FINANCIAL CONDUCT AUTHORITY

MS16/2.2: Annex 6

Market Study

Mortgages Market Study

Interim Report: Annex 6 – Our approach and methodology for the switching analysis

May 2018

Annex 6: Our approach and methodology for the switching analysis

Introduction

1. Currently, most mortgage products sold in the UK comprise a short-term introductory deal after which the rate changes to a reversion rate, often a standard variable rate (SVR). Moving to a reversion rate often involves an increase in interest rate and mortgage payments. At this point it is usually in a consumer's interest to switch to a new mortgage product, either with their existing lender (an internal switch) or a new lender (an external switch).

2. If the market works well, consumers can and do switch to minimise their mortgage payments. This behaviour can also drive competition amongst firms and lead to benefits for all consumers. However, market dynamics can change over time, for example lenders' appetite for credit risk can fluctuate. This can result in higher risk consumers on a reversion rate being unable to find a new introductory deal (that would reduce their mortgage costs) despite not being tied to their existing lender. Meanwhile, some consumers are simply less active and do not switch. Consumers that do not switch can experience harm through higher mortgage payments.

3. This Annex sets out our approach and methodology in analysing product switching in the mortgage market, providing further detail to Chapter 6. We have attempted to understand consumers' switching behaviour and identify if consumers are harmed from not switching. Specifically, we looked at consumers on a reversion rate who could benefit from switching to reduce monthly mortgage payments but either do not or cannot. Some consumers have mortgages that have been sold to firms that are not authorised for lending. In these cases, we have limited data. Our approach therefore differs from the more in-depth analysis we have been able to undertake for mortgages reported by firms authorised for mortgages.

4. The Annex is structured as follows:
   - Consumers of mortgages with firms authorised to lend
     - data sources
     - overview of the high-level methodology
     - establishing the baseline population
     - consumers not in the analysis
     - identifying consumers who may be unable to switch
     - identifying whether consumers who can switch would benefit from switching and by how much
   - Consumers of mortgages with firms not authorised for lending
     - data sources
     - estimating which consumers in closed books of firms not authorised by the FCA could benefit from switching

Consumers of mortgages with firms authorised to lend

5. We have estimated the number of residential mortgage holders on a reversion rate that may be experiencing harm from not switching. We differentiate between consumers who appear unable to switch and those who appear able to switch. We then look at whether consumers would benefit from switching.[1]

Data sources

6. The switching analysis of mortgages with authorised lenders focuses on the second half of 2016 (H2 2016). We use 3 main sources of data for our analysis.

7. The first are the mortgage product sales data (PSD) submitted by lenders to the FCA as part of their regulatory returns. We used data from both PSD001, which reports origination of new regulated mortgage contracts, and PSD007, which reports on the status and performance of existing regulated mortgage contracts.
   - PSD007 submissions for June 2016 and December 2016 are used to identify individuals on reversion rates in the second half of 2016.[2] This constitutes the baseline population for the switching analysis (see subsection Establishing the baseline population below). PSD007 data on borrower and loan characteristics are also used to build alternative payment scenarios (see subsection Identifying whether consumers who can switch would benefit from switching and by how much) to inform the estimates of potential savings in the analysis of inactive consumers.
   - We source data on income and property value from PSD001. Income data are used in the descriptive statistics of the consumers who appear unable to switch and inactive consumers. They are also used in frontier analysis to identify consumers who appear unable to switch. We assume income is unchanged since the last observed transaction in the market. However, income data from PSD001 is adjusted for GDP growth[3] to H2 2016. Property values sourced from PSD001 are also adjusted to H2 2016 using Nationwide's Seasonally Adjusted Regional Quarterly Indices.[4]

8. The second used in the analysis is transaction level data on internal switching submitted for the purpose of the market study. These data are integrated to PSD001 and further used to build the frontiers for the analysis of consumers who appear unable to switch and the benchmarks for the inactive analysis.

9. Finally, we use publicly available product information provided by third parties to obtain data on reversion rates in H2 2016, to complement PSD001 and to build the benchmarks for both the analysis of consumers who appear unable to switch and the inactive analysis.

10. We also use qualitative evidence gathered from firms to supplement our quantitative analysis, to help us scope the empirical work, and to interpret results.

[1] We refer to 'consumers' and 'mortgages' interchangeably in this Annex. The analysis refers to the number of mortgage accounts impacted rather than the number of consumers of those mortgages.

[2] In addition to accounts on lenders' Standard Variable rates, we have identified accounts on other reversion rates using a number of different techniques, including (i) comparing the date the introductory rate expired with the date the account was reported; (ii) comparing the stock of products observed in the performance data (PSD007) to the observed origination products (both in PSD001 and Moneyfacts), and (iii) using ad-hoc information from lenders on the number and nature of their accounts on a reversion rate.

[3] GDP growth data was sourced from the Office of National Statistics.

[4] https://www.nationwide.co.uk/about/house-price-index/download-data#xtab:regional-quarterly-series-all-properties-data-available-from-1973-onwards

11. Finally, we validate results and key assumptions by using other sources of evidence, such as the intermediary survey of the extent to which consumers are able to switch, or other FCA market intelligence.

Overview of the high-level methodology

12. The methodology for the switching analysis consists of 4 main stages:

i. **establishing the baseline population**

We obtain the baseline population for the analysis, ie the subset of mortgage consumers of interest

ii. **consumers not in the analysis**

We identify and remove from our analysis those mortgages in arrears, those with small balances, and those that are near the end of their term

iii. **identifying consumers who may be unable to switch**

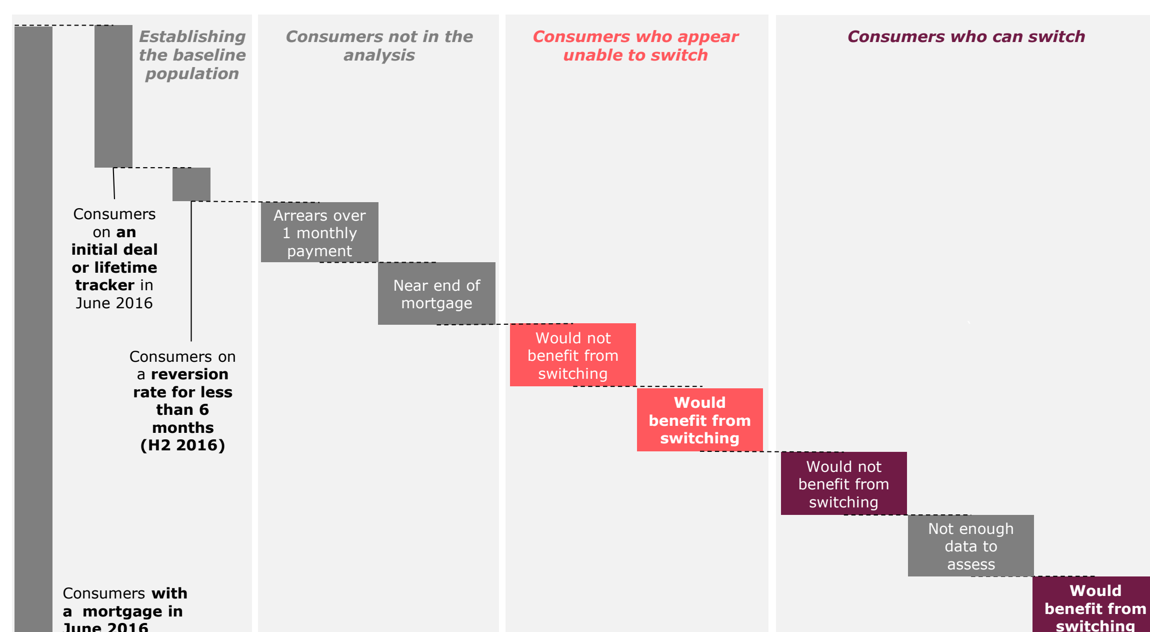
We estimate those in the remaining population who may be unable to switch. We consider the extent to which these consumers would benefit from switching, if they could

iv. **identifying whether consumers who can switch would benefit from switching and by how much**

We identify a population of inactive consumers (those who could benefit from switching their mortgage but don't) and the population of consumers that can switch but would not benefit from doing so. For those that would have benefitted from switching we estimate the savings they could have made by switching to a new deal.

