The Hidden Costs of Financial Services:
Consumer Complaints and Financial Restitution*

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Abstract

Financial disputes are a widespread but understudied feature of consumer financial markets. Analyzing confidential information on nearly two million Consumer Financial Protection Bureau (CFPB) complaints, we find an average payout of $1,472 per successful dispute, and we develop a model to forecast the scope for additional compensation. When understanding what makes a dispute successful, firm differences rarely explain restitution outcomes; instead, product complexity and consumer engagement matter most. High-income consumers receive more restitution by self-advocating and providing documentation. Increased regulatory scrutiny also boosts restitution, but primarily for high-income consumers, highlighting the complementary nature of regulatory interventions and how self-advocacy and financial sophistication shape consumer redress.

*We are grateful to Lewis Kirvan who facilitated access to the confidential data and provided invaluable feedback. Heimer was previously an unpaid contract employee of the CFPB and the opinions of this article do not reflect the opinions of the CFPB or any governmental entity. Any errors or omissions are the authors' responsibility.

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Introduction

Financial services are a fundamental part of economic life, providing individuals with access to banking, credit, and investment opportunities. Unlike purchasing most physical goods, financial services rely on bilateral contracts between companies and consumers, typically requiring complex agreements that unfold over time. These services do not always function as expected—whether due to errors, ambiguous contract terms, or outright misconduct—leading to disputes between consumers and financial institutions. Despite the importance of these disputes, little is known about their prevalence, resolution, and economic significance. This paper provides the first large-scale study of disputed financial services, leveraging confidential complaint data compiled by the Consumer Financial Protection Bureau (CFPB) to systematically examine the market for financial disputes and the determinants of financial restitution.

Economic models of financial services typically assume frictionless transactions, where the costs to consumers are primarily determined by interest rates and fees.[1] However, in reality, financial disputes represent hidden and underappreciated costs consumers bear when services fail or contractual terms are contested. While regulatory bodies sometimes engage in large-scale enforcement actions against financial companies, and class-action lawsuits occasionally secure mass restitution for affected consumers, these efforts target common issues with specific companies and do not capture the individual disputes that consumers must navigate on their own.[2] Whether and how individual consumers secure redress remains largely unexplored, despite its relevance for the efficiency of the financial sector and consumer welfare.

Our paper starts by documenting that disputes over financial services are both widespread and economically significant. Since 2014, consumers have filed nearly two million complaints with the CFPB, with approxim-

[1] See e.g., Green 1973; Jaffee and Russell 1976; Stiglitz and Weiss 1981; Jappelli and Pagano 1993.

[2] Studies of class action settlements include Schwemm and Taren 2010; Agarwal et al. 2014; Eisenberg and Miller 2015; Shavell 2016.

ately 7.5% resulting in financial restitution to the consumer.[3] The total volume of complaints has tripled since 2014, reflecting growing consumer awareness of the complaint process. Nonetheless, the proportion of complaints leading to financial restitution has remained mostly stable, indicating that the increase is not driven by an influx of frivolous or unfounded claims. This pattern highlights financial disputes as an underutilized avenue for consumer redress, where many affected individuals may be unaware of the opportunity to seek compensation.

The financial stakes are substantial. Over the course of the sample, companies have returned over $200 million in restitution, averaging approximately $1,472 per successful complaint. Notably, relief amounts have risen significantly over time, indicating considerable scope for additional restitution. We estimate the potential scope of unclaimed compensation by adapting a susceptible–infected–recovered (SIR) model to capture how knowledge of the CFPB complaint portal spreads over time. To calibrate the model, we use complaint success rates and average restitution amounts by product type from the CFPB data. We define the total susceptible population using national statistics on financial product ownership, derived from sources such as the Survey of Consumer Finances. This framework allows us to project steady-state complaint activity under full awareness and thereby estimate the total potential scope of financial restitution. According to the model, the median projected costs of unclaimed compensation are approximately a billion dollars over the coming decade, and the interquartile range is 500 million to 1.6 billion.

Next, we explore the mechanisms that shape financial restitution outcomes. One possibility is that certain companies are systematically bad actors, engaging in overcharging practices and disproportionately targeting vulnerable consumers. Evidence of companies fostering financial misconduct has been documented in specific segments of the financial sector, particularly financial advising (e.g., Dimmock et al. 2018; Egan et al. 2019).

[3] We exclude credit reporting disputes and errors because of their distinct nature and because the credit reporting agencies are not providing in-kind financial service obligations.

