CONSUMER FINANCIAL PROTECTION BUREAU | APRIL 2023

# Data Point: Consumer Credit and the Removal of Medical Collections from Credit Reports

Consumer Financial Protection Bureau

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This is another in an occasional series of publications from the Consumer Financial Protection Bureau's Office of Research. These publications are intended to further the CFPB's objective of providing an evidence-based perspective on consumer financial markets, consumer behavior, and regulations to inform the public discourse. See 12 U.S.C. § 5493(d).[1]

[1] This report was prepared by Alyssa Brown and Eric Wilson.

# 1. Executive summary

The three nationwide consumer reporting companies (Equifax, Experian, and TransUnion) announced that they removed unpaid medical collections under $500 from consumer credit reports on April 11, 2023.[2] Medical debt is often not incurred voluntarily or with full knowledge of its terms of repayment. Past CFPB research has shown that medical collections are less predictive of credit risk than collections for other types of debt, but the extent to which furnished medical collections affect people's credit availability and outcomes remains an unanswered question.[3] Our analysis shows that the removal of all medical collections from a person's consumer credit report can significantly improve credit availability and outcomes.

This report estimates how the removal of certain medical collections from consumer credit reports may impact credit availability. Our analysis of a sample of final medical collection tradelines from 2012-2020 reveals the following:

1. We estimate that 22.8 million people will have at least one medical collection removed from their credit reports when all medical collections less than $500 are removed. This amounts to 73 percent of the population who had medical collections on their credit report in December 2022. Fifty percent of those with medical collections on their credit report will continue to have medical collections on their credit report and so may experience limited benefits from the change.

2. The average person experiences a 25-point increase in their credit score in the first quarter after their last medical collection is removed from their credit report, in our model. Individuals with medical collections under $500 experience an average increase of 21 points, compared to 32 points for people with medical collections over $500. Higher credit scores enable people to access credit at lower interest rates, and credit

[2] Business Wire, "Equifax, Experian, and TransUnion Remove Medical Debt Under $500 From U.S. Credit Reports," April 2023, https://www.businesswire.com/news/home/20230411005392/en/Equifax-Experian-and-TransUnion-Remove-Medical-Collections-Debt-Under-500-From-U.S.-Credit-Reports. See generally: Nathe, Lucas and Ryan Sandler, "Paid and Low-Balance Medical Collections on Consumer Credit Reports," Consumer Financial Protection Bureau Consumer Credit Trends, July 2022, https://www.consumerfinance.gov/data-research/research-reports/paid-and-low-balance-medical-collections-on-consumer-credit-reports.

[3] Brevoort, Kenneth P. and Michelle Kambara, "Medical Debt and Credit Scores," Consumer Financial Protection Bureau Office of Research, Data Point, May 2014, https://files.consumerfinance.gov/f/201405_cfpb_report_data-point_medical-debt-credit-scores.pdf

report information may also be considered in rental screenings and employment background checks.[4]

3. We find significant associations in our model between the removal of all medical collection tradelines and the amount of credit that individuals have available to them in revolving and installment accounts. Six quarters after the average person has their last medical collection tradeline removed from their credit report, their total amount of available revolving credit has increased by $1,028 and their total amount of available installment credit has increased by $4,123.[5] These changes both reflect three percent increases over their baseline amounts.

4. We see increases in first-lien mortgage inquiries in the first quarter after a medical collection tradeline is removed. We also see an initial increase in mortgage inquiry propensity in the last quarter in which a medical collection tradeline is reported. This is consistent with individuals learning that they have a medical collection lowering their credit score in the process of applying for a mortgage, working to remove the medical collection from their credit report, and then re-applying in the subsequent quarter after the medical collection tradeline is removed from their credit report. We believe that people seeking a first-lien mortgage may work to remove medical collections from their credit report as part of their process of applying for mortgage credit.

The findings in this report point toward the important effects that reducing reporting of medical collection on consumer reports may have on individuals.

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[4] Consumer Financial Protection Bureau, "Tenant Background Checks Market", November 2022, https://files.consumerfinance.gov/f/documents/cfpb_tenant-background-checks-market_report_2022-11.pdf ; Consumer Financial Protection Bureau, "I've been looking for a job. What do employers see when they do credit checks and background checks?" September 2020, https://www.consumerfinance.gov/ask-cfpb/ive-been-looking-for-a-job-what-do-employers-see-when-they-do-credit-checks-and-background-checks-en-1823/

[5] We define an individual's available revolving credit as the sum of their revolving accounts' credit limits, and we define an individual's available installment credit as the sum of their installment accounts' loan principals.

# 2. Introduction

Many people experience unexpected health shocks that affect their financial well-being as much as, or even more than, their physical health. Health events are often not planned for, and many households are unable to pay their medical bills and accrue debt as a result. Medical debt can increase the cost and reduce the availability of credit and can even reduce access to employment and housing.[6] Recognizing the unexpected circumstances that lead to medical collections debt, the three nationwide consumer reporting companies announced the removal of medical collections under $500 from consumer credit reports by the end of March 2023, along with two other changes to their medical debt collection reporting.[7] These two other changes were implemented in July 2022: paid medical collections were removed from credit reports, and the delay in medical collection reporting was extended from sixth months after the first delinquency to one year after the first delinquency. The national consumer reporting companies announced that medical collections under $500 were removed from credit reports in April 2023.[8] Previous CFPB research detailed the characteristics of individuals who are likely to be affected by these reforms and found that, after unpaid medical collections under $500 are removed from credit reports, about half of people with medical collections will have all their medical collections removed from their credit reports, while about half will continue to have medical collections on their credit reports.[9]

We shed light on the potential effects of the reporting changes by studying medical collections that were removed from credit reports between 2012 and 2020. We investigate how these removals are associated with changes in credit score and credit availability. The causes of medical collection tradeline removals are varied and not included on credit reports, making it

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[6] Consumer Financial Protection Bureau, "I've been looking for a job. What do employers see when they do credit checks and background checks?" September 2020, https://www.consumerfinance.gov/ask-cfpb/ive-been-looking-for-a-job-what-do-employers-see-when-they-do-credit-checks-and-background-checks-en-1823/ ; Consumer Financial Protection Bureau, "Tenant Background Checks Market", November 2022, https://files.consumerfinance.gov/f/documents/cfpb_tenant-background-checks-market_report_2022-11.pdf.

[7] TransUnion, "Equifax, Experian, and TransUnion Support U.S. Consumers With Changes to Medical Collection Debt Reporting", 2022, https://newsroom.transunion.com/equifax-experian-and-transunion-support-us-consumers-with-changes-to-medical-collection-debt-reporting/.

[8] Business Wire, "Equifax, Experian, and TransUnion Remove Medical Debt Under $500 From U.S. Credit Reports," April 2023, https://www.businesswire.com/news/home/20230411005392/en/Equifax-Experian-and-TransUnion-Remove-Medical-Collections-Debt-Under-500-From-U.S.-Credit-Reports.