13. Figure 6.1 summarises the 4 key stages of our analysis.

Figure 6.1: summary of approach and main stages of the switching analysis[5]



[5] Source: FCA analysis

Establishing the baseline population

14. Some consumers on an introductory rate could conceivably benefit from switching. However, harm experienced from not switching is likely to be small for 2 reasons:
    - the difference between introductory rates of comparable products is substantially lower than the differential between introductory rates and reversion rates
    - these consumers are likely to incur an early repayment charge which further reduces any benefits of switching

15. Our analysis therefore excludes mortgages on an introductory rate and focuses on those consumers on a reversion rate. Lifetime trackers are also therefore excluded from the analysis.

16. Using regulatory reporting data for all regulated firms in the market, we identified those consumers that were on a reversion rate for the whole of the second half of 2016. By looking at consumers on a reversion rate for at least 6 months, we exclude customers that move on to a reversion rate but switch relatively quickly. Such consumers may either:
    - rationally decide to stay on a reversion rate for a short period of time – for example if they are looking to move home
    - only engage with switching once their introductory period ends
    - These consumers may be inactive for a short period of time, and thus miss out on a lower rate. However, because they only stay on a reversion rate for a few months, they suffer relatively little harm.

17. We therefore focus on those on a reversion rate for at least 6 months.[6]

18. Of the 8 million mortgages reported in June 2016, around 2 million (25%) were on a reversion rate for the whole of the second half of 2016. This constitutes our baseline population for the switching analysis.[7]

Consumers not in the analysis

19. Of the 2 million mortgages on a reversion rate for the whole of the second half of 2016 (the baseline population) we exclude from our analysis both of these groups:
    - **consumers in arrears**

      Mortgages in aggregate arrears equal to, or greater than, one monthly payment are excluded from our analysis. This is a common threshold used by lenders to segment borrowers seeking an internal switch. These consumers may still be able to switch but are typically treated individually and differently by lenders. We found that around 100,000[8] mortgages in our baseline population (on a reversion rate for the second half of 2016) fall into this category
    - **consumers near the end of their mortgage**

      We use an outstanding balance lower than £10,000, or a remaining term of less than 2 years as proxies to identify consumers that are near the end of their mortgage. These are the most common thresholds identified by our review of

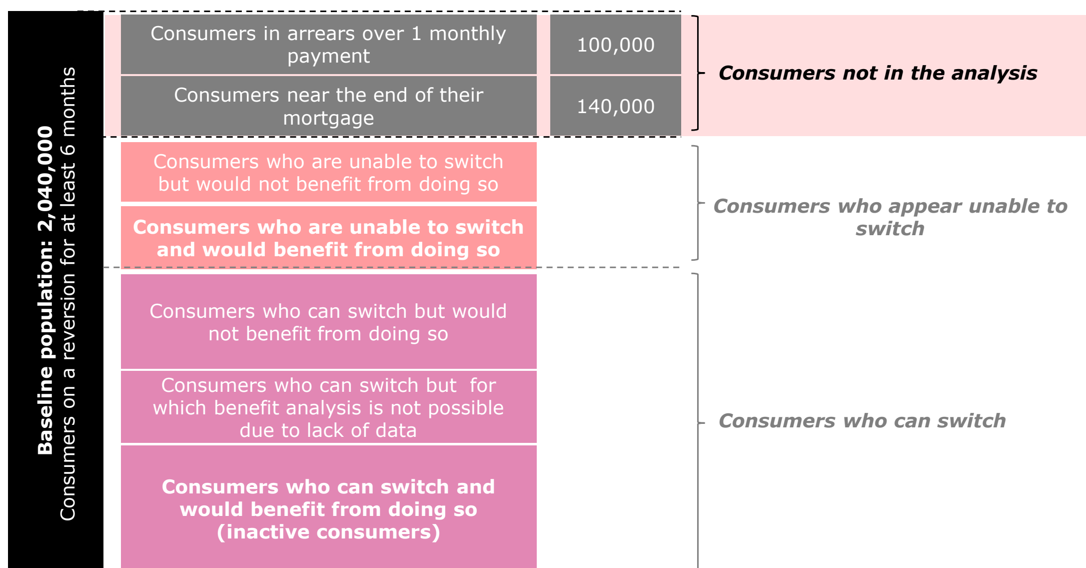
[6] Firms are not required to report the length of each consumer's permanence on a reversion rate so we instead matched observations in PSD007 over consecutive periods. We use six consecutive months on a reversion rate to distinguish between consumers who only pay a reversion rate for a short period of time and those who pay it for longer periods.

[7] Source: FCA product sales data PSD007. Reversion rates include managed reversion rates, such as SVRs, and non-managed reversion rates, such as tracker rates. We mapped accounts that were on a reversion rate for two consecutive observations (June 2016 & December 2016)

[8] All results of the switching analysis are rounded to the nearest 10,000.

lender policies, undertaken on a sample of firms. Consumers with a low outstanding balance, or only a few years remaining on their loan, are unlikely to benefit as the interest savings in many cases will not outweigh the costs of obtaining a new mortgage. In addition, many lenders do not offer new products to borrowers with a low balance or low remaining term. We found that 140,000 mortgages in our baseline population were near the end of their term.

Figure 6.2: Switching analysis – consumers not in the analysis[9]



Identifying consumers who may be unable to switch

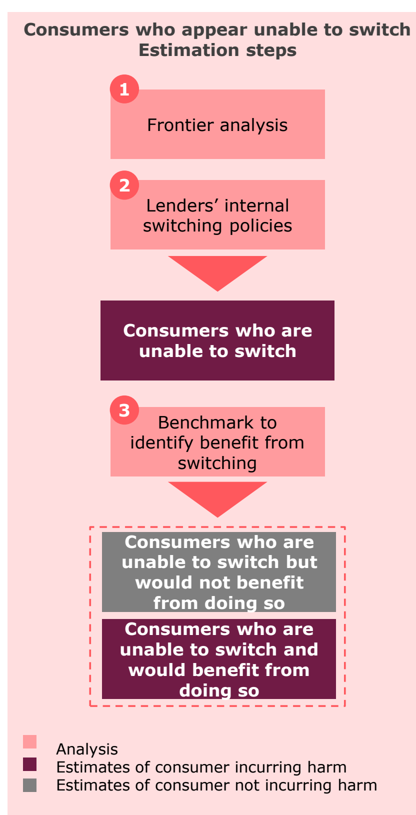
20. We define consumers as unable to switch if they would not be offered a new deal by their existing lender or another lender in the market.
    - we used a frontier analysis approach (see box below for details) to estimate the number of consumers with mortgages with authorised lenders who appear unable to switch in the open market.
    - many lenders told us that they currently allow their existing borrowers to switch to a new product without completing an affordability assessment. We factored these internal switching policies into our estimate of consumers who may be unable to switch.