Alternatively, financial companies are imperfect and prone to errors, while consumers, facing complex financial products, may struggle to recognize when they are entitled to restitution. This explanation highlights the role of consumer financial aptitude and self-advocacy, as some individuals are more adept at identifying and articulating disputes, making it easier for companies to acknowledge and correct mistakes. Disentangling these explanations is critical for determining whether financial restitution outcomes are primarily shaped by company misconduct or by consumers' ability to navigate the dispute process.

To assess whether some companies systematically engage in unfair practices that should result in financial restitution, we begin by examining restitution rates across different types of financial products. Many financial companies operate across multiple product lines, and if company-level misconduct were the primary driver of restitution outcomes, we would expect similar restitution patterns across a company's various products. However, our analysis suggests otherwise. Using variance decomposition, we find that product type is by far the strongest determinant of restitution outcomes, with significantly more variation explained by the type of financial product than by company identity. Moreover, restitution rates appear to be closely tied to the complexity of the financial product and the ease with which consumers can articulate and substantiate their claims. Complaints related to bank accounts and credit cards, which involve relatively straightforward disputes, have the highest restitution rates, whereas term loans such as mortgages, student loans, and auto loans—which entail more complex legal contracts and repayment structures—result in significantly lower compensation rates. While approximately 17% of banking and credit card complaints lead to monetary relief, less than 5% of consumer loans do. These findings suggest that product complexity plays a key role in shaping restitution outcomes (as in Carlin 2009), leaving considerable room for consumer awareness and financial sophistication to influence whether complaints result in compensation.

Building on this evidence, we find substantial support for the role of financial sophistication and self-advocacy in shaping restitution outcomes.

In particular, consumers from higher-income Census tracts are significantly more likely to obtain monetary relief. For example, consumers in the top income quintile receive restitution in approximately 10% of cases, while those in the bottom quintile do so in just under 6% of cases. We find broadly similar patterns when examining education and race. Moreover, the income gradient persists even after controlling for complaint characteristics, product type, time, and critically, firm fixed effects. The persistence of income differences within firms suggests that the variation is not driven by systematic differences in company behavior, but instead reflects heterogeneity in how consumers approach the complaint process.

We identify self-advocacy and documentation as key mechanisms underlying these demographic differences. Higher-income consumers are more likely to explicitly request refunds, cite fraud, and attach supporting documentation to their complaints. These actions are strongly predictive of restitution, increasing the likelihood of monetary relief by as much as 50%. In contrast, firms do not allocate more resources to high-income complaints relative to lower incomes. Using internal identifiers, we track the experience and engagement of the company employee who handles each complaint. We find no systematic variation by consumer income. These findings reinforce the view that consumer sophistication, rather than differential firm treatment, drives much of the observed heterogeneity in financial restitution.

In the remaining segment of the paper, we leverage previously unexamined data on the CFPB's internal review of the complaint process and its communications with companies. Since 2020, the CFPB has been conducting company response monitoring reviews to assess whether companies are properly responding to complaints. As part of these initiatives, the CFPB reviews company responses and continues monitoring a large sample of individual complaints. When companies are found to be improperly addressing a significant fraction of complaints, the CFPB issues confidential monitoring reports highlighting these deficiencies. Over fifty companies received these reports during our sample's time frame, some on multiple occasions. Crucially, these reports were delivered at staggered intervals over the sample

period, creating an ideal setting for a difference-in-differences analysis of the effect of private regulatory scrutiny on company behavior.

First, we use the CFPB's monitoring reviews to examine whether income-related differences in financial restitution stem from companies treating different consumer groups unequally. The CFPB's monitoring reviews results serve as a benchmark for how complaints should have been handled. We find that complaints from low-income consumers are more likely to receive an unsatisfactory response according to the CFPB reviews. However, the disparity in complaint handling is relatively small compared to the large gap in financial restitution outcomes. Moreover, when controlling for exhaustive fixed effects, the observed income-related differences disappear. This suggests that the financial restitution gap is not solely driven by companies failing to process low-income complaints properly, but rather by differences in how consumers engage with the complaint process.

