Retail banking market investigation

Actual and perceived behaviour of personal current account customers (revised)

7 August 2015, revised 18 August 2015

This is one of a series of consultative working papers which will be published during the course of the investigation. This paper should be read alongside the updated issues statement and the other working papers which accompany it. These papers do not form the inquiry group's provisional findings. The group is carrying forward its information-gathering and analysis work and will proceed to prepare its provisional findings, which are currently scheduled for publication in September 2015, taking into consideration responses to the consultation on the updated issues statement and the working papers. Parties wishing to comment on this paper should send their comments to retailbanking@cma.gsi.gov.uk by Friday 21 August 2015.

The Competition and Markets Authority has excluded from this published version of the working paper information which the inquiry group considers should be excluded having regard to the three considerations set out in section 244 of the Enterprise Act 2002 (specified information: considerations relevant to disclosure). The omissions are indicated by [✂].

Contents

Page

Introduction

1. This paper summarises the results from our analysis of the actual and perceived behaviour of personal current account (PCA) customers. The aim of the analysis is to help us assess whether consumers are engaged in the market, and whether they are aware of their account usage and the associated charges and benefits. This analysis aims to inform theory of harm 1 which considers, among other questions, whether there is sufficient customer engagement to foster effective competition.

2. As set out in our *Proposed approach for comparing actual and perceived behaviour of personal current account customers*, published on 10 March 2015 (methodology paper),[1] we use anonymised current account usage data from 2014 as provided by the banks (transaction data) and combine it with the results of a consumer survey (commissioned by the CMA and conducted by GfK). This survey is drawn from the same customer base as the transaction data and asks customers about their usage of current accounts. This allows us to compare actual past usage and charges (using transaction data) with the perceived usage and charges (from survey responses) on a customer-by-customer basis.

3. Significant differences between customers' perceptions of their account usage and their actual behaviour, as well as between actual and perceived charges, may indicate a lack of engagement for a number of reasons. First, it gives some indication that customers may not engage with or may not understand their bank account usage. A large discrepancy between actual and perceived charges may also indicate that customers find the pricing complex, opaque or otherwise difficult to understand. Second, if customers do not engage with, or do not understand their current account usage and charges, they may have difficulties shopping around and identifying the best offer for their needs. This could lead to them exercising little pressure on banks to improve their current product offer. Third, if customers underestimate their usage, they might incur costs inadvertently.

4. While we do not expect customers to know their usage and charges to the day and penny,[2] the presence of large discrepancies and the direction of the

[1] Comparing actual and perceived behaviour.
[2] In response to our methodology paper three banks told us that some of the hypotheses were not relevant for understanding customers' engagement. They told us that, although customers might not know their overdraft usage behaviour and the amount of charges they incurred off the top of their head, customers did have access to this information when needed. While we appreciate that consumers may be able to retrieve information on their overdraft usage in the event they decide to compare fees across accounts, we consider that this analysis also provides insight on how engaged consumers are with their PCA, in the sense of being aware of how they use their account and charges they incur. If consumers have limited awareness of usage and charges incurred, they may not even think of searching/switching in the first place.

misperception will be informative for the reasons set out in paragraph 3, in particular if there are significant differences between customer groups.

5. The paper is structured as follows.

- First, we set out our research questions and summarise the main results.
- Second, we describe our analysis in detail.
- Third, we discuss limitations and how sensitive results are to our assumptions.
- The appendices provide further details on customer segmentation, the data set, some additional results and sensitivities.

Summary of analysis and key findings

6. As set out in our methodology paper, we concentrate on a number of specific research questions:[3]

- Overdraft usage: Does customers' perception of their usage of overdrafts (months in overdraft, days in overdraft and debit balance), match their actual usage?
- Overdraft limit: Does customers' awareness of their arranged overdraft limits match the limits actually provided by their banks?
- Overdraft charges: Does customers' perception of the costs paid for overdrafts match their recent charges?
- Credit balances: Does customers' awareness of interest payments on credit balances match the payment features provided by their banks?

7. Our main findings are as follows:

Overdraft usage

- In 2014, slightly less than half (44%) of PCA customers used arranged and unarranged overdrafts to varying degrees.

[3] We do not test the hypothesis set out in Section E of our methodology paper, which aims to test customers' awareness of charging structures applying to their overdrafts, as the transaction data does not allow us to distinguish whether charges refer to arranged or unarranged overdraft usage.

- 39% of overdraft users responded that they do not use an overdraft while they actually do.

- Few assess their usage correctly. 49% **correctly estimate the number of months they used their overdraft within a margin of error of around two months**. 38% correctly estimate the average number of days in overdraft in those months in which they went into overdraft within +/- three days. The survey asked customers to place their debit balances (ie the amount by which they are overdrawn) within set bands. **27% of customers can correctly estimate the band within which their debit balance lies**.

- Overdraft users **more often underestimate** than overestimate **their usage**. This result holds both for how often they use it (months in overdraft and days in overdraft per month) as well as for their overdraft balances. For example, 63% of customers who use overdrafts underestimate the number of months they used it by more than a month.

Overdraft limits

- 89% of all customers, and 91% of those who use overdrafts, know whether or not they have an arranged overdraft limit**. 63% of all customers** who use overdrafts,[4] and 57% of those who use overdrafts and have an arranged limit, **know exactly what their overdraft limit** is.

- 32% of customers who use overdrafts and have an arranged overdraft limit underestimate that limit. However, a non-negligible share (12%) of them overestimate it, potentially leading to unexpected unarranged overdraft charges or returned item fees.

- Half of customers who either exceed their arranged overdraft limit or go into an unarranged overdraft are not aware that they use an unarranged overdraft. They also tend to underestimate their unarranged overdraft usage.

Overdraft charges

- Half of customers are charged £5 or less per month for their overdraft. Customers broadly estimate their charges correctly, with only a small percentage stating that their charges were considerably different from

[4] This figure includes customers who do not have an arranged overdraft limit, but use an unarranged overdraft. For these customers the arranged limit is zero.

what they were actually charged. Customers tend to underestimate rather than overestimate their charges.

Interest payments and cashback (revenue on balances)

- With respect to credit balances we find that 60% correctly know whether or not they receive any revenue on their balances, and over one third falsely think that they receive revenue while they do not.

Customer segmentation[5]

8. We analyse whether certain customer segments have a higher awareness of their overdraft usage,[6] charges and limits, and whether they receive payments on credit balances. We find no evidence of one group outperforming any other groups regarding all research questions.

    - **Basic characteristics**. Women are slightly better at assessing the number of months in overdraft. Although younger customers assess their overdraft limit correctly more often than the rest of their group, they are more often incorrect about whether they receive payments on credit balances. Slightly more customers in Northern Ireland and England perceive correctly that they receive payments compared to customers in Scotland.[7]

    - **Education***.* Customers with a degree are more likely to assess their monthly usage correctly, when allowing for a tolerance of two months.

    - **Banking needs***.* A higher share of regular overdraft users underestimate their usage, compared to non-regular users. Unarranged overdraft users correctly assess their limits more often than arranged overdraft only users.

9. [✂]

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[5] More details on customer segmentation can be found in Appendix A.
[6] For analysing overdraft usage, we concentrate on the months in overdraft. This is because (a) the results for the days in overdraft are comparable to the results for months, and (b) debit balances are less accurately estimated as respondents are asked to estimate a band instead of a value.
[7] For this analysis, we cannot compare results to Wales, as our sample size for Wales is below 150 respondents (see Table 3, Appendix A).

Sensitivities

10. Customers may misrepresent their usage when responding to a survey. For example, customers may not want to admit how high their overdraft usage is.[8] This could partly explain why people tend to under- rather than overestimate their usage. We therefore re-run our analysis excluding those customers that actually use overdrafts but state in their survey response that they do not.[9] While this does not fully control for misrepresentation, it gives an indication of how sensitive the results are. We find that the results are broadly similar when we exclude this group of customers from the analysis.

11. Some customers might also find it difficult to answer certain questions due to the difficulties of recalling usage over a whole year.[10] As a result of these difficulties, some customers might base their responses on their recent usage instead of reflecting the usage over the past year, as requested in the survey. We therefore re-run our analysis, comparing survey responses to actual usage in the last quarter of 2014. We find that the differences are small and, as such, do not represent a challenge to the validity of our main qualitative results.

12. Finally, if usage is cyclical, the transaction data may not accurately reflect yearly usage for those who opened an account with their current bank during the course of 2014 (as we do not have information on their usage with their previous bank). We therefore also test whether our results change if we exclude customers who opened their account with their current bank in 2014. There are no significant changes to our results in doing so.

Detailed analysis

13. The following analysis is based on a data set of 2,938 PCA customers (full sample), which contains information on their actual account usage provided by banks[11] (transaction data) and their responses to a GfK survey (survey data) which we use to assess how they perceive their account usage.[12] The data allows us to compute, for each respondent, the difference between the actual and perceived value of their overdraft usage, overdraft limit, overdraft

[8] In response to our methodology paper two banks told us that customers may under-report certain aspects of usage or charges compared with their true expectations, which could reflect their fear of being judged as having a lack of control over their finances.
[9] Under the assumption that customers who say that they do not go into overdraft at all when they actually do are more likely to be those who are not willing to admit to their overdraft usage.
[10] In response to our methodology paper three banks told us that asking respondents over a timeframe of one year is too long, as quality of recall diminishes significantly over this timeframe and it is unreasonable to expect customers to recall accurately specific details of charges in such circumstances.
[11] Barclays, Bank of Scotland, First Direct, Halifax, HSBC, Lloyds, RBS, Santander, NatWest, Marks & Spencer.
[12] More details on how the data set is constructed and how it is cleaned can be found in Appendix B.

charges and whether they received any credit interest. We consider both the sign of the differences (eg whether customers under- or overestimate their usage) as well as the absolute values of the differences, as these reveal the extent to which customers misjudge their usage, ie are wrong in either direction.

14. To find out whether certain types of customers misjudge their usage more often, we look at these differences again by customer segment and test whether the mean (absolute difference) for one group differs significantly from the mean (absolute difference) for another group. We also test whether there are any differences between the shares of customers who correctly report their actual usage and whether the direction of the error is different on average.[13]

15. In particular, we look at basic customer characteristics (gender, age, nation), education, proxy for financial knowledge (whether the respondent provided a correct answer to a basic financial calculation), their banking needs (account incomings, type of overdraft user), which and how many banks they used, and whether they switched PCA recently. Appendix A provides further details on the segments and how they are defined.

Overdraft usage

16. We start by looking at various measures of overdraft usage. Lack of awareness of overdraft usage may indicate a lack of engagement with PCAs. It may also make it more difficult for customers to compare tariffs across banks insofar as tariffs will vary depending on the extent to which customers make use of overdrafts.

17. In 2014, slightly less than half (44%) of the customers in the full sample used an overdraft (arranged or unarranged) to varying degrees. Of those who used overdrafts, 39% of customers say that they did not use overdrafts when in fact they did. The remainder of our analysis of overdrafts focuses on customers who actually went into overdraft in 2014. This overdraft sample comprises 1,181 respondents, representing 43% of the customers in the full sample.[14] More details on how we construct the overdraft sample can be found in Appendix B.

