custom– both in terms of alternative forms of credit (e.g. pawnbroker loans, credit union loans, bank or building society loans) and the two channels of purchase in the payday lending sector: online and high street;
- Evidence for any customer segmentation in the market, and providing a clear overview of the customer base;
- Understanding of the consumer decision making process with respect to payday loans;
- Switching between payday lenders, and use of multiple lenders;
- Patterns of behaviour over time;
- Consumer attitudes and behaviour with regards to payday lending companies;

The consumer survey consisted of two groups: main and contemporaneous; in addition to these 50 in-depth interviews were commissioned. Consumers in the main sample had taken out a loan August-September 2013, while those in the contemporaneous group had taken out loans on four specific dates in October-November 2013. The purpose of the contemporaneous sample was to explore consumer decision-making at the point of taking out the loan and to eliminate potential post-rationalisation of decision. A sub-sample of this contemporaneous sample were asked a follow-up survey a week after their loan was due to be repaid.

The research found that compared to the UK population, payday lending customers are more likely to be male, younger, working, living in private rented or social housing and living in deprived areas. A third of payday lending customers have a household income less than £18,000 per year, but 30% have an annual household income of £36,000 or more. 41% of consumers incorrectly answered a basic financial literacy question and 64% a question relating to compound interest.

The survey results echoed findings from the Bristol research finding that the demographic and financial profile of online and high-street customers is different. The results of the questionnaire also showed that only a minority of consumers who use a particular channel to purchase HCSTC

(online or high-street) would consider the other method. Only 11% of online customers with more than one loan would consider using high-street lender. 32% of consumers would not consider high-street lenders due to lower convenience, 23% due to lower speed or higher difficulty of getting the loan.

There was limited evidence of shopping around among surveyed consumers – only 27% of customers had shopped around (comparing products prices or non-price features) for the loan referenced in the survey. More than half of those who took out payday loans thought they could have used an alternative source of credit (although 40% said they had no access to alternatives apart from friends and family). Speed of getting the money was the most important reason for deciding to use payday loan.

53% of consumers said they spent the money on living expenses. Only 2% of consumers reported they took out a loan specifically to repay a previous HCSTC loan, however, 25% stated that they had to repay a previous HCSTC loan in the same month they took out another loan. The majority of consumers (59%) said they definitely could not have gone without the loan. Analysis of qualitative interviews show that when asked about need, consumers initially exaggerate and stressed that they had no alternative, but, on reflection, said that they did not really need the loan after all and could have struggled through.¹³

c. Justification for Consumer Survey

We considered whether to rely on existing surveys to assess the impact of the price cap. Such an approach was not chosen as our analysis has different objectives to those of previous surveys and requires a new survey to be undertaken in order to meet our objectives. Consequently a bespoke survey was commissioned, the results of which were used alongside the other publically available survey results. For the FCA's purposes of considering the trade-offs involved in evaluating a price cap, existing surveys had two limitations:

- i. Existing surveys did not sample consumers who did not take out HCSTC, in particular consumers who were marginally denied loans (i.e. consumers whose credit scores fell just below the credit score cut-off used by lenders in the loan approval decisions). These consumers are an important comparison group for understanding the effects of HCSTC use and denial. Also, existing surveys do include hypothetical questions to indicate what consumers would do were HCSTC not available. For the purpose of this analysis we judged important to ask marginally denied consumers about their actual experience of being denied credit as a means of comparison and validation.

¹³ Page 74 https://assets.digital.cabinet-office.gov.uk/media/5329df8aed915d0e5d000339/140131_payday_lending_tns_survey_report_.pdf

- ii. Existing surveys did not include a credit score or similar ranking variable to be able to assess where consumers are located in the distribution of creditworthiness. Assessing the impact of a price cap absent credit score data would require strong assumptions regarding how consumers are differentially affected by a price cap.

A further benefit of undertaking a consumer survey for this analysis is the potential for matching CRA data into consumers' survey responses. This would not have been possible on a retrospective basis using either of the earlier surveys reviewed above.

Given the short time available to design the questionnaire, carry out fieldwork, and analyse the results it was concluded that TNS-BMRB was the most appropriate market research company to carry out this survey. TNS-BMRB also undertook the BIS and Competition Commission surveys reviewed earlier.

10. Survey design

a. Approach to Survey Design

The survey was designed to meet the objectives outlined in Section 1. This sub-section describes how the survey analysis was configured to meet these objectives. Survey data is, conditional on the consent of respondents, merged with data from CRA and HCSTC firms to be able to achieve these objectives.

A central aspect of the survey design for this analysis is the inclusion in the survey of consumers whose application for HCSTC was unsuccessful (this is described further in the 'Survey Group Design' section). This enabled us to gain an insight into the impact on consumers not having access to HCSTC.

Q1. What are the socio-economic characteristics of consumers who apply for HCSTC?

CRA data contains only limited socio-economic data. The socio-economic data provided by HCSTC firms also differs in its definition and scope from firm-to-firm. Given the importance of these characteristics, survey questions were included on basic socio-economic and demographic variables. These included:

- Demographics of consumers. The survey covers consumers' housing tenure, gender, ethnicity, qualifications, dependent children, and marital status.
- Economic characteristics of borrowers – employment status, income level and volatility, sources of income and employment status of spouse / partner.
- Value and type of any savings or investment. These questions were asked to assess the potential for consumers to manage any unexpected shocks to income or expenditure. Questions included the amount of saving – with a range of formal (such as bank accounts and ISAs) and informal methods (such as saving at home).
- Behavioural traits. Behavioural traits were analysed by asking consumers Likert scale responses to phrases describing how people manage their money. Examples of these are "I am organised when it comes to managing my money day-to-day" and "I haven't added up my debts because I don't want to know how much I owe".
- Financial literacy. Two questions were asked to assess how well consumers understand the costs of borrowing using simplified examples.

Q2. What options are there for consumers who no longer have access to HCSTC?

Data on potential substitutes and complements for HCSTC are in some cases not available in CRA data – especially for informal methods of borrowing. In order to assess the impact of a price cap on HCSTC upon these, the survey design mimics the CRA data analysis by including consumers who did and did not receive loans, where both groups were configured to include consumers very close to firm credit-score cut-off thresholds. Regression analysis is then undertaken to estimate the causal impact of HCSTC use on these outcomes.

This design feature of incorporating consumers who did and did not receive loans also enabled the inclusion of a series of questions about what consumers served in the market would hypothetically do without access to loans and what consumers excluded from the market did when unable to access loans. Comparison of ‘hypothetical’ responses from consumers served with ‘actual’ responses from consumers denied loans enables inference into ex-post rationalised and cross-group validation.

Questions were constructed in the survey to include the following topics:

- Substitutes and complements to HCSTC. Following previous research findings by BIS, there was a particular emphasis on informal methods such as borrowing from family or friends. The survey asked consumers the alternatives considered when applying for HCSTC, what they would/did do without access to HCSTC, and their borrowing behaviour (the options consumers attempted to and actually borrowed from, outstanding and overdue debts) since the time of the loan application the questionnaire refers to. Responses to consumer considerations included non-credit options such as not borrowing or going without the money if have no access to HCSTC.
- Whether without access consumers would use unlicensed lenders. Given the expectation that a price cap would reduce access to HCSTC there was particular concern regarding whether consumers who lose access would instead use illegal, unlicensed lending and incur high financial and non-financial costs as a consequence. Consumers were asked if they considered borrowing from a ‘loan shark’, those that said yes were asked to define this. As part of the substitutes questions referred to above consumers were asked whether they had borrowed from unlicensed lenders since the time of the loan application the questionnaire referenced. This analysis was designed in conjunction with England’s illegal money lending team.
- Whether consumers use overdrafts. To complement CRA data on overdrafts the survey asked a series of questions to analyse the impact a lack of access to HCSTC would be expected to have on a consumers’ bank account. Consumers were asked whether they had an overdraft facility and, if so, how much their outstanding balance was.

Q3 Are consumers better or worse off without access to HCSTC?

To answer this question, survey elements were designed around the three sub-themes described in Section 1:

Consumer experiences of HCSTC use

An objective of the survey is to assess consumer experiences of use of HCSTC and the impact of removing HCSTC access. Consumers were asked questions to understand the 'journey' of their interaction with these products – from choosing to apply, to their experience of the product, and what they would do in the future. Questions pertaining to this included:

- Reasons for borrowing. Consumers were asked what they planned/did use their HCSTC for. This included whether the money from HCSTC was used for basic items such as rent, living expenses or household bills, more unexpected items such as repairing broken items or for discretionary items such as presents or holidays.
- Whether they could 'do without'. Consumers were asked the degree of importance (whether they definitely could not, possibly or easily have gone without) they attached to the loan referenced in the questionnaire.
- Why HCTSC was chosen rather than borrowing in other ways. In particular, whether it was features of the product (such as being able to get the money quickly, having a good relationship with the lender, product features matching needs) or whether it was chosen due to a lack of alternatives available (i.e. as the only way to get very short-term loan).
- Happiness with decision to apply for HCSTC. Consumers with access to HCSTC were asked whether they were happy, indifferent or regretted their decision to use HCSTC. Those who reported regret were asked the intensity of this regret via a follow-up question. Those without access to HCSTC were similarly asked whether, on reflection, they considered it was 'for the best' that their application for credit had been declined or whether it would have been better if the loan had been approved. Following these questions consumers were asked follow-up questions regarding the reasons for being happy or regretting their decision to apply for HCSTC.
- The cost of HCSTC relative to their expectations. Consumers with access to HCSTC were asked whether they ended up paying more, less or the same as they had originally expected when took out their loan. Consumers who used formal alternatives to HCSTC (such as credit card or an overdraft) were asked if this cost more, less or the same as what they would have paid if they would have used HCSTC.
- Whether would apply for HCSTC again. Following from consumers' interaction with HCSTC, consumers with and without access were asked whether in the future if they needed to borrow a similar amount of money for a similar purpose they would apply again, use an alternative method or 'go without'.

Consumer financial and non-financial outcomes

In order to evaluate whether consumers are likely to be better or worse off from losing access to HCSTC measures of consumer 'welfare' were included in the survey. Given the complexity of analysing welfare the survey was designed to cover broad range of variables, financial and non-financial, to inform judgement of the impact upon consumer welfare of not having access to HCSTC. These questions covered:

- General well-being. These consisted of four questions from the ONS Subjective Well-Being section of the Annual Population Survey asking consumers to state (0-10) how happy and anxious they felt yesterday, the extent to which they feel the things they do are worthwhile and how satisfied they are with life.
- Financial distress and health. Consumers were asked whether they had experienced different forms of distress (anxiety/stress, embarrassment, having to take time off work, relationship or problems with family members) as a result of their financial difficulties over the last few weeks. Consumers were also asked how they assessed their general health compared to people of their age.
- Household finances. Consumers were asked how well they were keeping 'on top' of bills and commitments. Responses to this question ranged from keeping up without any difficulties to falling behind with many bills and commitments. Consumers were specifically asked whether they had recently missed a payment on a bill or commitment. A series of items were included, such as rent, council tax, fuel, hire purchase payment and other household bills.
- Unarranged overdraft use. Particular focus was given to unarranged overdrafts. The prior literature on the impact of restricting access to HCSTC finds some consumers substitute towards unarranged overdrafts (e.g. Morgan and Strain, 2003). Consumers asked if they had exceeded their overdraft limit and had payments (direct debits or cheques) refused due to insufficient funds being available since they applied for a loan.

Consumer 'focus groups' experiencing or at high risk of experiencing detriment

Previous surveys focused on representative samples of HCSTC users. Given the particular features of the price cap design, the survey included two 'consumer detriment focus samples' (problem debt and habitual borrower groups described in more detail in the survey group design section) to specifically analyse the welfare and experiences of consumers who were most likely to be at risk of detriment in the current market.

The problem debt sample group was asked the same questions as other consumers who had access to HCSTC. The focus of analysis on this group was primarily on their welfare outcomes and consumer perspectives of HCSTC compared to other sampled groups.

The habitual borrower sample group had a separate series of questions than other survey groups. This was primarily in order to enable questions to analyse potential changes in interaction with HCSTC over time. This was analysed through the following series of questions:

- Asking these consumers how they planned to use their money for their first loan as well as how they usually used it for subsequent loans.
- Asking what these consumers would have done without access to HCSTC for their first loan as well as for subsequent loans.

b. Survey Group Design

The survey sample was chosen from all HCSTC applicants in the data received from firms by statutory data request and for which the CRA were able to match credit file records. From this observed population the target sample was selected based on the following criteria (no individual appeared in more than one group - this was ensured via the CRA matching individuals)

The survey target sample comprised two sub-samples – the ‘Risk Score Sample’ and the ‘Consumer Detriment Focus Sample’.

A) *‘Risk Score Sample’* (groups 1, 2 and 3)

The purpose of the risk score sample was i) to sample marginally successful and marginally unsuccessful loan applicants (identified by their credit score) to allow for regression discontinuity design (RDD) analysis mimicking the CRA analysis, and ii) to separately achieve a representative sample of successful loan applicants.

In the HCSTC market many firms decide whether to approve an application for a HCSTC loan based on credit scoring models. These models predict the likelihood an applicant will default on a loan and use the calculated ‘credit score’ prediction as an indicator of the firm’s willingness to lend to that individual at a given price¹⁴. These credit scoring models vary by firm and, for each first time loan application received, combine information from an individual’s loan application form, CRA data and the firm’s past experience of lending to produce a credit score.

Firms have a cut-off against which these scores are judged such that, if a loan application receives a score less than the cut-off it is generally denied, if a score is greater than the cut-off the application moves to the next stage in the approval process. Loan applications that pass this credit scoring stage have further checks carried out in the credit scoring process, such as bank verification checks, before it is decided whether or not to approve an application for credit.

Consumers were selected for the ‘risk score sample’ using the position of their credit score at the time of their loan application relative to a firm’s

¹⁴ Scoring models vary by lender and do not all use default as a credit scoring metric.

credit score cut-off. As described in Table 22 this 'risk score sample' was split into three groups.

Group 1 consisted of consumers whose credit score on their first HCSTC loan application were just below a lender's credit score cut-off. This criterion meant that the majority of consumers in this group were not expected to have access to HCSTC – although some did manage to get loans from other providers within 7 days of being initially denied access by one of the lenders.

Group 2 consisted of consumers whose credit score on their first loan application were just above a lender's credit score cut-off. However, not all consumers in this group received loans from firms as some consumers' applications were denied after the credit score stage (or may not have pursued application).

Groups 1 and 2 sampled from four lenders on the basis of the use of clearly identifiable credit score cut-offs in these lenders' decision making process. These criteria meant that these groups did not include any applicants for store credit.

For Groups 1 and 2, 'just above' and 'just below' were defined as the 5% of people accepted and 5% of people denied closest to the credit score cut-off for getting a loan under a particular process in a particular month.¹⁵ Sampling for Groups 1 and 2 was based on a prioritisation of consumers closest to the threshold. This was implemented by assigning to each individual one of 20 'priority' levels, where 1 means closest to the cutoff. This prioritisation sought to interview as many people as close as possible to the credit score cut-off and ensure the distribution of the two groups were symmetric in order to make them as comparable as possible. The priority level determined the order in which TNS-BMRB would solicit interviews from individuals.

Group 3 was designed to be a representative sample of consumers with access to HCSTC, whose applications were less marginally successful as these consumers had higher credit scores (lower chance of late or non-payment). This group consisted of consumers from a larger number of lenders. This group of individuals were stratified by loan company and loan amount and a 1 in n selection with a random start/fixed interval was carried out to select the number of records included in the target sample. The sample achieved covered 11 lenders – both online and high-street.

For Groups 1-3 individuals were drawn in the target sample if they had applied for their first HCSTC loan within the July-November 2013 period and satisfied the additional group criteria set out above. The focus on their first loan application was to ensure clean identification of the impact of access to HCSTC; it is possible that after this first loan application, some consumers have become repeat borrowers.

¹⁵ This was expanded to the closest 7% for November 2013, to achieve a large enough sample size.

The period July-November 2013 was selected taking the following considerations into account. First, based on feedback from previous surveys, consumers who took out loans before this period would be expected to have lower response rates due to contact details being out of date. Second, it was also expected that consumers would be less easily able to recall loans taken before this time period thereby making responses less reliable. Third, this period provided sufficient time after the point of application for HCSTC for consumers to be able to reflect on their experience and for the impact of its use, positive and negative, to be seen on financial and non-financial outcomes.

The identification strategy (and consumer experience questions) focused on consumers' first loan application. However, some of these consumers took out subsequent HCSTC loans.

B) '*Consumer Detriment Focus Sample*' (Groups 4 and 5):

The '*Consumer Detriment Focus Sample*' consisted of two groups: '*problem debt*' (Group 4) and '*habitual borrowers*' (Group 5).

Group 4 consisted of individuals who had applied for their first HCSTC within the July-November 2013 period and who, as of 31st January 2014, had outstanding unpaid debt (revenue and principal) on their HCSTC loan greater than 100% of principal. Individuals were selected from the very top of the distribution of unpaid debt until it was achieved a target sample sufficiently large to return the target number of responses. Conditional on being included in the target sample based on these criteria, individuals were stratified by loan company and loan amount and a random sample of consumers to contact was taken.

Group 5 focused on '*habitual borrowers*' who were very regular consumers of HCSTC in 2013. Individuals were chosen from this group if they had received more than 10 loans (in total, across all firms, including rollovers) during 2013. In this group individuals' loan records were stratified by loan company and number of loans and a 1 in n selection with a random start/fixed interval was carried out to select the number of records.

Tables A8 and A9 summarise the characteristics of the sample groups, which are numbered groups 1 to 5. In each case the criteria for an individual being eligible for each group is defined on the basis of their loan activity in the period July to November 2013.

Table 19: Sample Group Description

Group number	Risk score sample			Consumer detriment focus sample	
	1	2	3	4	5
Group name	Just below credit score approval cut-off	Just above credit score approval cut-off	Less marginal successful	Problem debt	Habitual borrowers
Group Description	Consumers who first applied for a HCSTC loan between July-November 2013			Consumers who had taken out a HCSTC loan and experienced severe debt problems (defined as unpaid debt on HCSTC greater than 100% of principal)	Consumers who had taken 10 or more HCSTC loans in 2013
	Application just below a lender's credit score approval cut-off (unsuccessful) Some subsequently received loans from other lenders.	Application just above a lender's credit score approval cut-off (successful) Some applications were ultimately unsuccessful due to not meeting other subsequent criteria (e.g. bank account verification checks).	Representative of consumers who were readily accepted for loans (based on the lender scoring mechanism)		
Percent who received HCSTC	7%	49% ¹⁶	100%		
Perceived risk of default by lenders at time of application	High	High	Medium-Low	Variety – sample based on ex-post results	
Sample Selection Criteria	These groups were prioritised from 1 to 11 based on the lender score for each record. This priority level determined the order the sample was issued. The aim was to get as many people as close as possible to the credit score threshold and ensure the distribution of the two groups were symmetric.		Customer data was stratified by loan company and loan amount ¹⁷		customer data was stratified by loan company and number of loans ¹⁸
Sample size	552	540	546	170	192

¹⁶ Some applications were ultimately unsuccessful due to not meeting other subsequent criteria (e.g. bank account verification checks).

¹⁷ A 1 in n selection with a random start/fixed interval was carried out to select the number of records

¹⁸ A 1 in n selection with a random start/fixed interval was carried out to select the number of records

c. Survey Sections and Content

The final questionnaire (enclosed in the Technical Report) agreed between TNS BMRB and the FCA is divided into the following sections:

- i. Introduction and screening
- ii. Opening demographics
- iii. General financial situation
- iv. Wellbeing
- v. Questions for consumers who had taken out HCSTC (consumers who used HCSTC from groups 1,2,3 and 4)¹⁹
- vi. Questions for consumers whose application for HCSTC was denied (consumers who did not use HCSTC from groups 1 or 2)²⁰
- vii. Questions for habitual borrowers (group 5)²¹
- viii. Other loans and savings
- ix. Behavioural traits and wellbeing
- x. Demographics and health

All sections in the survey were asked to all consumers (with the exception of sections v, vi and vii). The main purpose of the introduction and screening part was to verify that the interviewer was talking to the correct individual and to make sure the respondent recalled the sampled loan. The wording of the introduction was given careful thought. Mentioning HCSTC loans in the introduction could prove off-putting to respondents whose application had been refused, or might influence respondent answers through nudging effects. For these reasons, the survey was introduced as being about 'how people borrow money' and in particular about HCSTC loans.

Additional thought was given to the placement of questions on wellbeing and financial circumstances as the answers to these questions could be biased by the outcome of the respondents' loan application, particularly for those who were denied the loan. Asking these questions after questions referring to the loan application may have resulted in response bias due to framing effects. However, starting the interview with these relatively sensitive questions could prove disconcerting to respondents. On this basis, it was decided to open the interview with some general demographic questions before moving on to wellbeing/ financial circumstances.

¹⁹ Coded as 'PDL' questions in TNS-BMRB survey

²⁰ Coded as 'NON-PDL' questions in TNS-BMRB survey

²¹ Coded as 'HAB' questions in TNS-BMRB survey

As the demographic information provided to the FCA by HCSTC firms and CRA were limited in coverage, the consumer survey asked for general information that could be used as additional covariates of importance and to analyse how HCSTC loans affect different individuals. Welfare questions and questions about respondents' financial situation were used as outcomes variables to assess whether the circumstances of consumers have been made better or worse as a result of getting or not a loan. Most demographic-related questions were either standard questions or taken from other surveys such as the British Household Panel and the Census survey. These were chosen in order to use well-tested question and established phrasing.

The main part of the survey comprised a set of questions about customers' experience of their first application for a HCSTC loan. The focus of this section was to understand the reason behind applying for a loan, how comfortable consumers would have been using substitutes and their overall experience. Appropriate questions were taken from relevant questionnaires on HCSTC loans, including the Competition Commission (2013) and BIS (2013).

For each topic, respondents in different groups were asked different questions depending on whether or not they had taken out a loan. While some questions were identical in both sections, for others the emphasis was different depending on which group the respondent belonged to. For example, where denied respondents were asked what action they took when they were unable to obtain a HCSTC loan (actual question), accepted respondents were asked what action they would have taken if unable to get a HCSTC loan (hypothetical question). These 'hypothetical' questions provide an important counterfactual for verifying the accuracy of the 'actual' questions. Repeat borrowers were asked broadly the same questions as first time applicants, but questions referred to both their first loan application and their typical use.

Additional questions were asked about non-consumer credit obligations of the individual or household, such as rent and household bills expenditure. Some of these data are available from CRA, but most are not (for example council tax, rent). Finally, questions were asked about savings, both formal and informal, to assess the potential for consumers impacted by the cap to use savings instead, as an alternative means of funding consumption.

d. Practical Considerations and Pilot Survey Feedback

Following best practice, all selected customers were sent advance notification prior to the start of fieldwork, either by email or letter. The emails and letters were sent on FCA letterhead and provided a brief explanation of the research, outlining why the customer had been selected and explaining that a £25 incentive would be offered to respondents. This advance communication was addressed to the named customer and the email address used was the one provided at the time of HCSTC application

(hence the individual would most likely have previously received communication regarding HCSTC via that email address).

TNS-BMRB also took steps to ensure confidentiality when contacting individuals during fieldwork. Interviewers introduced the survey only after when it was confirmed that they were speaking to the correct person from the customer sample. Moreover, customers could opt-out of the research in advance of being called (after receipt of the letter) if they did not wish to take part.

Survey design involves trading-off depth and coverage of the survey questionnaire with response rates and quality of the answers. A longer survey allows for inclusion of follow-up questions which probe particular topics in depth and also provides space for incorporating a broader range of topics and issues within the sections of the survey. However, longer questionnaires may lead to lower response rates due to the additional time commitment required to complete the survey, or lower quality responses as subjects become fatigued or seek to complete the survey interview within a shorter time frame.

Following consultation with TNS-BMRB and their advice on best practice, the decision was taken to limit the survey duration to a maximum of 25 minutes. Consequently, judgements were made about the length and depth of each sub-section within the survey and the prioritisation of sections of the survey which were of highest value for the core analysis.

A pilot survey of the questionnaire was conducted in March 2014. Feedback from this resulted in a reworded, shortened questionnaire to improve comprehension and reduce drop-out rates. There were high non-response rates among consumers whose credit applications were denied leading to multiple phone numbers for each individual and greater sample being provided by the FCA for the main questionnaire.

To maximise response and reduce any selection bias, different levels of incentives were tested during the pilot to assess the impact of incentive on response rate. The pilot was divided into three groups:

- A third of cases were not offered any incentive;
- A third of cases were offered a £10 incentive on completion of an interview;
- A third of cases were offered a £20 incentive on completion of an interview.

Respondents were given a choice of either an Amazon e-voucher or a paper Love2shop voucher. Of the 37 interviews achieved during the pilot, 8 were from the 'no incentive' group, 11 were from the £10 group and 18 were from the £20 group, suggesting that an incentive could potentially have a positive impact on likelihood of response.²² Given the relatively

²² A test is not possible on this pilot data

short fieldwork, it was decided to offer incentives to all participants, with the value increased to £25.

Additional practical considerations influenced the design of the questionnaire. As the survey was conducted via telephone at the questionnaire design stage it was important to limit question length. Similarly, the number of options on multiple-choice answer lists was limited such that the list could feasibly be recalled by the respondent during a telephone conversation. The telephone medium also influenced the ordering of survey questions in some cases.

11. Data matching and Collation

a. Data Matching

Where possible, survey responses are matched with CRA records. At the end of the survey interview, respondents were asked for permission to link their survey responses to other data held within CRA records. It was made clear to respondents that any results would not be communicated to HCSTC lenders or the CRAs, and would not affect their credit score or their ability to get credit or loans in the future.

When preparing the interim results and later the final results, TNS-BMRB added a linking serial provided by the FCA to their data file. This linking serial was used to match survey responses to the additional CRA and firm data previously collected by the FCA for the 89.2% of respondents who gave permission; this operation was carried over by TNS-BMRB on the FCA premises. For the remaining 11.8%, these survey responses were omitted from components of the analysis which required CRA data matching (regressions and analysing outcomes of different caps).

b. Data Coding

The FCA systematically coded and cleaned data received from TNS-BMRB. For details regarding how variables have been coded please see the codebook (Table A7). In the dataset received from TNS-BMRB where responses were listed as don't know (-9) or refused (-99) these were recoded as missing (STATA syntax "."). Where there was non-response or the consumer refused to give a response these were also replaced with missing values.

c. Response rates

Full details of achieved response rates are provided in Table 2. The response rate was 5.4% across the whole sample. This was similar to previous consumer surveys of HCSTC customers. Group 3 is comparable to the Competition Commission consumer survey sample. This representative sample achieved a 20.3% cooperation rate – this is the number of interviews achieved out of the number of phone calls where contact was made and a consumer was able to confirm details of their application for HCTSC.

Group 3 had a 10.3% response rate – which is the number of interviews out of contacts attempted. Across all groups the primary reason for the low response rates were inactive phone numbers. This issue was most notable for the problem debt group and is the main reason why the response rate of this group was much lower than other groups (2.3%).

For groups 1 and 2 only priority levels 1 to 11 (out of 20 in the target sample sent to TNS-BMRB) were used in the achieved sample in order to meet the number of interviews required. The distribution of these responses by priority level is displayed in appendix table A34.

Table 20: Consumer Survey Response Rates by Group

Group	Sample attempted	Interviews achieved	Original target	% of target achieved	Response rate	Cooperation rate
1	12,321	552	534	103%	5.4%	16.4%
2	12,239	540	534	101%	5.0%	15.6%
3	5,595	545	534	102%	10.3%	20.3%
4	9,194	171	200	86%	2.3%	11.7%
5	2,449	192	200	96%	8.6%	17.4%
Total	41,798	2,000	2,002	100%	5.4%	16.5%

d. Sample Selection Tests

Statistical tests were carried out on the achieved sample to determine whether the average characteristics of respondents to the survey match the target sample of consumers delivered to TNS-BMRB. This analysis allows an identification of potential bias in responses. This procedure was implemented using t-tests for equivalence of means. The results of these t-tests show the likelihood a difference in means is found by chance (e.g. a value of 0.05 indicates a 5% probability that the result is found by chance).²³ These t-tests were conducted to determine any significant differences across a number of relevant demographic and financial variables, such as age, gender, CRA credit score, debt level and adverse credit events before the time of application. These tests were conducted both on the aggregate sample sent and for each individual group. Table A21 provides test results for each variable.

In general, the achieved sample is not materially different from the target sample delivered to TNS-BMRB, with some exceptions. Across all groups, customers who took part in the survey were statistically significantly (at the 1% level) less likely to have subsequently defaulted on their loan (10.6% of respondents defaulted on their loan compared to 14.0% in the target sample) and were statistically significantly (at the 1% level) older (average age of respondents is 33 compared to 32 in the target sample). Group 1 was the only group to display a statistically significant difference in age at the 5% level or less (sample 33 vs. 32 in the target sample).

The sample achieved for groups 1, 2 and 3 were all found to have statistically significantly lower default rates (conditional on taking out a loan) than the target sample. This difference was statistically significant at the 1% level for group 1 (achieved sample 4.3% vs. target sample 22.5%) and the 5% level for both groups 2 (achieved sample 3.3% vs. target sample 7.2%) and 3 (achieved sample 3.6% vs. target sample 8.0%). However, we believe the difference in the group 1 samples arises due to the small sample of individuals with loans in group 1 (37 individuals). As we can expect that defaulting causes worse financial and welfare outcomes than not defaulting, as is indicated by the results from group 4, it may imply that some of our findings from groups 1, 2 and 3 may understate detriment from HCSTC.

²³ The results referred to are p-values calculated from these t-tests which are more easily understood by those less familiar with statistics than the t-statistics these p-values are derived from.

Groups 4 and 5 were found to be representative of the sample delivered across the full range of variables tested (age, default rates, debt levels and experience of bad credit events in six months before loan application) based on a 5% level of significance.

None of the other variables across groups tested showed a statistically different difference at the 5% or less level between the population sent to TNS-BMRB and the survey sample respondents in any of the five groups.

e. Coding Unlicensed Lending

Assessing how likely consumers were to use unlicensed lenders is especially problematic as consumers can be expected to be reluctant to admit using such lenders.

A new variable 'consider_loanshark_edited' was constructed based upon examination of the verbatim responses for what consumers meant by the term 'loan shark'. This surveying approach (asking consumers if they would consider using a loan shark, what they would describe as a loan shark and editing responses) was carried out based on recommendations from England's Illegal Money Lending Team.

Responses which listed licensed lenders by name or their market's characteristics (e.g. a home credit, payday loan company or pawn broking shop) or having APRs over 10% were edited out (as APRs are only displayed for licensed lenders) as not being a loan shark. It is, perhaps, unsurprising that some individuals identified licensed lenders by the term 'loan sharks' as in various instances media coverage has referred to HCSTC as 'legal loan sharking'. This edit took the initial 137 responses of consumers stating they would consider borrowing from a loan shark down to 90 across all five surveyed groups. See Appendix table A39 for a list of responses edited out.

12. Methodology

The consumer survey was designed in a comparable way to the CRA data analysis in order to ascertain the causal impact of consumers not having access to HCSTC. The survey was designed to have a 'treatment' group of consumers whose application for HCSTC was marginally accepted which was compared to a 'control' group of consumers who were marginally denied HCSTC from groups 1 and 2. In a randomised controlled trial (where the decision whether or not to grant a loan application is purely random) comparison between the two would produce unbiased causal estimates for the effect of taking out a loan. Given that the decision by lenders whether to grant loan is non-random the analysis used Regression Discontinuity Design (RDD) as described in the CRA Data Analysis earlier in this report. As there are fewer observations in this survey (2,000 interviews in total) compared to the number in the CRA data slightly different statistical implementation is used. Initial analysis takes the form of comparison of means between these two groups and examining whether the observable characteristics (e.g. gender and CRA variables before first HCSTC use) are statistically significantly different in group 1 compared to group 2. A statistical technique known as a t-test was used for this²⁴. This check is performed to assess how comparable the sample groups are and whether differences in means between groups are likely to be explained by observable characteristics rather than HCSTC use. If differences are not significantly different between groups then the RDD approach is valid. Where significant differences are found linear control can be applied via Instrumental Variable (IV) regressions.

Following this test, differences in means for outcome variables are analysed as a first step to assess the impact of HCSTC use (Appendix Table A26). Consumers from groups 1 and 2 were divided into consumers who were 'marginal unsuccessful' and 'marginal successful' in their application for HCSTC. This assignment used the results of TNS-BMRB screening questions verifying firm data. This categorisation is shown in Table 21.

The results for consumers who were 'marginal successful' were compared to those from group 3 (which contained 'less marginal successful' consumers – whose application for credit was more readily accepted by lenders) to provide an indication for how the surveyed variables change with risk score.

²⁴ A t tests analyses whether results are statistically different from one another when taking account of small sample sizes.

Table 21: Numbers of Consumers in Survey Groups

Group number	Risk score sample			Consumer detriment focus sample	
	1	2	3	4	5
Group name	Just below credit score approval cut-off	Just above credit score approval cut-off	Less marginal successful	Problem debt	Habitual borrowers
Marginal unsuccessful	515	275	546	170	192
Marginal successful	37	265			
Group 3/Less marginal successful/Higher credit score			546		
Problem debt				170	
Habitual borrowers					192

The responses of group 3 'Less marginal successful' were compared to those from groups 4 and 5 - the Consumer Detriment Focus Sample. This was undertaken in order to analyse how habitual borrowers and consumers with problem debt varied in their socio-economic characteristics and measures of well-being. It should be noted that this method does not causally identify the impact of HCSTC on problem debt or habitual borrowing but provides an indication for the observable outcomes of these consumers relative to group 3. For the habitual borrower group there were a series of questions relating to loan use which were analysed by comparing changes in their responses related to their first loan and subsequent loans. Questions with low response rates, such as how comfortable consumers were in using alternatives were given little weight in this analysis due to concerns that small sample size would not produce reliable estimates.

The comparison of means between consumers who did and did not get loans provides a starting point for assessing the impact of HCSTC use. In this market the 'treatment' is not random and is principally based on credit scoring – with a loan application approved or denied based on its credit score relative to a firm's credit score approval cut-off. We are able to exploit this variation using customers' credit scores relative to a firm's approval threshold as an instrument for whether or not they received treatment of getting a loan.

Due to smaller sample size, the analysis implemented the RDD approach using Instrumental Variables (IV) regressions²⁵. Instrumental Variables (IV) regressions were implemented using group assignment as an instrument for whether a loan application was accepted (and therefore whether a consumer had access to HCSTC). The instrument was the indicator variable 'above' which shows whether a consumer was above the cut-off (and therefore in group 2 rather than group 1). In this regression setup the distance to the credit scoring cut-off is important as the effect of HCSTC access is expected to be most reliably assessed the closer an

²⁵ Non-parametric RDD (as in the CRA Data Analysis) was also used as a robustness check to the main results and displayed consistent findings.

observation is to this point. Observations were therefore weighted by priority level (as shown in table A34). Given concerns regarding sample size, regressions were run across a series of model specifications. Different model specifications test the robustness of results to the inclusion of additional socio-economic variables such as age and housing tenure. Without these additional variables (known as “controls”) some model specifications may spuriously attach findings to HCSTC use which are actually due to unrelated factors. Although the tests for balance (see Appendix Table A21) indicate that the achieved sample is representative of the target sample (based on their observable characteristics in firm and CRA data) the results of this survey should be accompanied by the caveat of small sample size. In this regard, the fact that findings observed for consumers who got loans are similar to those of previous surveys is reassuring. As an analysis of the impact of HCSTC had not previously been carried out the methodological approach erred on the side of caution: the results are not claimed as significant unless findings are found to be robust across specifications (though few results were found to be statistically significant in any model specification).

13. Analysing the Impact of HCSTC Access

a. Data Results

A graphical overview of the responses to each of the consumer survey questions can be found in the accompanying slide pack to this publication 'FCA TNS-BMRB Consumer Research into the HCSTC Market July 2014'.

This chapter uses the econometric approach set out in chapter 5 to analyse the impact of access to HCSTC across a range of metrics. To aid this, appendix tables provide greater detail for the analysis carried out.

Tables A22-A25 provide descriptive statistics for the questionnaire responses by group. Given the number of variables tested a codebook is provided in table A21.

Table A26 shows t-tests for the differences in means between marginal successful and unsuccessful applicants for HCTSC. The impact of access to HCTSC is shown using IV regressions in tables A36 and A37– with the model specifications set out in table A35.

Following this table A27 carries out the same tests between marginal successful and less marginal successful applicants. Tables A28 to A30 do these comparisons for store users, problem debt and habitual borrowers. Habitual borrower specific questionnaire responses are displayed in tables A31-A32.

b. Testing Marginal Comparison Groups

There are a few statistically significant differences between consumers just below and just above lenders' credit score cut-offs (groups 1 and 2 in the survey). There are no differences in the survey for age, gender, children, number of additional adults in a household, tenure type, labour market status, ethnicity, whether consumers had qualifications, education and income levels except the top bands (degree and over £50,000 respectively). The main difference is that those in group 2 are approximately 40% more likely to have access to HCSTC than those in group 1 (supporting our identification strategy). These results enable us to have confidence in this sample for the RDD.

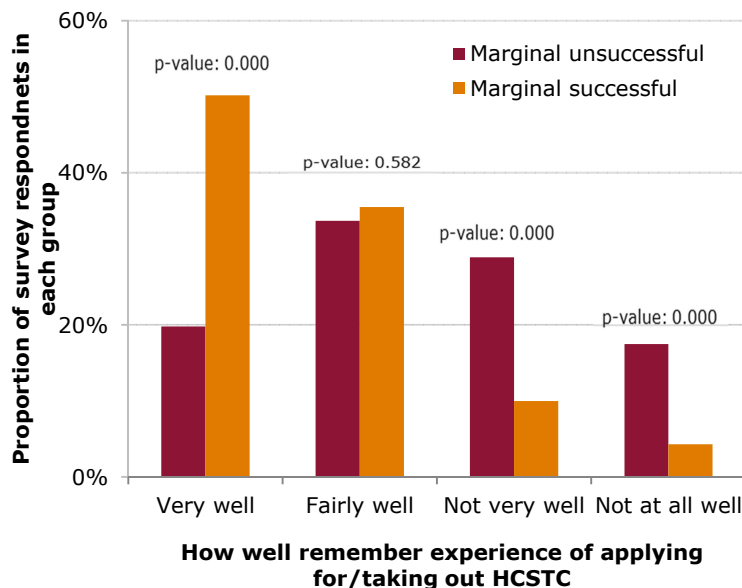
The main statistically significant differences we do find (at the 5% level) are that consumers from group 2 are more likely than consumers from group 1 to have a partner, have a degree or higher qualification, have income from employment, have an overdraft facility and have income over £50,000. Appendix table A26 displays the full results of these tests. At the 95% confidence interval, these significant results display a wide variation of potential differences in means.

When we compare the differences in means of socio-economic variables for consumers who were marginally successful and unsuccessful we did not find that these statistically significant differences between groups 1 and 2 remain (except for the ability to recall applying for loans, discussed below). Consumers who marginally got loans were slightly less likely to be

home owners than those marginally denied access. The full results of these tests are displayed in appendix table A28.

As displayed in Figure 12, we find that consumers who were denied access to HCSTC were, somewhat unsurprisingly, statistically significantly less likely to remember the experience of applying for HCSTC than marginal successful applicants. This finding means that some survey responses explicitly relating to HCSTC applications for those whose applications were unsuccessful need to be treated with caution – especially questions such as what unsuccessful applicants planned to use HCSTC for. This low recall could also be potentially interpreted as providing an indication that being denied access to HCSTC does not leave a memorable, lasting impact a few months later.

Figure 12: Consumer Recall of HCSTC application



c. Q1. What are the socio-economic characteristics of consumers who apply for HCSTC?

This section analyses the socio-economic characteristics of HCSTC applicants in the risk score sample. It primarily focuses on group 3, less marginal successful applicants, who are a representative sample of the market. The characteristics of this group are compared to those at the margin to analyse any correlation with risk score. The characteristics of the problem debt and habitual borrower groups are analysed later on in the document.

These socio-economic characteristics are broadly consistent with findings from previous consumer surveys (which only covered consumers who had access to HCSTC) commissioned by BIS and the Competition Commission. Table A22 in the Appendix provide a detailed breakdown of socio-economic characteristics of consumers by different sampling groups.

First we provide a short overview of the consumer sample (see Figure 13). Based on the socio-economic profile and financial circumstances we observe that less marginal successful HCSTC applicants (group 3) are:

- More likely to be male (57%) than female;
- On average, 33 years old;
- Mainly live in rental accommodation (37% privately rented, 29% rent from local authority/housing association);
- Typically employed (64% full time and 14% part time) but with relatively low incomes (32% earn less than £12,000, 60% less than £18,000 p.a.);
- Have limited savings (57% have no savings at all);
- Have limited access to overdraft facilities (45%);
- Total debts had increased from £1,780 12 months before applying for HCSTC to, on average, £2,748 the month before applying for HCSTC (Figure 14). Of these outstanding debts, 13% were default balances at the time of the loan application.
- Often are in significant financial difficulty (44% report having recently missed a household bill)
- Commonly experience distress about their financial difficulties (50%)

Figure 13: Socio-economic Characteristics of HCSTC Applicants

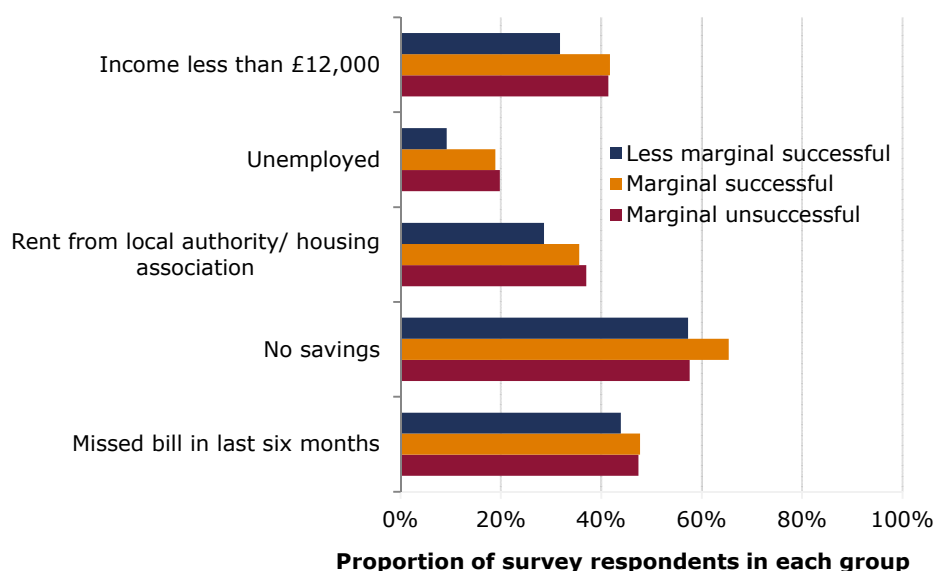
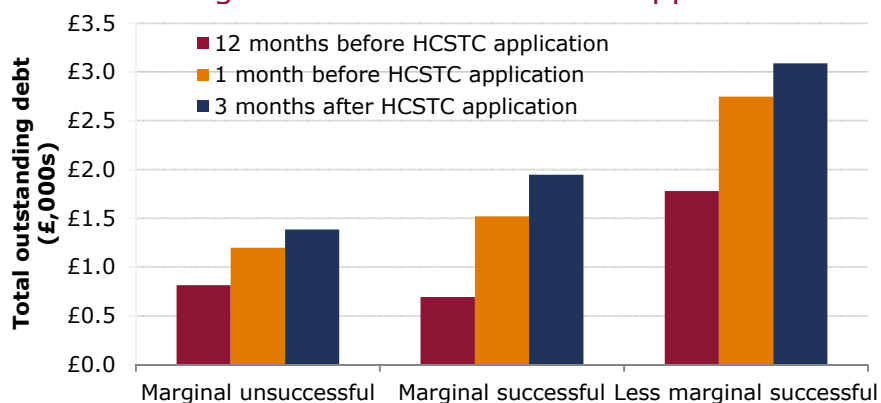


Figure 14: Debts of HCSTC applicants



A minority of consumers have children and consumers are generally employed or self-employed but with low, but regular, sources of income.

At the margin (groups 1 and 2, who are close to the firm credit score cut-off thresholds) we observe that just under half of applicants are in full time employment (47%), and 16% are employed part time. There are a high proportion of consumers unemployed (20%). Approximately 7% of marginal consumers list their current employment status as being unable to work due to ill-health or disability. The remaining individuals in these groups are (in descending order of response frequency): looking after their families, in full time education, retired and other work statuses. Consumers from group 3 (higher credit scores/less marginal successful) are statistically significantly more likely to be in full-time employment (less likely to be unemployed).

In line with findings from previous surveys, income levels for HCSTC applicants are generally low. Around 42% of marginal consumers earn less than £12,000 a year, and just fewer than 70% earn less than £18,000 a year. In general, consumers with higher credit scores who receive loans do not have statistically significantly higher incomes than those at the margin. The exception to this is that marginal applicants are more likely to be earning under £6,000 than those consumers who receive loans.

In line with the above findings, over 66% of consumers at the margin receive income from employment.²⁶ Approximately 27% of applicants at the margin receive state benefits (excluding pensions, child benefits and tax credits). Approximately a quarter of these marginal consumers receive income from child benefits (a similar proportion receive tax credits and these two benefits are highly correlated).

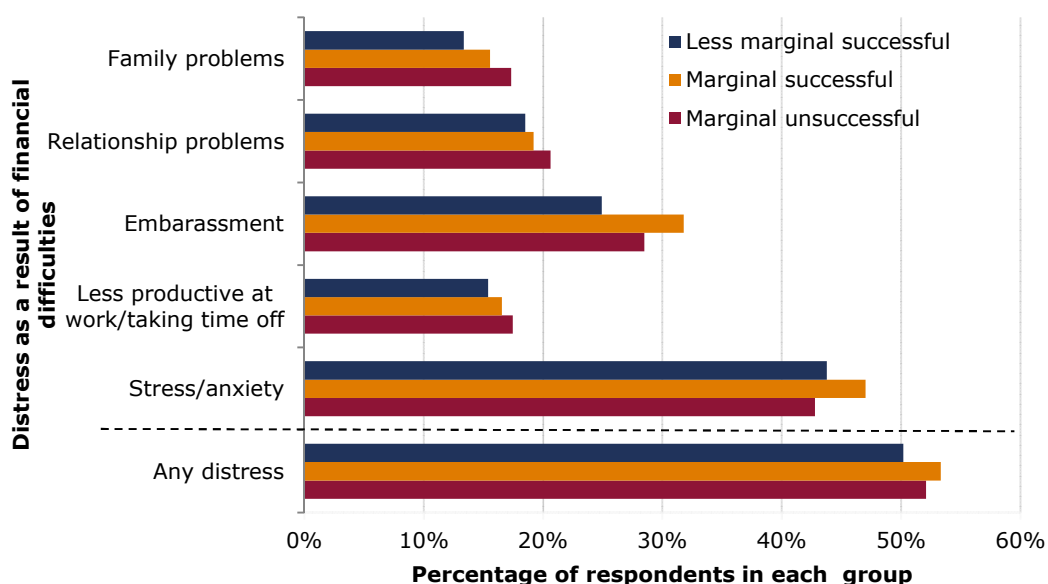
We find that marginal HCSTC applicants have limited savings. Approximately 60% of marginal applicants have no savings at all and where individuals have savings these are typically small (45% have less

²⁶ Marginal applicants are calculated as an average of the responses by 'marginal unsuccessful' and 'marginal successful' (weighting by sample size).

than £500). Only a minority of consumers applying for HCSTC have an overdraft facility (36%).

A significant proportion of HCSTC applicants are in financial difficulty. At the margin, just under half of consumers (48%) have missed a bill or credit commitment in the last six months. The majority of these marginal consumers report that they are having some difficulties keeping on top of their bills and credit commitments (64%). Approximately a fifth (19%) of consumers report that they are falling behind on some bills and 8% are falling behind with many bills or credit commitments. 15% of consumers with higher credit scores and 18% of marginal applicants had recently sought financial help from a debt management or advice organisation.

Figure 15: Distress As a Result of Financial Situation²⁷



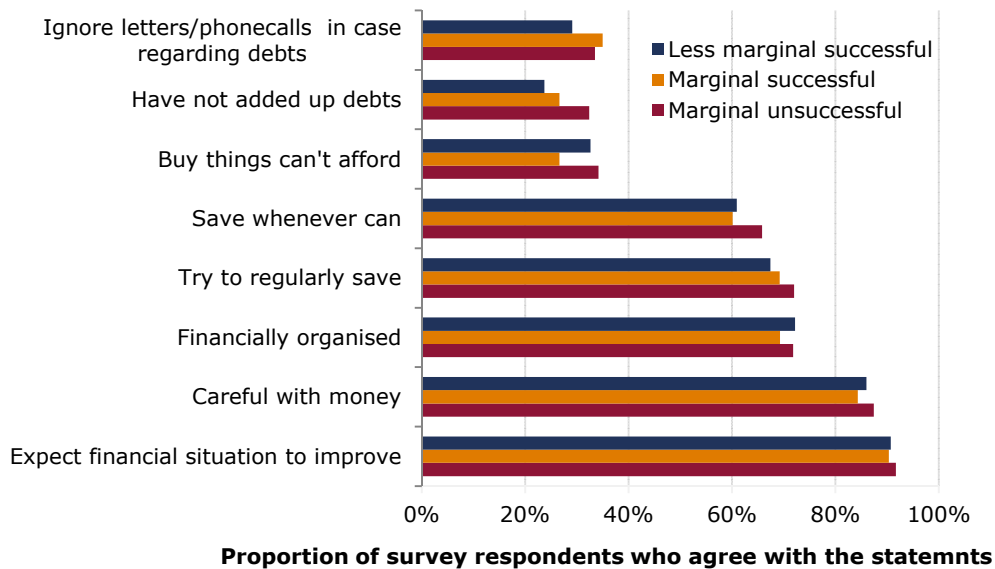
As displayed in Figure 15 approximately half of applicants at the margin (52%) report having experienced a form of distress as a result of financial difficulties over the few weeks before being interviewed. This finding does not change much for consumers with higher credit scores who are more readily accepted for loans. Of those at the margin, the most common form of distress experienced is stress/anxiety (44%), with just under a third of consumers (29%) experiencing embarrassment. Approximately 17% have been less productive or have taken time off work as a result of their financial difficulties. For 20% of consumers at the margin their financial difficulties have impacted their relationships. A similar proportion of marginal consumers reported that their financial difficulties had led to them experiencing problems with their friends or family.

A series of questions were asked to assess how consumers self-identify their financial circumstances by behavioural traits. Comparing group 3

²⁷ Under 5% of consumers reported other forms of distress due to their financial issues. Details of these responses can be found in the appendix.

respondents to marginal successful and unsuccessful applicants in Figure 16 shows little difference. The majority of consumers identify themselves as financially organised who are careful with money, try to save, do not ignore their debts and think their finances will improve. The finding that over 90% of applicants expect their financial situation to improve is especially interesting in the context of the HCSTC market where the majority of borrowers are repeat customers.

Figure 16: Behavioural traits of HCSTC Applicants



The majority of consumers struggle with financial literacy questions regarding the costs of borrowing. When asked two questions regarding financial literacy the majority of HCSTC applicants across groups were able to correctly answer a simple interest rate question regarding the cost of repaying a loan after one month– 65% of marginal applicants (successful and unsuccessful) and 74% of consumers with higher credit scores (group 3)²⁸. The Competition Commission consumer survey asked the same question and found 59% of consumers answered it correctly.

When a follow-up, more difficult question was asked regarding compounded interest rates a much lower proportion answered correctly.²⁹ Among marginal applicants 39% answered correctly, and 45% of group 3 consumers with higher credit scores. The Competition Commission consumer survey asked the same question and found 34% of consumers answered it correctly.

²⁸ Survey question: "You have taken out a loan for £500, and the interest rate you are charged is 10% per month. There are no other fees. At this interest rate, how much money would you owe in total after one month?" The correct answer is £550.

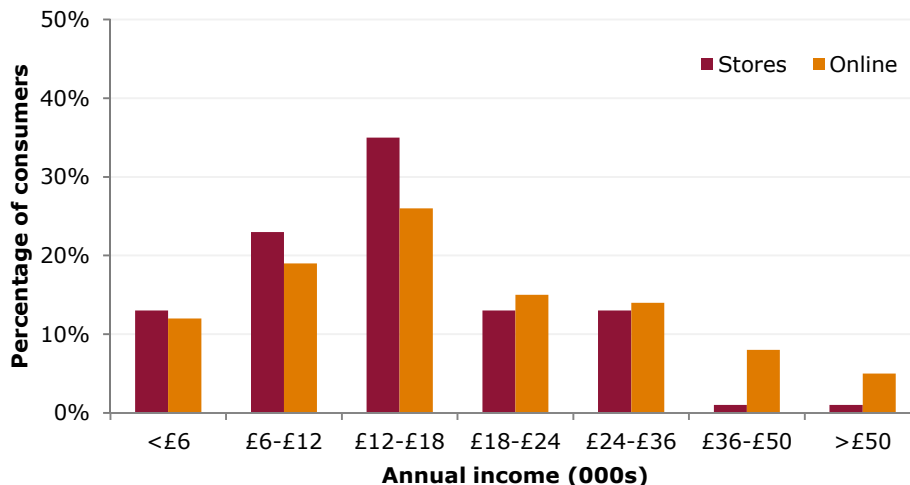
²⁹ Survey question: "And if you didn't pay anything off, at this interest rate (10%) how much would you owe after two months – again assuming there were no additional fees?" Consumers were given a choice of 'less than £600, £600 or over £600". Over £600 is the correct answer.

Of the 1,487 consumers who responded to both of these questions in the survey (across all groups) only 389 (26% of respondents) answered both of these questions correctly.

Store users of HCSTC have noticeably different socio-economic characteristics to non-store users.

Comparing consumers who receive loans with higher credit scores (group 3) who use stores compared to those who use online lenders we find similar results to previous surveys. It should be noted that this survey had a lower number of store users than previous surveys as group 3 was designed to be representative by market share. These differences are that store users have statistically significantly different socio-economic characteristics to non-store users. Users of stores are significantly older, 38 years old on average. Store users are more likely to rent from local authorities/housing associations (48% vs. 24% of non-store consumers). Store users of HCSTC are also more likely to receive state benefits (24% vs. 15%), and less likely to be employed or have income from employment (53% full-time employed vs. 66% of non-store users). Income levels for consumers who use stores are also lower (71% vs 57% with income under £18,000 p.a.) as shown in Figure 17. A higher proportion of store users than non-store users have no savings (68% vs 55%) and fewer have overdraft facilities (27% vs 49%).

Figure 7: Comparison of Income for Stores and Online



d. Q2. What options are there for consumers who no longer have access to HCSTC?

Analysing responses on what customers would do without access to HCSTC we find:

- Responses from consumers who currently have access to HCSTC about what they would hypothetically do without access are similar to what consumers without access to HCTSC state they actually do /have done.

- The majority of consumers (60% of those accepted at the margin) state they have not borrowed in other ways if they did not get HCSTC. This is validated by the actual actions of those who did not get HCSTC loans.
- Borrowing from family or friends is the main substitute considered. Borrowing from family is the more preferred option compared to borrowing from friends.
- Consumers are uncomfortable borrowing from friends, although those who actually borrow are less uncomfortable than it is reported in the hypothetical responses.
- A very small proportion of consumers (8% at the margin) state they might have borrowed from other sources if their HCSTC application was denied, indicating limited substitution to other forms of credit. This response is closely aligned to the actual actions taken by consumers whose applications were denied (10% borrowing elsewhere).
- Few consumers (under 2% across the entire sample) use illegal lending and, we did not find evidence that without access to HCSTC consumers would increase their use of this.

Without access to HCSTC the majority of consumers are not expected to borrow, with around a quarter borrowing from family or friends instead. This is borne out when comparing actual to hypothetical responses

Consumers who marginally received loans were asked hypothetically what they would have done if their application for HCSTC had been denied. The responses for consumers at the margin are displayed in table 22 and indicate that without access to HCSTC: 60% of consumers would not borrow, 19% would borrow from family or friends, 8% would borrow elsewhere and 13% did not know. Responses for consumers receiving loans not on the margin indicate; 56% would not borrow, 25% would borrow from family or friends and 7% would borrow elsewhere and 12% did not know. Of those, who did not borrow, 5-10% would find funds for current consumption in other ways such as by reducing savings, selling assets.

These hypothetical responses closely mirror the actions actually taken by consumers who did not get loans. Without access to HCSTC 59% state they did not borrow, 28% borrowed from family or friends, 10% borrowed elsewhere³⁰.

Comparing these hypothetical and actual responses between consumers at the margin who did and did not get loans does not produce statistically significant differences using IV regressions. There is some evidence from t-tests of a statistically significant difference in the likelihood of borrowing from family or friends.

³⁰ Excluding 'don't knows', 62% did not borrow

These findings are consistent with 55% of group 3 consumers with higher credit scores, and 57% of marginal successful consumers reporting that they considered some alternatives at the time of applying for HCSTC. The finding that the majority of consumers without access to HCSTC go without credit (either formal or informal) mirrors the findings from the CRA analysis where no evidence of substitution to formal credit was found.

We infer from this that without access to HCSTC the majority of consumers are unlikely to find the money elsewhere. We further infer that the hypothetical responses of those not on the margin are reasonable predictors for what consumers without access will actually do.

Table 22: Use of Alternative Borrowing When HCSTC Not Available. Comparison of Hypothetical and Actual Responses³¹

	What consumers without access to HCSTC actually did following application being denied	What consumers with access to HCSTC hypothetically state they would do without access to HCSTC	
		Marginal successful	Less marginal successful
Borrow from family or friends	28%	19%	25%
Borrowed from friends/family	25%	18%	22%
Asked a friend or relative to give money/buy on behalf	2%	2%	3%
Borrow from somewhere else	10%	8%	7%
Borrow from another HCSTC lender	6%	5%	2%
Borrow in some other way (e.g. overdraft, credit card)	4%	2%	5%
Not borrow	59%	60%	56%
Made a decision to go without	20%	21%	24%
Nothing – nowhere else to borrow from	23%	27%	22%
Cut back on spending	1%	<1%	<1%
Requested more time for money that I owed	1%	2%	3%
Saved up until I had the money that I needed	3%	2%	3%
Used savings I already had	1%	<1%	<1%
Sold something	2%	4%	3%
Increased working hours	1%	<1%	0%
Defaulted on another loan/bill/payment	2%	1%	3%
Used a debt management service	<1%	0%	0%
Something else	3%	4%	2%
Don't know	4%	13%	12%

³¹ Note. This question was multi-coded and therefore results do not sum exactly to 100%.

Borrowing from family or friends is the main substitute considered

As the above results indicate, the main credit alternative to HCSTC is borrowing informally from family or friends. This result is strongly supported by consumer responses which report that this was the main alternative way of borrowing considered when applying for HCSTC. Of the small numbers of HCSTC applicants who considered any alternatives, this option was considered by 69%, 66% and 70% of consumers whose loan applications were marginally unsuccessful, successful and less marginal successful for loans respectively.