21. Not all consumers who are unable to switch experience harm. For example, some may be paying low reversion rates. These may reflect the terms and conditions of mortgage contracts in place before the financial crisis led to reversion rates falling in response to lower funding costs. We therefore distinguish between those consumers who may be unable to switch who would benefit from switching, and those who would not.

22. Figure 6.3 summarises our approach to estimating the population of existing borrowers who appear unable to switch and how many of these would benefit from switching.

[9] Source: analysis based on PSD007 data. This analysis covers regulated lenders only. Figures are rounded to the nearest 10,000.

Figure 6.3: Estimation of consumers who appear unable to switch[10]



Frontier analysis

23. First we construct the lending frontiers for H2 2016. Then we assess how many of the 1.8 million consumers on a reversion rate in this period, which we have not already excluded from the analysis, would not be able to switch to a mortgage available in the open-market (because they were outside the lending frontier).

24. We construct 3 regional lending frontiers by looking at the mortgages originated by all lenders in each of 3 regions (England and Wales, Northern Ireland, and Scotland). Next, we control for consumer characteristics relevant to eligibility such as whether the mortgage extends past retirement at maturity, Loan-to-Income (LTI), employment status, Loan-to-Value (LTV) bands and repayment type of the existing mortgage. We then map the stock of mortgages in the remaining baseline population against their frontier. This allows us to identify consumers with mortgage accounts that are outside their region's lending frontier, ie would not be offered a deal in the open market.

25. To map consumers against the frontiers we assume that consumers' personal characteristics are unchanged since their last observed transaction in the market. We take into account capital repayment and changes in the housing market. We do this by using the outstanding balance, remaining mortgage term and adjusted property value as of June 2016. This allows us to identify consumers that met the risk appetite of their lender when they last took out a mortgage or switched but who might not meet the lending criteria of any lender in the period of analysis.

[10] Source: FCA analysis

Using lending frontiers to estimate the number of consumers with mortgages who may be unable to switch

The lending frontier represents the characteristics of the most risky lending that providers in the market were willing to carry out in H2 2016, for different types of consumer, in each region.

The frontier is used to identify existing borrowers whose characteristics would put them outside the lending frontier in H2 2016, and so are unlikely to be able to refinance in the open market. Borrowers whose characteristics place them inside the frontier should have been able to refinance (and therefore switch).

To build the lending frontier, we use PSD001 data on mortgages originated in H2 2016.

- The frontier uses external switching data from PSD001 to identify a set of regional lending frontiers (considering all lenders active in a region). The macro-regions considered in the analysis are England and Wales, Scotland and Norther Ireland.
- The frontier is built by ranking products sold in the period of analysis according to risk to the lender, captured by the following characteristics that are measurable from our data:
  - LTI: The bands used in the analyses were derived from identifiable clusters from Moneyfacts data: 4, 4.5, 4.75 and 5. All else being equal, a higher LTI mortgage presents higher risk to the lender
  - LTV: The bands used in the analyses are the standard bands identified from PSD1: 50%, 60%, 65%, 70%, 75%, 80%, 85% and 90%. All else being equal, a higher LTV mortgage assumes higher risk to the lender.
  - Repayment type: This can be one of: interest only (IO), capital repayment, or mix of IO and capital repayment. A mortgage that has a greater interest-only component (all else being equal) is considered to present higher risk to the lender.
  - Lending into retirement: a mortgage either has a term that ends before the borrower(s)' retirement or extends into it. A mortgage that extends into retirement is considered to present a higher riskier than an otherwise identical one that does not.

Mortgage lending transactions are ranked according to their risk levels on the bands of the characteristics above. Transactions are on the frontier if there were no other transactions that were as risky in all of the characteristics and riskier in at least one characteristic. In simple terms, such a transaction is among the riskiest for lenders of all the mortgage transactions in in that period.

To avoid comparing dis-similar consumers who are likely to be treated differently by lenders we also control for consumer employment status (whether self-employed or not) and their credit history. We construct separate lending frontiers for these different consumer groups.

For the constructed lending frontiers we then estimate existing borrowers' risk characteristics using PSD007, making adjustments for time to income (using GDP

growth) and to property value (using Nationwide's regional adjusted house index.) Bar these general changes, we assume for simplicity, and in the absence of information, that consumer circumstances have not changed.

By comparing the stock of active mortgages on reversion rate for at least 6 months in H2 2016 against the relevant frontier we estimate accounts whose riskiness is likely to place them outside the relevant frontier, and so current lending appetites. These are considered too risky for the market. The frontier analysis has some limitations, which we attempt to mitigate:

- **Treatments of outliers in the PSD001 lending data can affect results.** The more we remove extreme lending values from PSD001 the more conservative our results, ie increasing the size of the population of consumers who appear unable to switch. To be conservative, we take several steps to avoid outliers affecting results. First, we apply outlier cleaning to remove extreme lending values in PSD001 and second, we use bands for the risk characteristics. This means frontiers are thick and capture more existing borrowers.
- **We consider personal characteristics of consumers as at the last time they transacted in the market to exclude consumers who are unable to switch due to changes in personal circumstances.** This means that the analysis does not capture consumers that are left out of the market due to a combination of changes in personal characteristics and changes in market risk appetite.
- **The frontier method depends on there being sufficient variation in current lending to bring out the different possibilities of lending**. However, it may be that a lender is willing to offer a loan that is not observed in the data, as there has not been demand for it. If so, then the frontier will not capture this possibility and will assume that this lending is not possible. Incorporating lenders' internal switching policies (see below) helps to mitigate this.

Lenders' internal switching policies

26. We supplement the frontier analysis by accounting for how a sample of lenders have told us they treat existing customers wanting to switch and whether they carry out an affordability assessment or apply other criteria that might mean some customers are unable to switch. The majority told us that they currently allow their existing customers to switch to a new product without undergoing an affordability assessment with a small number of exceptions (such as low balances, low remaining term, or, potentially, those who are in arrears). As lenders' responses were broadly similar, we extrapolated these lender policies for existing borrowers across the whole market. This assumes that all other lenders, including those for whom we do not have information, are likely to make provisions for their existing borrowers in a similar way.

27. We only consider consumers whose account characteristics lie outside both the lending frontier, and their existing lender's internal switching policy, as unable to switch.

28. Our analysis estimates that around 50,000 consumers were both outside the lending frontier and unlikely to qualify for an internal switch. However, these estimates do not (yet) consider whether these consumers would benefit from switching.

29. Accounting for internal switching policies significantly reduces our estimate of the number of borrowers with existing mortgages who may be unable to switch. This highlights the importance of these policies working effectively and customers being aware of them.