[9] Nathe, Lucas and Ryan Sandler, "Paid and Low-Balance Medical Collections on Consumer Credit Reports," Consumer Financial Protection Bureau Consumer Credit Trends, July 2022, https://www.consumerfinance.gov/data-research/research-reports/paid-and-low-balance-medical-collections-on-consumer-credit-reports.

difficult to determine exactly how the removal of medical collections under $500 from credit reports will affect measures of credit availability. Medical collections may have been removed from credit reports due to unobservable factors that also affected consumers' financial well-being. We would not want to mistakenly attribute the effects of these other variables to the medical collection removal, and so we do not interpret our findings as causal evidence of how consumer credit availability will necessarily change when medical collections under $500 are removed from credit reports. Instead, we conclude that our studied credit availability measures have meaningful associations with medical collection reporting.

We center our analysis around credit scores because they have important effects on the loan terms and likelihood of approval that people face when they apply for credit, though they are also an important barometer of financial well-being in their own right. We find that credit scores increase by 25 points, on average, in the first quarter after the last medical collection is removed from a consumer's credit report. The average increase is larger for individuals whose medical collections are over $500, with an associated increase in credit score of 32 points compared to 21 points for people with medical collections under $500.

Our data do not include the terms of loans that are originated, but improvements in credit score are likely to confer cheaper rates and higher approval rates for consumers seeking to obtain new mortgages and other forms of credit. A twenty-point increase in credit score typically reduces the upfront fee on mortgages by 0.25% of the loan balance.[10] This corresponds to a savings of $625 for a mortgage of $250,000.[11] We also consider the overall amount of credit that individuals have available in revolving and installment accounts. We aggregate credit limits and loan principals across each person's tradelines and find that, six quarters after the removal of the last medical collection from their credit report, individuals have an average of an additional $1,028 of revolving credit and an additional $4,123 of installment credit.

Finally, we investigate if individuals are more likely to pursue additional credit when their medical collections are removed by studying inquiries for first-lien mortgages. Mortgage inquiries are hard pulls of credit reports by lenders in response to applications for new lines of credit and for increases in existing credit limits, and are one representation of demand for

[10] Fannie Mae, "Loan Level Price Adjustment Matrix," 2023, https://singlefamily.fanniemae.com/media/9391/display.
[11] Though these fees are charged to the lender, research has shown that these fees are fully passed through to consumers. See Alexandrov, Alexei, Thomas Conkling, and Sergei Koulayev. 2022. "Changing the Scope of GSE Loan Guarantees: Estimating Effects on Mortgage Pricing and Availability." *The Journal of Real Estate Finance and Economics.*

mortgages.[12] People may be especially driven to improve their credit score before they apply for a mortgage because of the important role that credit scores play in setting mortgage rates.[13] We find a one percentage point increase in the likelihood of a mortgage inquiry in the first quarter after the last medical collection tradeline has been removed. This is a more than a 20% increase over the pre-removal baseline likelihood of a mortgage inquiry.

Unlike in our other studied credit availability measures, we find that the first increase in the likelihood of a mortgage inquiry occurs in the last quarter in which the medical collection tradeline is still reported. The association increases further in the first quarter after the tradeline is removed, but is not persistent, and returns to its initial level within three quarters. This relationship is consistent with a hypothesis that individuals may work to remove collections from their credit reports or otherwise improve their credit score when they apply for a mortgage. The medical collection reporting reform removes this burden from potential homeowners whose medical collections are under $500.

Our findings explore how the reporting change may impact the millions of individuals who have medical collections under $500 removed from their credit reports. The medical collection reporting reforms are likely to have important effects for consumers, as well as for a well-functioning consumer reporting system, with our results suggesting that affected individuals may experience increases in their credit scores within the next three months. The remainder of this data point first describes some of the causes of medical collection removals from credit reports. We then provide our empirical approach, data, and results in more detail.

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[12] The CFPB's credit report data originates from one of the three nationwide consumer reporting agencies, but lenders can pull credit reports from any consumer reporting agency. Our data do not include inquires made to other consumer reporting agencies. Given this limitation and the importance of credit scores in mortgage price setting, we focus on inquiries for first-lien mortgages, as mortgage lenders generally pull credit reports from each of the three nationwide consumer reporting agencies rather than just one. See DeNicola, Louis, "Which Credit Score do Mortgage Lenders Use?" February 2021, https://www.experian.com/blogs/ask-experian/which-credit-scores-do-mortgage-lenders-use/

[13] Consumer Financial Protection Bureau, "How does my credit score affect my ability to get a mortgage loan?" September 2020, https://www.consumerfinance.gov/ask-cfpb/how-does-my-credit-score-affect-my-ability-to-get-a-mortgage-loan-en-319/.

# 3. Medical collection removals

The reasons for the removal of any information from a consumer's credit report are varied and not listed in the credit report. Medical collections are rarely visible on a report for the full seven years that the Fair Credit Reporting Act permits, even though few are ever marked as paid. Less than twenty percent of unpaid medical collections remain on consumer credit reports for longer than four years.[14] The lack of persistence of the accounts on reports may be partially driven by a failure of collectors to continue furnishing updated information. Additionally, the consumer reporting companies have a requirement that medical collections should be removed from credit reports after six months without updated furnishing, implemented in September 2017.[15]

Another factor contributing to the lack of persistence may be consumer disputes of medical collections. Medical collections are often reported by third-party collection companies who may not be easily able to verify the legitimacy of the debt.[16] Individual experiences differ across a large number of small furnishers, as the top four medical collection furnishers reported only 14.7 percent of the medical collections that were reported in the first quarter of 2022.[17] The Fair Debt Collection Practices Act requires debt collection furnishers to investigate disputes and provide individuals with verification of the debt.[18] If debt collection furnishers find that the disputed debt is inaccurate or cannot be verified in response to a consumer dispute, the furnisher is required to request that the consumer reporting company delete or modify the furnished information about the debt. Additionally, there is some evidence that collection

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[14] Nathe, Lucas and Ryan Sandler, "Paid and Low-Balance Medical Collections on Consumer Credit Reports," Consumer Financial Protection Bureau Consumer Credit Trends, July 2022, https://www.consumerfinance.gov/data-research/research-reports/paid-and-low-balance-medical-collections-on-consumer-credit-reports.

[15] Andrews, Michelle, "Credit Agencies to Ease Up on Medical Debt Reporting," National Public Radio, July 2017, https://www.npr.org/sections/health-shots/2017/07/11/536501809/credit-agencies-to-ease-up-on-medical-debt-reporting; Nathe, Lucas and Ryan Sandler, "Paid and Low-Balance Medical Collections on Consumer Credit Reports," Consumer Financial Protection Bureau Consumer Credit Trends, July 2022, https://www.consumerfinance.gov/data-research/research-reports/paid-and-low-balance-medical-collections-on-consumer-credit-reports/.