Differences in means and IV regressions indicate that, at the margins, there is some evidence of substitution, with consumers who get loans being less likely to consider or actually borrow from friends or relatives than those without access to HCSTC. However, these results are not robust across all specifications tested.

Table 23: Impact of Access to HCSTC on Borrowing from Family or Friends

	Difference in means between marginally successful and unsuccessful applicants for HCTSC (p-value) ³²	IV regression coefficient for impact of HCSTC access at the margin ³³ (standard error)
Consider borrowing from friend or relative	-3.56% (0.403)	-0.330*** (0.122)
Without HCSTC would/did borrow from family or friends	-8.3% (0.005)	-0.0632 (0.0785)
Actually borrowed from family in last six months	-7.99% (0.018)	-0.1220 (0.0884)
Actually borrowed from friend in last six months	-6.29% (0.030)	-0.1240 (0.0776)

The majority of consumers report being uncomfortable with the idea of borrowing from family or friends. However, consumers who did not have access were significantly more likely to be comfortable using this option.

Consumers were asked how comfortable they would be taking different actions without access to HCTSC. Borrowing from friends or family is the only one of these questions with a large enough number of responses to do meaningful inference. It indicates that, both for marginally successful and higher credit score successful applicants from group 3, that this is an uncomfortable option. Only 22% of those at the margin report being comfortable using this option, and 31% of group 3 respondents to this question.

³² Confidence intervals reported in appendix

³³ *, ** and *** denote HCSTC use has statistically significant effects at 10%, 5%, 1% respectively

However, comparing these responses to those of marginally unsuccessful applicants, who actually had experienced this situation, indicates that this borrowing option is less uncomfortable than it initially appears. 43% of marginally unsuccessful consumers report being comfortable using this option when they had no access to HCSTC. This difference in means is statistically significant (p value 0.003), although the small sample size of this test should be noted – 199 marginally unsuccessful applicants compared to only 54 marginally successful applicants.

Borrowing from family appears preferable to borrowing from friends. Borrowing from friends is more common in the actual behaviour of consumers denied HCSTC loans than in the hypothetical answers given by those with HCSTC loans.

Observing how consumers report to have borrowed money in the six months since their first loan application, there is a higher prevalence of borrowing from family from those who marginally did not have access to HCSTC (48%) compared to those that marginally had access to HCSTC (40% at the margin and 36% for group 3 consumers with higher credit scores). As shown in Table 23 the difference in means between marginal successful and unsuccessful applicants is statistically significant (p value 0.018), however, it does not hold in the IV regressions once socio-economic controls are added and the magnitude of any effect is highly uncertain.

Comparing this finding with those of consumers borrowing from friends (which was a separate response option to borrowing from work colleagues, a member of the community or unlicensed lender) indicates a similar pattern. 26% of those without access to HCSTC borrowed from friends over the last six months compared to 20% of those that had access to HCSTC at the margin and 18% not on the margin. These differences are statistically significant in t-tests as displayed in table 23, however, are statistically insignificant across IV regression specifications once socio-economic controls are included.

There appears to be limited evidence of substitution with non-HCSTC licenced lending options with consumers often viewing HCSTC as their only option

As shown above, a minority of consumers considered using non-HCSTC licensed lending options (credit cards, overdrafts, bank personal loans, home credit) when applying for HCSTC. This echoes the findings from the Competition and Markets Authority in its market definition³⁴ and from their consumer survey³⁴.

8% of consumers who were marginally accepted for loans state that they would have borrowed elsewhere if their application for HCSTC was denied. This splits into 5% of marginal consumers reporting that they apply to another HCSTC lender and only 2% borrowing from credit

³⁴ Page 14 https://assets.digital.cabinet-office.gov.uk/media/539b1d16e5274a103100000a/PDL_PFs_main_report.pdf

cards, overdrafts or other forms of mainstream credit³⁵. Of those who were marginally unsuccessful in their application for HCSTC, 4% actually borrowed from non-HCSTC licensed lending alternatives. There are some statistically significant differences found in the IV regressions, with consumers whose application for HCSTC was marginally successful being more likely to actually borrow from credit cards and consider borrowing from bank loans than consumers whose applications were marginally unsuccessful – indicating complementarity rather than substitutability between these credit products for the minority of consumers who consider borrowing elsewhere.

When asked why they applied for HCTSC, 22% of consumers who marginally got loans indicated that it was their only option (19% of those who marginally did not get loans and 24% of those from group 3).

These results are echoed by consumer responses to non-HCSTC applications for credit being denied, or being put off applying because expecting their application to be denied

The majority of consumers across all groups had had an application for credit denied in the six months since their first application for HCSTC. Consumers who had attempted to borrow in ways other than HCSTC over the last six months (or were put off applying as a result of expecting their application would be denied) were asked what action they took instead. These results corroborate earlier findings regarding what consumers would do without access to HCSTC (in this question there are no hypothetical responses only actual). The majority of consumers did not borrow after being denied a loan. Borrowing from friends or family was the next most popular alternative – 6% and 15% of marginally unsuccessful and successful applicants for HCSTC respectively and 13% of group 3 consumers.

The results of IV regressions indicate that consumers whose HCSTC applications were marginally successful were 21% less likely to be put off borrowing because they thought their application would be denied compared to consumers whose applications were marginally unsuccessful.

Very few consumers use illegal lending, and we did not find evidence that without access to HCSTC consumers will increase their use of this

A potentially significant cost to reducing access to HCSTC would be if consumers turned to unlicensed lenders (colloquially referred to as loan sharks). This form of lending is illegal and associated with very poor conduct with consumers paying extremely high prices for borrowing and, by using this means, putting their persons, belongings and relations in harm's way.

³⁵ These do not sum to 8% figure in table 22 due to rounding – 7.6% would borrow from HCSTC or other borrowing methods, derived from 5.2% HCSTC and 2.3% non-HCSTC formal borrowing methods.

As explained above advice was taken from the Illegal Money Lending team regarding the best approach to ascertain whether without access to HCSTC consumers would be likely to use illegal lending. Consumers were directly asked if they considered borrowing from a loan shark. For those that answered yes a follow-up question was asked requiring consumers to provide an explanation regarding what they consider by the term 'loan shark'. These responses were analysed and edited such that where consumers considered a licensed lender, (or something which clearly was not an illegal lender) to be a loan shark, responses were reclassified to "not consider borrowing from a loan shark" in the variable 'consider_loanshark_edited'.

Using this edited variable, we found that 3% of consumers who got loans at the margin said they considered borrowing from a loan shark. This compares to 5% of consumers who did not have access to HCSTC. The difference is not statistically significant by comparison of means or when using more robust IV regression specifications.

Other variables were also used to determine whether consumers were likely to turn to illegal lending without access to HCSTC. A variable was constructed if a customer recorded any interaction with an illegal lender over the last six months (attempting to borrow, actually borrowing, having outstanding debts, repaying debts, having overdue debts). This approach found a low percentage (under 2%) of our entire 2,000 consumer survey sample having used an illegal lender since July 2013 (similar to the rates found in previous research). There were no significant differences found in this variable between consumers who did and did not get loans.

We therefore conclude that few consumers use illegal lending and we did not find evidence that without access to HCSTC consumers would increase their use of this. Despite the small numbers expected to be affected by this issue it remains a cause for concern given the high financial and non-financial costs users of these illegal products are likely to experience. It is also a concern if post-cap unlicensed lending becomes more easily accessible and therefore more widely considered by consumers.

e. Q3. Are consumers better or worse off without access to HCSTC?

Consumer experiences of HCSTC use

Examining consumers' experiences of HCSTC use we observe:

- Whether consumers report positive or negative experiences of HCSTC use is mainly related to the current price of these products and whether the consumer paid more than they originally expected to³⁶.

³⁶ Negative experiences being - regretting using HCSTC, those that were denied access to HCSTC feeling that they were better off being denied, HCSTC applicants not planning to use the product again in future)

- While the majority of consumers paid what they expected for HCSTC, a significant minority ended up paying more than what they expected
- This matches with a significant proportion of consumers subsequently regretting their decision to use HCSTC (41% of those at the margin and 30% of those away from the margin)
- A minority of consumers said they would apply for HCSTC again (24% of consumers who did not get loans, 29% of consumers who marginally got loans, and 40% of consumers not on the margin)
- A substantial proportion of HCSTC applicants who were denied for loans (63%) report it being for the best that their application was declined
- Consumers value the speed/convenience of HCSTC
- Consumers mainly plan to use HCSTC for regular, non-discretionary expenditure
- The majority of consumers who had access to HCSTC report that they definitely could not have gone without the money borrowed, compared to a minority of those without access (despite similar planned use of HCSTC money)

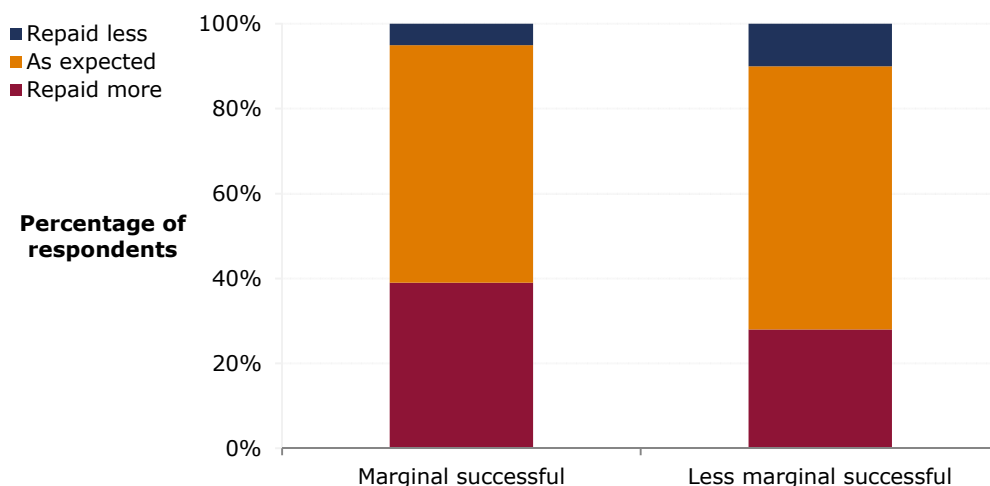
In some cases answers to questions on consumer experiences are not comparable between 'actual' answers for those using/denied credit and 'hypothetical' answers from the relevant comparison group³⁷.

The majority of consumers pay what they expected for HCSTC, however, a significant minority pay more than they expected

As displayed in Figure 18, the majority of consumers with access to HCSTC repaid what they expected for the loan (56% at the margin and 62% of consumers whose loan applications were less marginally successful). A significant minority of marginal consumers who got loans, 39%, repaid more than they expected, this decreases to 28% of group 3 consumers. Few consumers repay less than they expected: 5% at the margin and 10% further away from the margin.

³⁷ This is due to the majority of consumers without access to HCSTC could not be asked about their experiences of using a payday loan.

Figure 18: Cost of Repaying HCSTC Relative to Consumers' Expectations



The majority of consumers are happy with their decision to use HCSTC, however, a significant minority strongly regret their decision to use these products

The majority of consumers (53% at the margin, 63% of consumers not on the margin) report that they are happy with their decision to use HCSTC (59% averaging across both). Of these consumers who reported being happy with their decision to use HCSTC the most common responses given were³⁸:

- The loan provided them with help needed at the time (34%)
- Consumers did not have any problems paying back (29%)
- The loan enabled them to get money quickly and easily (26%)

A substantial proportion of consumers report regretting their decision to use HCSTC: 41% of those at the margin and 30% not on the margin (34% averaging across both). Of consumers who reported regretting their decision to use HCSTC, the overwhelming majority reported intense feelings of regret (81% at the margin and 75% not on the margin regretted their decision a lot rather than a little).

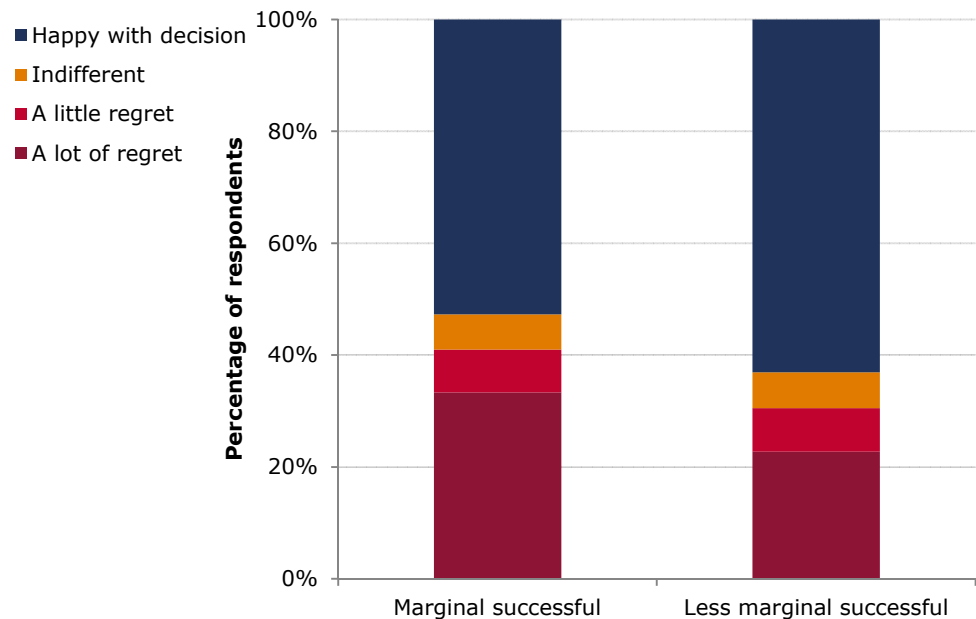
Examination of the reasons for consumers regretting their decision indicates the primary reasons for regret are related to the current price of HCSTC. Among these consumers, the most common reasons for regretting taking out a loan were:

- High interest rates (34%)

³⁸ Responses were open-ended and therefore allowed consumers to give multiple reasons. The remainder gave a variety of responses.

- Felt they were in greater financial difficulty as a result of taking out HCSTC (19%)
- They had difficulty paying the money back (15%)

Figure 19: Consumer Happiness With Decision to Use HCSTC



With the above in mind it is important to caveat the interpretation of regret levels of consumers as it shows consumer regret at current prices. Therefore levels and intensity of regret recorded in the survey may not correspond to the equivalent metric post-cap.

Few consumers are indifferent about their decision to borrow: 6% at and further away from the margin.³⁹

Fewer consumers would apply for HCSTC again in the future compared to the proportion who were happy with their decision to use HCSTC

Consumers were asked if, in the future, they needed to borrow a similar amount of money for a similar purpose, would they: apply for HCSTC again, use an alternate, or go without. The responses show that a noticeable minority of consumers would apply for HCSTC again: 24% of consumers who did not get loans, 29% of consumers who marginally got loans, and 40% of consumers not on the margin.

Rather than apply for HCSTC again or using an alternative method, a high proportion of consumers responded they would go without: 42% of those without loans, 40% of those who marginally got loans, and 27%

³⁹ Indifferent was an unprompted response which was only recorded if a consumer responded in this way.

of consumers not on the margin. Across groups, approximately a third of consumers (34%, 31% and 33% for consumers who did not get loans, marginally got loans and received loans not on the margin respectively) would use an alternative rather than go without or apply for HCSTC again.

Across consumers who got loans there is a strong relationship between consumers regretting their decisions to use HCSTC, repaying more than they expected and not planning to use HCSTC again in the future

As shown in table 24, of the 59% of consumers who were happy to take out a loan, 70% repaid what they expected to and only 54% would use HCSTC if in similar circumstances in the future. Of marginally successful applicants, 53% are happy with their decision to use HCSTC, however, only 50% report that they would apply for HCSTC in similar circumstances in the future.

The inverse relationship is found for the 34% of consumers who regret their decision to use HCSTC, with 55% of these consumers having repaid more than they expected and 52% saying they would go without the money instead of using HCTSC again if in similar circumstances in the future.

Table 24: Interaction Between Consumer Loan Experiences⁴⁰

			Of consumers who responded being...		
			Happy with decision to take out a loan	Indifferent with decision to take out a loan	Regret decision to take out a loan
This proportion of respondents also said....	Compared to expectations, repaying HCSTC loan was...	Less expensive	12%	6%	3%
		As expected	70%	58%	43%
		More expensive	18%	37%	55%
	If in a similar situation in the future would you...	Apply for HCSTC again	54%	20%	8%
		Go without the money instead	20%	24%	52%
		Try an alternative way of borrowing	26%	56%	39%

⁴⁰ Columns within the quadrants do not all sum to 100% due to rounding

The majority of consumers whose HCSTC application was denied view that it was for the best that their application was declined

A comparable question was asked for consumers who were marginally denied for loans. The majority of consumers, 63%, reported that it was for the best that the lender declined their application. These responses are likely to involve ex-post rationalisation as it is unclear what additional information consumers have which they did not have at the time of making their application for HCSTC. The most common reasons for this were:

- High interest rates (27%)
- Customers expected greater financial difficulty as a result of taking out the loan (24%)
- They found a better alternative (14%)
- They avoided having to pay money back (12%)

28% of respondents felt they would have been better if their loan application had been approved. Of these customers the most common responses explaining this were that:

- HCSTC would have provided the financial help they needed at the time (54%)
- HCSTC was their preferred alternative (10%)

The remaining 9% were indifferent as to whether it was for the best that their loan application was declined.⁴¹

Consumers value the speed/convenience of HCSTC

As found in previous surveys, consumers value speed/convenience of HCSTC. We find that there is a statistically significant difference between customers at the margin who did and did not get loans. Speed/convenience is significantly more important for those accepted at the margin (46%) than those who do not take out loans (33%).

Consumers mainly plan to use HCSTC for regular, non-discretionary expenditure

Consumers are typically found to need HCSTC for non-discretionary expenditure. Less than 20% of the planned use of these loans appears to be for *pure* discretionary spending (holidays/socialising, presents, weddings or home improvements). Table 25 summarises the different planned use for HCSTC.

There are few statistically significant differences in the planned usage of HCSTC by those denied and those marginally accepted for these loans.

⁴¹ Indifferent was an unprompted response which was only recorded if a consumer responded in this way.

The most prominent variable where the two groups are statistically significantly different, when comparing means, is 'living expenses and general shopping' where those with loans are 8% more likely to use for this purpose than those who were denied loans⁴². These results are caveated by the fact that money is fungible – meaning that HCSTC money can be easily interchanged for different uses.

Table 25: Planned Use of HCSTC⁴³

	Marginal unsuccessful applicants	Marginal successful applicants	Less marginal successful applicants
Regular non-discretionary expenditure	47%	54%	55%
Household bills	27%	24%	24%
Living expenses and general shopping	18%	26%	29%
Rent or mortgage payments	6%	8%	4%
Potential shocks	16%	11%	8%
Car/vehicle	12%	9%	6%
Repair/replace broken household items	4%	2%	2%
Discretionary spending	16%	19%	20%
Consumer electronics	1%	1%	<1%
A holiday, going out or socialising	10%	11%	14%
Present/gift/Christmas	3%	2%	5%
Wedding	<1%	<1%	0%
Gambling	<1%	0%	0%
For home improvements	<1%	3%	<1%
Other	16%	17%	19%
To pay off HCTC debts	<1%	<1%	0%
To pay non-HCSTC debts	5%	5%	5%
Other	6%	5%	6%
To help a friend or family member	3%	4%	3%
Business purposes	2%	<1%	1%
To have as spare/extra money	<1%	1%	1%
Don't know	7%	0%	0%

The majority of consumers who had access to HCSTC report that they definitely could not have gone without compared to a minority of those without access (despite similar planned use of HCSTC money)

The majority of consumers who got loans often view this money as something they definitely could not do without (55% at the margin, 50% less marginal). We observe that those who got loans at the margin

⁴² Significant differences are also found in consumers planned use for spare money, to fund a shortfall, use for home improvements and to build credit ratings, however, the 95% confidence intervals are small (under 4% maximum differences between groups)

⁴³ Consumers were allowed multiple responses for this question and therefore the components may not sum to 100%

were statistically significantly more likely to regard the use of HCSTC as something they definitely could not have gone without (and less likely to regard it as something they could have easily or possibly gone without), compared to those who did not get loans – where only 28% regard this to be the case.

This difference is surprising given that, in general, the planned use of both marginal groups is insignificantly different from one another. It may be explained by those denied access being forced to go without the money and so realise they could effectively do without, while those consumers who had access had not had to experience this. The findings of the Competition Commission qualitative research may also help to explain this result. They find that when asked about need, consumers initially exaggerate and stressed that they had no alternative, but, on reflection, said that they did not really need the loan after all and could have struggled through.⁴⁴

Consumers' financial and non-financial outcomes

Comparing welfare outcomes between those who got HCSTC credit at the margin and those who were denied we do not find any evidence for a lack of access to HCSTC causing a detrimental impact upon:

- General well-being
- The distress of consumers arising due to their finances.
- Consumers' household financial situation

The impact that not having access to HCSTC has on consumers' general well-being is estimated from ONS well-being measures. These variables record, on a ten-point scale, how satisfied consumers are with their lives, how worthwhile they think the things they do are as well as their self-reported levels of happiness and anxiousness yesterday.

Comparing the response to the survey questions to the ONS well-being measures (which construct percentages of consumers with medium-high responses, except for anxiousness which is recorded as medium-low) indicates that HCSTC applicants (denied and accepted) have worse well-being than the UK population as displayed in Table 26.

⁴⁴ Page 74 https://assets.digital.cabinet-office.gov.uk/media/5329df8aed915d0e5d000339/140131_payday_lending_tns_survey_report_.pdf

Table 26: Well-being of HCSTC Applicants Compared to UK Population

	UK	Marginal unsuccessful	Marginal successful	Less marginal successful
medium-high life satisfaction	77%	52%	53%	50%
medium-high worthwhile	81%	57%	55%	58%
medium-high happiness	72%	56%	54%	52%
medium-low anxiousness	62%	46%	50%	46%

Comparing these measures of wellbeing between consumers who marginally do and do not have access to HCSTC does not show statistically significant differences – even at the 10% significance level.⁴⁵

There are some statistically significant differences found in life satisfaction levels when running IV regressions without controls. However, this difference does not remain when basic socio-economic controls are added. Income, age and employment status variables are all statistically significant.

This regression specification (IV3 in the appendix tables) does not find statistically significant results for any of the other wellbeing metrics. We therefore conclude that, at the margin, a lack of access to HCSTC does not have a statistically significant impact on wellbeing. Instead, differences in wellbeing measures are resulting from socio-economic circumstances of borrowers.

Table 27: Impact of Access to HCSTC on Well-being

	Difference in means between marginally successful and unsuccessful applicants for HCSTC (p-value) ⁴⁶	IV regression coefficient for impact of HCSTC access at the margin ⁴⁷ (standard error)
medium-high life satisfaction	1.79% (0.596)	-0.0433 (0.0865)
medium-high worthwhile	-2.71% (0.420)	-0.0322 (0.0879)
medium-high happiness	-1.60% (0.636)	-0.0271 (0.0902)
medium-low anxiousness	3.80% (0.261)	-0.0320 (0.0880)
Any distress due to financial situation	1.22% (0.718)	0.0346 (0.0886)

⁴⁵ Consistent results are found using the raw 0-10 satisfaction metric. Examination of the 0-10 distribution of these well-being variables also did not show noticeable differences between marginally successful and unsuccessful applicants.

⁴⁶ Confidence intervals reported in appendix

⁴⁷ *, ** and *** denote HCSTC use has statistically significant effects at 10%, 5%, 1% respectively

We do not find evidence of a lack of access to HCSTC adversely affecting the distress of consumers due to their finances.

The majority of consumers surveyed reported suffering from distress as a consequence of financial difficulties. This ranged from 52% of consumers who did not have access to HCSTC, to 53% with access to HCSTC at the margin and 50% for consumers not at the margin with access to HCSTC. The differences in these were not significantly different from zero under t-tests at the 10% statistical significance level.

Using IV regressions with controls in general we do not find a lack of access to HCSTC resulting in consumers being statistically significantly more financially distressed.

We do not find evidence of a lack of access to HCSTC affecting consumers' household financial situation.

The majority of consumers surveyed reported financial difficulties (through a variety of measures) over the last six months. Performing t-tests between marginal groups indicates that a lack of access is not associated with worse outcomes for consumers. A difference is that those with access to HCSTC were slightly statistically significantly more likely (at the 5% level) to have missed paying their TV license over the past six months.

There is limited evidence that consumers with access to HCSTC were more likely to be falling behind on many bills or loan commitments. This finding is statistically significant at the 1% level when comparing means using t-tests. However, when using IV regressions and controls this effect becomes statistically insignificant. This change in significance is primarily due the inclusion of controls for income levels which have significant explanatory power on the household finance variables displayed in Table 28.

An alternate measure of whether a consumers has missed any bills since July 2013 shows no statistically significant difference between customers who did or did not have access to HCSTC. T-tests and IV regression results also indicate that consumers without access to HCSTC are not statistically significantly more likely to exceed their overdraft limit or miss payments.

Table 28: Impact of Access to HCSTC on Household Finances

	Difference in means between marginally successful and unsuccessful applicants for HCSTC (p-value) ⁴⁸	IV regression coefficient for impact of HCSTC access at the margin ⁴⁹ (standard error)
Missed any bills	0.28% (0.934)	0.0125 (0.0909)
Keeping up with no difficulties	-1.48% (0.651)	-0.032 (0.0839)
Keeping up but struggling	-5.03% (0.125)	-0.0649 (0.0856)
Falling behind on some bills or loan commitments	1.37% (0.608)	0.0206 (0.0759)
Falling behind on many bills or loan commitments	5.14% (0.006)	0.0763 (0.0492)

Problem debt

Problem debt status is defined as consumers with unpaid debt on their existing loans greater than 100% of principal. Focusing on this group we observe problem debt borrowers:

- Are materially more restricted in their choice of options compared to other HCSTC borrowers
- Are in more severe financial difficulties than other HCSTC users, which can translate into worse welfare outcomes
- Have a worse experience of HCSTC than other users, with more than half regretting taking out such loans, and less than 20% stating they would choose HCSTC again in the future

Problem debt borrowers are materially more restricted in their choice of options than other HCSTC users

Less than a quarter of HCSTC customers not on the margin (group 3) state they chose such a loan because they could not borrow the money from anywhere else. For the problem debt group almost 31% state this lack of options as the reason for borrowing through HCSTC rather than borrowing money in another way.

77% of problem debt borrowers further state that they would consider borrowing from family or friends as an alternative, compared to 70% for HCSTC customers not on the margin. Problem debt borrowers are also more likely to actually borrow from friends or family (71% vs 56% of HCSTC customers not on the margin).

The percentage of problem debt borrowers with overdraft facilities who have exceeded their overdraft limit is similar to that in group 3. A

⁴⁸ Confidence intervals reported in appendix

⁴⁹ *, ** and *** denote HCSTC use has statistically significant effects at 10%, 5%, 1% respectively

significantly higher proportion of borrowers in the problem debt group (compared to group 3) are unemployed (39% versus 9%) or have income from state benefits (51% compared to 17% in group 3).

74% of consumers in the problem debt group have no savings, compared to 57% of those in group 3. A higher proportion of consumers in the former group have not added up the debts they owe (28% vs 16% in group 3) or ignored debt letters (28% vs 16% in group 3).

Those with problem debt are in more severe financial difficulties than other HCSTC users

17% of problem debt borrowers state that they are falling behind with many bills and commitments (compared to 6% of group 3 consumers) and 29% falling behind with some bills and commitments (compared to 15% of less marginal consumers).

While 44% of less marginal consumers have missed a bill in the months after taking out a payday loan, the number for problem debt borrowers is 57%. This difference is statistically significant – as are the likelihood of missing rent or water bills. 27% of problem debt borrowers report seeking financial help, 18% has started debt management plans. In comparison, fewer than 15% of less marginal customers report seeking financial help, and 9% have started debt management plans since the time of first applying for HCSTC⁵⁰.

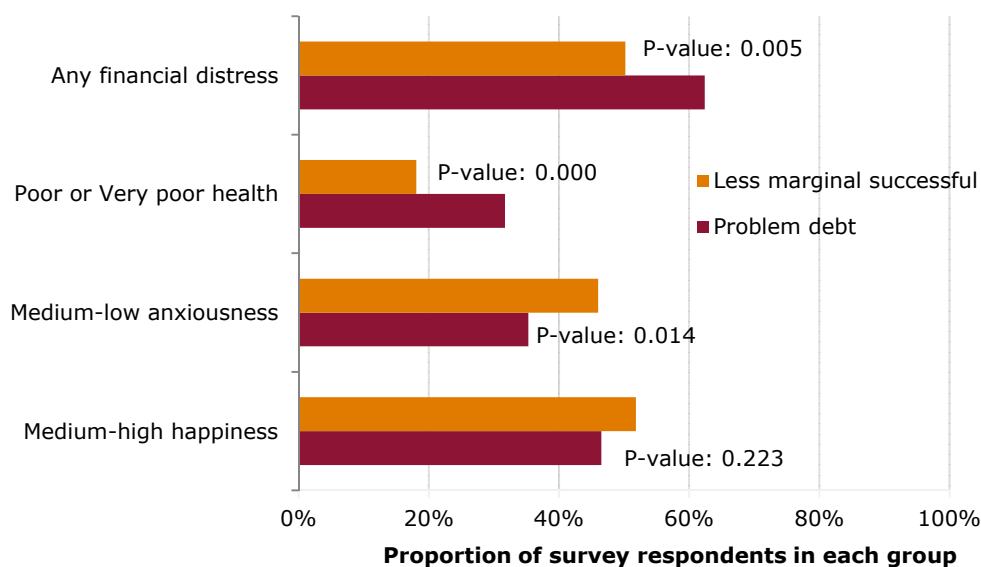
Problem debt users also have higher distress levels (62% compared to 50% for group 3) as displayed in Figure 20. Problem debt consumers are significantly more likely to experience stress, embarrassment, relationship or family issues than those in group 3. It is timely at this point to re-emphasise we cannot say HCSTC caused these outcomes, we can merely observe that consumers with unpaid HCSTC had significantly worse outcomes than consumers in group 3.

In line with the above indicators of financial distress, problem debt individuals exhibit lower welfare outcomes. Most noticeably, 32% of problem debt consumers report poor or very poor health compared to 18% of group 3 consumers; these findings are statistically significant.

Across the four well-being measures (life satisfaction, happiness, how worthwhile life is and how anxious are) consumers from the problem debt group report worse outcomes - although not always statistically significant. Medium-high life satisfaction levels are lower (46%) for problem debt borrowers than for the entire sample (50%). Similar differences are found for medium-high happiness (47% for problem debt borrowers compared to 52% of less marginal consumers). However, both of these differences are not statistically significant. Consumers with problem debt are observed to have noticeably higher (65%) level of anxiousness than less marginal consumers (54%) – this difference is statistically significant.

⁵⁰ The survey did not include whether or not they had used DMPs earlier than the timing of this application

Figure 20: Consumer Happiness With Decision to Use HCSTC



Problem debt borrowers have a worse experience of HCSTC than other users. More regret taking out such loans, more report having to pay back more than expected and more state they would not choose HCSTC in the future

Examining the experience of problem debt borrowers with HCSTC we observe 56% state they have ended up paying more than they expected. This is significantly more than the 28% of group 3 borrowers (those not at the margin) who report having to pay beyond their expectations. This is somewhat unsurprising as before been recorded as unpaid debt these consumers would have incurred charges from late payment. Regret levels are a lot higher for those with problem debt (67%) compared to less marginal consumers (31%). These high regret rates and paying more than expected coincide with problem debt borrowers being less likely to apply for HCSTC again (19% of problem debt borrowers compared to 40% of less marginal consumers would borrow again).

Habitual borrowers

Habitual borrowers are described as those who received more than 10 loans (in total, across all firms) during 2013. Focusing on this group, we find habitual borrowers:

- Become more dependent on HCSTC with more use. They increasingly start using HCSTC for regular expenditure and paying off debts
- The majority of habitual borrowers consider they could not possibly do without HCSTC, but the majority also regret taking out such loans

- Appear to be in worse financial circumstances than group 3 HCSTC users, and exhibit poor welfare outcomes

Habitual users become more dependent on HCSTC with more use. They increasingly start using HCSTC for regular expenditure and paying off debts

Comparing how habitual borrowers report using their first HCTSC loan to how they usually use money from subsequent loans shows noticeable changes. Habitual borrowers' use of their first loan is broadly in line with that for groups in the risk score sample. However, subsequent loans consumer use it less to fund discretionary expenditure such as holidays, going out or socialising and more for living expenses, rent, to pay off debts and shortfalls (the grey rows in Table 29). The increase use of HCSTC to regularly fund credit shortfall (under 1% of consumers on their first loans to 7% on subsequent loans), is especially noticeable.

Table 29: Changes in Habitual Borrower Use of HCSTC

T S S	% of respondents		Percentage change from first loan
	Habitual borrowers' use of first HCSTC (192 respondents)	Habitual borrowers' subsequent usual use of HCSTC (191 respondents)	
Regular non-discretionary expenditure	65 %	73%	12%
Household bills	39%	44%	12%
Living expenses and general shopping	27%	40%	51%
Rent or mortgage payments	4%	6%	38%
Potential shocks	9%	5%	-45%
Car/vehicle	7%	4%	-50%
Repair/replace broken household items	2%	2%	-24%
Discretionary spending	14%	7%	-46%
Consumer electronics	0%	1%	
A holiday, going out or socialising	9%	5%	-50%
Present/gift/Christmas	3%	2%	-40%
For wedding	<1%	<1%	0%
Gambling	<1%	0%	-100%
For home improvements	<1%	0%	-100%
Other	14%	20%	46%
To pay off HCSTC debts	<1%	2%	300%
To pay off other debts	3%	4%	60%
To fund shortfall	<1%	7%	1200%
Other	5%	3%	-44%
To help a friend or family member	3%	<1%	-80%
Business purposes	<1%	<1%	0%
To have as spare/ extra money	0%	3.1%	
Don't know	1%	2%	51%

The majority of habitual borrowers consider they 'couldn't possibly do without' HCSTC, but the majority also regret taking out such loans

The dependency of the habitual borrowers on HCSTC is high – taking out over 10 loans in a year. 52% state they definitely could not have gone without such loans. This compares with 28% for those who applied for but did not get HCSTC. We infer that habitual borrowers who do get such loans over estimate the importance or absolute need for this credit or judge their options have become even more limited.

While the majority of habitual borrowers state they could not have gone without HCSTC, the majority also regret taking out these loans. 51% of habitual borrowers express regret compared to 31% of consumers who less marginally got loans and 41% of those who marginally got loans. We infer that this combination of feeling (not been able to do without whilst regretting using these products shows similarities to behaviour that could be described as addictive-like.

Habitual borrowers appear to be in worse financial circumstances than other HCSTC users, and exhibit poor welfare outcomes

Whilst 21% of consumers who less marginally got loans and 32% of those who marginally got loans state they are falling behind some or many bills, 35% of habitual borrowers state the same. A further 37% of habitual borrowers state while they are keeping up with their bills and commitments, it is a struggle. In line with this a higher percentage of habitual borrowers (57%) report missing a bill compared 48% of marginal got loans.

29% of habitual debt borrowers report seeking financial help, and 19% have started debt management plans. In comparison, 22% of consumers who less marginally got loans and 15% of those who marginally got loans report seeking financial help, and 9% of consumers who less marginally got loans and 13% of those who marginally got loans have started debt management plans.

These stretched financial circumstances and dependency on HCSTC also translates into poor welfare outcomes. Wellbeing measures are lower for the habitual group compared to group 3, however, these differences are not statistically significant. These consumers also report statistically significantly higher financial distress than group 3 (60% compared to 50% in group 3).

14. Analysing Outcomes Under Different Cap Levels

a. Methodology for Analysing Outcomes Under Different Cap Levels

The IV analysis provides insight for the impact of not having access to HCSTC for those consumers currently at the margin of firm credit score cut-off thresholds, who currently have the highest chance of non-payment. However, the price cap is expected to also reduce access for consumers with higher credit scores as firms credit score cut-off thresholds are raised in response to the cap (group 3 in the survey design).

To inform the cap decision an assessment of the characteristics of consumers who could be expected not to receive loans under different cap levels was undertaken. Results are shown in this section. This analysis includes analysis of socio-economic characteristics as well as variables related to HCSTC use. The aim of this analysis is to understand how different cap levels will affect consumers. The methodological approach to do this is similar to that used in the CRA Data Analysis.

However, the approach used here differs from that used in the CRA Data Analysis. The small sample size of the survey meant that using local averages for groups of consumers who lose access to HCSTC under different cap levels would be highly sensitive to small sample size. Given this the following methodological approach was pursued.

A subsample of the consumers surveyed was chosen based on observations fulfilling all of the following criteria:

- i. A consumer having access to credit and being in groups 1, 2 or 3 only (analysis was limited to these groups in order maintain a consistent sample of first-time applicants and not skew the sample with by including individuals from the consumer risk groups)
- ii. The individual had given express permission to link CRA and firms data to their survey responses
- iii. There were at least 20 customers fitting the above criteria in a firm

This produced a sample of 712 consumers. The firms sampled from covered over 80% of the market by number of customers in the sample period (July - November 2013). Taking consumers from groups 1, 2 and 3 produced an uneven distribution compared to the population. Therefore, for each of these firms a kernel density was calculated from the population data to produce weights to be applied to the survey sample and ensure its distribution matched that of the population credit score.

Logit regressions were run on this sub-sample of the consumer survey data on a firm-by-firm level using the weighting approach outlined above.⁵¹ This approach produced a continuous function enabling the level

⁵¹ Sensitivity checks were carried out running probit models as well as allowing for non-linear functional form of regressors. This sensitivity check did not change the results presented.

of each variable to be estimated at different points in the credit score distribution. In these regressions the outcome variables were demographic characteristics and measures relating to consumers' financial, non-financial wellbeing and experience of HCSTC use.

The cut-offs calculated from the supply side model from firms' credit score distributions at different cap scenarios were applied to these regressions to provide estimates of how the level of each outcome varies at different caps. Under tighter caps firms have a higher threshold for accepting loan applications, as firms adopt higher credit score cut-offs and so grant fewer loans to customers.

These firm estimates were combined weighting marginal estimates by the sampled firms' relative market share of first-time customers between July-November 2013. Firms were given 0 weights at particular cap level (and other firms' weights adjusted accordingly), if, based on the results of the static supply-side model, no loans were granted in the preceding (higher) cap rate (as this would imply no marginal customers are excluded).

These results should not be interpreted as causal estimates of the effect on consumers at different points in the distribution not having access to HCSTC. Instead, they are approximations based on the estimated characteristics of consumers at current points in the credit score distribution.

b. Analysing outcomes under different cap levels

As mentioned above, to inform the cap decision an assessment of the characteristics of consumers who would no longer receives loans under different cap levels was carried out. The main results are presented below, for more detailed results please refer to table A23.

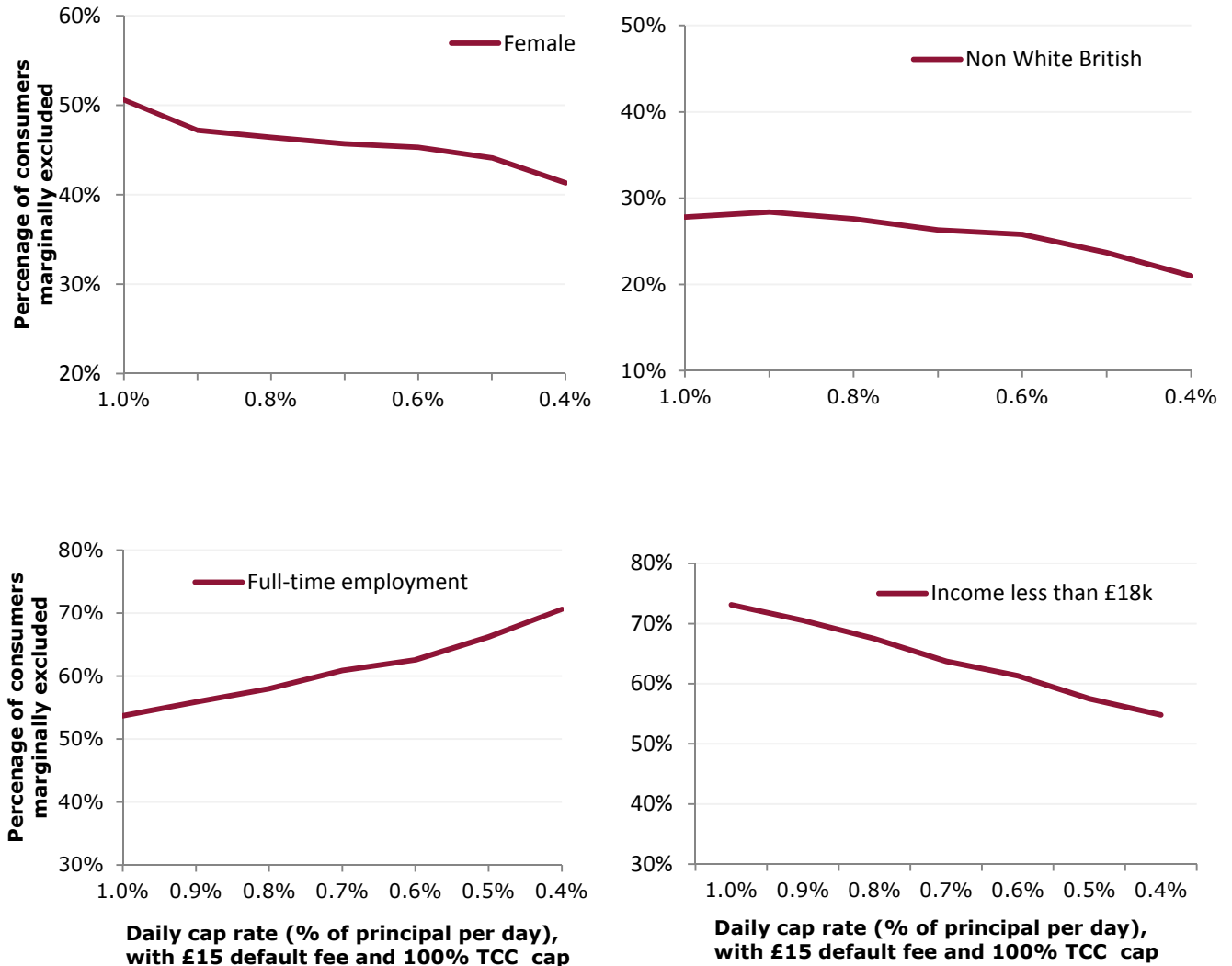
Socio-economic characteristics

Under tighter caps, the consumers that would be less likely to be (progressively) excluded are:

- Female (from around 51% at the 1% cap rate to 41% at 0.4% cap rate)
- Non-White-British (from 28% at the 1% cap to 21% at 0.4% cap)
- Unemployed (from 10% to 7% from 1% to 0.4%)
- Receiving state benefits (37% at 1% to 16% at 0.4%)
- Rent – especially from local authority/housing association (over 40% at 1% to near a quarter at 0.4%)
- Have an annual income below £18,000 (over 70% to 55% moving from 1% to 0.4%)

Under tighter caps there is little variation in education levels of consumers excluded.

Figure 21: Profile of Consumers Marginally Excluded Under Progressively Tighter Caps



Welfare and household finances

Under tighter caps, the marginal consumers excluded exhibit better financial situations compared to those currently at the margin of firms’ lending, however even those excluded at the lowest cap exhibit poor financial circumstances overall. As caps tighten the marginal consumers excluded are progressively less likely to:

- Experience distress due to their financial situation (34% at 1% rate to 30% at 0.4%)
- Falling behind with many bills or commitments (9% at 1% rate to under 4% at 0.4% rate)

- Have bank payments refused (38% at 1% to 31% at 0.4% rate)
- Not have an overdraft facility (70% at 1% to approximately 50% at 0.4%)
- Have no savings (60% at 1% to fewer than 50% at 0.4%)
- Chose HCSTC as it was viewed as their only option (26% to 22%)

Under tighter caps there is little variation in whether consumers excluded at different cap rates miss bills or experience any financial distress. These remain fairly high levels throughout.

Figure 22: Welfare and Financial Circumstances of Consumers Marginally Excluded Under Progressively Tighter Caps

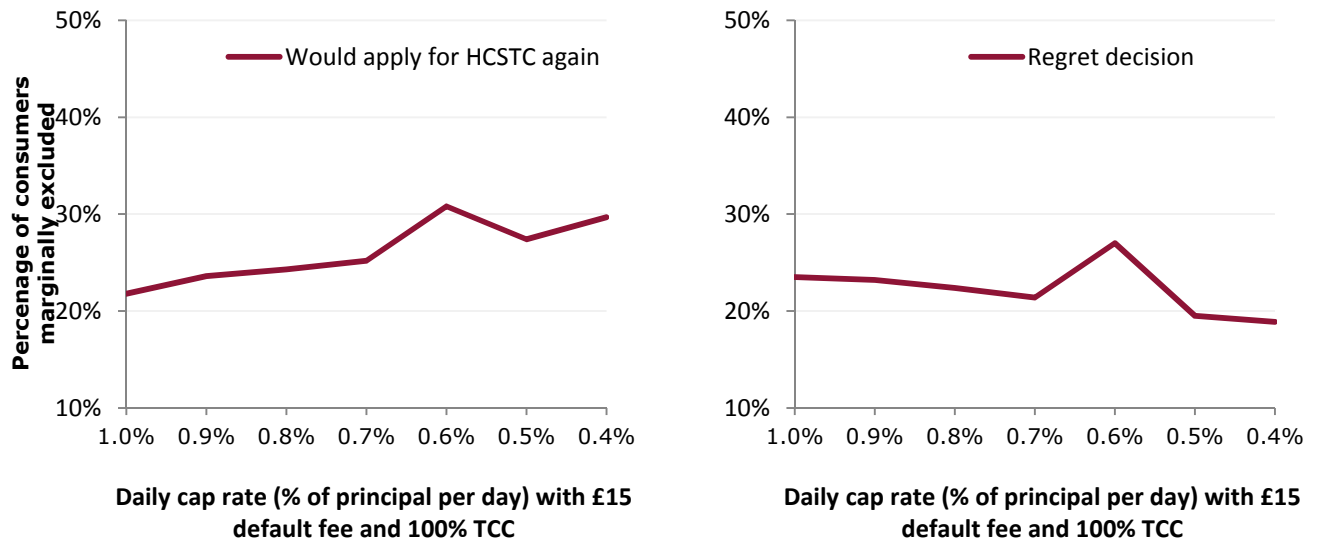


HCSTC experience

Under tighter caps the marginal consumers excluded are less likely than those at the current threshold to:

- Have repaid more than they expected (30% at 1% to 15% at 0.4%)
- Regret their decision to apply for HCSTC (23% at 1% to 19% at 0.4%)
- Go without HCSTC if faced with a similar solution again in the future (37% at 1% to 27% at 0.4%)

Figure 23: HCSTC Experience of Consumers Marginally Excluded Under Progressively Tighter Caps



c. Concluding Findings From The Survey Analysis

Q1. What are the socio-economic characteristics of consumers who apply for HCSTC?

In comparison to the UK population, HCSTC applicants are more commonly renters, have lower incomes, and, on average, are in their early 30s, with a greater proportion male than female. We find that, moving up the credit score distribution, under tighter caps consumers marginally excluded are more likely to have higher incomes and be in full-time employment. Consumers are typically in poor financial situations with rising debts and high prevalence of missing household bills.

Echoing earlier surveys we find a noticeable difference in the socio-economic characteristics of store users of HCSTC compared to online. Store users are typically older, with a higher proportion on state benefits and with lower incomes, a lower proportion employed and with overdraft facilities than online users.

Q2. What options are there for consumers who no longer have access to HCSTC?

The main alternative credit option for consumers who no longer have access to HCSTC is borrowing from family or friends.

Mainstream credit options, such as overdrafts and credit cards do not appear to be considered or used instead of HCSTC except by a small percentage of applicants.

The overwhelming majority of consumers are expected to not borrow without access to HCSTC. This can be due to forgoing consumption or making funds via reducing spending/selling assets.

Fewer than 5% of consumers currently consider using an illegal lender instead of HCSTC, and fewer than 2% have actually borrowed from one in the last six months. We do not find evidence that consumers are more likely to borrow from these sources without access to HCSTC.

Q3. Are consumers better or worse off without access to HCSTC?

Those with high unpaid debt do have worse welfare outcomes but we cannot identify whether this is caused by HCSTC. Compared to consumers with access to HCSTC, those without access do not appear to miss significantly more household bills, be more financially distressed, less satisfied, happy, or more anxious.

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Table A1: Firm Data Submission Summary of Data Coverage

Variable	Percentage missing in raw data			Percentage missing in first observation data		
	Successful applicants	Unsuccessful applicants	All	Successful applicants	Unsuccessful applicants	All
Variables identifying first loan applicants						
Date of first loan application incl. pre-2012	9%	17%	14%	2%	0%	1%
Date of first loan acceptance incl. pre-2012	9%	77%	51%	0%	75%	37%
Date loan written	6%	n/a	n/a	3%	n/a	n/a
Date loan applied for 2012-2013	7%	2%	4%	5%	0%	2%
Observation date (date written / date applied for)	0%	2%	1%	n/a	n/a	n/a
Variables identifying when an applicant got unsuccessful						
Application withdrawn	n/a	9%	n/a	n/a	1%	n/a
Application unsuccessful before final credit score stage	n/a	2%	n/a	n/a	0%	n/a
Application unsuccessful at final credit score stage	n/a	2%	n/a	n/a	0%	n/a
Application unsuccessful after final credit score stage	n/a	7%	n/a	n/a	0%	n/a
Credit score	31%	60%	49%	5%	13%	9%
Variables for loan characteristics						
Application process id	0%	2%	1%	0%	0%	0%
Unpaid debt	11%	n/a	n/a	6%	n/a	n/a
Variables for applicant characteristics						
Date of birth	0%	28%	18%	0%	9%	4%
Monthly income	7%	37%	26%	2%	10%	6%
Gender	17%	66%	48%	19%	55%	36%
Marital status	44%	78%	65%	43%	56%	49%
Employment status	2%	30%	19%	1%	9%	5%

Source: Analysis of firm data. Note: Raw data covers a period of time greater than only 2012/13 for some firms.

Table A2: Variables Constructed From CRA Credit File Records

Variable Name	Variable Tag	Type	Variable description	Type	Aggregation calculation	Origin of variable
LOAN APPLICATION VARIABLES						
Total Applications						
# Credit Items	chk	Number	total number of all credit checks	Number	Sum	(2)
Any Credit Items	chkd	Dummy	= 1 if any credit check	Dummy	Max	(2)
Numbers of Applications for Specific Credit Products						
# Credit Card Checks	ccchk	Number	total number of credit card checks	Number	Sum	(2)
# Personal Loan Checks	plchk	Number	total number of personal loan checks	Number	Sum	(2)
# Revolving Credit Checks	rcchk	Number	total number of revolving credit checks	Number	Sum	(2)
# Home Credit Checks	hcchk	Number	total number of home credit checks	Number	Sum	(2)
# Mortgage Checks	morchk	Number	total number of mortgage checks	Number	Sum	(2)
Whether Applied for Specific Credit Products						
Any Credit Card Checks	ccchkd	Dummy	= 1 if credit card check	Dummy	Max	(2)
Any Personal Loan Checks	plchkd	Dummy	= 1 if personal loan check	Dummy	Max	(2)
Any Revolving Credit Checks	rcchkd	Dummy	= 1 if revolving credit check	Dummy	Max	(2)
Any Home Credit Checks	hcchkd	Dummy	= 1 if home credit check	Dummy	Max	(2)
Any Mortgage Checks	morchkd	Dummy	= 1 if mortgage check	Dummy	Max	(2)
CREDIT PORTFOLIO VARIABLES						
All Credit Products						
# Credit products	cprod	Number	total number of all products held in month	Number	Max	(4)
Any Credit products	cprodd	Dummy	= 1 if credit product held	Dummy	Max	(4)
Number of Credit Products Held						
# Credit Cards	ccprod	Number	total number of credit card products held in month	Number	Max	(4)
# Personal Loans	plprod	Number	total number of personal loan products held in month	Number	Max	(4)
# Home Credit	hcprod	Number	total number of home credit products held in month	Number	Max	(4)
# Mail Orders	moprod	Number	total number of mail order products held in month	Number	Max	(4)
# Hire Purchases	hpprod	Number	total number of hire purchase products held in month	Number	Max	(4)
# Mortgages	morprod	Number	total number of mortgage held in month	Number	Max	(4)
# HCSTC Loans	pdprod	Number	total number of hcstc loan products held in month	Number	Max	(4)
# Other Products	othprod	Number	total number of other credit products held in month	Number	Max	(4)
# Current Accounts	currprod	Number	total number of current accounts in month	Number	Max	(4)

Technical Annex 3: Impact of the cap on HCSTC demand

# Household Bills	hhbmprod	Number	total number of household bills or mobile accounts in month	Number	Max	(4)
Whether Specific Credit Products Held						
Any Credit Cards	ccprodd	Dummy	= 1 if credit card product held	Dummy	Max	(4)
Any Personal Loans	plprodd	Dummy	= 1 if personal loan product held	Dummy	Max	(4)
Any Home Credit	hcprodd	Dummy	= 1 if home credit product held	Dummy	Max	(4)
Any Mail Orders	moprodd	Dummy	= 1 if mail order product held	Dummy	Max	(4)
Any Hire Purchases	hprodd	Dummy	= 1 if hire purchase product held	Dummy	Max	(4)
Any Mortgages	morprodd	Dummy	= 1 if mortgage held	Dummy	Max	(4)
Any HCSTC Loans	pdprodd	Dummy	= 1 if pay day loan product held	Dummy	Max	(4)
Any Other Products	othprodd	Dummy	= 1 if other credit product held	Dummy	Max	(4)
Any Current Accounts	currprodd	Dummy	= 1 if current account product held	Dummy	Max	(4)
Any Household Bills	hhbmprodd	Dummy	= 1 if household bill or mobile account held	Dummy	Max	(4)
Sum of Credit Products						
All Consumer Credit	bal	Balance	sum of all balances for individual excl. mortgages	Balance	Mean	(4)
All Non-HCSTC Credit	npdlbal	Balance	sum of all non-HCSTC loan balances (excl. mortgages) for individual excl. mortgages	Balance	Mean	(4)
All HCSTC	pdlbal	Balance	sum of all HCSTC balances for individual excl. mortgages	Balance	Mean	(4)
Log All Consumer Credit	lbal	Log balance	log of sum of all balances for individual excl. mortgages	Log balance	Mean	(4)
Log All Non-HCSTC Credit	lnpdlbal	Log balance	log of sum of all non-HCSTC loan balances (excl. mortgages) for individual excl. mortgages	Log balance	Mean	(4)
Log All HCSTC	lpdlbal	Log balance	log of sum of all HCSTC balances for individual excl. mortgages	Log balance	Mean	(4)
Credit Product Balances (Levels)						
Credit Cards	ccbal	Balance	sum of all credit card balances for individuals - (statement end balances from BDS)	Balance	Mean	(5)
Personal Loans	plbal	Balance	sum of all personal loan balances for individual excl. mortgages	Balance	Mean	(4)
Home Credit	hcbal	Balance	sum of all home credit balances for individuals - (statement end balances from BDS)	Balance	Mean	(5)
Mail Orders	mobal	Balance	sum of all mail order balances for individual	Balance	Mean	(4)
Hire Purchases	hpbal	Balance	sum of all hire purchase balances for individual	Balance	Mean	(4)
Household Bills	hhbmbal	Balance	sum of all household bills and mobile phone bills for individual	Balance	Mean	(4)
Cash Advances	cadv	Number	total cash advances by person across all credit card account	Number	Sum	(5)
Current Accounts	currbal	Balance	sum of all current account balances (i.e. overdrawn amount on balance)	Balance	Mean	(4)
Other	othbal	Balance	sum of other balances for individual	Balance	Mean	(4)
Credit Product Balances (Log)						
Log Credit Cards	lccbal	Log balance	log of sum of all credit card balances for individuals - (statement end balances from BDS)	Log balance	Mean	(5)
Log Personal loans	lplbal	Log balance	log of sum of all personal loan balances for individual excl. mortgages	Log balance	Mean	(4)

Technical Annex 3: Impact of the cap on HCSTC demand

Log Home Credit	lhcbal	Log balance	log of sum of all home credit balances for individuals - (statement end balances from BDS)	Log balance	Mean	(5)
Log Mail Orders	lmobal	Log balance	log of sum of all mail order balances for individual	Log balance	Mean	(4)
Log Hire Purchases	lhpbal	Log balance	log of sum of all hire purchase balances for individual	Log balance	Mean	(4)
Log Household Bills	lhhbmbal	Log balance	log of sum of all household bills and mobile phone bills for individual	Log balance	Mean	(4)
Log Cash Advances	cadvd	Dummy	= 1 if cash advance across all credit card accounts	Dummy	Max	(5)
Log Current Accounts	lcurrbal	Log balance	log of sum of all current account balances (i.e. overdrawn amount on balance)	Log balance	Mean	(4)
Log Other	lothbal	Log balance	log of sum of other balances for individual	Log balance	Mean	(4)

CREDITWORTHINESS VARIABLES

Bad Credit Events

Sum of Events

# All Accounts	bce	Number	total number of bad credit events across all accounts (defined as either having a missed payment or default on account - can be persistent)	Number	Sum	(4)
# Non-HCSTC Accounts	npdlbce	Number	total number of bad credit events not on HCSTCs	Number	Sum	(4)
# HCSTC Accounts	pdlbce	Number	total number of bad credit events on HCSTCs	Number	Sum	(4)
Any All Accounts	bced	Dummy	= 1 if bad credit event across all accounts (defined as either having a missed payment or default on account - can be persistent)	Dummy	Max	(4)
Any Non-HCSTC Accounts	npdlbced	Dummy	= 1 if bad credit event not on HCSTC	Dummy	Max	(4)
Any HCSTC Accounts	pdlbced	Dummy	= 1 if bad credit event on HCSTC	Dummy	Max	(4)

Number of Events on Specific Products

# Credit Card	ccbce	Number	total number of bad credit events on credit cards	Number	Sum	(4)
# Personal Loans	plbce	Number	total number of bad credit events on personal loans	Number	Sum	(4)
# Home Credit	hhcbce	Number	total number of bad credit events on home credit	Number	Sum	(4)
# Household Bills	hhbbce	Number	total number of bad credit events on household bills	Number	Sum	(4)
# Missed Mortgage Payments	missmor	Number	total number of missed mortgage payments in month	Number	Sum	(4)
# Exceeded Overdraft	cballimd	Dummy	= 1 if amount overdrawn on current account exceeded overdraft limit (= 1 if current account balance > limit)	Dummy	Max	(4)
# Mobile Accounts	mbspbce	Number	total number of bad credit events on mobile phone bills	Number	Sum	(4)

Whether Any Events on Specific Products

Any Credit Card	ccbced	Dummy	= 1 if bad credit event on credit cards	Dummy	Max	(4)
Any Personal Loans	plbced	Dummy	= 1 if bad credit event on personal loans	Dummy	Max	(4)
Any Home Credit	hhcbced	Dummy	= 1 if bad credit events on home credit	Dummy	Max	(4)
Any Household Bills	hhbbced	Dummy	= 1 if bad credit event on household bills	Dummy	Max	(4)
Any Missed Mortgage Payments	missmord	Dummy	= 1 if missed mortgage payment	Dummy	Max	(4)
Any Exceeded Overdraft	cballim	Number	Number of times where amount overdrawn on current account exceeds overdraft limit (= 1 if current account balance > limit)	Number	Sum	(4)

Technical Annex 3: Impact of the cap on HCSTC demand

Any Mobile Accounts	mbpbced	Dummy	= 1 if bad credit event on mobile phone bills	Dummy	Max	(4)
Worst Account Measures						
# Worsening Credit	wce	Number	total number of worsening credit events (defined as increasing the period of missed payment - e.g. 1 month to 2 month missed - or moving from missed payment to default i.e. 1-8)	Number	Sum	(4)
# Worsening Household Bills	hhbwce	Number	total number of worsening credit events on household bills	Number	Sum	(4)
Any Worsening Credit	wced	Dummy	= 1 if worsening credit event (defined as increasing the period of missed payment - e.g. 1 month to 2 month missed - or moving from missed payment to default)	Dummy	Max	(4)
Any Worsening Household Bills	hhbwced	Dummy	= 1 if worsening credit event on household bills	Dummy	Max	(4)
Worst Account Status	wrstac	Level	for each person, looking at the worst account status on all accounts. 0 = all accounts up to date; 1 = early missed payment on worst account (1-2 months); 2 = delinquent on account (3-6 months); 3 = default on account			
OTHER CREDITWORTHINESS VARIABLES						
Delinquency and Default Balances incl. HCSTC						
All Default Balances	defbal	Balance	sum of all default balances for individual excl. mortgages	Balance	Mean	(4)
All Delinquent Balances	ldefbal	Log balance	log of sum of all default balances for individual excl. mortgages	Log balance	Mean	(4)
Log All Default Balances	delbal	Balance	sum of all delinquent (missed payment of 3-6 months) balances for individual	Balance	Mean	(4)
Log All Delinquent Balances	ldelbal	Log balance	log of sum of all delinquent (missed payment of 3-6 months) balances for individual	Log balance	Mean	(4)
Default Balances as % Total Balances	ratdefbal	Ratio	default balances as a ratio of total balances	Ratio	Mean	(4)
Delinquent Balances as % Total Balances	ratdelbal	Ratio	delinquent balances as a ratio of total balances	Ratio	Mean	(4)
Delinquency and Default Balances excl. HCSTC						
Default Balances	npdldefbal	Balance	sum of all default balances for individual excl. mortgages and HCSTC loans	Balance	Mean	(4)
Log Default Balances	lnpdldefbal	Log balance	log of sum of all default balances for individual excl. mortgages and HCSTC loans	Log balance	Mean	(4)
Default Balances as % Total Balances	ratnpdldefbal	Ratio	non-HCSTC default balances as a ratio of non-HCSTC total balances	Ratio	Mean	(4)
Delinquent Balances as % Total Balances	ratnpdldefbal	Ratio	non-HCSTC delinquent balances (3-6 months) as a ratio of non-HCSTC total balances	Ratio	Mean	(4)
Personal Insolvency Outcomes						
Bankruptcy	bankruptcy	Dummy	=1 if bankruptcy	Dummy	Max	(1)
County Court Judgement	ccj	Dummy	=1 if county court judgement	Dummy	Max	(1)
Debt Relief Order	dro	Dummy	=1 if debt relief order	Dummy	Max	(1)
Insolvency	insol	Dummy	=1 if insolvency	Dummy	Max	(1)
IVA	iva	Dummy	=1 if individual voluntary arrangement	Dummy	Max	(1)

Judgement Order

jdjord

Dummy =1 if judgement order

Dummy Max

(1)

Table A3: Details of Data Cleaning Performed

Description

- 1 Where applicants were unsuccessful before the credit score stage, they were not included in the sample of first time applicants.
- 2 For credit account balances the aggregated variables removed the top and bottom one percentile of data, due to the long tail of very high balance values having a disproportionate effect on the variable means.
- 3 The names of the representative 8 firms were checked against the raw credit file data to ensure that HCSTC was recorded in the data in line with the FCA's definition. It was found that some of the loans made available by one of these firms were recorded as personal loans rather than payday loans in the CRA data. To make this consistent with the FCA's definition of HCSTC, these loans were recoded as payday loans.
- 4 The CRA data files included observations on credit products held / public outcomes for people associated with those who had applied for HCSTC (e.g. spouses), as well as the people themselves. For the purpose of our analysis, we only retained observations for the HCSTC applicants themselves, dropping observations for associated people.
- 5 For credit checks, duplicate checks by individual, application type, account number and month of application were dropped from the data on advice of the CRA, since firms will often perform multiple checks.
- 6 Definitions for the different credit product groupings used in the analysis e.g. mortgages, credit cards, were constructed from the product types in the CRA data based on advice from the CRA.

