CONSUMER FINANCIAL PROTECTION BUREAU | MAY 2019

QUARTERLY CONSUMER CREDIT TRENDS

Timing of Applications for Consumer Credit

Consumer Financial
Protection Bureau

This is part of a series of quarterly reports on consumer credit trends produced by the Consumer Financial Protection Bureau using a longitudinal, nationally-representative sample of approximately five million de-identified credit records from one of the three nationwide consumer reporting agencies.[*]

[*] Report prepared by Anita Chen and Ryan Sandler in the Office of Research.

The ability of consumers to access various types of credit can be affected by their credit scores, as many lenders require a minimum credit score before credit will be extended. Given the critical role that credit scores play in determining access to credit, there has been a push in recent years to make credit scores more available to consumers and to educate them on how credit scores are used and calculated.[1] This information may be particularly useful for consumers whose scores change over time. While some consumers' credit scores are relatively stable, many others experience large increases or decreases in their credit scores over time. Whether these large changes are from consumers establishing a credit history or from falling into and recovering from financial difficulties, as consumers' financial circumstances evolve, both their desire to seek more credit and creditors' willingness to lend may change as well. As will be discussed later in this report, this may be the case if consumers are aware of their current credit score.

This *Quarterly Consumer Credit Trends* report uses the Bureau's consumer credit panel (CCP) to examine when consumers apply for new credit over the evolution of their own credit scores. For most forms of credit, when a consumer submits an application the lender will seek information about the consumer from a nationwide credit reporting agency. This is referred to as a "hard inquiry."[2] This report focuses on hard inquiries for general purpose credit cards made by consumers whose credit scores showed large increases or decreases between 2009 and 2017.[3] The data show that consumers are more likely to apply for a general purpose credit card both as their credit score approaches the maximum and minimum scores observed for the borrower over the period.[4] In addition, there are sharp changes in the rate of credit card applications, as measured by hard inquiries, in the quarters around consumers' minimum and maximum credit scores. The number of credit card inquiries per person decreases by 48 percent between the quarter immediately before consumers' minimum credit score and the quarter immediately after. On the other hand, the number of credit card inquiries per person peaks as it approaches the consumers' maximum credit score and then declines. These patterns are more pronounced

[1] For instance, in 2014, the Consumer Financial Protection Bureau sent letters to top credit card companies urging them to make credit reports freely and more widely available and to include educational information with the scores. *See* https://www.consumerfinance.gov/about-us/newsroom/cfpb-calls-on-top-credit-card-companies-to-make-credit-scores-available-to-consumers/ for more information. For consumer education material from the CFPB on credit reports and scores, see https://www.consumerfinance.gov/consumer-tools/credit-reports-and-scores/.

[2] Throughout this report, the term "inquiry" refers to hard inquiries.

[3] A general purpose credit card is a credit card that can be used across a network of unrelated merchants, such as a Visa, MasterCard, American Express, or Discover credit card. These are distinguished from private label cards, which are usable only at a single merchant or set of affiliated merchants.

[4] Although most hard inquiries for general purpose credit cards result from applications for a new account, hard inquiries can also be generated by applications for a credit limit increase on an existing card. The CCP inquiry data do not indicate whether a given inquiry is for a new account or an increased limit, and we do not distinguish between these two types of inquiries for purposes of this report. From the available data, it appears that less than five percent of the credit card inquiries reported in the CCP are for credit-line increases on an existing card.

for consumers whose maximum or minimum credit scores are relatively low. The report closes with a discussion of some potential explanations for these patterns.

This report uses CCP quarterly archives from 2009 to 2017, covering 36 quarters.[5] All consumers who have a credit score available for at least 29 quarters in the CCP[6] and whose maximum and minimum credit scores are at least 100 points apart are included in the analysis.[7] Importantly, although the sample includes some consumers from the inception of their credit report, for many consumers in the sample their credit history predates the start of the period.