Second, we explore whether regulatory pressure affects company behavior by analyzing how companies respond to heightened CFPB scrutiny. After receiving a confidential monitoring report highlighting complaint handling deficiencies, companies increase the share of complaints resolved with monetary relief by several percentage points. However, this effect is stronger for high-income consumers, suggesting that regulatory interventions can disproportionately benefit better-off individuals. Instead of leveling the playing field, heightened scrutiny appears to reinforce pre-existing differences in financial restitution. Companies improve their responsiveness primarily to consumers who are already more likely to secure restitution, while complaints from low-income consumers remain less likely to result in compensation. This finding further supports the role of financial aptitude and self-advocacy in determining restitution outcomes—consumers who can effectively navigate the dispute resolution process are best positioned to benefit from regulatory oversight.

Our findings reveal fundamental limits of regulation in safeguarding consumer welfare in financial markets. Consumer protection policies often focus on company misconduct and regulatory enforcement, yet our results suggest that even well-designed interventions may be insufficient to

strengthen consumer protections. The complaint resolution process does not function in isolation—companies respond not only to regulatory scrutiny but also to how effectively consumers advocate for themselves. More broadly, these results highlight a key challenge in financial regulation: rules designed to protect consumers may be least effective for those who struggle to navigate the system.

Related Literature

The literature on consumer welfare in financial markets has traditionally focused on two main paradigms: behavioral mistakes and firm market power. The first emphasizes how limited attention, poor financial literacy, or cognitive biases lead consumers to make suboptimal financial decisions.[4] The second line of research examines how financial institutions may exploit informational advantages or market concentration to extract rents from consumers.[5]

Our paper introduces an entirely new mechanism: even when consumers choose reasonable products and firms behave competitively, financial services are prone to operational or administrative mistakes. Importantly, the resolution of such mistakes is not automatic. Instead, it often depends on consumers recognizing the error, interpreting whether it merits restitution, and engaging in a structured complaint process. This dimension—variability in restitution for mistakes—is a hidden but significant source of heterogeneity in consumer financial outcomes and has been largely overlooked in prior work.[6]

To this end, while our focus is on individual-level complaints that do not necessarily involve misconduct, our closest parallels lie in the growing literature on financial misconduct toward households. Much of this work centers on financial advisors, whose misconduct tends to affect higher-wealth households. For instance, Gurun et al. 2018; Dimmock et al. 2018; Egan et al.

[4]See e.g., Lusardi and Mitchell 2014; Keys et al. 2016; Gathergood et al. 2019; Jørring 2024, among others.

[5]See e.g., Carlin 2009, Schenone 2010, Agarwal et al. 2015, Flanagan and Purnanandam 2024, Bhutta et al. 2024, among others.

[6]Most comparable, some research documents the importance of self-efficacy on financial distress outcomes (e.g., Kuhnen and Melzer 2018; Parise and Peijnenburg 2019).

2019 document the prevalence, persistence, and transmission of misconduct among advisors. Our paper shifts attention from this narrower segment of the financial sector to a broader set of financial services that affect the everyday financial products used by the broad population.

We also build on research studying financial disputes between consumers and companies. Egan et al. forthcoming analyzes arbitration outcomes involving uninformed consumers. Cheng et al. 2021 and LaVoice and Vamossy 2024 study settlements over debt collection cases. Argyle et al. 2023 and Lee 2024 study bankruptcy outcomes. Compared to these studies, our setting involves a nonjudicial complaint process that spans a wide array of financial products and does not require legal representation. This enables us to speak to a broader set of financial services that apply to the whole population and focuses on mechanisms determining the causes and consequences of such disputes.

Finally, we contribute to an emerging literature that uses CFPB complaint data to assess financial service quality and regulatory effectiveness.[7] Several papers study the impact of disclosing the written text of complaints.[8] Begley and Purnanandam 2021 and Kim et al. 2024 use the volume of complaints to proxy for the quality of financial services. In contrast to these papers, we examine the full spectrum of financial products and focus on the consumer-side outcomes of complaints, especially monetary restitution. We are the first, to our knowledge, to systematically document the heterogeneity in complaint resolution outcomes, the scale of their financial implications, and the effects of private enforcement efforts.

I Consumer Complaint Data from the CFPB

Since its inception in 2011, the Consumer Financial Protection Bureau (CFPB) has maintained a portal through which consumers can submit complaints against financial service providers. Approximately 80% of complaints are

[7] See e.g., Sedunov 2020; Fuster et al. 2021; Dou and Roh 2024; Bian et al. 2023; Huang et al. 2024; Butler et al. 2023.

[8] See e.g., Li 2023; Mazur 2024; Jou et al. 2024; Dou et al. 2024.

submitted via this online portal, with the remaining 20% arriving through email, fax, phone, postal mail, or referral. The submission process requires consumers to: (1) identify the relevant product or service, (2) describe the issue using both structured fields and free-form narrative, and (3) specify the company involved, the desired resolution, and provide contact information. The CFPB then forwards the complaint to the company. The company is expected to respond to the complaint within 15 days.