Source: FCA

Table A4: CRA Summary Statistics: Loan Application Outcomes

Outcome variable	Time period (months)	All Mean	SD	Gotloan7 Mean	SD
<i>Total Applications</i>					
# Credit Items	0-6	1.31	2.18	1.12	2.03
Any Credit Items	0-6	0.485	0.500	0.436	0.496
<i>Number of Applications for Specific Credit Products</i>					
# Credit Card Checks	0-6	0.316	0.833	0.295	0.821
# Personal Loan Checks	0-6	0.500	1.13	0.334	0.872
# Revolving Credit Checks	0-6	0.0360	0.196	0.0318	0.185
# Home Credit Checks	0-6	0.000349	0.0190	0.000351	0.0190
# Mortgage Checks	0-6	0.00669	0.0994	0.00631	0.0970
<i>Whether Applied for Specific Credit Products</i>					
Any Credit Card Checks	0-6	0.193	0.395	0.179	0.383
Any Personal Loan Checks	0-6	0.254	0.435	0.194	0.395
Any Revolving Credit Checks	0-6	0.0350	0.183	0.0302	0.171
Any Home Credit Checks	0-6	0.00035	0.0187	0.000346	0.0186
Any Mortgage Checks	0-6	0.00544	0.0735	0.00509	0.0712
<i>Total Applications</i>					
# Credit Items	6-12	0.802	1.62	0.710	1.57
Any Credit Items	6-12	0.349	0.477	0.310	0.462
<i>Number of Applications for Specific Credit Products</i>					
# Credit Card Checks	6-12	0.205	0.644	0.195	0.643
# Personal Loan Checks	6-12	0.260	0.787	0.180	0.638
# Revolving Credit Checks	6-12	0.0250	0.162	0.0231	0.157
# Home Credit Checks	6-12	0.00	0.0143	0.000201	0.0144
# Mortgage Checks	6-12	0.00600	0.0905	0.00543	0.0886
<i>Whether Applied for Specific Credit Products</i>					
Any Credit Card Checks	6-12	0.136	0.343	0.127	0.333
Any Personal Loan Checks	6-12	0.149	0.356	0.110	0.312
Any Revolving Credit Checks	6-12	0.0240	0.154	0.0221	0.147
Any Home Credit Checks	6-12	0.00	0.0140	0.000198	0.0141
Any Mortgage Checks	6-12	0.00500	0.0685	0.00444	0.0665

Table A5: CRA Summary Statistics: Credit Portfolio Products

Outcome variable	Time period (months)	All		Gotloan7		Just Below	Just Above	T-statistic
		Mean	SD	Mean	SD			
<i>All Credit Products</i>								
# Credit products	0-6	6.17	5.54	7.68	5.69	4.81	5.58	0.00
Any Credit products	0-6	0.867	0.340	0.956	0.206	0.808	0.853	0.00
<i>Number of Credit Products Held</i>								
# Credit Cards	0-6	0.708	1.34	0.785	1.37	0.547	0.603	0.00
# Personal Loans	0-6	0.346	0.817	0.430	0.903	0.247	0.294	0.00
# Home Credit	0-6	51.5	193	54.1	199	59.5	57.7	0.316
# Mail Orders	0-6	0.472	1.10	0.502	1.11	0.465	0.457	0.359
# Hire Purchases	0-6	1.34	1.60	1.45	1.61	1.30	1.29	0.625
# Mortgages	0-6	0.153	0.575	0.161	0.564	0.0978	0.110	0.00133
# HCSTC Loans	0-6	1.62	2.69	2.66	3.02	0.643	1.32	0.00
# Other Products	0-6	0.0892	0.363	0.100	0.383	0.0722	0.0743	0.438
# Current Accounts	0-6	1.20	1.09	1.33	1.06	1.14	1.13	0.744
# Household Bills	0-6	0.147	0.354	0.152	0.359	0.166	0.158	0.00875
<i>Whether Specific Credit Products Held</i>								
Any Credit Cards	0-6	0.344	0.475	0.384	0.486	0.291	0.304	0.000490
Any Personal Loans	0-6	0.216	0.412	0.265	0.441	0.166	0.192	0.00
Any Home Credit	0-6	0.488	1.89	0.522	1.97	0.543	0.538	0.752
Any Mail Orders	0-6	0.258	0.437	0.274	0.446	0.248	0.248	0.892
Any Hire Purchases	0-6	0.609	0.488	0.661	0.474	0.581	0.582	0.773
Any Mortgages	0-6	0.115	0.319	0.121	0.327	0.0796	0.0852	0.0137
Any HCSTC Loans	0-6	0.493	0.500	0.788	0.409	0.246	0.463	0.00
Any Other Products	0-6	0.0757	0.265	0.0818	0.274	0.0662	0.0646	0.432
Any Current Accounts	0-6	0.718	0.450	0.793	0.405	0.678	0.677	0.833
Any Household Bills	0-6	50.2	111	52.7	112	55.7	53.5	0.0286
<i>All Credit Products</i>								
# Credit products	6-12	7.36	6.76	9.32	7.17	5.55	6.38	0.00
Any Credit products	6-12	0.879	0.326	0.961	0.193	0.821	0.860	0.00
<i>Number of Credit Products Held</i>								
# Credit Cards	6-12	0.764	1.39	0.844	1.41	0.595	0.638	0.00

Technical Annex 3: Impact of the cap on HCSTC demand

# Personal Loans	6-12	0.413	0.943	0.519	1.06	0.294	0.342	0.00
# Home Credit	6-12	54.5	199	57.3	205	62.3	58.8	0.0651
# Mail Orders	6-12	0.522	1.17	0.552	1.18	0.518	0.501	0.110
# Hire Purchases	6-12	1.46	1.69	1.58	1.70	1.43	1.40	0.131
# Mortgages	6-12	0.160	0.594	0.167	0.580	0.0994	0.110	0.00798
# HCSTC Loans	6-12	2.40	4.13	3.85	4.73	0.987	1.78	0.00
# Other Products	6-12	0.0964	0.379	0.108	0.400	0.0774	0.0791	0.574
# Current Accounts	6-12	1.25	1.13	1.38	1.11	1.19	1.18	0.615
# Household Bills	6-12	0.158	0.364	0.164	0.370	0.179	0.170	0.00449
<i>Whether Specific Credit Products Held</i>								
Any Credit Cards	6-12	0.366	0.482	0.407	0.491	0.311	0.319	0.0685
Any Personal Loans	6-12	0.244	0.429	0.299	0.458	0.188	0.215	0.00
Any Home Credit	6-12	0.553	2.07	0.590	2.15	0.621	0.604	0.368
Any Mail Orders	6-12	0.278	0.448	0.295	0.456	0.269	0.265	0.271
Any Hire Purchases	6-12	0.637	0.481	0.686	0.464	0.606	0.602	0.401
Any Mortgages	6-12	0.118	0.323	0.124	0.330	0.0807	0.0849	0.0858
Any HCSTC Loans	6-12	0.523	0.499	0.807	0.394	0.287	0.482	0.00
Any Other Products	6-12	0.0809	0.273	0.0872	0.282	0.0703	0.0678	0.258
Any Current Accounts	6-12	0.727	0.445	0.796	0.403	0.687	0.683	0.346
Any Household Bills	6-12	62.0	138	65.1	139	67.9	66.1	0.180

Table A6: CRA Summary Statistics: Credit Portfolio Balances

Outcome variable	Time period (months)	All		Gotloan7		Just Below	Just Above	T-statistic
		Mean	SD	Mean	SD			
<i>Sum of Credit Product Balances</i>								
All Consumer Credit	0-6	1720	3390	2010	3580	1330	1480	0.00
All Non-HCSTC Credit	0-6	1650	3370	1900	3580	1300	1380	0.000300
All HCSTC	0-6	57.7	109	95.6	128	30.2	72.1	0.00
Log All Consumer Credit	0-6	4.51	3.19	5.19	2.88	4.00	4.41	0.00
Log All Non-HCSTC Credit	0-6	4.10	3.37	4.52	3.31	3.79	3.84	0.0927
Log All HCSTC	0-6	1.04	1.66	1.72	1.85	0.500	1.15	0.00
<i>Credit Product Balances (Levels)</i>								
Credit Cards	0-6	309	953	359	1020	215	239	0.000356
Personal Loans	0-6	410	1510	485	1630	289	321	0.00370
Home Credit	0-6	51.5	193	54.1	199	59.5	57.7	0.316
Mail Orders	0-6	46.3	164	52.0	174	40.5	42.6	0.0997
Hire Purchases	0-6	83.3	582	94.7	621	66.8	73.0	0.167
Household Bills	0-6	50.2	111	52.7	112	55.7	53.5	0.0286
Cash Advances	0-6	0.156	0.725	0.187	0.796	0.120	0.129	0.0937
Current Accounts	0-6	172	410	203	442	141	150	0.00667
Other	0-6	8.11	59.3	9.31	63.4	6.53	6.79	0.560
<i>Credit Product Balances (Log)</i>								
Log Credit Cards	0-6	1.29	2.61	1.48	2.76	1.02	1.09	0.00119
Log Personal loans	0-6	0.854	2.33	1.03	2.51	0.629	0.713	0.00
Log Home Credit	0-6	0.540	1.66	0.560	1.69	0.616	0.597	0.199
Log Mail Orders	0-6	0.623	1.69	0.686	1.77	0.567	0.584	0.222
Log Hire Purchases	0-6	0.172	1.09	0.194	1.16	0.141	0.159	0.0334
Log Household Bills	0-6	1.35	1.96	1.46	1.99	1.35	1.33	0.169
Log Cash Advances	0-6	0.0710	0.257	0.0847	0.278	0.0584	0.0612	0.154
Log Current Accounts	0-6	1.54	2.43	1.78	2.54	1.36	1.40	0.0405
Log Other	0-6	0.116	0.748	0.133	0.800	0.0929	0.0990	0.291
<i>Sum of Credit Product Balances</i>								
All Consumer Credit	6-12	1760	3280	2050	3450	1430	1520	0.000503
All Non-HCSTC Credit	6-12	1670	3250	1900	3430	1360	1400	0.189

Technical Annex 3: Impact of the cap on HCSTC demand

All HCSTC	6-12	77.6	169	122	199	45.3	91.5	0.00
Log All Consumer Credit	6-12	4.62	3.22	5.27	2.96	4.16	4.42	0.00
Log All Non-HCSTC Credit	6-12	4.23	3.34	4.67	3.26	3.94	3.93	0.665
Log All HCSTC	6-12	1.12	2.02	1.75	2.30	0.623	1.19	0.00
<i>Credit Product Balances (Levels)</i>								
Credit Cards	6-12	302	906	348	967	222	233	0.100
Personal Loans	6-12	397	1430	470	1530	295	313	0.115
Home Credit	6-12	54.5	199	57.3	205	62.3	58.8	0.0651
Mail Orders	6-12	53.3	181	59.8	193	47.9	48.0	0.933
Hire Purchases	6-12	87.4	600	98.6	636	67.0	78.5	0.0185
Household Bills	6-12	62.0	138	65.1	139	67.9	66.1	0.180
Cash Advances	6-12	0.122	0.645	0.148	0.709	0.0908	0.0896	0.791
Current Accounts	6-12	181	421	213	453	150	156	0.0992
Other	6-12	8.53	60.9	9.71	64.9	7.20	7.33	0.801
<i>Credit Product Balances (Log)</i>								
Log Credit Cards	6-12	1.33	2.61	1.51	2.75	1.09	1.10	0.601
Log Personal loans	6-12	0.935	2.35	1.15	2.55	0.713	0.800	0.00
Log Home Credit	6-12	0.563	1.69	0.585	1.73	0.635	0.602	0.0356
Log Mail Orders	6-12	0.661	1.72	0.727	1.80	0.611	0.607	0.763
Log Hire Purchases	6-12	0.176	1.09	0.198	1.16	0.138	0.160	0.0131
Log Household Bills	6-12	1.44	2.05	1.56	2.08	1.44	1.41	0.108
Log Cash Advances	6-12	0.0557	0.229	0.0665	0.249	0.0421	0.0429	0.636
Log Current Accounts	6-12	1.60	2.48	1.85	2.59	1.42	1.45	0.170
Log Other	6-12	0.120	0.747	0.136	0.796	0.0978	0.0976	0.971

Table A7: CRA Summary Statistics: Bad Credit Events

Outcome variable	Time period (months)	All		Gotloan7		Just Below	Just Above	T-statistic
		Mean	SD	Mean	SD			
<i>Sum of Events</i>								
# All Accounts	0-6	4.10	4.52	4.26	4.59	6.96	7.18	0.00
# Non-HCSTC Accounts	0-6	3.84	4.09	4.09	4.09	6.79	6.95	0.961
# HCSTC Accounts	0-6	0.270	0.437	0.176	0.499	1.02	1.25	0.00
Any All Accounts	0-6	0.509	0.567	0.504	0.538	0.500	0.495	0.00
Any Non-HCSTC Accounts	0-6	0.471	0.505	0.484	0.477	0.499	0.500	0.0800
Any HCSTC Accounts	0-6	0.0975	0.158	0.0612	0.154	0.297	0.364	0.00
<i>Number of Events on Specific Products</i>								
# Credit Card	0-6	0.709	0.808	0.606	0.677	2.45	2.59	0.000230
# Personal Loans	0-6	0.233	0.271	0.207	0.218	1.18	1.27	0.269
# Home Credit	0-6	0.694	0.726	0.797	0.799	3.03	3.11	0.931
# Household Bills	0-6	1.03	1.06	1.23	1.16	2.56	2.56	0.00506
# Missed Mortgage Payments	0-6	0.153	0.169	0.133	0.143	1.07	1.09	0.242
# Exceeded Overdraft	0-6	0.260	0.280	0.275	0.270	0.438	0.449	0.246
# Mobile Accounts	0-6	0.000790	0.000702	0.00219	0.000710	0.0599	0.0549	0.0355
<i>Whether Any Events on Specific Products</i>								
Any Credit Card	0-6	0.140	0.161	0.124	0.133	0.347	0.368	0.00237
Any Personal Loans	0-6	0.0537	0.0644	0.0487	0.0514	0.225	0.245	0.137
Any Home Credit	0-6	0.0877	0.0909	0.104	0.0991	0.283	0.288	0.0785
Any Household Bills	0-6	0.230	0.242	0.256	0.247	0.421	0.428	0.0157
Any Missed Mortgage Payments	0-6	0.0307	0.0342	0.0267	0.0276	0.172	0.182	0.478
Any Exceeded Overdraft	0-6	0.936	0.991	1.03	1.00	2.12	2.14	0.174
Any Mobile Accounts	0-6	0.000240	0.000230	0.000508	0.000216	0.0155	0.0152	0.0605
<i>Worst Account Measures (excl HCSTC)</i>								
# Worsening Credit	0-6	1.83	1.96	2.03	2.03	3.67	3.79	0.894
# Worsening Household Bills	0-6	0.626	0.647	0.749	0.719	1.73	1.74	0.0661
Any Worsening Credit	0-6	0.420	0.454	0.429	0.424	0.494	0.498	0.274
Any Worsening Household Bills	0-6	0.205	0.217	0.226	0.220	0.404	0.412	0.0727
Worst Account Status	0-6	1.12	1.23	1.17	1.22	1.26	1.26	0.00
<i>Sum of Events</i>								

Technical Annex 3: Impact of the cap on HCSTC demand

# All Accounts	6-12	5.25	6.07	5.32	5.79	8.40	8.93	0.00
# Non-HCSTC Accounts	6-12	4.57	5.00	4.87	4.82	7.77	8.09	0.528
# HCSTC Accounts	6-12	0.686	1.07	0.451	0.967	2.10	2.54	0.00
Any All Accounts	6-12	0.545	0.609	0.538	0.567	0.498	0.488	0.00
Any Non-HCSTC Accounts	6-12	0.500	0.539	0.513	0.505	0.500	0.498	0.107
Any HCSTC Accounts	6-12	0.148	0.227	0.0980	0.191	0.355	0.419	0.00
<i>Number of Events on Specific Products</i>								
# Credit Card	6-12	0.823	0.949	0.742	0.802	2.73	2.90	0.0106
# Personal Loans	6-12	0.360	0.464	0.305	0.357	1.50	1.69	0.00
# Home Credit	6-12	0.764	0.804	0.876	0.850	3.18	3.28	0.375
# Household Bills	6-12	1.20	1.25	1.40	1.30	2.85	2.88	0.000177
# Missed Mortgage Payments	6-12	0.142	0.159	0.126	0.129	1.02	1.05	0.768
# Exceeded Overdraft	6-12	0.260	0.282	0.266	0.262	0.438	0.450	0.293
# Mobile Accounts	6-12	0.000729	0.000759	0.000825	0.000621	0.0540	0.0560	0.677
<i>Whether Any Events on Specific Products</i>								
Any Credit Card	6-12	0.151	0.174	0.138	0.143	0.358	0.379	0.156
Any Personal Loans	6-12	0.0810	0.105	0.0692	0.0831	0.273	0.307	0.00
Any Home Credit	6-12	0.0969	0.100	0.112	0.108	0.296	0.300	0.110
Any Household Bills	6-12	0.252	0.264	0.276	0.267	0.434	0.441	0.0278
Any Missed Mortgage Payments	6-12	0.0292	0.0329	0.0247	0.0261	0.168	0.178	0.330
Any Exceeded Overdraft	6-12	1.06	1.15	1.14	1.12	2.38	2.46	0.332
Any Mobile Accounts	6-12	0.000250	0.000254	0.000434	0.000138	0.0158	0.0159	0.0406
<i>Worst Account Measures (excl HCSTC)</i>								
# Worsening Credit	6-12	1.94	2.17	2.05	2.06	3.75	3.95	0.946
# Worsening Household Bills	6-12	0.632	0.667	0.712	0.675	1.69	1.72	0.0206
Any Worsening Credit	6-12	0.433	0.473	0.438	0.436	0.495	0.499	0.680
Any Worsening Household Bills	6-12	0.214	0.227	0.231	0.224	0.410	0.419	0.0611
Worst Account Status	6-12	1.36	1.53	1.37	1.47	1.37	1.37	0.00

Table A8: CRA Summary Statistics: Other Creditworthiness Outcomes

Outcome variable	Time period (months)	All		Gotloan7		Just Below	Just Above	T-statistic
		Mean	SD	Mean	SD			
<i>Delinquency and Default Balances incl. HCSTC</i>								
All Default Balances	0-6	99.9	105	108	106	329	338	0.471
All Delinquent Balances	0-6	0.825	0.848	0.931	0.892	1.86	1.87	0.0169
Log All Default Balances	0-6	70.8	78.8	79.0	85.3	228	240	0.00207
Log All Delinquent Balances	0-6	0.601	0.654	0.679	0.716	1.41	1.44	0.00294
Default Balances as % Total Balances	0-6	0.127	0.106	0.166	0.134	0.267	0.237	0.00
Delinquent Balances as % Total Balances	0-6	0.0717	0.0670	0.0917	0.0899	0.158	0.151	0.272
<i>Delinquency and Default Balances excl. HCSTC</i>								
Default Balances	0-6	97.7	101	107	103	328	337	0.147
Log Default Balances	0-6	0.799	0.808	0.916	0.855	1.85	1.86	0.000153
<i>Delinquency and Default Balances incl. HCSTC</i>								
All Default Balances	6-12	216	249	218	251	560	593	0.00
All Delinquent Balances	6-12	1.51	1.73	1.56	1.77	2.43	2.54	0.00
Log All Default Balances	6-12	96.6	111	101	111	284	303	0.000106
Log All Delinquent Balances	6-12	0.786	0.881	0.844	0.887	1.64	1.71	0.00468
Default Balances as % Total Balances	6-12	0.246	0.244	0.287	0.307	0.354	0.350	0.00
Delinquent Balances as % Total Balances	6-12	0.0933	0.0895	0.113	0.111	0.186	0.179	0.311
<i>Delinquency and Default Balances excl. HCSTC</i>								
Default Balances	6-12	185	200	199	198	536	561	0.886
Log Default Balances	6-12	1.24	1.31	1.40	1.37	2.27	2.31	0.118
<i>Personal Insolvency Outcomes</i>								
Bankruptcy	0-12	0.000101	0.000102	0.000156	0.000124	0.0100	0.0101	0.739
County Court Judgement	0-12	0.00195	0.00191	0.00207	0.00207	0.0441	0.0436	0.998
Debt Relief Order	0-12	0.00	0.00	0.000156	0.000124	0.00821	0.00877	0.739
Insolvency	0-12	0.000281	0.000292	0.000352	0.000340	0.0168	0.0171	0.939
IVA	0-12	0.000113	0.000113	0.00	0.00	0.0106	0.0106	0.440
Judgement Order	0-12	0.00167	0.00162	0.00172	0.00173	0.0408	0.0402	0.975

Table A9: RDD Estimates for Loan Application Outcomes

Outcome variable	Time period (months)	LP1	LP2	LP3	LP4	LP5	LP6	LP7	LP8	LP9
<i>Total Applications</i>										
# Credit Items	0-6	-	+*	+***	+***	+	+***	-	+***	+***
Any Credit Items	0-6	-	+	+***	+***	-	+***	+	+***	+***
<i>Number of Applications for Specific Credit Products</i>										
# Credit Card Checks	0-6	-	+	+*	+	+	+*	-	+*	+**
# Personal Loan Checks	0-6	+	+***	+***	+***	+*	+***	+	+***	+***
# Revolving Credit Checks	0-6	-	+	+	+	+*	-	-	-	+
# Home Credit Checks	0-6	-			+	-	+		-	+
# Mortgage Checks	0-6	-	+	+	+	+	-	-	+	-
<i>Whether Applied for Specific Credit Products</i>										
Any Credit Card Checks	0-6	-	+	+	+*	+	+	-	+*	+**
Any Personal Loan Checks	0-6	+	+**	+***	+***	+	+***	+	+***	+***
Any Revolving Credit Checks	0-6	-	+	+	+	+	-	-	-	+
Any Home Credit Checks	0-6	-			+	-	+		-	+
Any Mortgage Checks	0-6	-	+	+	+	+	-	-	-	-
<i>Total Applications</i>										
# Credit Items	6-12	-	+	+	+	+	+	-	+	+
Any Credit Items	6-12	-	+	-	-	-	+	+	+	+
<i>Number of Applications for Specific Credit Products</i>										
# Credit Card Checks	6-12	+	+	+	-	+	-	+	-	-
# Personal Loan Checks	6-12	+	+	+	+	+	+**	+	+***	+*
# Revolving Credit Checks	6-12	-	+*	+	+	-	+	+	-**	+
# Home Credit Checks	6-12			-	-				+	+
# Mortgage Checks	6-12	-	+	-	+	+	+		+	-
<i>Whether Applied for Specific Credit Products</i>										
Any Credit Card Checks	6-12	+	+	-	-	+	+	+	-	-
Any Personal Loan Checks	6-12	-	+	+	+	+	+**	+	+**	+**
Any Revolving Credit Checks	6-12	-*	+*	+	+	-	+	+	-**	+
Any Home Credit Checks	6-12			-	-				+	+
Any Mortgage Checks	6-12	-	-	-	+	-	+		+	-

Table A10: RDD Estimates for Credit Portfolio Products

Outcome variable	Time period (months)	LP1	LP2	LP3	LP4	LP5	LP6	LP7	LP8	LP9
<i>All Credit Products</i>										
# Credit products	0-6	-	+	+***	+***	+***	+**	+***	+***	+***
Any Credit products	0-6	+		+***	+***	+***	+***	+***	+***	+***
<i>Number of Credit Products Held</i>										
# Credit Cards	0-6	-	-	+*	+	-	-**	-	-	-
# Personal Loans	0-6	+	-	+**	+*	+	-	+	+***	+***
# Home Credit	0-6	-	+	-	-	+	+	+	-	+
# Mail Orders	0-6	-	-	+*	+	-*	-	-	-	+
# Hire Purchases	0-6	-	-	+*	+**	+	-	+	+	+
# Mortgages	0-6	-	-	+	-	-	-*	-*	-	-
# HCSTC Loans	0-6	+***	+***	+***	+***	+***	+***	+***	+***	+***
# Other Products	0-6	-*	-*	+*	-	+	-	+	-	+
# Current Accounts	0-6	-**	+	+	+	+	-	-	+	+
# Household Bills	0-6	-	-	+	+***	-	-	-	-**	+
<i>Whether Specific Credit Products Held</i>										
Any Credit Cards	0-6	-	-	+*	+	-	-*	+	-	-
Any Personal Loans	0-6	-	-	+**	+	+*	-	+	+***	+***
Any Home Credit	0-6	-	+	+	-	-	+	+	-	+*
Any Mail Orders	0-6	-	+	+	+	-*	-	+	-	+
Any Hire Purchases	0-6	-	-	+	+***	-	-**	+**	-	-
Any Mortgages	0-6	-	-*	+	-	-	-*	-	-**	-
Any HCSTC Loans	0-6	+***	+***	+***	+***	+***	+***	+***	+***	+***
Any Other Products	0-6	-	-*	+	+	-	-	-	-*	-
Any Current Accounts	0-6	-**	+	+	+	-*	+	-	+	+*
Any Household Bills	0-6	-	+	+	+**	-	-	+	-**	+
<i>All Credit Products</i>										
# Credit products	6-12	-	+	+***	+***	+***	+***	+***	+***	+***
Any Credit products	6-12	+	+**	+***	+***	+***	+***	+**	+***	+***
<i>Number of Credit Products Held</i>										
# Credit Cards	6-12	-	-	+	+	+	-**	-	-	-*
# Personal Loans	6-12	+	-	+***	+	+	-	+	+***	+***

Technical Annex 3: Impact of the cap on HCSTC demand

# Home Credit	6-12	-	+	-	-	+	+	+	-	+
# Mail Orders	6-12	-	-	+	+	-	-	-	-	-
# Hire Purchases	6-12	-*	-*	+	+	+	-	+	+	+
# Mortgages	6-12	-	-	+	-	-	-*	-	-	-
# HCSTC Loans	6-12	+***	+***	+***	+***	+***	+***	+***	+***	+***
# Other Products	6-12	-*	-	+	-	+	-	+	-	+
# Current Accounts	6-12	-*	+	+	+	-	-	-	+	+
# Household Bills	6-12	-	+	+	+	-	-	-	-*	+
<i>Whether Specific Credit Products Held</i>										
Any Credit Cards	6-12	-	+	+	-	-	-*	-	-	-*
Any Personal Loans	6-12	-	+	+***	+	+	-	+	+***	+***
Any Home Credit	6-12	-	+	+	-	-	+	+	-	+
Any Mail Orders	6-12	-	-	+	+	-*	-	+	-	+
Any Hire Purchases	6-12	-	-**	+	+**	-	-*	+	-	-
Any Mortgages	6-12	-	-	+	-	-	-*	-	-**	-
Any HCSTC Loans	6-12	+***	+***	+***	+***	+***	+***	+***	+***	+***
Any Other Products	6-12	-	-	-	+	-	-	+	-**	-
Any Current Accounts	6-12	-*	+	+	+	-	+	-	+	+
Any Household Bills	6-12	-	+	+	+**	-	-	-	-**	+

Table A11: RDD Estimates for Credit Portfolio Balances

Outcome variable	Time period (months)	LP1	LP2	LP3	LP4	LP5	LP6	LP7	LP8	LP9
<i>Sum of Credit Product Balances</i>										
All Consumer Credit	0-6	-	-	+*	+	+*	-	+	+**	+**
All Non-HCSTC Credit	0-6	-	-	+	+	+	-**	-	-	-
All HCSTC	0-6	+	+***	+***	+***	+***	+***	+***	+***	+***
Log All Consumer Credit	0-6	-	+	+***	+***	+***	+***	+	+***	+***
Log All Non-HCSTC Credit	0-6	-	+	+*	+	-	-	-	-	+
Log All HCSTC	0-6	+	+***	+***	+***	+***	+***	+***	+***	+***
<i>Credit Product Balances (Levels)</i>										
Credit Cards	0-6	+	-	+	-	-	-**	-	-	-
Personal Loans	0-6	+	-	+	-	-	-***	+	-	-
Home Credit	0-6	-	+	-	-	-	+	+	-	+*
Mail Orders	0-6	-	-	+	+*	-	-*	+	-	+
Hire Purchases	0-6	+	-	+	+*	+	-**	+	+*	+
Household Bills	0-6	+	+	+	-	+	+	+	-**	-
Cash Advances	0-6	-	+	+**	+	+	-	+***	-	-
Current Accounts	0-6	+	-	+	+***	-	+	+	+	-
Other	0-6	+	-	-	+	-	+	+	-	+
<i>Credit Product Balances (Log)</i>										
Log Credit Cards	0-6	+	-	+	-	-	-*	+***	-	-
Log Personal loans	0-6	-	+	+	+	+	-*	+	+	+
Log Home Credit	0-6	-	+	-	-*	-	+	+	-	+**
Log Mail Orders	0-6	-	+	+	+	-	-**	+	-	+
Log Hire Purchases	0-6	-	-	+*	+	-	-*	+**	+*	+
Log Household Bills	0-6	-	+	+	+	+	+	+	-*	+
Log Cash Advances	0-6	-*	+	+*	+	+	-	+	-	-
Log Current Accounts	0-6	+	+	+	+*	+	+	-	+	+
Log Other	0-6	+	-	-	+	-	+	-	-	-
<i>Sum of Credit Product Balances</i>										
All Consumer Credit	6-12									
All Non-HCSTC Credit	6-12									
All HCSTC	6-12									
Log All Consumer Credit	6-12	-	-	+	+	+*	-	-	+***	+**

Technical Annex 3: Impact of the cap on HCSTC demand

Log All Non-HCSTC Credit	6-12	-	-*	-	-	+	-*	-	-	-
Log All HCSTC	6-12	+***	+	+***	+***	+***	+***	+	+***	+***
<i>Credit Product Balances (Levels)</i>		-	+	+***	+**	+***	+***	-	+***	+***
Credit Cards	6-12	-	+	+	+	+	-	-	+	+**
Personal Loans	6-12	+***	+	+***	+***	+***	+***	+	+***	+***
Home Credit	6-12									
Mail Orders	6-12	+	-	+	+	-	-*	-	-	-
Hire Purchases	6-12	-	-	-	-	+	-*	-	+	+
Household Bills	6-12	-	+	-	-	-	+**	-	-	+**
Cash Advances	6-12	-	-	+	+	-	-*	+	-	+
Current Accounts	6-12	-	-	+	+**	+	-	+	+	-
Other	6-12	+	+	+	-	+	+**	+	-	+
<i>Credit Product Balances (Log)</i>		-	-	-	-	-	-	-	+	-
Log Credit Cards	6-12	+	+	+	+	+	+	-	+	-
Log Personal loans	6-12	-	-	-	-	-	+	+	-	+
Log Home Credit	6-12									
Log Mail Orders	6-12	-	-	+	-	+	-*	+***	-	-*
Log Hire Purchases	6-12	-	+	+	+	+	-	-	+***	+***
Log Household Bills	6-12	-	+	-	-	-	+**	-	-	+***
Log Cash Advances	6-12	-	+	+	+	-	-*	+	-	+
Log Current Accounts	6-12	-	-	+	+**	-	-*	+**	+	+
Log Other	6-12	-	+	+	+	+	+	+	-	+
Log Cash Advances	6-12	+	-	-	-	+	-	-	+	-
Log Current Accounts	6-12	+	-	+	+	+	+	+	+	+
Log Other	6-12	+	+	-	-	+	+	-	-	+

Table A12: RDD Second Stage Estimates for Bad Credit Events

Outcome variable	Time period (months)	LP1	LP2	LP3	LP4	LP5	LP6	LP7	LP8	LP9
<i>Sum of Events</i>										
# All Accounts	0-6	-	+	+***	+	+	+***	+**	+	+***
# Non-HCSTC Accounts	0-6	-	-	+*	-	-	+	+	-	+
# HCSTC Accounts	0-6	+	+*	+***	+***	+***	+***	+***	+***	+***
Any All Accounts	0-6	-	+	+***	+***	+**	+***	+**	+***	+***
Any Non-HCSTC Accounts	0-6	-	+	+***	+	-	+	+	-	+
Any HCSTC Accounts	0-6	+	+***	+***	+***	+***	+***	+***	+***	+***
<i>Number of Events on Specific Products</i>										
# Credit Card	0-6	+	-	+	+	+	+	+*	-	-
# Personal Loans	0-6	-	-	+	+	-	-	+**	-	-
# Home Credit	0-6	-	+	+	-*	+	-	-	+	+
# Household Bills	0-6	-	+	+	+	+	+	+	-*	+
# Missed Mortgage Payments	0-6	+	-	+	-	-	+	+	-	-
# Exceeded Overdraft	0-6	+	-	-	-	-	+*	-	+**	+
# Mobile Accounts	0-6	-	-	-	-	-	-	+	-	-
<i>Whether Any Events on Specific Products</i>										
Any Credit Card	0-6	+	-	+	+	+	+	+	-	-
Any Personal Loans	0-6	-	-	+	+	-	+	+	-	-
Any Home Credit	0-6	-	+	+	-*	-	+	-	-	+
Any Household Bills	0-6	-	+	+*	+	+	+	+	-	+
Any Missed Mortgage Payments	0-6	+	-	+	-	-	+	-	-	+
Any Exceeded Overdraft	0-6	+	-	-	-	+	+*	+	+	+
Any Mobile Accounts	0-6	-	-	-	-	-	-	+	-	-
<i>Worst Account Measures (excl HCSTC)</i>										
# Worsening Credit	0-6	-	+	+*	-	-	+*	+	-	+
# Worsening Household Bills	0-6	-	+	+*	-	+	+	+	-	-
Any Worsening Credit	0-6	-*	+	+***	+	-	+	-	-	+*
Any Worsening Household Bills	0-6	-	+	+*	+	-	+	+	-	+
Worst Account Status	0-6	-	+	+***	+*	+*	+***	+	+*	+***
<i>Sum of Events</i>										
# All Accounts	6-12	-	+	+***	+*	+*	+***	+	+***	+***
# Non-HCSTC Accounts	6-12	-	+	+	-	-	+***	+	+	+

Technical Annex 3: Impact of the cap on HCSTC demand

# HCSTC Accounts	6-12	+	+	+***	+***	+***	+***	+**	+***	+***
Any All Accounts	6-12	-	+	+***	+***	+***	+***	+*	+***	+***
Any Non-HCSTC Accounts	6-12	-	+	+**	+	-	+	+	+	+***
Any HCSTC Accounts	6-12	+***	+	+***	+***	+***	+***	+***	+***	+***
<i>Number of Events on Specific Products</i>										
# Credit Card	6-12	+	+	+	+	+	+*	+	+	-
# Personal Loans	6-12	+	-	+	-	+	+*	+	+***	+***
# Home Credit	6-12	-	+**	-	-*	+	+	-	-	+
# Household Bills	6-12	-	+	-	+	-	+**	+	-*	+
# Missed Mortgage Payments	6-12	+	+	+	-	+	+	+	+	-
# Exceeded Overdraft	6-12	-	-	+	+	+	+*	+	+*	+**
# Mobile Accounts	6-12				-		+		+	-
<i>Whether Any Events on Specific Products</i>										
Any Credit Card	6-12	-	+	+	+	+	+	+	+	-
Any Personal Loans	6-12	-	-	+*	+	+	+	+	+***	+***
Any Home Credit	6-12	+	+	+	-*	-	+	-	-	+**
Any Household Bills	6-12	-	+	+	+	+	+**	-	-	+
Any Missed Mortgage Payments	6-12	+	+	+	+	+	+	+	-	-
Any Exceeded Overdraft	6-12	+	-	+	+	-	+***	+	+*	+
Any Mobile Accounts	6-12				-		-		-	-
<i>Worst Account Measures (excl HCSTC)</i>										
# Worsening Credit	6-12	-	+	+	+	-	+*	+	+	+
# Worsening Household Bills	6-12	-	+	-	+	-	+	+	-	+
Any Worsening Credit	6-12	-	+	+	+	-	+**	+	+	+***
Any Worsening Household Bills	6-12	+	+	+	+	+	+***	-	-	+
Worst Account Status	6-12	+	+	+***	+***	+***	+***	+*	+***	+***

Table A13: RDD Second Stage Estimates for Other Creditworthiness Outcomes

Outcome variable	Time period (months)	LP1	LP2	LP3	LP4	LP5	LP6	LP7	LP8	LP9
<i>Delinquency and Default Balances incl. HCSTC</i>										
All Default Balances	0-6	+	-	+	-	+	+	+	-	-
All Delinquent Balances	0-6	+	-	+	-	-	+	+	-	-
Log All Default Balances	0-6	-	+	+	-	-	+	+	+	+
Log All Delinquent Balances	0-6	-	+	+	-	-	+	+	+	+
Default Balances as % Total Balances	0-6	+	-	-	-	-	-	-	-	-
Delinquent Balances as % Total Balances	0-6	-	+	-	-	-	+	+	+	+
<i>Delinquency and Default Balances excl. HCSTC</i>										
Default Balances	0-6	+	-	+	-	+	+	+	-	-
Log Default Balances	0-6	+	-	+	-	-	+	+	-	-
<i>Delinquency and Default Balances incl. HCSTC</i>										
All Default Balances	6-12	+	-	+	+	+	+	-	+	+
All Delinquent Balances	6-12	+	-	+	+	+	+	+	+	+
Log All Default Balances	6-12	+	+	+	+	+	+	+	+	+
Log All Delinquent Balances	6-12	+	+	+	+	+	+	-	+	+
Default Balances as % Total Balances	6-12	-	-	+	+	+	+	+	+	+
Delinquent Balances as % Total Balances	6-12	+	+	-	-	-	+	-	-	+
<i>Delinquency and Default Balances excl. HCSTC</i>										
Default Balances	6-12	+	-	+	-	-	+	-	+	+
Log Default Balances	6-12	+	-	+	-	-	+	+	+	+
<i>Personal Insolvency Outcomes</i>										
Bankruptcy	0-12								+	
County Court Judgement	0-12	-	+	-	-	+	-	+	+	-
Debt Relief Order	0-12					+			+	-
Insolvency	0-12					+	+		+	-
IVA	0-12						+			
Judgement Order	0-12	-	+	-	-	+	-	+	+	-

Table A14: RDD Robustness Falsification Tests for Loan Application Outcomes

Outcome variable	Time period (months)	LP1	LP2	LP3	LP4	LP5	LP6	LP7	LP8	LP9	All
<i>Total Applications</i>											
# Credit Items	0-6	-	+	-	-	-	+***	+	-	-	-
Any Credit Items	0-6	-	+	-	+	-*	+***	+	-	+	-
<i>Number of Applications for Specific Credit Products</i>											
# Credit Card Checks	0-6	+	+	-	-	-	+**	+	-*	-	-
# Personal Loan Checks	0-6	-	+	-	+	-	+***	+**	+	+	+
# Revolving Credit Checks	0-6	-	-	-	-	+	+	+	+	+	+
# Home Credit Checks	0-6			+			+		-	-	-*
# Mortgage Checks	0-6	-	-	+	-	-	-	-	+	-	-
<i>Whether Applied for Specific Credit Products</i>											
Any Credit Card Checks	0-6	-	+	-	-	-	+**	-	-	-	-
Any Personal Loan Checks	0-6	-	+*	-	+	-	+***	+**	+	+	+
Any Revolving Credit Checks	0-6	-	-	-	-	+	+	+	+	+	+
Any Home Credit Checks	0-6			+			+		-	-	-*
Any Mortgage Checks	0-6	-	-	+	-	-	-	-	+	-	-
<i>Total Applications</i>											
# Credit Items	6-12	-**	+	+	+*	-	-	-	-*	+	-
Any Credit Items	6-12	-**	-	+	+**	-	+	-	-	+	-
<i>Number of Applications for Specific Credit Products</i>											
# Credit Card Checks	6-12	-*	+	+	+	+	+	-	-	-	-
# Personal Loan Checks	6-12	-	+	-	+**	-	+**	+	-*	-	-
# Revolving Credit Checks	6-12	-	+	-	-	+*	+	-	-	+	-
# Home Credit Checks	6-12			+	+				+	+	+*
# Mortgage Checks	6-12	-	-	+	+	-	-	-	+	+	-
<i>Whether Applied for Specific Credit Products</i>											
Any Credit Card Checks	6-12	-*	-	+	+	+	+	-	-	-	-
Any Personal Loan Checks	6-12	-	+	-	+*	-	+	+	-	-	-
Any Revolving Credit Checks	6-12	-	+	-	-	+*	+	-	-	+	-
Any Home Credit Checks	6-12			+	+				+	+	+*
Any Mortgage Checks	6-12	-	-	+	+	-	-	-	+	+	-

Table A15: RDD Robustness Falsification Tests for Credit Portfolio Products

Outcome variable	Time period (months)	LP1	LP2	LP3	LP4	LP5	LP6	LP7	LP8	LP9	All
<i>All Credit Products</i>											
# Credit products	0-6	-	+	+**	+	-	-	-	-	-	-
Any Credit products	0-6	-	+	+***	+	-	-	+	+	+***	+**
<i>Number of Credit Products Held</i>											
# Credit Cards	0-6	-	-	+	+	-	-**	-	-	-	-
# Personal Loans	0-6	-	-	+**	+*	-	-	+	-	+	+
# Home Credit	0-6	-	+	+	+	+	+	+	-	+	-
# Mail Orders	0-6	-	-	+**	+*	-*	-	-	-	+	-
# Hire Purchases	0-6	-	-	+	+	+	-*	+	+	+	+
# Mortgages	0-6	-	-	+	-	-	-*	-*	-	-	-**
# HCSTC Loans	0-6	-	+*	+	+	+	+	+	+	+	+**
# Other Products	0-6	-*	-*	+	+	+	-	+	-	+	-
# Current Accounts	0-6	-	-	+	+	+	-	-*	-	+	-
# Household Bills	0-6	-	-	+**	+***	-	-	+	-*	+	-
<i>Whether Specific Credit Products Held</i>											
Any Credit Cards	0-6	-	-	+	-	-*	-*	+	-*	-	-**
Any Personal Loans	0-6	+	-	+	+	-	-	+	-	+	-
Any Home Credit	0-6	-	+	+	-	-	+	+	-	+	+
Any Mail Orders	0-6	-	+	+*	+	-	-	+	-*	+	-
Any Hire Purchases	0-6	-	-	+	+	-	-**	+**	-	-	-
Any Mortgages	0-6	+	-*	+	-	-*	-*	-	-**	-	-***
Any HCSTC Loans	0-6	-	+*	-	+	-	-	+	-	-	-
Any Other Products	0-6	-	-*	+	+	-	-	+	-**	-	-**
Any Current Accounts	0-6	-*	+	+	+	-	+	-	+	+*	+
Any Household Bills	0-6	-	+	+*	+***	-	-	+	-*	+*	+
<i>All Credit Products</i>											
# Credit products	6-12	-	+	+*	+	-	-	-	-	-	-
Any Credit products	6-12	-	+	+***	+	-	+	-	-	+*	+
<i>Number of Credit Products Held</i>											
# Credit Cards	6-12	-	-	+	+	-	-**	-	-	-	-
# Personal Loans	6-12	-	-	+**	+	-	-**	+	-	+	-

Technical Annex 3: Impact of the cap on HCSTC demand

# Home Credit	6-12	-	+	+	+	+	+	+	-	+	+
# Mail Orders	6-12	-	-	+*	+	-	-	-	-	-	-
# Hire Purchases	6-12	-	-	+	+	+	-*	+	+	+	+
# Mortgages	6-12	+	-	+	-	-	-*	-	-	-	-**
# HCSTC Loans	6-12	-	+*	+	+	-	+	+*	+	+	+**
# Other Products	6-12	-	-*	+	+	-	-	+	-	+	-
# Current Accounts	6-12	-	+	+	+	-	-	-*	-	+	-
# Household Bills	6-12	+	-	+*	+	-	-	-	-*	-	-
<i>Whether Specific Credit Products Held</i>											
Any Credit Cards	6-12	+	-	+	-	-*	-**	+	-*	-*	-**
Any Personal Loans	6-12	-	-*	+	+	-	-*	-	-	+	-
Any Home Credit	6-12	-	+	+	-	-	-	+	-	+	+
Any Mail Orders	6-12	+	+	+	+	-	-	-	-*	+	-
Any Hire Purchases	6-12	-	-	+	+**	-*	-**	+*	-	-	-
Any Mortgages	6-12	+	-*	+	-	-*	-*	-	-**	-*	-***
Any HCSTC Loans	6-12	+	+*	-	+	-*	-	+*	-	-	-
Any Other Products	6-12	-	-	+	-	-*	-	+	-**	-	-***
Any Current Accounts	6-12	-	+	+	+	-	+	-	-	+	+
Any Household Bills	6-12	-	-	+**	+	-	-	-	-*	+	-

Table A16: RDD Robustness Falsification Tests for Credit Portfolio Balances

Outcome variable	Time period (months)	LP1	LP2	LP3	LP4	LP5	LP6	LP7	LP8	LP9	All
<i>Sum of Credit Product Balances</i>											
All Consumer Credit	0-6	+	+	+	+	+	_*	-	-	-	-
All Non-HCSTC Credit	0-6	+	+	+	+	+	_*	-	-	-	-
Log All Consumer Credit	0-6	+	+	+**	+	-	-	-	_*	+	+
Log All Non-HCSTC Credit	0-6	+	+	+**	+	+	-	-	_*	+	+
<i>Credit Product Balances (Levels)</i>											
Credit Cards	0-6	+	-	+	+	+	_*	-	+	+	+
Personal Loans	0-6	+	-	-	+	-	_*	-	-	-	-
Home Credit	0-6	-	+	-	-	+	+	+	-	+	+
Mail Orders	0-6	+	-	+	+	-	_*	-	-	+	+
Hire Purchases	0-6	-	-	+	+	+	+	+*	+	+	+
Household Bills	0-6	+	+	+*	+	+	-	+	_*	+*	+
Cash Advances	0-6	-	-	+**	+	-	+	+*	+	-	+
Current Accounts	0-6	+	-	+	+*	+	+	+	-	_*	-
Other	0-6	-	-	+	+	_*	+	-	-	+	-
<i>Credit Product Balances (Log)</i>											
Log Credit Cards	0-6	-	-	+	+	-	_*	+	-	-	-
Log Personal loans	0-6	-	-	+	+	-	_*	-	+	-	-
Log Home Credit	0-6	-	+	+	_*	+	+	+	-	+	+
Log Mail Orders	0-6	+	+	+	+	+	_*	-	-	+	+
Log Hire Purchases	0-6	-	+	-	+	-	+	+	+	+	+
Log Household Bills	0-6	+	+	+***	+	+	-	+	_*	+*	+
Log Cash Advances	0-6	-	+	+*	+	-	-	+	-	-	+
Log Current Accounts	0-6	+	+	+	+*	+	+	-	-	-	+
Log Other	0-6	_*	_*	+	+	_*	-	-	-	+	-
<i>Sum of Credit Product Balances</i>											
All Consumer Credit	6-12	+	-	+	+	-	_*	-	-	-	-
All Non-HCSTC Credit	6-12	+	-	+	+	-	_*	-	-	-	-
Log All Consumer Credit	6-12	+*	-	+	+	+	_*	+	_*	-	-
Log All Non-HCSTC Credit	6-12	+*	-	+	+	+	_*	+	_*	-	-
<i>Credit Product Balances (Levels)</i>											

Technical Annex 3: Impact of the cap on HCSTC demand

Credit Cards	6-12	+	-	+	-	-	-**	-	+	+	-
Personal Loans	6-12	-	-	+	+	-	-	-	-	-	_*
Home Credit	6-12	-	-	-	-	+	+	+	+	+	+
Mail Orders	6-12	+	-	+	+	+	_*	-	+	+	+
Hire Purchases	6-12	-	-	+	+	-	+	+	+	-	-
Household Bills	6-12	+	+	+	+	+	-	+	-**	-	-
Cash Advances	6-12	-	-	+*	+**	-	-	+	-	-	+
Current Accounts	6-12	+	-	+	+**	-	-	+	-	_*	-
Other	6-12	-	+	+	+	-	-	+	-	+	-
<i>Credit Product Balances (Log)</i>											
Log Credit Cards	6-12	-	-	+*	-	+	_*	-	-	-	_*
Log Personal loans	6-12	-	-	+	+	-	_*	+	+	-	-
Log Home Credit	6-12	-	+	+	-	+	+	-	-	+	+
Log Mail Orders	6-12	+	-	+	+	+	_*	-	+	+	+
Log Hire Purchases	6-12	_*	-	-	+*	-	-	+*	-	-	-
Log Household Bills	6-12	+	+	+*	+	+	-	+	-	-	-
Log Cash Advances	6-12	-	_*	+	+***	-	-	+	+	+	-
Log Current Accounts	6-12	+	+	+	+*	-	+	-	-	-	-
Log Other	6-12	+	-	+	-	-	-	+	-	+	-

Table A17: RDD Robustness Falsification Tests for Bad Credit Events

Outcome variable	Time period (months)	LP1	LP2	LP3	LP4	LP5	LP6	LP7	LP8	LP9	All
<i>Sum of Events</i>											
# All Accounts	0-6	+	+	+*	+	+	-	+	-	-	-
# Non-HCSTC Accounts	0-6	+	+	+*	+	+	-	+	-	-	-
# HCSTC Accounts	0-6	+	+	+	+	-	+	+	+*	+	+*
Any All Accounts	0-6	+	+	+**	+	+	-	-	-*	+	-
Any Non-HCSTC Accounts	0-6	+	+	+**	+	+	-	-	-*	+	-
Any HCSTC Accounts	0-6	+	+	-	+	-	+	+	+**	+	+*
<i>Number of Events on Specific Products</i>											
# Credit Card	0-6	+	-	+*	+	+	-	+***	+	-	+
# Personal Loans	0-6	+	-	+	+*	-	-*	+*	-	-	-
# Home Credit	0-6	-	+	+	-	+	+	-	+	+	+
# Household Bills	0-6	+	-	+	+	+	+	+	-*	+	-
# Missed Mortgage Payments	0-6	+	-	+	+	-	-	+***	-	+	+
# Exceeded Overdraft	0-6	-	-	+	+	-	-	+	-	-	-
# Mobile Accounts	0-6					-					-
<i>Whether Any Events on Specific Products</i>											
Any Credit Card	0-6	+	+	+	+	+	-	-	-	-	-
Any Personal Loans	0-6	-	-	+	+	-	-	+	-	+	-
Any Home Credit	0-6	-	+	+	-*	+	+	-	+	+	+
Any Household Bills	0-6	+	+	+	-	+	-	+	-	+	+
Any Missed Mortgage Payments	0-6	+	-	+	+	-	-	+	-	+	+
Any Exceeded Overdraft	0-6	+	-	+	+	+	+	-	-	-	-
Any Mobile Accounts	0-6					-					-
<i>Worst Account Measures (excl HCSTC)</i>											
# Worsening Credit	0-6	-	+	+*	+	+	-	+	-	-	-
# Worsening Household Bills	0-6	+	+	+	+	+	-	+	-	+	+
Any Worsening Credit	0-6	+	+	+*	+	+	-	-	-**	+	-
Any Worsening Household Bills	0-6	+	+	+	-	+	-	-	-*	+*	+
Worst Account Status	0-6	+	-	+**	-	-	-	-	-	-	-
<i>Sum of Events</i>											
# All Accounts	6-12	+	-	+	+	+	-	+	-	+	+

Technical Annex 3: Impact of the cap on HCSTC demand

# Non-HCSTC Accounts	6-12	+	-	+	+	+	-	+	-	+	+
# HCSTC Accounts	6-12	+	+	-		-	+	-	+	-	-
Any All Accounts	6-12	+	-	+	+	+	-	-	-	+	+
Any Non-HCSTC Accounts	6-12	+	-	+	+	+	-	+	-	+	+
Any HCSTC Accounts	6-12	+	-	-		-	+	-	+	+	-
<i>Number of Events on Specific Products</i>											
# Credit Card	6-12	+	+	+	-	+	-	***	+	-	+
# Personal Loans	6-12	-	-	+	+	-	**	+	+	-	+
# Home Credit	6-12	-	+	+	-	+	+	-	+	+	+
# Household Bills	6-12	+	-	-	+	+	-	+	-	-	+
# Missed Mortgage Payments	6-12	+	-	+	+	-	-	+	-	+	+
# Exceeded Overdraft	6-12	-	+	+	+	-	-	-	-	-	-
<i>Whether Any Events on Specific Products</i>											
Any Credit Card	6-12	+	-	+	+	+	-	+	-	+	+
Any Personal Loans	6-12	-	-	+	+	-	*	+	-	+	+
Any Home Credit	6-12	+	+	+	-	+	+	+	+	+	+
Any Household Bills	6-12	+	+	+	+	+	-	+	-	-	+
Any Missed Mortgage Payments	6-12	+	-	+	+	-	-	+	-	+	+
Any Exceeded Overdraft	6-12	-	-	+	-	+	+	+	-	-	-
<i>Worst Account Measures (excl HCSTC)</i>											
# Worsening Credit	6-12	+	-	+	+	+	-	+	+	-	+
# Worsening Household Bills	6-12	+	+	-	-	+	-	+	-	-	+
Any Worsening Credit	6-12	+	-	+	+	+	-	-	-	+	+
Any Worsening Household Bills	6-12	+	+	+	+	+	-	+	-	+	+
Worst Account Status	6-12	+	-	+	+	+	-	+	-	-	-

Table A18: RDD Robustness Falsification Tests for Other Creditworthiness Outcomes

Outcome variable	Time period (months)	LP1	LP2	LP3	LP4	LP5	LP6	LP7	LP8	LP9	All
<i>Delinquency and Default Balances incl. HCSTC</i>											
All Default Balances	0-6	+	-	+	-	+	+	+	+	-	+
All Delinquent Balances	0-6	+	+	+	-	-	+	+	-	-	-
Log All Default Balances	0-6	-	+	+	-	+	+	-	+	-	-
Log All Delinquent Balances	0-6	+	+	+	-*	-	+	-	-	+	+
Default Balances as % Total Balances	0-6	+	-	-	-	+	+	-	+	-*	-
Delinquent Balances as % Total Balances	0-6	+	+	-*	-	-	+	+	+	+	-
<i>Delinquency and Default Balances excl. HCSTC</i>											
Default Balances	0-6	+	-	+	-	+	+	+	+	-	+
Log Default Balances	0-6	+	-	+	-	+	+	+	-	-	-
<i>Delinquency and Default Balances incl. HCSTC</i>											
All Default Balances	6-12	+	-	-	-	+	-	-	+	-	-
All Delinquent Balances	6-12	+	-	-	-	+	-	+	+	-	+
Log All Default Balances	6-12	-	-	-	+	+	+	+	+	+	+
Log All Delinquent Balances	6-12	-	-	-	-	+	+	+	+	+	+
Default Balances as % Total Balances	6-12	+	-	-	-	+	+	-	+	-	-
Delinquent Balances as % Total Balances	6-12	-	-	-	-	-	+	+	+	-	+
<i>Delinquency and Default Balances excl. HCSTC</i>											
Default Balances	6-12	+	-	-	-	+	-	-	+	-	-
Log Default Balances	6-12	+	-	-	-	+	-	+	-	-	-
<i>Personal Insolvency Outcomes</i>											
Bankruptcy	0-12										
County Court Judgement	0-12	-	-	-	-		-	+	-	-	-
Debt Relief Order	0-12	-									-
Insolvency	0-12	-								-	-
IVA	0-12									-	-
Judgement Order	0-12	-	-	-	-		-	+	-	-	-