[16] Consumer Financial Protection Bureau, "Medical Debt Buren in the United States", February 2022, https://files.consumerfinance.gov/f/documents/cfpb_medical-debt-burden-in-the-united-states_report_2022-03.pdf.

[17] Consumer Financial Protection Bureau, "Market Snapshot: An Update on Third-Party Debt Collections Tradelines Reporting," February 2023, https://files.consumerfinance.gov/f/documents/cfpb_market-snapshot-third-party-debt-collections-tradelines-reporting_2023-02.pdf.

[18] Consumer Financial Protection Bureau, "What is a debt collection validation notice?" November 2021, https://www.consumerfinance.gov/ask-cfpb/what-is-a-debt-collection-validation-notice-en-2109/.

companies will stop furnishing collections if they are paid in a process known as “pay-for-delete” or will settle for payments lower than the amount of debt.[19]

Furthermore, we observe instances of the same medical collection disappearing and reappearing on a consumer’s credit report as it is sold between debt buyers. For the purposes of this report, we assume that a collection arises from the same debt as a previously reported collection if it is for the same dollar amount and if the date it was opened is after the most recent update of the earlier collection’s balance amount.[20]

[19] Carrns, Ann, "Consumer Agency Weighs Ban on Medical Debts in Credit Reports”, New York Times, March 2022, https://www.nytimes.com/2022/03/04/business/credit-report-medical-debt-ban.html ; Consumer Financial Protection Bureau, “Market Snapshot: An Update on Third-Party Debt Collections Tradeline Reporting,” February 2023, https://files.consumerfinance.gov/f/documents/cfpb_market-snapshot-third-party-debt-collections-tradelines-reporting_2023-02.pdf

[20] It is also common for telecom debts to be sold between debt collection companies. In previous CFPB research, a new telecom collection was assigned as arising from a previous collection if the new collection appeared on the consumer’s credit report within 18 months of a preexisting collection and had a balance within ten percent of the preexisting collection’s balance. We may be over-counting the number of new medical collections by having stricter requirements to match collections over time. However, the event study analysis focuses on the removal of a consumer’s last medical collection with no restrictions on the length of time the collection was previously furnished, so using alternative mechanisms for linking debts over time will not affect the main analysis. See Bucks, Brian, Susan Singer, and Nicholas Tremper, “Quarterly Consumer Credit Trends: Collection of Telecommunication Debt”, Consumer Financial Protection Bureau, 2018, https://files.consumerfinance.gov/f/documents/bcfp_consumer-credit-trends_collection-telecommunications-debt_082018.pdf.

# 4. Empirical approach

Our data do not allow us to see what causes the removal of a given medical collection. This limits our ability to estimate the causal effects of the removal, as there may be unobserved factors driving both medical collection removals and credit availability. Instead, we use event study analysis to investigate how the removal of medical collections is associated with each of the credit measures we consider. Event study graphs show how an outcome changes over time relative to a baseline period, usually chosen as the period right before the event of interest. Our baseline period is the quarter with the last furnishing of the individual's final medical collection(s). The association between our studied credit measures and an individual's last medical collection removal is measured relative to this baseline for five quarters prior to its final report, and for six quarters after.

Event study analysis provides important evidence on whether there are trends in the outcome variable before the event occurs. Finding such a trend may imply that an unobserved variable is correlated with the event of interest and changes in the outcome variable may not be directly related to the studied event. Event study graphs show how associations change over time, rather than showing the average association taken over all quarters after the event, as in standard regression analysis. For example, if people are not aware of how the removal of medical collections from their credit reports affects their credit scores, it may take several quarters for them to realize their credit score has improved, which may delay any corresponding increase in their demand for credit. Our analysis provides more insight into these response patterns than simple regression would provide in this context.

Though event study figures are useful for studying trends over time, they usually require that individuals only experience the relevant event once during the study period. However, nearly two-thirds of individuals with at least one medical collection in the CFPB's Consumer Credit Panel (CCP) have multiple medical collections, and because most of these collections are removed in different quarters, many people experience multiple removals. If we included all collection removals in the sample, many people would have collection removals before and after the baseline quarter, which would complicate our interpretation and add bias and noise to our measurement of what happens after removal.[21] Because of these issues that arise when individuals experience multiple events during the study period, we only consider the last

[21] Sandler, Danielle and Ryan Sandler. 2014. "Multiple Event Studies in Public Finance and Labor Economics: A Simulation Study with Applications," *Journal of Economic and Social Measurement* 39(1): 31-57.

medical collection removal for each person, such that no medical collections are reported after the last removal. Our results are most indicative of the potential effects for the approximately one-half of individuals with medical collections who will have all their medical collections removed under the reporting change.

Our dataset includes one observation per quarter for each individual. We create eleven binary variables for each of the five quarters preceding the baseline quarter (i.e., the quarter of the last medical collection tradeline) and the six quarters following the baseline quarter. For example, consider a person whose last reported medical collection appears on their credit report for the final time in June 2016. The event study regression includes, as independent variables, binary variables for each of the five quarters before the final furnishing (March 2015 through March 2016) and each of the six quarters after the final furnishing (September 2016 through December 2017), leaving out June 2016 because our baseline is the last quarter in which a medical collection is reported. The binary variables are included as *relative* to the removal period, which can happen at any time during the study period. Rather than having a binary variable for all March 2016 observations, for example, we include a binary variable for all observations that are one quarter before each person's last medical collection tradeline is reported for the last time. The event study figures show the average difference in the specified outcome between the baseline quarter in which the last medical collection furnishing occurs, and each of the five quarters before the final report and each of the six quarters after the final report. The regressions also include person-specific and time-specific effects which control for differences in the dependent variables across individuals and quarters. We cluster standard errors by person to account for autocorrelation in individuals' outcomes. [22]

[22] A more technical explanation can be found in Conkling, Thomas and Nicholas Tremper, "Data Point: Final Student Loan Payments and Broader Household Borrowing," Consumer Financial Protection Bureau, June 2018, https://files.consumerfinance.gov/f/documents/bcfp_data-point_final-student-loan-payments-household-borrowing.pdf.

# 5. Data

We analyze data from the CFPB's CCP, a 1-in-48 deidentified sample of credit reports from one of the three nationwide consumer reporting agencies. Once someone is added to the sample, their quarterly credit records are included for the duration of their credit history. The panel dataset includes all credit report tradelines, a commercially available credit score, and consumer credit inquiries. The tradelines provide information on current credit accounts as well as accounts that have gone into collections. A medical collection is defined as a debt collection tradeline whose original creditor is coded as a medical entity.

Our sample includes quarterly credit reports with a medical collection removal between June 2012 and December 2020. We discard from the sample medical collections that were marked as paid because these collections were removed from credit reports beginning in July 2022.[23] After including five pre-removal and six post-removal quarters, the sample includes quarters from March 2011 through June 2022.