Table 1 summarizes the key features of the sample. The first two columns report statistics for the consumers who meet the sample criteria described above, classified by whether they reached their maximum or minimum credit score first over the period of analysis. For comparison, the final column reports the same statistics for consumers whose credits scores have a range of less than 100 points during the sample period and thus are not included in the main analysis.

TABLE 1: SUMMARY STATISTICS OF CONSUMERS WHOSE CREDIT SCORES CHANGED BY AT LEAST 100 POINTS BETWEEN 2009 AND 2017

	Max first	Min first	Range < 100
Total number of inquiries	4.2	6.0	2.5
Average credit score over sample period	653.0	664.0	763.7
Max credit score observed in sample	726.3	737.8	767.1
Min credit score observed in sample	557.5	578.1	705.0
Difference between min and max credit scores	168.7	159.8	62.2
Average time between min and max scores (quarters)	10.8	21.9	14.9
Age in 2009	42.7	41.8	51.3
Observations (consumers)	2,746,891	1,393,793	2,355,834

Note: Sample in first two columns restricted to observations with at least 29 quarters of credit scores and with a 100-point or greater difference between their min and max score.

[5] This report uses the inquiry type definitions used for the Bureau's Consumer Credit Trends Inquiry index and Credit Tightness index. The earliest year available for these definitions was 2009, and the last full year for which CCP data was available when analysis for this report began was 2017.

[6] The requirement to have at least 29 quarters of credit scores is intended to focus on consumers whose scores change because of potential changes in their financial circumstances, rather than consumers whose scores vary sharply as a result of having a thin, largely unscorable credit file. Only eight percent of consumers with a score range of 100 points are dropped due to having fewer than 29 quarters of non-missing credit scores. Analysis without this requirement results in similar outcomes to the findings shown throughout this report.

[7] This report uses one of the commercially available credit scores that is included in the CCP. A 100 point difference between the maximum and minimum scores from 2009 to 2017 is roughly equal to the median of the distribution of all such credit score ranges in the CCP. That is, roughly half of all consumers with 29 quarters of non-missing credit scores had a range of at least 100 points between 2009 and 2017.

Notably, almost two-thirds of the sample experienced at least a 100-point swing in their credit score between 2009 and 2017. Among consumers with these large credit score changes, about twice as many consumers experienced their maximum score before their minimum score.[8] However, consumers with large credit score swings look similar regardless of whether the maximum or minimum score is observed first. Notably, average scores are similar, as are the ranges between maximum and minimum scores. Consumers who reached their minimum first tend to be slightly younger. It takes significantly longer for scores to peak than bottom out—on average it takes more than five years for consumers to go from their minimum score to their maximum score, and less than three years to go from their maximum to their minimum. Consumers with large credit score swings also look notably different from consumers without large credit score swings. Consumers with large changes have considerably lower scores on average and are younger than consumers whose credit scores are more stable.

The remainder of this report focuses on the rate of general-purpose credit card inquiries in the quarters before and after consumers' maximum and minimum credit scores. The remaining analysis does not distinguish between consumers who reach their maximum first versus their minimum first, as Table 1 shows these groups are largely very similar. The patterns in the rates of inquiries examined below are also similar for consumers who reached their maximum first and those who reached their minimum first.

Figure 1 plots the average number of credit card inquiries per person by the number of quarters before or after each consumer's maximum credit score. As most consumers do not apply for a new credit card or credit limit increase every quarter, the average number of inquiries per person primarily captures the likelihood that consumers apply for credit at all, but also adjusts for the number of inquiries per applicant.[9] Note that not all consumers are included in each point in the graph—for example, a consumer who achieves their maximum score in the same