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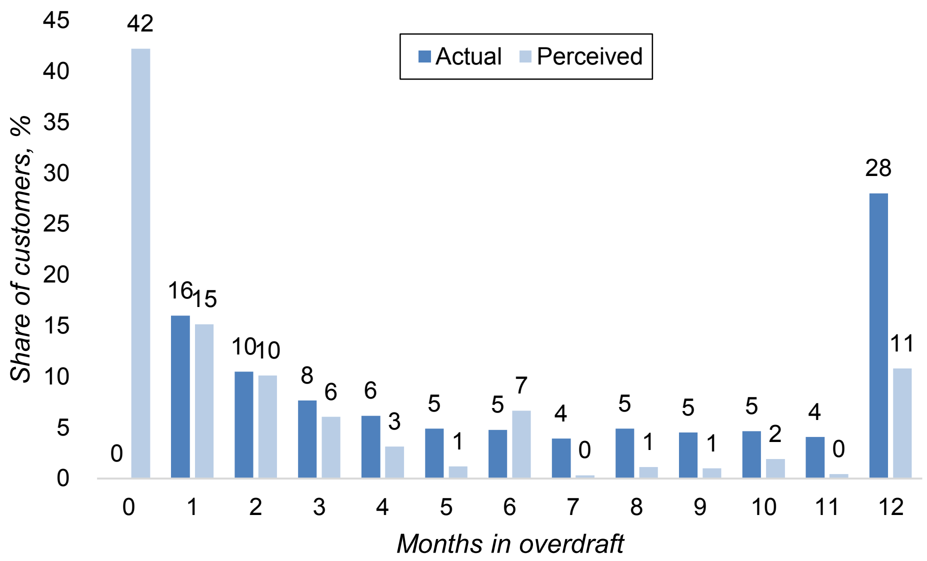
[13] Significance is used in a statistical sense and judged at the 95% level. For example, two means are said to be significantly different if the chance that the difference between them is purely random, is below 5%.
[14] The sampling structure allows us to draw conclusions on all customers based on the answers by the respondents of the survey. In the following we use 'respondents' when referring to the number of customers answering our questions. This figure is important when looking at sample sizes for our tests. Shares will be reported as shares of the customer base.

Main results: months in overdraft

18. As Figure 1 indicates, customers typically either use their overdraft rarely (26% were overdrawn for one or two months in 2014) or are overdrawn in every month of the year (28%).[15] However, only 11% of those customers who actually went into overdraft in the past 12 months say that they are overdrawn in every month. Most customers perceive that they are not in overdraft at all (42%[16]) or just for one or two months (25%).

Figure 1: Distribution of actual and perceived number of months in overdraft (overdraft sample*)



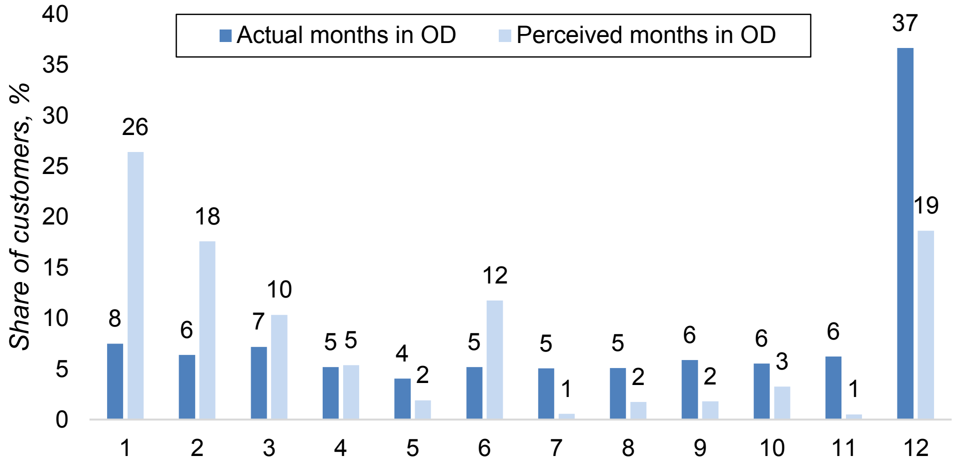
Source: CMA analysis based on banks' transaction data and GfK survey data.
*80 observations are excluded from the overdraft sample as customers responded that they did not know how many months they were in overdraft or refused to say, leading to a total of 1,101 observations.

19. When we exclude the 42% of respondents who say they have not used overdrafts from the analysis (Figure 2 below), the distribution of the actual number of months in overdraft changes slightly. The proportion of those who have been in overdraft for one or two months decreases, whereas of those who have been in overdraft for all 12 months increases.

20. This is because most of the respondents who say they have not used an overdraft used it for one or two months. Additionally, less of the respondents have used an overdraft for all 12 months in comparison to the main specification. The distribution of actual overdraft usage of the respondents who say they have not used an overdraft can be found in Appendix D, Figure 3.

[15] We define a month in overdraft when a customer was overdrawn by at least one day in that month.
[16] This share slightly deviates from the percentage in the overdraft sample, as some customers do not know the months they go into overdraft or refuse to answer, thereby reducing the sample to 1,101 respondents.

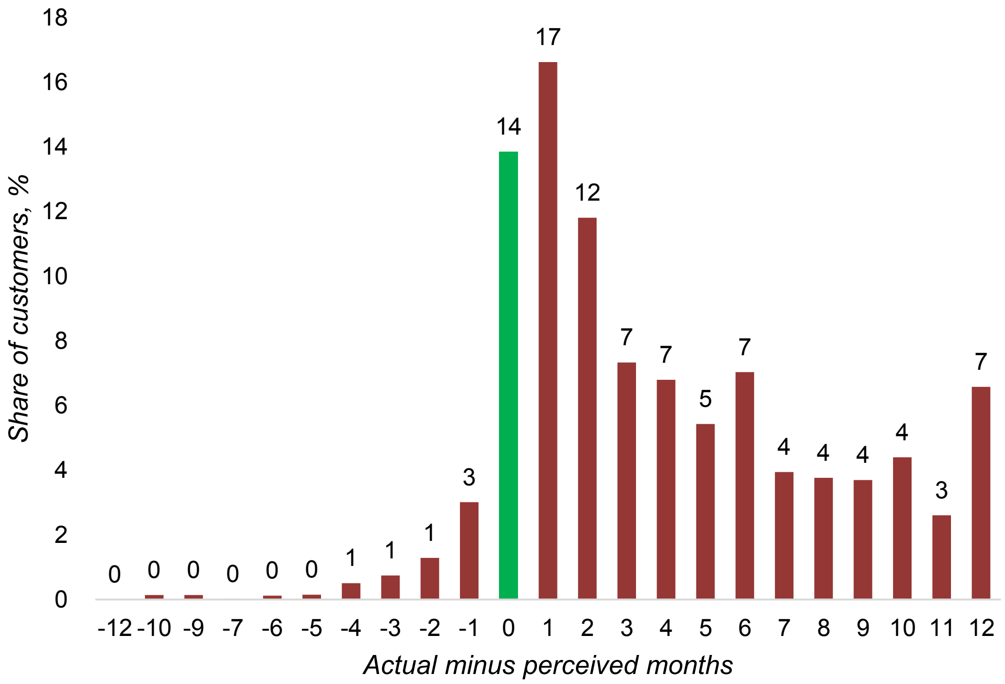
Figure 2: Distribution of actual and perceived number of months in overdraft (OD) (overdraft sample excluding those who said they did not use overdraft*)



Source: CMA analysis based on banks' transaction data and GfK survey data.
*466 observations are excluded from the overdraft sample because they say they do not use overdrafts; 80 observations are excluded because respondents did not know for how many months they used an overdraft or refused to say, resulting in a total of 635 observations.

21. A customer-by-customer comparison reveals (Figure 3) that only 14% of customers are correct when answering how many months they are overdrawn. This figure increases to 33% if we allow for a tolerance of one month. Nearly half of customers can estimate the number of months they go into overdraft within a tolerance of two months. In total, 80% underestimate their overdraft usage, 63% by more than one month, and 52% by more than two months. Around 7% of customers say that they do not go into overdraft, but actually do in every month of the year. Customers rarely overestimate their usage.

Figure 3: Difference between actual and perceived number of months in overdraft (overdraft sample*)



Source: CMA analysis based on banks' transaction data and GfK survey data.
*80 observations are excluded from the overdraft sample as customers responded that they did not know how many months they went into overdraft or refused to say, resulting in a total of 1,101 observations.

22. On average, customers misjudge the number of months they use their overdraft by four months. Customers who underestimate their usage estimate it incorrectly on average by five months, while those who overestimate it estimate it incorrectly by two months.

Customer segmentation

23. We find that certain subgroups of customers more often assess their months in overdraft correctly. We only report groups where the differences are statistically significant. Appendix A provides further details of this analysis.

- **Basic characteristics**. Women are somewhat better at assessing their usage (17% of women are correct, compared to 11% for men) and are less likely to underestimate.

- **Education**. Customers with a degree are more likely to assess their usage right, when allowing for a tolerance of two months. On average they misjudge their usage by slightly less; four months for those with a degree compared to four and a half months for those without a degree.

- **Banking needs**. Unarranged overdraft users correctly estimate the number of months in overdraft more often than arranged only overdraft users (there is no difference between the two groups when allowing for a two month tolerance). A higher share of regular overdraft users underestimate their usage, compared to non-regular users. On average they misjudge by six months, while infrequent users misjudge by 2.5 months.

Main results: days in overdraft

24. Respondents were also asked to estimate how many days they go into overdraft on average per month for those months in which they use overdrafts.

25. Asking about the number of days in overdraft allows a better assessment of whether a respondent can judge the intensity of their overdraft usage. However, as it requires respondents to calculate averages, it is a more complex question to answer compared to their overdraft limit or number of months overdrawn. In addition, this question is likely to be more difficult for those customers whose number of days in overdraft varies a lot from month to month.

26. 27% of customers use their overdraft for 22 or more days in the months where they go into overdraft (see Figure 4). The second most likely usage is low usage, with one to three days (22%).[17] There is a strong difference in perceptions; 41%[18] of those who use overdrafts say they do not use it on any day of the year. Only 7% of customers believe that they use it for more than 22 days.

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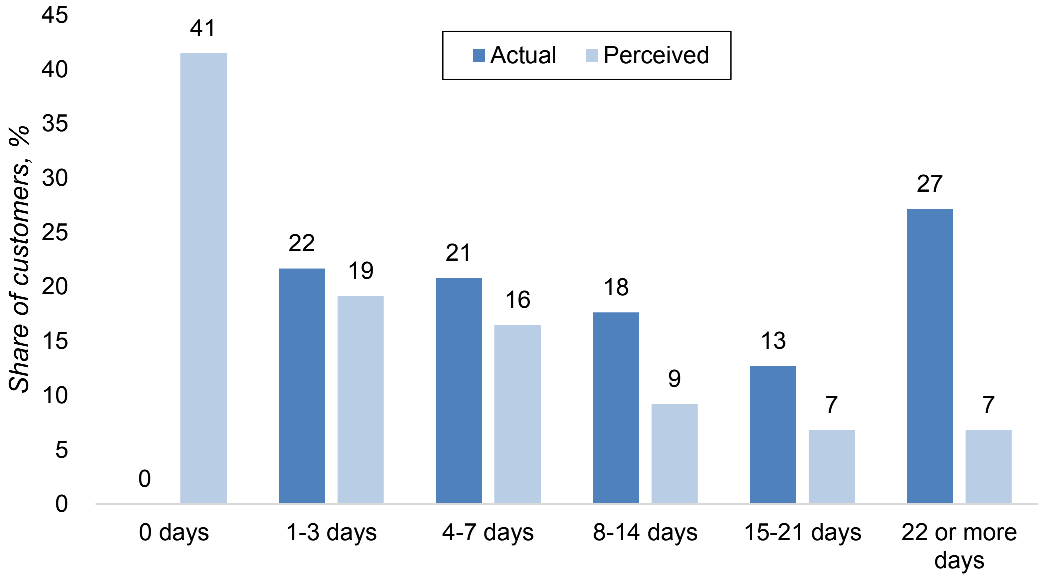
[17] We observe a strong positive correlation between actual number of months and days in overdraft, in the sense that customers who go into overdraft for many days per month also tend to be those who go into overdraft for a large number of months in the year, and vice versa. See [Figure 1 in Appendix C].
[18] This share slightly deviates from the percentage in the overdraft sample, as some customers do not know the number of months they go into overdraft or refuse to answer, thereby reducing the sample to 1,114 respondents.