The sample requirements limit the generalizability of our findings to the entire sample of medical collection removals; however, they allow us to focus on a sample that is more like the consumers who will be affected by the reporting change. Only 35 percent of removals in the full sample of medical collections were for medical collections under $500, but in the event study sample, 68 percent of removals are for collections under $500. Though we cannot, for econometric and data limitations, estimate the exact effect of the reporting change on consumer credit, our strategy provides some suggestive evidence of how similar medical collection removals have affected individuals.

In the event study sample, the average total dollar amount of removed medical collections is $752 and the average number of removed collections is 1.30.[24] The median total dollar amount of removed collections is $282 and the median number of removed collections is one, showing the long right tail in the distribution of medical collections across consumers. Approximately 94 percent of consumers in the event study sample have at least one revolving credit tradeline during the three-year sample, and 93 percent have at least one installment credit tradeline.

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[23] We include the five observations for a consumer before each medical collection's last furnishing as well as the six observations after the last furnishing. We focus on these twelve quarters because this event horizon is long enough to study immediate and longer-term effects while also minimizing sample attrition.

[24] Note that because multiple tradelines can be removed at once, a consumer can have a total amount of removed collections above $500, but each collection may be less than $500 and thus the consumer would have all their collections removed under the reporting change.

Nearly 29 percent of consumers in the sample have a first-lien mortgage inquiry in at least one of their twelve quarters in the sample.

The event study sample includes each person's last medical collections that are ever reported on their credit report. In the full sample, which includes all quarters in which at least one medical collection tradeline was furnished for the last time, the average consumer has $1,328 in medical collections across 1.72 tradelines. Therefore, the event study sample includes fewer collections and lower dollar amount totals per medical collection removal. It also includes slightly less than one-quarter of consumers with medical collections, which can be explained by our sample restrictions. First, we require that consumers have their last medical collection reported in or before December 2020, so we can include six quarters after the removal with no medical collections in our event studies. This reduces the initial sample of consumers with medical collections by more than 40 percent. The remaining sample reduction is caused by requiring that consumers have their credit score and at least one tradeline reported in every quarter included in the sample.[25] We do not exclude medical collections over $500 from the main sample, and instead provide a separate analysis for the association with credit score by the size of medical collections.

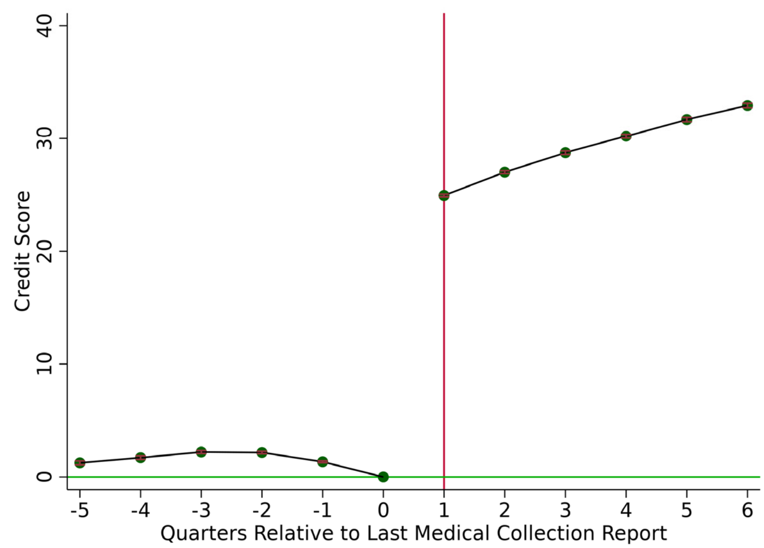
[25] Appendix A provides more details on how the event study sample differs from the sample of all medical collections.

# 6. Results

## 6.1 Medical collection removals and credit score

In this section, we explore the association of the removal of the final medical collection from a consumer's credit report with credit scores using event study analysis.

**FIGURE 1:** FINAL MEDICAL COLLECTION TRADELINE REMOVALS AND CREDIT SCORES




First, we consider how individuals' credit scores change during the five quarters before their last medical collection report.[26] Figure 1 shows that average credit scores do not change much over this time conditional on our controls for quarter- and person-specific averages, which we include in every event study regression. Scores begin sloping upward in the first quarter after

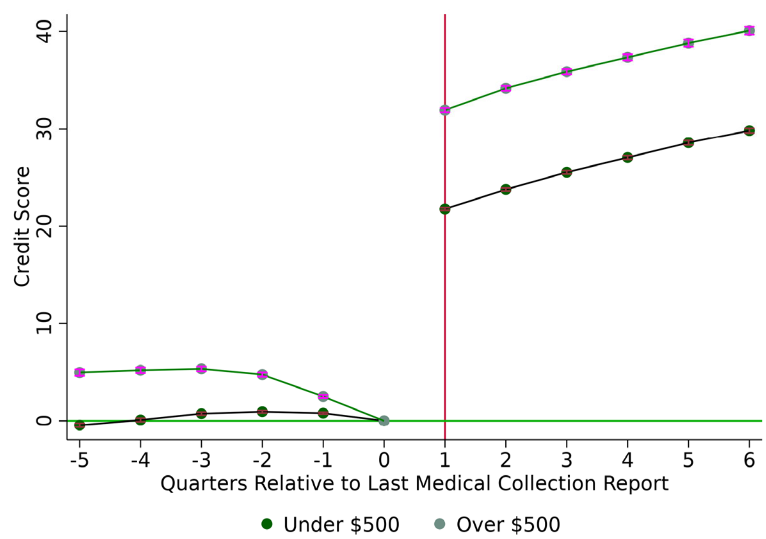
[26] Each estimated coefficient in Figure 1 (and in all the figures in this data point, unless noted otherwise) shows the average difference in credit score between the associated quarter on the x-axis and the quarter of the last medical collection tradeline (quarter zero). The event study graph includes individual and quarter fixed effects, and standard errors are clustered by individual. Ninety-five percent confidence intervals are plotted but contained within the dots (and thus difficult to see) because of the precision of our estimates. The sample includes all "final quarters of the last medical collection tradeline(s)" as described in Columns 5 and 6 of Appendix A.

the last report, with a person's credit score increasing by approximately 25 points in the first quarter after all their medical collections are removed. Credit scores continue to slope upward for six quarters until they have increased by nearly 33 points from their pre-removal level.

This relatively large average increase in credit scores may indicate meaningful improvements in the mortgage terms available to people, as well as potentially improving access to other consumer financial products. However, the estimates reported above are averages over all individuals' final medical collection tradeline removals, and these estimates may vary in important ways for different groups.

In the next several figures, we create the same event study graph for several subsamples to learn about the features of medical collection removals that have the largest associations with credit scores. These sources of heterogeneity provide some suggestive evidence for who may be most affected by the removal of medical collections under $500 from credit reports.