Table A19: Codebook For Variable Names

Variable name	Variable label detail	Survey question source (unless specified otherwise)
Permission to link other data	Data linkage question – whether consumer gave permission to link data	qlink
Age	Age – calculated from date of birth provided in firm data	Firm data
Male	Male	qgen
additional_adults	Number of additional adults in household	qadult
Partner	Currently living with partner	qpartner
Children	Number of children in household	qchild
home_own	Own their home outright	qacc
home_mortgage	Own their home with a mortgage	qacc
home_private_rent	Rent from a private landlord	qacc
home_social_rent	Rent from local authority/housing association	qacc
home_shared_ownership	Pay part rent and part mortgage (shared ownership)	qacc
home_rent_free	Live rent free (inc. rent free in relative/friend's property)	qacc
home_squat	Squatting	qacc
home_other	Other accomodation	qacc
ethnic_white_brit	White British	qethnic
ethnic_white_irish	White Irish	qethnic
ethnic_other_white	Other White background	qethnic
ethnic_mixed	Mixed ethnicity	qethnic
ethnic_asian	Asian or Asian British	qethnic
ethnic_black	Black or Black British	qethnic
ethnic_chinese	Chinese	qethnic
ethnic_other	Other ethnicity	qethnic
qualifications	Whether have any qualifications for which received a certificate, or any professional, vocational or other work-related qualifications	qquals
education_degree	Highest qualification: degree-level or above education	qqualsh
education_diploma	Highest qualification: higher education diploma	qqualsh
education_alevel	Highest qualification: A level	qqualsh
education_gcse	Highest qualification: GCSE	qqualsh
education_other	Other highest qualification	qqualsh
fulltime_employed	Currently full-time employed	qemps
parttime_employed	Currently part-time employed	qemps
unemployed	Ccurrently unemployed	qemps
Retired	Currently retired	qemps
fteducation	Currently in education	qemps
unable_to_work	Unable to work diue to ill-health/disability	qemps
looking_after_family	Looking after family	qemps
other_work_status	Other work status	qemps

Technical Annex 3: Impact of the cap on HCSTC demand

income_partner	Whether partner is receiving any income from paid work	qincp
income_employment	Source of income: Earnings from employment or self-employment	qinc_01
income_pension	Source of income: Pension	qinc_02
income_childbenefit	Source of income: Child Benefit	qinc_03
income_statebenefit	Source of income: Other State Benefits	qinc_04
income_taxcredits	Source of income: Tax Credits	qinc_05
income_othersource	Source of income: Other income sources e.g. rent, regular allowance from outside	qinc_06
income_noregularsource	Source of income: No source of regular income	qinc_07
income_nosource	Source of income: No source of income	qinc_08
income_under_6k	Annual income under £6,000	qincan
income_6k_to_12k	Annual income between £6,000 - £11,999	qincan
income_12k_to_18k	Annual income between £12,000 - £17,999	qincan
income_18k_to_24k	Annual income between £18,000 - £23,999	qincan
income_24k_to_36k	Annual income between £24,000 - £35,999	qincan
income_36k_to_50	Annual income between £36,000 - £49,999	qincan
income_over_50k	Annual income more than £50,000	qincan
irregular_income	Receive irregular/variable income	qincrg
health_very_poor	Very poor health over the last 6 months	qillco
health_poor	Poor health over the last 6 months	qillco
health_fair	Fair health over the last 6 months	qillco
health_good	Good health over the last 6 months	qillco
health_excellent	Excellent health over the last 6 months	qillco
Happy	Wellbeing: How happy was yesterday	qhappy
Anxious	Wellbeing: How anxious felt yesterday	qanxio
worthwhile	Wellbeing: Extent to which feel the things you do in life are important	qworth
Satisfied	Wellbeing: How satisfied with life nowadays	qsat
happiness_medium_high	dummy for if happiness recorded as medium-high(7-10)	qhappy
anxiousness_medium_low	dummy for if anxiousness recorded as low-medium(0-3)	qanxio
worthwhile_medium_high	dummy for if worthwhile recorded as medium-high(7-10)	qworth
satisfied_medium_high	dummy for if satisfied recorded as medium-high(7-10)	qsat
keeping_up_no_difficulties	Keeping up with bills without any difficulties	qtopbil
keeping_up_but_struggling	Keeping up with bills, but it is a struggle	qtopbil
falling_behind_some_bills	Falling behind with some bills and commitments	qtopbil
falling_behind_many_bills	Falling behind with many bills and commitments?	qtopbil
any_missed_bills	Dummy variable if behind on any bills	qpaym_01-qpaym_16
missed_fuel_bill	Whether missed payment since July 2013: Fuel bills	qpaym_01
missed_rent_bill	Whether missed payment since July 2013: Rent	qpaym_02
missed_council_tax_bill	Whether missed payment since July 2013: Council Tax	qpaym_03
missed_insurance_bill	Whether missed payment since July 2013: Insurance policies	qpaym_04
missed_telephone_bill	Whether missed payment since July 2013: Telephone bill (landline or mobile) or b	qpaym_05
missed_hire_purchase_bill	Whether missed payment since July 2013: Hire purchase payments	qpaym_06
missed_water_bill	Whether missed payment since July 2013: Water bill	qpaym_07

Technical Annex 3: Impact of the cap on HCSTC demand

missed_other_regular_bill	Whether missed payment since July 2013: Any other regular bill or commitment (sp	qpaym_08
missed_mortgage_bill	Whether missed payment since July 2013: Mortgage	qpaym_09
missed_catalogue_bill	Whether missed payment since July 2013: Catalogue payments	qpaym_10
missed_tv_licence_bill	Whether missed payment since July 2013: TV licence	qpaym_11
missed_gym_bill	Whether missed payment since July 2013: Gym	qpaym_12
missed_loan_repayment	Whether missed payment since July 2013: Loan repayment	qpaym_13
missed_credit_credit_bill	Whether missed payment since July 2013: Credit card	qpaym_14
missed_child_care_bill	Whether missed payment since July 2013: Child care or other child expense	qpaym_15
missed_other_bill	Whether missed payment since July 2013: Other answer	qpaym_16
any_financial_distress	Dummy variable if experienced problems related to financial difficulties	qfindif_01-qfindif_09
fin_distress_stress	Experienced in the last few weeks as a result of financial difficulties: Anxiety or stress	qfindif_01
fin_distress_off_work	Experienced in the last few weeks as a result of financial difficulties: Being less productive or having to take time off work	qfindif_02
fin_distress_embarrassment	Experienced in the last few weeks as a result of financial difficulties: Embarrassment	qfindif_03
fin_distress_relationship	Experienced in the last few weeks as a result of financial difficulties: Relationship problems	qfindif_04
fin_distress_family	Experienced in the last few weeks as a result of financial difficulties: Problems with friends or family members	qfindif_05
fin_distress_other_health	Experienced in the last few weeks as a result of financial difficulties: Other health problems	qfindif_06
fin_distress_depression	Experienced in the last few weeks as a result of financial difficulties: Depression	qfindif_07
fin_distress_lost_sleep	Experienced in the last few weeks as a result of financial difficulties: Loss of sleep	qfindif_08
fin_distress_other_issue	Experienced in the last few weeks as a result of financial difficulties: Other (specify)	qfindif_09
sought_financial_help	Whether sought financial help from a professional debt management or advice organisation since July 2013	qadvice
started_dmp	Whether have started a Debt Management Plan since July 2013	qdmp
paid_for_dmp	Whether have to pay for Debt Management Plan	qdmppay
not_financially_organised	I am organised when it comes to managing my money day-to-day=Definitely disagree	qatt_1
tend_not_financially_organised	I am organised when it comes to managing my money day-to-day=Tend to disagree	qatt_1
tend_financially_organised	I am organised when it comes to managing my money day-to-day=Tend to agree	qatt_1
financially_organised	I am organised when it comes to managing my money day-to-day=Definitely agree	qatt_1
do_not_save_whenver_can	I save whenever I can rather than spend=Definitely disagree	qatt_2
tend_not_save_whenver_can	I save whenever I can rather than spend=Tend to disagree	qatt_2
tend_save_whenver_can	I save whenever I can rather than spend=Tend to agree	qatt_2
save_whenver_can	I save whenever I can rather than spend=Definitely agree	qatt_2
do_not_buy_things_cant_afford	I buy things that I can't really afford and end up regretting it=Definitely disagree	qatt_3
tend_not_buy_things_cant_afford	I buy things that I can't really afford and end up regretting it=Tend to disagree	qatt_3
tend_buy_things_cant_afford	I buy things that I can't really afford and end up regretting it=Tend to agree	qatt_3
buy_things_cant_afford	I buy things that I can't really afford and end up regretting it=Definitely agree	qatt_3
not_careful_with_money	I have to be careful with my money to avoid running out=Definitely disagree	qatt_4
tend_not_careful_with_money	I have to be careful with my money to avoid running out=Tend to disagree	qatt_4
tend_careful_with_money	I have to be careful with my money to avoid running out=Tend to agree	qatt_4
careful_with_money	I have to be careful with my money to avoid running out=Definitely agree	qatt_4
do_not_try_to_regularly_save	I try to save small amounts on a regular basis=Definitely disagree	qatt_5
tend_not_try_to_regularly_save	I try to save small amounts on a regular basis=Tend to disagree	qatt_5
tend_try_to_regularly_save	I try to save small amounts on a regular basis=Tend to agree	qatt_5

Technical Annex 3: Impact of the cap on HCSTC demand

try_to_regularly_save	I try to save small amounts on a regular basis=Definitely agree	qatt_5
do_not_think_finances_improve	I think my financial situation will get better in the future=Definitely disagree	qatt_6
tend_not_think_finances_improve	I think my financial situation will get better in the future=Tend to disagree	qatt_6
tend_think_finances_improve	I think my financial situation will get better in the future=Tend to agree	qatt_6
think_finances_improve	I think my financial situation will get better in the future=Definitely agree	qatt_6
do_not_ignore_debt_letters	Sometimes I ignore letters and phone calls in case they are to tell me that I owe money=Definitely disagree	qatt_7
tend_not_ignore_debt_letters	Sometimes I ignore letters and phone calls in case they are to tell me that I owe money=Tend to disagree	qatt_7
tend_try_ignore_debt_letters	Sometimes I ignore letters and phone calls in case they are to tell me that I owe money=Tend to agree	qatt_7
ignore_debt_letters	Sometimes I ignore letters and phone calls in case they are to tell me that I owe money=Definitely agree	qatt_7
added_up_owed_debts	I haven't added up my debts because I don't want to know how much I owe=Definitely disagree	qatt_8
tend_added_up_owed_debts	I haven't added up my debts because I don't want to know how much I owe=Tend to disagree	qatt_8
tend_not_added_up_owed_debts	I haven't added up my debts because I don't want to know how much I owe=Tend to agree	qatt_8
not_added_up_owed_debts	I haven't added up my debts because I don't want to know how much I owe=Definitely agree	qatt_8
fin_literacy_question1_correct	Financial Literacy Question 1	Qintr
fin_literacy_question2_correct	Financial Literacy Question 2	qintr2
no_savings	Have no savings	qsav_8, qinfsav_09, qsavt
saved_£1_£200	Saving between £1 to £199	Qsavt
saved_£200_to_£500	Saving between £200 to £499	Qsavt
saved_£500_to_£700	Saving between £500 to £699	Qsavt
saved_£700_to_£1000	Saving between £700 to £999	Qsavt
saved_£1000_to_£2000	Saving between £1,000 to £1,999	Qsavt
saved_£2000_to_£5000	Saving between £2,000 to £4,999	Qsavt
saved_£5000_to_£10000	Saving between £5,000 to £9,999	Qsavt
saved_£10000_to_£25000	Saving between £10,000 to £24,999	Qsavt
saved_£25000_to_£50000	Saving between £25,000 to £49,999	Qsavt
saved_over_£50000	Saving of £50,000 or more	Qsavt
savings_or_deposit_account	Own a savings or deposit account	qsav_1
cash_ISA	Own a Cash ISA	qsav_2
premium_bonds	Own a Premium bonds	qsav_3
stocks_shares	Own Stocks and shares	qsav_4
other_savings_product	Own a other savings products	qsav_5
other_savings_product_ex_pension	Own a other investment product (not including pension)	qsav_6
savings_held_by_someone_else	Given to someone else to keep or save	qinfsav_01
savings_at_home	have money saved in cash at home	qinfsav_02
savings_club	Have money paid into a savings and loans club	qinfsav_03
christmas_club	Own a Christmas club	qinfsav_04
jamjar_account	Own a Jamjar account	qinfsav_05
gold_jewellery_antiques	Have Gold/jewellery/antiques	qinfsav_06
other_informal_savings	Other informal savings	qinfsav_07
overdraft_facility	Whether have overdraft facility	godfac

Technical Annex 3: Impact of the cap on HCSTC demand

not_overdrawn	Have an overdraft facility and not overdrawn	godover
overdrawn_under_£50	Overdrawn under £50	godover
overdrawn_£50_to_£100	Overdrawn between £50 and £100	godover
overdrawn_£100_to_£150	Overdrawn between £100 and £150	godover
overdrawn_£150_to_£200	Overdrawn between £150 and £200	godover
overdrawn_£200_to_£300	Overdrawn between £200 and £300	godover
overdrawn_£300_to_£400	Overdrawn between £300 and £400	godover
overdrawn_£400_to_£500	Overdrawn between £400 and £500	godover
overdrawn_£500_to_£600	Overdrawn between £500 and £600	godover
overdrawn_£600_to_£700	Overdrawn between £600 and £700	godover
overdrawn_£700_to_£800	Overdrawn between £700 and £800	godover
overdrawn_£800_to_£900	Overdrawn between £800 and £900	godover
overdrawn_£900_to_£1000	Overdrawn between £900 and £1000	godover
overdrawn_£1000_to_£1500	Overdrawn between £1000 and £1500	godover
overdrawn_£1500_to_£2000	Overdrawn between £1500 and £2000	godover
overdrawn_over_£2000	Overdrawn over £2000	godover
exceeded_overdraft_limit	Whether ever aware of exceeding overdraft limit since July 2013	godbank
refused_payments	Whether direct debit or cheque payment refused	qdrdeb, qodbk2
refused_direct_debit	Whether bank has ever refused to pay a direct debit since July 2013	qdrdeb
refused_cheque	Whether bank has ever refused to pay a cheque/ cheque has bounced since July 2013	qodbk2
actually_borrowed_anywhere	Dummy variable if borrowed money from anywhere since HCSTC application	qborro_01-qborro_13
actually_borrowed_overdraft	Increased the amount you borrowed from your overdraft since HCSTC application	qborro_01
actually_borrowed_credit_card	Increased the amount you borrowed on your credit card since HCSTC application	qborro_02
actually_borrowed_family	Borrowed money from a family member since HCSTC application	qborro_03
actually_borrowed_friend	Borrowed money from a friend since HCSTC application	qborro_04
actually_borrowed_colleague	Borrowed money from a work colleague since HCSTC application	qborro_05
actually_borrowed_employer	Taken out a loan or advance on wages from your employer since HCSTC application	qborro_06
actually_borrowed_socialfund	Taken out a Social Fund loan since HCSTC application	qborro_07
actually_borrowed_creditunion	Taken out a Credit Union loan since HCSTC application	qborro_08
actually_borrowed_homecredit	Used Home credit (a loan from a lender who comes to your home) since HCSTC application	qborro_09
actually_borrowed_longloan	Taken out a longer term online loan product (installment loan, guarantor loan, peer-to-peer loan) since HCSTC application	qborro_10
actually_borrowed_pawnbroking	Taken out a pawn broking loan since HCSTC application	qborro_11
actually_borrowed_logbook	Taken out a logbook loan since HCSTC application	qborro_12
actually_borrowed_loanshark	Taken out a loan from an unlicensed lender, sometimes referred to as a loan shark since HCSTC application	qborro_13
total_outstanding_debt	Total amount of outstanding debt	Rqborra-rqborrk
outstanding_debt_family	Amount still owed to any family members you have borrowed from	Qborra
outstanding_debt_friends	Amount still owed to friends you have borrowed from	Qborrb
outstanding_debt_colleagues	Amount still owed to work colleagues you have borrowed from	Qborrc
outstanding_debt_employer	Amount still owed to your employer	Qborrd
outstanding_debt_socialfund	Amount still owed to the Social Fund	Qborre
outstanding_debt_creditunion	Amount still owed on any Credit Union loans	Qborrf

Technical Annex 3: Impact of the cap on HCSTC demand

outstanding_debt_homecredit	Amount still owed on Home Credit	Qborrg
outstanding_debt_longloan	Amount still owed on any longer term loan products	Qborrh
outstanding_debt_pawnbroking	Amount still owed on any pawnbroking loans	Qborri
outstanding_debt_logbook	Amount still owed on any logbook loans	Qborrj
outstanding_debt_loanshark	Amount still owed on any loans from unlicensed lenders, sometimes referred to as	Qborrk
total_debt_repayment	Total amount repaid each month	Qrepaya- qrepayk
debt_repayment_family	Amount currently paying per month to any family members you have borrowed from	Qrepaya
debt_repayment_friends	Amount currently paying per month to friends you have borrowed from	Qrepayb
debt_repayment_colleagues	Amount currently paying per month to work colleagues you have borrowed from	Qrepayc
debt_repayment_employer	Amount currently paying per month to your employer	Qrepayd
debt_repayment_socialfund	Amount currently paying per month to the Social Fund	Qrepaye
debt_repayment_creditunion	Amount currently paying per month on any Credit Union loans	Qrepayf
debt_repayment_homecredit	Amount currently paying per month on Home Credit	Qrepayg
debt_repayment_longloan	Amount currently paying per month on any longer term loan products	Qrepayh
debt_repayment_pawnbroking	Amount currently paying per month on any pawnbroking loans	Qrepayi
debt_repayment_logbook	Amount currently paying per month on any logbook loans	Qrepayj
debt_repayment_loanshark	Amount currently paying per month on any loans from unlicensed lenders, sometime	Qrepayk
behind_any_loan_repayments	Dummy variable if behind on any debt repayments	qrepay2a-qrepay2k
behind_family_repayment	Whether able to keep up with repayments to any family members borrowed from	qrepay2a
behind_friend_repayment	Whether able to keep up with repayments to friends borrowed from	qrepay2b
behind_colleagues_repayment	Whether able to keep up with repayments to work colleaguesborrowed	qrepay2c
behind_employer_repayment	Whether able to keep up with repayments to employer	qrepay2d
behind_socialfund_repayment	Whether able to keep up with repayments to the Social Fund	qrepay2e
behind_creditunion_repayment	Whether able to keep up with repayments on any Credit Union loans	qrepay2f
behind_homecredit_repayment	Whether able to keep up with repayments on Home Credit	qrepay2g
behind_longloan_repayment	Whether able to keep up with repayments on any longer term loan products	qrepay2h
behind_pawnbroking_repayment	Whether able to keep up with repayments on any pawnbroking loans	qrepay2i
behind_logbook_repayment	Whether able to keep up with repayments on any logbook loans	qrepay2j
behind_loanshark_rpymnt	Whether able to keep up with repayments on any loans from unlicensed lenders	qrepay2k
total_overdue_debt	Total amount owed in overdue payments	qowe_1-qowe_11
overdue_debt_family	Amount owed in overdue payments to any Family Members You Have Borrowed From	qowe_1
overdue_debt_friends	Amount owed in overdue payments to Friends	qowe_2
overdue_debt_colleagues	Amount owed in overdue payments to Work Colleagues	qowe_3
overdue_debt_employer	Amount owed in overdue payments to employer	qowe_4
overdue_debt_socialfund	Amount owed in overdue payments to Social Fund	qowe_5
overdue_debt_creditunion	Amount owed in overdue payments on Any Credit Union Loans	qowe_6
overdue_debt_homecredit	Amount owed in overdue payments on Home Credit	qowe_7
overdue_debt_longloan	Amount owed in overdue payments on Any Longer Term Online Loan Products	qowe_8
overdue_debt_pawnbroking	Amount owed in overdue payments on Any Pawnbroking Loans	qowe_9
overdue_debt_logbook	Amount owed in overdue payments on Any Logbook Loans	qowe_10
overdue_debt_loanshark	Amount owed in overdue payments On Any Loans From Unlicensed Lenders	qowe_11
attempt_borrow_anywhere	Dummy variable if tried to borrow money from anywhere	qaplo_01-qaplo_13

Technical Annex 3: Impact of the cap on HCSTC demand

attempt_borrow_overdraft	Whether tried to increase the amount overdraft limit since HCSTC loan application	qaplo_01
attempt_borrow_credit_card	Whether tried to increase credit card limit since HCSTC loan application	qaplo_02
attempt_borrow_family	Whether tried to borrow from a family member since HCSTC loan application	qaplo_03
attempt_borrow_friend	Whether tried to borrow from a friend since HCSTC loan application	qaplo_04
attempt_borrow_colleague	Whether tried to borrow from a work colleague since HCSTC loan application	qaplo_05
attempt_borrow_employer	Whether tried to borrow by taking out a loan or advance on wage since HCSTC loan application	qaplo_06
attempt_borrow_socialfund	Whether tried to borrow by taking out a Social Fund loan since HCSTC loan application	qaplo_07
attempt_borrow_creditunion	Whether tried to borrow by taking out a Credit Union loan since HCSTC loan application	qaplo_08
attempt_borrow_homecredit	Whether tried to borrow by using home credit since HCSTC loan application	qaplo_09
attempt_borrow_longloan	Whether tried to borrow money by taking out a longer term online loan product since HCSTC loan application	qaplo_10
attempt_borrow_pawnbroking	Whether tried to borrow by taking out a pawn broking loan since HCSTC loan application	qaplo_11
attempt_borrow_logbook	Whether tried to borrow by taking out a logbook loan since HCSTC loan application	qaplo_12
attempt_borrow_loanshark	Whether tried to borrow by taking out a loan from an unlicensed lender since HCSTC loan application	qaplo_13
any_loanshark_interaction	Wheter consumer reported any debts or attempted borrowing with unlicenced lender	attempt_borrow_loanshark, outstanding_debt_loanshar, debt_repayment_loanshark, overdue_debt_loanshark, actually_borrowed_loanshar k
attempt_borrow_rej	Whether any of the loans or credit applied for since July 2013 have been rejected	Qrej
attempt_borrow_putoff	Whether been put off applying for a loan because thought application would be rejected	Qputoff
after_rejection_went_without	Made a decision to go without the money when turned down for credit or a loan/ being put off applying	qacti_01
after_rejection_did_nothing	Did nothing - had nowhere else to borrow the money from when turned down for credit or a loan/ being put off applying	qacti_02
after_rejection_sold_something	Sold something when turned down for credit or a loan/ being put off applying	qacti_03
after_rejection_use_savings	Used savings already had when turned down for credit or a loan/ being put off applying	qacti_04
after_rejection_saved_up	Saved up until I had the money that I needed when turned down for credit or a loan/ being put off applying	qacti_05
after_rejection_borrow_friends	Borrowed from friends/family when turned down for credit or a loan/ being put off applying	qacti_06
after_rejection_friend_buy	Asked a friend or relative to give you the money or buy things on your behalf when turned down for credit or a loan/ being put off applying	qacti_07
after_rejection_borrow_pdl	Borrowed from another HCSTC lender when turned down for credit or a loan/ being put off applying	qacti_08
after_rejection_borrow_nonpdl	Borrowed in some other way/overdraft/credit card when turned down for credit or a loan/ being put off applying	qacti_09
after_rejection_loan_default	Defaulted on another loan/bill/payment when turned down for credit or a loan/ being put off applying	qacti_10
after_rejection_cut_spending	Cut back on spending when turned down for credit or a loan/ being put off applying	qacti_11
after_rejection_prolong_debts	Requested more time for money that I owed when turned down for credit or a loan/ being put off applying	qacti_12
after_rejection_creditscore	Took steps to build/ improve/ check out my credit score when turned down for credit or a loan/ being put off applying	qacti_13
after_rejection_increase_work	Increased working hours when turned down for credit or a loan/ being put off applying	qacti_14
after_rejection_debt_management	Used a debt management service when turned down for credit or a loan/ being put off applying	qacti_15
after_rejection_something_else	Did something else when turned down for credit or a loan/ being put off applying	qacti_16
remember_loan_very_well	How well remember experience of taking out/ applying for HCSTC loan=Very well	qremexp
remember_loan_fairly_well	How well remember experience of taking out/ applying for HCSTC loan=Fairly well	qremexp

Technical Annex 3: Impact of the cap on HCSTC demand

remember_loan_not_very_well	How well remember experience of taking out/ applying for HCSTC loan=Not very well	qremexp
remember_loan_not_at_all_well	How well remember experience of taking out/ applying for HCSTC loan=Not at all well	qremexp
loanmonth_jun13	Month of loan=June 2013	xsvar20
loanmonth_jul13	Month of loan=July 2013	xsvar20
loanmonth_aug13	Month of loan=August 2013	xsvar20
loanmonth_sep13	Month of loan=September 2013	xsvar20
loanmonth_oct13	Month of loan=October 2013	xsvar20
loanmonth_nov13	Month of loan=November 2013	xsvar20
happy_decision	Happy with decision to use a HCSTC loan	qpdldec
indifferent_decision	Indifferent with decision to use a HCSTC loan	qpdldec
regret_decision	Regret decision to use a HCSTC loan	qpdldec
regret_a_lot	Regret decision to use a HCSTC loan a lot	qpdlreg
regret_a_little	Regret decision to use a HCSTC loan a little	qpdlreg
best_accepted	For the best that the lender declined	qnondec
best_indifferent	Indifferent as to whether would have been better off with or without loan	Qnondec
best_declined	Would have been better if loan had been declined	qnondec
repaid_less	Repaid less than expected	Qpdlco
repaid_expected	Repaid as expected	Qpdlco
repaid_more	Repaid more than expected	Qpdlco
Alt_cost_less	Cost of alternate way of borrowing was less than would have paid with HCSTC	Qnonco
Alt_cost_same	Cost of alternate way of borrowing was same as would have paid with HCSTC	Qnonco
Alt_cost_more	Cost of alternate way of borrowing was more than would have paid with HCSTC	Qnonco
apply_pdl_again	Would apply for a HCSTC loan again in the future	qpdlfut, qnonfut
go_without_pdl	Would try an alternative method in future	qpdlfut, qnonfut
use_pdl_alternative	Would go without the money in the future	qpdlfut, qnonfut
without_alternative_apply_pdl	Would apply for a HCSTC loan again in future if couldn't use alternative method	qpdlft2
without_alternative_go_without	Would go without the money in future if couldn't use alternative method	qpdlft2
easily_gone_without_money	RD: Perceived importance of money borrowed	qpdlneed, qnonne1, qhbne
possibly_gone_without_money	RD: Perceived importance of money borrowed	qpdlneed, qnonne1, qhbne
not_gone_without_money	RD: Perceived importance of money borrowed	qpdlneed, qnonne1, qhbne
not_spent_pdl_money	Have not used money borrowed yet	qpdlud
spent_part_of_pdl_money	Have used part of the money borrowed yet	qpdlud
spent_all_pdl_money	Have used all the money borrowed yet	qpdlud
used_pdl_money_as_planned	Used the money borrowed in the way originally planned	qpdlppa
intend_pdl_money_changed	Didn't use the money in the way originally planned	qpdlppa
consider_any_alternatives	Whether considered any alternative ways to borrow the money before taking out HCSTC loan	qpdlalt, qnonnal, qhbalt

Technical Annex 3: Impact of the cap on HCSTC demand

consider_loanshark	Whether considered borrowing from a 'loan shark'	qpdlis3,qndlls3,qhbis1
consider_loanshark_edited	Whether considered borrowing from a 'loan shark' (edited)	
why_pdl_speed	Reason for using a HCSTC loan rather than borrowing the money in another way: Can get the money quickly and easily	qpdlw_01,qhbwhy_01,qnonwh_01
why_pdl_limits_amount	Reason for using a HCSTC loan rather than borrowing the money in another way: Will only let me borrow what I can afford to repay	qpdlw_02,qhbwhy_02,qnonwh_03
why_pdl_only_st_option	Reason for using a HCSTC loan rather than borrowing the money in another way: Only way to get very short term loan	qpdlw_03,qhbwhy_03,qnonwh_04
why_pdl_option_extend	Reason for using a HCSTC loan rather than borrowing the money in another way: Will let me extend/increase/renew loan	qpdlw_04,qhbwhy_04,qnonwh_05
why_pdl_no_checks	Reason for using a HCSTC loan rather than borrowing the money in another way: No credit check required	qpdlw_05,qhbwhy_05,qnonwh_06
why_pdl_only_small_option	Reason for using a HCSTC loan rather than borrowing the money in another way: Only way to borrow such a small sum of money	qpdlw_06,qhbwhy_06,qnonwh_07
why_pdl_cheapest_option	Reason for using a HCSTC loan rather than borrowing the money in another way: Cheaper than other types of lending	qpdlw_07,qhbwhy_07,qnonwh_08
why_pdl_only_option	Reason for using a HCSTC loan rather than borrowing the money in another way: Couldn't borrow the money from anywhere else	qpdlw_08,qhbwhy_08,qnonwh_09
why_pdl_preferred_option	Reason for using a HCSTC loan rather than borrowing the money in another way: Didn't want to borrow the money from anywhere else	qpdlw_09,qhbwhy_09,qnonwh_10
why_pdl_selfcontrol	Reason for using a HCSTC loan rather than borrowing the money in another way: Helps me control my borrowing	qpdlw_10,qhbwhy_10,qnonwh_12
why_pdl_good_relationship	Used a HCSTC loan rather than borrowing in another way because have a good relationship with PDL company	qpdlw_11,qhbwhy_11,qnonwh_13
why_pdl_no_late_charge	Used a HCSTC loan rather than borrowing in another way because no charges for late payment	qpdlw_12,qhbwhy_12,qnonwh_11
why_pdl_maxed_out	Used a HCSTC loan rather than borrowing in another way because up to limit on my credit card/overdraft	qpdlw_13,qhbwhy_13,qnonwh_01
why_pdl_advertising	Used a HCSTC loan rather than borrowing in another way because saw advertisement for a HCSTC loan company	qpdlw_14,qhbwhy_14,qnonwh_14
why_pdl_unknown_alternatives	Used a HCSTC loan rather than borrowing in another way because didn't know of any alternatives	qpdlw_15,qhbwhy_15,qnonwh_15
why_pdl_private_option	Used a HCSTC loan rather than borrowing in another way because feels like a more private option	qpdlw_16,qhbwhy_16,qnonwh_16
why_pdl_recommended	Used a HCSTC loan rather than borrowing in another way because has been recommended to me	qpdlw_17,qhbwhy_17,qnonwh_17
why_pdl_badcredit	Used a HCSTC loan rather than borrowing in another way because bad credit rating (no further detail)	qpdlw_18,qhbwhy_18,qnonwh_20
why_pdl_impulse	Used a HCSTC loan rather than borrowing in another way because it was an impulse decision	qpdlw_19,qhbwhy_19,qnonwh_18
why_pdl_curiosity	Used a HCSTC loan rather than borrowing in another way because of curiosity (general reference)	qpdlw_20,qhbwhy_20,qnonwh_29
Plan_use_basic	Planned to use money from HCSTC for basic expenditure	Qnonus_01, qnonus_02, qnonus_03 qpdlus_01, qpdlus_02,qpdlus_03, qhbus_01, qhbus_02, qhbus_03

Technical Annex 3: Impact of the cap on HCSTC demand

Plan_use_discretionary	Planned to use money from HCSTC for discretionary expenditure	qpdlus_04, qpdlus_08, qpdlus_13, qpdlus_16, qpdlus_18, qpdlus_09, qnonus_04, qnonus_08, qnonus_09, qnonus_13, qnonus_16, qnonus_18, qhbus_04, qhbus_08, qhbus_09, qhbus_13, qhbus_16, qhbus_18
Plan_use_shock	Planned to use money from HCSTC for shocks	qpdlus_05, qpdlus_06, qnonus_05, qnonus_06, qhbus_05, qhbus_06
Plan_use_othercat	Planned to use money from HCSTC for other categories	qpdlus_07, qpdlus_10, qpdlus_11, qpdlus_12, qpdlus_14, qpdlus_15, qpdlus_17, qpdlus_19, qnonus_07, qnonus_10, qnonus_11, qnonus_12, qnonus_14, qnonus_15, qnonus_17, qnonus_19, qhbus_07, qhbus_10, qhbus_11, qhbus_12, qhbus_14, qhbus_15, qhbus_17, qhbus_19,
plan_use_housing	Planned to use money from HCSTC for rent or mortgage payments	Qpdlus_01, Qnonus_01, qhbus_01
plan_use_livingcost	Planned to use money from HCSTC for living expenses and general shopping e.g. food/clothes/household items	Qpdlus_02, Qnonus_02, qhbus_02
plan_use_bills	Planned to use money from HCSTC for household bills such as fuel, water and telephone (including arrears)	Qpdlus_03, Qnonus_03, qhbus_03
plan_use_electronics	Planned to use money from HCSTC for consumer electronics (Xbox, MP3 player,...)	Qpdlus_04, Qnonus_04, qhbus_04
plan_use_repair	Planned to use money from HCSTC to repair/replace broken household items	Qpdlus_05, Qnonus_05, qhbus_05
plan_use_car	Planned to use money from HCSTC for car/vehicle	Qpdlus_06, Qnonus_06, qhbus_06
plan_use_help_friend	Planned to use money from HCSTC to help a friend or family member	Qpdlus_07, Qnonus_07, qhbus_07
plan_use_present	Planned to use money from HCSTC for present/gift/Christmas	Qpdlus_08, Qnonus_08, qhbus_08
plan_use_holiday	Planned to use money from HCSTC for holiday, going out or socialising	Qpdlus_09, Qnonus_09, qhbus_09
plan_use_pay_pdl	Planned to use money from HCSTC to pay off another payday loan	Qpdlus_10, Qnonus_10, qhbus_10
plan_use_otherdebts	Planned to use money from HCSTC to pay off other debts (not payday loan)	Qpdlus_11, Qnonus_11, qhbus_11

Technical Annex 3: Impact of the cap on HCSTC demand

plan_use_business	Planned to use money from HCSTC for business purposes	Qpdlus_12, Qnonus_12, qhbus_12
plan_use_gambling	Planned to use money from HCSTC for gambling	Qpdlus_13, Qnonus_13, qhbus_13
plan_use_spare_money	Planned to use money from HCSTC to have spare/extra money	Qpdlus_14, Qnonus_14, qhbus_14
plan_use_fund_shortfall	Planned to use money from HCSTC to fund a shortfall	Qpdlus_15, Qnonus_15, qhbus_15
plan_use_home_improve	Planned to use money from HCSTC for home improvements	Qpdlus_16, Qnonus_16, qhbus_16
plan_use_creditbuild	Planned to use money from HCSTC to build a credit rating	Qpdlus_17, Qnonus_17, qhbus_17
plan_use_wedding	Planned to use money from HCSTC for a wedding	Qpdlus_18, Qnonus_18, qhbus_18
plan_use_other	Planned to use money from HCSTC for other reasons	Qpdlus_19, Qnonus_19, qhbus_19
consider_creditcard	Considered borrowing on a credit card	qpdlal_01, qnonnaf_01, qhbal3_01
consider_storecard	Considered borrowing on a store card	qpdlal_02, qnonnaf_02, qhbal3_02
Consider_overdraft	Considered borrowing on bank account overdraft	qpdlal_03, qnonnaf_03, qhbal3_03
consider_pdl	Considered borrowing from a payday lender	qpdlal_04, qnonnaf_04, qhbal3_04
consider_homecredit	Considered borrowing from home credit provider	qpdlal_05, qnonnaf_05, qhbal3_05
consider_pawnbroking	Considered borrowing from a pawnbroker	qpdlal_06, qnonnaf_06, qhbal3_06
consider_hirepurchase	Considered borrowing via buying goods on credit (including hire purchase, mail order, rent-to-buy)	qpdlal_07, qnonnaf_07, qhbal3_07
consider_creditunion	Considered borrowing from a credit union	qpdlal_08, qnonnaf_08, qhbal3_08
consider_socialfund	Considered borrowing from the social fund	qpdlal_09, qnonnaf_09, qhbal3_09
consider_bankloan	Considered borrowing from bank/building society loan	qpdlal_10, qnonnaf_10, qhbal3_10
consider_friend_relative	Considered borrowing from a friend or relative	qpdlal_11, qnonnaf_11, qhbal3_11
consider_community_figure	Considered borrowing from someone else in the community	qpdlal_12, qnonnaf_12, qhbal3_12
consider_selling_asset	Considered borrowing by selling an asset	qpdlal_13, qnonnaf_13, qhbal3_13
consider_employer	Considered borrowing from employer	qpdlal_14, qnonnaf_14, qhbal3_14
consider_use_savings	Considered borrowing by using savings	qpdlal_15, qnonnaf_15, qhbal3_15
consider_other	Considered borrowing in other way	qpdlal_16, qnonnaf_16,

Technical Annex 3: Impact of the cap on HCSTC demand

		qhb3_16
notborrow	When/if you were not able to get a payday loan on this occasion did/would not borrow	Qpdln0_01, qnonho_01, qpdln0_02, qnonho_02, qpdln0_03, qnonho_03, qpdln0_04, qnonho_04, qpdln0_05, qnonho_05, qpdln0_10, qnonho_10, qpdln0_11, qnonho_11, qpdln0_12, qnonho_12, qpdln0_13, qnonho_13, qpdln0_14, qnonho_14, qpdln0_15, qnonho_15
borrow_friendfam	When/if you were not able to get a payday loan on this occasion did/would borrow from friend or family	Qpdln0_06, qnonho_06, Qpdln0_07, qnonho_07
borrow_credit	When/if you were not able to get a payday loan on this occasion did/would borrow elsewhere	Qpdln0_08, qnonho_08, Qpdln0_09, qnonho_09
without_loan_went_without	When/if you were not able to get a payday loan on this occasion did/would make a decision to go without the money	Qpdln0_01, Qnonho_01,
without_loan_did_nothing	When/if you were not able to get a payday loan on this occasion did/would do nothing	Qpdln0_02, Qnonho_02,
without_loan_sold_something	When/if you were not able to get a payday loan on this occasion did/would have sold something	Qpdln0_03, Qnonho_03,
without_loan_use_savings	When/if you were not able to get a payday loan on this occasion did/would have borrowed from family/friends	Qpdln0_04, Qnonho_04,
without_loan_saved_up	When/if you were not able to get a payday loan on this occasion did/would have saved up until had the money that needed	Qpdln0_05, Qnonho_05,
without_loan_borrow_friends	When/if you were not able to get a payday loan on this occasion did/would have borrowed from friends/family	Qpdln0_06, Qnonho_06,
without_loan_friend_buy	When/if you were not able to get a payday loan on this occasion did/would have asked a friend or relative to give you the money to buy things on your behalf	Qpdln0_07, Qnonho_07,
without_loan_borrow_pdl	When/if you were not able to get a payday loan on this occasion did/would have borrowed from another payday lender	Qpdln0_07, Qnonho_07,
without_loan_borrow_nonpdl	When/if you were not able to get a payday loan on this occasion did/would have borrowed in some other way/overdraft/credit card	Qpdln0_08, Qnonho_08,
without_loan_default	When/if you were not able to get a payday loan on this occasion did/would have defaulted on another loan/bill/payment	Qpdln0_09, Qnonho_09,
without_loan_cut_spending	When/if you were not able to get a payday loan on this occasion did/would have cut back on spending	Qpdln0_10, Qnonho_10,
without_loan_prolong_debts	When/if you were not able to get a payday loan on this occasion did/would have requested more time for money that I owed	Qpdln0_11, Qnonho_11,
without_loan_increase_work	When/if you were not able to get a payday loan on this occasion did/would have increased working hours	Qpdln0_12, Qnonho_12,
without_loan_debt_management	When/if you were not able to get a payday loan on this occasion did/would have used a debt management service	Qpdln0_13, Qnonho_13,
without_loan_something_else	When/if you were not able to get a payday loan on this occasion did/would have done something else	Qpdln0_14, Qnonho_14,

Table A20: Sample Response Rates

	All	Group 1 - Just below credit score cut-off	Group 2 - Just above credit score cut-off	Group 3 - Less marginal successful	Group 4 - Problem debt	Group 5 - Habitual borrowers
Issued sample	41,798	12,321	12,239	5595	9194	2449
Number screened (answered phone but not willing to complete survey)	2,490	725	679	619	237	230
Number screened out of questionnaire (answered phone but ineligible)	291	118	79	30	44	20
Ineligible (screened and screened out as a percent of issued sample)	11.7%	16.3%	11.6%	4.8%	18.6%	8.7%
Number not screened	39,308	11,596	11,560	4,976	8,957	2,219
Assumed number not screened that would be ineligible	4,594	1,887	1,345	241	1,663	193
Total ineligible (actual + assumed)	4,885	2,005	1,424	271	1,707	213
Assumed eligible sample	36,913	10,316	10,815	5,324	7,487	2,236
Number contacted	13,762	4,014	3,916	2831	1789	1212
Number screened	2,490	725	679	619	237	230
Number screened out	291	118	79	30	44	20
Ineligible %	11.7%	16.3%	11.6%	4.8%	18.6%	8.7%
Number contacted and not screened	11,272	3,289	3,237	2,212	1,552	982
Assumed number contacted and not screened that would be ineligible	1317	535	377	107	288	85
Total number contacted that would be ineligible (actual + assumed)	1,608	653	456	137	332	105
Number contacted and assumed to be eligible	12,154	3,361	3,460	2,694	1,457	1,107
Number of interviews	2,000	552	540	546	170	192
Cooperation rate (number of interviews/number contacted and assumed to be eligible)	16.5%	16.4%	15.6%	20.3%	11.7%	17.4%
Response rate(number of interviews/assumed eligible sample)	5.4%	5.4%	5.0%	10.3%	2.3%	8.6%

Table A21: Sample Selection

		Number in sample	Number in population	Sample mean	Population mean	Difference between sample and population means	Sample standard deviation (s.d.)	Population s.d.	P-value	T-statistic
All groups	Defaulted on this loan (conditional on being granted a loan)	982	50,236	10.6%	14.0%	-3.4%	30.8%	34.7%	0.24%	-3.035
	Age	1763	87,115	33	32	1	12	11	0.01%	3.846
	Gender	1191	61,299	35.9%	37.0%	-1.0%	48.0%	48.3%	47.13%	-0.720
	CRA credit score January 2013	1778	88,320	678	674	3	102	106	18.58%	1.323
	Debt level month before application	1770	87,968	£ 1,691	£1,860	-£169	£4,570	4,854	14.59%	-1.454
	Bad credit event within six months before application	1778	88,320	43.8%	44.2%	-0.4%	49.6%	49.7%	72.13%	-0.357
Group 1	Defaulted	23	1,411	4.3%	22.5%	-18.2%	20.9%	41.8%	3.75%	-2.082
	Age	487	22,753	33	32	1	12	11	1.47%	2.439
	Gender	209	10,196	63.2%	60.0%	3.2%	48.4%	49.0%	35.38%	0.927
	CRA credit score January 2013	490	22,904	658	657	1	92	97	84.35%	0.197
	Debt level month before application	488	22,729	£999	£1,049	-£50	£2,921	£3,360	74.27%	-0.328
	Bad credit event within six months before application	490	22,904	48.4%	43.1%	5.3%	50.0%	49.5%	1.99%	2.328
Group 2	Defaulted	212	9,733	3.3%	7.2%	-3.9%	17.9%	25.9%	2.86%	-2.189
	Age	479	22,803	33	32	1	12	12	9.49%	1.670
	Gender	298	15,812	35.2%	35.7%	-0.5%	47.9%	47.9%	85.73%	-0.180
	CRA credit score January 2013	483	22,962	680	679	2	100	107	72.91%	0.346
	Debt level month before application	480	22,840	£1,584	£1,651	-£67	£4,856	£4,661	75.67%	-0.310
	Bad credit event within six months before application	483	22,962	41.4%	40.0%	1.4%	49.3%	49.0%	54.38%	0.607
Group 3	Defaulted	440	21,336	3.6%	8.0%	-4.3%	18.7%	27.1%	0.09%	-3.330

Table A22: Socio-economic Characteristics of Surveyed Consumers

	Marginal unsuccessful			Marginal successful			Less marginal successful			Problem debt			Habitual borrowers		
	Number of respondents (N)	Mean	Standard Deviation (s.d.)	N	Mean	s.d.	N	Mean	s.d.	N	Mean	s.d.	N	Mean	s.d.
Sample size	790			302			546			170			192		
permission_to_link_other_data	787	89.3%	0.31	301	89.7%	0.30	545	88.6%	0.32	170	91.2%	0.28	192	87.0%	0.34
age	697	33.2	11.8	269	33.0	12.5	483	33.4	12.3	155	31.8	11.2	159	35.9	13.2
male	789	61.5%	0.49	302	56.6%	0.50	546	56.6%	0.50	170	58.8%	0.49	192	54.2%	0.50
additional_adults	790	62.8%	0.48	302	65.6%	0.48	546	72.0%	0.45	170	60.6%	0.49	192	65.6%	0.48
partner	790	67.5%	0.47	302	65.2%	0.48	546	64.7%	0.48	170	65.3%	0.48	192	62.0%	0.49
children	790	39.2%	0.49	302	42.7%	0.50	546	33.0%	0.47	170	41.2%	0.49	192	38.5%	0.49
home_own	786	2.8%	0.17	298	0.0%	0.00	542	3.1%	0.17	166	0.6%	0.08	189	2.6%	0.16
home_mortgage	786	6.6%	0.25	298	9.1%	0.29	542	15.5%	0.36	166	2.4%	0.15	189	13.2%	0.34
home_private_rent	786	40.6%	0.49	298	37.6%	0.49	542	36.5%	0.48	166	39.8%	0.49	189	37.6%	0.49
home_social_rent	786	37.0%	0.48	298	35.6%	0.48	542	28.6%	0.45	166	38.0%	0.49	189	30.7%	0.46
home_shared_ownership	786	0.5%	0.07	298	1.0%	0.10	542	1.5%	0.12	166	1.2%	0.11	189	1.1%	0.10
home_rent_free	786	9.9%	0.30	298	11.4%	0.32	542	8.7%	0.28	166	13.3%	0.34	189	11.1%	0.32
home_squat	786	0.0%	0.00	298	0.0%	0.00	542	0.2%	0.04	166	0.0%	0.00	189	0.0%	0.00
home_other	786	2.5%	0.16	298	5.4%	0.23	542	5.9%	0.24	166	4.8%	0.21	189	3.7%	0.19
ethnic_white_brit	785	67.8%	0.47	301	70.1%	0.46	545	76.3%	0.43	169	79.9%	0.40	192	76.6%	0.42
ethnic_white_irish	785	2.5%	0.16	301	1.3%	0.11	545	2.4%	0.15	169	3.6%	0.19	192	2.6%	0.16
ethnic_other_white	785	6.4%	0.24	301	6.6%	0.25	545	6.4%	0.25	169	2.4%	0.15	192	4.7%	0.21
ethnic_mixed	785	3.2%	0.18	301	2.7%	0.16	545	1.8%	0.13	169	2.4%	0.15	192	2.6%	0.16
ethnic_asian	785	6.8%	0.25	301	5.3%	0.22	545	2.9%	0.17	169	4.1%	0.20	192	1.6%	0.12
ethnic_black	785	9.9%	0.30	301	10.0%	0.30	545	8.1%	0.27	169	5.9%	0.24	192	10.9%	0.31
ethnic_chinese	785	0.0%	0.00	301	0.0%	0.00	545	0.4%	0.06	169	0.0%	0.00	192	0.0%	0.00
ethnic_other	785	3.4%	0.18	301	4.0%	0.20	545	1.7%	0.13	169	1.8%	0.13	192	1.0%	0.10
qualifications	790	76.2%	0.43	302	74.8%	0.43	546	78.9%	0.41	169	66.3%	0.47	191	73.3%	0.44

Technical Annex 3: Impact of the cap on HCSTC demand

education_degree	595	17.8%	0.38	226	19.9%	0.40	430	19.3%	0.40	111	4.5%	0.21	140	14.3%	0.35
education_diploma	595	20.0%	0.40	226	18.6%	0.39	430	20.0%	0.40	111	9.0%	0.29	140	22.1%	0.42
education_alevel	595	25.4%	0.44	226	21.7%	0.41	430	27.9%	0.45	111	33.3%	0.47	140	27.1%	0.45
education_gcse	595	25.0%	0.43	226	26.1%	0.44	430	20.9%	0.41	111	33.3%	0.47	140	22.9%	0.42
education_other	595	11.8%	0.32	226	13.7%	0.34	430	11.9%	0.32	111	19.8%	0.40	140	13.6%	0.34
fulltime_employed	788	46.3%	0.50	302	48.0%	0.50	544	63.6%	0.48	170	27.1%	0.45	192	59.9%	0.49
parttime_employed	788	16.2%	0.37	302	16.6%	0.37	544	14.3%	0.35	170	12.4%	0.33	192	13.5%	0.34
unemployed	788	19.8%	0.40	302	18.9%	0.39	544	9.2%	0.29	170	38.8%	0.49	192	13.5%	0.34
retired	788	2.2%	0.15	302	1.3%	0.11	544	1.8%	0.13	170	0.6%	0.08	192	2.6%	0.16
fteducation	788	3.2%	0.18	302	3.3%	0.18	544	2.9%	0.17	170	2.9%	0.17	192	0.5%	0.07
unable_to_work	788	7.4%	0.26	302	7.0%	0.25	544	4.2%	0.20	170	12.9%	0.34	192	6.3%	0.24
looking_after_family	788	3.3%	0.18	302	4.0%	0.20	544	2.9%	0.17	170	4.7%	0.21	192	3.1%	0.17
other_work_status	788	1.6%	0.13	302	1.0%	0.10	544	0.9%	0.10	170	0.6%	0.08	192	0.5%	0.07
income_partner	235	56.6%	0.50	91	49.5%	0.50	193	65.3%	0.48	44	40.9%	0.50	52	44.2%	0.50
income_employment	790	66.1%	0.47	302	68.2%	0.47	546	82.6%	0.38	170	45.3%	0.50	192	75.5%	0.43
income_pension	790	7.6%	0.27	302	6.6%	0.25	546	8.1%	0.27	170	2.4%	0.15	192	9.4%	0.29
income_childbenefit	790	26.3%	0.44	302	28.5%	0.45	546	24.0%	0.43	170	31.2%	0.46	192	28.1%	0.45
income_statebenefit	790	31.3%	0.46	302	27.8%	0.45	546	16.7%	0.37	170	50.6%	0.50	192	26.6%	0.44
income_taxcredits	790	23.3%	0.42	302	26.8%	0.44	546	17.4%	0.38	170	27.1%	0.45	192	24.5%	0.43
income_othersource	790	9.6%	0.30	302	10.3%	0.30	546	9.9%	0.30	170	10.6%	0.31	192	5.2%	0.22
income_noregularsource	790	2.9%	0.17	302	3.6%	0.19	546	1.5%	0.12	170	3.5%	0.19	192	3.1%	0.17
income_nosource	790	1.8%	0.13	302	3.0%	0.17	546	0.9%	0.10	170	1.2%	0.11	192	0.0%	0.00
income_under_6k	700	19.6%	0.40	264	20.5%	0.40	485	12.4%	0.33	149	35.6%	0.48	162	11.1%	0.32
income_6k_to_12k	700	21.9%	0.41	264	21.2%	0.41	485	19.4%	0.40	149	26.2%	0.44	162	25.9%	0.44
income_12k_to_18k	700	27.3%	0.45	264	25.4%	0.44	485	27.8%	0.45	149	19.5%	0.40	162	25.9%	0.44
income_18k_to_24k	700	13.4%	0.34	264	15.2%	0.36	485	15.1%	0.36	149	7.4%	0.26	162	22.8%	0.42
income_24k_to_36k	700	11.7%	0.32	264	10.6%	0.31	485	14.2%	0.35	149	8.1%	0.27	162	11.7%	0.32
income_36k_to_50	700	3.7%	0.19	264	4.5%	0.21	485	7.0%	0.26	149	2.0%	0.14	162	1.9%	0.14
income_over_50k	700	2.4%	0.15	264	2.7%	0.16	485	4.1%	0.20	149	1.3%	0.12	162	0.6%	0.08
irregular_income	775	29.9%	0.46	295	28.8%	0.45	545	25.1%	0.43	164	23.2%	0.42	188	26.1%	0.44
health_very_poor	786	8.3%	0.28	302	10.6%	0.31	542	6.3%	0.24	170	12.9%	0.34	189	7.9%	0.27

Technical Annex 3: Impact of the cap on HCSTC demand

health_poor	786	13.0%	0.34	302	12.9%	0.34	542	11.8%	0.32	170	18.8%	0.39	189	13.8%	0.35
health_fair	786	20.0%	0.40	302	20.5%	0.40	542	23.2%	0.42	170	22.4%	0.42	189	27.5%	0.45
health_good	786	35.5%	0.48	302	30.1%	0.46	542	36.3%	0.48	170	30.0%	0.46	189	33.3%	0.47
health_excellent	786	23.3%	0.42	302	25.8%	0.44	542	22.3%	0.42	170	15.9%	0.37	189	17.5%	0.38
happy	784	72.8%	0.26	302	72.2%	0.26	541	72.0%	0.24	168	67.8%	0.27	191	67.5%	0.25
anxious	783	34.5%	0.32	299	33.2%	0.33	544	34.6%	0.31	167	40.8%	0.30	191	36.5%	0.31
worthwhile	776	74.3%	0.25	298	73.9%	0.24	542	74.2%	0.23	166	71.4%	0.26	189	72.6%	0.25
satisfied	784	70.5%	0.26	300	72.7%	0.25	543	71.1%	0.23	169	65.7%	0.27	189	68.6%	0.25
happiness_medium_high	790	55.6%	0.50	302	54.0%	0.50	546	51.8%	0.50	170	46.5%	0.50	192	45.3%	0.50
anxiousness_medium_low	790	46.2%	0.50	302	50.0%	0.50	546	46.0%	0.50	170	35.3%	0.48	192	40.6%	0.49
worthwhile_medium_high	790	57.3%	0.49	302	54.6%	0.50	546	57.9%	0.49	170	52.9%	0.50	192	55.2%	0.50
satisfied_medium_high	790	51.5%	0.50	302	53.3%	0.50	546	50.2%	0.50	170	45.9%	0.50	192	46.9%	0.50

Table A23: Financial Circumstances of Surveyed Consumers

	Marginal unsuccessful			Marginal successful			Less marginal successful			Problem debt			Habitual borrowers		
	N	Mean	s.d.	N	Mean	s.d.	N	Mean	s.d.	N	Mean	s.d.	N	Mean	s.d.
Sample size	790			302			546			170			192		
keeping_up_no_difficulties	773	36.5%	0.48	300	35.0%	0.48	539	39.7%	0.49	163	23.9%	0.43	192	28.1%	0.45
keeping_up_but_struggling	773	38.0%	0.49	300	33.0%	0.47	539	39.7%	0.49	163	30.1%	0.46	192	37.0%	0.48
falling_behind_some_bills	773	18.6%	0.39	300	20.0%	0.40	539	14.8%	0.36	163	29.4%	0.46	192	24.0%	0.43
falling_behind_many_bills	773	6.9%	0.25	300	12.0%	0.33	539	5.8%	0.23	163	16.6%	0.37	192	10.9%	0.31
any_missed_bills	789	47.4%	0.50	302	47.7%	0.50	544	43.9%	0.50	170	56.5%	0.50	192	57.3%	0.50
missed_fuel_bill	790	10.9%	0.31	302	11.3%	0.32	546	9.5%	0.29	170	13.5%	0.34	192	18.2%	0.39
missed_rent_bill	790	14.3%	0.35	302	12.6%	0.33	546	10.8%	0.31	170	18.8%	0.39	192	17.7%	0.38
missed_council_tax_bill	790	18.4%	0.39	302	15.6%	0.36	546	15.4%	0.36	170	17.6%	0.38	192	22.9%	0.42
missed_insurance_bill	790	6.5%	0.25	302	6.3%	0.24	546	4.8%	0.21	170	5.3%	0.22	192	12.0%	0.33
missed_telephone_bill	790	26.3%	0.44	302	31.1%	0.46	546	24.2%	0.43	170	30.0%	0.46	192	30.7%	0.46
missed_hire_purchase_bill	790	2.4%	0.15	302	2.6%	0.16	546	1.5%	0.12	170	2.4%	0.15	192	3.1%	0.17
missed_water_bill	790	10.3%	0.30	302	12.6%	0.33	546	8.4%	0.28	170	16.5%	0.37	192	16.1%	0.37
missed_other_regular_bill	790	0.3%	0.05	302	0.0%	0.00	546	0.2%	0.04	170	0.0%	0.00	192	0.0%	0.00
missed_mortgage_bill	790	1.3%	0.11	302	2.0%	0.14	546	2.4%	0.15	170	1.2%	0.11	192	2.6%	0.16
missed_catalogue_bill	790	0.6%	0.08	302	0.3%	0.06	546	0.4%	0.06	170	1.2%	0.11	192	0.0%	0.00
missed_tv_licence_bill	790	0.4%	0.06	302	1.7%	0.13	546	0.7%	0.09	170	2.9%	0.17	192	1.0%	0.10
missed_gym_bill	790	0.5%	0.07	302	0.3%	0.06	546	0.0%	0.00	170	0.6%	0.08	192	0.5%	0.07
missed_loan_repayment	790	0.3%	0.05	302	0.3%	0.06	546	0.7%	0.09	170	1.8%	0.13	192	1.6%	0.12
missed_credit_credit_bill	790	0.6%	0.08	302	0.3%	0.06	546	0.5%	0.07	170	0.6%	0.08	192	0.5%	0.07
missed_child_care_bill	790	0.1%	0.04	302	0.0%	0.00	546	0.0%	0.00	170	1.2%	0.11	192	1.0%	0.10
missed_other_bill	790	1.6%	0.13	302	2.0%	0.14	546	1.3%	0.11	170	2.4%	0.15	192	1.6%	0.12
any_financial_distress	789	52.1%	0.50	302	53.3%	0.50	544	50.2%	0.50	170	62.4%	0.49	191	59.7%	0.49
fin_distress_stress	790	42.8%	0.50	302	47.0%	0.50	546	43.8%	0.50	170	57.6%	0.50	192	53.6%	0.50
fin_distress_off_work	790	17.5%	0.38	302	16.6%	0.37	546	15.4%	0.36	170	19.4%	0.40	192	21.9%	0.41