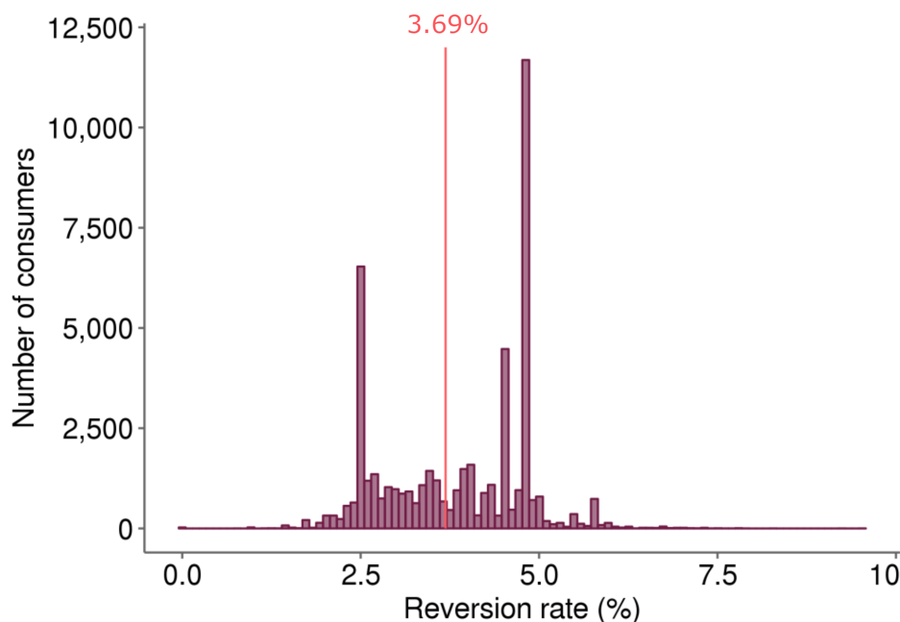
30. Using the RfI data on internal switches we were able to construct a lending frontier for internal switches. This indicated that there are some differences between lenders' internal switching policies and the switching that we actually observed in 2016 H2. This could be for a number of reasons, including changes to policies since December 2016 or customers outside the frontier not having applied to switch in 2016H2.[11]

Assessing the benefit of switching for those we estimate cannot switch

31. Amongst the consumers who appear to be unable to switch, we distinguish between those that would benefit from switching (and so may be experiencing harm) and those who would not.

32. As shown in Figure 6.4 below, the distribution of the 50,000 consumers who appear unable to switch has 2 peaks: one around the most common legacy reversion rate (2.5%) and the other around the current average SVR (4.6%-4.8%).

Figure 6.4: Reversion rate of the 50,000 consumers who appear unable to switch[12]



33. Consumers who may be unable to switch by definition do not qualify for any of the existing introductory deals. Therefore, taking account of the distribution of the rates these consumers pay, we decided to use 3.69%, the lowest standard variable rate offered in the market in the period of analysis as our benchmark.[13]

[11] Our approach allows us to account for lenders' current internal switching policies which may be different to those policies in place in H2 2016, the period to which the frontier analysis applies.

[12] Source: FCA analysis based on PSD007

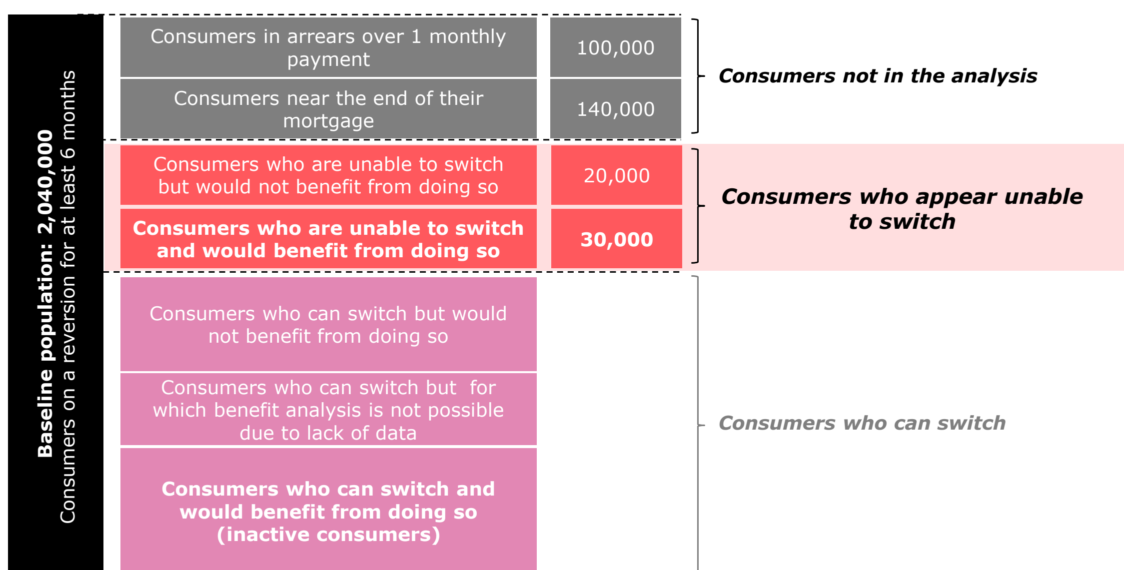
[13] Later in this Annex we describe how we use individual benchmark scenarios for consumers who we assess are able to switch based on products they qualify for

34. We assume that consumers paying 3.69% or less are unlikely to benefit from switching as the rates most of these consumers pay (ie around 2.5%) are comparable to those payable on introductory deals, often because they are benefitting from legacy terms and conditions. On the other hand, we assume that consumers with mortgages on rates higher than 3.69% would potentially benefit from switching.[14] Importantly, the results are not particularly sensitive to small changes in this benchmark; moving it by a few basis points would not change the number of consumers who would benefit from switching significantly (as the benchmark is distant from both of the peaks in the distribution).

Results and conclusion

35. Of the 50,000 consumers that appear unable to switch either internally or externally, about 30,000 pay a reversion rate greater than 3.69% and we estimate they would benefit from switching. Of these, around 10,000 have a mortgage with active lenders and around 20,000 have mortgages with lenders that no longer lend (albeit these mortgage books are owned by firms authorised to undertake new mortgage business).

Figure 6.5: Switching analysis – consumers who appear unable to switch[15]



Identifying whether consumers who can switch would benefit from switching and by how much

36. Once we have deducted from our baseline switching population of approximately 2 million consumers on a reversion rate in H2 2016, those near the end of their mortgage, those in arrears and those that cannot switch, we are left with around 1.75m consumers who could have switched but did not do so.

37. The final step of our analysis is identifying, from this population, the consumers who would have benefitted from switching but who are inactive (inactive consumers). We therefore define inactive consumers as:

- on a reversion rate long term (longer than 6 months)
- not in arrears[16]

[14] Some consumers may have high risk characteristics and the market may demand a rate premium to reflect these.

[15] Source: FCA analysis based on PSD007

[16] Arrears are defined as aggregate arrears of at least 1 monthly payment.

- have a remaining mortgage term of more than two years and an outstanding balance of more than £10,000
- would be offered a new deal from their existing lender and/or another lender, and
- would benefit from switching to a new deal

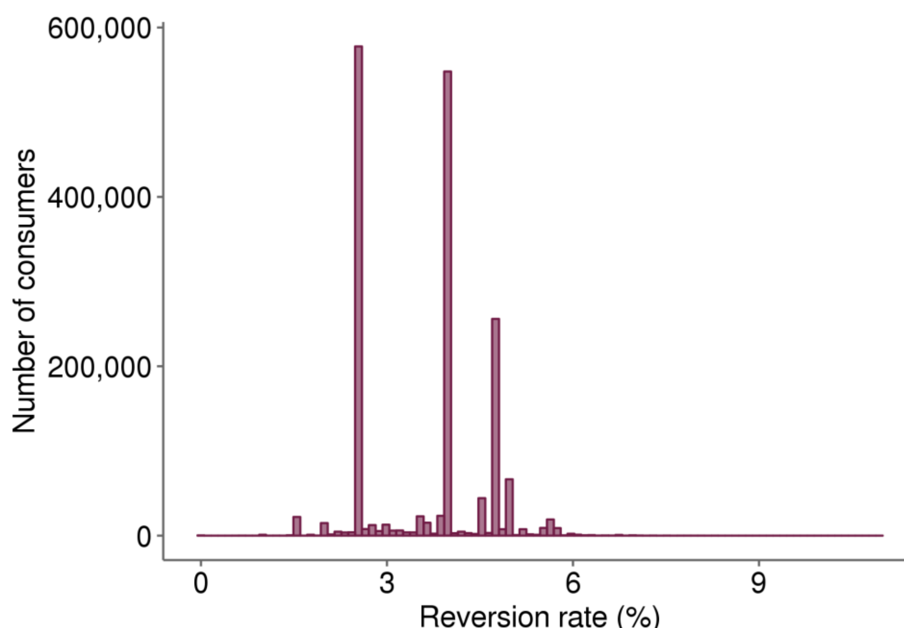
38. To do so, we construct an alternative scenario for each individual consumer (benchmark scenario) and compare payments under this scenario to payments on the reversion rate (the base scenario).