Figure 4: Distribution of actual and perceived average number of days per months in overdraft (average over months in which customer went into overdraft; overdraft sample*)

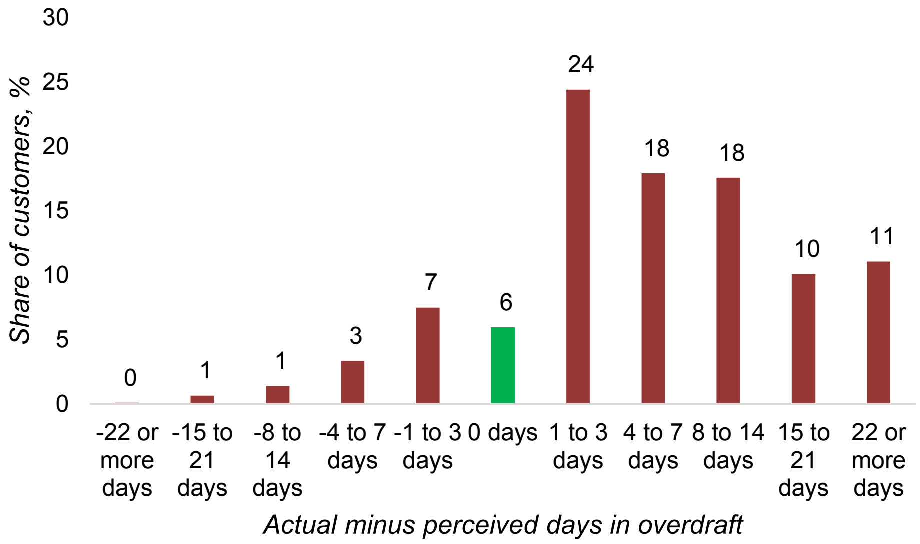


Source: CMA analysis based on banks' transaction data and GfK survey data.
*67 observations are excluded from the overdraft sample as customers responded that they did not know how many days they went into overdraft or refused to say, leading to a total of 1,114 observations.

27. Figure 5 shows that only 6% of customers correctly assess their average daily overdraft usage. The figure increases to 38% when allowing for a tolerance of three days. Furthermore, 81% of customers underestimate their usage in terms of number of days in overdraft and 57% by more than three days. This is comparable to the share of customers who underestimate the number of months in overdraft. In the other direction, 13% overestimate the number of days in overdraft.[19]

[19] The numbers in the text base are the un-rounded figures. Adding up the numbers displayed in Figure 5 therefore does not necessarily lead to exactly the same results.

Figure 5: Difference between actual and perceived number of days per months in overdraft (average over months in which customer went into overdraft; overdraft sample*)



Source: CMA analysis based on banks' transaction data and GfK survey data.
*67 observations are excluded from the overdraft sample as customers responded that they did not know how many days they were in overdraft or refused to say, leading to a total of 1,114 observations.

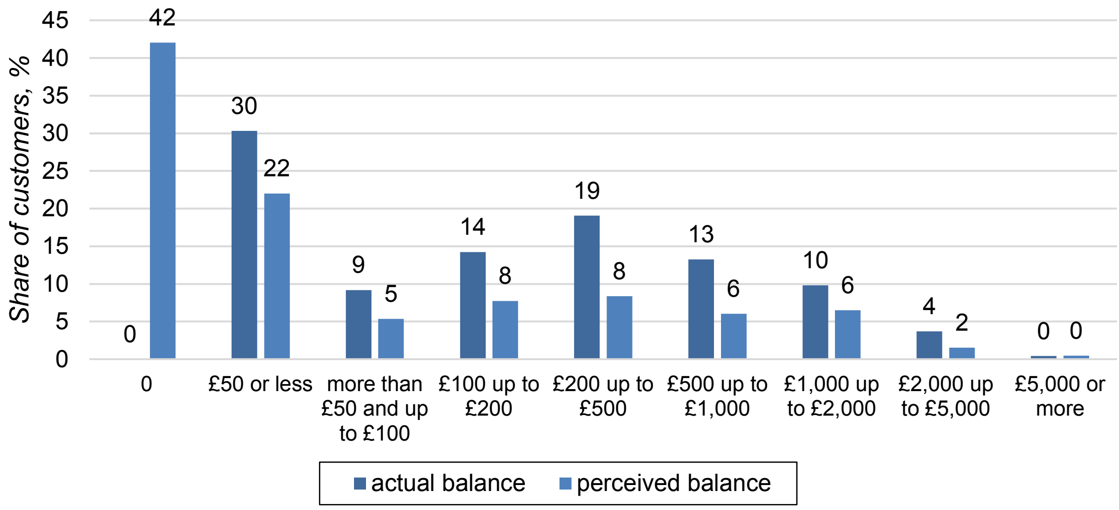
28. On average, customers misjudge their actual overdraft usage per month by nine days, with those who underestimate it misjudging it by more (ten days) than those who overestimate it (five days).

Main results: debit balances

29. We find that 54% of customers in our overdraft sample have an average debit balance on the days they went into overdraft of below £200.[20] Furthermore, 14% of customers have debit balances of £1,000 or more. We find again that 42% of customers think that they are not in debit when in fact they actually are and 77% of customers believe that their debit balance is below £200 (see Figure 6).

[20] The numbers in the text base are the un-rounded figures. Adding up the numbers displayed in Figure 6 therefore does not necessarily lead to exactly the same results.

Figure 6: Distribution of actual and perceived debit balance (overdraft sample*)



Source: CMA analysis based on banks' transaction data and GfK survey data.
*78 observations are excluded from the overdraft sample as customers responded that they did not know their overdraft balances or refused to say leading to a total of 1,103 observations.

30. The survey asked respondents to place their debit balance within pre-defined bands rather than the actual value of the debit balance. We therefore compare whether customers are able to estimate the correct band into which their debit balances fall.

31. We find that most customers (64%) underestimate usage and some of them do so severely (10% thought they had a balance of zero or less than £50, while actually having a debit balance of £500 or more). 27% of customers correctly estimate the band in which their debit balance lies.

32. The table below shows further details on the difference between customers' actual and perceived debit balances.

Table 1: Difference between actual and perceived credit balance (overdraft sample*)

	Survey results (%)						
Transaction data	*£0*	*£50 or less*	*£51 to less than £100*	*£100 to less than £200*	*£200 to less than £500*	*£500 to less than £1,000*	*£1,000 or more*
£50 or less	17	**11**	1	1	0	0	0
£51 to less than £100	5	3	**1**	1	0	0	0
£100 to less than £200	6	3	1	**2**	1	0	0
£200 to less than £500	6	3	2	2	**4**	1	0
£500 to less than £1,000	3	1	0	1	2	**3**	2
£1,000 or more	4	1	0	1	1	1	**5**

Source: CMA analysis based on banks' transaction data and GfK survey data.
*78 observations are excluded from the overdraft sample where customers responded that they did not know their overdraft balances or refused to say, leading to a total of 1,103 observations. Note that the results in the individual cells are indicative only as sample sizes for some of these categories are quite small (below 150 respondents).

Overdraft limits

33. Next we investigate whether customers are aware of their arranged overdraft limits. A lack of awareness could indicate a lack of engagement by customers.

In addition, overestimation of available limits may lead to the use of unarranged overdrafts and additional charges.

34. We also analyse whether customers are aware of how often they exceed this limit or go into an unarranged overdraft when they do not have an arranged overdraft limit.

Main results: overdraft limits

35. The transaction data shows that 36% of surveyed customers (ie full sample) and 22% of the customers who go into overdraft do not have an arranged overdraft limit.[21] This does not differ from perceptions, as 37% of surveyed customers (ie full sample), and 25% of those who go into overdraft, state that they do not have an arranged overdraft limit.[22] 89% of all customers, and 91% of those who go into overdraft, are correctly aware of whether or not they have a limit.

Table 2: Availability of overdraft limit, share of customers

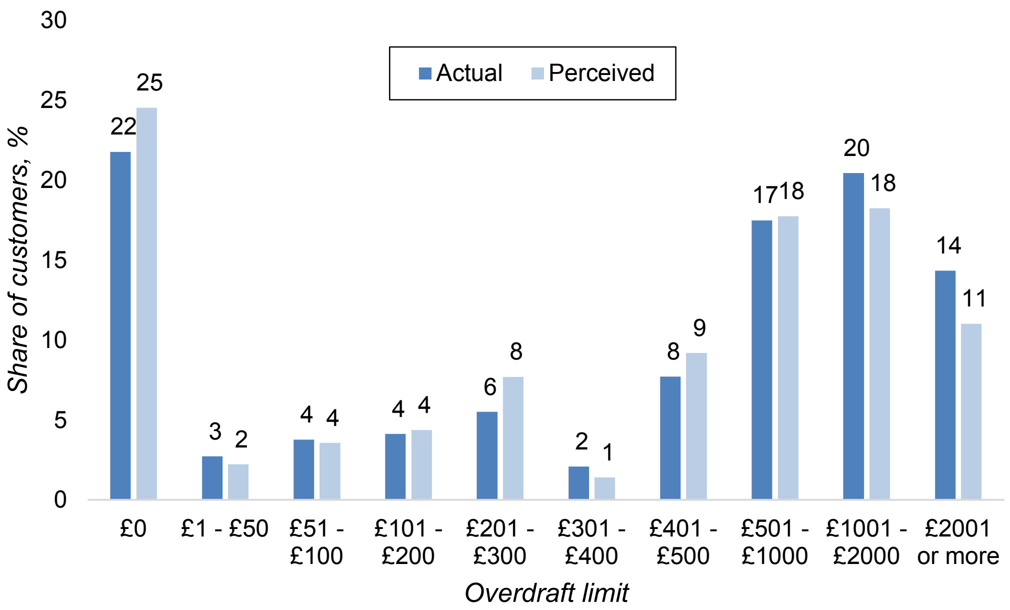
						%
	Perceived (survey results)					
	Full sample			*Overdraft sample*		
Actual (transaction data)	No	Yes	Total	No	Yes	Total
No	31	5	**36**	19	3	**22**
Yes	6	58	**64**	6	73	**78**
Total	**37**	**63**	**100**	**25**	**75**	**100**

Source: CMA analysis based on banks' transaction data and GfK survey data.
*162 observations are excluded from the overdraft sample as customers responded that they did not know whether they had an overdraft limit or how high it was or refused to say, leading to a total of 1,019 observations.

36. Of the customers in the sample who have an arranged overdraft, 55% have an overdraft limit of £1,000 or below (Figure 7 below). Overdraft limits above £5,000 and below £100 are rare and this roughly matches perceptions.

[21] The transaction data provides the arranged overdraft limit at the end of 2014. It is zero if the customer has not agreed a limit.
[22] Base = All. Question G2 'Do you have an authorised overdraft on your main current account – that is an agreement that you are allowed to go up to a certain amount overdrawn?' Note: The sample is based on responses to questions in the GfK survey. For further details, see GfK NOP PCA banking survey technical report.