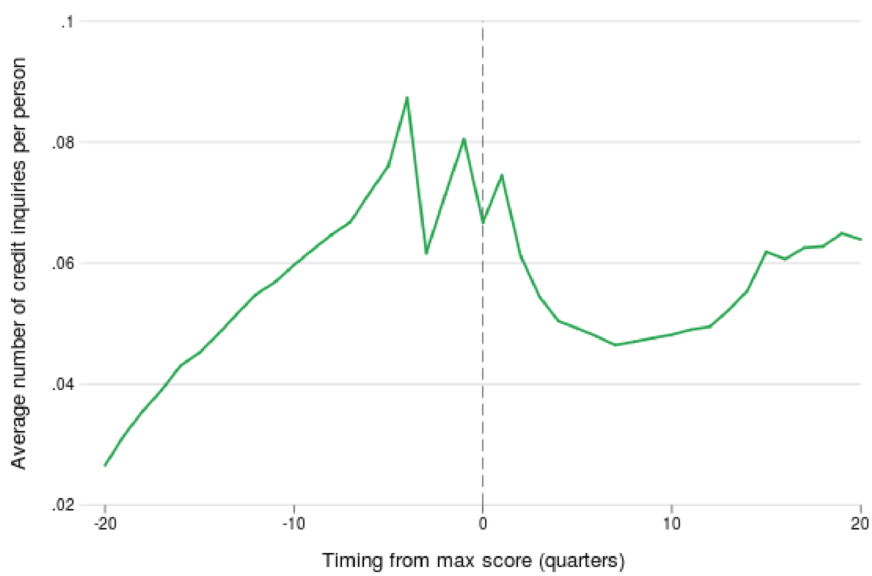
[8] Consumers who experience their minimum credit score first may still have had their credit score fall substantially over the sample period, and vice versa for consumers who experience their maximum score first. For instance, consider a consumer who had an initial credit score of 650 in 2009, a minimum of 500 in 2011 and a maximum of 700 in 2015. We would classify this consumer as "minimum first", but their credit score clearly fell substantially. Similarly, a consumer who had an initial credit score of 600 in 2009, a maximum of 700 in 2015, and a minimum score of 550 in 2017 would be classified as maximum first but also experienced a substantial rise in credit score.

[9] The patterns in this and other figures look very similar if the variable on the vertical axis is the proportion of consumers with at least one inquiry, rather than the number of inquiries per person. In any given quarter, about 15 percent of consumers in the sample have one or more general-purpose credit card inquiry. Note, however, that this undercounts the total number of inquiries that consumers are making—necessarily we only count inquiries made to the nationwide credit reporting agency that supplies the Bureau with the CCP data. Most credit card issuers do not make a hard inquiry with all three nationwide credit reporting agencies. For instance, the CCP has more new credit card accounts than hard inquiries for new credit card accounts—despite the fact that not all credit card inquiries result in a new credit card account. *See* Charles Romeo and Ryan Sandler, "The Effect of Debt Collection Laws on Access to Credit," (Consumer Financial Protection Bureau Office of Research Working Paper No. 2018-01, 2018).

quarter that they appear in the CCP for the first time will not be included in the calculation for the periods leading up to the maximum.

Figure 1 shows that consumers in the sample have more credit card inquiries over time as they approach their maximum credit score.[10] However, approximately four quarters before consumers in our sample reach their maximum credit score, the rate of credit card inquiries increases sharply and reaches a peak of 0.09 inquiries per person. After this increase, the rate of inquiries fluctuates between 0.06 and 0.08 inquiries per person over the next few quarters. As shown below in Figure 3, these fluctuations seem to be due to the fact that inquiries from consumers with relatively low maximum scores peak later than inquiries from consumers with relatively high maximum scores. After consumers reach their maximum score, the rate of inquiries declines quickly, starting in the second quarter after the maximum, before leveling out at around 0.05 inquires per person. This suggests that consumers are relatively less likely to apply for a new credit card or an increased credit limit after they reach their maximum score.

FIGURE 1: AVERAGE QUARTERLY CREDIT CARD INQUIRIES PER PERSON, CONSUMERS WITH LARGE CREDIT SCORE CHANGES, BY QUARTERS FROM MAXIMUM CREDIT SCORE, 2009-2017



[10] Note that there was a general upward trend in the rate of credit card inquiries over the sample period—this is evident from the Bureau's Consumer Credit Trends Inquiry index. (*See* https://www.consumerfinance.gov/data-research/consumer-credit-trends/credit-cards/inquiry-activity/). Thus, part of the pre-maximum rise in credit card inquiries in our sample of consumers reflects that broader trend. However, an upward trend still appears if we adjust the figure to remove the overall trend in inquiries during the sample period. Also note that although the increase in inquiries per person shows a steady trend, the underlying credit score may not show the same trend. Consumers' credit scores may rise and fall from quarter to quarter as they approach their maximum score.