Constructing the base and benchmark scenarios

39. We consider the proportion of consumers on a reversion rate in H2 2016 who are not in arrears of at least one month, not near the end of their mortgage, and able to switch as potentially inactive.

40. Not all potentially inactive consumers are actually inactive, as some might have decided not to switch. For example, as figure 6.6 shows, some potentially inactive consumers are paying legacy reversion rates between 2% and 2.5%. These rates are comparable to some incentivised rates currently offered in the market.

Figure 6.6: Distribution of reversion rate paid by 1.75m potentially inactive consumers, by number of accounts as of the end of 2016[17]



41. However, unlike our earlier analysis for consumers who may be unable to switch, we can assess the extent to which each potentially inactive consumer would be better off switching. We do this by comparing the stream of payments that each consumer would make until the end of their mortgage term under their current reversion rate (the base scenario), to the stream of payments under a hypothetical scenario where the customer switched to a new deal in June 2016 (the benchmark scenario).

42. For the **base scenario** we estimate monthly payments under the consumer's current reversion rate ($PMT_{BASE,i}$ where *i* is a consumer).[18] We then aggregate the stream of

[17] FCA analysis based on PSD007.

[18] We calculate monthly payments from June 2016 until the end of the mortgage term for each potentially inert consumer. In August 2016, the Bank of England reduced the base rate by 0.25 basis points, and most lenders reflected the reduction in the base rate in their reversion rates at different times. For simplicity we have therefore assumed a reduced reversion rate applied for all lenders from June 2016.

payments until the end of the mortgage term into an annual percentage rate of charge (APR), which summarises the total cost of the credit to the consumer ($APR_{BASE,i}$ where i is a consumer).[19] Unless there is a change in the reversion rate, monthly payments in the base scenario are constant. Moreover, as the base scenario does not entail any fees, the computed APR is roughly equal to the reversion rate consumers are paying.

43. Under the **benchmark scenario** consumers are assigned a new product, which comprises both the product interest rate and the product fees (if any) net of any switching incentives. The benchmark scenario assumes that consumers put the minimum effort into switching. This reflects that consumers in the analysis are potentially inactive, so by definition are more reluctant to put effort and engage with the market. Therefore, in the benchmark scenario we assume that each consumer switches:
   - only once, in June 2016, and reverts to the reversion rate of the new product at the end of the introductory period
   - to a product offered by their existing lender, as this minimises shopping around costs
   - to a 2-year fixed-rate product, as this was the most popular type of product in the market in 2016
     - mindful that a two year fixed rate product may not be suitable for all customers, we also validate our results with a tracker benchmark
   - to the most sold product in the period of analysis for which they are eligible, where a product is defined as a combination of rate and fees

44. The box below describes how we assign benchmark products to the potentially inactive consumers, and discusses the key assumptions in the analysis.

45. As for the base scenario, we estimate monthly payments under the benchmark scenario. The computed monthly payments, and the APR account for the:

    (i) initial interest rate

    (ii) the associated reversion rate as of January 2017, [20] and

    (iii) any fees associated with the product

    Under the 2-year fixed benchmark the consumer will make an initial series of payments during the first 24 months (each monthly payment in the initial 24 months is denoted as $PMT_{2YF\ BENCH,i}^{incentivised}$), followed by another stream of payments for the remaining months (each monthly payment in the remaining months is denoted as $PMT_{2YF\ BENCH,i}^{reversion}$).[21]

46. We then aggregate the stream of payments under the benchmark into the annual percentage rate of charge ($APR_{BENCH,i}$ where i is a consumer), accounting for the monetary switching costs (eg product fees) and assuming that after the end of the benchmark product's incentivised period consumers revert to paying their lender's

[19] For a definition, please see the FCA Handbook. Available at: https://www.handbook.fca.org.uk/handbook/glossary/G3491.html

[20] The reversion rate associated to the Benchmark product may be different from the one consumers are paying, and used in the Base scenario. That is, some lenders have legacy reversion rates that are only linked to mortgage contracts extended before a set date.

[21] As described in this annex, we also built a tracker benchmark to validate our results. Under the tracker benchmark, monthly payments are calculated in advance, and therefore do not reflect any change in the rate that might occur. As a result, payments are constant over the term of the mortgage ($PMT_{TRA\ BENCH,i}$)

current reversion rate until the end of their mortgage term.[22] Figure 6.7 below summarises the monthly payments in the two scenarios.

Figure 6.7: Base and Benchmark scenarios in the inactive analysis[23]

Period	Base scenario	Benchmark scenario (incl. fees)
June 2016 – June 2018	$PMT_{BASE,i}$	$PMT_{BENCH,i}^{incentivised}$
July 2018 – consumer's end of product term	$PMT_{BASE,i}$	$PMT_{BENCH,i}^{reversion}$

Building the benchmark scenario

In the benchmark scenario we assume each potentially inactive consumer switches, on 1st June 2016, to the most popular 2-year fixed rate product (for which they were eligible) offered by their existing lender in H2 2016. This implies that the benchmark scenario does not assume the best value switching option, but the minimum effort switching option for each consumer. This is a conservative assumption as shopping around typically enables consumers to obtain better value deals.

We also validate our results with a tracker benchmark, which we construct similarly to the 2-year fixed rate benchmark, but assign consumers a lifetime tracker under the benchmark (see validation section below for more details). Both benchmarks are underpinned by the following key assumptions:

- we assume that consumers switch to a new deal with their existing lender. As well as being a 'minimum effort' option this also accounts for brand effects. That is, consumers might have an inherent preference for their existing lender. Further, our high-level analysis suggests that switching externally is not significantly beneficial when the higher costs associated with switching externally are considered
- product fees and any monetary costs of switching are accounted for, with any fees added to the mortgage balance and repaid over the remaining term of the mortgage. This is to account for consumers that are cash-constrained and cannot pay the fees upfront, even where that would reduce the overall cost of the mortgage
- non-monetary costs of switching are not accounted for

To allocate a benchmark product to each potentially inactive consumer we first identify the set of products sold to existing consumers by each lender and split those by loan-to-value (LTV) in H2 2016. We then match each potentially inactive consumer to the product sold by their existing lender and to a consumer with the same or higher LTV. Where more than one product is identified, we assigned the product (defined as the combination of interest rate and fees) that was sold with

[22] As with the monthly payments, the estimated APRs account for both the interest rate(s) and any fee associated with the benchmark product.

[23] FCA analysis.

the highest frequency. In case of a tie, the product with the highest fees was selected.

To obtain up-to-date LTVs for the identified group of potentially inactive consumers, unique consumers in PSD007 were matched to PSD001 to retrieve the value of their property at time of their last reported transaction (ie PSD001 date of origination). Using Nationwide's regional adjusted house index, the value of the property was adjusted to June 2016 for all matched PSD007 unique entries. This, together with the outstanding balance of the first PSD007 observation, was used to estimate LTV in June 2016.