Figure 7: Distribution of actual and perceived overdraft limit (overdraft sample*)

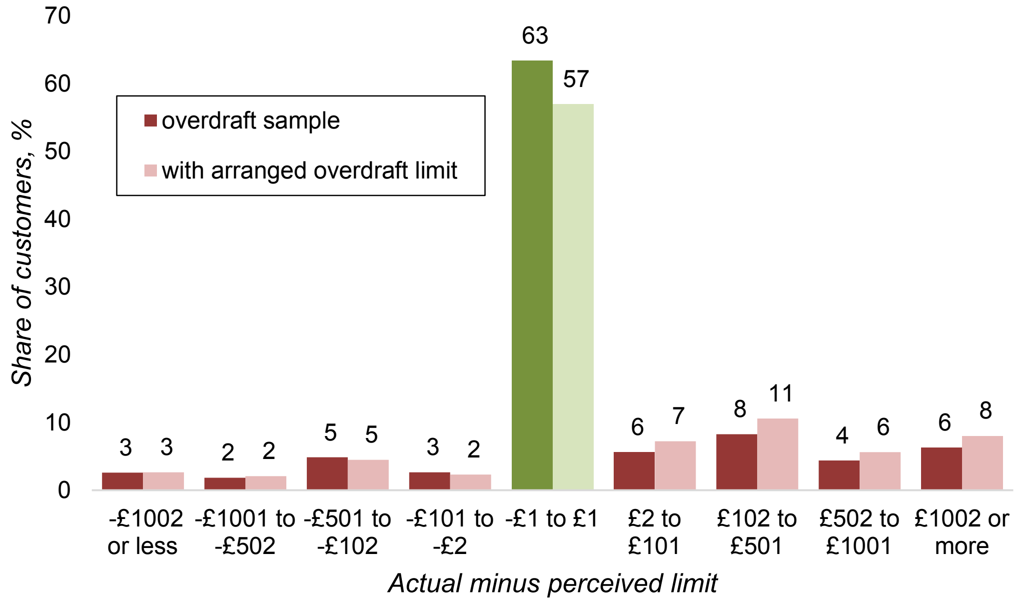


Source: CMA analysis based on banks' transaction data and GfK survey data.
*162 observations are excluded from the overdraft sample as customers responded that they did not know whether they had an overdraft limit or how high it was or refused to say, leading to a total of 1,019 observations.

37. Next, we look at the difference between the actual and perceived values of the overdraft limit for each customer in the overdraft sample. Of the customers who use overdrafts[23] 63% correctly judge their limits within a margin of error of £1. The corresponding figure for customers who use overdrafts and who have an arranged overdraft limit is 57%. However, there are customers who significantly misjudge their actual overdraft limit, as Figure 8 indicates. Of the customers who go into overdraft, 25% underestimate the limit and 12% overestimate the limit. If we focus on those who have an arranged overdraft limit, 32% underestimate it, while 12% overestimate it.

[23] This group also includes customers who do not have an arranged overdraft limit but use an unarranged overdraft.

Figure 8: Difference between actual and perceived overdraft limit, %



Source: CMA analysis based on banks' transaction data and GfK survey data.
*162 observations are excluded from the overdraft sample as customers responded that they did not know whether they had an overdraft limit/how high it was or refused to say. This results in a total of 1,019 observations. The sample with an arranged overdraft limit is a subset of this sample, excluding a further 253 respondents with zero overdraft limit.

38. Customers who use overdrafts, either arranged or unarranged, misjudge their limit on average by approximately £350. Customers who have an arranged overdraft limit and use overdrafts, misjudge their limit by approximately £430.

39. We also analyse how often customers overstep their limit or use an overdraft even though they do not have a limit agreed (unarranged overdraft). We find that 51% of all overdraft users and 38% of those with an arranged limit use an unarranged overdraft. Similarly to the above analysis on overdrafts in general, we find that customers very often perceive that they do not use unarranged overdrafts when in fact they actually do (32% of those who use an overdraft and 22% of those with an arranged limit) and, on average, underestimate their usage. Further details on unarranged overdraft usage is provided in Appendix C.

Customer segmentation

40. We find that certain subgroups of customers within a given segment correctly assess their overdraft limits more often than other subgroups in that segment:

- **Basic characteristics**. 18 to 24 year olds assess their limits correctly more often than 35 to 64 year olds.

- **Degree**. Customers with no degree are more likely to assess their limit correctly. (There is no difference between the two groups when allowing for a 25% tolerance.)

- **Financial literacy**. Customers who responded correctly to our financial literacy question in the survey are more likely to estimate their limit correctly, within a 25% tolerance.

- **Banking needs**. Unarranged overdraft users correctly assess their limits more often than arranged overdraft only users (71% unarranged overdraft users are correct compared to 54% of arranged only overdraft users). Customers with low inflows judge their limits correctly more often than medium and high inflow customers (this result disappears when allowing for a 25% tolerance).

- **Other segments**. [✂] Switchers misjudge their limits less than non-switchers. (This result disappears when allowing for a 25% tolerance).

Overdraft charges

41. We also look at overall overdraft charges to test whether customers are (to varying degrees) aware of the amount of charges they are paying for overdraft usage. If customers are not aware of the charges they incur on overdrafts, the level of charges may not prompt them to search for better value offers. Even if customers do engage in search, a lack of knowledge of the charges they currently incur will make it more difficult for them to compare other available options.

42. The transaction data gives (a) the total interest paid for overdraft, and (b) the total value of non-interest charges paid in the use of the overdraft, in each month of 2014. We compared the sum, averaged over the months in which a customer was in overdraft in 2014, to the total overdraft charges as estimated by respondents of the survey.[24]

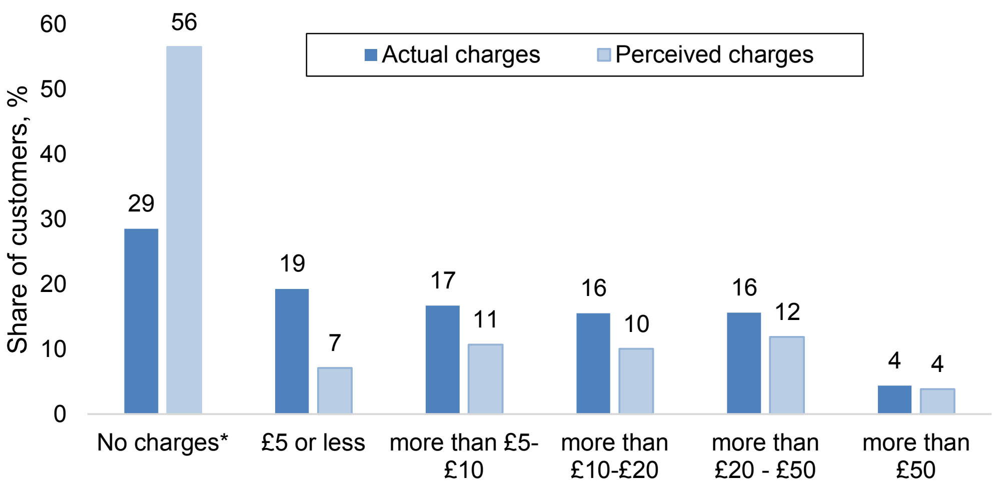
Main results

43. Roughly a third of overdraft users are not charged or pay less than £0.5 for their overdraft usage, and about another third, are charged between £0.5 and £5 per month on average. The survey data indicates that 56% of customers perceive that they do not incur any charges at all and 7% believe that they are charged between £0.5 and £5. As it is likely to be difficult to estimate average monthly charges very accurately, especially if there are many months when customers do not use overdrafts at all, we analyse all customers who are

[24] Base = All who have been overdrawn on their main account at any time in the last 12 months. Question G11 ‘Thinking about the x months (from G5) that you were overdrawn, what was the average amount that you were charged for your overdraft in a month, whether authorised or not?’

charged £5 or less as one group.[25] When we do so, perceptions of charges (64%) appear to correspond more accurately to actual values (48%).[26] Only 4% of customers incur charges above £50, which is consistent with respondents' perceptions (see Figure 9).

Figure 9: Distribution of actual and perceived overdraft charges (overdraft sample)**



Source: CMA analysis based on banks' transaction data and GfK survey data.
*This includes customers who pay between zero and up to £0.5.
**89 observations are excluded from the overdraft sample as respondents did not know or refused to provide their overdraft charges, leading to a total of 1,092 observations.

44. On average, customers who go into overdraft pay £12 per month for use of the overdraft. However, customers believe that they are charged on average £11 per month for an overdraft.

45. 30% of customers can estimate their charges within +/- £1, and 50% within +/- £5. Table 3 below compares customers' responses to their actual charges. Values further off the diagonal are more problematic as they show large discrepancies between actual and perceived values. We find that a very small percentage of customers report a charge which is considerably lower or higher than their actual charges. Most people whose reported charges do not reflect their actual charges assess it incorrectly by only a few pounds.

Table 3: Difference between actual and perceived overdraft charges (overdraft sample*)

				Perceived (survey data)
Actual (transaction data)	No charges**	£5 or less	more than £5–£20	more than £20
No charges**	23	1	2	1
£5 or less	11	3	4	2

[25] By doing so, we allow for a tolerance of up to £5 of incorrect assessment for customers who are charged £5 or less.
[26] The numbers in the text base are the un-rounded figures. Adding up the numbers displayed in Figure 9 therefore does not necessarily lead to exactly the same results.

more than £5 - £20	14	2	11	5
more than £20	8	1	4	8

Source: CMA analysis based on banks' transaction data and GfK survey data.
*89 observations were excluded from the overdraft sample as respondents did not know or refused to provide their overdraft charges, leading to a total of 1,092 observations.
**This includes customers who paid between zero and up to £0.5.
***Note that the results should be taken as indicative as most subgroups have very low sample sizes.

46. Customers that are not charged for an overdraft (29%) may be less aware of their overdraft usage. Hence, we analyse whether customers correctly estimate their usage (in terms of number of months per year), more often if we exclude those customers who are not charged. We found that there are no significant differences in the results. Detailed information of the analysis can be found in Appendix D.

Interest payments and cashback (revenue on balances)

47. In addition to overdrafts, we also analyse whether customers are aware if they receive interest on credit balances or cashback from their bank. Lack of awareness of whether or not they receive credit interest or cashback could indicate a lack of engagement with PCAs.