The CFPB publishes a redacted version of these complaints in a publicly available data set. The publicly available data include the consumer's zip code (sometimes truncated to the first three digits), and indicators for whether the filer is elderly or a service member or veteran. The public data includes the company name, product category, issue type, and response type (closed with explanation, closed with non-monetary relief, or closed with monetary relief).

We use the CFPB's internal complaint database to enable a more comprehensive analysis of the complaint and dispute resolution process. Compared to the public dataset, the internal data offers granular filer information, more details about the complaint, and insights into how the company addresses the complaint. Key differences include, for example, (1) the dollar amount of any monetary relief provided, (2) whether the filer attached supporting documentation, (3) unique IDs for company employees handling each complaint, and (4) login records for both consumers and company representatives. In contrast to the public database, full addresses, complaint narratives, and desired outcomes are always included in the internal data.

Access to filer name and address allows us to merge the complaint data with Census tract-level socioeconomic indicators, including household median income and educational attainment (measured as the share of adults with a bachelor's degree). We also apply Bayesian Improved Surname and Geocoding (BISG) techniques to infer the race and ethnicity (Asian, Black, Hispanic, or White) of filers based on their names and addresses.[9]

[9]BISG algorithms have been employed at several government agencies that are tasked with ensuring compliance to fair lending laws, since they have been found to produce proxies that correlate highly with self-reported race in tests and are more accurate than

We also leverage confidential information about the CFPB's internal review of company complaint responses. Since 2020, the CFPB has been assessing the quality of companies' responses to complaints, specifically, whether companies respond promptly and accurately. When conducting its reviews, the CFPB randomly selects a set of past complaints to the company. When the reviewers identify significant deficiencies, the CFPB issues confidential monitoring reports to the relevant companies. Between 2020 and 2024, the CFPB sent approximately 80 such reports to companies, which were delivered staggered over time. Some companies were sent reports multiple times, and these too were delivered at different times. Overall, while the set of companies that received reports is certainly not random, the timing with which they were sent reports was. This setup allows us to use a difference-in-differences framework to test the effect of private regulatory pressure on company behavior.

Our analysis includes all non-credit-reporting complaints submitted between January 2014 and December 2024.[10] Since we primarily aim to understand the direct financial costs to consumers, we exclude the "credit reporting" category of complaints. These complaints are primarily directed at the three major credit reporting agencies and typically seek to resolve errors in peoples' credit reports. Though these credit reporting errors can have significant downstream costs—such as difficulties getting a loan—they rarely result in financial redress.

Figure 1 presents the different ways in which companies resolve complaints. Overall, a sizable number of complaints result in the consumer receiving financial compensation: 7.6% of complaints are resolved with monetary relief. The remainder are either closed with an explanation (81.6%) or closed with non-monetary relief (10.8%).

Figure 2 presents trends in the volume of complaints overall and across different product categories. Panel A shows a steady rise in total complaints, from 113,551 in 2014 to 317,988 in 2024, with an average annual

relying only on demographic information from place of residence or surname alone (Elliott et al. 2008, Elliott et al. 2009, CFPB 2014).

[10] We exclude the complaints filed before 2014 because the complaint system had not yet incorporated all financial products.

growth rate of around 10%. Furthermore, as the overall number of complaints grew, the likelihood of a complaint resulting in monetary restitution remained relatively stable over time (around 7-8%). Panel B shows that the largest product categories in the CFPB complaints are *debt collection* (representing 33.58% of all complaints), *cards* (debit, credit, prepaid cards) (18.76% of all complaints), *mortgage* (16.18% of all complaints), and *accounts* (checking or savings) (15.49% of all complaints). They are also the fastest-growing categories over time, with debt collection, cards, and accounts witnessing significant increases over the last 5 years.[11] Smaller but still significant categories include complaints about money transfers (money transfer, virtual currency, or money service), student loans, car loans, and other loans (payday, title, personal loans).

II The Scope for Financial Restitution

Over the course of our sample (2014–2024), companies returned over $200 million in monetary relief to consumers who filed complaints with the CFPB. In this section, we describe trends in financial restitution and use these trends to consider the overall scope for mistakes in financial services that result in losses for consumers.