Technical Annex 3: Impact of the cap on HCSTC demand

fin_distress_embarrassment	790	28.5%	0.45	302	31.8%	0.47	546	24.9%	0.43	170	39.4%	0.49	192	34.9%	0.48
fin_distress_relationship	790	20.6%	0.40	302	19.2%	0.39	546	18.5%	0.39	170	26.5%	0.44	192	21.4%	0.41
fin_distress_family	790	17.3%	0.38	302	15.6%	0.36	546	13.4%	0.34	170	28.2%	0.45	192	18.2%	0.39
fin_distress_other_health	790	0.6%	0.08	302	0.3%	0.06	546	0.4%	0.06	170	0.6%	0.08	192	0.5%	0.07
fin_distress_depression	790	0.3%	0.05	302	0.7%	0.08	546	0.9%	0.10	170	0.0%	0.00	192	0.5%	0.07
fin_distress_lost_sleep	790	0.1%	0.04	302	0.0%	0.00	546	0.4%	0.06	170	0.6%	0.08	192	0.5%	0.07
fin_distress_other_issue	790	1.5%	0.12	302	2.6%	0.16	546	2.0%	0.14	170	3.5%	0.19	192	1.6%	0.12
fin_distress_no_issues	790	47.8%	0.50	302	46.7%	0.50	546	49.6%	0.50	170	37.6%	0.49	192	40.1%	0.49
sought_financial_help	789	15.8%	0.37	302	21.9%	0.41	546	14.8%	0.36	170	26.5%	0.44	192	28.6%	0.45
started_dmp	786	9.4%	0.29	300	13.0%	0.34	544	8.6%	0.28	170	18.2%	0.39	192	19.3%	0.40
paid_for_dmp	73	43.8%	0.50	39	38.5%	0.49	46	45.7%	0.50	31	41.9%	0.50	37	51.4%	0.51
not_financially_organised	787	14.0%	0.35	300	14.3%	0.35	542	11.4%	0.32	170	23.5%	0.43	191	17.3%	0.38
tend_not_financially_organised	787	14.2%	0.35	300	16.3%	0.37	542	16.4%	0.37	170	16.5%	0.37	191	16.2%	0.37
tend_financially_organised	787	35.7%	0.48	300	32.7%	0.47	542	40.8%	0.49	170	28.8%	0.45	191	38.2%	0.49
financially_organised	787	36.1%	0.48	300	36.7%	0.48	542	31.4%	0.46	170	31.2%	0.46	191	28.3%	0.45
do_not_save_whenEVER_can	779	15.3%	0.36	298	16.8%	0.37	537	16.0%	0.37	169	26.6%	0.44	188	26.1%	0.44
tend_not_save_whenEVER_can	779	18.9%	0.39	298	23.2%	0.42	537	23.1%	0.42	169	17.2%	0.38	188	20.7%	0.41
tend_save_whenEVER_can	779	30.8%	0.46	298	27.5%	0.45	537	35.4%	0.48	169	29.0%	0.46	188	29.8%	0.46
save_whenEVER_can	779	35.0%	0.48	298	32.6%	0.47	537	25.5%	0.44	169	27.2%	0.45	188	23.4%	0.42
do_not_buy_things_cant_afford	784	47.4%	0.50	297	50.8%	0.50	543	44.8%	0.50	170	50.6%	0.50	192	46.9%	0.50
tend_not_buy_things_cant_afford	784	18.4%	0.39	297	22.6%	0.42	543	22.7%	0.42	170	10.6%	0.31	192	19.8%	0.40
tend_buy_things_cant_afford	784	17.6%	0.38	297	14.8%	0.36	543	17.3%	0.38	170	21.2%	0.41	192	14.6%	0.35
buy_things_cant_afford	784	16.6%	0.37	297	11.8%	0.32	543	15.3%	0.36	170	17.6%	0.38	192	18.8%	0.39
not_careful_with_money	789	6.5%	0.25	300	8.7%	0.28	543	7.6%	0.26	169	5.9%	0.24	191	4.2%	0.20
tend_not_careful_with_money	789	6.2%	0.24	300	7.0%	0.26	543	6.4%	0.25	169	5.9%	0.24	191	3.1%	0.17
tend_careful_with_money	789	23.6%	0.42	300	24.3%	0.43	543	27.1%	0.44	169	17.8%	0.38	191	27.7%	0.45
careful_with_money	789	63.8%	0.48	300	60.0%	0.49	543	58.9%	0.49	169	70.4%	0.46	191	64.9%	0.48
do_not_try_to_regularly_save	782	14.5%	0.35	298	16.1%	0.37	540	15.6%	0.36	169	24.9%	0.43	192	16.7%	0.37
tend_not_try_to_regularly_save	782	13.6%	0.34	298	14.8%	0.36	540	17.0%	0.38	169	10.7%	0.31	192	18.2%	0.39
tend_try_to_regularly_save	782	32.1%	0.47	298	34.6%	0.48	540	32.2%	0.47	169	37.9%	0.49	192	35.4%	0.48

Technical Annex 3: Impact of the cap on HCSTC demand

try_to_regularly_save	782	39.9%	0.49	298	34.6%	0.48	540	35.2%	0.48	169	26.6%	0.44	192	29.7%	0.46
do_not_think_finances_improve	782	3.8%	0.19	297	6.1%	0.24	539	3.5%	0.18	168	6.5%	0.25	187	1.1%	0.10
tend_not_think_finances_improve	782	4.5%	0.21	297	3.7%	0.19	539	5.8%	0.23	168	4.2%	0.20	187	5.3%	0.23
tend_think_finances_improve	782	27.5%	0.45	297	26.3%	0.44	539	26.9%	0.44	168	25.6%	0.44	187	32.1%	0.47
think_finances_improve	782	64.2%	0.48	297	64.0%	0.48	539	63.8%	0.48	168	63.7%	0.48	187	61.5%	0.49
do_not_ignore_debt_letters	787	51.5%	0.50	300	51.0%	0.50	539	58.1%	0.49	169	43.8%	0.50	191	52.4%	0.50
tend_not_ignore_debt_letters	787	15.0%	0.36	300	14.0%	0.35	539	12.8%	0.33	169	7.1%	0.26	191	12.6%	0.33
tend_try_ignore_debt_letters	787	15.5%	0.36	300	14.3%	0.35	539	15.4%	0.36	169	21.3%	0.41	191	18.3%	0.39
ignore_debt_letters	787	18.0%	0.38	300	20.7%	0.41	539	13.7%	0.34	169	27.8%	0.45	191	16.8%	0.37
added_up_owed_debts	776	51.3%	0.50	301	58.5%	0.49	537	60.9%	0.49	170	42.4%	0.50	189	57.7%	0.50
tend_added_up_owed_debts	776	16.4%	0.37	301	15.0%	0.36	537	15.5%	0.36	170	17.6%	0.38	189	12.2%	0.33
tend_not_added_up_owed_debts	776	13.3%	0.34	301	9.0%	0.29	537	8.2%	0.27	170	11.8%	0.32	189	14.8%	0.36
not_added_up_owed_debts	776	19.1%	0.39	301	17.6%	0.38	537	15.5%	0.36	170	28.2%	0.45	189	15.3%	0.36
fin_literacy_question1_correct	581	63.9%	0.48	225	66.7%	0.47	444	74.1%	0.44	113	59.3%	0.49	141	66.7%	0.47
fin_literacy_question2_correct	575	38.3%	0.49	224	42.0%	0.49	438	44.7%	0.50	110	41.8%	0.50	140	45.0%	0.50
no_savings	747	57.6%	0.49	289	65.4%	0.48	518	57.3%	0.50	164	73.8%	0.44	179	62.6%	0.49
saved_£1_£200	396	29.8%	0.46	138	27.5%	0.45	283	27.6%	0.45	60	30.0%	0.46	95	35.8%	0.48
saved_£200_to_£500	396	16.2%	0.37	138	15.2%	0.36	283	15.5%	0.36	60	20.0%	0.40	95	12.6%	0.33
saved_£500_to_£700	396	5.1%	0.22	138	5.1%	0.22	283	6.7%	0.25	60	6.7%	0.25	95	6.3%	0.24
saved_£700_to_£1000	396	4.3%	0.20	138	4.3%	0.20	283	3.9%	0.19	60	3.3%	0.18	95	5.3%	0.22
saved_£1000_to_£2000	396	7.1%	0.26	138	6.5%	0.25	283	8.5%	0.28	60	8.3%	0.28	95	3.2%	0.18
saved_£2000_to_£5000	396	9.3%	0.29	138	6.5%	0.25	283	7.8%	0.27	60	3.3%	0.18	95	2.1%	0.14
saved_£5000_to_£10000	396	3.3%	0.18	138	4.3%	0.20	283	3.9%	0.19	60	0.0%	0.00	95	3.2%	0.18
saved_£10000_to_£25000	396	1.8%	0.13	138	2.2%	0.15	283	2.8%	0.17	60	0.0%	0.00	95	0.0%	0.00
saved_£25000_to_£50000	396	1.8%	0.13	138	0.0%	0.00	283	0.4%	0.06	60	0.0%	0.00	95	1.1%	0.10
saved_over_£50000	396	1.5%	0.12	138	0.7%	0.09	283	1.1%	0.10	60	0.0%	0.00	95	1.1%	0.10
savings_or_deposit_account	790	35.9%	0.48	302	31.5%	0.47	546	37.7%	0.49	170	22.4%	0.42	192	33.9%	0.47
cash_ISA	790	14.4%	0.35	302	13.9%	0.35	546	17.8%	0.38	170	6.5%	0.25	192	15.6%	0.36
premium_bonds	790	2.5%	0.16	302	3.6%	0.19	546	5.5%	0.23	170	1.8%	0.13	192	3.6%	0.19
stocks_shares	790	2.9%	0.17	302	3.3%	0.18	546	4.9%	0.22	170	2.4%	0.15	192	3.1%	0.17
other_savings_product	790	3.0%	0.17	302	2.3%	0.15	546	2.6%	0.16	170	0.6%	0.08	192	3.6%	0.19

Technical Annex 3: Impact of the cap on HCSTC demand

other_savings_product_ex_pension	790	1.4%	0.12	302	1.0%	0.10	546	1.3%	0.11	170	0.6%	0.08	192	0.0%	0.00
savings_held_by_someone_else	790	7.8%	0.27	302	7.9%	0.27	546	9.9%	0.30	170	7.6%	0.27	192	5.7%	0.23
savings_at_home	790	14.8%	0.36	302	10.3%	0.30	546	13.0%	0.34	170	10.6%	0.31	192	9.4%	0.29
savings_club	790	2.8%	0.16	302	0.3%	0.06	546	1.6%	0.13	170	1.8%	0.13	192	1.0%	0.10
christmas_club	790	2.3%	0.15	302	1.7%	0.13	546	2.4%	0.15	170	1.2%	0.11	192	2.6%	0.16
jamjar_account	790	1.6%	0.13	302	2.0%	0.14	546	3.7%	0.19	170	0.0%	0.00	192	2.6%	0.16
gold_jewellery_antiques	790	5.4%	0.23	302	3.6%	0.19	546	4.0%	0.20	170	1.2%	0.11	192	2.6%	0.16
other_informal_savings	790	1.8%	0.13	302	0.7%	0.08	546	1.8%	0.13	170	1.2%	0.11	192	1.0%	0.10
overdraft_facility	790	36.6%	0.48	300	33.7%	0.47	543	44.9%	0.50	170	25.9%	0.44	190	40.5%	0.49
not_overdrawn	289	36.7%	0.48	101	26.7%	0.44	244	30.7%	0.46	44	31.8%	0.47	77	24.7%	0.43
overdrawn_under_£50	167	7.2%	0.26	70	7.1%	0.26	160	9.4%	0.29	30	23.3%	0.43	55	10.9%	0.31
overdrawn_£50_to_£100	167	10.2%	0.30	70	11.4%	0.32	160	6.9%	0.25	30	6.7%	0.25	55	5.5%	0.23
overdrawn_£100_to_£150	167	7.8%	0.27	70	7.1%	0.26	160	3.1%	0.17	30	6.7%	0.25	55	3.6%	0.19
overdrawn_£150_to_£200	167	8.4%	0.28	70	11.4%	0.32	160	6.9%	0.25	30	0.0%	0.00	55	7.3%	0.26
overdrawn_£200_to_£300	167	8.4%	0.28	70	7.1%	0.26	160	10.6%	0.31	30	16.7%	0.38	55	16.4%	0.37
overdrawn_£300_to_£400	167	7.2%	0.26	70	14.3%	0.35	160	5.0%	0.22	30	3.3%	0.18	55	5.5%	0.23
overdrawn_£400_to_£500	167	10.8%	0.31	70	1.4%	0.12	160	15.6%	0.36	30	3.3%	0.18	55	7.3%	0.26
overdrawn_£500_to_£600	167	1.2%	0.11	70	2.9%	0.17	160	3.1%	0.17	30	3.3%	0.18	55	9.1%	0.29
overdrawn_£600_to_£700	167	4.2%	0.20	70	1.4%	0.12	160	3.1%	0.17	30	3.3%	0.18	55	3.6%	0.19
overdrawn_£700_to_£800	167	4.8%	0.21	70	2.9%	0.17	160	4.4%	0.21	30	3.3%	0.18	55	1.8%	0.13
overdrawn_£800_to_£900	167	3.0%	0.17	70	1.4%	0.12	160	3.8%	0.19	30	3.3%	0.18	55	5.5%	0.23
overdrawn_£900_to_£1000	167	4.8%	0.21	70	11.4%	0.32	160	6.9%	0.25	30	6.7%	0.25	55	3.6%	0.19
overdrawn_£1000_to_£1500	167	7.8%	0.27	70	8.6%	0.28	160	6.9%	0.25	30	10.0%	0.31	55	12.7%	0.34
overdrawn_£1500_to_£2000	167	8.4%	0.28	70	4.3%	0.20	160	8.8%	0.28	30	3.3%	0.18	55	5.5%	0.23
overdrawn_over_£2000	167	6.0%	0.24	70	7.1%	0.26	160	5.6%	0.23	30	6.7%	0.25	55	1.8%	0.13
exceeded_overdraft_limit	281	52.3%	0.50	101	58.4%	0.50	240	57.9%	0.49	44	59.1%	0.50	74	68.9%	0.47
refused_payments	790	33.4%	0.47	302	32.1%	0.47	546	29.7%	0.46	170	34.1%	0.48	192	35.4%	0.48
refused_direct_debit	778	33.3%	0.47	295	32.5%	0.47	530	29.8%	0.46	167	32.9%	0.47	187	35.3%	0.48
refused_cheque	784	2.6%	0.16	301	2.0%	0.14	538	1.7%	0.13	170	5.9%	0.24	190	4.7%	0.21
actually_borrowed_anywhere	526	100.0%	0.00	181	100.0%	0.00	292	99.3%	0.08	101	100.0%	0.00	125	100.0%	0.00

Technical Annex 3: Impact of the cap on HCSTC demand

actually_borrowed_overdraft	790	5.3%	0.22	302	6.0%	0.24	546	5.7%	0.23	170	2.9%	0.17	192	4.7%	0.21
actually_borrowed_credit_card	790	4.7%	0.21	302	5.6%	0.23	546	6.6%	0.25	170	4.1%	0.20	192	5.2%	0.22
actually_borrowed_family	790	47.7%	0.50	302	39.7%	0.49	546	35.9%	0.48	170	41.8%	0.49	192	44.3%	0.50
actually_borrowed_friend	790	25.8%	0.44	302	19.5%	0.40	546	17.6%	0.38	170	28.8%	0.45	192	27.1%	0.45
actually_borrowed_colleague	790	5.4%	0.23	302	3.6%	0.19	546	4.6%	0.21	170	4.7%	0.21	192	5.7%	0.23
actually_borrowed_employer	790	5.8%	0.23	302	2.6%	0.16	546	4.6%	0.21	170	2.9%	0.17	192	2.6%	0.16
actually_borrowed_socialfund	790	7.5%	0.26	302	7.6%	0.27	546	2.6%	0.16	170	12.4%	0.33	192	4.7%	0.21
actually_borrowed_creditunion	790	2.4%	0.15	302	0.3%	0.06	546	1.3%	0.11	170	1.2%	0.11	192	5.7%	0.23
actually_borrowed_homecredit	790	5.3%	0.22	302	5.0%	0.22	546	3.1%	0.17	170	2.9%	0.17	192	7.3%	0.26
actually_borrowed_longloan	790	2.7%	0.16	302	5.3%	0.22	546	3.8%	0.19	170	1.2%	0.11	192	5.2%	0.22
actually_borrowed_pawnbroking	790	4.3%	0.20	302	5.0%	0.22	546	2.4%	0.15	170	3.5%	0.19	192	4.2%	0.20
actually_borrowed_logbook	790	0.9%	0.09	302	1.7%	0.13	546	0.5%	0.07	170	0.6%	0.08	192	2.1%	0.14
actually_borrowed_loanshark	790	1.4%	0.12	302	1.0%	0.10	546	0.2%	0.04	170	1.2%	0.11	192	0.5%	0.07
total_outstanding_debt	287	£1,115	2377	103	£893	1388	143	£983	2035	63	£780	1630	74	£1,872	6288
outstanding_debt_family	175	£1,119	2568	64	£808	1187	91	£753	1593	44	£509	775	43	£700	1220
outstanding_debt_friends	84	£510	1257	18	£262	354	32	£270	539	21	£209	422	21	£890	3237
outstanding_debt_colleagues	17	£95	87	6	£166	313	5	£172	244	5	£82	68	3	£1,793	2782
outstanding_debt_employer	9	£633	1272	1	£2,500	.	6	£354	269	2	£300	141	3	£872	1410
outstanding_debt_socialfund	43	£424	276	18	£360	259	8	£189	262	15	£462	276	7	£391	513
outstanding_debt_creditunion	13	£516	456	1	£300	.	5	£1,240	808	0	.	.	8	£932	1317
outstanding_debt_homecredit	30	£544	538	11	£340	316	14	£776	1074	3	£227	247	10	£764	1172
outstanding_debt_longloan	13	£1,202	1511	13	£980	912	18	£2,114	4031	2	£3,500	707	6	£10,181	19612
outstanding_debt_pawnbroking	19	£323	390	11	£323	332	7	£297	272	4	£900	1402	7	£258	350
outstanding_debt_logbook	4	£950	759	2	£2,250	2475	1	£1,420	.	1	£3,000	.	2	£300	141
outstanding_debt_loanshark	7	£1,031	2196	1	£800	.	1	£300	.	1	£130	.	1	£400	.
total_debt_repayment	178	£105	105	65	£142	163	81	£107	98	33	£91	168	44	£118	117
debt_repayment_family	85	£90	90	30	£110	117	32	£112	116	18	£57	44	17	£98	93
debt_repayment_friends	36	£71	93	7	£49	48	8	£39	29	4	£39	9	8	£93	139
debt_repayment_colleagues	2	£30	28	2	£225	247	1	£100	.	2	£25	7	1	£5	.
debt_repayment_employer	4	£138	85	1	£100	.	4	£95	53	1	£100	.	2	£103	138
debt_repayment_socialfund	38	£55	41	16	£50	47	7	£50	46	13	£31	22	6	£33	12

Technical Annex 3: Impact of the cap on HCSTC demand

debt_repayment_creditunion	13	£91	88	1	£50	.	5	£60	19	0	.	.	7	£66	71
debt_repayment_homecredit	27	£77	56	10	£136	237	14	£107	100	3	£68	49	7	£126	78
debt_repayment_longloan	10	£157	122	12	£149	85	15	£130	83	2	£445	361	5	£153	70
debt_repayment_pawnbroking	7	£64	83	4	£223	192	2	£55	21	0	.	.	3	£22	14
debt_repayment_logbook	4	£98	57	2	£85	64	1	£130	.	1	£160	.	1	£216	.
debt_repayment_loanshark	4	£40	19	1	£1	.	0	.	.	1	£13	.	0	.	.
behind_any_loan_repayments	210	76.2%	0.43	70	80.0%	0.40	104	74.0%	0.44	41	65.9%	0.48	55	80.0%	0.40
behind_family_repayment	110	31.8%	0.47	36	27.8%	0.45	56	26.8%	0.45	24	45.8%	0.51	31	29.0%	0.46
behind_friend_repayment	45	31.1%	0.47	8	50.0%	0.53	12	50.0%	0.52	7	71.4%	0.49	11	27.3%	0.47
behind_colleagues_repayment	5	20.0%	0.45	2	0.0%	0.00	1	100.0%	.	2	0.0%	0.00	2	100.0%	0.00
behind_employer_repayment	6	16.7%	0.41	1	0.0%	.	5	0.0%	0.00	1	0.0%	.	2	50.0%	0.71
behind_socialfund_repayment	38	2.6%	0.16	16	6.3%	0.25	7	0.0%	0.00	14	7.1%	0.27	6	0.0%	0.00
behind_creditunion_repayment	13	0.0%	0.00	1	100.0%	.	5	0.0%	0.00	0	.	.	7	0.0%	0.00
behind_homecredit_repayment	29	13.8%	0.35	10	20.0%	0.42	14	35.7%	0.50	3	0.0%	0.00	9	0.0%	0.00
behind_longloan_repayment	13	7.7%	0.28	12	8.3%	0.29	16	18.8%	0.40	2	0.0%	0.00	5	20.0%	0.45
behind_pawnbroking_repayment	9	0.0%	0.00	3	66.7%	0.58	2	50.0%	0.71	0	.	.	5	0.0%	0.00
behind_logbook_repayment	4	0.0%	0.00	2	50.0%	0.71	1	100.0%	.	1	0.0%	.	1	0.0%	.
behind_loanshark_rpymnt	5	40.0%	0.55	1	100.0%	.	0	.	.	1	100.0%	.	1	100.0%	.
total_overdue_debt	43	£384	503	11	£1,661	2247	22	£453	698	12	£317	396	9	£633	649
overdue_debt_family	29	£414	573	8	£1,600	1970	12	£436	599	9	£298	364	7	£606	710
overdue_debt_friends	13	£202	193	3	£733	462	5	£604	842	5	£206	192	3	£190	36
overdue_debt_colleagues	0	.	.	0	.	.	1	£200	.	0	.	.	2	£190	226
overdue_debt_employer	0	.	.	0	.	.	0	.	.	0	.	.	1	£106	.
overdue_debt_socialfund	1	£1,000	.	1	£30	.	0	.	.	0	.	.	0	.	.
overdue_debt_creditunion	0	.	.	1	£50	.	0	.	.	0	.	.	0	.	.
overdue_debt_homecredit	3	£150	217	2	£695	148	5	£140	82	0	.	.	0	.	.
overdue_debt_longloan	1	£280	.	1	£300	.	2	£260	198	0	.	.	0	.	.
overdue_debt_pawnbroking	0	.	.	2	£284	356	1	£200	.	0	.	.	0	.	.
overdue_debt_logbook	0	.	.	1	£130	.	1	£90	.	0	.	.	0	.	.
overdue_debt_loanshark	2	£73	39	1	£800	.	0	.	.	1	£90	.	1	£400	.

Technical Annex 3: Impact of the cap on HCSTC demand

attempt_borrow_anywhere	790	33.7%	0.47	301	31.6%	0.47	545	28.4%	0.45	170	33.5%	0.47	192	40.6%	0.49
attempt_borrow_overdraft	790	9.4%	0.29	302	9.9%	0.30	546	9.2%	0.29	170	8.2%	0.28	192	16.7%	0.37
attempt_borrow_credit_card	790	4.8%	0.21	302	4.3%	0.20	546	4.2%	0.20	170	1.8%	0.13	192	5.7%	0.23
attempt_borrow_family	790	16.3%	0.37	302	15.2%	0.36	546	10.6%	0.31	170	20.0%	0.40	192	20.8%	0.41
attempt_borrow_friend	790	9.6%	0.30	302	7.6%	0.27	546	5.1%	0.22	170	12.9%	0.34	192	11.5%	0.32
attempt_borrow_colleague	790	1.8%	0.13	302	0.7%	0.08	546	1.3%	0.11	170	1.2%	0.11	192	2.6%	0.16
attempt_borrow_employer	790	3.5%	0.19	302	1.3%	0.11	546	2.6%	0.16	170	1.2%	0.11	192	3.1%	0.17
attempt_borrow_socialfund	790	3.8%	0.19	302	4.3%	0.20	546	1.5%	0.12	170	5.3%	0.22	192	3.1%	0.17
attempt_borrow_creditunion	790	1.8%	0.13	302	0.3%	0.06	546	0.7%	0.09	170	0.0%	0.00	192	3.1%	0.17
attempt_borrow_homecredit	790	2.7%	0.16	302	3.0%	0.17	546	1.6%	0.13	170	1.2%	0.11	192	1.0%	0.10
attempt_borrow_longloan	790	3.5%	0.19	302	3.6%	0.19	546	3.8%	0.19	170	6.5%	0.25	192	6.3%	0.24
attempt_borrow_pawnbroking	790	2.3%	0.15	302	1.7%	0.13	546	1.8%	0.13	170	3.5%	0.19	192	2.6%	0.16
attempt_borrow_logbook	790	0.5%	0.07	302	0.7%	0.08	546	0.0%	0.00	170	0.0%	0.00	192	1.0%	0.10
attempt_borrow_loanshark	790	0.8%	0.09	302	0.3%	0.06	546	0.2%	0.04	170	0.6%	0.08	192	1.6%	0.12
any_loanshark_interaction	790	1.6%	0.13	302	1.0%	0.10	546	0.4%	0.06	170	1.2%	0.11	192	1.6%	0.12
attempt_borrow_rej	258	60.1%	0.49	93	50.5%	0.50	154	50.0%	0.50	57	63.2%	0.49	78	47.4%	0.50
attempt_borrow_putoff	785	45.7%	0.50	299	33.8%	0.47	543	30.9%	0.46	169	47.9%	0.50	190	45.8%	0.50
after_denial_went_without	411	32.8%	0.47	120	30.0%	0.46	183	31.7%	0.47	84	34.5%	0.48	93	29.0%	0.46
after_denial_did_nothing	411	27.3%	0.45	120	36.7%	0.48	183	30.1%	0.46	84	42.9%	0.50	93	23.7%	0.43
after_denial_sold_something	411	1.7%	0.13	120	1.7%	0.13	183	0.0%	0.00	84	1.2%	0.11	93	0.0%	0.00
after_denial_use_savings	411	1.0%	0.10	120	0.8%	0.09	183	0.0%	0.00	84	0.0%	0.00	93	0.0%	0.00
after_denial_saved_up	411	2.4%	0.15	120	1.7%	0.13	183	4.9%	0.22	84	1.2%	0.11	93	2.2%	0.15
after_denial_borrow_friends	411	15.8%	0.37	120	6.7%	0.25	183	7.1%	0.26	84	4.8%	0.21	93	6.5%	0.25
after_denial_friend_buy	411	3.2%	0.18	120	1.7%	0.13	183	1.1%	0.10	84	2.4%	0.15	93	3.2%	0.18
after_denial_borrow_pdl	411	6.1%	0.24	120	15.0%	0.36	183	13.1%	0.34	84	2.4%	0.15	93	23.7%	0.43
after_denial_borrow_nonpdl	411	3.6%	0.19	120	5.8%	0.24	183	4.4%	0.21	84	1.2%	0.11	93	3.2%	0.18
after_denial_loan_default	411	0.2%	0.05	120	0.8%	0.09	183	0.5%	0.07	84	0.0%	0.00	93	2.2%	0.15
after_denial_cut_spending	411	1.5%	0.12	120	0.0%	0.00	183	1.6%	0.13	84	1.2%	0.11	93	1.1%	0.10
after_denial_prolong_debts	411	0.0%	0.00	120	0.8%	0.09	183	1.1%	0.10	84	0.0%	0.00	93	2.2%	0.15
after_denial_creditscore	411	1.7%	0.13	120	0.8%	0.09	183	1.1%	0.10	84	0.0%	0.00	93	2.2%	0.15
after_denial_increase_work	411	0.5%	0.07	120	0.0%	0.00	183	0.0%	0.00	84	1.2%	0.11	93	0.0%	0.00

Technical Annex 3: Impact of the cap on HCSTC demand

after_denial_debt_management	411	0.2%	0.05	120	0.0%	0.00	183	0.0%	0.00	84	1.2%	0.11	93	1.1%	0.10
after_denial_something_else	411	2.4%	0.15	120	0.8%	0.09	183	6.0%	0.24	84	8.3%	0.28	93	3.2%	0.18

Table A24: HCSTC-related Experiences of Surveyed Consumers

	Marginal unsuccessful			Marginal successful			Less marginal successful			Problem debt			Habitual borrowers		
	N	Mean	s.d.	N	Mean	s.d.	N	Mean	s.d.	N	Mean	s.d.	N	Mean	s.d.
Sample size	790			302			546			170			192		
remember_loan_very_well	781	19.8%	0.40	299	50.2%	0.50	545	46.8%	0.50	170	41.2%	0.49	0	.	.
remember_loan_fairly_well	781	33.7%	0.47	299	35.5%	0.48	545	38.2%	0.49	170	38.2%	0.49	0	.	.
remember_loan_not_very_well	781	28.9%	0.45	299	10.0%	0.30	545	11.7%	0.32	170	14.1%	0.35	0	.	.
remember_loan_not_at_all_well	781	17.5%	0.38	299	4.3%	0.20	545	3.3%	0.18	170	6.5%	0.25	0	.	.
loanmonth_jun13	790	15.6%	0.36	302	14.2%	0.35	546	0.0%	0.00	170	0.0%	0.00	192	0.0%	0.00
loanmonth_jul13	790	17.7%	0.38	302	19.9%	0.40	546	25.8%	0.44	170	22.9%	0.42	192	0.0%	0.00
loanmonth_aug13	790	19.5%	0.40	302	19.9%	0.40	546	25.1%	0.43	170	22.9%	0.42	192	0.0%	0.00
loanmonth_sep13	790	21.8%	0.41	302	21.2%	0.41	546	24.9%	0.43	170	28.2%	0.45	192	0.0%	0.00
loanmonth_oct13	790	25.4%	0.44	302	24.2%	0.43	546	24.2%	0.43	170	25.9%	0.44	192	0.0%	0.00
loanmonth_nov13	790	0.0%	0.00	302	0.7%	0.08	546	0.0%	0.00	170	0.0%	0.00	192	0.0%	0.00
happy_decision	0	.	.	300	52.7%	0.50	545	63.1%	0.48	170	29.4%	0.46	190	38.4%	0.49
indifferent_decision	0	.	.	300	6.3%	0.24	545	6.4%	0.25	170	4.1%	0.20	190	11.1%	0.31
regret_decision	0	.	.	300	41.0%	0.49	545	30.5%	0.46	170	66.5%	0.47	190	50.5%	0.50
regret_a_lot	0	.	.	123	81.3%	0.39	165	74.5%	0.44	113	80.5%	0.40	0	.	.
regret_a_little	0	.	.	123	18.7%	0.39	165	25.5%	0.44	113	19.5%	0.40	0	.	.
best_accepted	772	28.1%	0.45	0	.	.	0	.	.	0	.	.	0	.	.
best_indifferent	772	8.7%	0.28	0	.	.	0	.	.	0	.	.	0	.	.
best_declined	772	63.2%	0.48	0	.	.	0	.	.	0	.	.	0	.	.
repaid_less	0	.	.	293	5.1%	0.22	540	10.4%	0.31	169	4.1%	0.20	0	.	.
repaid_expected	0	.	.	293	55.6%	0.50	540	61.7%	0.49	169	40.2%	0.49	0	.	.
repaid_more	0	.	.	293	39.2%	0.49	540	28.0%	0.45	169	55.6%	0.50	0	.	.
alt_cost_less	17	76.5%	0.44	0	.	.	0	.	.	0	.	.	0	.	.
alt_cost_same	17	23.5%	0.44	0	.	.	0	.	.	0	.	.	0	.	.
alt_cost_more	17	5.9%	0.24	0	.	.	0	.	.	0	.	.	0	.	.

Technical Annex 3: Impact of the cap on HCSTC demand

apply_pdl_again	775	23.7%	0.43	298	29.2%	0.46	536	39.7%	0.49	170	19.4%	0.40	0	.	.
go_without_pdl	775	42.3%	0.49	298	39.9%	0.49	536	26.9%	0.44	170	51.2%	0.50	0	.	.
use_pdl_alternative	775	33.9%	0.47	298	30.9%	0.46	536	33.4%	0.47	170	29.4%	0.46	0	.	.
without_alternative_apply_pdl	0	.	.	85	44.7%	0.50	172	50.6%	0.50	49	26.5%	0.45	0	.	.
without_alternative_go_without	0	.	.	85	55.3%	0.50	172	49.4%	0.50	49	73.5%	0.45	0	.	.
easily_gone_without_money	766	25.3%	0.44	295	11.9%	0.32	536	11.6%	0.32	164	15.9%	0.37	185	7.0%	0.26
possibly_gone_without_money	766	46.6%	0.50	295	33.2%	0.47	536	38.2%	0.49	164	32.3%	0.47	185	36.2%	0.48
not_gone_without_money	766	28.1%	0.45	295	54.9%	0.50	536	50.2%	0.50	164	51.8%	0.50	185	56.8%	0.50
not_spent_pdl_money	0	.	.	300	1.3%	0.11	544	1.1%	0.10	169	1.8%	0.13	0	.	.
spent_part_of_pdl_money	0	.	.	300	4.0%	0.20	544	3.5%	0.18	169	2.4%	0.15	0	.	.
spent_all_pdl_money	0	.	.	300	94.7%	0.23	544	95.4%	0.21	169	95.9%	0.20	0	.	.
used_pdl_money_as_planned	0	.	.	290	94.1%	0.24	531	95.5%	0.21	161	87.6%	0.33	0	.	.
intend_pdl_money_changed	0	.	.	4	75.0%	0.50	6	33.3%	0.52	2	0.0%	0.00	0	.	.
why_pdl_speed	790	32.7%	0.47	302	45.7%	0.50	546	43.0%	0.50	170	30.6%	0.46	192	38.5%	0.49
why_pdl_limits_amount	790	1.4%	0.12	302	2.0%	0.14	546	0.5%	0.07	170	0.6%	0.08	192	1.0%	0.10
why_pdl_only_st_option	790	3.4%	0.18	302	5.3%	0.22	546	7.1%	0.26	170	7.1%	0.26	192	5.7%	0.23
why_pdl_option_extend	790	0.3%	0.05	302	0.3%	0.06	546	0.4%	0.06	170	0.0%	0.00	192	0.0%	0.00
why_pdl_no_checks	790	2.2%	0.15	302	4.0%	0.20	546	4.2%	0.20	170	4.1%	0.20	192	0.5%	0.07
why_pdl_only_small_option	790	2.0%	0.14	302	9.3%	0.29	546	7.1%	0.26	170	8.8%	0.28	192	6.8%	0.25
why_pdl_cheapest_option	790	3.8%	0.19	302	1.7%	0.13	546	1.8%	0.13	170	1.8%	0.13	192	2.1%	0.14
why_pdl_only_option	790	19.0%	0.39	302	22.2%	0.42	546	24.4%	0.43	170	30.6%	0.46	192	34.4%	0.48
why_pdl_preferred_option	790	10.8%	0.31	302	3.6%	0.19	546	7.7%	0.27	170	5.3%	0.22	192	6.8%	0.25
why_pdl_selfcontrol	790	0.1%	0.04	302	0.7%	0.08	546	0.4%	0.06	170	0.0%	0.00	192	0.0%	0.00
why_pdl_good_relationship	790	0.3%	0.05	302	0.3%	0.06	546	0.5%	0.07	170	0.6%	0.08	192	0.0%	0.00
why_pdl_no_late_charge	790	0.1%	0.04	302	0.0%	0.00	546	0.0%	0.00	170	0.0%	0.00	192	0.0%	0.00
why_pdl_maxed_out	790	0.6%	0.08	302	0.0%	0.00	546	0.2%	0.04	170	0.0%	0.00	192	0.0%	0.00
why_pdl_advertising	790	3.3%	0.18	302	0.7%	0.08	546	1.5%	0.12	170	1.8%	0.13	192	3.1%	0.17
why_pdl_unknown_alternatives	790	0.8%	0.09	302	1.7%	0.13	546	0.9%	0.10	170	0.0%	0.00	192	0.5%	0.07
why_pdl_private_option	790	1.8%	0.13	302	0.7%	0.08	546	1.6%	0.13	170	1.8%	0.13	192	4.2%	0.20
why_pdl_recommended	790	3.4%	0.18	302	1.7%	0.13	546	1.5%	0.12	170	2.4%	0.15	192	1.6%	0.12

Technical Annex 3: Impact of the cap on HCSTC demand

why_pdl_badcredit	790	0.8%	0.09	302	1.0%	0.10	546	0.5%	0.07	170	0.6%	0.08	192	0.0%	0.00
why_pdl_impulse	790	1.5%	0.12	302	0.0%	0.00	546	0.0%	0.00	170	0.0%	0.00	192	0.0%	0.00
why_pdl_curiosity	790	2.2%	0.15	302	0.0%	0.00	546	0.0%	0.00	170	0.0%	0.00	192	0.0%	0.00
why_pdl_other	790	10.3%	0.30	302	5.3%	0.22	546	4.2%	0.20	170	7.1%	0.26	192	5.2%	0.22
why_pdl_dontknow	790	4.7%	0.21	302	2.0%	0.14	546	2.2%	0.15	170	2.9%	0.17	192	1.0%	0.10
plan_use_basic	785	47.0%	0.50	289	54.3%	0.50	510	54.9%	0.50	163	61.3%	0.49	191	62.8%	0.48
plan_use_discretionary	785	16.1%	0.37	289	18.7%	0.39	510	19.6%	0.40	163	15.3%	0.36	191	13.6%	0.34
plan_use_shock	785	15.7%	0.36	289	11.4%	0.32	510	7.5%	0.26	163	7.4%	0.26	191	9.4%	0.29
plan_use_othercat	785	15.8%	0.36	289	17.0%	0.38	510	18.8%	0.39	163	19.0%	0.39	191	13.6%	0.34
plan_use_housing	785	6.1%	0.24	289	8.3%	0.28	510	4.1%	0.20	163	0.6%	0.08	191	4.2%	0.20
plan_use_livingcost	785	17.6%	0.38	289	26.3%	0.44	510	29.4%	0.46	163	34.4%	0.48	191	26.7%	0.44
plan_use_bills	785	26.8%	0.44	289	24.2%	0.43	510	24.3%	0.43	163	31.3%	0.47	191	38.7%	0.49
plan_use_electronics	785	1.0%	0.10	289	1.0%	0.10	510	0.8%	0.09	163	1.2%	0.11	191	0.0%	0.00
plan_use_repair	785	3.7%	0.19	289	2.4%	0.15	510	1.6%	0.12	163	3.1%	0.17	191	2.1%	0.14
plan_use_car	785	12.0%	0.32	289	9.0%	0.29	510	5.9%	0.24	163	4.3%	0.20	191	7.3%	0.26
plan_use_help_friend	785	2.8%	0.17	289	3.5%	0.18	510	3.1%	0.17	163	3.7%	0.19	191	2.6%	0.16
plan_use_present	785	3.3%	0.18	289	2.4%	0.15	510	4.7%	0.21	163	3.7%	0.19	191	2.6%	0.16
plan_use_holiday	785	10.2%	0.30	289	11.4%	0.32	510	14.1%	0.35	163	6.7%	0.25	191	9.4%	0.29
plan_use_pay_pdl	785	0.3%	0.05	289	0.3%	0.06	510	0.0%	0.00	163	1.2%	0.11	191	0.5%	0.07
plan_use_otherdebts	785	5.2%	0.22	289	4.5%	0.21	510	5.1%	0.22	163	8.0%	0.27	191	2.6%	0.16
plan_use_business	785	1.7%	0.13	289	0.3%	0.06	510	1.0%	0.10	163	0.0%	0.00	191	0.5%	0.07
plan_use_gambling	785	0.1%	0.04	289	0.0%	0.00	510	0.0%	0.00	163	0.0%	0.00	191	0.5%	0.07
plan_use_spare_money	785	0.3%	0.05	289	1.4%	0.12	510	1.2%	0.11	163	0.6%	0.08	191	0.0%	0.00
plan_use_fund_shortfall	785	0.0%	0.00	289	1.0%	0.10	510	2.0%	0.14	163	0.0%	0.00	191	2.6%	0.16
plan_use_home_improve	785	0.5%	0.07	289	3.1%	0.17	510	0.6%	0.08	163	3.7%	0.19	191	0.5%	0.07
plan_use_wedding	785	0.9%	0.09	289	0.7%	0.08	510	0.0%	0.00	163	0.0%	0.00	191	0.5%	0.07
plan_use_other	785	5.9%	0.24	289	5.2%	0.22	510	5.9%	0.24	163	5.5%	0.23	191	4.7%	0.21
plan_use_dontknow	785	7.1%	0.26	289	0.0%	0.00	510	0.0%	0.00	163	0.0%	0.00	184	0.0%	0.00
consider_any_alternatives	785	54.3%	0.50	301	56.5%	0.50	542	55.4%	0.50	170	56.5%	0.50	192	59.9%	0.49
consider_creditcard	422	3.3%	0.18	167	5.4%	0.23	297	4.0%	0.20	95	0.0%	0.00	107	11.2%	0.32
consider_pdl	422	8.3%	0.28	167	4.8%	0.21	297	5.7%	0.23	95	6.3%	0.24	107	15.0%	0.36

Technical Annex 3: Impact of the cap on HCSTC demand

consider_homecredit	422	1.2%	0.11	167	2.4%	0.15	297	0.7%	0.08	95	1.1%	0.10	107	0.9%	0.10
consider_pawnbroking	422	0.9%	0.10	167	2.4%	0.15	297	0.7%	0.08	95	2.1%	0.14	107	0.9%	0.10
consider_creditunion	422	0.7%	0.08	167	0.6%	0.08	297	0.7%	0.08	95	0.0%	0.00	107	3.7%	0.19
consider_socialfund	422	1.2%	0.11	167	0.0%	0.00	297	0.3%	0.06	95	1.1%	0.10	107	0.9%	0.10
consider_bankloan	422	11.6%	0.32	167	15.0%	0.36	297	12.1%	0.33	95	10.5%	0.31	107	26.2%	0.44
consider_friend_relative	422	69.4%	0.46	167	65.9%	0.48	297	70.0%	0.46	95	76.8%	0.42	107	51.4%	0.50
consider_community_figure	422	0.2%	0.05	167	0.6%	0.08	297	0.7%	0.08	95	0.0%	0.00	107	0.0%	0.00
consider_selling_asset	422	0.9%	0.10	167	1.8%	0.13	297	1.3%	0.12	95	1.1%	0.10	107	0.0%	0.00
consider_employer	422	0.2%	0.05	167	1.2%	0.11	297	1.7%	0.13	95	0.0%	0.00	107	0.9%	0.10
consider_use_savings	422	0.5%	0.07	167	1.2%	0.11	297	0.3%	0.06	95	0.0%	0.00	107	0.0%	0.00
consider_other	422	3.1%	0.17	167	2.4%	0.15	297	3.0%	0.17	95	3.2%	0.18	107	4.7%	0.21
consider_loanshark	782	8.3%	0.28	301	5.3%	0.22	540	4.6%	0.21	170	8.8%	0.28	192	8.3%	0.28
consider_loanshark_edited	790	4.7%	0.21	302	3.3%	0.18	546	3.7%	0.19	170	6.5%	0.25	192	6.3%	0.24
notborrow	789	58.6%	0.49	302	59.9%	0.49	546	56.4%	0.50	169	65.1%	0.48	0	.	.
borrow_friendfam	789	27.5%	0.45	302	19.2%	0.39	546	25.1%	0.43	169	17.2%	0.38	0	.	.
borrow_credit	789	10.4%	0.31	302	7.6%	0.27	546	7.1%	0.26	169	3.6%	0.19	0	.	.
without_loan_went_without	789	20.3%	0.40	302	20.5%	0.40	546	24.4%	0.43	169	26.0%	0.44	0	.	.
without_loan_did_nothing	789	23.4%	0.42	302	26.5%	0.44	546	22.3%	0.42	169	22.5%	0.42	0	.	.
without_loan_sold_something	789	2.3%	0.15	302	4.0%	0.20	546	2.7%	0.16	169	4.7%	0.21	0	.	.
without_loan_use_savings	789	1.3%	0.11	302	0.7%	0.08	546	0.2%	0.04	169	0.0%	0.00	0	.	.
without_loan_saved_up	789	3.4%	0.18	302	2.0%	0.14	546	2.6%	0.16	169	3.0%	0.17	0	.	.
without_loan_borrow_friends	789	25.3%	0.44	302	17.5%	0.38	546	22.3%	0.42	169	16.6%	0.37	0	.	.
without_loan_friend_buy	789	2.2%	0.15	302	1.7%	0.13	546	3.1%	0.17	169	0.6%	0.08	0	.	.
without_loan_borrow_pdl	789	6.3%	0.24	302	5.3%	0.22	546	2.4%	0.15	169	2.4%	0.15	0	.	.
without_loan_borrow_nonpdl	789	4.1%	0.20	302	2.3%	0.15	546	4.9%	0.22	169	1.2%	0.11	0	.	.
without_loan_default	789	1.6%	0.13	302	1.3%	0.11	546	2.7%	0.16	169	1.8%	0.13	0	.	.
without_loan_cut_spending	789	1.4%	0.12	302	0.7%	0.08	546	0.9%	0.10	169	0.6%	0.08	0	.	.
without_loan_prolong_debts	789	1.1%	0.11	302	2.0%	0.14	546	2.6%	0.16	169	1.2%	0.11	0	.	.
without_loan_increase_work	789	1.1%	0.11	302	0.3%	0.06	546	0.0%	0.00	169	0.6%	0.08	0	.	.
without_loan_debt_management	789	0.5%	0.07	302	0.0%	0.00	546	0.0%	0.00	169	0.0%	0.00	0	.	.

Technical Annex 3: Impact of the cap on HCSTC demand

without_loan_something_else	789	3.4%	0.18	302	4.0%	0.20	546	1.6%	0.13	169	7.1%	0.26	0	.	.
without_loan_dontknow	789	3.7%	0.19	302	13.2%	0.34	546	11.7%	0.32	169	14.8%	0.36	0	.	.

**Table A25: Comfort using alternatives without access to HCSTC
(n.b. all have small sample size except 'borrow from friends')**

Comfort responses relate to "without_loan_" options	% of respondents					Number of respondents				
	Marginal unsuccessful	Marginal successful	Less marginal successful	Problem debt	Habitual borrowers	Marginal unsuccessful	Marginal successful	Less marginal successful	Problem debt	Habitual borrowers
sold_something										
Very uncomfortable	75%	80%	57%	75%	50%	9	8	8	6	3
Fairly uncomfortable	17%	20%	29%	13%	33%	2	2	4	1	2
Fairly comfortable	8%	0%	7%	13%	17%	1	0	1	1	1
Very comfortable	0%	0%	7%	0%	0%	0	0	1	0	0
use_savings										
Very uncomfortable	10%	0%	100%	0%	0%	1	0	1	0	0
Fairly uncomfortable	20%	50%	0%	0%	0%	2	1	0	0	0
Fairly comfortable	50%	50%	0%	0%	0%	5	1	0	0	0
Very comfortable	20%	0%	0%	0%	0%	2	0	0	0	0
saved_up										
Very uncomfortable	20%	20%	0%	20%	0%	5	1	0	1	0
Fairly uncomfortable	24%	60%	15%	60%	0%	6	3	2	3	0
Fairly comfortable	36%	0%	62%	20%	0%	9	0	8	1	0
Very comfortable	20%	20%	23%	0%	0%	5	1	3	0	0
borrow_friends										
Very uncomfortable	27%	44%	34%	26%	22%	53	24	42	7	8
Fairly uncomfortable	31%	33%	34%	52%	42%	61	18	42	14	15
Fairly comfortable	27%	15%	20%	19%	31%	53	8	25	5	11
Very comfortable	16%	7%	11%	4%	6%	32	4	14	1	2
friend_buy										
Very uncomfortable	47%	60%	35%	0%	75%	7	3	6	0	3
Fairly uncomfortable	20%	20%	18%	0%	0%	3	1	3	0	0
Fairly comfortable	33%	0%	35%	100%	0%	5	0	6	1	0
Very comfortable	0%	20%	12%	0%	25%	0	1	2	0	1
borrow_pdl										
Very uncomfortable	29%	20%	18%	40%	50%	13	3	2	2	2
Fairly uncomfortable	27%	27%	36%	40%	50%	12	4	4	2	2
Fairly comfortable	33%	33%	18%	20%	0%	15	5	2	1	0
Very comfortable	11%	20%	27%	0%	0%	5	3	3	0	0
borrow_nonpdl										
Very uncomfortable	19%	0%	20%	0%	67%	3	0	3	0	4

Technical Annex 3: Impact of the cap on HCSTC demand

Fairly uncomfortable	13%	0%	33%	0%	33%	2	0	5	0	2
Fairly comfortable	38%	0%	40%	0%	0%	6	0	6	0	0
Very comfortable	31%	100%	7%	0%	0%	5	1	1	0	0
default										
Very uncomfortable	88%	100%	67%	0%	50%	7	2	4	0	1
Fairly uncomfortable	0%	0%	33%	100%	0%	0	0	2	3	0
Fairly comfortable	0%	0%	0%	0%	50%	0	0	0	0	1
Very comfortable	13%	0%	0%	0%	0%	1	0	0	0	0
cut_spending										
Very uncomfortable	0%	0%	25%	0%	0%	0	0	1	0	0
Fairly uncomfortable	22%	50%	25%	0%	0%	2	1	1	0	0
Fairly comfortable	56%	50%	25%	0%	100%	5	1	1	0	1
Very comfortable	22%	0%	25%	0%	0%	2	0	1	0	0
prolong_debts										
Very uncomfortable	25%	50%	22%	0%	0%	1	2	2	0	0
Fairly uncomfortable	25%	25%	67%	100%	0%	1	1	6	1	0
Fairly comfortable	50%	25%	11%	0%	100%	2	1	1	0	1
Very comfortable	0%	0%	0%	0%	0%	0	0	0	0	0
something_else										
Very uncomfortable	25%	65%	39%	62%	42%	26	24	24	16	5
Fairly uncomfortable	24%	16%	26%	19%	17%	25	6	16	5	2
Fairly comfortable	28%	14%	23%	15%	42%	29	5	14	4	5
Very comfortable	24%	5%	12%	4%	0%	25	2	7	1	0

Table A26: T-tests Comparing Consumers from Groups 1 and 2

(bold where difference is statistically significant at the 5% level)

	Number of respondents		P value for difference in means (group 2 less group 1 consumers)	Lower confidence interval	Difference in means (group 2 less group 1 consumers)	Upper confidence interval
	Group 1	Group 2				
gotloan	552	540	0.000	37.69%	42.37%	47.05%
permission_to_link_other_data	549	539	0.848	-3.30%	0.36%	4.01%
age	487	479	0.747	-1.26	0.25	1.76
male	552	539	0.135	-10.24%	-4.43%	1.38%
additional_adults	552	540	0.218	-2.12%	3.60%	9.31%
partner	552	540	0.040	0.29%	5.87%	11.44%
children	552	540	0.703	-6.95%	-1.13%	4.69%
home_own	546	538	0.409	-2.39%	-0.71%	0.97%
home_mortgage	546	538	0.113	-0.59%	2.51%	5.60%
home_private_rent	546	538	0.450	-3.58%	2.25%	8.08%
home_social_rent	546	538	0.311	-8.70%	-2.97%	2.77%
home_shared_ownership	546	538	0.719	-1.13%	-0.17%	0.78%
home_rent_free	546	538	0.189	-6.06%	-2.43%	1.19%
home_squat	546	538	0.000	0.00%	0.00%	0.00%
home_other	546	538	0.161	-0.61%	1.53%	3.66%
ethnic_white_brit	548	538	0.802	-4.83%	0.71%	6.24%
ethnic_white_irish	548	538	0.714	-2.08%	-0.33%	1.42%
ethnic_other_white	548	538	0.364	-4.28%	-1.35%	1.57%
ethnic_mixed	548	538	0.407	-2.91%	-0.86%	1.18%
ethnic_asian	548	538	0.839	-2.60%	0.30%	3.21%
ethnic_black	548	538	0.761	-4.12%	-0.55%	3.01%
ethnic_chinese	548	538	0.000	0.00%	0.00%	0.00%
ethnic_other	548	538	0.064	-0.12%	2.09%	4.30%
qualifications	552	540	0.719	-4.15%	0.93%	6.02%
education_degree	412	409	0.021	0.94%	6.22%	11.51%

Technical Annex 3: Impact of the cap on HCSTC demand

education_diploma	412	409	0.753	-4.56%	0.87%	6.31%
education_alevel	412	409	0.215	-9.59%	-3.72%	2.15%
education_gcse	412	409	0.675	-7.23%	-1.28%	4.68%
education_other	412	409	0.360	-6.60%	-2.10%	2.39%
fulltime_employed	550	540	0.169	-1.76%	4.16%	10.09%
parttime_employed	550	540	0.721	-5.19%	-0.80%	3.59%
unemployed	550	540	0.816	-5.27%	-0.56%	4.15%
retired	550	540	0.859	-1.78%	-0.15%	1.49%
fteducation	550	540	0.361	-1.12%	0.98%	3.07%
unable_to_work	550	540	0.033	-6.43%	-3.35%	-0.28%
looking_after_family	550	540	0.785	-2.48%	-0.30%	1.88%
other_work_status	550	540	0.971	-1.40%	0.03%	1.46%
income_partner	140	186	0.213	-17.88%	-6.96%	3.97%
income_employment	552	540	0.029	0.64%	6.23%	11.81%
income_pension	552	540	0.571	-2.20%	0.89%	3.99%
income_childbenefit	552	540	0.745	-6.14%	-0.87%	4.39%
income_statebenefit	552	540	0.053	-10.83%	-5.38%	0.07%
income_taxcredits	552	540	0.477	-6.94%	-1.85%	3.24%
income_othersource	552	540	0.064	-0.20%	3.33%	6.85%
income_noregularsource	552	540	0.777	-2.36%	-0.30%	1.76%
income_nosource	552	540	0.493	-1.11%	0.60%	2.30%
income_under_6k	484	480	0.251	-7.98%	-2.95%	2.09%
income_6k_to_12k	484	480	0.632	-6.48%	-1.27%	3.94%
income_12k_to_18k	484	480	0.516	-7.45%	-1.85%	3.74%
income_18k_to_24k	484	480	0.672	-3.43%	0.95%	5.32%
income_24k_to_36k	484	480	0.652	-3.09%	0.92%	4.94%
income_36k_to_50	484	480	0.093	-0.35%	2.11%	4.56%
income_over_50k	484	480	0.037	0.13%	2.10%	4.06%
irregular_income	540	530	0.283	-8.47%	-3.00%	2.48%
health_very_poor	548	540	0.129	-6.01%	-2.63%	0.76%
health_poor	548	540	0.716	-3.25%	0.74%	4.74%
health_fair	548	540	0.423	-2.82%	1.95%	6.72%
health_good	548	540	0.269	-8.81%	-3.18%	2.46%
health_excellent	548	540	0.230	-1.97%	3.11%	8.19%
happy	549	537	0.205	-1.08%	1.97%	5.03%
anxious	549	533	0.522	-5.13%	-1.26%	2.60%

Technical Annex 3: Impact of the cap on HCSTC demand

worthwhile	540	534	0.348	-1.53%	1.41%	4.34%
satisfied	549	535	0.023	0.49%	3.50%	6.50%
happiness_medium_high	552	540	0.210	-2.13%	3.78%	9.68%
anxiousness_medium_low	552	540	0.094	-0.85%	5.07%	10.99%
worthwhile_medium_high	552	540	0.865	-5.37%	0.51%	6.40%
satisfied_medium_high	552	540	0.326	-2.95%	2.98%	8.90%
keeping_up_no_difficulties	542	531	0.144	-1.47%	4.28%	10.03%
keeping_up_but_struggling	542	531	0.283	-8.93%	-3.16%	2.60%
falling_behind_some_bills	542	531	0.088	-8.78%	-4.08%	0.61%
falling_behind_many_bills	542	531	0.078	-0.33%	2.97%	6.27%
any_missed_bills	551	540	0.514	-7.91%	-1.98%	3.96%
missed_fuel_bill	552	540	0.651	-4.57%	-0.86%	2.86%
missed_rent_bill	552	540	0.041	-8.37%	-4.28%	-0.18%
missed_council_tax_bill	552	540	0.867	-4.13%	0.39%	4.91%
missed_insurance_bill	552	540	0.879	-3.13%	-0.23%	2.68%
missed_telephone_bill	552	540	0.557	-6.90%	-1.59%	3.72%
missed_hire_purchase_bill	552	540	0.891	-1.97%	-0.13%	1.72%
missed_water_bill	552	540	0.720	-4.38%	-0.68%	3.02%
missed_other_regular_bill	552	540	0.988	-0.50%	0.00%	0.51%
missed_mortgage_bill	552	540	0.040	0.07%	1.50%	2.92%
missed_catalogue_bill	552	540	0.107	-1.60%	-0.72%	0.16%
missed_tv_licence_bill	552	540	0.975	-1.00%	0.02%	1.03%
missed_gym_bill	552	540	0.672	-0.97%	-0.17%	0.63%
missed_loan_repayment	552	540	0.080	-0.07%	0.56%	1.18%
missed_credit_credit_bill	552	540	0.978	-0.87%	0.01%	0.89%
missed_child_care_bill	552	540	0.323	-0.54%	-0.18%	0.18%
missed_other_bill	552	540	0.458	-0.96%	0.59%	2.14%
any_financial_distress	552	539	0.100	-10.91%	-4.98%	0.94%
fin_distress_stress	552	540	0.061	-11.51%	-5.63%	0.26%
fin_distress_off_work	552	540	0.426	-6.30%	-1.82%	2.66%
fin_distress_embarrassment	552	540	0.972	-5.31%	0.10%	5.51%
fin_distress_relationship	552	540	0.162	-8.17%	-3.40%	1.36%
fin_distress_family	552	540	0.036	-9.19%	-4.76%	-0.32%
fin_distress_other_health	552	540	0.429	-1.23%	-0.35%	0.52%
fin_distress_depression	552	540	0.982	-0.71%	0.01%	0.73%
fin_distress_lost_sleep	552	540	0.323	-0.54%	-0.18%	0.18%
fin_distress_other_issue	552	540	0.341	-0.82%	0.77%	2.36%