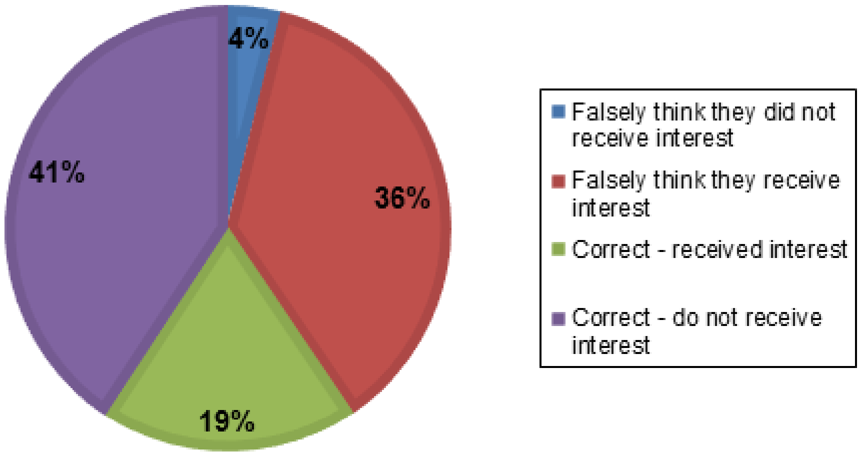
Main results

48. The transaction data provides, for each month in 2014, information on whether a customer receives any interest and non-interest revenue, while the survey asks customers if they receive any interest on balances on their account or any cashback on bills/purchases.[27]

49. We find that 23% of customers actually receive interest and/or cashback payments on their credit balances, although approximately half of customers perceive that they receive payments (see Figure 10 below). Most of the customers (60%) correctly know whether they receive payments on their credit balances or not. However, 37% of customers falsely think that they are receiving payments when actually they are not.[28]

[27] Base=All. Question C1 'I would now like you to think just about your main current account with {bank}.Which of these features, if any, does your main current account have? 1. Pays interest on money in account; 2. Includes insurance, such as for travel or mobile phones; 3. Free overdraft so you don't pay if you are overdrawn; 4. Pays cashback on bills/purchases.'
[28] From the transaction data we are unable to distinguish what the source of the revenue on balances that customers receive is. This means that we are unable to distinguish whether customers receive interest or cashback payments on their credit balance or both. Therefore, we can only test whether customers receive any type of revenue on balances versus none.

Figure 10: Proportion of consumers that were correct and incorrect*[29]



Source: CMA analysis based on banks' transaction data and GfK survey data.
*We exclude 113 observations from the full sample from respondents who did not know whether they received payments on their balances. We exclude a further 62 observations from respondents who did not have information on whether the customer actually received payments on credit balances, leading to a sample of 2,763 which is used for this analysis.

Customer segmentation

50. We find that certain subgroups within a given segment perceive that they receive payments on their balances incorrectly more often than other subgroups.

- **Basic characteristics**. More customers in the 18 to 34 age group incorrectly perceive that they receive payments compared with the proportion of customers in other age groups. Slightly more customers in Northern Ireland and England perceive correctly that they receive payments compared to customers in Scotland.[30]
- **Banking needs**. Slightly less customers who do not use an overdraft perceive that they receive payments incorrectly compared to those who use overdrafts. Slightly fewer customers with high inflows incorrectly perceive that they receive payments compared to those with medium and low inflows.
- **Other segments**. Switchers less often incorrectly perceive that they receive payments compared to those who have not switched. Slightly

[29] The numbers in the text base are the un-rounded figures. Adding up the numbers displayed in Figure 10 therefore does not necessarily lead to exactly the same results.
[30] For this analysis, we cannot compare results to Wales, as our sample size for Wales is below 150 respondents (see Table 3, Appendix A).

fewer customers with more than one account incorrectly perceive that they receive payments than those with a single current account.

- **Other segments:** [✂]

Sensitivity analysis and limitations

Data limitations

51. Customers are asked about their perceived overdraft usage in the last year. As only five banks – Barclays, HSBC, Lloyds Banking Group, RBS and Santander – provided usage figures for a full calendar year (the others reported usage over the last quarter) we concentrate on customers of these banks.[31]

52. In our methodology paper, we suggested using the last quarter of 2014 as a proxy for the whole year for those banks that could only provide data from October to December 2014. We decide not to pursue this approach further, because, with only a few exceptions, our analysis does not reveal statistical differences between perceptions of customers of the different banks included in the analysis. This indicates to us that customer perception (eg unawareness of actual number of days/months in overdraft) is unlikely to differ significantly if we were to include more banks in our analysis.

53. As our survey was carried out in early 2015, we have slightly different time periods for the actual (January to December 2014) and perceived (February 2014 to February 2015) data.[32] This should not materially affect the analysis which uses yearly averages as we have 12 months data in both cases, and can thus capture any cyclicality within the year. For the arranged overdraft limit the transaction data gives the value at the end of 2014. This is compared with the value of the arranged overdraft limit for each customer as of February 2015 obtained from the customer survey. As the actual value of the overdraft limit is taken as of 31 December 2014, while the perceived value is taken in February 2015, it might be the case that the actual value has changed for some customers between 31 December 2014 and March 2015. The banks confirm that this is the case for only a small set of surveyed customers (as

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[31] Three banks noted in response to our methodology paper that smaller banks did not report data for the full year, which could bias our results. These banks question the approach to use the last quarter as a proxy for the whole year for this group due to potential differences in disposable income and spending habits at this time of the year in comparison to other periods. If data is not available for all banks, this could lead to overall findings that are not reflecting the market as a whole.

[32] In response to our methodology paper two banks told us that our transactional data refers to 2014 (account usage) or end of 2014 (account pricing and overdraft limits), however the survey data for customers' perceptions relates to February 2015 (or year to February 2015), leading to inconsistencies.

overdraft limits do not change often). Therefore, this is unlikely to influence results.

Survey data limitations

54. As we use survey data, we recognise that there are particular limitations that should be taken into account when interpreting survey data. These are discussed below.

55. Respondents may be unwilling to talk about sensitive topics, such as the use of an overdraft or their true debit balance, and, instead of answering truthfully, may deliberately misstate or deny their true usage altogether.

56. In addition, some of the research questions require respondents to undertake mental arithmetic in order to calculate average values over a year's period. This may be particularly difficult, when an overdraft is not used in every month of the year or is used in different frequency over the months. Additionally, respondents may feel under time pressure, since the interviewer is waiting on the line, which may further influence their ability to calculate averages correctly.

57. For example, looking at usage, respondents are likely to find the question on whether they use an overdraft easiest to answer; the question on the number of months would be slightly more difficult as it relies on recall; the questions on the number of days per month and on debit balance would be most difficult as they rely not only on recall but also the ability to calculate an average over a 12-month period in their head and under time pressure.

58. This may be reflected in the proportions of respondents who answered these questions correctly, as 61% of respondents correctly state that they are using an overdraft, 49% and 38% of respondents correctly estimate the number of months (within +/- two months) and days (within +/- three days) they use an overdraft respectively, and 27% of respondents can correctly estimate the band within which their debit balance lies.

Sensitivities

59. Overall, we find that the results from the various sensitivities we ran produce broadly similar results to those from the main specification,[33] and therefore we believe that our qualitative results are robust. Further details of the sensitivity analyses are reported in Appendix D.

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[33] We refer to the overdraft sample, described in detail in Appendix B, as the main specification.

Excluding customers who opened a new account with their current bank in 2014 from the analysis

60. If usage is cyclical (either across the year or over the time a customer stays with a bank), yearly averages will be different for customers who were with the bank only for a few months (eg because the customer is new to banking or because he/she switched from one bank to another).[34] We therefore re-do our analysis excluding those who opened their account during 2014 (3% of those who used overdrafts in 2014) and find that the impact on the results is small.

Excluding respondents from the analysis that may not wish to talk about their usage

61. It may be the case that respondents who state that they do not use an overdraft in the previous 12 months when in fact the transaction data shows they do, may not wish to talk about their usage (as opposed to genuinely not knowing that they are in overdraft). We therefore test whether our results are sensitive to these respondents.

62. We find that differences in results are very small for most of our research questions. Slightly more customers can correctly estimate the band within which their debit balances lies, slightly less customers who either exceed their arranged overdraft limit or go into an unarranged overdraft do not say that they use an unarranged overdraft, and slightly less customers are able to estimate their overdraft charges within +/- £5. However, overall we find that differences are small and do not present a challenge to the validity of our main results.

Using data for the last quarter of 2014 only[35]

63. Finally, as respondents may have thought of more recent months when responding to the survey and therefore their responses may reflect the overdraft usage, charges incurred and credit interest in the last three months, we repeat our analysis using only transaction data for the last quarter of 2014.[36] Overall, we do not find significant differences from our main results.

[34] In response to our methodology paper, one bank noted that we have 12 months of transactional data for non-switchers, but only one to 12 months of data for switchers, as we do not have data from their previous bank.
[35] Two banks note that the difference between perceived and actual values could be caused by a survey response bias relating to the most recent (pre-) notification of charges they have received.
[36] This sensitivity is not performed for the analysis of the actual versus perceived months in overdraft, as we cannot calculate average months per year, based on three months of data.

Appendix A: Customer segmentation

1. We analyse whether there are differences between the actual and perceived values of overdraft usage (in months), overdraft limits, and credit interest across different customer segments. In particular, we test (at a 95% confidence level):

   - **Months in overdraft**: (a) whether the number of months by which customers misjudge their usage is significantly different for one subgroup compared to another and (b) whether certain subgroups correctly assess their usage more often or are more likely to underestimate it than others.

   - **Overdraft limits**: whether certain subgroups correctly assess their limits more often or are more likely to overestimate it than others.

   - **Credit interest***:* whether some groups are incorrect more often in their response to whether they receive payments on their balances.

Customer subgroups

2. We analyse differences between the following subgroups of customers.

3. Basic customer characteristics:

   - **Gender**.

   - **Age**: 18 to 34; 35 to 64; 65 and over (based on transaction data).

   - **Devolved nation**: England; Wales; Scotland; Northern Ireland.[37]

   - **Education**: higher education degree; no degree (includes no qualifications, A levels and any other qualifications).

4. If banking products are perceived as difficult to understand or complex, customers who have more experience with financial questions might engage more with them. We therefore use a proxy for financial literacy, based on information provided in the survey:

   - **Financial literacy** (as per survey question): correct answer to the financial question; incorrect answer to the financial question.[38]

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[37] This category is based on a customer's home region as given in the survey data.
[38] Base = All: Question K1 'I would like to ask you a question to do with working out things like bank charges. Suppose you took out a loan of £500, and the interest rate you are charged is 10% per month. There are no other fees. At this rate how much money would you owe in total after one month, if you hadn't repaid any of the loan?'

5. We also split customers by their banking needs, as shown in the transaction data. Customers with higher needs might engage more with the market:

- **Regular overdraft users**: regular overdraft users (those who used an overdraft for nine months or more in 2014); non-regular overdraft users (those who used an overdraft for eight months or less in 2014).[39]

- **Arranged only overdraft users**: those who only used an arranged overdraft in 2014; those who used an unarranged overdraft (which may include both those using arranged and unarranged and those using unarranged only).

- **Inflows into the account:** high (more than £2,500 per month); medium (between £1,250 and £2,500 per month) and low (less than £1,250 per month).[40] Inflows are likely to be positively correlated with income.

6. Finally, we define the following additional segments relating to how and with which bank(s) a customer engages:

- **PCA bank** (of customer): Barclays; Bank of Scotland; First Direct; Halifax; HSBC; Lloyds; NatWest; RBS; Santander.[41]

- **Multiple PCAs**: multiple PCA holders (those who have two or more PCAs at different banks); single PCA holders.

- **Switcher**: switchers (those who switched their main account from one bank to another or changed to a different tariff with the same bank in the last three years); non-switchers (those who have not changed banks or tariffs in the last three years).

7. We do not perform tests when the sample size falls below 150.

We assumed that those who said £50 or £550 were correct in answering this question. We judge those who said 'do not know' as having answered incorrectly but exclude those who refused to answer the question.

[39] We include overdraft usage in response to one bank's response to our methodology paper, as we agree that correct recognition of limits may be more likely for customers that use the overdraft facility on a regular basis. Two other banks noted that we should also consider segments by financial decision maker, digital engagement and by behavioural segments using a recognised segmentation model such as Consumer Spotlight (FCA's segmentation model of retail customers). Due to data limitation and prioritisation we decided not to include these subgroups in our segmentation analysis.