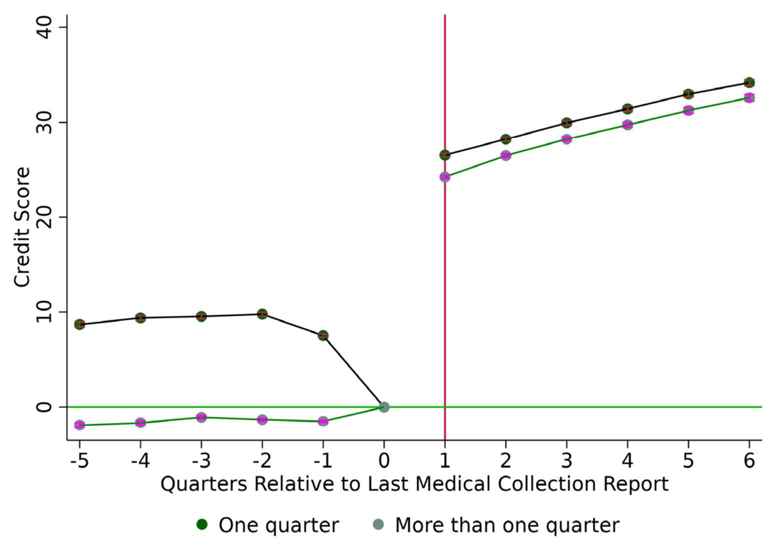
**FIGURE 2:** FINAL MEDICAL COLLECTION TRADELINE REMOVALS AND CREDIT SCORES, SEPARATELY BY DOLLAR AMOUNT OF COLLECTIONS REMOVED




Because the change in reporting policy will only remove medical collections under $500, we first consider results separately by whether the removed collections were each for amounts under $500, or if at least one had a balance over $500. Figure 2 shows that individuals with at least one medical collection over $500 have a larger associated increase in their credit score, with an average change of nearly 32 points in the first quarter after the removal, compared to 21 points for individuals without any medical collections over $500. This suggests that, in our model and given our controls, removing larger medical collections is correlated with larger score changes. Individuals with smaller medical collections also have higher credit scores before their final medical collection is removed, with an average score of 624 for individuals with all their collections under $500 compared to 604 for individuals with at least one collection over $500. Credit scores are bounded by minimum and maximum values, so people with higher credit scores have less margin for improvement. This may contribute to the smaller average change for individuals with medical collections under $500.

Figure 1 shows that average credit scores in the five quarters before a removal are persistently a few points higher than the average credit score in the quarter of the last medical collection report. This is surprising because the last medical collection tradeline is not expected to be associated with other negative financial outcomes that would affect credit score. However, 32 percent of individuals in the sample have their medical collection furnished for only one quarter. These individuals may have much higher credit scores before the quarter of the last medical collection report than for those whose collection has been furnished for more than one quarter.[27]

**FIGURE 3:** FINAL MEDICAL COLLECTION TRADELINE REMOVALS AND CREDIT SCORES, SEPARATELY BY TIME FURNISHED




[27] For the subset of consumers whose medical collection(s) is reported for more than one quarter, the average length of time furnished is nine quarters, and the median is seven.

Figure 3 presents the estimated average changes from our event study analysis separately by whether the medical collection was furnished for one quarter or for more than one quarter. Individuals whose collection was only furnished for one quarter have credit scores that are approximately ten points higher on average in the five quarters before the quarter of the last medical collection report than for individuals who experienced longer furnishing periods. The average difference in credit score after the last medical collection report is only two points larger for individuals whose medical collection was furnished for one quarter, suggesting that the length of time the medical collection appeared on a consumer's credit report has only a small association with credit score after its removal.

The baseline quarter in our event study analysis (quarter zero) is defined as the quarter of the person's last medical collection report; however, some people have multiple collections removed in this quarter, while others have only one. We investigate if individuals who have multiple medical collections removed from their credit reports have similar associated average changes in credit scores as individuals who only have one medical collection removed.

**FIGURE 4:** FINAL MEDICAL COLLECTION TRADELINE REMOVALS AND CREDIT SCORES, SEPARATELY BY THE NUMBER OF REMOVED MEDICAL COLLECTIONS

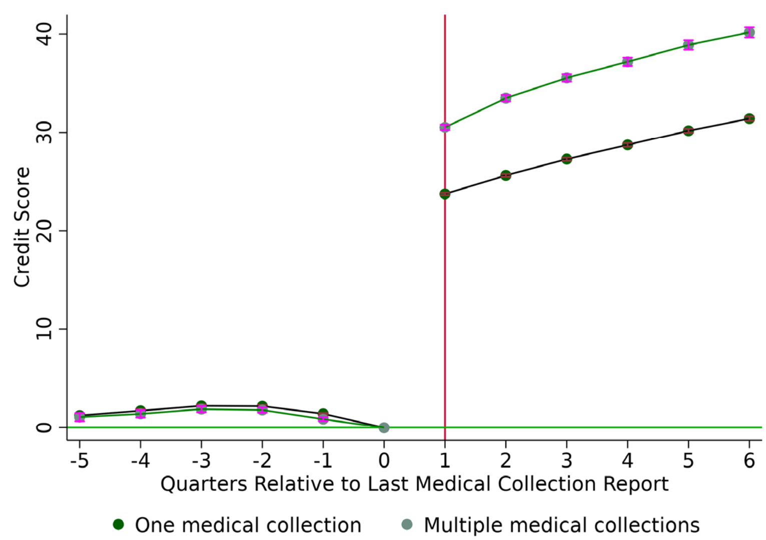
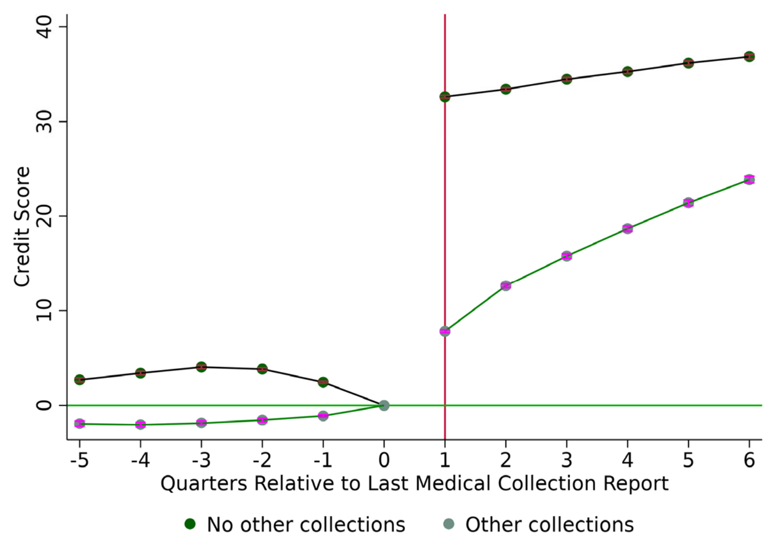



Figure 4 provides the estimated average changes in credit score from the event study analysis, separately by whether the person had one or multiple medical collections removed in the quarter of their last medical collection report. The estimated average changes are very similar before the last report but then diverge. Individuals with one medical collection removed have an associated average increase in credit score of 24 points while individuals with more than one medical collection removed have an average increase of 30 points. The average changes for both groups continue to increase for the six quarters after the last medical collection(s), suggesting that the reporting change may have larger effects on credit scores for people who have multiple medical collections removed from their credit reports.