Technical Annex 3: Impact of the cap on HCSTC demand

fin_distress_no_issues	552	540	0.106	-1.03%	4.89%	10.81%
no_savings	525	511	0.968	-6.10%	-0.12%	5.86%
savings_or_deposit_account	552	540	0.561	-3.97%	1.68%	7.33%
cash_ISA	552	540	0.060	-0.17%	3.98%	8.13%
premium_bonds	552	540	0.039	0.11%	2.08%	4.05%
stocks_shares	552	540	0.098	-0.32%	1.71%	3.75%
other_savings_product	552	540	0.543	-1.36%	0.61%	2.58%
other_savings_prod_ex_pension	552	540	0.264	-0.57%	0.76%	2.10%
savings_held_by_someone_else	552	540	0.570	-4.12%	-0.93%	2.27%
savings_at_home	552	540	0.573	-5.23%	-1.17%	2.90%
savings_club	552	540	0.318	-2.57%	-0.87%	0.83%
christmas_club	552	540	0.155	-2.94%	-1.24%	0.47%
jamjar_account	552	540	0.855	-1.70%	-0.14%	1.41%
gold_jewellery_antiques	552	540	0.079	-0.26%	2.31%	4.88%
other_informal_savings	552	540	0.646	-1.76%	-0.33%	1.09%
overdraft_facility	552	538	0.019	1.11%	6.79%	12.47%
not_overdrawn	179	211	0.527	-12.51%	-3.05%	6.41%
exceeded_overdraft_limit	175	207	0.626	-7.55%	2.50%	12.56%
refused_payments	552	540	0.402	-7.97%	-2.39%	3.20%
refused_direct_debit	542	531	0.462	-7.75%	-2.12%	3.52%
refused_cheque	548	537	0.125	-3.25%	-1.43%	0.39%
actually_borrowed_overdraft	552	540	0.251	-1.12%	1.59%	4.29%
actually_borrowed_credit_card	552	540	0.021	0.47%	3.04%	5.61%
actually_borrowed_family	552	540	0.031	-12.41%	-6.51%	-0.61%
actually_borrowed_friend	552	540	0.001	-13.50%	-8.45%	-3.39%
actually_borrowed_colleague	552	540	0.451	-3.56%	-0.99%	1.58%
actually_borrowed_employer	552	540	0.451	-3.56%	-0.99%	1.58%
actually_borrowed_socialfund	552	540	0.900	-3.33%	-0.20%	2.93%
actually_borrowed_creditunion	552	540	0.688	-1.92%	-0.33%	1.27%
actually_borrowed_homecredit	552	540	0.622	-1.98%	0.66%	3.31%
actually_borrowed_longloan	552	540	0.921	-2.26%	-0.11%	2.04%
actually_borrowed_pawnbroking	552	540	0.946	-2.54%	-0.08%	2.37%
actually_borrowed_logbook	552	540	0.969	-1.21%	0.02%	1.26%
actually_borrowed_loanshark	552	540	0.563	-0.94%	0.39%	1.73%
total_outstanding_debt	203	187	0.206	-£152	£277	£706

Technical Annex 3: Impact of the cap on HCSTC demand

outstanding_debt_family	122	117	0.633	-£438	£141	£721
outstanding_debt_friends	58	44	0.220	-£167	£283	£734
outstanding_debt_socialfund	32	29	0.923	-£144	-£7	£130
outstanding_debt_creditunion	7	7	0.736	-£395	£84	£564
outstanding_debt_homecredit	20	21	0.212	-£105	£194	£494
outstanding_debt_longloan	11	15	0.350	-£1,422	-£465	£492
outstanding_debt_pawnbroking	15	15	0.359	-£386	-£124	£137
total_debt_repayment	124	119	0.038	£2	£33	£64
debt_repayment_family	55	60	0.173	-£11	£25	£61
debt_repayment_friends	24	19	0.886	-£49	£4	£57
debt_repayment_socialfund	29	25	0.946	-£24	-£1	£22
debt_repayment_homecredit	18	19	0.156	-£22	£61	£144
behind_any_loan_repayments	149	131	0.987	-9.97%	-0.08%	9.81%
behind_family_repayment	75	71	0.753	-17.51%	-2.42%	12.66%
behind_friend_repayment	29	24	0.629	-19.59%	6.47%	32.52%
behind_socialfund_repayment	29	25	0.125	-2.06%	8.00%	18.06%
behind_homecredit_repayment	19	20	0.426	-13.58%	9.47%	32.53%
total_overdue_debt	27	27	0.012	£203	£806	£1,410
overdue_debt_family	18	19	0.020	£166	£843	£1,520
attempt_borrow_anywhere	551	540	0.390	-8.04%	-2.45%	3.14%
attempt_borrow_overdraft	552	540	0.251	-1.44%	2.04%	5.52%
attempt_borrow_credit_card	552	540	0.610	-1.85%	0.65%	3.16%
attempt_borrow_family	552	540	0.214	-7.11%	-2.76%	1.59%
attempt_borrow_friend	552	540	0.405	-4.86%	-1.45%	1.96%
attempt_borrow_colleague	552	540	0.584	-1.03%	0.40%	1.83%
attempt_borrow_employer	552	540	0.673	-1.57%	0.43%	2.43%
attempt_borrow_socialfund	552	540	0.482	-3.14%	-0.83%	1.48%
attempt_borrow_creditunion	552	540	0.828	-1.54%	-0.15%	1.23%
attempt_borrow_homecredit	552	540	0.757	-2.25%	-0.31%	1.63%
attempt_borrow_longloan	552	540	0.816	-1.94%	0.26%	2.47%
attempt_borrow_pawnbroking	552	540	0.563	-2.21%	-0.50%	1.20%
attempt_borrow_logbook	552	540	0.978	-0.87%	0.01%	0.89%
attempt_borrow_loanshark	552	540	0.683	-0.75%	0.20%	1.14%
any_loanshark_interaction	552	540	0.584	-1.03%	0.40%	1.83%
attempt_borrow_rej	183	168	0.475	-6.59%	3.79%	14.16%
attempt_borrow_putoff	548	536	0.006	-14.16%	-8.29%	-2.42%

Technical Annex 3: Impact of the cap on HCSTC demand

after_denial_went_without	290	241	0.296	-12.25%	-4.26%	3.73%
after_denial_did_nothing	290	241	0.970	-7.65%	0.15%	7.95%
after_denial_sold_something	290	241	0.954	-2.27%	-0.06%	2.15%
after_denial_use_savings	290	241	0.511	-1.10%	0.56%	2.21%
after_denial_saved_up	290	241	0.794	-2.88%	-0.34%	2.20%
after_denial_borrow_friends	290	241	0.071	-11.29%	-5.42%	0.46%
after_denial_friend_buy	290	241	0.250	-1.17%	1.67%	4.50%
after_denial_borrow_pdl	290	241	0.038	0.28%	4.93%	9.58%
after_denial_borrow_nonpdl	290	241	0.658	-2.64%	0.77%	4.18%
after_denial_loan_default	290	241	0.121	-0.22%	0.83%	1.88%
after_denial_cut_spending	290	241	0.820	-1.60%	0.21%	2.02%
after_denial_prolong_debts	290	241	0.273	-0.33%	0.41%	1.16%
after_denial_creditscore	290	241	0.792	-1.80%	0.28%	2.37%
after_denial_increase_work	290	241	0.896	-0.98%	0.07%	1.12%
after_denial_debt_mgmt	290	241	0.273	-0.33%	0.41%	1.16%
after_denial_something_else	290	241	0.544	-3.19%	-0.75%	1.68%
remember_loan_very_well	546	534	0.000	4.73%	10.07%	15.41%
remember_loan_fairly_well	546	534	0.744	-4.72%	0.94%	6.61%
remember_loan_not_very_well	546	534	0.052	-10.10%	-5.03%	0.04%
remember_loan_not_at_all_well	546	534	0.004	-10.10%	-5.99%	-1.87%
loanmonth_jun13	552	540	0.988	-4.30%	-0.03%	4.23%
loanmonth_jul13	552	540	0.205	-1.62%	2.97%	7.56%
loanmonth_aug13	552	540	0.525	-3.18%	1.53%	6.24%
loanmonth_sep13	552	540	0.691	-5.88%	-0.99%	3.90%
loanmonth_oct13	552	540	0.236	-8.26%	-3.11%	2.03%
loanmonth_nov13	552	540	0.162	-0.87%	-0.36%	0.14%
happy_decision	36	264	0.712	-20.72%	-3.28%	14.16%
indifferent_decision	36	264	0.047	-17.04%	-8.59%	-0.13%
regret_decision	36	264	0.176	-5.26%	11.87%	29.00%
regret_a_lot	11	112	0.449	-14.87%	9.42%	33.70%
regret_a_little	11	112	0.449	-33.70%	-9.42%	14.87%
repaid_less	35	258	0.865	-8.48%	-0.68%	7.13%
repaid_expected	35	258	0.865	-16.07%	1.53%	19.13%
repaid_more	35	258	0.923	-18.15%	-0.85%	16.45%
apply_pdl_again	543	530	0.316	-2.54%	2.66%	7.86%

Technical Annex 3: Impact of the cap on HCSTC demand

go_without_pdl	543	530	0.277	-9.18%	-3.28%	2.62%
use_pdl_alternative	543	530	0.831	-5.02%	0.62%	6.25%
without_alternative_apply_pdl	13	72	0.628	-22.30%	7.37%	37.05%
without_alternative_go_without	13	72	0.628	-37.05%	-7.37%	22.30%
easily_gone_without_money	534	527	0.315	-7.50%	-2.54%	2.41%
possibly_gone_without_money	534	527	0.018	-13.11%	-7.16%	-1.22%
not_gone_without_money	534	527	0.001	3.97%	9.71%	15.44%
not_spent_pdl_money	37	263	0.440	-5.52%	-1.56%	2.39%
spent_part_of_pdl_money	37	263	0.186	-2.18%	4.56%	11.31%
spent_all_pdl_money	37	263	0.449	-10.75%	-3.00%	4.75%
used_pdl_money_as_planned	35	255	0.421	-11.74%	-3.42%	4.90%
intend_pdl_money_changed	1	3	0.000	100.00%	100.00%	100.00%
consider_any_alternatives	550	536	0.555	-4.14%	1.78%	7.71%
consider_loanshark	547	536	0.476	-4.28%	-1.14%	1.99%
consider_loanshark_edited	552	540	0.206	-3.96%	-1.55%	0.85%
why_pdl_speed	552	540	0.917	-6.01%	-0.30%	5.41%
why_pdl_limits_amount	552	540	0.436	-0.89%	0.58%	2.05%
why_pdl_only_st_option	552	540	0.819	-2.04%	0.27%	2.58%
why_pdl_option_extend	552	540	0.576	-0.80%	-0.18%	0.44%
why_pdl_no_checks	552	540	0.317	-0.93%	0.97%	2.88%
why_pdl_only_small_option	552	540	0.055	-0.04%	2.29%	4.62%
why_pdl_cheapest_option	552	540	0.654	-2.57%	-0.48%	1.61%
why_pdl_only_option	552	540	0.001	3.60%	8.31%	13.03%
why_pdl_preferred_option	552	540	0.043	-6.83%	-3.47%	-0.11%
why_pdl_selfcontrol	552	540	0.576	-0.80%	-0.18%	0.44%
why_pdl_good_relationship	552	540	0.576	-0.80%	-0.18%	0.44%
why_pdl_no_late_charge	552	540	0.323	-0.54%	-0.18%	0.18%
why_pdl_maxed_out	552	540	0.187	-1.34%	-0.54%	0.26%
why_pdl_advertising	552	540	0.480	-2.55%	-0.68%	1.20%
why_pdl_unknown_alternatives	552	540	0.790	-1.35%	-0.16%	1.02%
why_pdl_private_option	552	540	0.965	-1.39%	0.03%	1.46%
why_pdl_recommended	552	540	0.170	-3.40%	-1.40%	0.60%
why_pdl_badcredit	552	540	0.713	-0.87%	0.20%	1.27%
why_pdl_impulse	552	540	0.969	-1.21%	0.02%	1.26%
why_pdl_curiosity	552	540	0.772	-1.25%	0.22%	1.69%
plan_use_housing	548	538	0.417	-1.73%	1.23%	4.19%
plan_use_livingcost	548	538	0.447	-2.90%	1.84%	6.57%

Technical Annex 3: Impact of the cap on HCSTC demand

plan_use_bills	548	538	0.041	-10.62%	-5.42%	-0.22%
plan_use_electronics	548	538	0.786	-1.36%	-0.17%	1.03%
plan_use_repair	548	538	0.284	-0.96%	1.17%	3.30%
plan_use_car	548	538	0.492	-2.42%	1.31%	5.04%
plan_use_help_friend	548	538	0.441	-1.22%	0.79%	2.80%
plan_use_present	548	538	0.407	-2.91%	-0.86%	1.18%
plan_use_holiday	548	538	0.319	-1.78%	1.85%	5.48%
plan_use_pay_pdl	548	538	0.574	-0.80%	-0.18%	0.45%
plan_use_otherdebts	548	538	0.295	-3.97%	-1.38%	1.21%
plan_use_business	548	538	0.972	-1.32%	0.02%	1.37%
plan_use_gambling	548	538	0.322	-0.54%	-0.18%	0.18%
plan_use_spare_money	548	538	0.097	-0.13%	0.75%	1.63%
plan_use_fund_shortfall	548	538	0.080	-0.07%	0.56%	1.18%
plan_use_home_improve	548	538	0.153	-0.35%	0.94%	2.24%
plan_use_creditbuild	548	538	0.153	-0.14%	0.37%	0.88%
plan_use_wedding	548	538	0.303	-0.51%	0.57%	1.65%
plan_use_other	548	538	0.837	-2.45%	0.29%	3.03%
consider_creditcard	293	296	0.144	-0.79%	2.34%	5.47%
consider_storecard	293	296	0.315	-1.01%	-0.34%	0.32%
consider_pdl	293	296	0.902	-3.94%	0.27%	4.47%
consider_homecredit	293	296	0.749	-1.66%	0.32%	2.31%
consider_pawnbroking	293	296	0.988	-1.89%	-0.01%	1.86%
consider_hirepurchase	293	296	0.320	-0.33%	0.34%	1.00%
consider_creditunion	293	296	0.312	-2.01%	-0.69%	0.64%
consider_socialfund	293	296	0.024	-3.18%	-1.71%	-0.23%
consider_bankloan	293	296	0.000	4.76%	10.06%	15.36%
consider_friend_relative	293	296	0.003	-18.69%	-11.22%	-3.76%
consider_community_figure	293	296	0.159	-0.26%	0.68%	1.62%
consider_selling_asset	293	296	0.249	-2.78%	-1.03%	0.72%
consider_employer	293	296	0.558	-1.50%	-0.34%	0.81%
consider_use_savings	293	296	0.321	-0.66%	0.67%	2.00%
consider_other	293	296	0.448	-3.76%	-1.05%	1.66%
without_loan_went_without	551	540	0.895	-5.11%	-0.32%	4.46%
without_loan_did_nothing	551	540	0.689	-4.05%	1.04%	6.13%
without_loan_sold_something	551	540	0.955	-1.89%	0.06%	2.00%
without_loan_use_savings	551	540	0.232	-0.48%	0.76%	1.99%

Technical Annex 3: Impact of the cap on HCSTC demand

without_loan_saved_up	551	540	0.410	-2.89%	-0.86%	1.18%
without_loan_borrow_friends	551	540	0.080	-9.49%	-4.48%	0.52%
without_loan_friend_buy	551	540	0.633	-1.26%	0.41%	2.08%
without_loan_borrow_pdl	551	540	0.735	-2.34%	0.49%	3.32%
without_loan_borrow_nonpdl	551	540	0.282	-3.42%	-1.21%	0.99%
without_loan_default	551	540	0.207	-0.52%	0.95%	2.42%
without_loan_cut_spending	551	540	0.152	-0.35%	0.94%	2.23%
without_loan_prolong_debts	551	540	0.765	-1.17%	0.21%	1.59%
without_loan_increase_work	551	540	0.505	-0.75%	0.39%	1.52%
without_loan_debt_management	551	540	0.307	-0.34%	0.37%	1.09%
without_loan_something_else	551	540	0.453	-3.05%	-0.84%	1.36%
comfort_borrow_friends	140	113	0.713	-30.50%	-4.82%	20.86%

Table A27: T-tests Comparing Outcomes of Consumers Whose HCSTC Application was Marginally Successful or Unsuccessful (bold where difference is statistically significant at the 5% level)

	Number of respondents		P value for difference in means (marginal successful - marginal unsuccessful applicants)	Lower confidence interval	Difference in means (marginal successful - marginal unsuccessful applicants)	Upper confidence interval
	Marginal unsuccessful applicants	Marginal successful applicants				
permission_to_link_other_data	787	301	0.858	-3.71%	0.37%	4.46%
age	697	269	0.772	-1.94	-0.25	1.44
male	789	302	0.144	-11.34%	-4.85%	1.65%
additional_adults	790	302	0.394	-3.61%	2.78%	9.16%
partner	790	302	0.483	-8.48%	-2.24%	4.01%
children	790	302	0.295	-3.03%	3.47%	9.98%
home_own	786	298	0.003	-4.67%	-2.80%	-0.92%
home_mortgage	786	298	0.167	-1.02%	2.44%	5.91%
home_private_rent	786	298	0.368	-9.53%	-3.00%	3.53%
home_social_rent	786	298	0.658	-7.88%	-1.45%	4.98%
home_shared_ownership	786	298	0.361	-0.57%	0.50%	1.57%
home_rent_free	786	298	0.474	-2.58%	1.49%	5.55%
home_squat	786	298	0.000	0.00%	0.00%	0.00%
home_other	786	298	0.020	0.44%	2.82%	5.21%
ethnic_white_brit	785	301	0.460	-3.85%	2.33%	8.51%
ethnic_white_irish	785	301	0.222	-3.17%	-1.22%	0.73%
ethnic_other_white	785	301	0.869	-2.99%	0.28%	3.54%
ethnic_mixed	785	301	0.651	-2.81%	-0.53%	1.76%

Technical Annex 3: Impact of the cap on HCSTC demand

ethnic_asian	785	301	0.386	-4.68%	-1.44%	1.81%
ethnic_black	785	301	0.988	-3.95%	0.03%	4.01%
ethnic_chinese	785	301	0.000	0.00%	0.00%	0.00%
ethnic_other	785	301	0.665	-1.93%	0.55%	3.02%
qualifications	790	302	0.637	-7.05%	-1.37%	4.31%
education_degree	595	226	0.489	-3.84%	2.10%	8.04%
education_diploma	595	226	0.649	-7.50%	-1.42%	4.67%
education_alevel	595	226	0.271	-10.27%	-3.70%	2.88%
education_gcse	595	226	0.755	-5.60%	1.06%	7.73%
education_other	595	226	0.448	-3.08%	1.95%	6.99%
fulltime_employed	788	302	0.616	-4.93%	1.69%	8.32%
parttime_employed	788	302	0.901	-4.60%	0.31%	5.22%
unemployed	788	302	0.731	-6.19%	-0.92%	4.34%
retired	788	302	0.371	-2.66%	-0.83%	0.99%
fteducation	788	302	0.908	-2.20%	0.14%	2.48%
unable_to_work	788	302	0.817	-3.85%	-0.41%	3.04%
looking_after_family	788	302	0.588	-1.76%	0.67%	3.11%
other_work_status	788	302	0.420	-2.25%	-0.66%	0.94%
income_partner	235	91	0.246	-19.21%	-7.15%	4.92%
income_employment	790	302	0.503	-4.12%	2.14%	8.39%
income_pension	790	302	0.582	-4.43%	-0.97%	2.49%
income_childbenefit	790	302	0.475	-3.74%	2.15%	8.03%
income_statebenefit	790	302	0.267	-9.55%	-3.45%	2.65%
income_taxcredits	790	302	0.224	-2.16%	3.53%	9.22%
income_othersource	790	302	0.749	-3.30%	0.64%	4.59%
income_noregularsource	790	302	0.534	-1.57%	0.73%	3.04%
income_nosource	790	302	0.214	-0.70%	1.21%	3.11%
income_under_6k	700	264	0.759	-4.76%	0.88%	6.53%
income_6k_to_12k	700	264	0.829	-6.48%	-0.65%	5.19%
income_12k_to_18k	700	264	0.551	-8.18%	-1.91%	4.37%
income_18k_to_24k	700	264	0.491	-3.18%	1.72%	6.62%
income_24k_to_36k	700	264	0.630	-5.61%	-1.11%	3.40%
income_36k_to_50	700	264	0.555	-1.93%	0.83%	3.59%
income_over_50k	700	264	0.843	-1.98%	0.22%	2.43%
irregular_income	775	295	0.720	-7.25%	-1.12%	5.01%
health_very_poor	786	302	0.228	-1.46%	2.33%	6.11%
health_poor	786	302	0.978	-4.52%	-0.06%	4.40%

Technical Annex 3: Impact of the cap on HCSTC demand

health_fair	786	302	0.838	-4.77%	0.56%	5.88%
health_good	786	302	0.095	-11.65%	-5.36%	0.92%
health_excellent	786	302	0.379	-3.12%	2.55%	8.21%
happy	784	302	0.713	-4.05%	-0.64%	2.77%
anxious	783	299	0.572	-5.57%	-1.25%	3.08%
worthwhile	776	298	0.790	-3.72%	-0.45%	2.83%
satisfied	784	300	0.198	-1.15%	2.21%	5.57%
happiness_medium_high	790	302	0.636	-8.20%	-1.60%	5.00%
anxiousness_medium_low	790	302	0.261	-2.82%	3.80%	10.42%
worthwhile_medium_high	790	302	0.420	-9.28%	-2.71%	3.87%
satisfied_medium_high	790	302	0.596	-4.84%	1.79%	8.42%
keeping_up_no_difficulties	773	300	0.651	-7.89%	-1.48%	4.93%
keeping_up_but_struggling	773	300	0.125	-11.46%	-5.03%	1.39%
falling_behind_some_bills	773	300	0.608	-3.86%	1.37%	6.61%
falling_behind_many_bills	773	300	0.006	1.48%	5.14%	8.81%
any_missed_bills	789	302	0.934	-6.35%	0.28%	6.91%
missed_fuel_bill	790	302	0.861	-3.78%	0.37%	4.52%
missed_rent_bill	790	302	0.462	-6.30%	-1.72%	2.86%
missed_council_tax_bill	790	302	0.279	-7.84%	-2.79%	2.26%
missed_insurance_bill	790	302	0.921	-3.42%	-0.16%	3.09%
missed_telephone_bill	790	302	0.113	-1.13%	4.80%	10.73%
missed_hire_purchase_bill	790	302	0.817	-1.82%	0.24%	2.30%
missed_water_bill	790	302	0.270	-1.80%	2.33%	6.46%
missed_other_regular_bill	790	302	0.382	-0.82%	-0.25%	0.31%
missed_mortgage_bill	790	302	0.376	-0.87%	0.72%	2.32%
missed_catalogue_bill	790	302	0.547	-1.28%	-0.30%	0.68%
missed_tv_licence_bill	790	302	0.027	0.15%	1.28%	2.41%
missed_gym_bill	790	302	0.702	-1.07%	-0.18%	0.72%
missed_loan_repayment	790	302	0.826	-0.62%	0.08%	0.77%
missed_credit_credit_bill	790	302	0.547	-1.28%	-0.30%	0.68%
missed_child_care_bill	790	302	0.537	-0.53%	-0.13%	0.27%
missed_other_bill	790	302	0.700	-1.39%	0.34%	2.08%
any_financial_distress	789	302	0.718	-5.41%	1.22%	7.85%
fin_distress_stress	790	302	0.208	-2.35%	4.24%	10.82%
fin_distress_off_work	790	302	0.721	-5.92%	-0.91%	4.10%
fin_distress_embarrassment	790	302	0.284	-2.74%	3.31%	9.35%

Technical Annex 3: Impact of the cap on HCSTC demand

fin_distress_relationship	790	302	0.600	-6.76%	-1.43%	3.90%
fin_distress_family	790	302	0.483	-6.75%	-1.78%	3.19%
fin_distress_other_health	790	302	0.547	-1.28%	-0.30%	0.68%
fin_distress_depression	790	302	0.317	-0.39%	0.41%	1.21%
fin_distress_lost_sleep	790	302	0.537	-0.53%	-0.13%	0.27%
fin_distress_other_issue	790	302	0.213	-0.65%	1.13%	2.91%
fin_distress_no_issues	790	302	0.732	-7.79%	-1.16%	5.47%
no_savings	747	289	0.021	1.19%	7.83%	14.48%
savings_or_deposit_account	790	302	0.163	-10.80%	-4.49%	1.82%
cash_ISA	790	302	0.825	-5.17%	-0.52%	4.12%
premium_bonds	790	302	0.323	-1.09%	1.11%	3.31%
stocks_shares	790	302	0.730	-1.87%	0.40%	2.67%
other_savings_product	790	302	0.522	-2.92%	-0.72%	1.48%
other_savings_prod_ex_pension	790	302	0.600	-1.89%	-0.40%	1.09%
savings_held_by_someone_else	790	302	0.957	-3.48%	0.10%	3.67%
savings_at_home	790	302	0.050	-9.08%	-4.55%	-0.01%
savings_club	790	302	0.012	-4.35%	-2.45%	-0.55%
christmas_club	790	302	0.522	-2.53%	-0.62%	1.28%
jamjar_account	790	302	0.700	-1.39%	0.34%	2.08%
gold_jewellery_antiques	790	302	0.220	-4.68%	-1.80%	1.07%
other_informal_savings	790	302	0.172	-2.70%	-1.11%	0.48%
overdraft_facility	790	300	0.370	-9.29%	-2.92%	3.46%
not_overdrawn	289	101	0.070	-20.67%	-9.95%	0.78%
exceeded_overdraft_limit	281	101	0.293	-5.24%	6.10%	17.45%
refused_payments	790	302	0.684	-7.54%	-1.30%	4.94%
refused_direct_debit	778	295	0.816	-7.06%	-0.75%	5.56%
refused_cheque	784	301	0.591	-2.59%	-0.56%	1.48%
actually_borrowed_overdraft	790	302	0.677	-2.38%	0.64%	3.67%
actually_borrowed_credit_card	790	302	0.520	-1.93%	0.95%	3.82%
actually_borrowed_family	790	302	0.018	-14.58%	-7.99%	-1.39%
actually_borrowed_friend	790	302	0.030	-11.95%	-6.29%	-0.62%
actually_borrowed_colleague	790	302	0.220	-4.68%	-1.80%	1.07%
actually_borrowed_employer	790	302	0.030	-6.05%	-3.17%	-0.30%
actually_borrowed_socialfund	790	302	0.934	-3.35%	0.15%	3.65%
actually_borrowed_creditunion	790	302	0.022	-3.85%	-2.07%	-0.30%
actually_borrowed_homecredit	790	302	0.817	-3.30%	-0.35%	2.60%
actually_borrowed_longloan	790	302	0.031	0.24%	2.64%	5.04%

Technical Annex 3: Impact of the cap on HCSTC demand

actually_borrowed_pawnbroking	790	302	0.636	-2.08%	0.66%	3.41%
actually_borrowed_logbook	790	302	0.276	-0.61%	0.77%	2.15%
actually_borrowed_loanshark	790	302	0.600	-1.89%	-0.40%	1.09%
total_outstanding_debt	287	103	0.372	-£708	-£222	£265
attempt_borrow_anywhere	790	301	0.509	-8.36%	-2.11%	4.14%
attempt_borrow_overdraft	790	302	0.776	-3.33%	0.57%	4.46%
attempt_borrow_credit_card	790	302	0.724	-3.31%	-0.51%	2.29%
attempt_borrow_family	790	302	0.659	-5.97%	-1.10%	3.77%
attempt_borrow_friend	790	302	0.303	-5.81%	-2.00%	1.80%
attempt_borrow_colleague	790	302	0.172	-2.70%	-1.11%	0.48%
attempt_borrow_employer	790	302	0.052	-4.45%	-2.22%	0.01%
attempt_borrow_socialfund	790	302	0.700	-2.07%	0.51%	3.09%
attempt_borrow_creditunion	790	302	0.067	-2.98%	-1.44%	0.10%
attempt_borrow_homecredit	790	302	0.771	-1.85%	0.32%	2.49%
attempt_borrow_longloan	790	302	0.938	-2.36%	0.10%	2.56%
attempt_borrow_pawnbroking	790	302	0.522	-2.53%	-0.62%	1.28%
attempt_borrow_logbook	790	302	0.755	-0.83%	0.16%	1.14%
attempt_borrow_loanshark	790	302	0.428	-1.49%	-0.43%	0.63%
any_loanshark_interaction	790	302	0.423	-2.25%	-0.65%	0.94%
attempt_borrow_rej	258	93	0.111	-21.25%	-9.54%	2.17%
attempt_borrow_putoff	785	299	0.000	-18.50%	-11.95%	-5.40%
after_denial_went_without	411	120	0.558	-12.36%	-2.85%	6.67%
after_denial_did_nothing	411	120	0.046	0.17%	9.42%	18.66%
after_denial_sold_something	411	120	0.978	-2.67%	-0.04%	2.59%
after_denial_use_savings	411	120	0.889	-2.11%	-0.14%	1.83%
after_denial_saved_up	411	120	0.620	-3.79%	-0.77%	2.26%
after_denial_borrow_friends	411	120	0.010	-16.12%	-9.15%	-2.18%
after_denial_friend_buy	411	120	0.385	-4.87%	-1.50%	1.88%
after_denial_borrow_pdl	411	120	0.002	3.41%	8.92%	14.42%
after_denial_borrow_nonpdl	411	120	0.292	-1.87%	2.18%	6.24%
after_denial_loan_default	411	120	0.354	-0.66%	0.59%	1.84%
after_denial_cut_spending	411	120	0.184	-3.61%	-1.46%	0.69%
after_denial_prolong_debts	411	120	0.064	-0.05%	0.83%	1.71%
after_denial_creditscore	411	120	0.492	-3.35%	-0.87%	1.61%
after_denial_increase_work	411	120	0.445	-1.73%	-0.49%	0.76%
after_denial_debt_mgmt	411	120	0.589	-1.13%	-0.24%	0.64%

Technical Annex 3: Impact of the cap on HCSTC demand

after_denial_something_else	411	120	0.280	-4.50%	-1.60%	1.30%
remember_loan_very_well	781	299	0.000	24.59%	30.32%	36.05%
remember_loan_fairly_well	781	299	0.582	-4.55%	1.78%	8.10%
remember_loan_not_very_well	781	299	0.000	-24.46%	-18.90%	-13.34%
remember_loan_not_at_all_well	781	299	0.000	-17.74%	-13.19%	-8.65%
loanmonth_jun13	790	302	0.584	-6.10%	-1.33%	3.43%
loanmonth_jul13	790	302	0.413	-2.99%	2.15%	7.28%
loanmonth_aug13	790	302	0.889	-4.89%	0.37%	5.64%
loanmonth_sep13	790	302	0.835	-6.04%	-0.58%	4.88%
loanmonth_oct13	790	302	0.665	-7.02%	-1.27%	4.48%
loanmonth_nov13	790	302	0.022	0.10%	0.66%	1.23%
apply_pdl_again	775	298	0.066	-0.35%	5.45%	11.25%
go_without_pdl	775	298	0.477	-8.98%	-2.39%	4.20%
use_pdl_alternative	775	298	0.340	-9.35%	-3.06%	3.23%
easily_gone_without_money	766	295	0.000	-18.93%	-13.46%	-7.99%
possibly_gone_without_money	766	295	0.000	-19.99%	-13.39%	-6.78%
not_gone_without_money	766	295	0.000	20.62%	26.85%	33.07%
consider_any_alternatives	785	301	0.513	-4.41%	2.21%	8.83%
consider_loanshark	782	301	0.093	-6.49%	-3.00%	0.50%
consider_loanshark_edited	790	302	0.318	-4.06%	-1.37%	1.32%
why_pdl_speed	790	302	0.000	6.70%	13.04%	19.37%
why_pdl_limits_amount	790	302	0.478	-1.05%	0.59%	2.24%
why_pdl_only_st_option	790	302	0.153	-0.70%	1.88%	4.46%
why_pdl_option_extend	790	302	0.826	-0.62%	0.08%	0.77%
why_pdl_no_checks	790	302	0.094	-0.31%	1.82%	3.95%
why_pdl_only_small_option	790	302	0.000	4.67%	7.25%	9.82%
why_pdl_cheapest_option	790	302	0.072	-4.48%	-2.14%	0.19%
why_pdl_only_option	790	302	0.237	-2.09%	3.20%	8.49%
why_pdl_preferred_option	790	302	0.000	-10.85%	-7.12%	-3.38%
why_pdl_selfcontrol	790	302	0.131	-0.16%	0.54%	1.23%
why_pdl_good_relationship	790	302	0.826	-0.62%	0.08%	0.77%
why_pdl_no_late_charge	790	302	0.537	-0.53%	-0.13%	0.27%
why_pdl_maxed_out	790	302	0.166	-1.53%	-0.63%	0.26%
why_pdl_advertising	790	302	0.014	-4.72%	-2.63%	-0.54%
why_pdl_unknown_alternatives	790	302	0.185	-0.43%	0.90%	2.22%
why_pdl_private_option	790	302	0.172	-2.70%	-1.11%	0.48%
why_pdl_recommended	790	302	0.123	-4.00%	-1.76%	0.47%

Technical Annex 3: Impact of the cap on HCSTC demand

why_pdl_badcredit	790	302	0.702	-0.97%	0.23%	1.43%
why_pdl_impulse	790	302	0.031	-2.90%	-1.52%	-0.14%
why_pdl_curiosity	790	302	0.010	-3.79%	-2.15%	-0.51%
plan_use_basic	785	301	0.129	-1.49%	5.15%	11.79%
plan_use_discretionary	785	301	0.454	-3.06%	1.89%	6.83%
plan_use_shock	785	301	0.048	-9.36%	-4.71%	-0.05%
plan_use_othercat	785	301	0.846	-4.38%	0.48%	5.35%
plan_use_housing	785	301	0.271	-1.45%	1.86%	5.17%
plan_use_livingcost	785	301	0.004	2.40%	7.67%	12.94%
plan_use_bills	785	301	0.239	-9.31%	-3.50%	2.32%
plan_use_electronics	785	301	0.974	-1.35%	-0.02%	1.31%
plan_use_repair	785	301	0.260	-3.75%	-1.37%	1.01%
plan_use_car	785	301	0.117	-7.50%	-3.34%	0.83%
plan_use_help_friend	785	301	0.651	-1.73%	0.52%	2.77%
plan_use_present	785	301	0.397	-3.27%	-0.99%	1.30%
plan_use_holiday	785	301	0.709	-3.29%	0.77%	4.83%
plan_use_pay_pdl	785	301	0.828	-0.62%	0.08%	0.78%
plan_use_otherdebts	785	301	0.540	-3.79%	-0.90%	1.99%
plan_use_business	785	301	0.084	-2.82%	-1.32%	0.17%
plan_use_gambling	785	301	0.536	-0.53%	-0.13%	0.28%
plan_use_spare_money	785	301	0.033	0.09%	1.07%	2.06%
plan_use_fund_shortfall	785	301	0.005	0.30%	1.00%	1.69%
plan_use_home_improve	785	301	0.001	1.04%	2.48%	3.92%
plan_use_creditbuild	785	301	0.022	0.10%	0.66%	1.23%
plan_use_wedding	785	301	0.712	-1.43%	-0.23%	0.98%
plan_use_other	785	301	0.575	-3.94%	-0.88%	2.19%
consider_creditcard	422	167	0.243	-1.40%	2.07%	5.54%
consider_storecard	422	167	0.530	-0.98%	-0.24%	0.50%
consider_pdl	422	167	0.141	-8.16%	-3.50%	1.16%
consider_homecredit	422	167	0.281	-0.99%	1.21%	3.41%
consider_pawnbroking	422	167	0.172	-0.63%	1.45%	3.52%
consider_hirepurchase	422	167	0.530	-0.98%	-0.24%	0.50%
consider_creditunion	422	167	0.882	-1.59%	-0.11%	1.36%
consider_socialfund	422	167	0.158	-2.83%	-1.18%	0.46%
consider_bankloan	422	167	0.268	-2.58%	3.36%	9.30%
consider_friend_relative	422	167	0.403	-11.90%	-3.56%	4.78%

Technical Annex 3: Impact of the cap on HCSTC demand

consider_community_figure	422	167	0.497	-0.68%	0.36%	1.41%
consider_selling_asset	422	167	0.393	-1.10%	0.85%	2.79%
consider_employer	422	167	0.140	-0.31%	0.96%	2.24%
consider_use_savings	422	167	0.336	-0.75%	0.72%	2.20%
consider_other	422	167	0.655	-3.69%	-0.69%	2.32%
notborrow	789	302	0.679	-5.15%	1.38%	7.91%
borrow_friendfam	789	302	0.005	-14.04%	-8.30%	-2.56%
borrow_credit	789	302	0.164	-6.69%	-2.78%	1.13%
without_loan_went_without	789	302	0.927	-5.09%	0.25%	5.60%
without_loan_did_nothing	789	302	0.295	-2.65%	3.04%	8.73%
without_loan_sold_something	789	302	0.126	-0.48%	1.69%	3.86%
without_loan_use_savings	789	302	0.392	-1.99%	-0.61%	0.78%
without_loan_saved_up	789	302	0.216	-3.71%	-1.44%	0.84%
without_loan_borrow_friends	789	302	0.006	-13.38%	-7.80%	-2.22%
without_loan_friend_buy	789	302	0.600	-2.36%	-0.50%	1.37%
without_loan_borrow_pdl	789	302	0.520	-4.20%	-1.04%	2.12%
without_loan_borrow_nonpdl	789	302	0.167	-4.20%	-1.74%	0.72%
without_loan_default	789	302	0.700	-1.97%	-0.32%	1.32%
without_loan_cut_spending	789	302	0.319	-2.17%	-0.73%	0.71%
without_loan_prolong_debts	789	302	0.283	-0.70%	0.85%	2.39%
without_loan_increase_work	789	302	0.210	-2.07%	-0.81%	0.45%
without_loan_debt_management	789	302	0.215	-1.31%	-0.51%	0.29%
without_loan_something_else	789	302	0.661	-1.91%	0.55%	3.02%
comfort_borrow_friends	199	54	0.003	-77.60%	-46.98%	-16.35%

Table A28: T-tests Comparing Consumers whose HCSTC Application was Marginally and Less Marginally Successful

(bold where difference is statistically significant at the 5% level)

	Number of respondents		P value for difference in means (less marginal successful - marginal successful)	Lower confidence interval	Difference in means (less marginal successful - marginal successful)	Upper confidence interval
	Marginal successful applicants	Less marginally successful applicants				
permission_to_link_other_data	301	545	0.632	-5.48%	-1.08%	3.33%
age	269	483	0.620	-1.38	0.47	2.31
male	302	546	0.993	-7.00%	-0.03%	6.95%
additional_adults	302	546	0.052	-0.04%	6.42%	12.87%
partner	302	546	0.866	-7.30%	-0.58%	6.14%
children	302	546	0.005	-16.49%	-9.75%	-3.01%
home_own	298	542	0.002	1.16%	3.14%	5.12%
home_mortgage	298	542	0.008	1.67%	6.44%	11.21%
home_private_rent	298	542	0.763	-7.88%	-1.05%	5.78%
home_social_rent	298	542	0.037	-13.50%	-6.97%	-0.44%
home_shared_ownership	298	542	0.568	-1.14%	0.47%	2.08%
home_rent_free	298	542	0.199	-6.91%	-2.74%	1.44%
home_squat	298	542	0.459	-0.30%	0.18%	0.67%
home_other	298	542	0.750	-2.75%	0.53%	3.82%
ethnic_white_brit	301	545	0.048	0.07%	6.23%	12.39%
ethnic_white_irish	301	545	0.295	-0.92%	1.06%	3.03%
ethnic_other_white	301	545	0.900	-3.70%	-0.22%	3.25%
ethnic_mixed	301	545	0.428	-2.86%	-0.82%	1.21%
ethnic_asian	301	545	0.083	-5.06%	-2.38%	0.30%
ethnic_black	301	545	0.351	-5.87%	-1.89%	2.09%
ethnic_chinese	301	545	0.293	-0.32%	0.37%	1.05%
ethnic_other	301	545	0.037	-4.52%	-2.34%	-0.15%
qualifications	302	546	0.171	-1.77%	4.10%	9.98%
education_degree	226	430	0.852	-7.00%	-0.61%	5.78%

Technical Annex 3: Impact of the cap on HCSTC demand

education_diploma	226	430	0.664	-4.97%	1.42%	7.81%
education_alevel	226	430	0.083	-0.81%	6.23%	13.26%
education_gcse	226	430	0.133	-11.92%	-5.18%	1.57%
education_other	226	430	0.495	-7.19%	-1.86%	3.48%
fulltime_employed	302	544	0.000	8.72%	15.59%	22.46%
parttime_employed	302	544	0.389	-7.26%	-2.22%	2.83%
unemployed	302	544	0.000	-14.32%	-9.68%	-5.05%
retired	302	544	0.575	-1.28%	0.51%	2.31%
fteducation	302	544	0.765	-2.80%	-0.37%	2.06%
unable_to_work	302	544	0.087	-5.85%	-2.73%	0.40%
looking_after_family	302	544	0.422	-3.55%	-1.03%	1.49%
other_work_status	302	544	0.915	-1.44%	-0.07%	1.29%
income_partner	91	193	0.011	3.73%	15.83%	27.94%
income_employment	302	546	0.000	8.59%	14.39%	20.19%
income_pension	302	546	0.449	-2.28%	1.44%	5.15%
income_childbenefit	302	546	0.152	-10.62%	-4.48%	1.65%
income_statebenefit	302	546	0.000	-16.79%	-11.15%	-5.50%
income_taxcredits	302	546	0.001	-15.09%	-9.42%	-3.75%
income_othersource	302	546	0.862	-4.60%	-0.37%	3.85%
income_noregularsource	302	546	0.040	-4.25%	-2.18%	-0.10%
income_nosource	302	546	0.024	-3.85%	-2.06%	-0.28%
income_under_6k	264	485	0.003	-13.44%	-8.08%	-2.72%
income_6k_to_12k	264	485	0.550	-7.84%	-1.83%	4.18%
income_12k_to_18k	264	485	0.470	-4.20%	2.46%	9.12%
income_18k_to_24k	264	485	0.971	-5.47%	-0.10%	5.27%
income_24k_to_36k	264	485	0.159	-1.41%	3.62%	8.65%
income_36k_to_50	264	485	0.180	-1.13%	2.46%	6.06%
income_over_50k	264	485	0.302	-1.32%	1.47%	4.27%
irregular_income	295	545	0.249	-9.93%	-3.68%	2.57%
health_very_poor	302	542	0.025	-8.09%	-4.32%	-0.55%
health_poor	302	542	0.639	-5.72%	-1.11%	3.51%
health_fair	302	542	0.364	-3.14%	2.72%	8.58%
health_good	302	542	0.068	-0.45%	6.21%	12.88%
health_excellent	302	542	0.251	-9.48%	-3.50%	2.47%
happy	302	541	0.922	-3.67%	-0.17%	3.33%
anxious	299	544	0.544	-3.13%	1.40%	5.94%
worthwhile	298	542	0.830	-2.97%	0.37%	3.70%

Technical Annex 3: Impact of the cap on HCSTC demand

satisfied	300	543	0.350	-4.95%	-1.60%	1.75%
happiness_medium_high	302	546	0.550	-9.17%	-2.14%	4.88%
anxiousness_medium_low	302	546	0.261	-11.05%	-4.03%	2.99%
worthwhile_medium_high	302	546	0.362	-3.73%	3.24%	10.21%
satisfied_medium_high	302	546	0.383	-10.16%	-3.13%	3.90%
keeping_up_no_difficulties	300	539	0.179	-2.15%	4.70%	11.56%
keeping_up_but_struggling	300	539	0.054	-0.12%	6.70%	13.52%
falling_behind_some_bills	300	539	0.055	-10.42%	-5.16%	0.10%
falling_behind_many_bills	300	539	0.001	-10.06%	-6.25%	-2.44%
any_missed_bills	302	544	0.295	-10.75%	-3.75%	3.26%
missed_fuel_bill	302	546	0.424	-5.98%	-1.73%	2.51%
missed_rent_bill	302	546	0.437	-6.25%	-1.78%	2.70%
missed_council_tax_bill	302	546	0.945	-5.26%	-0.18%	4.91%
missed_insurance_bill	302	546	0.342	-4.68%	-1.53%	1.62%
missed_telephone_bill	302	546	0.028	-13.15%	-6.95%	-0.75%
missed_hire_purchase_bill	302	546	0.226	-3.10%	-1.18%	0.73%
missed_water_bill	302	546	0.052	-8.35%	-4.16%	0.04%
missed_other_regular_bill	302	546	0.457	-0.30%	0.18%	0.67%
missed_mortgage_bill	302	546	0.711	-1.69%	0.39%	2.48%
missed_catalogue_bill	302	546	0.934	-0.80%	0.04%	0.87%
missed_tv_licence_bill	302	546	0.210	-2.36%	-0.92%	0.52%
missed_gym_bill	302	546	0.179	-0.81%	-0.33%	0.15%
missed_loan_repayment	302	546	0.465	-0.68%	0.40%	1.48%
missed_credit_credit_bill	302	546	0.657	-0.75%	0.22%	1.18%
missed_child_care_bill	302	546	0.000	0.00%	0.00%	0.00%
missed_other_bill	302	546	0.424	-2.43%	-0.70%	1.02%
any_financial_distress	302	544	0.384	-10.16%	-3.13%	3.91%
fin_distress_stress	302	546	0.363	-10.24%	-3.25%	3.75%
fin_distress_off_work	302	546	0.655	-6.30%	-1.17%	3.96%
fin_distress_embarrassment	302	546	0.031	-13.14%	-6.88%	-0.62%
fin_distress_relationship	302	546	0.801	-6.20%	-0.71%	4.79%
fin_distress_family	302	546	0.381	-7.10%	-2.19%	2.71%
fin_distress_other_health	302	546	0.934	-0.80%	0.04%	0.87%
fin_distress_depression	302	546	0.696	-1.02%	0.25%	1.53%
fin_distress_lost_sleep	302	546	0.293	-0.32%	0.37%	1.05%
fin_distress_other_issue	302	546	0.551	-2.72%	-0.63%	1.45%

Technical Annex 3: Impact of the cap on HCSTC demand

fin_distress_no_issues	302	546	0.412	-4.09%	2.94%	9.98%
no_savings	289	518	0.025	-15.09%	-8.06%	-1.03%
savings_or_deposit_account	302	546	0.068	-0.45%	6.27%	12.99%
cash_ISA	302	546	0.146	-1.34%	3.86%	9.06%
premium_bonds	302	546	0.229	-1.16%	1.85%	4.87%
stocks_shares	302	546	0.265	-1.24%	1.63%	4.51%
other_savings_product	302	546	0.825	-1.94%	0.25%	2.43%
other_savings_prod_ex_pension	302	546	0.710	-1.23%	0.29%	1.81%
savings_held_by_someone_else	302	546	0.349	-2.12%	1.94%	6.01%
savings_at_home	302	546	0.241	-1.84%	2.74%	7.31%
savings_club	302	546	0.089	-0.20%	1.32%	2.83%
christmas_club	302	546	0.483	-1.30%	0.73%	2.75%
jamjar_account	302	546	0.176	-0.75%	1.68%	4.10%
gold_jewellery_antiques	302	546	0.781	-2.33%	0.39%	3.11%
other_informal_savings	302	546	0.168	-0.49%	1.17%	2.83%
overdraft_facility	300	543	0.001	4.37%	11.27%	18.17%
not_overdrawn	101	244	0.460	-6.60%	4.01%	14.61%
exceeded_overdraft_limit	101	240	0.932	-12.00%	-0.50%	11.01%
refused_payments	302	546	0.459	-8.93%	-2.45%	4.03%
refused_direct_debit	295	530	0.416	-9.31%	-2.73%	3.85%
refused_cheque	301	538	0.737	-2.19%	-0.32%	1.55%
actually_borrowed_overdraft	302	546	0.866	-3.57%	-0.28%	3.00%
actually_borrowed_credit_card	302	546	0.579	-2.44%	0.96%	4.37%
actually_borrowed_family	302	546	0.269	-10.64%	-3.84%	2.96%
actually_borrowed_friend	302	546	0.481	-7.39%	-1.95%	3.48%
actually_borrowed_colleague	302	546	0.518	-1.90%	0.94%	3.77%
actually_borrowed_employer	302	546	0.164	-0.79%	1.93%	4.65%
actually_borrowed_socialfund	302	546	0.001	-7.91%	-5.05%	-2.20%
actually_borrowed_creditunion	302	546	0.171	-0.41%	0.95%	2.31%
actually_borrowed_homecredit	302	546	0.175	-4.53%	-1.85%	0.83%
actually_borrowed_longloan	302	546	0.322	-4.32%	-1.45%	1.42%
actually_borrowed_pawnbroking	302	546	0.044	-5.09%	-2.59%	-0.08%
actually_borrowed_logbook	302	546	0.111	-2.46%	-1.11%	0.25%
actually_borrowed_loanshark	302	546	0.099	-1.77%	-0.81%	0.15%
total_outstanding_debt	103	143	0.700	-£365	£89	£544
attempt_borrow_anywhere	301	545	0.341	-9.55%	-3.12%	3.31%

Technical Annex 3: Impact of the cap on HCSTC demand

attempt_borrow_overdraft	302	546	0.712	-4.89%	-0.78%	3.34%
attempt_borrow_credit_card	302	546	0.949	-2.93%	-0.09%	2.75%
attempt_borrow_family	302	546	0.050	-9.21%	-4.61%	0.00%
attempt_borrow_friend	302	546	0.145	-5.83%	-2.49%	0.85%
attempt_borrow_colleague	302	546	0.400	-0.82%	0.62%	2.06%
attempt_borrow_employer	302	546	0.231	-0.79%	1.24%	3.27%
attempt_borrow_socialfund	302	546	0.011	-5.02%	-2.84%	-0.66%
attempt_borrow_creditunion	302	546	0.465	-0.68%	0.40%	1.48%
attempt_borrow_homecredit	302	546	0.198	-3.36%	-1.33%	0.69%
attempt_borrow_longloan	302	546	0.882	-2.48%	0.20%	2.89%
attempt_borrow_pawnbroking	302	546	0.853	-1.68%	0.18%	2.03%
attempt_borrow_logbook	302	546	0.057	-1.34%	-0.66%	0.02%
attempt_borrow_loanshark	302	546	0.671	-0.83%	-0.15%	0.53%
any_loanshark_interaction	302	546	0.254	-1.70%	-0.63%	0.45%
attempt_borrow_rej	93	154	0.935	-13.46%	-0.54%	12.38%
attempt_borrow_putoff	299	543	0.398	-9.43%	-2.84%	3.75%
after_denial_went_without	120	183	0.756	-8.99%	1.69%	12.38%
after_denial_did_nothing	120	183	0.231	-17.42%	-6.61%	4.20%
after_denial_sold_something	120	183	0.080	-3.53%	-1.67%	0.19%
after_denial_use_savings	120	183	0.217	-2.15%	-0.83%	0.49%
after_denial_saved_up	120	183	0.140	-1.05%	3.25%	7.56%
after_denial_borrow_friends	120	183	0.884	-5.43%	0.44%	6.30%
after_denial_friend_buy	120	183	0.670	-3.21%	-0.57%	2.06%
after_denial_borrow_pdl	120	183	0.644	-9.86%	-1.89%	6.09%
after_denial_borrow_nonpdl	120	183	0.568	-6.47%	-1.46%	3.55%
after_denial_loan_default	120	183	0.764	-2.16%	-0.29%	1.58%
after_denial_cut_spending	120	183	0.160	-0.64%	1.64%	3.92%
after_denial_prolong_debts	120	183	0.824	-2.03%	0.26%	2.55%
after_denial_creditscore	120	183	0.824	-2.03%	0.26%	2.55%
after_denial_increase_work	120	183	0.000	0.00%	0.00%	0.00%
after_denial_debt_mgmt	120	183	0.000	0.00%	0.00%	0.00%
after_denial_something_else	120	183	0.024	0.71%	5.18%	9.64%
remember_loan_very_well	299	545	0.348	-10.43%	-3.38%	3.67%
remember_loan_fairly_well	299	545	0.436	-4.11%	2.71%	9.54%
remember_loan_not_very_well	299	545	0.451	-2.73%	1.71%	6.15%
remember_loan_not_at_all_well	299	545	0.441	-3.70%	-1.05%	1.61%

Technical Annex 3: Impact of the cap on HCSTC demand

loanmonth_jun13	302	546	0.000	-17.17%	-14.24%	-11.30%
loanmonth_jul13	302	546	0.051	-0.01%	5.96%	11.93%
loanmonth_aug13	302	546	0.085	-0.71%	5.22%	11.16%
loanmonth_sep13	302	546	0.223	-2.25%	3.72%	9.69%
loanmonth_oct13	302	546	0.999	-6.02%	0.00%	6.03%
loanmonth_nov13	302	546	0.057	-1.34%	-0.66%	0.02%
happy_decision	300	545	0.003	3.56%	10.45%	17.34%
indifferent_decision	300	545	0.960	-3.36%	0.09%	3.54%
regret_decision	300	545	0.002	-17.20%	-10.54%	-3.89%
regret_a_lot	123	165	0.176	-16.52%	-6.76%	3.01%
regret_a_little	123	165	0.176	-3.01%	6.76%	16.52%
repaid_less	293	540	0.010	1.29%	5.25%	9.21%
repaid_expected	293	540	0.090	-0.94%	6.04%	13.01%
repaid_more	293	540	0.001	-17.88%	-11.29%	-4.69%
apply_pdl_again	298	536	0.002	3.78%	10.54%	17.31%
go_without_pdl	298	536	0.000	-19.60%	-13.07%	-6.54%
use_pdl_alternative	298	536	0.457	-4.12%	2.52%	9.16%
without_alternative_apply_pdl	85	172	0.377	-7.14%	5.88%	18.89%
without_alternative_go_without	85	172	0.377	-18.89%	-5.88%	7.14%
easily_gone_without_money	295	536	0.899	-4.87%	-0.30%	4.27%
possibly_gone_without_money	295	536	0.150	-1.81%	5.03%	11.86%
not_gone_without_money	295	536	0.192	-11.83%	-4.73%	2.37%
consider_any_alternatives	301	542	0.752	-8.13%	-1.13%	5.88%
consider_loanshark	301	540	0.658	-3.73%	-0.69%	2.35%
consider_loanshark_edited	302	546	0.791	-2.25%	0.35%	2.95%
why_pdl_speed	302	546	0.456	-9.64%	-2.66%	4.33%
why_pdl_limits_amount	302	546	0.051	-2.88%	-1.44%	0.00%
why_pdl_only_st_option	302	546	0.297	-1.62%	1.84%	5.31%
why_pdl_option_extend	302	546	0.934	-0.80%	0.04%	0.87%
why_pdl_no_checks	302	546	0.867	-2.56%	0.24%	3.04%
why_pdl_only_small_option	302	546	0.272	-5.92%	-2.13%	1.66%
why_pdl_cheapest_option	302	546	0.853	-1.68%	0.18%	2.03%
why_pdl_only_option	302	546	0.476	-3.80%	2.17%	8.15%
why_pdl_preferred_option	302	546	0.020	0.65%	4.05%	7.45%
why_pdl_selfcontrol	302	546	0.548	-1.26%	-0.30%	0.67%
why_pdl_good_relationship	302	546	0.657	-0.75%	0.22%	1.18%
why_pdl_no_late_charge	302	546	0.000	0.00%	0.00%	0.00%

Technical Annex 3: Impact of the cap on HCSTC demand

why_pdl_maxed_out	302	546	0.457	-0.30%	0.18%	0.67%
why_pdl_advertising	302	546	0.300	-0.72%	0.80%	2.32%
why_pdl_unknown_alternatives	302	546	0.340	-2.26%	-0.74%	0.78%
why_pdl_private_option	302	546	0.225	-0.60%	0.99%	2.58%
why_pdl_recommended	302	546	0.829	-1.92%	-0.19%	1.54%
why_pdl_badcredit	302	546	0.461	-1.62%	-0.44%	0.74%
why_pdl_impulse	302	546	0.000	0.00%	0.00%	0.00%
why_pdl_curiosity	302	546	0.000	0.00%	0.00%	0.00%
plan_use_basic	301	541	0.911	-7.45%	-0.40%	6.65%
plan_use_discretionary	301	541	0.845	-4.91%	0.54%	6.00%
plan_use_shock	301	541	0.049	-7.85%	-3.94%	-0.03%
plan_use_othercat	301	541	0.590	-3.86%	1.47%	6.79%
plan_use_housing	301	541	0.011	-7.25%	-4.09%	-0.93%
plan_use_livingcost	301	541	0.437	-3.77%	2.48%	8.73%
plan_use_bills	301	541	0.912	-6.28%	-0.34%	5.61%
plan_use_electronics	301	541	0.694	-1.54%	-0.26%	1.02%
plan_use_repair	301	541	0.374	-2.71%	-0.85%	1.02%
plan_use_car	301	541	0.085	-6.60%	-3.09%	0.42%
plan_use_help_friend	301	541	0.770	-2.81%	-0.36%	2.08%
plan_use_present	301	541	0.119	-0.54%	2.11%	4.76%
plan_use_holiday	301	541	0.324	-2.31%	2.35%	7.00%
plan_use_pay_pdl	301	541	0.180	-0.82%	-0.33%	0.15%
plan_use_otherdebts	301	541	0.748	-2.48%	0.49%	3.45%
plan_use_business	301	541	0.328	-0.59%	0.59%	1.78%
plan_use_gambling	301	541	0.000	0.00%	0.00%	0.00%
plan_use_spare_money	301	541	0.778	-1.75%	-0.22%	1.31%
plan_use_fund_shortfall	301	541	0.337	-0.89%	0.85%	2.59%
plan_use_home_improve	301	541	0.004	-4.10%	-2.44%	-0.77%
plan_use_creditbuild	301	541	0.843	-1.19%	-0.11%	0.97%
plan_use_wedding	301	541	0.058	-1.35%	-0.66%	0.02%
plan_use_other	301	541	0.729	-2.61%	0.56%	3.74%
consider_creditcard	167	297	0.503	-5.30%	-1.35%	2.60%
consider_storecard	167	297	0.000	0.00%	0.00%	0.00%
consider_pdl	167	297	0.670	-3.36%	0.93%	5.22%
consider_homecredit	167	297	0.116	-3.86%	-1.72%	0.42%
consider_pawnbroking	167	297	0.116	-3.86%	-1.72%	0.42%

Technical Annex 3: Impact of the cap on HCSTC demand

consider_hirepurchase	167	297	0.454	-0.54%	0.34%	1.22%
consider_creditunion	167	297	0.924	-1.45%	0.07%	1.60%
consider_socialfund	167	297	0.454	-0.54%	0.34%	1.22%
consider_bankloan	167	297	0.384	-9.26%	-2.85%	3.57%
consider_friend_relative	167	297	0.355	-4.65%	4.17%	12.98%
consider_community_figure	167	297	0.924	-1.45%	0.07%	1.60%
consider_selling_asset	167	297	0.704	-2.77%	-0.45%	1.87%
consider_employer	167	297	0.681	-1.83%	0.49%	2.80%
consider_use_savings	167	297	0.268	-2.38%	-0.86%	0.66%
consider_other	167	297	0.691	-2.50%	0.64%	3.77%
notborrow	302	546	0.321	-10.47%	-3.52%	3.43%
borrow_friendfam	302	546	0.051	-0.02%	5.89%	11.79%
borrow_credit	302	546	0.800	-4.14%	-0.47%	3.19%
without_loan_went_without	302	546	0.205	-2.09%	3.83%	9.75%
without_loan_did_nothing	302	546	0.175	-10.13%	-4.15%	1.84%
without_loan_sold_something	302	546	0.331	-3.70%	-1.23%	1.24%
without_loan_use_savings	302	546	0.261	-1.31%	-0.48%	0.36%
without_loan_saved_up	302	546	0.596	-1.56%	0.58%	2.71%
without_loan_borrow_friends	302	546	0.099	-0.89%	4.79%	10.48%
without_loan_friend_buy	302	546	0.201	-0.78%	1.46%	3.69%
without_loan_borrow_pdl	302	546	0.025	-5.47%	-2.92%	-0.37%
without_loan_borrow_nonpdl	302	546	0.062	-0.13%	2.63%	5.38%
without_loan_default	302	546	0.180	-0.66%	1.42%	3.50%
without_loan_cut_spending	302	546	0.696	-1.02%	0.25%	1.53%
without_loan_prolong_debts	302	546	0.596	-1.56%	0.58%	2.71%
without_loan_increase_work	302	546	0.179	-0.81%	-0.33%	0.15%
without_loan_debt_management	302	546	0.000	0.00%	0.00%	0.00%
without_loan_something_else	302	546	0.037	-4.51%	-2.33%	-0.14%
comfort_borrow_friends	54	123	0.140	-7.67%	23.76%	55.18%