[40] We use inflows into the account (defined as total value of payments and transfers into the account) between October and December 2014 to estimate yearly incomings as we did not receive data for January to September.

[41] Two banks noted in response to our methodology paper that the overdraft charging structure of banks may have changed during the 12 months considered, which may lead to discrepancies in transaction and survey data. To check whether this may be the case, we have carried out segmentation by banks. Unfortunately most sample sizes for banks are too small to rely on results.

Table 1: Overdraft usage (number of months in overdraft) by segments (overdraft sample*)

			Share of customers, (%)			
Segment	*Subgroup*	*Number of respondents*	*Total*	*Who correctly asses their usage (correctly within +/- 2 months)*	*Who under-estimate their usage*	*Mean absolute difference (months)***
Basic characteristics						
Gender	Male	585	53	11*** (44)	83***	4.4
	Female	516	47	17*** (50)	76***	3.9
Age	18-34	427	36	15 (50)	77	
	35-64	586	56	14 (44)	81	
	65+	87	9			
Nation	England	804	86	14 (46)	80	
	Wales	56	6			
	Scotland	161	7	16 (50)	79	
	Northern Ireland	80	1			
Education						
Education	No degree	603	55	14 (43***)	81	4.5
	Degree	472	45	14 (50***)	79	3.8
Financial knowledge						
Financial literacy	No	435	40	13 (50)	81	
	Yes	653	60	14 (45)	80	
Banking needs						
Regular OD user	Yes	682	59	8*** (59***)	84***	2.7
	No	419	41	22*** (29***)	75***	6.2
Overdraft type user	Arranged only	528	49	11*** (45)	80	
	Unarranged	573	51	16*** (48)	80	
Inflows	Low	342	30	12 (50)	82	
	Medium	354	31	17 (44)	78	
	High	405	39	13 (46)	80	
Other segments						
[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	
Switcher	No	895	88	14 (46)	80	
	Yes	206	12	10 (50)	80	
Multi-banking	No	871	78	13 (45)	81	
	Yes	230	22	16 (51)	77	

Source: CMA analysis based on banks' transaction data and GfK survey data.
*The analysis is based on the overdraft sample minus those respondents who did not know how many months they went into overdraft or refused to say, which comprises 1,101 respondents. Customers who did not know the answer/refused to respond to a question which we use to define the segment or for which the value is missing in the transaction data are excluded from a specific segment.
**We only report the value if the difference for a subgroup is significantly different from at least one other subgroup in the segment.
***Significantly different from share of other subgroup in segment at 95% level.

Table 2: Overdraft limits by segments (overdraft sample*)

			Share of customers, (%)		
Segment	*Subgroup*	*Number of respondents*	*Total*	*Who correctly asses their limit (correctly within +/- 25%)*	*Who over-estimate their limit*
Basic characteristics					
Gender	Male	533	52	62 (73)	13
	Female	486	48	65 (74)	11
Age	18-34	411	37	71** (78**)	10
	35-64	532	55	60** (72**)	12
	65+	75	8		
Nation	England	743	86	63 (73)	12
	Wales	55	7		
	Scotland	144	6		
	Northern Ireland	77	1		
Education					
Education	No degree	565	57	67** (75)	11
	Degree	427	43	58** (70)	14
Financial knowledge					
Financial literacy	No	401	40	61 (68**)	13
	Yes	606	60	64 (77**)	12
Banking needs					
Regular OD user	Yes	617	57	65 (72)	13
	No	402	43	61 (75)	10
Overdraft type user	Arranged only	471	46	54** (67**)	13
	Unarranged	548	54	71** (79**)	11
Inflows	Low	312	30	72** (76) (wrt Medium and High)	12
	Medium	341	32	62** (73) (wrt Low)	13
	High	366	38	57** (71)(wrt Low)	11
Other segments					
[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Switcher	No	815	87	62** (73)	12
	Yes	204	13	72** (76)	11
Multi-banking	No	816	79	65 (75)	12
	Yes	203	21	58 (67)	13

Source: CMA analysis based on banks' transaction data and GfK survey data.
*The analysis is based on the overdraft sample minus those respondents who did not know how many months they went into overdraft or refused to say, which comprises 1,018 respondents. Customers who did not know the answer to a question, which we use to split the segment, refused a response or for which the value is missing in the transaction data, are excluded for a specific segment.
**Significantly different from share of other subgroup in segment at 95% level.

Table 3: Interest payments and cashback (revenue on balance) by segments (revenue on balance sample*)

			Share of customer, %		
Segment	*Subgroup*	*Number of respondents*	*All*	*Who are correct, (%)*	*Who falsely thinking they receive interest (%)*
Basic characteristics					
Gender	Male	1454	53	59	37
	Female	1307	47	61	36
Age	18-34	922	29	52*** (wrt 35-64 and 65 +)	45*** (wrt 35-64 and 65 +)
	35-64	1340	51	61*** (wrt to 18-34 and 65+)	35*** (wrt to 18-34 and 65+)
	65+	496	20	67*** (wrt to 18-34 and 35-64)	29*** (wrt to 18-34 and 35-64)
Nation	England	2004	87	60*** (wrt Scotland)	36
	Wales	117	5		
	Scotland	442	7	55*** (wrt NI and England)	40*** (wrt NI)
	Northern Ireland	199	1	64*** (wrt Scotland)	31*** (Scotland)
Education					
Education	No degree	1501	57	60	36
	Degree	1162	43	59	37
Financial knowledge					
Financial literacy	No	1120	41	58	38
	Yes	1614	59	60	36
Banking needs					
Regular OD user	Yes	407	60	53	43
	No	689	40	54	42
Overdraft type user	No overdraft	1642	57	63*** (wrt arranged only And unarranged)	32*** (wrt arranged only And unarranged)
	Arranged only	543	21	53*** (wrt no overdraft)	43*** (wrt no overdraft)
	Unarranged	578	22	55***(wrt to no overdraft)	42***(wrt to no overdraft)
Inflows	Low	920	31	58	39 ** (wrt to High)
	Medium	885	31	56*** (wrt to High)	39*** (wrt to High)
	High	958	38	63*** (wrt to Medium)	32*** (wrt to Medium and Low)
Other segments					
[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Switcher	Yes	567	14	67***	26***
Multi-banking	No	2155	78	58***	38***
	Yes	608	22	65***	31***

Source: CMA analysis based on banks' transaction data and GfK survey data.
*The analysis is based on the revenue on balance sample minus those respondents who refused to say whether they knew if they received interest or cashback, which comprises 2763 respondents. Customers who did not know the answer to a question, which we use to split the segment, refused to answer or for which the value is missing in the transaction data, are excluded for a specific segment.
**We only report the value if the difference for a subgroup is significantly different from at least one other subgroup in the segment.
***Significantly different from share of other subgroup in segment at 95% level.

Appendix B: Data sets and cleaning

Sample source

1. We use the transaction data provided by banks to obtain the actual value of customers' overdraft usage, limits, charges and credit payments. We use the GfK customer survey data to obtain the customers' corresponding perceived values.

Survey data

2. Chapter 1 of the PCA banking survey technical report[42] explains how the survey sample was constructed and stratified.

Transaction data

3. Banks were asked to provide transaction data for the 120,000 accounts that were sampled by GfK in the second stage of the survey sampling process on a customer-by-customer basis. This data was directly sent to the CMA by banks.

Data cleaning and sample size

4. For our analysis we combine the survey data provided by GfK with the transaction data provided by banks. The information for the two data sources is merged using a unique account identifier provided by the banks and a customer number for joint accounts.

5. We remove from the dataset customers that were with the bank for less than two months in 2014. For customers who joined the bank during 2014 and were with the bank for at least two months, we exclude from the analysis the usage data for the month of joining as this might not represent typical usage.

6. Some banks only provided data for the last quarter of 2014. We exclude these banks from the analysis. Hence, our analysis is based on the brands of those banks that provided data for the full year. These are Barclays, Bank of Scotland, First Direct, Halifax, HSBC, Lloyds, Marks & Spencer, NatWest, RBS and Santander.

[42] GfK NOP PCA banking survey technical report.

7. This results in a sample of 2,938 respondents, which we refer to as the full sample.

Construction of the overdraft sample

8. Table 1 shows the actual and perceived overdraft usage of the full sample. In 2014, 44% of respondents used overdrafts to varying degrees. There are more people who actually go into overdraft than those who say they do in the survey. According to the survey, 73% of customers say that they never go into overdraft. This would suggest that 17% of the customers do not remember that they go into overdraft.

9. A small proportion of customers responded that they either go into overdraft (even though they do not) or do not know whether they went into overdraft, or refused to say.

Table 1: Actual and perceived overdraft usage (full sample)

%

	Perceived usage (survey results)			
Actual usage (transaction data)	*Used overdraft*	*Did not use overdraft*	*Not available**	*Total*
Used overdraft	26	17	1	**44**
Did not use overdraft	3	53	1	**56**
Total	**29**	**70**	**1**	**100**

Source: CMA analysis based on banks' transaction data and GfK survey data.
*This includes respondents who refused to respond or did not know whether they went into overdraft in the last 12 months.
Note: The analysis is based on the full sample (2,938 respondents). The 'overdraft sample', which is used for the following analysis, is marked in green and comprises 1,181 respondents. Incorrect responses are highlighted in red.

10. In order to exclude those for whom overdrafts are not relevant because they do not go into overdraft, we construct a sub-sample of respondents, who according to the transaction data have used an overdraft for at least one day in 2014. We also exclude the small share of respondents who refused to respond to this question or responded that they did not know whether or not they used overdrafts even though they actually did.

11. This overdraft sample is marked in green in Table 2 and is the basis for our analysis on overdrafts. It comprises 1,181 respondents and represents 43% of the customers in the full sample.[43] 39% of customers in this sample say that they do not use overdrafts when in fact they actually do.

[43] The sampling structure allows us to draw conclusions on all customers based on the answers by the respondents of the survey. In the following we use 'respondents' when referring to the number of customers answering our questions. This figure is important when looking at sample sizes for our tests. Shares will be reported as shares of the customer base.

Table 2: Actual and perceived overdraft usage (overdraft sample*)

Actual usage (transaction data)	Perceived usage (survey results): Used overdraft	Perceived usage (survey results): Did not use overdraft
Used overdraft	61%	39%

Source: CMA analysis based on banks' transaction data and GfK survey data.
*1,181 respondents. The 'overdraft sample', which is used for the following analysis, is marked in green and comprises 1,181 respondents. Incorrect responses are highlighted in red.

Construction of variables

12. The following describes how we construct the actual and perceived variables for overdraft usage, limits, charges and credit payments. All actual variables are based on transaction data, whereas all perceived variables are based on survey data. We exclude observations where a customer responded 'do not know' or refused to answer the question.

Account usage

Months in overdraft

- Actual number of months in overdraft: The number of months the account has been in overdraft in 2014. A month is counted as a month in overdraft if the customer goes in overdraft for at least one day in that month.

- Perceived number of months in overdraft: The number of months that respondents say that they have been in overdraft in 2014.[44] Where respondents answered earlier in the survey that they had not used an overdraft at all, this variable is given the value zero.[45]

Days in overdraft

- Actual number of days in overdraft: The average number of days per month the account has been in overdraft in 2014. The average number of days is constructed by dividing the total number of days in overdraft by the number of months the account is in overdraft.