A Trends in Financial Restitution

The CFPB complaint portal has resulted in a substantial amount of monetary relief delivered to consumers. For the 7.6% of complaints that result in monetary relief, companies have paid a total of $205 million in restitution to consumers thus far. Nonetheless, there are increasing trends in the use of the complaint portal and the total amount of financial restitution delivered to consumers, suggesting scope for more.

[11] Debt collection complaints doubled in volume in 2024. The increase was driven largely by consumers using this product category to complain about erroneous information on their credit reports related to debt. Since credit reporting is not a source of monetary relief, this dynamic mostly explains the decrease in the percentage of complaints receiving monetary relief in 2024 compared to all previous years.

Table 1, Panel A, shows that the volume of complaints nearly tripled between 2014 and 2024, growing from 113,551 to 317,988 annually. Despite this increase, the share of complaints resolved with monetary relief remained stable between 7% and 8%. There is a slight reduction in restitution rates in 2024, falling to 6.22%. However, the reduction results from a disproportionate increase in complaints about debt collection, which rarely deliver financial restitution. Furthermore, the average monetary relief amount rose from $694 in 2014 to $2,280 in 2024. Hence, the majority of total monetary relief was distributed in the second half of the sample, particularly in recent years.

Panel B explores the distribution of monetary relief across products. Accounts and credit card complaints are most likely to result in restitution, with 17.39% and 17.13% of these complaints receiving monetary relief, respectively. In contrast, student loan and debt collection complaints have far lower resolution rates, at 2.07% and 0.67%, respectively. Generally, term loans, such as mortgages and car loans, have rates of monetary relief in between these numbers.

These patterns highlight a growing yet underutilized channel for consumer redress. Although the number of complaints has tripled and average relief amounts have risen, the share of cases resolved with monetary relief has remained remarkably stable. This constancy suggests that potential adverse selection issues of allowing consumers to complain are not yet an issue—it is not a rise in frivolous or unsubstantiated claims that has driven the increased usage of the CFPB complaint system.

B Projecting the Costs of Errors in Financial Services

As the number of complaints has grown considerably since the start of the CFPB and the restitution rate has remained relatively constant, it suggests scope for additional restitution to consumers. Crucially, the financial costs of restitution are considerable when viewed through the lens of the typical American household's finances. According to the Report on the Economic Well-Being of U.S. Households, almost forty percent could not cover

a hypothetical $400 emergency expense using cash or equivalents.[12] As such, the average restitution payment of $1,472 ($2,280 in the most recent year of data) would benefit many households substantially. Therefore, it is worthwhile to project the total amount of restitution available to consumers should they rectify errors in their financial services.

While our analysis focuses on complaints formally submitted through the CFPB portal, these disputes likely represent only a fraction of all financial service errors experienced by U.S. consumers. One challenge in scaling the CFPB statistics to the national population is that many consumers were likely unaware of the CFPB's complaint process during our study period. Indeed, complaint volumes have exhibited sustained growth over time, consistent with increasing awareness and adoption. As a result, simply extrapolating from observed complaint rates to the general population by stratifying across income or product would likely misrepresent the true scale of potential restitution.

Therefore, we develop a dynamic susceptible-infected-recovered (SIR) model (a la Acemoglu et al. 2021) to project the total cost of such errors across the broader population. Specifically, we conceptualize the filing of a complaint as the outcome of an informational diffusion process. Awareness of the CFPB complaint portal spreads through consumer networks—analogous to the spread of infection in an epidemic. In the model, the "susceptible" population consists of consumers who are eligible to file a complaint (e.g., those who perceive having experienced a mistake); the "infected" population consists of consumers who are aware of and willing to use the portal; and the "recovered" population includes those who have filed and resolved a complaint (regardless of outcome). Complaint data by product category allows us to estimate how the "infection curve" could grow over time as awareness frictions abate.

To calibrate the model and estimate aggregate total costs, we apply product-level estimates of the average restitution amount per successful complaint, along with estimates of the probability of receiving monetary re-

[12] https://www.federalreserve.gov/publications/files/2022-report-economic-well-being-us-households-202305.pdf.

lief. We gather national statistics on product usage from sources such as the Survey of Consumer Finances to calibrate the total population of susceptible individuals. Calibration parameters are reported in Internet Appendix Table B.1.

Letting ρ_p denote the observed rate of monetary relief for product p, and α_p the projected steady-state complaint rate under full awareness, the implied total restitution is given by:

$$\text{Projected Cost}_p = \alpha_p \times \rho_p \times \text{Average Restitution}_p \times \text{Population}_p \quad (1)$$

Summing across all p, we recover an estimate of the national cost of uncorrected mistakes in consumer finance. Internet Appendix B presents the details of the SIR model.