Our event study analyses use the final medical collection report on a consumer's credit report as their baseline period, such that no medical collections are furnished on their future credit reports. This removal may be less impactful if other collections remain on the consumer's credit report, as is true for 31 percent of individuals in the event study sample. Figure 5 estimates the event study regression separately by whether there are non-medical collections on the consumer's credit report in the first quarter without the medical collection report. We find an average increase in credit score of nearly 33 points for individuals without other non-medical collections, compared to eight points for individuals with non-medical collections. The average change for individuals with other types of collections grows to 24 points after six quarters. This difference suggests that the effect of the reporting change will be largest for people who have no non-medical collections remaining on their credit report.

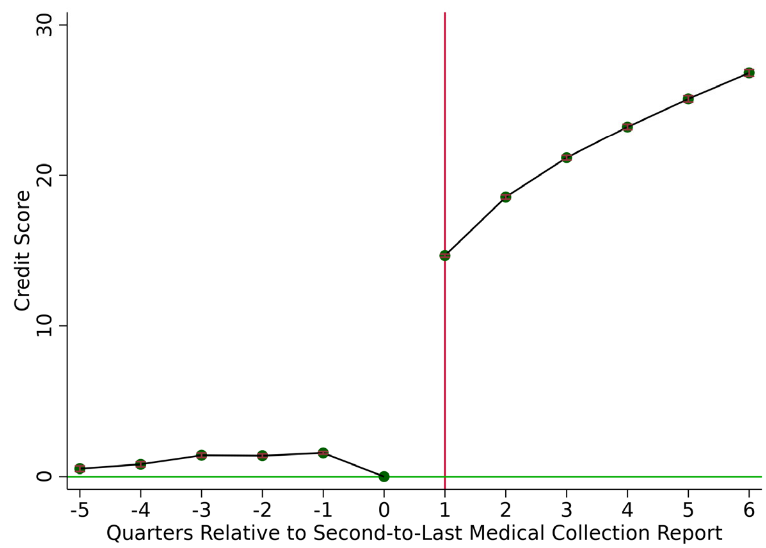
**FIGURE 5:** FINAL MEDICAL COLLECTION TRADELINE REMOVALS AND CREDIT SCORES, SEPARATELY BY PRESENCE OF OTHER COLLECTIONS




The event study analysis shown in Figure 5 investigated the average change in credit score after the final medical collection that appears on a consumer's credit report is removed during our sample. We estimate that the reporting change will remove all medical collections for only half of individuals with medical collections on their credit report. Given that Figure 5 shows smaller average changes in credit score for consumers with non-medical collections that remain on their credit reports after the medical collection is removed, we may expect smaller average changes for individuals with future medical collections as well.

As a final variation on the main event study analysis, Figure 6 considers the removal of the second-to-last medical collection that is ever reported on a consumer's credit report.[28] The average associated improvement in credit score is nearly 15 points in the first quarter after the medical collection's removal and increases to 27 points after six quarters. Though the average change in the first quarter is ten points smaller than for the final medical collection removal, the average change is only six points smaller after six quarters. The steeper slope in the relationship between the length of time after the second-to-last medical collection removal and credit score may be partially driven by the removal of the last medical collection during the six quarters after the second-to-last removal for some individuals in the sample.

**FIGURE 6:** SECOND-TO-LAST MEDICAL COLLECTION TRADELINE REMOVALS AND CREDIT SCORES




[28] The sample includes all individuals who had at least two quarters in which a medical collection tradeline was removed from their credit report, whose second-to-last medical collection tradeline removal occurred between June 2012 and December 2020, and who have non-missing credit score and at least one reported tradeline in each of the twelve event study quarters. The last medical collection tradeline removal can occur in the six post-removal quarters that we included in the event study figures or in later quarters. The model is otherwise specified as for Figure 1.

## 6.2 Medical collection removals and credit availability

The previous section showed that medical collection removals are associated with relatively large average changes in credit score, with changes in the first quarter after the last medical collection report ranging between eight and 32 points, depending on the subsample. We next ask if the removal of individuals' last medical collection(s) is associated with other important measures of credit availability: aggregated credit limits across revolving accounts and aggregated loan principal amounts across installment accounts.

**FIGURE 7:** FINAL MEDICAL COLLECTION TRADELINE REMOVALS AND REVOLVING CREDIT

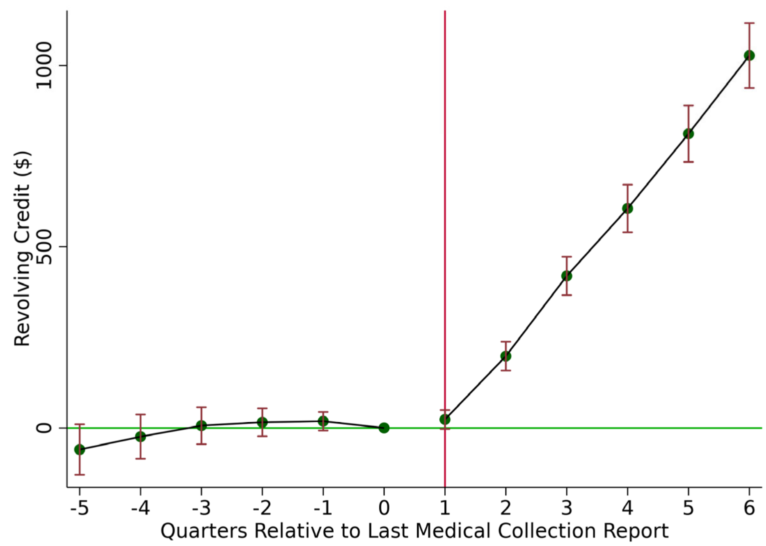



Figure 7 shows the results of the event study analysis for revolving credit, measured as the sum of all credit limits in revolving credit accounts.[29] The average change is near zero in the first quarter after the last medical collection report but grows until it reaches a $1,028 average increase in revolving credit after six quarters. This is approximately three percent of the average baseline amount of revolving credit ($32,397) and is more than ten percent of the median baseline amount ($9,700). We may have expected an upward trend in revolving credit both before and after the medical collection removal, as individuals' financial wellbeing tends to

[29] Each point of the event study graph provides the average difference in the amount of revolving credit between the associated quarter on the x-axis and the quarter of the last medical collection tradeline (quarter zero). The model is otherwise specified as for Figure 1.

increase on average with age, and thus so too may the amount of credit they have available to them.[30] However, we only find a persistent upward trend in revolving credit after the medical collection removal, suggesting that this trend is not caused by age-related increases in credit provision. The gradual increase may instead be explained by the infrequency of applications for new lines of revolving credit or higher credit limits. People may not reap the benefits of their higher credit score immediately if they do not apply for additional credit in every quarter, and so the relationship between the medical collection removal and revolving credit may take several quarters to develop as additional individuals apply for new lines of credit in each quarter.