Quantifying gross savings from a switch

47. As previously described, to ascertain whether a consumer would benefit from a switch we compared the APR from the base scenario to the APR under the benchmark scenario. Consumers for which the APR under the base scenario is lower or equal to the one in the benchmark scenario are better off in the base scenario, and therefore would not benefit from switching. That is:

$$APR_{BASE,i} \leq APR_{BENCH,i}$$

48. On the other hand, consumers for which the APR in the benchmark is smaller than that in the base scenario would benefit from switching. That is:

$$APR_{BASE,i} > APR_{BENCH,i}$$

49. We estimate gross savings from switching by comparing the monthly payment in the base scenario to the monthly payment in the benchmark initial period (ie the first 2 years). Savings are considered gross because the analysis does not account for the non-monetary cost of switching.

Validation: the tracker benchmark

50. To validate our results we also built a benchmark scenario which assumed consumers switched to a lifetime tracker with their existing lender. A lifetime tracker offers the same flexibility as a reversion rate, so this enables us to control for consumers who have a preference for flexibility.

51. Similar to the 2-year fixed benchmark, the tracker benchmark is built by matching each potentially inactive consumer to the most popular tracker product (for which they are eligible) offered by their existing lender. In other words, the observed transaction was associated with the same or a higher LTV.[24] The estimate of gross savings under the tracker benchmark aligns with the 2-year-fixed benchmark.

52. As shown in Figure 6.8, the distribution of the estimated APRs for the tracker benchmark tends to be lower than the 2-year fixed benchmark. However, gross savings in terms of annual payments are constant throughout the term of the mortgage for the tracker benchmark, and are on average £650 per year. This is illustrated in Figure 6.9, where the left-hand-side panel depicts the annual savings associated with the benchmarks in the first 2 years after the switch, and the right-hand-side panel shows the annual savings after the first 2 years.

[24] Since there are fewer transactions for lifetime trackers compared to 2-year fixed products, we were unable to build a benchmark for as large a proportion of potentially inactive consumers.

Figure 6.8: APR distribution - 2 Year Fixed benchmark vs tracker benchmark[25]

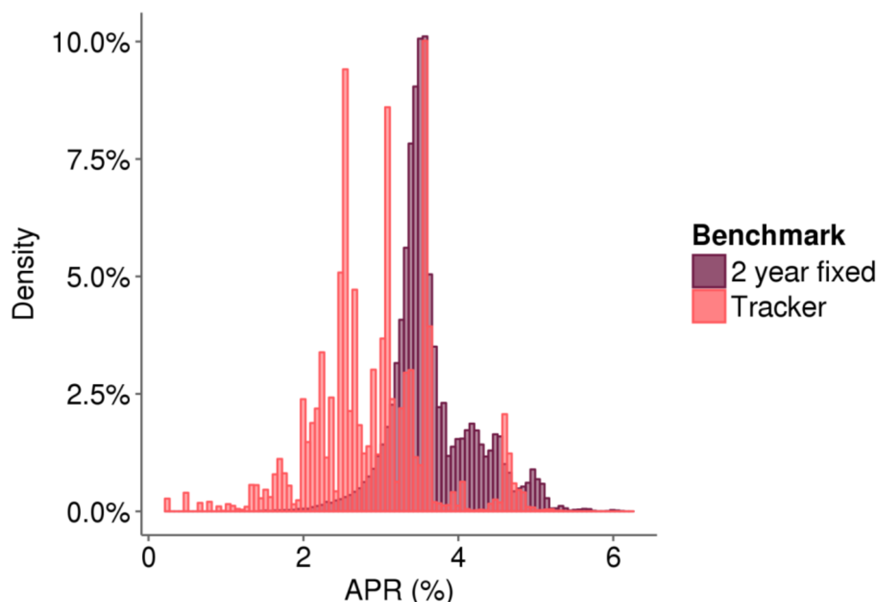
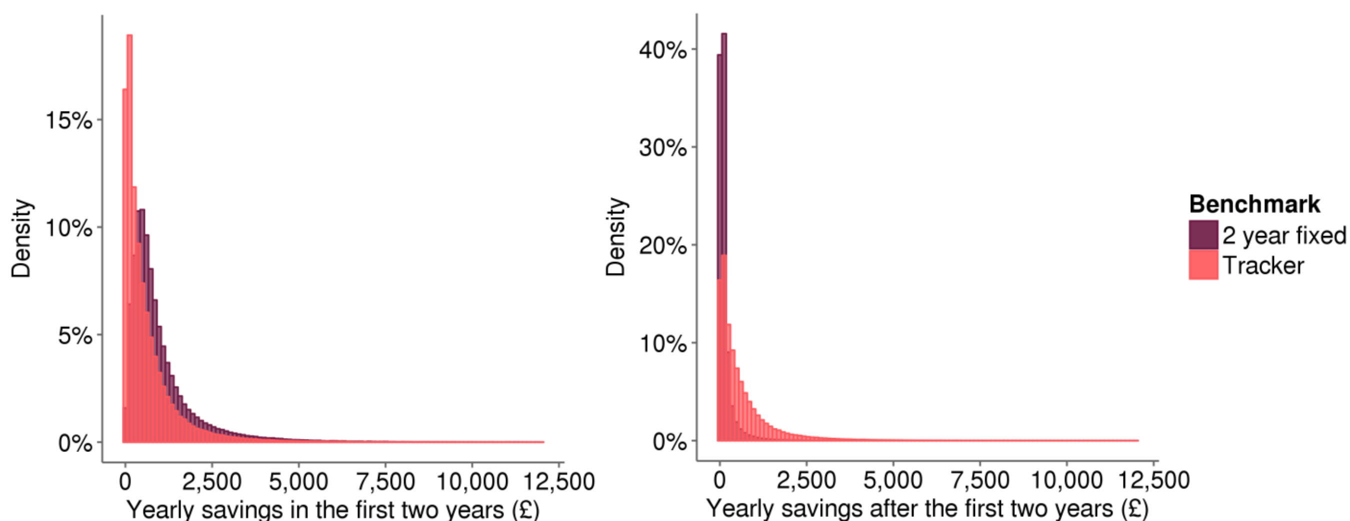


Figure 6.9: 2-year-fixed benchmark vs tracker benchmark: Annual savings distribution in the first 2 years, and after the first 2 years



Validation: switching twice

53. As described above, the benchmark scenario describes a consumer switching only once, and then moving to the reversion rate, rather than switching every time the deal expires. As a result, the benchmark identifies the lower bound number of inactive customers, as there are potentially more consumers that would benefit if they switched more than once.

54. To validate our assumptions we compute an alternative APR measure that considers 2 consecutive switches to the same product. As expected, for a portion of

[25] Source: FCA analysis based on PSD007

consumers, while one switch would not be beneficial, two consecutive switches would be.