The main unknown parameter value in our SIR model is the filing rate conditional on awareness ($\theta \in [0, 1]$). For instance, some households may be aware of the CFPB and have issues with financial products, but they choose not to complain, for example, because they mistrust government services. Since this parameter is unobservable, we present our estimates over the range of θ.

Table 2 presents estimates of the SIR model for each of the main financial products in our data and the aggregate costs for different values of θ. The financial costs project to be largest in the categories "accounts" and "cards." Figure 3 projects cumulative aggregate costs over the subsequent ten years. The median projection of the financial costs is approximately one billion dollars. The interquartile range goes from around 500 million to 1.6 billion.

III Understanding Who Gets Financial Restitution: Firm Behavior or Consumer Sophistication?

Next, we explore factors that determine which complaints result in financial restitution. On one hand, certain companies could be systemically bad actors, engaging in misconduct that disproportionally targets vulnerable

consumers. On the other hand, consumers could have trouble understanding when financial service errors merit restitution, especially when financial products are complex. Distinguishing between these explanations for patterns of financial restitution is crucial to understanding whether company misconduct or consumers' imperfect knowledge and ability to navigate the financial sector drives consumers' losses.

A Are Some Firms Systemically Making Financial Errors?

We begin with a variance decomposition analysis to evaluate whether firm-specific misconduct systematically drives restitution outcomes. Table 3, Panel A, presents results from regressing the indicator variable *solved wMR*—equal to one if the complaint was resolved with monetary relief—on combinations of quarter fixed effects, company fixed effects, product fixed effects, and county fixed effects.[13]

In Column 1, we find that quarter and company fixed effects together explain roughly 10% of the variation in restitution outcomes, with company fixed effects accounting for about two-thirds of that explanatory power. This suggests modest firm-level differences. However, once product fixed effects are included in Column 2, the model's explanatory power increases to 12.18%, with product type now accounting for over 99% of the explained variation. The introduction of county fixed effects in Column 3 makes little difference. The dominance of product effects holds even when restricting the sample to companies offering more than one financial product (Columns 4 to 6).

These results indicate that restitution outcomes are driven far more by the type of financial product involved than by which company is named in the complaint. The finding aligns with our earlier analysis in Table 1, which shows that straightforward products like checking accounts and credit cards are associated with higher restitution rates, while more complex products

[13]Decomposition percentages are based on Mean Squares, which account for the degrees of freedom associated with each explanatory variable.

like term loans (mortgages, auto loans, and student loans) are much less likely to result in compensation.

In sum, our variance decomposition suggests that product complexity, not systematic firm misconduct, is the dominant source of variation in restitution. This finding sets the stage for our subsequent analysis, which shifts attention from firms to consumers. If firms do not systematically vary in how they treat complaints, then consumer-level factors such as awareness, sophistication, and the ability to navigate financial disputes may be key drivers of who receives redress.

B Differences in Consumers' Ability to Secure Restitution

The preceding analysis highlighted the role of product complexity in shaping restitution outcomes. We now turn to consumer-level heterogeneity, focusing on income as a proxy for financial sophistication and the ability to navigate disputes. If financial redress hinges not only on the nature of the product or the firm, but also on how effectively a consumer engages the complaint process, then we would expect to see systematic variation in outcomes across income groups.

Figure 4, Panel A, presents raw restitution rates by income quintile. The gradient is clear and steep: consumers from the top income quintile receive restitution in nearly 10% of cases, while those from the bottom quintile do so in fewer than 6%. To further isolate income effects within products, Panel B plots the difference in restitution rates between the highest and lowest income quintiles by product category. Across almost all products—especially cards and money transfers—high-income consumers are more likely to receive monetary relief. These patterns suggest that income-based disparities persist even within narrowly defined complaint types.

We formalize these findings in Panel A of Table 4, which estimates complaint-level regressions of the probability that a complaint results in monetary relief. We estimate the following general regression specifica-

tions:

$$solved\ w/MR_{i,f,c,r,q,tr} = \gamma_q + \gamma_c + \beta_1 \times X_{f,q} + \epsilon \tag{2}$$

Across specifications, the dependent variable is $solved\ \ w/MR_{i,f,c,r,q,tr}$, a dummy equal to 1 if complaint i from filer f in tract tr against company c in quarter q has been solved with monetary relief (by company employee r). The independent variable, $X_{f,q}$ represents filer characteristics: a dummy for above median census tract tr income in Columns 1 to 3, or the natural logarithm of median census tract tr income in Columns 4 to 6. Specifications are progressively loading fixed effects: Columns 1 and 4 have quarter and company fixed effects, Columns 2 and 5 have quarter and company-product fixed effects, and Columns 3 and 6 add the filer's county fixed effects.