**FIGURE 8:** FINAL MEDICAL COLLECTION TRADELINE REMOVALS AND INSTALLMENT CREDIT

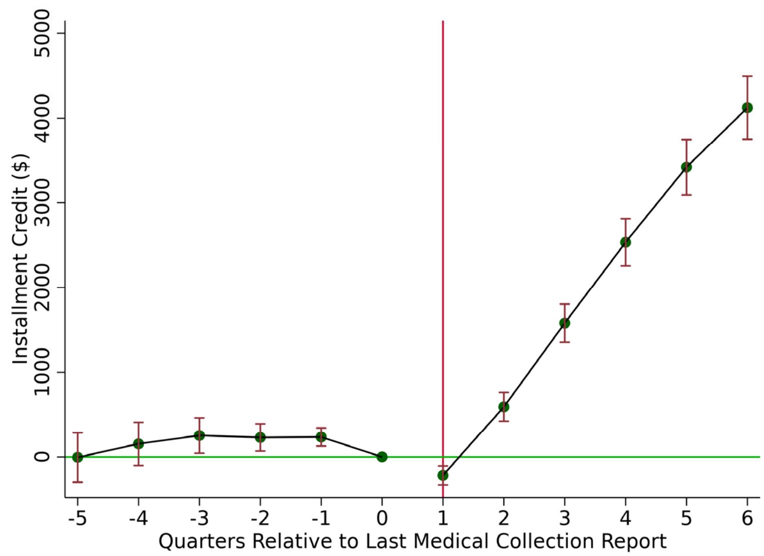



Figure 8 finds a similar pattern for installment credit.[31] A person's installment credit is measured as the sum of all the loan principal amounts across their installment accounts, which includes their mortgages, auto loans, student loans, and personal loans. The average change is slightly negative but near zero in the first quarter after the last medical collection tradeline is reported, and then begins to increase, reaching $4,123 of additional installment credit after six quarters. This is a slightly smaller increase than for revolving credit when considered as a percentage of baseline values: approximately three percent of mean baseline installment credit

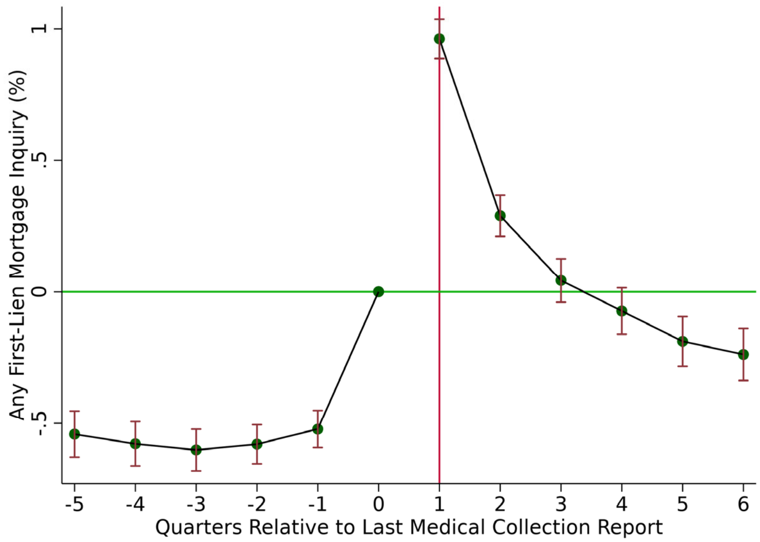
[30] Consumer Financial Protection Bureau, "Financial well-being in America", September 2017, https://files.consumerfinance.gov/f/documents/201709_cfpb_financial-well-being-in-America.pdf
[31] Each point of the event study graph provides the average difference in the amount of installment credit between the associated quarter on the x-axis and the quarter of the last medical collection tradeline (quarter zero). The model is otherwise specified as for Figure 1.

($147,041) and seven percent of the median ($58,985). As in Figure 7, the average changes before the last medical collection report are very similar to each other. This suggests that the upward trend after the last medical collection report is not driven by general improvements in financial wellbeing that occur over time for many people, and the lack of an immediate effect again may be caused by the infrequency with which individuals apply for a new line of installment credit.

The results in Figures 7 and 8 may be driven by lenders, if they are willing to provide more credit to individuals who do not have medical collections on their credit reports, or by consumers, if they are more likely to apply for larger loans or higher credit limits after their medical collection tradelines are removed from their credit reports, or by both. The second mechanism may be especially relevant in our context because consumer disputes can lead to the removal of medical collection accounts if the disputed information is not verified. Individuals may have an increased inclination to dispute medical collections when they plan to apply for additional credit so they can improve their credit score and receive better credit terms. Therefore, increases in demand for credit may in fact be the cause of a medical collection removal, rather than a result of it.

In our final event study, we consider the extent to which these increases in revolving and installment credit are driven by increased consumer demand and provide suggestive evidence that some individuals try to remove medical collections from their credit reports when they plan to apply for a first-lien mortgage. Figure 9 shows the results from the event study analysis for the average changes in the likelihood of a first-lien mortgage inquiry relative to each person's last medical collection removal.

**FIGURE 9:** FINAL MEDICAL COLLECTION TRADELINE REMOVALS AND INQUIRIES FOR FIRST-LIEN MORTGAGES




Unlike in the previous figures, the average changes in the five quarters before the final medical collection report are significantly different from the average change in the quarter of the final report, with a 0.5 percent smaller likelihood of having any mortgage inquiry. The average difference grows to nearly one percent in the first quarter after the final medical collection report and then falls to zero within three quarters, whereas in the other considered credit outcomes the average changes continue to increase for the duration of the sample. The one percentage point increase reflects a more than 20 percent increase in the baseline share of individuals with mortgage inquiries (4.7 percent).

Though the average change for mortgage inquiries appears to immediately follow the removal of a last medical collection tradeline from a person's credit report, the figures for revolving and installment credit show much more gradual changes. Applications for revolving credit and other forms of installment credit may not exhibit the same immediacy as applications for first-lien mortgages, perhaps because their pricing is not as sensitive to credit score, or in the case of other installment credit, because they are usually for smaller principals. We focus on mortgage inquiries because our data includes a much larger share of them than inquiries for other credit products, and because of the importance of credit score in price-setting for mortgages. Additionally, some mortgage inquiries do not lead to an originated loan and therefore do not lead to an increase in installment credit. Finally, the association is large relative to the baseline rate of mortgage inquiries, but small in absolute terms: a one percentage point increase in the likelihood of a mortgage inquiry would not lead to a dramatic increase in the amount of installment credit, on average.

The results of the event study suggest that some individuals have higher demand for mortgages in the first quarter after their final medical collection is removed from their credit report. However, if this increase in demand was the result of the medical collection tradeline removal (and its associated higher credit scores) alone, we would expect the increased demand to persist for the six quarters after the final report of the last medical collection tradeline, as do the average changes for credit scores and available revolving and installment credit.