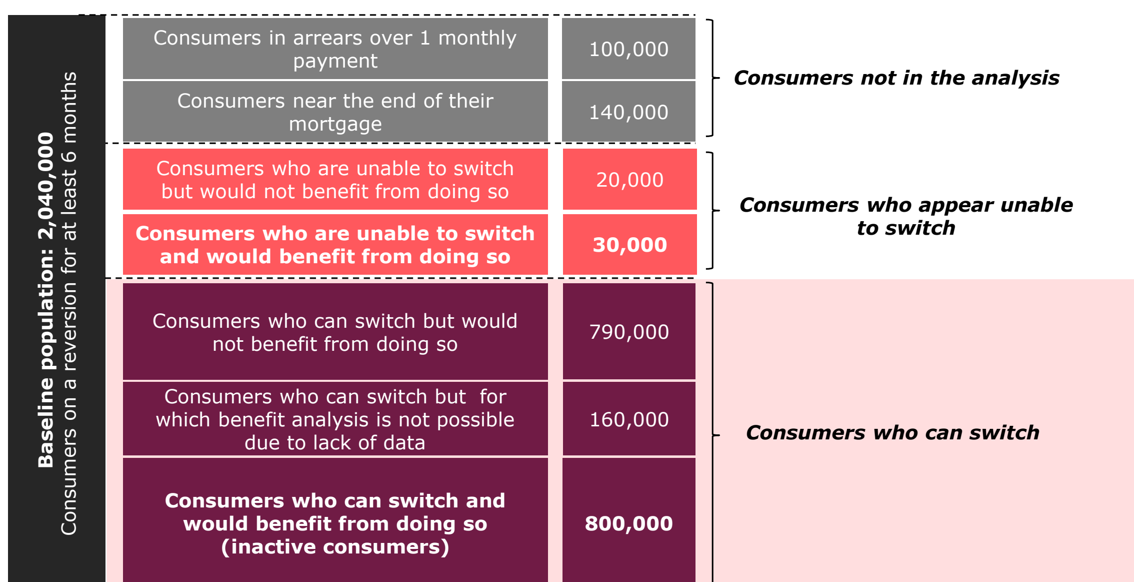
Results and conclusion

55. We estimate that, out of the 1.75 million consumers remaining in our baseline population that appear able to switch, around 800,000 are inactive. That is, it appears they would benefit from a switch but they have not engaged with the market. These consumers are potentially experiencing harm.

56. We estimate that if inactive consumers had switched in June 2016 they could have reduced their APR by 0.5 percentage points on average. In particular, by comparing their payments to the payments under a 2-year fixed benchmark product, we note that they could have saved on average £1,000 per year during the 2 years of the incentivised period of the benchmark product, and around £100 a year in the following years until the end of the mortgage term. This would increase further if the consumer switched again at the end of the introductory deal period of the new product.

57. We find that 790,000 consumers would not benefit from switching. We could not conduct the analysis for 160,000 mortgages due to missing data in PSD001 and PSD007.

Figure 6.10: Switching analysis – consumers who can switch[26]



Consumers of mortgages with firms not authorised to lend

58. In addition to the accounts held by lenders currently active in the market, there are a significant number of mortgages owned by firms that are not authorised for lending. In most cases, these accounts were purchased as part of a portfolio (closed book) sold by the originating lender.

59. We also carry out a high-level analysis of mortgage books now owned by firms that are not currently authorised to lend, to obtain a high-level estimate of the number of accounts that would benefit from switching but who may be unable to switch.

[26] Source: analysis based on PSD007 data. This analysis covers regulated lenders only. Figures are rounded to the nearest 10,000.

Data sources

60. Our analysis of consumers not with FCA-authorised firms uses portfolio level data collected by the FCA in March 2016, together with PSD007 submissions from June 2017.

Estimating which consumers in closed books of firms not authorised by the FCA could benefit from switching

61. The frontier analysis relies heavily on lenders' regulatory returns. However, only firms within our regulatory perimeter are required to submit this information. Since some of the owners of closed books are outside the regulatory perimeter, they are not required to report data on the performance of these accounts. These mortgages are therefore additional to those included in the analysis of consumers of mortgages with FCA-authorised firms (above).

62. We have therefore sought to estimate an approximate population of consumers in closed books held by firms not authorised for lending who might benefit from switching, but may be unable to do so.

63. To do so, we primarily used portfolio level data on accounts on closed books collected by the FCA as of 4th March 2016. This dataset contains the following information on a large number of closed books held by firms not authorised for lending. For a given portfolio it sets out:
    - total number of accounts
    - total value of accounts
    - average rate of interest paid
    - number of accounts in arrears
    - number of first- and second-charge loans
    - beneficial owner and third party administrator

64. For one large closed book not included in the aggregated dataset, we used account level information submitted to the FCA in June 2017. We aggregated these data in portfolios by type of interest rate paid and collated it with the already aggregated portfolio level data. The dataset obtained includes around 260,000 accounts across 165 portfolios.

65. Since the information was available only at portfolio level, our estimate of the population of consumers within these closed books, and the extent to which they may be unable to switch but may benefit from it, is considerably less precise than the estimate for mortgages with authorised firms presented earlier in this Annex.

66. We obtain the high-level estimate in the following way:
    - eliminate entire portfolios where the proportion of second-charge accounts exceeded 95%
    - eliminate entire portfolios where the average interest rate was equal or below 3.69%, to control for those likely to have consumers on low legacy interest rates, and
    - subtract the number of accounts in arrears from the remaining total[27]

[27] The portfolio-level dataset does not distinguish between first- and second-charge loans in its estimate of the number of accounts in arrears. When available, we used the share of first-charge mortgages sourced from PSD007 to estimate the number of first-charge accounts in arrears. Arrears are measured as equal to or greater than 1.5% of the outstanding balance.

67. We estimate that of the 260,000 first-charge accounts in these closed books, roughly 8% or 20,000 are in arrears. Approximately 120,000 are in portfolios with an average rate greater than a benchmark rate of 3.69% and would, on this basis, benefit from switching but may be unable to do so. Some of these consumers may be able to switch to a new lender but may not have done so for example, because they are near the end of their mortgage. Others may be inactive (see our analysis of consumers who can switch but do not).

68. There are several caveats to this analysis of mortgage books owned by firms that are not authorised for lending. In particular:

- it may overestimate the population of consumers who would benefit from switching and may be unable to switch if:
  - the portfolios include a large number of second-charge loans[28]
  - the average interest rate of portfolios with a high proportion of second-charge loans is skewed upwards, increasing the likelihood that they are identified as consumers who would benefit from switching to a new deal
- conversely, it may underestimate the population of consumers who would benefit from switching but may be unable to switch. This is because portfolios may have been excluded if their beneficial owner is a regulated firm, since these firms are obliged to submit this data as part of their regulatory returns so should already be included in the frontier analysis. We have been unable to reconcile this in all cases, and therefore may have eliminated accounts which have not been reported as part of firms' regulatory returns
- more generally, the estimates may be imprecise because:
  - most of the figures are as reported to us on 4th March 2016, 3 months before the assumptions used to conduct the frontier analysis on the wider mortgage population. We are aware of additional portfolios having been sold since this data was collected
  - we do not observe personal characteristics of account holders. Therefore, we cannot estimate the number of consumers that may be unable to switch. Some consumers may be inactive or rationally choosing not to switch
  - we do not observe the rate paid by each account holder. We use the average rate by portfolio to assess whether all the accounts in a certain portfolio would benefit from switching. While rates in these portfolios are likely to be concentrated, it is possible that using average rate by portfolio misrepresents the number of consumers in these portfolios who are unable to switch but would benefit from doing so

Sensitivity: impact of changes in the 3.69% benefit from switching benchmark threshold

69. As mentioned above, the high-level estimate of consumers who may be unable to switch and who experience harm in the portfolios owned by firms not authorised for lending is based on portfolios' average rates. We have therefore assessed the sensitivity of the estimates to changes to the benchmark rate used to assess benefit from switching.