FIGURE 2: AVERAGE QUARTERLY CREDIT CARD INQUIRIES PER PERSON, CONSUMERS WITH LARGE CREDIT SCORE CHANGES, BY QUARTERS FROM MINIMUM CREDIT SCORE, 2009-2017

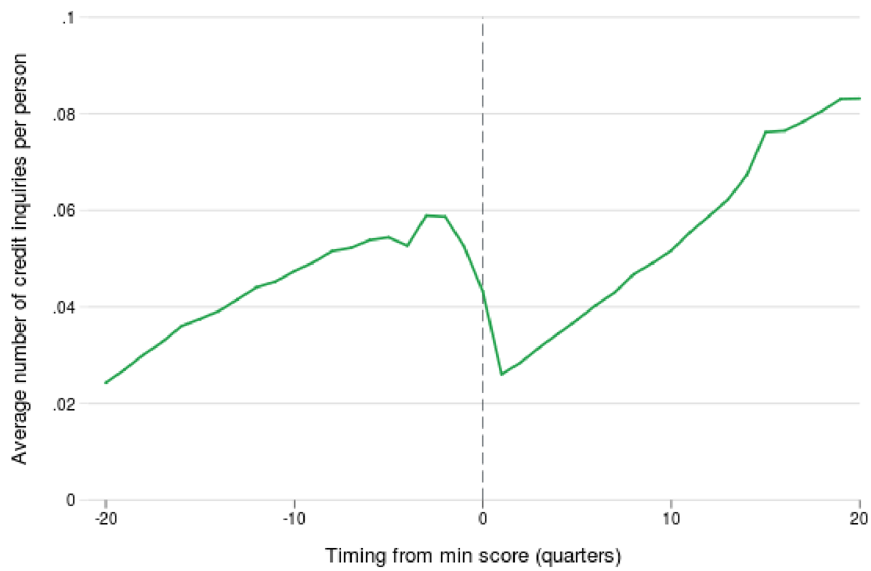


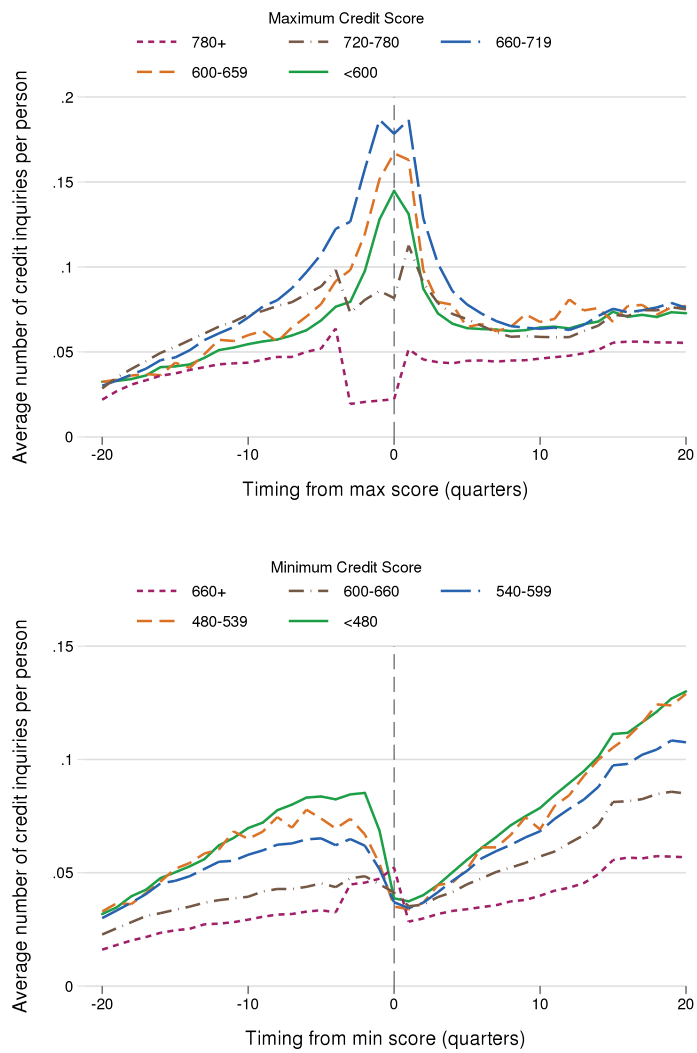
Figure 2 plots the rate of credit card inquiries per person in the quarters immediately before and after each consumer's minimum credit score. Once again there is a general upward trend in the average number of credit card inquiries per person. As with the maximum score, there is a sharp change in the rate of credit card inquiries around the time that consumers reach their minimum credit score.