Table 4, Panel A, Columns 1 and 4 establish the basic relationship between income and restitution, while Columns 2-3 and 5-6 progressively introduce the richer sets of fixed effects. The coefficient on income remains remarkably stable across specifications, indicating that the income gradient is not driven by compositional differences in geography, product, or provider.

In our most saturated specification (Column 6), which includes quarter, company-product, and geographic fixed effects, a one-standard-deviation increase in the filer's tract household median income is associated with a 0.62% increase in the probability of receiving monetary compensation. This effect size is economically meaningful since the average probability of restitution is 7.61%.

Panel B of Table 4 extends the analysis to restitution amounts. We employ fixed-effects Poisson models to estimate these regressions since the dependent variable of relief amount is continuous, downward truncated at zero. Estimates show that even under the strictest specification (with quarter, company-product, and county fixed effects) a complaint from a tract with above median income receives 31.1% higher relief amounts than complaints from a tract with below median income. These differences also

persist across specifications, confirming that income shapes not only whether relief is granted, but also how much is awarded.[14]

C Why Do Some Consumers Fare Better?

The previous section documented a substantial income gradient in financial restitution, with higher-income consumers more likely to receive compensation. This section explores why these disparities persist. One possibility is that firms treat complaints from high-income consumers more seriously, assigning more experienced personnel or investing greater effort in resolving their disputes. Another is that higher-income consumers are more proactive and effective in how they file complaints. In this section, we test these competing explanations by leveraging detailed information on both consumer behavior and firm engagement with the complaint.

Starting with consumer behavior, the CFPB complaint form includes two free-text narrative sections and an option to upload supporting documentation. We code consumer narratives for indicators of self-advocacy, including whether the filer explicitly requests a refund or cites potential fraud. Table 5, Panel A, shows that the use of these advocacy strategies increases strongly with income. High-income complainants are substantially more likely to request specific forms of relief and to frame their complaint in ways that increase the likelihood of success (Columns 1 through 4). The propensity to include supporting documentation is also increasing in income (Columns 5 and 6).

Next, we investigate whether firms engage differently to complaints from high- and low-income consumers. The internal CFPB data identifies the specific company employee who handled each complaint. For each handler, we construct two metrics: employee experience (the natural logarithm of the number of complaints previously addressed) and employee login time (percentage of days from complaint submission to resolution

[14] In the Appendix, Figure E.1 also displays patterns by education and race, and Table E.1 includes parallel specifications. These demographic characteristics are highly correlated with personal income and yield quantitatively similar results; therefore, we focus on income in the main text.

that the handler has logged into the complaint system). Panel B of Table 5 presents regression results testing whether these handler characteristics vary with filer income.[15] Across specifications, we find no evidence that firms allocate more experienced or engaged staff to higher-income complainants.

We further test whether differences in financial restitution likelihood directly stem from the company employee handling the complaint. In Internet Appendix Table C.1, we add employee (*respondent*) fixed effects to our baseline Equation 2. The addition does not impact the coefficients of interest, hence we find no evidence that it is certain firm employees who drive the different restitution patterns across income groups.

Next, we test whether differences in consumer behavior and firm resources contribute to financial restitution outcomes, with a particular focus on differences by income (Table 6). We augment equation 2 to include interactions between filer income and filer complaint actions, and interactions between income and company employee actions. Similar to Table E.1, Panel A uses a dummy variable for filers in above-median income tracts while Panel B uses a continuous version of income.

Overall, we find that consumer self-advocacy and documentation among higher-income filers is crucial for securing financial restitution. According to column (1), filer income, self-advocacy language, and supporting documentation all positively affect the propensity to receive financial restitution, even when the regressions include stringent fixed effects. Columns (2) and (6) show that these effects operate through the interaction of higher income with self-advocacy, documentation, and employee experience.