70. Figure 6.11 shows the distribution of the average portfolio rates, weighted by the size of the portfolio (net of arrears). The blue line is the 3.69% threshold, so that the consumers on the right hand side of the line are the 120,000 consumers who we

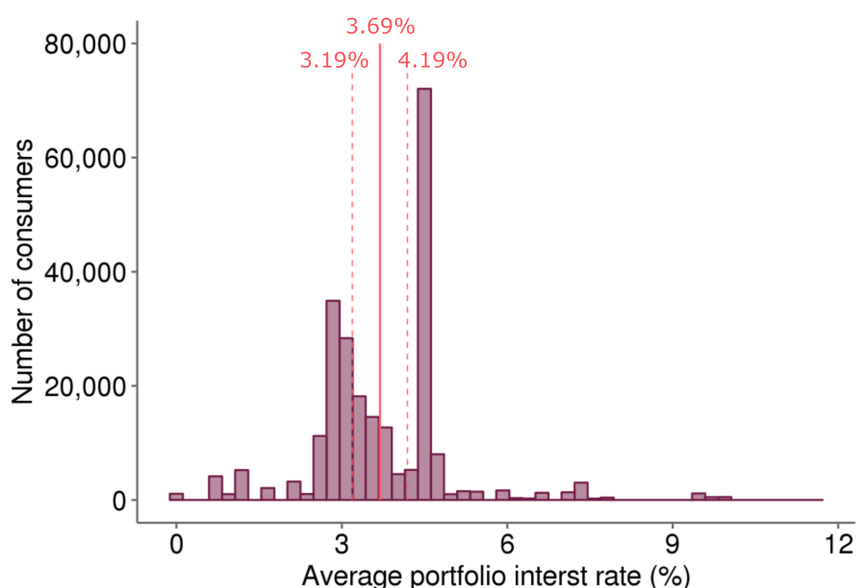
[28] Potentially in the region of tens of thousands

estimate would benefit from switching. The dotted lines represent 50 basis points variations to the 3.69% threshold. As indicated, the number of consumers that may be unable to switch and who would incur harm as a result would:

- increase by 30,000 to 150,000 if the benchmark rate was 50 basis points lower at 3.19%, and
- fall by 20,000 to 100,000 if the benchmark rate was 50 basis points higher at 4.19%

71. The figure also shows that over 50% of the consumers are in portfolios whose average rate is between 2.00% and 4.00%, and that around 23% of consumers are paying an average portfolio rate of 4.52%.

Figure 6.11: Distribution of average portfolio interest rate for mortgages in books owned by firms not authorised for lending[29]



Validation: the intermediary perspective on the extent to which consumers may be unable to switch

72. To complement our analysis of customers unable to switch, we also undertook a survey with 6 intermediary firms. The survey was designed to collate quantitative and qualitative insight on the flow of consumer enquiries that intermediaries dealt with over a given period.

73. The survey was in the field for a 3-week period during October 2017. We asked individual advisers at the intermediary firms in our sample to complete a questionnaire for all relevant enquiries for which an outcome was clear. This covered a range of scenarios, including:

- a recommendation being made,
- a decision-in-principle obtained or declined, or
- no recommendation being made because the adviser determined they were unable to place the business

74. A relevant enquiry included single or joint borrowers looking to switch to obtain a new deal (new product or rate) from either their existing, or a new, lender. Consumers needed to meet the following criteria:

[29] Source: FCA analysis based on data request to unregulated firms and PSD007

(i) have an existing first-charge residential mortgage

(ii) not looking to move home, and

(iii) not seeking to borrow any additional funds (or make any other material changes to the terms of the mortgage).

This was to ensure that any consumers we identified as facing limited choices aligned with the definition of consumers who may be unable to switch used elsewhere in the analysis.

75. Advisers were asked to provide the following information on each eligible customer:

- **Background information** – including their current lender, age and region
- **Recommendation** – whether they recommended that they switch to a new lender, switch to a new deal with their current lender, or provided no recommendation
- **Reasons for recommendation** – whether the recommendation was given simply because the deal was suitable, or whether there were any particular constraints which limited the consumer's choice set
- **Additional information on consumers who appear unable to switch** – if the consumer faced choice constraints, how the adviser inferred this (either based on a lender having rejected the applicant, or based on the adviser's perception), and the consumer's characteristics which the adviser believed impacted their eligibility for certain products
- Most questions were presented in a multiple choice format, albeit with several free text boxes for the respondents to provide additional qualitative information if they wished to do so.

76. We obtained a sample of 348 responses. The results are broadly aligned with our data analysis of the number of consumers who cannot switch and provides insight into the extent to which their choices may be constrained, and the possible reasons for this:[30]

- only a very small number (2%) of existing borrowers, who would benefit from switching, were unable to switch either to a new lender or with their existing lender
- a further 14% were unable to switch to a new lender but were able to switch with their existing lender. Of the total number of cases where consumers' choices were considered to be constrained in this way:
  - the adviser recommended an internal switch in 3% of cases where an application, or a decision-in-principle, was declined by a new lender
  - the adviser recommended an internal switch in 11% of cases because they judged the consumer's circumstances to be such that they would not meet the lending criteria of a new lender

77. The most common reasons cited in intermediaries' responses relate to consumers' employment status, their level/security of income, or interest-only mortgages.

78. We recognise the following limitations with the survey results:

- **Methodological approach and representativeness** – the approach may not have delivered a sample that is representative of the population of consumers who consider themselves unable to switch. This is because it does not include

[30] 7 cases couldn't switch; 9 cases were rejected for an external switch; advisers thought the borrowers would not meet the lending criteria of a new lender in another 38 cases.

those who do not seek help from an intermediary. Therefore, although it meets the criteria for statistical significance, the sample may be biased. In addition, it only includes consumers who sought advice from an intermediary in a specific time period. We are not aware of any particular reasons which should generate a strong bias, but we cannot rule out this possibility

- **Objectivity –** the survey relies upon individual advisers making submissions to us which are objective and accurate. There is a risk that individual advisers may not have submitted information on all eligible cases, which could skew the overall results. We have no reason to believe this is the case. We also acknowledge that the survey reports intermediaries' perception of consumers' circumstances, which are necessarily, in some cases, subjective
- We have taken these factors into account when reporting on the overall results.

Sensitivity of the estimates of consumers who appear unable to switch but would benefit from doing so

79. The consumers who appear unable to switch but would benefit from doing so appear primarily to be those affected by historic lending practices and subsequent market changes which led to a tightening of lending criteria - 96% took out their mortgage or last switched to a new lender before 2009. Therefore, we would not expect their numbers to grow dramatically unless there are further shocks to the market which result in further tightening of lenders' risk appetite.

80. However, our estimate of consumers who cannot switch is sensitive to assumptions about lenders' behaviour and their lending policies, as well as changes in the market, such as property prices, product innovation, regulatory changes, and the repayment of existing mortgages. The number of consumers who cannot switch:

- **would increase significantly if lenders that currently accept switches from existing borrowers, without assessing affordability and/or credit risk, stopped doing so**. Currently many consumers with active lenders are able to obtain a new deal from their current lender, even if they do not meet the lender's current lending criteria for new business (for example where they have a high-LTV interest-only mortgage). We would consider these consumers unable to switch if their existing lender decided to stop offering these switches to existing borrowers

- **would increase if consumers were excluded from the market on the basis of characteristics which we cannot observe from the data**. For example, according to our analysis, there are consumers on reversion rate in H2 2016 who are in regulated closed books and we assess could have obtained a new deal from other lenders in the market. It is possible, however that these consumers have some unobservable characteristics that result in their exclusion from the market, despite our analysis suggesting otherwise

- **would increase if consumers were excluded from the market on the basis of characteristics that we have not accounted for**. For example if consumers with niche lending requirements, such as those who have mortgages linked with shared ownership or Help-to Buy schemes, face additional restrictions to switching lender or are not offered a new deal by their current lender

- **could increase if active lenders were to sell portfolios of mortgages to firms not authorised to conduct mortgage business.** This is because these firms do not lend and do not offer existing consumers a new deal.

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