Credit card inquiries per person peak about two quarters before consumers' minimum credit scores, then fall by roughly half before resuming a steady upward trend. This sharp drop in credit card inquiries is not caused by consumers who experience a rapid drop in credit score immediately before their minimum score, nor is it caused by consumers who have filed for bankruptcy.[11]

Together, Figures 1 and 2 suggest that something happens when consumers approach their maximum and minimum credit scores, which leads to a sharp change in the likelihood of applying for a new credit card or credit limit increase. Figure 3 provides some additional insight into where this pattern comes from by breaking consumers out into groups based on the levels of their maximum and minimum credit scores.

[11] In analysis not shown here, we found that the same general upward trend and sharp drop around the minimum credit score appears for consumers with and without large (i.e., greater than 100 points) credit score declines in the quarters immediately preceding their minimum credit score, and for consumers who have and have not filed for bankruptcy in the quarters immediately preceding their minimum credit score.

FIGURE 3: AVERAGE CREDIT CARD INQUIRIES AROUND CONSUMERS' MAXIMUM AND MINIMUM CREDIT SCORE, BY THE LEVEL OF THE MAXIMUM AND MINIMUM.



The top panel of Figure 3 shows inquiries per person before and after consumers' maximum credit score, broken out by bands of the maximum credit score.[12] Consumers with credit scores below 720 points experience an increase in credit card inquiries around their maximum score. The increase and subsequent decline is similar for consumers in each maximum-score band below 720. On the other hand, consumers in the two highest credit score groups have generally

[12] The credit score groups shown in Figure 3 are based on the five credit score ranges used for the Bureau's Consumer Credit Trends series. *See* https://www.consumerfinance.gov/data-research/consumer-credit-trends/credit-cards/borrower-risk-profiles/. To accommodate the wide credit score ranges in our sample, we use slightly wider bands for low credit score consumers, and added an additional band for high credit score consumers in the top panel.

stable inquiry rates regardless of timing from their maximum and experience small declines in inquiry rates as they approach their maximum scores.

The bottom panel of Figure 3 shows inquiries per person before and after consumers' minimum credit scores, also broken out by bands of the minimum credit score. Around consumers' minimum scores, there is a decrease in credit card inquiries for each credit score group. This decline and the subsequent recovery becomes increasingly dramatic across the different credit score groups, with the sharpest decline occurring for consumers with the lowest minimum scores. Unlike with the maximum scores, consumers in the two highest score groups have fairly similar patterns of inquiry rates, albeit more muted than for lower credit score groups.

Finally, we turn to a discussion of what might lead to the observed patterns in the rate of credit card inquiries, although a full accounting of the underlying mechanism is outside the scope of this report. One possible explanation for the sharp changes in inquiries is that consumers are aware of their credit scores. There has been a general push in recent years to provide credit score information to consumers,[13] with several financial institutions, financial management companies, and nonprofit counselors providing their customers or clients with free access to credit scores.[14] If consumers are aware of their changing scores, they may be more likely to apply for a new credit card once their scores have risen high enough to qualify for a card with a lower Annual Percentage Rate (APR) and more likely to stop applying once their scores have sunk too low to have a realistic chance of being approved for a new card. This might explain why the inquiry rates for borrowers with relatively high credit scores tend to be mostly constant over time; such consumers' scores are high enough that they do not need to strategically time their credit card applications.