- Perceived number of days in overdraft: The average number of days per month that respondents say that they have been in overdraft in 2014, for

[44] Base = All who have been overdrawn on their main account at any time in the last 12 months. Question G5 'In how many months in the last year were you overdrawn?'
[45] Base = All. Question G4 'Have you gone overdrawn on your main current account at any time in the last twelve months?'

those months when they are in overdraft.[46] Where respondents answered earlier in the survey that they had not used an overdraft at all, this variable is given a value of zero.

Debit balance

- Actual debit balance: The actual average value an account has been in debit in 2014. The variable is built by multiplying the average overdraft balance in a month with the total number of days in overdraft in this month; this figure is then summed up over the year and divided by the total number of days in overdraft in the year.

- Perceived debit balance: The average amount that respondents say that their account has been in debit in 2014.[47] Where respondents answered earlier in the survey that they had not used an overdraft at all, this variable was given the value zero.

Overdraft limits

- Actual overdraft limit: Value of the arranged overdraft limit at the end of 2014.

- Perceived overdraft limit: The arranged overdraft limit that respondents say that they have on their main current account at the time the survey was carried out (February/March 2015).[48] Respondents who stated that they did not have an arranged overdraft limit were given the value zero.[49]

Unarranged overdraft usage

- Actual use of unarranged overdraft: Number of months in an unarranged overdraft, where the customer either exceeded their arranged overdraft limit or went into overdraft (for those that do not have an arranged overdraft limit).

- Perceived use of unarranged overdraft: For those who say they do not have an arranged overdraft limit, the number of months in unarranged

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[46] Base = All who have been overdrawn on their main account at any time in the last 12 months. Question G8 ‘And how many days in the month were you usually overdrawn?’
[47] Base = All who have been overdrawn on their main account at any time in the last 12 months. Question G7 ‘Thinking about the x months (from Question G5) that you have been overdrawn in the last year, what is the average amount you were overdrawn in a month?’
[48] Banks reported that overdraft limits had changed between December 2014 and February 2015 on average for less than 1% of customers across banks.
[49] Base=All. Question G2 ‘Do you have an authorised overdraft on your main current account – that is an agreement that you are allowed to go up to a certain amount overdrawn?’

overdraft is the same as the number of months in overdraft. For those who say they have an arranged overdraft limit, we use the number of months the respondents say that they exceeded their arranged overdraft limit.

Overdraft charges

- Actual overdraft charges: Average monthly overdraft charges incurred in 2014. The variable is built by summing the interest component and the non-interest component of charges. Both are constructed by summing up monthly charges over the year and then dividing by the number of months the customer was in overdraft in 2014.

- Perceived overdraft charges: The average monthly amount of overdraft charges that respondents say that they have paid for being overdrawn in 2014.[50] Where respondents answered earlier in the survey that they had not used an overdraft at all, this variable is given the value zero.

Credit balances

- Actual credit balance: Average monthly interest and non-interest revenue received on the credit balance of an account.

- Perceived credit balance: Dummy variable that takes the value of 1, if the respondent says that he/she receives either credit interest or cashback on credit balances, and zero otherwise.

[50] Base = All who have been overdrawn on their main account at any time in the last 12 months. Question G11 ‘Thinking about the x months (from Question G5) that you were overdrawn, what was the average amount that you were charged for your overdraft in a month, whether authorised or not?’

Appendix C: Further results

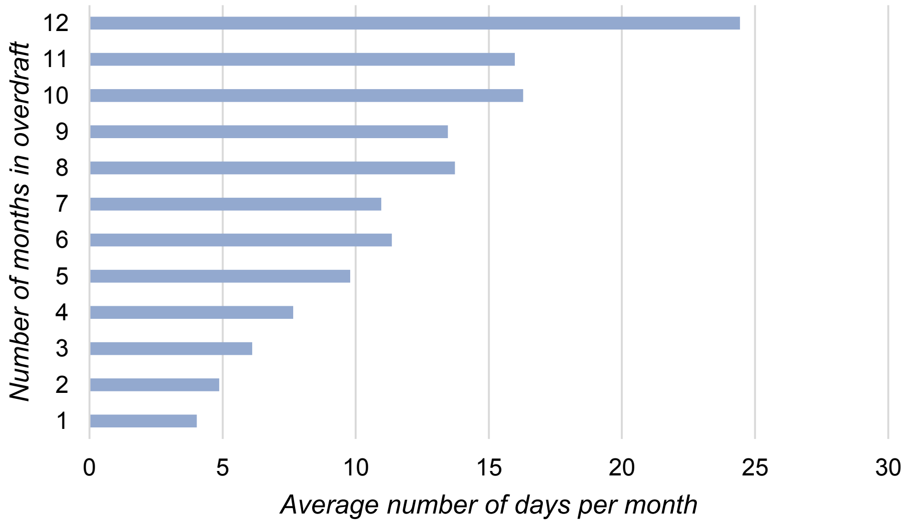
1. This Appendix provides further details on:

- the correlation between number of months and days in overdraft, and
- unarranged overdraft usage.

Correlation between number of months and days in overdraft

2. Among overdraft users, there is a strong positive correlation between number of months and number of days in overdraft (Figure 1 below). For example, those who use overdrafts in each of the 12 months in 2014 remain in overdraft on average 24 days per month, while those who use it for just one month remain in overdraft for four days on average.

Figure 1: Number of days versus number of months in overdraft, 2014 (overdraft sample)



Source: CMA analysis based on banks' transaction data and GfK survey data.
Note: The sample includes 1,181 observations.

Unarranged overdraft usage

3. 51% of overdraft users go into an unarranged overdraft, either because they did not have an arranged overdraft limit or because they exceeded their arranged limit. The proportion drops to 38% when only looking at those with an arranged overdraft limit. 32% of customers are not aware that they go into unarranged overdraft, even though they do (22% of those with an arranged overdraft limit).[51]

[51] In response to our methodology paper, one bank told us that customers may not properly understand the survey questions, as the terminology used in the survey (eg 'arranged' and 'unarranged' overdrafts) is not always

Table 1: Usage of unarranged overdraft, share of customers

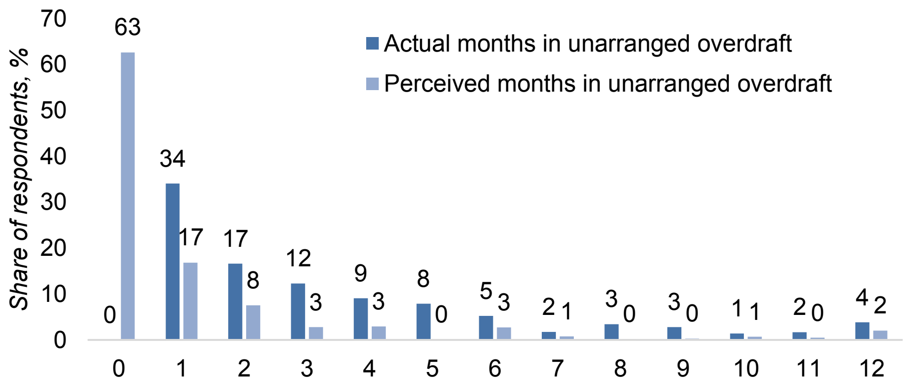
%

	Perceived (survey results)					
Actual (transaction data)	*Overdraft sample**			*Overdraft sample with arranged overdraft limit***		
	No	**Yes**	**Total**	**No**	**Yes**	**Total**
No	46	4	49	58	5	**62**
Yes	32	19	51	22	15	**38**
Total	**78**	**23**	**100**	**80**	**20**	**100**

Source: CMA analysis based on banks' transaction data and GfK survey data.
*104 observations are excluded from the overdraft sample as where customers who use overdrafts responded that they: 1) do not know (or refuse to say) whether they have an arranged overdraft limit; 2) do not know (or refuse to say) whether they exceed their arranged overdraft limit; leading to a total of 1,077 observations.
**104 customers who use overdrafts are excluded where they responded that they: 1) do not know (or refuse to say) whether they had an arranged overdraft limit; 2) do not know (or refuse to say) whether they exceed their arranged overdraft limit. A further 266 observations are excluded from the overdraft sample for customers do not have arranged overdraft limits, leading to a total of 811 observations.

4. Figure 2 shows that about half of the overdraft users who go into unarranged overdraft do so for just one or two months in the year. However, regular use of unarranged overdrafts is not rare; 10% use it in nine months of the year or more. Those who use an unarranged overdraft go into an unarranged overdraft for 3.5 months on average.

Figure 2: Actual and perceived months in unarranged overdraft per year, % (users of unarranged overdraft*)



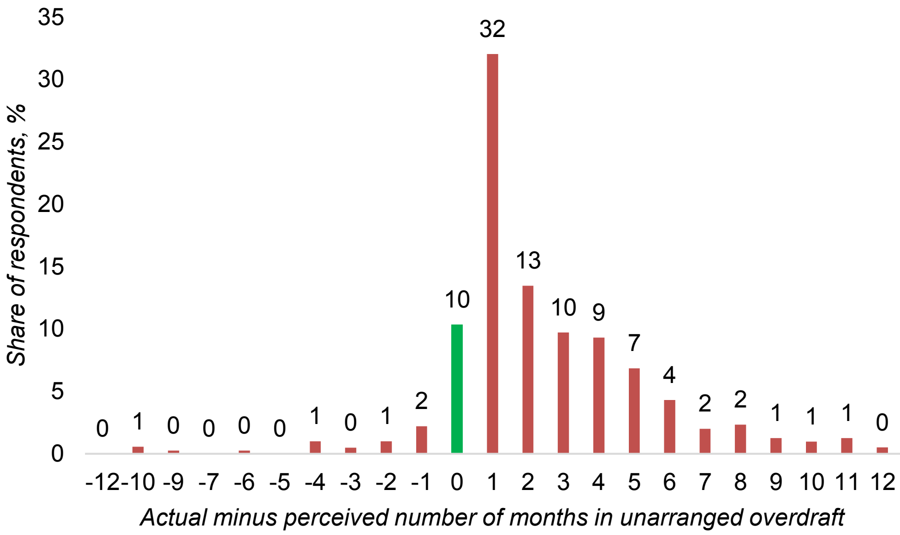
Source: CMA analysis based on banks' transaction data and GfK survey data.
*104 observations are excluded from the overdraft sample where customers who use overdrafts responded that they: 1) do not know (or refuse to say) whether they have an arranged overdraft limit; 2) do not know (or refuse to say) whether they exceed their arranged overdraft limit. A further 522 observations are excluded from the overdraft sample for respondents that do not go into unarranged overdraft on at least one day in 2014, leading to a total of 555 observations.

5. Similarly to the previous analysis, customers perceive that they use unarranged overdrafts less often than they actually do, as well as perceiving that they do not use it at all when actually they do. As Figure 3 shows, users

consistent with customer experience. It also told us that customers may not appreciate the distinction between days in overdraft versus days beyond their overdraft limit. We cannot exclude that the high share of those who are not aware that they went into unarranged overdraft could be influenced by the survey questions. However, we believe that the question was framed clearly.

of unarranged overdrafts underestimate their usage much more often than they overestimate their usage. In particular, 55% misjudge their overdraft usage by two or more months. On average, unarranged overdraft users, misjudge their unarranged usage by three months. The same group also misjudges the number of months they are in overdraft by four months.

Figure 3: Difference between actual and perceived months in unarranged overdraft (users of unarranged overdraft*)



Source: CMA analysis based on banks' transaction data and GfK survey data.
*104 observations are excluded from the overdraft sample where customers who used overdrafts responded that they: 1) do not know (or refuse to say) whether they have an arranged overdraft limit; 2) do not know (or refuse to say) whether they exceed their arranged overdraft limit. A further 522 observations are excluded from the overdraft sample as respondents do not go into unarranged overdraft on at least one day in 2014, leading to a total of 555 observations.