Table A29: T-tests Comparing Store and Online Users
(bold where difference is statistically significant at the 5% level)

	Number of respondents from group 3 who...		Mean		P value for difference in means (stores – online)	Lower confidence interval	Difference in means (stores – online)	Upper confidence interval
	First borrowed from stores	First borrowed online	First borrowed from stores	First borrowed online				
permission_to_link_other_data	95	450	90.53%	88.22%	0.521	-4.73%	2.30%	9.34%
age	86	397	38.3	32.4	0.000	3.2	6.0	8.8
male	96	450	47.92%	58.44%	0.059	-21.43%	-10.53%	0.38%
additional_adults	96	450	50.00%	76.67%	0.000	-36.32%	-26.67%	-17.01%
partner	96	450	78.13%	61.78%	0.002	5.88%	16.35%	26.81%
children	96	450	35.42%	32.44%	0.575	-7.40%	2.97%	13.35%
home_own	95	447	2.11%	3.36%	0.526	-5.12%	-1.25%	2.61%
home_mortgage	95	447	8.42%	17.00%	0.036	-16.58%	-8.58%	-0.59%
home_private_rent	95	447	36.84%	36.47%	0.945	-10.31%	0.38%	11.06%
home_social_rent	95	447	48.42%	24.38%	0.000	14.22%	24.04%	33.85%
home_shared_ownership	95	447	0.00%	1.79%	0.190	-4.46%	-1.79%	0.88%
home_rent_free	95	447	3.16%	9.84%	0.036	-12.90%	-6.69%	-0.47%
home_squat	95	447	0.00%	0.22%	0.645	-1.18%	-0.22%	0.73%
home_other	95	447	1.05%	6.94%	0.027	-11.09%	-5.88%	-0.68%
ethnic_white_brit	96	449	56.25%	80.62%	0.000	-33.53%	-24.37%	-15.22%
ethnic_white_irish	96	449	3.13%	2.23%	0.602	-2.47%	0.90%	4.27%
ethnic_other_white	96	449	9.38%	5.79%	0.194	-1.82%	3.58%	8.99%
ethnic_mixed	96	449	2.08%	1.78%	0.842	-2.66%	0.30%	3.26%
ethnic_asian	96	449	3.13%	2.90%	0.904	-3.50%	0.23%	3.96%
ethnic_black	96	449	21.88%	5.12%	0.000	10.90%	16.75%	22.60%
ethnic_chinese	96	449	0.00%	0.45%	0.513	-1.78%	-0.45%	0.89%
ethnic_other	96	449	4.17%	1.11%	0.033	0.25%	3.05%	5.86%

Technical Annex 3: Impact of the cap on HCSTC demand

qualifications	96	450	72.92%	80.22%	0.111	-16.29%	-7.31%	1.67%
education_degree	70	360	11.43%	20.83%	0.068	-19.49%	-9.40%	0.68%
education_diploma	70	360	17.14%	20.56%	0.515	-13.67%	-3.41%	6.85%
education_alevel	70	360	27.14%	28.06%	0.877	-12.42%	-0.91%	10.60%
education_gcse	70	360	20.00%	21.11%	0.835	-11.55%	-1.11%	9.33%
education_other	70	360	24.29%	9.44%	0.000	6.66%	14.84%	23.02%
fulltime_employed	96	448	53.13%	65.85%	0.019	-23.29%	-12.72%	-2.15%
parttime_employed	96	448	14.58%	14.29%	0.940	-7.44%	0.30%	8.04%
unemployed	96	448	11.46%	8.71%	0.398	-3.62%	2.75%	9.13%
retired	96	448	4.17%	1.34%	0.061	-0.13%	2.83%	5.78%
fteducation	96	448	3.13%	2.90%	0.907	-3.51%	0.22%	3.95%
unable_to_work	96	448	9.38%	3.13%	0.006	1.84%	6.25%	10.66%
looking_after_family	96	448	2.08%	3.13%	0.584	-4.77%	-1.04%	2.69%
other_work_status	96	448	2.08%	0.67%	0.188	-0.69%	1.41%	3.52%
income_partner	26	167	50.00%	67.66%	0.079	-37.28%	-17.66%	1.95%
income_employment	96	450	73.96%	84.44%	0.014	-18.81%	-10.49%	-2.16%
income_pension	96	450	11.46%	7.33%	0.178	-1.87%	4.13%	10.12%
income_childbenefit	96	450	26.04%	23.56%	0.605	-6.94%	2.49%	11.91%
income_statebenefit	96	450	23.96%	15.11%	0.035	0.65%	8.85%	17.04%
income_taxcredits	96	450	23.96%	16.00%	0.062	-0.38%	7.96%	16.30%
income_othersource	96	450	8.33%	10.22%	0.574	-8.48%	-1.89%	4.70%
income_noregularsource	96	450	3.13%	1.11%	0.136	-0.63%	2.01%	4.66%
income_nosource	96	450	0.00%	1.11%	0.300	-3.21%	-1.11%	0.99%
income_under_6k	83	402	13.25%	12.19%	0.789	-6.73%	1.06%	8.86%
income_6k_to_12k	83	402	22.89%	18.66%	0.375	-5.12%	4.23%	13.59%
income_12k_to_18k	83	402	34.94%	26.37%	0.113	-2.01%	8.57%	19.16%
income_18k_to_24k	83	402	13.25%	15.42%	0.616	-10.63%	-2.17%	6.30%
income_24k_to_36k	83	402	13.25%	14.43%	0.781	-9.45%	-1.17%	7.10%
income_36k_to_50	83	402	1.20%	8.21%	0.023	-13.02%	-7.00%	-0.99%
income_over_50k	83	402	1.20%	4.73%	0.142	-8.22%	-3.52%	1.18%
irregular_income	96	449	31.25%	23.83%	0.129	-2.14%	7.42%	16.98%
health_very_poor	94	448	11.70%	5.13%	0.017	1.20%	6.57%	11.94%
health_poor	94	448	15.96%	10.94%	0.171	-2.16%	5.02%	12.20%
health_fair	94	448	27.66%	22.32%	0.266	-4.06%	5.34%	14.74%
health_good	94	448	28.72%	37.95%	0.091	-19.91%	-9.22%	1.46%
health_excellent	94	448	15.96%	23.66%	0.103	-16.96%	-7.70%	1.55%

Technical Annex 3: Impact of the cap on HCSTC demand

happy	94	447	66.91%	73.04%	0.026	-11.51%	-6.13%	-0.75%
anxious	94	450	39.57%	33.58%	0.092	-0.96%	6.00%	12.95%
worthwhile	93	449	74.30%	74.21%	0.972	-5.10%	0.09%	5.28%
satisfied	94	449	66.60%	72.00%	0.040	-10.57%	-5.41%	-0.25%
happiness_medium_high	96	450	43.75%	53.56%	0.081	-20.80%	-9.81%	1.19%
anxiousness_medium_low	96	450	32.29%	48.89%	0.003	-27.51%	-16.60%	-5.68%
worthwhile_medium_high	96	450	56.25%	58.22%	0.723	-12.87%	-1.97%	8.93%
satisfied_medium_high	96	450	41.67%	52.00%	0.066	-21.34%	-10.33%	0.67%
keeping_up_no_difficulties	93	446	33.33%	41.03%	0.168	-18.63%	-7.70%	3.23%
keeping_up_but_struggling	93	446	37.63%	40.13%	0.655	-13.45%	-2.50%	8.45%
falling_behind_some_bills	93	446	21.51%	13.45%	0.047	0.12%	8.05%	15.98%
falling_behind_many_bills	93	446	7.53%	5.38%	0.420	-3.06%	2.15%	7.35%
any_missed_bills	96	448	50.00%	42.63%	0.188	-3.58%	7.37%	18.31%
missed_fuel_bill	96	450	13.54%	8.67%	0.140	-1.59%	4.88%	11.34%
missed_rent_bill	96	450	17.71%	9.33%	0.016	1.56%	8.37%	15.19%
missed_council_tax_bill	96	450	21.88%	14.00%	0.052	-0.06%	7.87%	15.81%
missed_insurance_bill	96	450	1.04%	5.56%	0.060	-9.20%	-4.51%	0.17%
missed_telephone_bill	96	450	26.04%	23.78%	0.639	-7.19%	2.26%	11.71%
missed_hire_purchase_bill	96	450	0.00%	1.78%	0.189	-4.43%	-1.78%	0.87%
missed_water_bill	96	450	9.38%	8.22%	0.713	-4.98%	1.15%	7.28%
missed_other_regular_bill	96	450	0.00%	0.22%	0.645	-1.17%	-0.22%	0.72%
missed_mortgage_bill	96	450	1.04%	2.67%	0.344	-4.99%	-1.63%	1.74%
missed_catalogue_bill	96	450	0.00%	0.44%	0.514	-1.78%	-0.44%	0.89%
missed_tv_licence_bill	96	450	0.00%	0.89%	0.355	-2.77%	-0.89%	0.99%
missed_gym_bill	96	450	0.00%	0.00%	0.000	0.00%	0.00%	0.00%
missed_loan_repayment	96	450	0.00%	0.89%	0.355	-2.77%	-0.89%	0.99%
missed_credit_credit_bill	96	450	0.00%	0.67%	0.423	-2.30%	-0.67%	0.96%
missed_child_care_bill	96	450	0.00%	0.00%	0.000	0.00%	0.00%	0.00%
missed_other_bill	96	450	0.00%	1.56%	0.219	-4.04%	-1.56%	0.92%
any_financial_distress	95	449	63.16%	47.44%	0.005	4.71%	15.72%	26.73%
fin_distress_stress	96	450	58.33%	40.67%	0.001	6.82%	17.67%	28.52%
fin_distress_off_work	96	450	11.46%	16.22%	0.241	-12.72%	-4.76%	3.19%
fin_distress_embarrassment	96	450	38.54%	22.00%	0.001	7.10%	16.54%	25.99%
fin_distress_relationship	96	450	23.96%	17.33%	0.130	-1.93%	6.62%	15.18%
fin_distress_family	96	450	16.67%	12.67%	0.297	-3.51%	4.00%	11.51%
fin_distress_other_health	96	450	0.00%	0.44%	0.514	-1.78%	-0.44%	0.89%

Technical Annex 3: Impact of the cap on HCSTC demand

fin_distress_depression	96	450	1.04%	0.89%	0.887	-1.95%	0.15%	2.26%
fin_distress_lost_sleep	96	450	1.04%	0.22%	0.228	-0.51%	0.82%	2.15%
fin_distress_other_issue	96	450	1.04%	2.22%	0.456	-4.28%	-1.18%	1.92%
fin_distress_no_issues	96	450	36.46%	52.44%	0.004	-26.94%	-15.99%	-5.03%
no_savings	95	423	68.42%	54.85%	0.016	2.61%	13.57%	24.54%
savings_or_deposit_account	96	450	27.08%	40.00%	0.018	-23.56%	-12.92%	-2.27%
cash_ISA	96	450	8.33%	19.78%	0.008	-19.83%	-11.44%	-3.06%
premium_bonds	96	450	1.04%	6.44%	0.035	-10.41%	-5.40%	-0.39%
stocks_shares	96	450	2.08%	5.56%	0.155	-8.25%	-3.47%	1.30%
other_savings_product	96	450	0.00%	3.11%	0.080	-6.59%	-3.11%	0.37%
other_savings_prod_ex_pension	96	450	1.04%	1.33%	0.818	-2.78%	-0.29%	2.19%
savings_held_by_someone_else	96	450	6.25%	10.67%	0.189	-11.00%	-4.42%	2.16%
savings_at_home	96	450	5.21%	14.67%	0.012	-16.84%	-9.46%	-2.08%
savings_club	96	450	1.04%	1.78%	0.608	-3.55%	-0.74%	2.07%
christmas_club	96	450	3.13%	2.22%	0.599	-2.46%	0.90%	4.27%
jamjar_account	96	450	4.17%	3.56%	0.773	-3.54%	0.61%	4.76%
gold_jewellery_antiques	96	450	3.13%	4.22%	0.620	-5.44%	-1.10%	3.24%
other_informal_savings	96	450	2.08%	1.78%	0.840	-2.65%	0.31%	3.27%
overdraft_facility	96	447	27.08%	48.77%	0.000	-32.52%	-21.69%	-10.85%
not_overdrawn	26	218	19.23%	32.11%	0.180	-31.65%	-12.88%	5.89%
exceeded_overdraft_limit	26	214	61.54%	57.48%	0.693	-16.11%	4.06%	24.24%
refused_payments	96	450	23.96%	30.89%	0.178	-17.00%	-6.93%	3.14%
refused_direct_debit	92	438	23.91%	31.05%	0.174	-17.42%	-7.14%	3.15%
refused_cheque	94	444	1.06%	1.80%	0.613	-3.60%	-0.74%	2.12%
actually_borrowed_overdraft	96	450	4.17%	6.00%	0.482	-6.94%	-1.83%	3.27%
actually_borrowed_credit_card	96	450	5.21%	6.89%	0.548	-7.16%	-1.68%	3.80%
actually_borrowed_family	96	450	27.08%	37.78%	0.047	-21.25%	-10.69%	-0.14%
actually_borrowed_friend	96	450	20.83%	16.89%	0.358	-4.45%	3.94%	12.34%
actually_borrowed_colleague	96	450	5.21%	4.44%	0.746	-3.85%	0.76%	5.38%
actually_borrowed_employer	96	450	5.21%	4.44%	0.746	-3.85%	0.76%	5.38%
actually_borrowed_socialfund	96	450	7.29%	1.56%	0.001	2.28%	5.74%	9.19%
actually_borrowed_creditunion	96	450	4.17%	0.67%	0.006	1.03%	3.50%	5.97%
actually_borrowed_homecredit	96	450	3.13%	3.11%	0.994	-3.82%	0.01%	3.85%
actually_borrowed_longloan	96	450	2.08%	4.22%	0.323	-6.38%	-2.14%	2.10%
actually_borrowed_pawnbroking	96	450	5.21%	1.78%	0.045	0.08%	3.43%	6.78%
actually_borrowed_logbook	96	450	1.04%	0.44%	0.473	-1.03%	0.60%	2.23%

Technical Annex 3: Impact of the cap on HCSTC demand

actually_borrowed_loanshark	96	450	0.00%	0.22%	0.645	-1.17%	-0.22%	0.72%
total_outstanding_debt	24	119	£ 472	£ 1,086	0.179	-£1,504	-£614	£276
attempt_borrow_anywhere	96	449	35.42%	26.95%	0.095	-1.47%	8.47%	18.40%
attempt_borrow_overdraft	96	450	12.50%	8.44%	0.212	-2.30%	4.06%	10.41%
attempt_borrow_credit_card	96	450	3.13%	4.44%	0.560	-5.75%	-1.32%	3.11%
attempt_borrow_family	96	450	9.38%	10.89%	0.663	-8.31%	-1.51%	5.29%
attempt_borrow_friend	96	450	8.33%	4.44%	0.117	-0.97%	3.89%	8.75%
attempt_borrow_colleague	96	450	2.08%	1.11%	0.443	-1.51%	0.97%	3.45%
attempt_borrow_employer	96	450	4.17%	2.22%	0.275	-1.54%	1.94%	5.43%
attempt_borrow_socialfund	96	450	5.21%	0.67%	0.001	1.92%	4.54%	7.17%
attempt_borrow_creditunion	96	450	3.13%	0.22%	0.002	1.04%	2.90%	4.77%
attempt_borrow_homecredit	96	450	2.08%	1.56%	0.713	-2.28%	0.53%	3.34%
attempt_borrow_longloan	96	450	1.04%	4.44%	0.116	-7.64%	-3.40%	0.83%
attempt_borrow_pawnbroking	96	450	4.17%	1.33%	0.060	-0.12%	2.83%	5.78%
attempt_borrow_logbook	96	450	0.00%	0.00%	0.000	0.00%	0.00%	0.00%
attempt_borrow_loanshark	96	450	0.00%	0.22%	0.645	-1.17%	-0.22%	0.72%
any_loanshark_interaction	96	450	0.00%	0.44%	0.514	-1.78%	-0.44%	0.89%
attempt_borrow_rej	33	121	45.45%	51.24%	0.559	-25.14%	-5.79%	13.57%
attempt_borrow_putoff	94	449	24.47%	32.29%	0.136	-18.10%	-7.83%	2.45%
after_denial_went_without	28	155	39.29%	30.32%	0.351	-9.82%	8.96%	27.75%
after_denial_did_nothing	28	155	28.57%	30.32%	0.853	-20.30%	-1.75%	16.80%
after_denial_sold_something	28	155	0.00%	0.00%	0.000	0.00%	0.00%	0.00%
after_denial_use_savings	28	155	0.00%	0.00%	0.000	0.00%	0.00%	0.00%
after_denial_saved_up	28	155	3.57%	5.16%	0.722	-10.34%	-1.59%	7.16%
after_denial_borrow_friends	28	155	0.00%	8.39%	0.113	-18.71%	-8.39%	1.94%
after_denial_friend_buy	28	155	0.00%	1.29%	0.548	-5.49%	-1.29%	2.91%
after_denial_borrow_pdl	28	155	7.14%	14.19%	0.312	-20.67%	-7.05%	6.57%
after_denial_borrow_nonpdl	28	155	10.71%	3.23%	0.075	-0.71%	7.49%	15.69%
after_denial_loan_default	28	155	0.00%	0.65%	0.672	-3.63%	-0.65%	2.34%
after_denial_cut_spending	28	155	0.00%	1.94%	0.461	-7.07%	-1.94%	3.20%
after_denial_prolong_debts	28	155	0.00%	1.29%	0.548	-5.49%	-1.29%	2.91%
after_denial_creditscore	28	155	0.00%	1.29%	0.548	-5.49%	-1.29%	2.91%
after_denial_increase_work	28	155	0.00%	0.00%	0.000	0.00%	0.00%	0.00%
after_denial_debt_mgmt	28	155	0.00%	0.00%	0.000	0.00%	0.00%	0.00%
after_denial_something_else	28	155	7.14%	5.81%	0.786	-8.28%	1.34%	10.95%

Technical Annex 3: Impact of the cap on HCSTC demand

remember_loan_very_well	95	450	48.42%	46.44%	0.726	-9.08%	1.98%	13.04%
remember_loan_fairly_well	95	450	35.79%	38.67%	0.601	-13.64%	-2.88%	7.89%
remember_loan_not_very_well	95	450	11.58%	11.78%	0.956	-7.34%	-0.20%	6.94%
remember_loan_not_at_all_well	95	450	4.21%	3.11%	0.587	-2.86%	1.10%	5.06%
loanmonth_jun13	96	450	0.00%	0.00%	0.000	0.00%	0.00%	0.00%
loanmonth_jul13	96	450	25.00%	26.00%	0.839	-10.66%	-1.00%	8.66%
loanmonth_aug13	96	450	26.04%	24.89%	0.813	-8.42%	1.15%	10.72%
loanmonth_sep13	96	450	20.83%	25.78%	0.310	-14.48%	-4.94%	4.59%
loanmonth_oct13	96	450	28.13%	23.33%	0.320	-4.65%	4.79%	14.23%
loanmonth_nov13	96	450	0.00%	0.00%	0.000	0.00%	0.00%	0.00%
happy_decision	96	449	54.17%	65.03%	0.045	-21.48%	-10.87%	-0.25%
indifferent_decision	96	449	10.42%	5.57%	0.079	-0.55%	4.85%	10.25%
regret_decision	96	449	35.42%	29.40%	0.246	-4.13%	6.02%	16.17%
regret_a_lot	33	132	87.88%	71.21%	0.050	0.15%	16.67%	33.19%
regret_a_little	33	132	12.12%	28.79%	0.050	-33.19%	-16.67%	-0.15%
repaid_less	93	447	9.68%	10.51%	0.810	-7.66%	-0.84%	5.99%
repaid_expected	93	447	44.09%	65.32%	0.000	-31.97%	-21.24%	-10.51%
repaid_more	93	447	46.24%	24.16%	0.000	12.21%	22.08%	31.95%
apply_pdl_again	90	446	34.44%	40.81%	0.261	-17.45%	-6.36%	4.73%
go_without_pdl	90	446	33.33%	25.56%	0.130	-2.26%	7.77%	17.81%
use_pdl_alternative	90	446	32.22%	33.63%	0.796	-12.11%	-1.41%	9.29%
without_alternative_apply_pdl	27	145	37.04%	53.10%	0.127	-36.58%	-16.07%	4.45%
without_alternative_go_without	27	145	62.96%	46.90%	0.127	-4.45%	16.07%	36.58%
easily_gone_without_money	94	442	4.26%	13.12%	0.015	-15.96%	-8.87%	-1.77%
possibly_gone_without_money	94	442	31.91%	39.59%	0.165	-18.50%	-7.68%	3.14%
not_gone_without_money	94	442	63.83%	47.29%	0.004	5.48%	16.54%	27.61%
consider_any_alternatives	96	446	51.04%	56.28%	0.350	-16.21%	-5.24%	5.74%
consider_loanshark	94	446	9.57%	3.59%	0.012	1.33%	5.99%	10.64%
consider_loanshark_edited	96	450	6.25%	3.11%	0.138	-1.00%	3.14%	7.28%
why_pdl_speed	96	450	26.04%	46.67%	0.000	-31.42%	-20.63%	-9.83%
why_pdl_limits_amount	96	450	0.00%	0.67%	0.423	-2.30%	-0.67%	0.96%
why_pdl_only_st_option	96	450	7.29%	7.11%	0.950	-5.50%	0.18%	5.87%
why_pdl_option_extend	96	450	0.00%	0.44%	0.514	-1.78%	-0.44%	0.89%
why_pdl_no_checks	96	450	2.08%	4.67%	0.253	-7.01%	-2.58%	1.85%
why_pdl_only_small_option	96	450	11.46%	6.22%	0.071	-0.43%	5.24%	10.90%
why_pdl_cheapest_option	96	450	0.00%	2.22%	0.141	-5.18%	-2.22%	0.73%
why_pdl_only_option	96	450	30.21%	23.11%	0.142	-2.36%	7.10%	16.55%

Technical Annex 3: Impact of the cap on HCSTC demand

why_pdl_preferred_option	96	450	7.29%	7.78%	0.871	-6.37%	-0.49%	5.40%
why_pdl_selfcontrol	96	450	0.00%	0.44%	0.514	-1.78%	-0.44%	0.89%
why_pdl_good_relationship	96	450	1.04%	0.44%	0.473	-1.03%	0.60%	2.23%
why_pdl_no_late_charge	96	450	0.00%	0.00%	0.000	0.00%	0.00%	0.00%
why_pdl_maxed_out	96	450	0.00%	0.22%	0.645	-1.17%	-0.22%	0.72%
why_pdl_advertising	96	450	1.04%	1.56%	0.704	-3.17%	-0.51%	2.14%
why_pdl_unknown_alternatives	96	450	2.08%	0.67%	0.187	-0.68%	1.42%	3.52%
why_pdl_private_option	96	450	2.08%	1.56%	0.713	-2.28%	0.53%	3.34%
why_pdl_recommended	96	450	2.08%	1.33%	0.580	-1.90%	0.75%	3.40%
why_pdl_badcredit	96	450	0.00%	0.67%	0.423	-2.30%	-0.67%	0.96%
why_pdl_impulse	96	450	0.00%	0.00%	0.000	0.00%	0.00%	0.00%
why_pdl_curiosity	96	450	0.00%	0.00%	0.000	0.00%	0.00%	0.00%
plan_use_basic	95	446	51.58%	51.79%	0.970	-11.30%	-0.21%	10.87%
plan_use_discretionary	95	446	16.84%	18.83%	0.650	-10.60%	-1.99%	6.62%
plan_use_shock	95	446	5.26%	7.40%	0.460	-7.80%	-2.14%	3.53%
plan_use_othercat	95	446	21.05%	17.04%	0.354	-4.46%	4.01%	12.48%
plan_use_housing	95	446	5.26%	3.59%	0.444	-2.61%	1.68%	5.96%
plan_use_livingcost	95	446	29.47%	27.35%	0.676	-7.81%	2.12%	12.05%
plan_use_bills	95	446	17.89%	23.99%	0.200	-15.41%	-6.10%	3.22%
plan_use_electronics	95	446	1.05%	0.67%	0.695	-1.52%	0.38%	2.28%
plan_use_repair	95	446	2.11%	1.35%	0.578	-1.92%	0.76%	3.44%
plan_use_car	95	446	3.16%	6.05%	0.264	-7.97%	-2.90%	2.18%
plan_use_help_friend	95	446	4.21%	2.69%	0.428	-2.24%	1.52%	5.28%
plan_use_present	95	446	5.26%	4.26%	0.667	-3.56%	1.00%	5.57%
plan_use_holiday	95	446	8.42%	14.35%	0.123	-13.45%	-5.93%	1.59%
plan_use_pay_pdl	95	446	0.00%	0.00%	0.000	0.00%	0.00%	0.00%
plan_use_otherdebts	95	446	3.16%	5.16%	0.409	-6.74%	-2.00%	2.74%
plan_use_business	95	446	1.05%	0.90%	0.886	-1.97%	0.16%	2.28%
plan_use_gambling	95	446	0.00%	0.00%	0.000	0.00%	0.00%	0.00%
plan_use_spare_money	95	446	1.05%	1.12%	0.954	-2.39%	-0.07%	2.26%
plan_use_fund_shortfall	95	446	2.11%	1.79%	0.838	-2.68%	0.31%	3.30%
plan_use_home_improve	95	446	2.11%	0.22%	0.025	0.24%	1.88%	3.52%
plan_use_creditbuild	95	446	0.00%	0.67%	0.424	-2.32%	-0.67%	0.97%
plan_use_wedding	95	446	0.00%	0.00%	0.000	0.00%	0.00%	0.00%
plan_use_other	95	446	9.47%	4.71%	0.066	-0.30%	4.77%	9.83%
consider_creditcard	49	248	2.04%	4.44%	0.438	-8.44%	-2.39%	3.65%

Technical Annex 3: Impact of the cap on HCSTC demand

consider_storecard	49	248	0.00%	0.00%	0.000	0.00%	0.00%	0.00%
consider_pdl	49	248	4.08%	6.05%	0.590	-9.11%	-1.97%	5.17%
consider_homecredit	49	248	0.00%	0.81%	0.530	-3.32%	-0.81%	1.71%
consider_pawnbroking	49	248	2.04%	0.40%	0.202	-0.87%	1.64%	4.15%
consider_hirepurchase	49	248	0.00%	0.40%	0.657	-2.18%	-0.40%	1.38%
consider_creditunion	49	248	4.08%	0.00%	0.001	1.61%	4.08%	6.55%
consider_socialfund	49	248	2.04%	0.00%	0.024	0.28%	2.04%	3.81%
consider_bankloan	49	248	6.12%	13.31%	0.160	-17.18%	-7.18%	2.82%
consider_friend_relative	49	248	65.31%	70.97%	0.431	-19.73%	-5.66%	8.41%
consider_community_figure	49	248	0.00%	0.81%	0.530	-3.32%	-0.81%	1.71%
consider_selling_asset	49	248	8.16%	0.00%	0.000	4.74%	8.16%	11.58%
consider_employer	49	248	6.12%	0.81%	0.008	1.41%	5.32%	9.22%
consider_use_savings	49	248	0.00%	0.40%	0.657	-2.18%	-0.40%	1.38%
consider_other	49	248	6.12%	2.42%	0.168	-1.55%	3.70%	8.96%
notborrow	96	450	60.42%	55.56%	0.384	-6.08%	4.86%	15.80%
borrow_friendfam	96	450	22.92%	25.56%	0.589	-12.21%	-2.64%	6.93%
borrow_credit	96	450	3.13%	8.00%	0.093	-10.55%	-4.87%	0.80%
without_loan_went_without	96	450	20.83%	25.11%	0.376	-13.75%	-4.28%	5.19%
without_loan_did_nothing	96	450	27.08%	21.33%	0.220	-3.43%	5.75%	14.93%
without_loan_sold_something	96	450	4.17%	2.44%	0.350	-1.88%	1.72%	5.33%
without_loan_use_savings	96	450	0.00%	0.22%	0.645	-1.17%	-0.22%	0.72%
without_loan_saved_up	96	450	2.08%	2.67%	0.743	-4.07%	-0.58%	2.91%
without_loan_borrow_friends	96	450	20.83%	22.67%	0.696	-11.03%	-1.83%	7.36%
without_loan_friend_buy	96	450	2.08%	3.33%	0.523	-5.08%	-1.25%	2.58%
without_loan_borrow_pdl	96	450	2.08%	2.44%	0.834	-3.73%	-0.36%	3.00%
without_loan_borrow_nonpdl	96	450	1.04%	5.78%	0.052	-9.51%	-4.74%	0.03%
without_loan_default	96	450	0.00%	3.33%	0.070	-6.93%	-3.33%	0.26%
without_loan_cut_spending	96	450	0.00%	1.11%	0.300	-3.21%	-1.11%	0.99%
without_loan_prolong_debts	96	450	4.17%	2.22%	0.275	-1.54%	1.94%	5.43%
without_loan_increase_work	96	450	0.00%	0.00%	0.000	0.00%	0.00%	0.00%
without_loan_debt_management	96	450	0.00%	0.00%	0.000	0.00%	0.00%	0.00%
without_loan_something_else	96	450	3.13%	1.33%	0.211	-1.02%	1.79%	4.60%
comfort_borrow_friends	20	103	110.00%	108.74%	0.959	-46.83%	1.26%	49.36%

Table A30: T-tests Comparing Problem Debt to Less Marginal Successful Applicants
(bold where difference is statistically significant at the 5% level)

	Number of respondents		P value for difference in means (problem debt – less marginal successful)	Lower confidence interval	Difference in means (problem debt – less marginal successful)	Upper confidence interval
	Less marginal successful	Problem debt				
age	483	155	0.150	-3.77	-1.60	0.58
male	546	170	0.608	-6.30%	2.23%	10.76%
additional_adults	546	170	0.005	-19.30%	-11.39%	-3.48%
partner	546	170	0.879	-7.59%	0.64%	8.87%
children	546	170	0.050	0.01%	8.21%	16.41%
home_own	542	166	0.070	-5.27%	-2.53%	0.20%
home_mortgage	542	166	0.000	-18.75%	-13.09%	-7.43%
home_private_rent	542	166	0.453	-5.19%	3.23%	11.64%
home_social_rent	542	166	0.022	1.35%	9.35%	17.36%
home_shared_ownership	542	166	0.796	-2.33%	-0.27%	1.78%
home_rent_free	542	166	0.082	-0.57%	4.58%	9.73%
home_squat	542	166	0.580	-0.84%	-0.18%	0.47%
home_other	542	166	0.597	-5.10%	-1.08%	2.93%
ethnic_white_brit	545	169	0.337	-3.70%	3.55%	10.80%
ethnic_white_irish	545	169	0.412	-1.61%	1.16%	3.94%
ethnic_other_white	545	169	0.043	-7.97%	-4.06%	-0.14%
ethnic_mixed	545	169	0.664	-1.86%	0.53%	2.93%
ethnic_asian	545	169	0.439	-1.84%	1.21%	4.26%

Technical Annex 3: Impact of the cap on HCSTC demand

ethnic_black	545	169	0.355	-6.72%	-2.16%	2.41%
ethnic_chinese	545	169	0.431	-1.28%	-0.37%	0.55%
ethnic_other	545	169	0.913	-2.10%	0.12%	2.35%
qualifications	546	169	0.001	-19.99%	-12.67%	-5.34%
education_degree	430	111	0.000	-22.41%	-14.80%	-7.18%
education_diploma	430	111	0.007	-18.92%	-10.99%	-3.06%
education_alevel	430	111	0.262	-4.05%	5.43%	14.90%
education_gcse	430	111	0.006	3.60%	12.40%	21.20%
education_other	430	111	0.029	0.85%	7.96%	15.07%
fulltime_employed	544	170	0.000	-44.69%	-36.54%	-28.39%
parttime_employed	544	170	0.514	-7.94%	-1.99%	3.97%
unemployed	544	170	0.000	23.65%	29.63%	35.61%
retired	544	170	0.249	-3.37%	-1.25%	0.87%
fteducation	544	170	1.000	-2.91%	0.00%	2.91%
unable_to_work	544	170	0.000	4.57%	8.71%	12.86%
looking_after_family	544	170	0.266	-1.34%	1.76%	4.87%
other_work_status	544	170	0.680	-1.90%	-0.33%	1.24%
income_partner	193	44	0.003	-40.13%	-24.38%	-8.63%
income_employment	546	170	0.000	-44.38%	-37.31%	-30.23%
income_pension	546	170	0.009	-10.00%	-5.71%	-1.41%
income_childbenefit	546	170	0.061	-0.33%	7.18%	14.70%
income_statebenefit	546	170	0.000	26.91%	33.92%	40.93%
income_taxcredits	546	170	0.006	2.84%	9.66%	16.48%
income_othersource	546	170	0.792	-4.49%	0.70%	5.88%
income_noregularsource	546	170	0.090	-0.32%	2.06%	4.45%
income_nosource	546	170	0.763	-1.44%	0.26%	1.96%
income_under_6k	485	149	0.000	16.40%	23.20%	30.00%
income_6k_to_12k	485	149	0.075	-0.67%	6.79%	14.26%
income_12k_to_18k	485	149	0.041	-16.40%	-8.37%	-0.35%
income_18k_to_24k	485	149	0.016	-13.87%	-7.67%	-1.46%
income_24k_to_36k	485	149	0.048	-12.29%	-6.17%	-0.05%
income_36k_to_50	485	149	0.023	-9.29%	-5.00%	-0.70%
income_over_50k	485	149	0.105	-6.14%	-2.78%	0.58%
irregular_income	545	164	0.609	-9.50%	-1.97%	5.57%
health_very_poor	542	170	0.005	2.05%	6.67%	11.29%
health_poor	542	170	0.019	1.15%	7.02%	12.89%
health_fair	542	170	0.809	-8.16%	-0.89%	6.37%

Technical Annex 3: Impact of the cap on HCSTC demand

health_good	542	170	0.130	-14.55%	-6.35%	1.86%
health_excellent	542	170	0.071	-13.43%	-6.44%	0.54%
happy	541	168	0.057	-8.49%	-4.18%	0.13%
anxious	544	167	0.025	0.79%	6.16%	11.54%
worthwhile	542	166	0.188	-6.91%	-2.78%	1.35%
satisfied	543	169	0.012	-9.58%	-5.39%	-1.20%
happiness_medium_high	546	170	0.223	-13.97%	-5.36%	3.25%
anxiousness_medium_low	546	170	0.014	-19.19%	-10.68%	-2.17%
worthwhile_medium_high	546	170	0.257	-13.47%	-4.93%	3.60%
satisfied_medium_high	546	170	0.328	-12.91%	-4.30%	4.31%
keeping_up_no_difficulties	539	163	0.000	-24.12%	-15.78%	-7.43%
keeping_up_but_struggling	539	163	0.026	-18.10%	-9.64%	-1.18%
falling_behind_some_bills	539	163	0.000	7.92%	14.61%	21.29%
falling_behind_many_bills	539	163	0.000	6.05%	10.81%	15.58%
any_missed_bills	544	170	0.004	3.98%	12.54%	21.09%
missed_fuel_bill	546	170	0.137	-1.27%	4.01%	9.28%
missed_rent_bill	546	170	0.006	2.31%	8.02%	13.73%
missed_council_tax_bill	546	170	0.482	-4.04%	2.26%	8.57%
missed_insurance_bill	546	170	0.779	-3.18%	0.53%	4.25%
missed_telephone_bill	546	170	0.129	-1.68%	5.82%	13.33%
missed_hire_purchase_bill	546	170	0.432	-1.32%	0.89%	3.10%
missed_water_bill	546	170	0.003	2.83%	8.05%	13.26%
missed_other_regular_bill	546	170	0.577	-0.83%	-0.18%	0.46%
missed_mortgage_bill	546	170	0.339	-3.67%	-1.20%	1.26%
missed_catalogue_bill	546	170	0.216	-0.47%	0.81%	2.09%
missed_tv_licence_bill	546	170	0.024	0.29%	2.21%	4.12%
missed_gym_bill	546	170	0.073	-0.05%	0.59%	1.23%
missed_loan_repayment	546	170	0.233	-0.66%	1.03%	2.73%
missed_credit_credit_bill	546	170	0.953	-1.25%	0.04%	1.32%
missed_child_care_bill	546	170	0.011	0.27%	1.18%	2.08%
missed_other_bill	546	170	0.322	-1.05%	1.07%	3.19%
any_financial_distress	544	170	0.005	3.61%	12.17%	20.73%
fin_distress_stress	546	170	0.002	5.33%	13.87%	22.42%
fin_distress_off_work	546	170	0.215	-2.34%	4.03%	10.39%
fin_distress_embarrassment	546	170	0.000	6.81%	14.50%	22.20%
fin_distress_relationship	546	170	0.024	1.05%	7.97%	14.89%

Technical Annex 3: Impact of the cap on HCSTC demand

fin_distress_family	546	170	0.000	8.50%	14.87%	21.23%
fin_distress_other_health	546	170	0.696	-0.89%	0.22%	1.34%
fin_distress_depression	546	170	0.211	-2.35%	-0.92%	0.52%
fin_distress_lost_sleep	546	170	0.696	-0.89%	0.22%	1.34%
fin_distress_other_issue	546	170	0.258	-1.11%	1.51%	4.14%
fin_distress_no_issues	546	170	0.006	-20.54%	-11.99%	-3.43%
no_savings	518	164	0.000	7.97%	16.44%	24.92%
savings_or_deposit_account	546	170	0.000	-23.47%	-15.38%	-7.28%
cash_ISA	546	170	0.000	-17.41%	-11.29%	-5.18%
premium_bonds	546	170	0.043	-7.33%	-3.73%	-0.13%
stocks_shares	546	170	0.147	-6.10%	-2.59%	0.91%
other_savings_product	546	170	0.117	-4.44%	-1.98%	0.49%
other_savings_prod_ex_pension	546	170	0.453	-2.51%	-0.69%	1.12%
savings_held_by_someone_else	546	170	0.381	-7.26%	-2.24%	2.77%
savings_at_home	546	170	0.405	-8.10%	-2.42%	3.27%
savings_club	546	170	0.918	-2.10%	0.12%	2.33%
christmas_club	546	170	0.339	-3.67%	-1.20%	1.26%
jamjar_account	546	170	0.011	-6.49%	-3.66%	-0.84%
gold_jewellery_antiques	546	170	0.071	-5.95%	-2.85%	0.24%
other_informal_savings	546	170	0.562	-2.87%	-0.66%	1.56%
overdraft_facility	543	170	0.000	-27.40%	-19.05%	-10.71%
not_overdrawn	244	44	0.887	-13.80%	1.08%	15.97%
exceeded_overdraft_limit	240	44	0.885	-14.74%	1.17%	17.09%
refused_payments	546	170	0.273	-3.50%	4.45%	12.39%
refused_direct_debit	530	167	0.446	-4.90%	3.12%	11.14%
refused_cheque	538	170	0.003	1.44%	4.21%	6.98%
actually_borrowed_overdraft	546	170	0.154	-6.50%	-2.74%	1.03%
actually_borrowed_credit_card	546	170	0.236	-6.57%	-2.48%	1.62%
actually_borrowed_family	546	170	0.168	-2.46%	5.87%	14.19%
actually_borrowed_friend	546	170	0.001	4.36%	11.24%	18.12%
actually_borrowed_colleague	546	170	0.945	-3.49%	0.13%	3.74%
actually_borrowed_employer	546	170	0.353	-5.09%	-1.64%	1.81%
actually_borrowed_socialfund	546	170	0.000	6.14%	9.79%	13.44%
actually_borrowed_creditunion	546	170	0.914	-2.03%	-0.11%	1.81%
actually_borrowed_homecredit	546	170	0.910	-3.15%	-0.17%	2.80%
actually_borrowed_longloan	546	170	0.085	-5.70%	-2.67%	0.36%
actually_borrowed_pawnbroking	546	170	0.417	-1.62%	1.15%	3.92%

Technical Annex 3: Impact of the cap on HCSTC demand

actually_borrowed_logbook	546	170	0.953	-1.25%	0.04%	1.32%
actually_borrowed_loanshark	546	170	0.080	-0.12%	0.99%	2.10%
total_outstanding_debt	143	63	0.487	-£772	-£202	£367
attempt_borrow_anywhere	545	170	0.205	-2.78%	5.09%	12.95%
attempt_borrow_overdraft	546	170	0.713	-5.84%	-0.92%	4.00%
attempt_borrow_credit_card	546	170	0.137	-5.67%	-2.45%	0.77%
attempt_borrow_family	546	170	0.001	3.65%	9.38%	15.10%
attempt_borrow_friend	546	170	0.000	3.46%	7.81%	12.17%
attempt_borrow_colleague	546	170	0.914	-2.03%	-0.11%	1.81%
attempt_borrow_employer	546	170	0.286	-3.93%	-1.39%	1.16%
attempt_borrow_socialfund	546	170	0.004	1.22%	3.83%	6.44%
attempt_borrow_creditunion	546	170	0.264	-2.02%	-0.73%	0.55%
attempt_borrow_homecredit	546	170	0.663	-2.59%	-0.47%	1.65%
attempt_borrow_longloan	546	170	0.149	-0.93%	2.62%	6.18%
attempt_borrow_pawnbroking	546	170	0.191	-0.85%	1.70%	4.24%
attempt_borrow_logbook	546	170	0.000	0.00%	0.00%	0.00%
attempt_borrow_loanshark	546	170	0.383	-0.50%	0.41%	1.31%
any_loanshark_interaction	546	170	0.216	-0.47%	0.81%	2.09%
attempt_borrow_rej	154	57	0.090	-1.97%	13.16%	28.28%
attempt_borrow_putoff	543	169	0.000	8.84%	16.99%	25.14%
after_denial_went_without	183	84	0.648	-9.32%	2.83%	14.98%
after_denial_did_nothing	183	84	0.041	0.61%	12.80%	25.00%
after_denial_sold_something	183	84	0.140	-0.39%	1.19%	2.77%
after_denial_use_savings	183	84	0.000	0.00%	0.00%	0.00%
after_denial_saved_up	183	84	0.137	-8.63%	-3.73%	1.17%
after_denial_borrow_friends	183	84	0.469	-8.67%	-2.34%	3.98%
after_denial_friend_buy	183	84	0.423	-1.86%	1.29%	4.43%
after_denial_borrow_pdl	183	84	0.006	-18.31%	-10.73%	-3.16%
after_denial_borrow_nonpdl	183	84	0.182	-7.84%	-3.18%	1.48%
after_denial_loan_default	183	84	0.499	-2.13%	-0.55%	1.04%
after_denial_cut_spending	183	84	0.780	-3.60%	-0.45%	2.70%
after_denial_prolong_debts	183	84	0.338	-3.32%	-1.09%	1.14%
after_denial_creditscore	183	84	0.338	-3.32%	-1.09%	1.14%
after_denial_increase_work	183	84	0.140	-0.39%	1.19%	2.77%
after_denial_debt_mgmt	183	84	0.140	-0.39%	1.19%	2.77%
after_denial_something_else	183	84	0.484	-4.17%	2.32%	8.82%

Technical Annex 3: Impact of the cap on HCSTC demand

remember_loan_very_well	545	170	0.200	-14.19%	-5.61%	2.96%
remember_loan_fairly_well	545	170	0.987	-8.31%	0.07%	8.45%
remember_loan_not_very_well	545	170	0.411	-3.29%	2.37%	8.04%
remember_loan_not_at_all_well	545	170	0.068	-0.23%	3.17%	6.56%
loanmonth_jun13	546	170	0.000	0.00%	0.00%	0.00%
loanmonth_jul13	546	170	0.450	-10.36%	-2.88%	4.59%
loanmonth_aug13	546	170	0.570	-9.57%	-2.15%	5.27%
loanmonth_sep13	546	170	0.387	-4.20%	3.33%	10.86%
loanmonth_oct13	546	170	0.652	-5.71%	1.71%	9.13%
loanmonth_nov13	546	170	0.000	0.00%	0.00%	0.00%
happy_decision	545	170	0.000	-41.92%	-33.71%	-25.50%
indifferent_decision	545	170	0.265	-6.36%	-2.30%	1.75%
regret_decision	545	170	0.000	28.03%	36.01%	44.00%
regret_a_lot	165	113	0.246	-4.10%	5.99%	16.07%
regret_a_little	165	113	0.246	-16.07%	-5.99%	4.10%
repaid_less	540	169	0.013	-11.13%	-6.23%	-1.33%
repaid_expected	540	169	0.000	-29.86%	-21.43%	-13.00%
repaid_more	540	169	0.000	19.69%	27.66%	35.63%
apply_pdl_again	536	170	0.000	-28.42%	-20.33%	-12.23%
go_without_pdl	536	170	0.000	16.41%	24.31%	32.22%
use_pdl_alternative	536	170	0.334	-12.07%	-3.98%	4.10%
without_alternative_apply_pdl	172	49	0.003	-39.60%	-24.05%	-8.50%
without_alternative_go_without	172	49	0.003	8.50%	24.05%	39.60%
easily_gone_without_money	536	164	0.148	-1.51%	4.29%	10.08%
possibly_gone_without_money	536	164	0.169	-14.37%	-5.93%	2.51%
not_gone_without_money	536	164	0.713	-7.11%	1.64%	10.40%
consider_any_alternatives	542	170	0.798	-7.45%	1.12%	9.69%
consider_loanshark	540	170	0.039	0.23%	4.19%	8.16%
consider_loanshark_edited	546	170	0.117	-0.69%	2.81%	6.31%
why_pdl_speed	546	170	0.004	-20.85%	-12.45%	-4.05%
why_pdl_limits_amount	546	170	0.953	-1.25%	0.04%	1.32%
why_pdl_only_st_option	546	170	0.970	-4.52%	-0.08%	4.35%
why_pdl_option_extend	546	170	0.430	-1.28%	-0.37%	0.54%
why_pdl_no_checks	546	170	0.957	-3.55%	-0.09%	3.36%
why_pdl_only_small_option	546	170	0.469	-2.87%	1.68%	6.23%
why_pdl_cheapest_option	546	170	0.955	-2.37%	-0.07%	2.23%

Technical Annex 3: Impact of the cap on HCSTC demand

why_pdl_only_option	546	170	0.105	-1.30%	6.23%	13.76%
why_pdl_preferred_option	546	170	0.289	-6.83%	-2.40%	2.03%
why_pdl_selfcontrol	546	170	0.430	-1.28%	-0.37%	0.54%
why_pdl_good_relationship	546	170	0.953	-1.25%	0.04%	1.32%
why_pdl_no_late_charge	546	170	0.000	0.00%	0.00%	0.00%
why_pdl_maxed_out	546	170	0.577	-0.83%	-0.18%	0.46%
why_pdl_advertising	546	170	0.782	-1.82%	0.30%	2.42%
why_pdl_unknown_alternatives	546	170	0.211	-2.35%	-0.92%	0.52%
why_pdl_private_option	546	170	0.918	-2.10%	0.12%	2.33%
why_pdl_recommended	546	170	0.432	-1.32%	0.89%	3.10%
why_pdl_badcredit	546	170	0.953	-1.25%	0.04%	1.32%
why_pdl_impulse	546	170	0.000	0.00%	0.00%	0.00%
why_pdl_curiosity	546	170	0.000	0.00%	0.00%	0.00%
plan_use_basic	541	170	0.107	-1.53%	7.07%	15.66%
plan_use_discretionary	541	170	0.260	-10.34%	-3.78%	2.78%
plan_use_shock	541	170	0.988	-4.38%	0.03%	4.45%
plan_use_othercat	541	170	0.884	-6.12%	0.49%	7.10%
plan_use_housing	541	170	0.031	-6.27%	-3.29%	-0.31%
plan_use_livingcost	541	170	0.192	-2.60%	5.21%	13.03%
plan_use_bills	541	170	0.062	-0.34%	7.08%	14.50%
plan_use_electronics	541	170	0.587	-1.14%	0.44%	2.02%
plan_use_repair	541	170	0.215	-0.85%	1.46%	3.77%
plan_use_car	541	170	0.465	-5.26%	-1.43%	2.40%
plan_use_help_friend	541	170	0.708	-2.42%	0.57%	3.56%
plan_use_present	541	170	0.609	-4.38%	-0.91%	2.56%
plan_use_holiday	541	170	0.015	-12.36%	-6.84%	-1.32%
plan_use_pay_pdl	541	170	0.011	0.27%	1.18%	2.09%
plan_use_otherdebts	541	170	0.156	-1.08%	2.84%	6.76%
plan_use_business	541	170	0.209	-2.36%	-0.92%	0.52%
plan_use_gambling	541	170	0.000	0.00%	0.00%	0.00%
plan_use_spare_money	541	170	0.549	-2.22%	-0.52%	1.18%
plan_use_fund_shortfall	541	170	0.074	-3.88%	-1.85%	0.18%
plan_use_home_improve	541	170	0.002	1.06%	2.97%	4.89%
plan_use_creditbuild	541	170	0.331	-1.67%	-0.55%	0.56%
plan_use_wedding	541	170	0.000	0.00%	0.00%	0.00%
plan_use_other	541	170	0.900	-4.18%	-0.25%	3.68%

Technical Annex 3: Impact of the cap on HCSTC demand

consider_creditcard	297	95	0.047	-8.01%	-4.04%	-0.07%
consider_storecard	297	95	0.000	0.00%	0.00%	0.00%
consider_pdl	297	95	0.831	-4.85%	0.59%	6.03%
consider_homecredit	297	95	0.713	-1.64%	0.38%	2.40%
consider_pawnbroking	297	95	0.228	-0.89%	1.43%	3.76%
consider_hirepurchase	297	95	0.572	-1.50%	-0.34%	0.83%
consider_creditunion	297	95	0.424	-2.32%	-0.67%	0.98%
consider_socialfund	297	95	0.395	-0.93%	0.72%	2.36%
consider_bankloan	297	95	0.675	-9.05%	-1.59%	5.86%
consider_friend_relative	297	95	0.201	-3.60%	6.81%	17.22%
consider_community_figure	297	95	0.424	-2.32%	-0.67%	0.98%
consider_selling_asset	297	95	0.825	-2.89%	-0.29%	2.30%
consider_employer	297	95	0.204	-4.28%	-1.68%	0.91%
consider_use_savings	297	95	0.572	-1.50%	-0.34%	0.83%
consider_other	297	95	0.950	-3.86%	0.13%	4.12%
notborrow	546	169	0.046	0.19%	8.68%	17.17%
borrow_friendfam	546	169	0.033	-15.20%	-7.93%	-0.66%
borrow_credit	546	169	0.093	-7.78%	-3.59%	0.59%
without_loan_went_without	546	169	0.660	-5.78%	1.68%	9.13%
without_loan_did_nothing	546	169	0.969	-7.06%	0.14%	7.34%
without_loan_sold_something	546	169	0.201	-1.06%	1.99%	5.03%
without_loan_use_savings	546	169	0.578	-0.83%	-0.18%	0.46%
without_loan_saved_up	546	169	0.781	-2.38%	0.39%	3.17%
without_loan_borrow_friends	546	169	0.107	-12.80%	-5.78%	1.25%
without_loan_friend_buy	546	169	0.068	-5.22%	-2.52%	0.18%
without_loan_borrow_pdl	546	169	0.992	-2.65%	-0.01%	2.62%
without_loan_borrow_nonpdl	546	169	0.030	-7.16%	-3.76%	-0.36%
without_loan_default	546	169	0.482	-3.68%	-0.97%	1.73%
without_loan_cut_spending	546	169	0.687	-1.90%	-0.32%	1.25%
without_loan_prolong_debts	546	169	0.290	-3.93%	-1.38%	1.17%
without_loan_increase_work	546	169	0.072	-0.05%	0.59%	1.24%
without_loan_debt_management	546	169	0.000	0.00%	0.00%	0.00%
without_loan_something_else	546	169	0.000	2.56%	5.45%	8.34%

Table A31: T-tests Comparing Habitual Borrowers to Less Marginal Successful Applicants

(bold where difference is statistically significant at the 5% level)

	Number of respondents		P value for difference in means (habitual borrowers - less marginal successful)	Lower confidence interval	Difference in means (habitual borrowers minus less marginal successful)	Upper confidence interval
	Sample size of habitual borrowers	Sample size of less marginal successful				
age	159	483	0.030	0.24	2.49	0.58
male	192	546	0.561	-10.60%	-2.43%	10.76%
additional_adults	192	546	0.098	-13.86%	-6.35%	-3.48%
partner	192	546	0.508	-10.58%	-2.67%	8.87%
children	192	546	0.162	-2.24%	5.57%	16.41%
home_own	189	542	0.734	-3.32%	-0.49%	0.20%
home_mortgage	189	542	0.451	-8.17%	-2.27%	-7.43%
home_private_rent	189	542	0.800	-6.96%	1.03%	11.64%
home_social_rent	189	542	0.587	-5.44%	2.09%	17.36%
home_shared_ownership	189	542	0.671	-2.34%	-0.42%	1.78%
home_rent_free	189	542	0.321	-2.37%	2.44%	9.73%
home_squat	189	542	0.555	-0.80%	-0.18%	0.47%
home_other	189	542	0.247	-5.92%	-2.20%	2.93%
ethnic_white_brit	192	545	0.948	-6.76%	0.23%	10.80%
ethnic_white_irish	192	545	0.866	-2.32%	0.22%	3.94%

Technical Annex 3: Impact of the cap on HCSTC demand

ethnic_other_white	192	545	0.384	-5.64%	-1.73%	-0.14%
ethnic_mixed	192	545	0.517	-1.56%	0.77%	2.93%
ethnic_asian	192	545	0.302	-3.98%	-1.37%	4.26%
ethnic_black	192	545	0.229	-1.80%	2.86%	2.41%
ethnic_chinese	192	545	0.401	-1.22%	-0.37%	0.55%
ethnic_other	192	545	0.550	-2.61%	-0.61%	2.35%
qualifications	191	546	0.109	-12.52%	-5.64%	-5.34%
education_degree	140	430	0.181	-12.36%	-5.02%	-7.18%
education_diploma	140	430	0.586	-5.57%	2.14%	-3.06%
education_alevel	140	430	0.861	-9.32%	-0.76%	14.90%
education_gcse	140	430	0.630	-5.91%	1.93%	21.20%
education_other	140	430	0.593	-4.56%	1.71%	15.07%
fulltime_employed	192	544	0.362	-11.67%	-3.71%	-28.39%
parttime_employed	192	544	0.786	-6.54%	-0.80%	3.97%
unemployed	192	544	0.089	-0.65%	4.35%	35.61%
retired	192	544	0.519	-1.56%	0.77%	0.87%
fteducation	192	544	0.055	-4.89%	-2.42%	2.91%
unable_to_work	192	544	0.258	-1.48%	2.02%	12.86%
looking_after_family	192	544	0.898	-2.62%	0.18%	4.87%
other_work_status	192	544	0.598	-1.88%	-0.40%	1.24%
income_partner	52	193	0.006	-35.83%	-21.05%	-8.63%
income_employment	192	546	0.032	-13.55%	-7.08%	-30.23%
income_pension	192	546	0.572	-3.25%	1.32%	-1.41%
income_childbenefit	192	546	0.256	-3.00%	4.13%	14.70%
income_statebenefit	192	546	0.003	3.44%	9.90%	40.93%
income_taxcredits	192	546	0.032	0.61%	7.08%	16.48%
income_othersource	192	546	0.047	-9.30%	-4.68%	5.88%
income_noregularsource	192	546	0.147	-0.58%	1.66%	4.45%
income_nosource	192	546	0.184	-2.26%	-0.92%	1.96%
income_under_6k	162	485	0.670	-7.06%	-1.26%	30.00%
income_6k_to_12k	162	485	0.077	-0.70%	6.54%	14.26%
income_12k_to_18k	162	485	0.638	-9.85%	-1.91%	-0.35%
income_18k_to_24k	162	485	0.022	1.12%	7.79%	-1.46%
income_24k_to_36k	162	485	0.423	-8.60%	-2.50%	-0.05%
income_36k_to_50	162	485	0.014	-9.28%	-5.16%	-0.70%
income_over_50k	162	485	0.029	-6.65%	-3.51%	0.58%
irregular_income	188	545	0.802	-6.30%	0.93%	5.57%

Technical Annex 3: Impact of the cap on HCSTC demand

health_very_poor	189	542	0.432	-2.48%	1.66%	11.29%
health_poor	189	542	0.483	-3.50%	1.95%	12.89%
health_fair	189	542	0.240	-2.84%	4.27%	6.37%
health_good	189	542	0.457	-10.95%	-3.01%	1.86%
health_excellent	189	542	0.158	-11.62%	-4.86%	0.54%
happy	191	541	0.030	-8.55%	-4.49%	0.13%
anxious	191	544	0.474	-3.26%	1.88%	11.54%
worthwhile	189	542	0.415	-5.55%	-1.63%	1.35%
satisfied	189	543	0.224	-6.38%	-2.44%	-1.20%
happiness_medium_high	192	546	0.121	-14.74%	-6.52%	3.25%
anxiousness_medium_low	192	546	0.200	-13.52%	-5.35%	-2.17%
worthwhile_medium_high	192	546	0.521	-10.81%	-2.67%	3.60%
satisfied_medium_high	192	546	0.431	-11.54%	-3.31%	4.31%
keeping_up_no_difficulties	192	539	0.004	-19.48%	-11.58%	-7.43%
keeping_up_but_struggling	192	539	0.507	-10.77%	-2.72%	-1.18%
falling_behind_some_bills	192	539	0.004	2.92%	9.12%	21.29%
falling_behind_many_bills	192	539	0.016	0.96%	5.19%	15.58%
any_missed_bills	192	544	0.001	5.19%	13.36%	21.09%
missed_fuel_bill	192	546	0.001	3.43%	8.71%	9.28%
missed_rent_bill	192	546	0.013	1.46%	6.90%	13.73%
missed_council_tax_bill	192	546	0.018	1.32%	7.53%	8.57%
missed_insurance_bill	192	546	0.001	3.15%	7.22%	4.25%
missed_telephone_bill	192	546	0.075	-0.64%	6.55%	13.33%
missed_hire_purchase_bill	192	546	0.147	-0.58%	1.66%	3.10%
missed_water_bill	192	546	0.003	2.72%	7.72%	13.26%
missed_other_regular_bill	192	546	0.554	-0.79%	-0.18%	0.46%
missed_mortgage_bill	192	546	0.863	-2.32%	0.22%	1.26%
missed_catalogue_bill	192	546	0.402	-1.22%	-0.37%	2.09%
missed_tv_licence_bill	192	546	0.682	-1.17%	0.31%	4.12%
missed_gym_bill	192	546	0.092	-0.08%	0.52%	1.23%
missed_loan_repayment	192	546	0.308	-0.77%	0.83%	2.73%
missed_credit_credit_bill	192	546	0.963	-1.24%	-0.03%	1.32%
missed_child_care_bill	192	546	0.017	0.19%	1.04%	2.08%
missed_other_bill	192	546	0.773	-1.62%	0.28%	3.19%
any_financial_distress	191	544	0.024	1.29%	9.50%	20.73%
fin_distress_stress	192	546	0.018	1.69%	9.87%	22.42%