In addition, it is possible that inquiries themselves and any new accounts resulting from those inquiries lead to peaks and troughs in credit scores. Commercially available credit scores generally have a small penalty for making hard inquiries,[15] as well as for opening new

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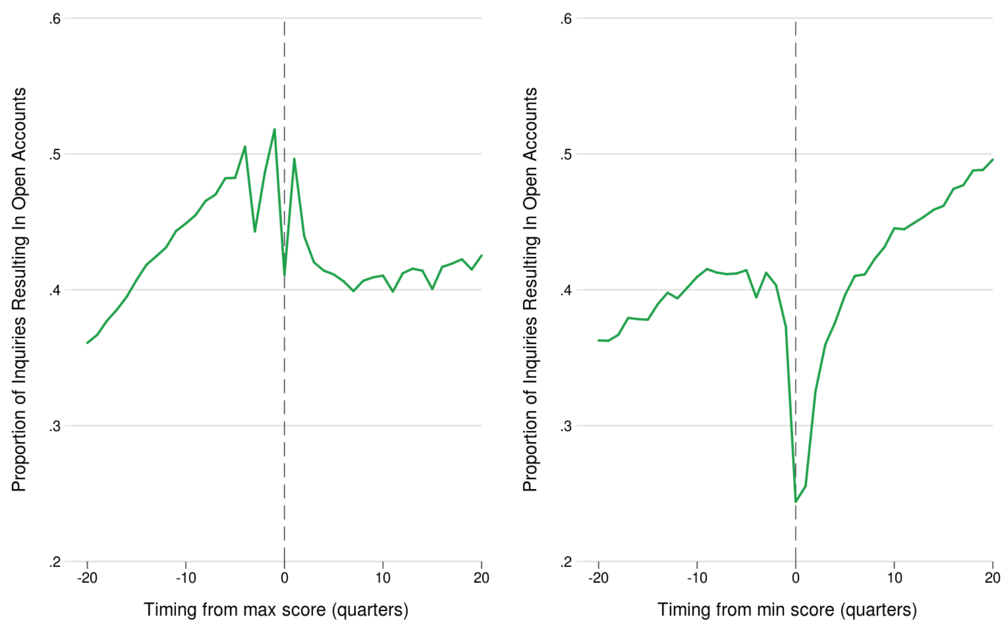
[13] In 2014, the Bureau sent letters to top credit card companies urging them to make credit reports freely and more widely available. The general patterns shown in figures 1, 2 and 3 hold when the sample is limited to consumers who experienced their minimum or maximum score prior to 2014, but the peaks and troughs are notably more subdued, consistent with credit score availability contributing to the patterns in the figures. See https://www.consumerfinance.gov/about-us/newsroom/cfpb-calls-on-top-credit-card-companies-to-make-credit-scores-available-to-consumers/ for more information.

[14] *See* https://www.consumerfinance.gov/documents/6518/bcfp_find-free-access-to-credit-score_05-2018.pdf for a list of credit card issuers that provide customers with free access to credit scores.

[15] Some versions of commercially available credit scores do not incorporate hard inquiries received immediately before the score is calculated, so as not to count consumers who are rate shopping as if they are applying for multiple accounts. *See* for instance https://thescore.vantagescore.com/article/218/no-4-series-inquiry-credit-inquiries or https://www.myfico.com/credit-education/credit-reports/credit-checks-and-inquiries. This will not generally affect

accounts.[16] If a consumer's credit score rises over a period of time, applying for and opening a new credit card might cause the credit score to fall—leading to the maximum we observe in the data. Conversely, if a consumer's credit score is falling over a period of time, in part due to credit inquiries, having fewer credit inquiries might lead to the consumer's credit score increasing from their minimum. This explanation can be tested to an extent by examining the success rate of credit card inquiries, that is, the proportion that result in newly opened credit card accounts.[17] If changes in inquiries are leading to peaks and troughs in credit scores, we would expect to see that the inquiry success rate tracks the patterns in the number of inquiries.