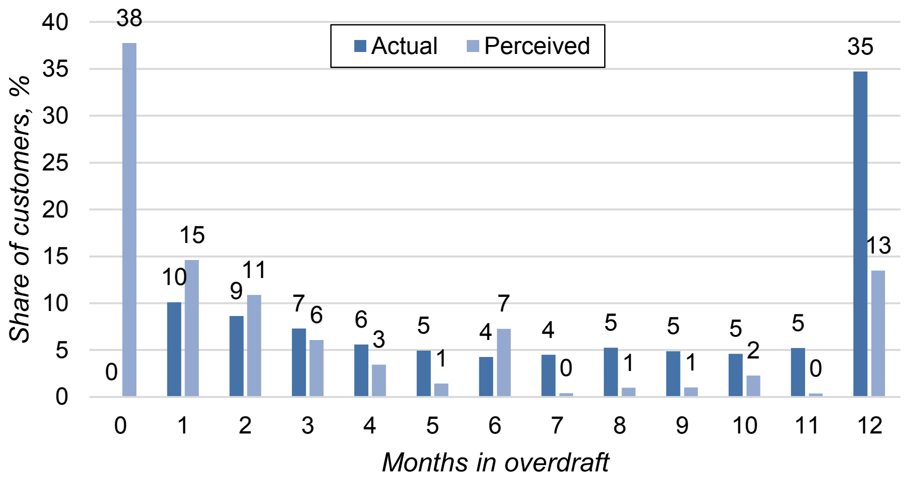
Appendix D: Sensitivities

1. This appendix provides further details on some of the sensitivity analyses we conducted.

Excluding respondents who have not been charged for using an overdraft

2. When excluding those respondents who have not incurred any charges from the analysis, Figure 1 shows that we do not observe any differences in the perceived number of months in overdraft compared to the main specification (see [Figure 1]).

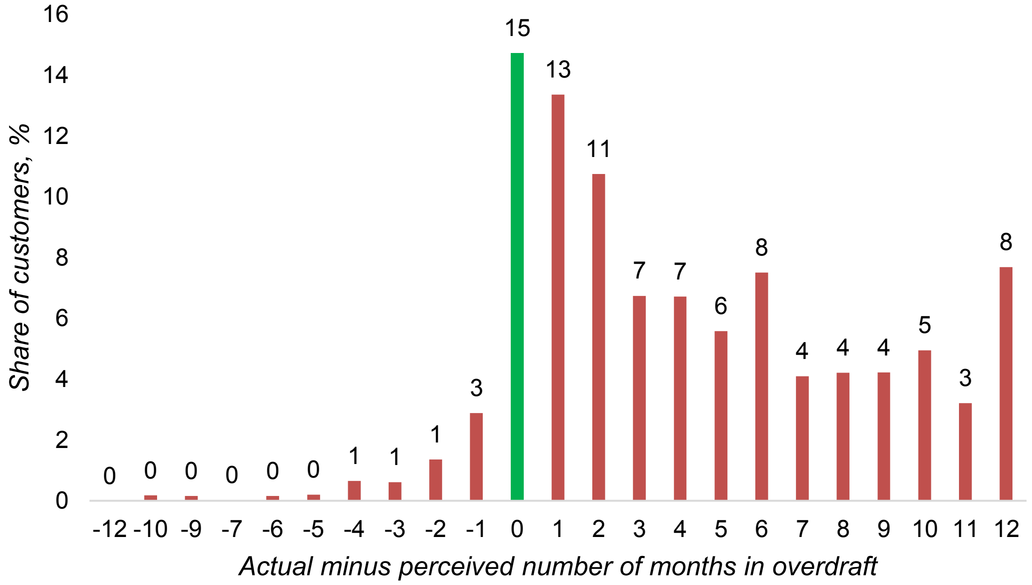
Figure 1: Distribution of actual and perceived number of months in overdraft excluding respondents that have not been charged for an overdraft (overdraft sample excluding free overdrafts*)



Source: CMA analysis based on banks' transaction data and GfK survey data.
*278 customers are not charged and are therefore excluded. A further 73 are excluded from the overdraft sample where customers responded that they did not know how many days they went into overdraft or refused to say, leading to a total of 830 observations.

3. Similarly, we do not observe significant changes in the difference between actual and perceived number of months in overdraft, as shown in Figure 2, compared to the main specification (see [Figure 3]).

Figure 2: Difference between actual and perceived number of months in overdraft excluding respondents who have not been charged for an overdraft (overdraft sample excluding free overdrafts*)



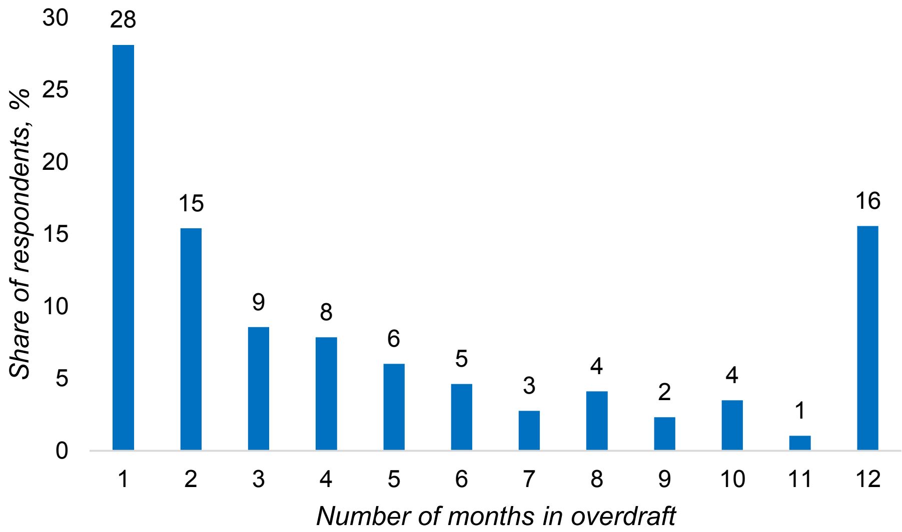
Source: CMA analysis based on banks' transaction data and GfK survey data.
*278 customers are not charged and are therefore excluded. A further 73 are excluded from the overdraft sample where customers responded that they did not know how many days they went into overdraft or refused to say, leading to a total of 830 observations.

Excluding respondents who may not wish to talk about their usage

4. When we compare the distribution of actual overdraft usage of the overdraft sample (see [Figure 1]) with the distribution of actual overdraft usage of respondents who said they did not use overdrafts even though the transaction data shows that they did[52] (see Figure 3 below), we note that more respondents have used overdrafts for one or two months and less respondents have been overdrawn in all 12 months compared to the main specification.

[52] Those are the 42% of respondents of the overdraft sample who say that they have not used an overdraft, shown in [Figure1].

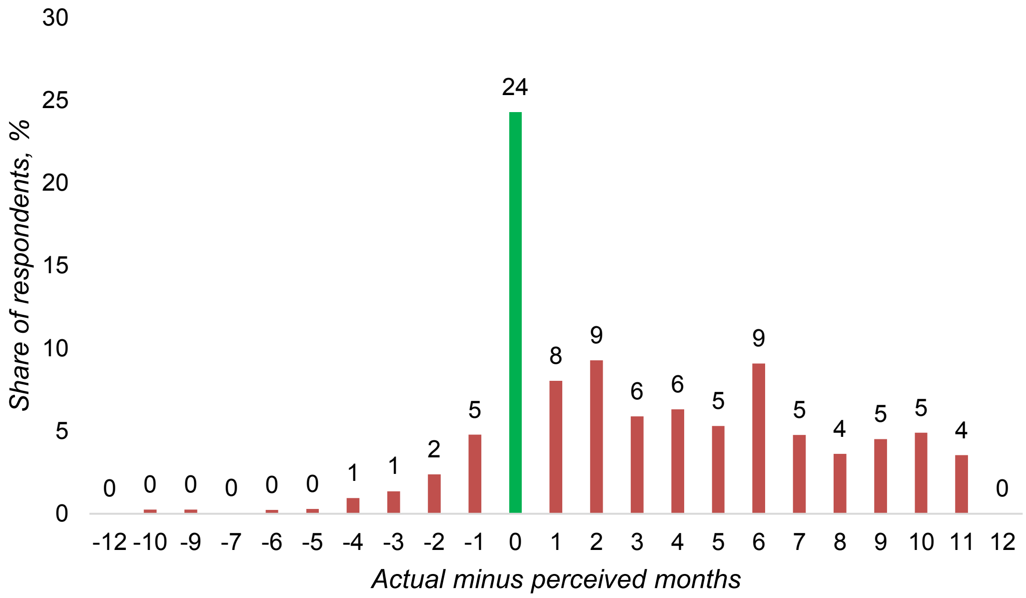
Figure 3: Distribution of actual number of months in overdraft of those who said they were not in overdraft*



Source: CMA analysis based on banks' transaction data and GfK survey data.
*The sample size includes 466 respondents who said they were not in overdraft although they actually were in overdraft.

5. Figure 4 below shows results on actual and perceived number of months in overdraft when we exclude from the analysis the 42% of respondents who said they do not go into overdraft at all even although the transaction data shows that they did. We find that 49% of customers can estimate the number of months they use their overdraft with a tolerance of two months compared to 47% from the main specification (see [Figure 3]). Similarly, 40% can estimate the average number of days in overdraft with a tolerance of three days compared to 38% from the main specification.

Figure 4: Difference between actual and perceived number of months in overdraft (overdraft sample excluding those who said they did not use overdraft*)



Source: CMA analysis based on banks' transaction data and GfK survey data.
*466 observations are excluded from the overdraft sample because they said they did not use overdrafts; 80 observations are excluded because they did not know for how many months they used an overdraft or refused to say, leading to 635 observations.

6. When we exclude from the analysis respondents who say that they have not used an overdraft, we further find that:

- 46% of customers can correctly estimate the band within which their debit balances lies compared to 27% in the main specification.
- Overdraft users continue to underestimate their usage much more often than they overestimate it. For example, 57% of customers who use overdrafts underestimate the number of months they use it by more than a month. This compares to 63% from the main specification.
- 64% of customers who use overdrafts, and 60% of those who use overdrafts and have an arranged limit, know their limit exactly compared to 63% and 57%, respectively, from the main specification.
- 37% of customers who either exceeded their arranged overdraft limit or went into an unarranged overdraft report that they have not used an unarranged overdraft compared with about half in the main specification.
- 38% of customers are charged £5 or less per month for their overdraft and 42% of customers are able to estimate their overdraft charges within £5, compared to 50% in the main specification.

Using data for the last quarter of 2014 only

7. When using data for the last three months in 2014 only, we find that 36% of respondents estimate the average number of days in overdraft per month to a tolerance of three days, compared with 38% from the main specification. On average, customers misjudged the number of days per month by nine, the same as in the main analysis.

8. 29% of customers can correctly estimate the band within which their debit balances lies, compared with 27% from the main specification.

9. As in the main specification, customers tend to underestimate their usage. The same proportion of customers underestimate (57%) the average number of days per month in overdraft with a tolerance of three days as in the main specification. Similarly, the same proportion (60%) of customers underestimate their debit balances, compared to the proportion in the main specification.

10. As in the main specification, roughly half of customers are charged £5 or less per month for their overdraft and 48% of customers are able to estimate their overdraft charges within a tolerance of £5, compared to 50% in the main specification.