This different pattern is instead consistent with some individuals disputing or settling their medical collection(s) when they plan to apply for a mortgage. The event study analysis shows that the likelihood of a mortgage inquiry first jumps in the same quarter as the last medical collection report. This is not reflective of any improvement in credit score, as the collection is still on the consumer's credit report. Instead, the relationship may flow in the opposite direction than in the previous outcomes: individuals may make a mortgage inquiry, realize they have a medical collection that may be lowering their credit score, and then work to remove the medical collection before applying for a mortgage again in the subsequent quarter (after the collection has been removed).[32] In this scenario, the person's mortgage inquiry in a particular quarter causes that quarter to become the last period in which the medical collection is furnished, rather than the medical collection tradeline's removal causing the mortgage inquiry. The effect may be larger in the period after the medical collection tradeline is removed as individuals who applied in the previous quarter re-apply for mortgages with an increased credit score following removal, as well as an increase in applications from people who did not apply for a mortgage until the medical collection was removed. The effect may not be persistent over time because individuals who act to remove a medical collection from their credit report do so because they plan to apply for a mortgage now, rather than waiting several quarters.

This event study analysis is suggestive that some people may have some ability to remove medical collections from their credit reports. However, this process is burdensome, often requiring several phone calls with debt collectors, sending certified letters to dispute the debt, and collecting records of care received from healthcare providers and amounts paid by insurers.[33] Furthermore, individuals are far from guaranteed success when they dispute or try to settle their medical collections, and many end the process without any change to their credit

[32] Only 1.3 percent of consumers have mortgage inquiries in both the quarter of their last medical collection report and in the first quarter after the medical collection's removal. An additional 4.4 percent have mortgage inquiries in only the first quarter after the medical collection's removal.
[33] Gill, Lisa L. "How to Fight Back When Contacted by a Debt Collector for a Medical Bill," Consumer Reports, August 2022, https://www.consumerreports.org/money/debt-collection/fight-when-contacted-by-a-debt-collector-for-medical-bill-a8932597676/

reports. Others may not know that disputing a medical collection is an option, and they may feel pressure to pay a debt they believe they do not owe before they apply for a mortgage.

Medical collections may soon not be considered at all in many mortgage lending determinations, even if medical collections over $500 remain on consumer credit reports. The Federal Housing Finance Agency's (FHFA) has left medical collections out of its underwriting processes for several years; both Fannie Mae and Freddie Mac require lenders seeking their backing not to consider medical collections in their assessments of repayment risk.[34] The FHFA has further announced that it will implement FICO 10T and VantageScore 4.0 as the credit scores that Fannie Mae and Freddie Mac will use as thresholds for screening in loans.[35] These credit scores underweight or do not include medical collections, unlike the credit score models that FHFA-backed loans have historically used for screening-in decisions.[36] This change will further reduce the pressure on individuals to work to remove medical collections from their credit reports when they plan to apply for a mortgage, and demonstrates the growing de-emphasis on the use of medical collections in assessing repayment risk across the credit market.

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[34] Fannie Mae, "Selling Guide," March 2023, https://selling-guide.fanniemae.com/Selling-Guide/Origination-thru-Closing/Subpart-B3-Underwriting-Borrowers/Chapter-B3-2-Desktop-Underwriter-DU-/1032994121/B3-2-03-Risk-Factors-Evaluated-by-DU-02-01-2023.htm#Risk.20Factors.20Evaluated.20by.20DU ; Freddie Mac, "Bulletin 2017-2: Selling," March 2017, https://guide.freddiemac.com/app/guide/bulletin/2017-2

[35] Federal Housing Finance Agency, "FHFA Announces Validation of FICO 10T and VantageScore 4.0 for Use by Fannie Mae and Freddie Mac," October 2022, https://www.fhfa.gov/Media/PublicAffairs/Pages/FHFA-Announces-Validation-of-FICO10T-and-Vantage-Score4-for-FNM-FRE.aspx

[36] The White House, "Fact Sheet: New Data Show 8.2 Million Fewer Americans Struggling with Medical Debt Under the Biden-Harris Administration," February 2023, https://www.whitehouse.gov/briefing-room/statements-releases/2023/02/14/fact-sheet-new-data-show-8-2-million-fewer-americans-struggling-with-medical-debt-under-the-biden-harris-administration/

# 7. Conclusion

We predict that, for approximately one half of consumers who currently have reported medical collections, the removal of medical collections under $500 from credit reports will remove all the medical collections on their credit reports. This data point provides descriptive evidence of how medical collection removals between 2012-2020 have been associated with changes in consumer credit.

Because medical collections are not removed from credit reports randomly, the event study analysis does not provide causal evidence. However, we show that individuals who have all their medical collections removed from their credit reports see increases in one of the commercially available credit scores of 25 points on average, with slightly smaller increases for individuals whose removed collections are under $500. People also experience increases in the amount of credit available to them in installment and revolving accounts, and in the likelihood of a mortgage inquiry, though the latter association may be better evidence of individual action to remove medical collections from their credit reports when they plan to apply for mortgages. We interpret our findings as suggestive evidence that the reporting change may increase credit scores and the availability of revolving and installment credit for people with medical collections under $500.

# APPENDIX A: SUMMARY STATISTICS ON MEDICAL COLLECTION REMOVAL

| | Count of unique medical collections per consumer | Total dollar amount of all unique medical collections per consumer | Count of unique medical collections per final quarter of medical collection tradeline | Total dollar amount of all unique medical collections per final quarter of medical collection tradeline | Count of unique medical collections per final quarter of last medical collection tradeline | Total dollar amount of all unique medical collections per final quarter of last medical collection tradeline |
|---|---|---|---|---|---|---|
| **Mean** | 6.78 | $5,216 | 1.72 | $1,328 | 1.30 | $752 |
| **Median** | 3 | $1,189 | 1 | $472 | 1 | $282 |
| **Collections (#)** | 17,368,280 | 17,368,280 | 17,368,280 | 17,368,280 | 783,304 | 783,304 |
| **Consumers affected (#)** | 2,562,576 | 2,562,576 | 2,562,576 | 2,562,576 | 603,207 | 603,207 |

Columns 1-4 include all medical collections for all consumers with medical collections reported during the sample. Columns 1 and 2 provide consumer-level data while columns 3 and 4 provide quarter-level data, where the quarter-level data describes the medical collection(s) in the last quarter in which it is reported. Consumers can have multiple "final quarters" if they have multiple medical collections which are removed in different quarters. Columns 5 and 6 include the event study sample, consisting of all "final quarters of last medical collection tradeline", i.e., the final medical collection on a consumer's credit report such that they have no medical collections reported on future credit reports. The final quarter of the last medical collection report must occur between June 2012 and December 2020 so we can include five quarters of pre-removal and six quarters of post-removal effects. Consumers must have non-missing credit score and at least one reported tradeline in each of the twelve sample quarters.