Technical Annex 3: Impact of the cap on HCSTC demand

fin_distress_off_work	192	546	0.040	0.31%	6.49%	10.39%
fin_distress_embarrassment	192	546	0.008	2.67%	9.99%	22.20%
fin_distress_relationship	192	546	0.389	-3.63%	2.86%	14.89%
fin_distress_family	192	546	0.102	-0.95%	4.86%	21.23%
fin_distress_other_health	192	546	0.773	-0.89%	0.15%	1.34%
fin_distress_depression	192	546	0.601	-1.87%	-0.39%	0.52%
fin_distress_lost_sleep	192	546	0.773	-0.89%	0.15%	1.34%
fin_distress_other_issue	192	546	0.693	-2.70%	-0.45%	4.14%
fin_distress_no_issues	192	546	0.023	-17.72%	-9.53%	-3.43%
no_savings	179	518	0.221	-3.14%	5.23%	24.92%
savings_or_deposit_account	192	546	0.339	-11.81%	-3.87%	-7.28%
cash_ISA	192	546	0.500	-8.35%	-2.14%	-5.18%
premium_bonds	192	546	0.313	-5.44%	-1.85%	-0.13%
stocks_shares	192	546	0.295	-5.22%	-1.82%	0.91%
other_savings_product	192	546	0.439	-1.66%	1.08%	0.49%
other_savings_prod_ex_pension	192	546	0.115	-2.88%	-1.28%	1.12%
savings_held_by_someone_else	192	546	0.080	-8.82%	-4.16%	2.77%
savings_at_home	192	546	0.185	-8.99%	-3.63%	3.27%
savings_club	192	546	0.551	-2.60%	-0.61%	2.33%
christmas_club	192	546	0.863	-2.32%	0.22%	1.26%
jamjar_account	192	546	0.486	-4.04%	-1.06%	-0.84%
gold_jewellery_antiques	192	546	0.366	-4.52%	-1.43%	0.24%
other_informal_savings	192	546	0.457	-2.87%	-0.79%	1.56%
overdraft_facility	190	543	0.292	-12.61%	-4.41%	-10.71%
not_overdrawn	77	244	0.310	-17.74%	-6.06%	15.97%
exceeded_overdraft_limit	74	240	0.091	-1.72%	11.00%	17.09%
refused_payments	192	546	0.140	-1.87%	5.75%	12.39%
refused_direct_debit	187	530	0.165	-2.24%	5.48%	11.14%
refused_cheque	190	538	0.019	0.50%	3.06%	6.98%
actually_borrowed_overdraft	192	546	0.603	-4.72%	-0.99%	1.03%
actually_borrowed_credit_card	192	546	0.495	-5.36%	-1.39%	1.62%
actually_borrowed_family	192	546	0.040	0.40%	8.37%	14.19%
actually_borrowed_friend	192	546	0.005	2.94%	9.50%	18.12%
actually_borrowed_colleague	192	546	0.525	-2.40%	1.15%	3.74%
actually_borrowed_employer	192	546	0.234	-5.22%	-1.97%	1.81%
actually_borrowed_socialfund	192	546	0.146	-0.73%	2.12%	13.44%
actually_borrowed_creditunion	192	546	0.001	1.93%	4.45%	1.81%

Technical Annex 3: Impact of the cap on HCSTC demand

actually_borrowed_homecredit	192	546	0.013	0.89%	4.18%	2.80%
actually_borrowed_longloan	192	546	0.419	-1.94%	1.36%	0.36%
actually_borrowed_pawnbroking	192	546	0.201	-0.95%	1.79%	3.92%
actually_borrowed_logbook	192	546	0.059	-0.06%	1.53%	1.32%
actually_borrowed_loanshark	192	546	0.440	-0.52%	0.34%	2.10%
total_outstanding_debt	74	143	0.124	-£239	£889	£367
attempt_borrow_anywhere	192	545	0.002	4.58%	12.18%	12.95%
attempt_borrow_overdraft	192	546	0.004	2.36%	7.51%	4.00%
attempt_borrow_credit_card	192	546	0.389	-1.93%	1.52%	0.77%
attempt_borrow_family	192	546	0.000	4.67%	10.21%	15.10%
attempt_borrow_friend	192	546	0.003	2.22%	6.33%	12.17%
attempt_borrow_colleague	192	546	0.213	-0.76%	1.32%	1.81%
attempt_borrow_employer	192	546	0.681	-2.11%	0.56%	1.16%
attempt_borrow_socialfund	192	546	0.147	-0.58%	1.66%	6.44%
attempt_borrow_creditunion	192	546	0.014	0.50%	2.39%	0.55%
attempt_borrow_homecredit	192	546	0.551	-2.60%	-0.61%	1.65%
attempt_borrow_longloan	192	546	0.166	-1.00%	2.40%	6.18%
attempt_borrow_pawnbroking	192	546	0.515	-1.55%	0.77%	4.24%
attempt_borrow_logbook	192	546	0.017	0.19%	1.04%	0.00%
attempt_borrow_loanshark	192	546	0.025	0.17%	1.38%	1.31%
any_loanshark_interaction	192	546	0.082	-0.15%	1.20%	2.09%
attempt_borrow_rej	78	154	0.714	-16.24%	-2.56%	28.28%
attempt_borrow_putoff	190	543	0.000	7.04%	14.85%	25.14%
after_denial_went_without	93	183	0.652	-14.22%	-2.66%	14.98%
after_denial_did_nothing	93	183	0.264	-17.61%	-6.40%	25.00%
after_denial_sold_something	93	183	0.000	0.00%	0.00%	2.77%
after_denial_use_savings	93	183	0.000	0.00%	0.00%	0.00%
after_denial_saved_up	93	183	0.268	-7.66%	-2.77%	1.17%
after_denial_borrow_friends	93	183	0.840	-6.99%	-0.65%	3.98%
after_denial_friend_buy	93	183	0.211	-1.20%	2.13%	4.43%
after_denial_borrow_pdl	93	183	0.026	1.29%	10.54%	-3.16%
after_denial_borrow_nonpdl	93	183	0.647	-6.04%	-1.15%	1.48%
after_denial_loan_default	93	183	0.226	-0.99%	1.60%	1.04%
after_denial_cut_spending	93	183	0.712	-3.56%	-0.56%	2.70%
after_denial_prolong_debts	93	183	0.489	-1.93%	1.06%	1.14%
after_denial_creditscore	93	183	0.489	-1.93%	1.06%	1.14%

Technical Annex 3: Impact of the cap on HCSTC demand

after_denial_increase_work	93	183	0.000	0.00%	0.00%	2.77%
after_denial_debt_mgmt	93	183	0.161	-0.42%	1.08%	2.77%
after_denial_something_else	93	183	0.321	-8.27%	-2.79%	8.82%
remember_loan_very_well	0	0	0.000	0.00%	0.00%	2.96%
remember_loan_fairly_well	0	0	0.000	0.00%	0.00%	8.45%
remember_loan_not_very_well	0	0	0.000	0.00%	0.00%	8.04%
remember_loan_not_at_all_well	0	0	0.000	0.00%	0.00%	6.56%
loanmonth_jun13	192	546	0.000	0.00%	0.00%	0.00%
loanmonth_jul13	192	546	0.000	-32.02%	-25.82%	4.59%
loanmonth_aug13	192	546	0.000	-31.23%	-25.09%	5.27%
loanmonth_sep13	192	546	0.000	-31.03%	-24.91%	10.86%
loanmonth_oct13	192	546	0.000	-30.24%	-24.18%	9.13%
loanmonth_nov13	192	546	0.000	0.00%	0.00%	0.00%
happy_decision	190	545	0.000	-32.69%	-24.70%	-25.50%
indifferent_decision	190	545	0.038	0.26%	4.63%	1.75%
regret_decision	190	545	0.000	12.28%	20.07%	44.00%
easily_gone_without_money	185	536	0.081	-9.64%	-4.54%	10.08%
possibly_gone_without_money	185	536	0.624	-10.14%	-2.03%	2.51%
not_gone_without_money	185	536	0.123	-1.78%	6.57%	10.40%
consider_any_alternatives	192	542	0.276	-3.62%	4.55%	9.69%
consider_loanshark	192	540	0.055	-0.08%	3.70%	8.16%
consider_loanshark_edited	192	546	0.130	-0.76%	2.59%	6.31%
why_pdl_speed	192	546	0.278	-12.62%	-4.50%	-4.05%
why_pdl_limits_amount	192	546	0.475	-0.86%	0.49%	1.32%
why_pdl_only_st_option	192	546	0.503	-5.55%	-1.41%	4.35%
why_pdl_option_extend	192	546	0.402	-1.22%	-0.37%	0.54%
why_pdl_no_checks	192	546	0.013	-6.60%	-3.69%	3.36%
why_pdl_only_small_option	192	546	0.863	-4.59%	-0.37%	6.23%
why_pdl_cheapest_option	192	546	0.826	-1.99%	0.25%	2.23%
why_pdl_only_option	192	546	0.007	2.74%	10.02%	13.76%
why_pdl_preferred_option	192	546	0.676	-5.25%	-0.92%	2.03%
why_pdl_selfcontrol	192	546	0.402	-1.22%	-0.37%	0.54%
why_pdl_good_relationship	192	546	0.304	-1.60%	-0.55%	1.32%
why_pdl_no_late_charge	192	546	0.000	0.00%	0.00%	0.00%
why_pdl_maxed_out	192	546	0.554	-0.79%	-0.18%	0.46%
why_pdl_advertising	192	546	0.147	-0.58%	1.66%	2.42%
why_pdl_unknown_alternatives	192	546	0.601	-1.87%	-0.39%	0.52%

Technical Annex 3: Impact of the cap on HCSTC demand

why_pdl_private_option	192	546	0.045	0.05%	2.52%	2.33%
why_pdl_recommended	192	546	0.924	-1.90%	0.10%	3.10%
why_pdl_badcredit	192	546	0.304	-1.60%	-0.55%	1.32%
why_pdl_impulse	192	546	0.000	0.00%	0.00%	0.00%
why_pdl_curiosity	192	546	0.000	0.00%	0.00%	0.00%
plan_use_basic	192	541	0.010	2.57%	10.74%	15.66%
plan_use_discretionary	192	541	0.119	-11.15%	-4.94%	2.78%
plan_use_shock	192	541	0.293	-2.03%	2.35%	4.45%
plan_use_othercat	192	541	0.180	-10.34%	-4.20%	7.10%
plan_use_housing	192	541	0.862	-2.93%	0.28%	-0.31%
plan_use_livingcost	192	541	0.757	-8.52%	-1.16%	13.03%
plan_use_bills	192	541	0.000	8.39%	15.62%	14.50%
plan_use_electronics	192	541	0.233	-1.95%	-0.74%	2.02%
plan_use_repair	192	541	0.571	-1.49%	0.60%	3.77%
plan_use_car	192	541	0.382	-2.17%	1.75%	2.40%
plan_use_help_friend	192	541	0.801	-3.10%	-0.35%	3.56%
plan_use_present	192	541	0.264	-5.04%	-1.83%	2.56%
plan_use_holiday	192	541	0.154	-9.34%	-3.93%	-1.32%
plan_use_pay_pdl	192	541	0.093	-0.09%	0.52%	2.09%
plan_use_otherdebts	192	541	0.193	-5.52%	-2.20%	6.76%
plan_use_business	192	541	0.595	-1.89%	-0.40%	0.52%
plan_use_gambling	192	541	0.093	-0.09%	0.52%	0.00%
plan_use_spare_money	192	541	0.143	-2.59%	-1.11%	1.18%
plan_use_fund_shortfall	192	541	0.526	-1.58%	0.76%	0.18%
plan_use_home_improve	192	541	0.957	-1.25%	-0.03%	4.89%
plan_use_creditbuild	192	541	0.302	-1.61%	-0.55%	0.56%
plan_use_wedding	192	541	0.093	-0.09%	0.52%	0.00%
plan_use_other	192	541	0.650	-4.56%	-0.86%	3.68%
consider_creditcard	107	297	0.007	1.98%	7.17%	-0.07%
consider_storecard	107	297	0.000	0.00%	0.00%	0.00%
consider_pdl	107	297	0.003	3.23%	9.23%	6.03%
consider_homecredit	107	297	0.788	-1.64%	0.26%	2.40%
consider_pawnbroking	107	297	0.788	-1.64%	0.26%	3.76%
consider_hirepurchase	107	297	0.549	-1.44%	-0.34%	0.83%
consider_creditunion	107	297	0.025	0.40%	3.06%	0.98%
consider_socialfund	107	297	0.451	-0.96%	0.60%	2.36%

Technical Annex 3: Impact of the cap on HCSTC demand

consider_bankloan	107	297	0.001	6.08%	14.05%	5.86%
consider_friend_relative	107	297	0.000	-29.03%	-18.63%	17.22%
consider_community_figure	107	297	0.396	-2.23%	-0.67%	0.98%
consider_selling_asset	107	297	0.229	-3.54%	-1.35%	2.30%
consider_employer	107	297	0.584	-3.43%	-0.75%	0.91%
consider_use_savings	107	297	0.549	-1.44%	-0.34%	0.83%
consider_other	107	297	0.427	-2.41%	1.64%	4.12%

Table A32: Changing Habitual Borrower Behaviour between First and Subsequent Loans

	% of respondents		Percentage change from first loan
	Habitual borrowers' first HCSTC application (192 respondents)	Habitual borrowers' subsequent usual HCSTC application (191 respondents)	
consider_any_alternatives	59.9%	57.8%	-3.5%
why_pdl_speed	38.5%	47.6%	23.5%
why_pdl_limits_amount	1.0%	1.6%	53.6%
why_pdl_only_st_option	5.7%	4.7%	-18.0%
why_pdl_option_extend	0.0%	1.0%	
why_pdl_no_checks	0.5%	4.2%	706.4%
why_pdl_only_small_option	6.8%	4.7%	-30.6%
why_pdl_cheapest_option	2.1%	2.6%	24.8%
why_pdl_only_option	34.4%	26.7%	-22.3%
why_pdl_preferred_option	6.8%	6.8%	0.4%
why_pdl_selfcontrol	0.0%	0.5%	
why_pdl_good_relationship	0.0%	0.5%	
why_pdl_no_late_charge	0.0%	0.0%	
why_pdl_maxed_out	0.0%	0.0%	
why_pdl_advertising	3.1%	0.5%	-84.0%
why_pdl_unknown_alternatives	0.5%	0.0%	-100.0%
why_pdl_private_option	4.2%	4.2%	0.8%
why_pdl_recommended	1.6%	0.0%	-100.0%

Technical Annex 3: Impact of the cap on HCSTC demand

why_pdl_badcredit	0.0%	0.0%	
why_pdl_impulse	0.0%	0.0%	
why_pdl_curiosity	0.0%	0.0%	
why_pdl_other	5.2%	1.6%	-69.3%
why_pdl_dontknow	1.0%	6.8%	552.8%

Table A33: Habitual Borrower Behaviour Without HCSTC (Actual and Hypothetical Responses)

	% of habitual borrower respondents	
	Actual behaviour following unsuccessful application (23 respondents)	Hypothetical responses (163 respondents)
Borrow from family or friends	34.8%	23.9%
Borrowed from friends/family	34.8%	22.1%
Asked a friend or relative to give money/buy on behalf	0.0%	2.4%
Borrow from somewhere else	4.3%	7.4%
Borrow from another HCSTC lender	0.0%	2.5%
Borrow in some other way (e.g. overdraft, credit card)	4.3%	5.5%
Not borrow	52.1%	60.1%
Made a decision to go without	26.1%	25.2%
Nothing – nowhere else to borrow from	13.0%	24.5%
Cut back on spending	0.0%	0.6%
Requested more time for money that I owed	4.3%	0.6%
Saved up until I had the money that I needed	0.0%	0.0%
Used savings I already had	0.0%	0.0%
Sold something	0.0%	4.3%
Increased working hours	0.0%	1.2%
Defaulted on another loan/bill/payment	8.7%	1.2%
Used a debt management service	0.0%	0.0%
Something else	0.0%	3.1%
Don't know	8.7%	12.2%

Table A34: Priority Level Responses and Weights for Groups 1 and 2

Priority Level	Number of respondents		Priority Level Weighting
	Group 1	Group 2	
1	55	46	1.0000
2	54	44	0.9091
3	53	53	0.8182
4	33	53	0.7273
5	33	50	0.6364
6	61	58	0.5455
7	68	70	0.4545
8	50	57	0.3636
9	61	54	0.2727
10	51	32	0.1818
11	33	23	0.0909

Table A35: IV Regressions For Impact of HCSTC use for Marginal Applicants

IV regression	IV regression specification
	$v_i = \alpha_1 + \delta z_{1i} + \sum_{f=1}^F \alpha_{2f} w_{fi} + \sum_{j=1}^J \beta_j x_{ji} + \varepsilon_{1i}$ $y_i = \alpha_1 + \delta z_{1i} + \sum_{f=1}^F \alpha_f w_f + \sum_{j=1}^J \beta_j x_{ji} + \varepsilon_{1i}$ <p><i>for individuals $i = 1, \dots, N$, firms $f = 1, \dots, F$, controls $j = 1, \dots, J$</i></p> <p><i>w_f are dummies for each firm</i></p> <p><i>z_1 is the instrument taking a value of 1 if group = 2 (consumer just above threshold), 0 if group = 1 (consumer just below threshold)</i></p> <p><i>v_i is a dummy for whether an individual got a loan</i></p> <p><i>y_i is an outcome variable e.g. anymissedbills</i></p> <p><i>x_j are control variables e.g. income under £6,000 p.a.</i></p>
IV1	<p>Here there are no controls so this term does not exist in the above equation.</p> <p>Each individual (i) is weighted based on their priority level ordering as in Table A34</p>
IV2	<p>(x_{ji}) includes dummies controlling for controls for:</p> <p>Income band dummies: income £6k-£12k, £12k-£18k, £18k-£24k, £36k-£50k, £50k, excluded group income under £6k</p> <p>Age dummies: 18-22, 23-27, 28-32, 33-37, 38-42, 43-47, 48-52, 53-57, 58-62, 63-67, 73, 77, excluded group over 78</p> <p>Employment status dummies: employed, unemployed, retired, full-time education, unable to work, looking after family, excluded group other work status</p>

Technical Annex 3: Impact of the cap on HCSTC demand

	<p>Dummies for highest education level achieved: degree level, diploma, a level, gcse, excluded group other education level.</p> <p>Dummies for ethnicity: white British, other white, mixed, Asian, black, Chinese, excluded group other</p> <p>Dummies for tenure status: own outright, own with mortgage, private renter, housing association/local authority, shared ownership, rent free, other, excluded category squatter</p> <p>Dummies for if additional adults in the household, if have children, if have a partner, if receive income from employment, credit score and credit score squared.</p> <p>Each individual (<i>i</i>) is unweighted</p>
IV3	Same as IV2 but weighted

Table A36: IV Regressions for Impact of HCSTC use for Marginal Applicants

(*, ** and *** indicates HCSTC use to have statistical significant effect at 10%, 5% and 1% respectively)

	IV1 (controlling for firms, priority level weights)		IV2 (socio-economic controls, no weights)		IV3 (socio-economic controls, priority level weights)	
	Coefficient	Standard Error	Coefficient	Standard Error	Coefficient	Standard Error
happy	0.0307	0.0352	0.00378	0.0436	-0.00709	0.0436
anxious	-0.0576	0.0457	0.0127	0.057	0.0539	0.0582
worthwhile	0.0206	0.0342	0.00555	0.0429	-0.00517	0.0402
satisfied	0.0593*	0.0346	0.0509	0.0418	0.0389	0.0402
happiness_medium_high	0.0769	0.0696	-0.0342	0.0866	-0.0271	0.0902
anxiousness_medium_low	0.144**	0.0694	0.0801	0.0878	0.032	0.088
worthwhile_medium_high	0.0128	0.0688	0.00799	0.0882	-0.0322	0.0879
satisfied_medium_high	0.00606	0.0697	0.0106	0.0852	-0.0433	0.0865
keeping_up_no_difficulties	0.0279	0.0676	0.039	0.0829	-0.032	0.0839
keeping_up_but_struggling	-0.0447	0.0663	-0.144*	0.0854	-0.0649	0.0856
falling_behind_some_bills	-0.0701	0.0559	0.0383	0.069	0.0206	0.0759

Technical Annex 3: Impact of the cap on HCSTC demand

falling_behind_many_bills	0.0869**	0.0377	0.0669	0.0492	0.0763	0.0492
any_missed_bills	-0.0193	0.0699	0.00727	0.0881	0.0125	0.0909
missed_fuel_bill	-0.00405	0.0425	0.0382	0.057	0.0539	0.0609
missed_rent_bill	-0.0626	0.0482	-0.0569	0.0617	-0.0156	0.0647
missed_council_tax_bill	0.00966	0.0536	-0.00906	0.0673	-0.00813	0.0692
missed_insurance_bill	-0.00634	0.0333	0.0123	0.0449	-0.00818	0.0461
missed_telephone_bill	0.0194	0.0625	-0.0567	0.0819	-0.014	0.083
missed_hire_purchase_bill	0.00247	0.022	-0.00199	0.0292	-0.0082	0.0321
missed_water_bill	-0.0121	0.0466	-0.0764	0.0551	-0.0726	0.0581
missed_other_regular_bill	-0.00208	0.0072	-0.00402	0.00884	-0.00657	0.00938
missed_mortgage_bill	0.0259*	0.014	0.0113	0.0175	0.0226	0.0191
missed_tv_licence_bill	-0.00151	0.0101	0.0103	0.0161	0.00295	0.0145
missed_gym_bill	-0.00632	0.00985	-0.0133	0.0139	-0.0128	0.0137
missed_credit_credit_bill	0.0064	0.0122	-0.0151	0.0151	-0.00643	0.0193
missed_other_bill	0.0259	0.0188	0.0297	0.0247	0.0323	0.0302
any_financial_distress	-0.0459	0.0697	-0.0208	0.0854	0.0346	0.0886
fin_distress_stress	-0.09	0.0699	-0.0535	0.0859	-0.0261	0.0872
fin_distress_off_work	0.00395	0.0522	0.0324	0.0656	0.0708	0.0686
fin_distress_embarrassment	0.0324	0.0641	0.132	0.0812	0.113	0.0843
fin_distress_relationship	-0.0441	0.055	0.000393	0.0716	0.0137	0.0729
fin_distress_family	-0.0702	0.0519	0.00204	0.066	-0.0108	0.0707
fin_distress_other_health	-0.0135	0.0125	-0.00843	0.0125	-0.0152	0.0158
fin_distress_depression	0.00524	0.01	-0.00122	0.0123	0.00229	0.0115
fin_distress_other_issue	0.0237	0.0185	0.0430*	0.0247	0.0373*	0.0204
fin_distress_no_issues	0.0432	0.0698	0.0186	0.0855	-0.0372	0.0887
exceeded_overdraft_limit	0.0781	0.132	0.064	0.143	-0.0693	0.15
refused_payments	-0.0162	0.0662	-0.0495	0.0845	-0.0344	0.0866
refused_direct_debit	-0.00122	0.0668	-0.0192	0.0851	-0.00877	0.0868
refused_cheque	-0.0450**	0.0224	-0.0434	0.0275	-0.0529*	0.0277
actually_borrowed_overdraft	0.0133	0.0305	-0.0159	0.041	-0.0297	0.0405

Technical Annex 3: Impact of the cap on HCSTC demand

actually_borrowed_credit_card	0.0541**	0.0247	0.138***	0.0387	0.119***	0.0317
actually_borrowed_family	-0.133*	0.0694	-0.143*	0.087	-0.122	0.0884
actually_borrowed_friend	-0.147**	0.0606	-0.0856	0.0752	-0.124	0.0776
actually_borrowed_colleague	-0.0193	0.031	-0.0201	0.0405	-0.024	0.0416
actually_borrowed_employer	-0.0149	0.0311	-0.0506	0.0398	-0.0417	0.0411
actually_borrowed_socialfund	0.0227	0.0396	0.0536	0.0468	0.045	0.0461
actually_borrowed_creditunion	-0.0121	0.0178	0.00337	0.0249	0.000983	0.023
actually_borrowed_homecredit	0.0167	0.0291	0.0104	0.042	0.00171	0.0387
actually_borrowed_longloan	0.00692	0.0238	-0.00574	0.0337	0.0046	0.0348
actually_borrowed_pawnbroking	0.0153	0.0299	0.000996	0.0391	0.0226	0.0355
actually_borrowed_logbook	-0.00822	0.0126	-0.0145	0.0196	-0.0255	0.0177
actually_borrowed_loanshark	0.0107	0.0156	0.0419**	0.0187	0.0396**	0.0194
attempt_borrow_overdraft	0.0201	0.0405	-0.0379	0.0533	-0.0343	0.0576
attempt_borrow_credit_card	0.0233	0.0264	0.0648*	0.0382	0.0673*	0.0352
attempt_borrow_family	-0.0646	0.0477	-0.118*	0.0674	-0.107	0.0666
attempt_borrow_friend	-0.0191	0.0393	0.0106	0.0514	-0.0184	0.0496
attempt_borrow_colleague	0.00387	0.0184	0.0188	0.0239	0.0116	0.0204
attempt_borrow_employer	0.000394	0.023	-0.0138	0.0333	-0.0248	0.0316
attempt_borrow_socialfund	-0.00813	0.0276	0.023	0.0355	0.0137	0.0303
attempt_borrow_creditunion	0.00227	0.0161	0.00384	0.0212	0.0077	0.0195
attempt_borrow_homecredit	0.000726	0.022	-0.0266	0.0316	-0.0283	0.0346
attempt_borrow_longloan	0.0123	0.0242	-0.0476	0.0341	-0.0479	0.0297
attempt_borrow_pawnbroking	-0.0102	0.0208	-0.0179	0.0258	-0.00316	0.0238
attempt_borrow_logbook	-0.00183	0.00805	-0.000359	0.0151	-0.0107	0.0127
attempt_borrow_loanshark	0.00311	0.0108	0.00405	0.0163	0.00421	0.0125
any_loanshark_interaction	0.0102	0.0164	0.0348*	0.0206	0.0348*	0.0201
attempt_borrow_rej	0.0206	0.128	-0.00188	0.163	-0.0906	0.166
attempt_borrow_putoff	-0.188***	0.0696	-0.199**	0.0878	-0.205**	0.088
apply_pdl_again	0.0442	0.0599	0.0348	0.0767	0.0169	0.0787
go_without_pdl	-0.0583	0.0689	-0.0721	0.0852	-0.0146	0.0845
use_pdl_alternative	0.0141	0.0648	0.0374	0.0823	-0.00228	0.0808

Technical Annex 3: Impact of the cap on HCSTC demand

easily_gone_without_money	-0.068	0.0582	-0.0148	0.0719	-0.00403	0.0735
possibly_gone_without_money	-0.128*	0.0692	-0.162*	0.0881	-0.156*	0.0896
not_gone_without_money	0.196***	0.0656	0.177**	0.0837	0.160*	0.0887
consider_any_alternatives	0.0144	0.0701	-0.035	0.0878	-0.0556	0.0885
consider_loanshark	-0.0173	0.0382	-0.00216	0.0459	-0.00134	0.0474
consider_loanshark_edited	-0.0405	0.0281	-0.00671	0.0343	-0.0291	0.036
plan_use_basic	-0.0917	0.0701	-0.0886	0.0869	-0.135	0.0898
plan_use_discretionary	0.0801	0.0492	0.0923	0.0656	0.101	0.0637
plan_use_shock	0.0219	0.0463	0.00226	0.0643	0.0143	0.0595
plan_use_othercat	0.0502	0.0521	0.0509	0.0645	0.0797	0.065
plan_use_housing	0.0445	0.0347	0.0036	0.0431	0.0435	0.0438
plan_use_livingcost	0.0536	0.0569	0.101	0.0702	0.0798	0.0774
plan_use_bills	-0.170***	0.0625	-0.181**	0.078	-0.223***	0.0806
plan_use_electronics	-0.00216	0.0143	-0.00937	0.0197	-0.00529	0.0195
plan_use_repair	0.00777	0.023	-0.0171	0.0326	-0.0228	0.026
plan_use_car	0.0141	0.0417	0.0194	0.0579	0.0371	0.055
plan_use_help_friend	0.0306	0.0264	0.0333	0.0277	0.0563*	0.034
plan_use_present	-0.0167	0.024	-0.0124	0.0267	-0.0235	0.0239
plan_use_holiday	0.0757**	0.0382	0.0837	0.0545	0.0995*	0.0515
plan_use_pay_pdl	-0.00596	0.00897	-0.0125	0.0108	-0.0112	0.0133
plan_use_otherdebts	-0.00738	0.0308	-0.00583	0.0413	0.00849	0.0399
plan_use_business	-0.017	0.0162	-0.000686	0.0202	-0.00958	0.0149
plan_use_gambling	-0.00603	0.00598	-0.00777	0.00619	-0.012	0.0112
plan_use_fund_shortfall	0.0160*	0.00957	0.0124	0.0107	0.0161*	0.00944
plan_use_home_improve	0.0234*	0.0131	0.0231	0.0198	0.0271*	0.0152
plan_use_wedding	0.0059	0.0157	0.0151	0.0163	0.0156	0.0198
plan_use_other	0.0126	0.0308	0.000193	0.039	-0.000441	0.039
consider_creditcard	0.0678*	0.0385	0.0339	0.0526	0.0541	0.0467
consider_pdl	-0.0123	0.0501	0.0582	0.0741	0.0503	0.0672
consider_homecredit	0.0116	0.0265	0.05	0.0331	0.0519	0.0414

Technical Annex 3: Impact of the cap on HCSTC demand

consider_pawnbroking	0.0128	0.0256	0.00994	0.0341	0.0213	0.0233
consider_creditunion	-0.00145	0.0116	-0.00421	0.0217	0.0016	0.00734
consider_socialfund	-0.0491**	0.0239	-0.0331	0.03	-0.0479*	0.0277
consider_bankloan	0.147**	0.0658	0.315***	0.0977	0.253***	0.085
consider_friend_relative	-0.197**	0.0914	-0.376***	0.135	-0.330***	0.122
consider_community_figure	0.0157	0.0127	0.0173	0.0194	0.0156	0.0123
consider_selling_asset	-0.0204	0.0239	-0.044	0.0375	-0.0267	0.0387
consider_employer	-0.00542	0.014	-0.0138	0.0198	-0.0252	0.0287
consider_use_savings	0.016	0.019	0.0115	0.024	0.0119	0.0191
notborrow	0.057	0.069	0.0135	0.0866	0.0166	0.0884
borrow_friendfam	-0.112*	0.0624	-0.0655	0.0769	-0.0632	0.0785
borrow_credit	-0.00883	0.0402	0.0108	0.0517	0.0092	0.0568
without_loan_went_without	0.0283	0.0552	-0.00926	0.0708	0.0635	0.0699
without_loan_did_nothing	0.032	0.0598	0.0529	0.0769	0.0241	0.0747
without_loan_sold_something	-0.0119	0.0212	0.0291	0.0307	0.00941	0.0324
without_loan_use_savings	0.0158	0.0146	0.0152	0.0192	0.00839	0.0161
without_loan_saved_up	-0.0133	0.026	-0.0332	0.0321	-0.0354	0.0319
without_loan_borrow_friends	-0.107*	0.0608	-0.0852	0.075	-0.0762	0.0766
without_loan_friend_buy	-0.00558	0.0204	0.0197	0.0265	0.013	0.0264
without_loan_borrow_pdl	0.0186	0.0323	0.0378	0.0422	0.0429	0.0509
without_loan_borrow_nonpdl	-0.0274	0.0255	-0.027	0.032	-0.0337	0.0289
without_loan_default	0.0165	0.0195	0.0179	0.0222	0.0114	0.0249
without_loan_cut_spending	0.0225	0.0141	0.0232	0.0195	0.0249	0.0172
without_loan_prolong_debts	0.0112	0.0169	0.0244	0.0185	0.0247	0.0197
without_loan_increase_work	0.00411	0.0127	-0.0133	0.0151	-0.0123	0.0103
without_loan_debt_management	0.00265	0.00477	0.00454	0.0106	-0.000788	0.00652
without_loan_something_else	-0.0217	0.0249	-0.0786**	0.0351	-0.0819**	0.0397

Table A37: 95% Confidence Interval from IV3

(* , ** and *** indicates HCSTC use to have statistical significant effect at 10%, 5% and 1% respectively)

	IV3 (socio-economic controls, priority level weights)		
	Lower confidence interval	IV3 coefficient estimate	Upper confidence interval
happy	-0.0925	-0.0071	0.0784
anxious	-0.0602	0.0539	0.1680
worthwhile	-0.0840	-0.0052	0.0736
satisfied	-0.0399	0.0389	0.1177
happiness_medium_high	-0.2039	-0.0271	0.1497
anxiousness_medium_low	-0.1405	0.0320	0.2045
worthwhile_medium_high	-0.2045	-0.0322	0.1401
satisfied_medium_high	-0.2128	-0.0433	0.1262
keeping_up_no_difficulties	-0.1964	-0.0320	0.1324
keeping_up_but_struggling	-0.2327	-0.0649	0.1029
falling_behind_some_bills	-0.1282	0.0206	0.1694
falling_behind_many_bills	-0.0201	0.0763	0.1727
any_missed_bills	-0.1657	0.0125	0.1907
missed_fuel_bill	-0.0655	0.0539	0.1733
missed_rent_bill	-0.1424	-0.0156	0.1112
missed_council_tax_bill	-0.1438	-0.0081	0.1275
missed_insurance_bill	-0.0985	-0.0082	0.0822

Technical Annex 3: Impact of the cap on HCSTC demand

missed_telephone_bill	-0.1767	-0.0140	0.1487
missed_hire_purchase_bill	-0.0711	-0.0082	0.0547
missed_water_bill	-0.1865	-0.0726	0.0413
missed_other_regular_bill	-0.0250	-0.0066	0.0118
missed_mortgage_bill	-0.0148	0.0226	0.0600
missed_tv_licence_bill	-0.0255	0.0030	0.0314
missed_gym_bill	-0.0397	-0.0128	0.0141
missed_credit_credit_bill	-0.0443	-0.0064	0.0314
missed_other_bill	-0.0269	0.0323	0.0915
any_financial_distress	-0.1391	0.0346	0.2083
fin_distress_stress	-0.1970	-0.0261	0.1448
fin_distress_off_work	-0.0637	0.0708	0.2053
fin_distress_embarrassment	-0.0522	0.1130	0.2782
fin_distress_relationship	-0.1292	0.0137	0.1566
fin_distress_family	-0.1494	-0.0108	0.1278
fin_distress_other_health	-0.0462	-0.0152	0.0158
fin_distress_depression	-0.0203	0.0023	0.0248
fin_distress_other_issue	-0.002684	0.0373*	0.077284
fin_distress_no_issues	-0.2111	-0.0372	0.1367
exceeded_overdraft_limit	-0.3633	-0.0693	0.2247
refused_payments	-0.2041	-0.0344	0.1353
refused_direct_debit	-0.1789	-0.0088	0.1614
refused_cheque	-0.107192	-0.0529*	0.001392
actually_borrowed_overdraft	-0.1091	-0.0297	0.0497
actually_borrowed_credit_card	0.056868	0.119***	0.181132
actually_borrowed_family	-0.2953	-0.1220	0.0513
actually_borrowed_friend	-0.2761	-0.1240	0.0281
actually_borrowed_colleague	-0.1055	-0.0240	0.0575
actually_borrowed_employer	-0.1223	-0.0417	0.0389
actually_borrowed_socialfund	-0.0454	0.0450	0.1354
actually_borrowed_creditunion	-0.0441	0.0010	0.0461

Technical Annex 3: Impact of the cap on HCSTC demand

actually_borrowed_homecredit	-0.0741	0.0017	0.0776
actually_borrowed_longloan	-0.0636	0.0046	0.0728
actually_borrowed_pawnbroking	-0.0470	0.0226	0.0922
actually_borrowed_logbook	-0.0602	-0.0255	0.0092
actually_borrowed_loanshark	0.001576	0.0396**	0.077624
attempt_borrow_overdraft	-0.1472	-0.0343	0.0786
attempt_borrow_credit_card	-0.001692	0.0673*	0.136292
attempt_borrow_family	-0.2375	-0.1070	0.0235
attempt_borrow_friend	-0.1156	-0.0184	0.0788
attempt_borrow_colleague	-0.0284	0.0116	0.0516
attempt_borrow_employer	-0.0867	-0.0248	0.0371
attempt_borrow_socialfund	-0.0457	0.0137	0.0731
attempt_borrow_creditunion	-0.0305	0.0077	0.0459
attempt_borrow_homecredit	-0.0961	-0.0283	0.0395
attempt_borrow_longloan	-0.1061	-0.0479	0.0103
attempt_borrow_pawnbroking	-0.0498	-0.0032	0.0435
attempt_borrow_logbook	-0.0356	-0.0107	0.0142
attempt_borrow_loanshark	-0.0203	0.0042	0.0287
any_loanshark_interaction	-0.004596	0.0348*	0.074196
attempt_borrow_rej	-0.4160	-0.0906	0.2348
attempt_borrow_putoff	-0.37748	-0.205**	-0.03252
apply_pdl_again	-0.1374	0.0169	0.1712
go_without_pdl	-0.1802	-0.0146	0.1510
use_pdl_alternative	-0.1606	-0.0023	0.1561
easily_gone_without_money	-0.1481	-0.0040	0.1400
possibly_gone_without_money	-0.331616	-0.156*	0.019616
not_gone_without_money	-0.013852	0.160*	0.333852
consider_any_alternatives	-0.34146	-0.0556	0.00546
consider_loanshark	-0.0942	-0.0013	0.0916
consider_loanshark_edited	-0.0997	-0.0291	0.0415

Technical Annex 3: Impact of the cap on HCSTC demand

plan_use_basic	-0.3110	-0.1350	0.0410
plan_use_discretionary	-0.0179	0.1010	0.2319
plan_use_shock	-0.1023	0.0143	0.1309
plan_use_othercat	-0.3764	0.0797	-0.1216
plan_use_housing	-0.0423	0.0435	0.1293
plan_use_livingcost	-0.0719	0.0798	0.2315
plan_use_bills	-0.3820	-	-0.0660
		0.223***	
plan_use_electronics	-0.0435	-0.0053	0.0329
plan_use_repair	-0.0738	-0.0228	0.0282
plan_use_car	-0.0078	0.0371	0.2078
plan_use_help_friend	-0.0083	0.0563*	0.1249
plan_use_present	-0.0703	-0.0235	0.0233
plan_use_holiday	0.0031	0.0995*	0.2049
plan_use_pay_pdl	-0.0373	-0.0112	0.0149
plan_use_otherdebts	-0.060004	0.00849	0.096404
plan_use_business	-0.002404	-0.00958	0.056004
plan_use_gambling	-0.0340	-0.0120	0.0100
plan_use_fund_shortfall	-0.0019	0.0161*	0.0351
plan_use_home_improve	-0.0027	0.0271*	0.0569
plan_use_wedding	-0.0232	0.0156	0.0544
plan_use_other	-0.0769	-0.0004	0.0760
consider_creditcard	-0.0374	0.0541	0.1456
consider_pdl	-0.0814	0.0503	0.1820
consider_homecredit	-0.0292	0.0519	0.1330
consider_pawnbroking	-0.0244	0.0213	0.0670
consider_creditunion	-0.0128	0.0016	0.0160
consider_socialfund	-0.102192	-0.0479*	0.006392
consider_bankloan	0.0864	0.253***	0.4196
consider_friend_relative	-0.56912	-	-0.09088
		0.330***	
consider_community_figure	-0.0085	0.0156	0.0397
consider_selling_asset	-0.1026	-0.0267	0.0492

Technical Annex 3: Impact of the cap on HCSTC demand

consider_employer	-0.0815	-0.0252	0.0311
consider_use_savings	-0.0255	0.0119	0.0493
notborrow	-0.156664	0.0166	0.189864
borrow_friendfam	-0.2171	-0.0632	0.0907
borrow_credit	-0.1021	0.0092	0.1205
without_loan_went_without	-0.0735	0.0635	0.2005
without_loan_did_nothing	-0.1223	0.0241	0.1705
without_loan_sold_something	-0.0541	0.0094	0.0729
without_loan_use_savings	-0.0232	0.0084	0.0399
without_loan_saved_up	-0.0979	-0.0354	0.0271
without_loan_borrow_friends	-0.2263	-0.0762	0.0739
without_loan_friend_buy	-0.0387	0.0130	0.0647
without_loan_borrow_pdl	-0.0569	0.0429	0.1427
without_loan_borrow_nonpdl	-0.0903	-0.0337	0.0229
without_loan_default	-0.0374	0.0114	0.0602
without_loan_cut_spending	-0.0088	0.0249	0.0586
without_loan_prolong_debts	-0.0139	0.0247	0.0633
without_loan_increase_work	-0.0325	-0.0123	0.0079
without_loan_debt_management	-0.0136	-0.0008	0.0120
without_loan_something_else	-0.159712	-	-0.004088
		0.0819**	

Technical Annex 3: Impact of the cap on HCSTC demand

Table A38: Marginal Effects Under Different Caps (using credit score cut-offs from supply-side decision model)

	No cap, post-baseline	Cap rate (with 100% TCC and £15 default charge) post-baseline						
		1%	0.90%	0.80%	0.70%	0.60%	0.50%	0.40%
employment	59.2%	67.0%	68.6%	69.5%	70.7%	71.5%	73.1%	75.2%
female	54.3%	50.6%	47.2%	46.4%	45.7%	45.3%	44.1%	41.3%
non_white_british	38.6%	27.8%	28.4%	27.6%	26.3%	25.8%	23.7%	21.0%
why_pdl_only_option	26.1%	26.4%	24.8%	24.1%	23.5%	22.7%	22.5%	22.2%
go_without_in_future	47.2%	36.9%	35.4%	34.0%	32.1%	32.1%	29.0%	26.7%
use_alternative	29.7%	30.0%	31.4%	31.9%	32.8%	32.9%	34.7%	36.1%
attempt_borrow_rej	47.9%	50.4%	49.9%	48.9%	44.7%	43.7%	45.3%	55.1%
attempt_borrow_putoff	22.7%	27.4%	25.1%	25.6%	26.9%	27.8%	31.5%	35.0%
home_own	2.3%	1.7%	1.9%	2.0%	2.2%	2.3%	2.5%	2.8%
home_mortgage	5.1%	10.7%	8.0%	8.7%	9.6%	10.3%	12.7%	17.4%
home_private_rent	31.1%	32.1%	32.9%	33.8%	35.2%	37.2%	39.1%	44.4%
home_social_rent	53.3%	41.9%	39.4%	37.5%	34.9%	33.4%	30.3%	26.9%
home_shared_ownership	0.3%	0.3%	0.3%	0.3%	0.4%	0.4%	0.5%	0.6%
ethnic_white_brit	60.3%	71.7%	70.8%	71.5%	72.7%	73.0%	74.9%	76.7%
ethnic_white_irish	2.8%	1.2%	1.2%	1.2%	1.2%	1.3%	1.5%	5.9%
ethnic_other_white	13.5%	8.2%	8.4%	8.0%	7.4%	7.2%	6.8%	10.8%
ethnic_mixed	1.3%	1.2%	1.3%	1.4%	1.5%	1.6%	1.8%	2.0%
ethnic_asian	14.3%	6.8%	6.9%	6.7%	6.4%	6.1%	5.3%	3.7%
ethnic_black	8.6%	8.0%	7.2%	7.2%	7.2%	7.2%	7.2%	7.3%
ethnic_chinese	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
ethnic_other	18.5%	3.7%	3.7%	3.0%	2.0%	1.9%	1.2%	0.9%
qualifications	67.4%	74.1%	78.2%	79.6%	81.1%	82.5%	83.3%	83.7%
education_degree	24.3%	23.6%	21.4%	21.6%	21.8%	22.5%	23.0%	26.2%
education_diploma	15.8%	15.3%	16.1%	16.2%	16.1%	15.5%	16.6%	20.1%
education_alevel	29.8%	25.6%	26.3%	26.1%	25.9%	25.7%	25.5%	28.1%
education_gcse	39.4%	28.2%	23.9%	22.0%	19.8%	18.0%	16.6%	14.9%
education_other	30.4%	16.1%	16.7%	16.2%	15.4%	15.4%	14.2%	12.6%
fulltime_employed	36.9%	53.7%	55.9%	58.0%	60.9%	62.6%	66.2%	70.6%

Technical Annex 3: Impact of the cap on HCSTC demand

parttime_employed	38.1%	20.4%	19.7%	18.3%	16.4%	15.5%	13.6%	11.7%
unemployed	13.5%	10.2%	9.6%	9.2%	8.8%	8.3%	7.9%	7.2%
retired	1.3%	1.5%	1.5%	1.5%	1.5%	1.5%	1.7%	1.8%
fteducation	3.1%	2.2%	2.4%	2.5%	2.6%	2.7%	2.9%	3.0%
unable_to_work	18.8%	10.7%	6.6%	5.7%	4.5%	3.8%	2.9%	2.1%
looking_after_family	8.4%	1.2%	1.3%	1.2%	1.1%	1.2%	1.2%	1.4%
other_work_status	16.6%	1.9%	1.2%	1.0%	0.8%	0.8%	0.6%	0.5%
income_partner	48.0%	56.4%	55.0%	55.6%	56.5%	57.1%	58.1%	59.6%
income_employment	61.2%	69.6%	71.0%	72.4%	74.2%	75.3%	77.3%	79.1%
income_pension	16.0%	8.8%	6.1%	6.0%	5.7%	5.6%	5.2%	4.9%
income_childbenefit	31.5%	23.6%	24.1%	23.6%	22.9%	22.3%	22.4%	22.8%
income_statebenefit	54.6%	36.7%	32.4%	30.0%	27.0%	25.2%	21.1%	15.7%
income_taxcredits	35.7%	21.5%	21.1%	20.6%	20.0%	19.8%	18.8%	17.1%
income_othersource	13.3%	7.7%	7.8%	7.6%	7.4%	7.0%	7.3%	7.5%
income_noregularsource	15.6%	3.8%	3.3%	2.8%	2.1%	1.9%	1.3%	0.9%
income_nosource	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.6%	0.8%
income_under_6k	34.6%	21.2%	20.6%	18.8%	16.1%	15.0%	11.9%	9.5%
income_6k_to_12k	27.7%	18.9%	19.0%	18.4%	17.8%	17.4%	16.7%	17.8%
income_12k_to_18k	38.6%	33.0%	30.9%	30.3%	29.8%	28.9%	28.9%	27.5%
income_18k_to_24k	15.0%	13.3%	12.4%	12.5%	12.8%	12.8%	13.5%	14.1%
income_24k_to_36k	15.2%	12.1%	9.0%	9.0%	9.2%	10.3%	10.5%	12.8%
income_36k_to_50	10.9%	7.7%	8.4%	8.7%	9.7%	10.7%	13.4%	14.7%
income_over_50k	0.6%	0.8%	1.0%	1.2%	1.4%	1.6%	2.4%	7.8%
irregular_income	26.9%	23.9%	24.8%	24.7%	24.6%	24.2%	24.5%	25.6%
health_very_poor	14.5%	10.1%	9.6%	8.9%	8.2%	7.7%	6.8%	6.2%
health_poor	5.0%	6.9%	6.2%	6.6%	7.7%	9.3%	10.5%	13.0%
health_fair	26.4%	17.0%	17.1%	16.9%	16.5%	16.4%	16.4%	17.0%
health_good	33.2%	36.2%	34.8%	34.7%	34.5%	34.3%	34.9%	36.8%
health_excellent	34.4%	31.2%	32.2%	31.9%	31.5%	30.9%	30.4%	28.7%
happiness_medium_high	57.0%	56.4%	55.3%	55.0%	53.8%	54.1%	51.4%	48.5%
anxiousness_medium_low	60.3%	57.2%	55.0%	53.6%	51.3%	49.0%	47.3%	46.1%
worthwhile_medium_high	44.5%	56.9%	55.8%	56.6%	57.8%	58.3%	60.1%	62.5%
satisfied_medium_high	55.5%	55.5%	54.6%	54.1%	53.1%	53.2%	51.9%	52.7%
no_savings	65.6%	59.8%	57.6%	56.5%	54.9%	53.8%	51.5%	48.5%
overdraft_facility	24.9%	29.9%	33.1%	35.1%	38.2%	40.7%	44.4%	49.1%
not_overdrawn	63.5%	50.1%	46.2%	43.8%	38.0%	32.6%	28.8%	25.3%
exceeded_overdraft_limit	26.1%	37.0%	39.5%	40.9%	43.0%	44.1%	47.6%	53.7%
refused_payments	46.9%	38.3%	38.5%	37.8%	36.9%	36.2%	34.5%	30.9%
refused_direct_debit	49.4%	39.0%	39.3%	38.5%	37.4%	36.7%	34.8%	30.9%
refused_cheque	2.5%	1.7%	1.5%	1.4%	1.2%	1.1%	1.1%	1.1%
actually_borrowed_overdraft	2.1%	3.1%	2.8%	3.0%	3.5%	3.7%	4.5%	5.7%
actually_borrowed_family	31.6%	31.1%	32.0%	32.2%	33.0%	35.8%	37.3%	41.3%
actually_borrowed_friend	27.0%	18.8%	19.0%	18.4%	17.4%	17.1%	16.4%	17.3%

Technical Annex 3: Impact of the cap on HCSTC demand

not_keep_top_bills	53.6%	58.4%	59.2%	60.4%	62.9%	64.8%	66.6%	66.0%
keeping_up_no_difficulties	47.0%	43.3%	42.5%	41.2%	38.3%	36.4%	33.9%	34.1%
keeping_up_but_struggling	25.6%	23.1%	25.1%	26.5%	28.9%	36.4%	33.6%	34.6%
falling_behind_some_bills	26.2%	18.4%	17.5%	16.8%	16.0%	19.1%	14.1%	11.8%
falling_behind_many_bills	11.7%	8.5%	6.9%	6.3%	5.7%	7.4%	4.6%	3.7%
any_missed_bills	46.8%	44.0%	44.3%	44.2%	44.5%	55.5%	47.0%	45.4%
missed_fuel_bill	13.8%	8.2%	8.6%	8.5%	8.5%	9.7%	8.0%	8.1%
missed_rent_bill	22.5%	11.7%	10.8%	10.4%	9.9%	14.8%	8.5%	7.0%
missed_council_tax_bill	16.7%	14.7%	13.4%	13.1%	12.7%	14.7%	12.1%	13.3%
missed_insurance_bill	4.9%	3.5%	3.8%	3.9%	4.0%	4.3%	4.2%	4.0%
missed_telephone_bill	38.4%	28.7%	29.4%	28.9%	28.3%	30.5%	26.2%	21.3%
missed_hire_purchase_bill	0.1%	0.3%	0.4%	0.4%	0.6%	0.7%	0.9%	1.3%
missed_water_bill	10.8%	9.4%	9.5%	9.3%	9.2%	11.1%	9.5%	11.0%
missed_mortgage_bill	3.8%	5.1%	1.4%	1.4%	1.3%	1.3%	1.2%	0.9%
missed_catalogue_bill	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%
missed_tv_licence_bill	6.8%	2.6%	1.9%	1.5%	1.1%	0.9%	0.7%	0.5%
missed_gym_bill	0.7%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
missed_loan_repayment	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
missed_credit_credit_bill	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.3%
missed_other_bill	1.1%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
any_financial_distress	39.5%	34.4%	34.4%	33.7%	32.8%	41.8%	31.2%	30.1%
fin_distress_stress	32.9%	29.3%	29.4%	28.7%	27.9%	36.4%	26.1%	24.8%
fin_distress_off_work	9.4%	8.9%	9.0%	8.9%	8.7%	10.5%	8.3%	8.1%
fin_distress_embarrassment	11.9%	13.6%	14.5%	14.8%	15.2%	21.7%	16.5%	19.3%
fin_distress_relationship	16.0%	9.5%	10.0%	10.0%	10.1%	13.8%	10.3%	10.2%
fin_distress_family	9.1%	8.5%	8.5%	8.3%	8.1%	10.1%	7.7%	7.5%
fin_distress_other_health	0.5%	0.5%	0.4%	0.4%	0.4%	0.4%	0.4%	0.3%
fin_distress_depression	0.0%	0.1%	0.1%	0.1%	0.2%	0.2%	0.3%	0.3%
sought_financial_help	14.4%	9.9%	9.7%	9.4%	9.0%	10.4%	8.3%	7.9%
started_dmp	8.4%	6.4%	6.3%	6.1%	5.8%	6.0%	5.2%	4.6%
happy_decision	42.9%	46.5%	48.7%	48.8%	48.5%	57.9%	47.7%	48.9%
indifferent_decision	4.1%	2.9%	3.2%	3.3%	3.7%	7.2%	10.1%	10.5%
regret_decision	26.9%	23.5%	23.2%	22.4%	21.4%	27.0%	19.5%	18.9%
repaid_less	0.8%	1.3%	1.7%	1.9%	2.3%	3.1%	3.3%	4.8%
repaid_expected	34.6%	36.7%	39.8%	40.8%	42.1%	53.2%	44.2%	44.7%
repaid_more	40.0%	30.3%	28.7%	26.7%	24.4%	30.3%	19.7%	15.1%
apply_pdl_again	18.5%	21.8%	23.6%	24.3%	25.2%	30.8%	27.4%	29.7%
go_without_pdl	25.2%	21.8%	21.1%	20.1%	18.8%	23.2%	16.6%	15.4%
use_pdl_alternative	24.0%	22.3%	23.4%	23.5%	23.6%	32.0%	23.5%	22.3%
easily_gone_without_money	1.9%	3.1%	3.6%	3.9%	4.4%	5.5%	5.6%	7.4%
possibly_gone_without_money	18.7%	19.5%	20.4%	20.4%	20.5%	26.6%	20.8%	21.4%
not_gone_without_money	46.5%	43.4%	44.3%	43.8%	43.1%	54.0%	41.3%	38.8%
not_spent_pdl_money	0.3%	0.3%	0.3%	0.3%	0.4%	0.6%	0.4%	0.4%
spent_part_of_pdl_money	0.2%	0.2%	0.2%	0.3%	0.4%	0.7%	0.6%	1.0%

Technical Annex 3: Impact of the cap on HCSTC demand

spent_all_pdl_money	65.1%	65.1%	67.6%	67.6%	67.4%	85.1%	67.0%	66.5%
used_pdl_money_as_planned	45.0%	45.3%	47.2%	47.3%	47.4%	64.2%	47.5%	47.6%
intend_pdl_money_changed	0.1%	0.3%	0.6%	0.9%	1.4%	2.0%	3.4%	6.2%
consider_any_alternatives	48.2%	46.2%	47.6%	47.1%	46.6%	57.1%	45.4%	43.9%
consider_loanshark	9.3%	6.1%	5.2%	4.6%	3.8%	4.3%	2.7%	2.2%
consider_loanshark_edited	4.9%	3.3%	2.8%	2.5%	2.2%	2.6%	1.6%	1.3%
why_pdl_speed	27.2%	29.2%	30.2%	30.2%	30.2%	34.4%	30.6%	32.7%
why_pdl_limits_amount	0.3%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%
why_pdl_only_st_option	3.4%	3.6%	3.9%	4.0%	4.1%	6.1%	4.4%	4.6%
why_pdl_option_extend	1.7%	1.4%	1.4%	1.3%	1.3%	1.3%	1.1%	1.0%
why_pdl_no_checks	2.5%	2.6%	2.9%	3.0%	3.2%	3.6%	3.6%	3.8%
why_pdl_only_small_option	4.7%	4.0%	4.2%	4.1%	4.1%	5.1%	3.9%	3.6%
why_pdl_cheapest_option	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%	0.4%
why_pdl_preferred_option	6.6%	4.1%	4.4%	4.5%	4.5%	5.6%	4.5%	3.9%
why_pdl_selfcontrol	0.6%	0.6%	0.6%	0.5%	0.5%	0.5%	0.5%	0.5%
why_pdl_good_relationship	0.4%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.0%
why_pdl_advertising	0.1%	0.3%	0.3%	0.3%	0.4%	0.4%	0.5%	0.8%
why_pdl_private_option	9.6%	4.9%	5.1%	5.0%	4.8%	4.7%	4.0%	2.4%
why_pdl_recommended	2.5%	1.0%	0.9%	0.8%	0.7%	0.9%	0.5%	0.2%
why_pdl_badcredit	0.5%	0.3%	0.3%	0.3%	0.2%	0.2%	0.1%	0.1%
plan_use_housing	3.4%	3.4%	3.5%	3.5%	3.5%	6.4%	3.5%	3.5%
plan_use_livingcost	10.2%	11.8%	13.1%	13.6%	14.4%	20.1%	16.0%	17.3%
plan_use_bills	14.0%	13.9%	15.0%	15.4%	15.9%	19.2%	16.8%	16.9%
plan_use_electronics	0.4%	0.3%	0.3%	0.3%	0.2%	0.5%	0.2%	0.2%
plan_use_repair	3.4%	1.7%	1.6%	1.5%	1.4%	1.4%	1.0%	0.6%
plan_use_car	2.7%	2.3%	2.2%	2.1%	2.0%	2.7%	1.8%	2.5%
plan_use_help_friend	2.1%	1.1%	0.8%	0.7%	0.6%	1.3%	0.3%	0.3%
plan_use_present	11.8%	7.5%	6.3%	5.4%	4.4%	3.9%	3.0%	2.2%
plan_use_holiday	15.1%	12.3%	12.8%	12.7%	12.6%	14.2%	12.0%	10.7%
plan_use_pay_pdl	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
plan_use_otherdebts	5.4%	3.7%	4.1%	4.2%	4.3%	5.3%	4.5%	4.3%
plan_use_business	0.5%	0.3%	0.3%	0.2%	0.2%	0.3%	0.1%	0.1%
plan_use_spare_money	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%

Table A39: Reclassifications of verbatim responses to 'would you consider borrowing from a loan shark'

Responses reclassified as not being considered a loan shark	Number of responses (out of 137 originally 'considered loan shark')
Don't know	5
Named home credit provider	10

Technical Annex 3: Impact of the cap on HCSTC demand

Named HCSTC lender	4
Unnamed reference to high-street pawn shop	8
Unnamed reference to licensed industry	11
Loan providers above X% APR	5
Other reference to general licensed borrowing	4
Total	47