FIGURE 4: INQUIRIES SUCCESS RATES (PROPORTION RESULTING IN OPEN ACCOUNTS), RELATIVE TO MAXIMUM AND MINIMUM SCORES



Note: The y-axis measures credit card accounts opened within 14 days of the inquiry.

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our analysis, as a quarter is longer than the "left out" period usually employed in these scores. In addition, this procedure is not generally applied to credit card inquiries.

[16] Commercially available credit scores also typically have a penalty for high credit card utilization, but it is unclear how opening new accounts would affect utilization. If consumers immediately "maxed out" new cards, this would likely lead to credit score penalties, but if consumers did not use much of the available balance on a new card, average utilization could fall. In practice, consumers' credit card utilization tends to be constant over time, even as their credit limits change. *See* Scott L. Fulford and Scott Shuh, "Credit Card Utilization and Consumption over the Life Cycle and Business Cycle," (Consumer Financial Protection Bureau Office of Research Working Paper No. 2017-03).

[17] We define an inquiry to be successful if we observe a credit card account opening within 14 days of the inquiry. This is the same definition used for the Bureau's Consumer Credit Trends Credit tightness index. *See* https://www.consumerfinance.gov/data-research/consumer-credit-trends/credit-cards/inquiry-activity/.

Figure 4 shows the proportion of credit inquiries that result in open accounts over time, relative to consumers' minimum and maximum credit scores. The timing of the changes in success rate are consistent with the explanation that inquiries and new accounts lead to peaks and troughs in consumers' credit scores. The left panel of Figure 4 shows that the proportion of inquiries that are successful peaks around the quarter of the maximum score, while the right panel shows that this proportion begins a sharp decline in the quarter before the minimum score.

Lastly, marketing by credit card issuers may play an important role in the timing of credit card inquiries. Issuers often use credit scores among other factors to decide who receives pre-screened direct marketing for credit card offers.[18] As a result, it is possible that a consumer's score reaches a maximum or minimum, in part, due to the consumer's credit score crossing a threshold used by issuers for marketing and, consequently, the consumer starts or stops receiving credit card offers. For instance, if a consumer's credit score has been rising over time and becomes high enough for the consumer to receive credit card offers from one or more issuers, this may lead the consumer to submit credit card applications, thereby generating more hard inquiries, and thus reducing their credit score and setting a maximum score. Conversely, a consumer's credit score may be declining over time in part because they are responding to marketing offers, until their credit score becomes too low to receive any more offers, which in turn allows the consumer's credit score to rise and set a minimum score. The fact that the sharp changes around minimum and maximum scores are more pronounced for consumers with very low maximum and minimum credit scores would be consistent with this explanation—creditor marketing criteria are likely more clear-cut for this group, such that transitioning into or out of a deep-subprime credit score category would lead to a sharp change in the volume of credit card marketing a consumer receives.

This *Quarterly Consumer Credit Trends* report serves as a starting point for further research on the timing of applications for consumer credit. More analysis is needed to better understand what leads consumers to apply for credit, and how this varies as their credit scores evolve. In particular, more research is needed to determine how the recent increase in the availability of credit score information has influenced consumers' decisions of when and whether to apply for more credit.

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[18] Pre-screened offers are firm offers of credit extended by credit card companies to consumers whose credit histories meet the criteria selected by the card company. *See* https://www.consumerfinance.gov/ask-cfpb/what-is-a-prescreened-credit-card-offer-en-1/ for more details. In January 2019, the most recent month for which data is available, major credit card companies sent out around 318 million credit card offers by direct mail alone, which generated more than 1.5 million applications for general purpose credit cards. An even larger number of applications were prompted by pre-screened offers sent through digital channels. *See* Mintel Compremedia, *U.S. Credit Card Response Rates* (January 2019).