Furthermore, even though companies do not systematically allocate more employee resources to higher-income complaints, Table 6, columns (3) through (6) reveal that employee involvement can affect outcomes.[16] Employee experience is not associated with an increase in restitution. By contrast, employee engagement, measured by login time, is negatively related to monetary relief overall. Interestingly, for high-income complaints,

[15] The number of observations included is lower in Panel B of Table 5 due to the occasional lack of the respondent identifier information in the data.

[16] The number of observations included in these columns is lower due to the occasional lack of the respondent identifier information in the data.

greater employee login activity reduces the probability of restitution, whereas for low-income complaints, employee engagement is positively associated with relief. These findings suggest that highly engaged company employees can help mitigate the shortcomings that low-income filers have in obtaining financial restitution.

Taken together, these findings suggest that income-based differences in complaint resolution are driven primarily by consumer behavior. Higher-income consumers are more likely to frame and support their complaints in ways that increase the likelihood of restitution. We find no evidence of differential firm effort or triage based on consumer characteristics. This distinction is important: it implies that financial restitution is not automatically triggered by company error but depends heavily on how consumers engage the dispute process.

IV Regulatory Scrutiny and Financial Restitution

We proceed to leverage confidential data on the CFPB's internal monitoring reviews of the complaint process. Since 2020, the CFPB has monitored and reviewed companies' processing of complaints. Specifically, the CFPB assesses whether companies manage complaint volume effectively and whether they properly respond to complaints. In conducting these reviews, the CFPB routinely selects some companies, and then analyzes a random selection of these companies' complaints over the previous few years. Between 2020 and 2024, nearly 550 companies were monitored through reviews, amounting to a total of over 194,000 screened complaints. These numbers represent around 10% of both the number of all companies that have ever received a CFPB complaint and the number of total complaints, highlighting the broad scope of this CFPB monitoring effort.

Once the CFPB has screened a random complaint as part of the monitoring review, it assigns metrics that capture how well the company processed the complaint. In particular, we focus on the two internal metrics that value the company's response to the filer. $I(\textit{company not address compl.})_{i,f,c,r,q,tr}$ is a dummy variable equal to 1 if the CFPB deems that com-

pany c did not properly address complaint i following its review. $I(response\ not\ substantive)_{i,f,c,r,q,tr}$ is a dummy variable equal to 1 if the CFPB deemed that company c did not provide a substantive response to the filer f of complaint i following its review. Overall, companies did not properly address around 5.25% of the reviewed complaints and did not provide a substantive response to 3.4% of them. If the CFPB finds that the company is processing complaints poorly, it then issues the company a confidential monitoring report highlighting the deficiencies. The CFPB sent 85 such reports between 2020-2024 and the complaints were delivered staggered over time.

In the following section, we use these confidential monitoring reports to establish an objective benchmark for income differences in financial restitution. Then, we assess whether regulatory pressure affects company behavior and financial restitution outcomes.

A CFPB Company Monitoring Reviews

By looking at the reviewed complaints that the CFPB flags (or not) as properly processed, we can gather information on the optimal benchmark for complaint processing. Further, having found differences in restitution across demographics, we can use this information to assess whether such differences are driven by companies not correctly processing complaints across demographics.

We find that complaints from low-income filers are relatively more likely to be poorly addressed or receive an unsatisfactory response, especially at companies that receive a monitoring report from the CFPB. Figure 5 plots $I(company\ not\ address\ compl.)_{i,f,c,r,q,tr}$ (Panel A) and $I(response\ not\ substantive)_{i,f,c,r,q,tr}$ (Panel B) by quintiles of the reviewed complaints' census tract household median income. Within each Panel, the graphs on the left pool together all reviewed complaints, while the graphs on the right distinguish between reviewed complaints that resulted in a confidential monitoring report being sent to the company (highlighting the deficiencies) and reviewed complaints that did not result in a confidential monitoring report being sent to the company. The graphs depict a clear monotonic trend that

is opposite the patterns of financial restitution: low-income filers are more likely to have their complaints improperly handled, especially at companies that end up receiving a monitoring report.

However, the disparities in complaint processing are much smaller than the socioeconomic differences for filers receiving financial restitution. Comparing Figure 5 with Figure 4, complaints in the top quintile of filer tract income are ∼20% less likely to be flagged as poorly handled in investigations than complaints in the bottom quintile, while they are ∼65% more likely to receive financial restitution.

Table G.1 uses regression analysis to test for differences in complaint handling across income groups. These regressions allow us to control for quarter, company, and product fixed effects. We find that the inclusion of company or product fixed effects eliminates differences in complaint handling across incomes. The difference in incomes becomes small and indistinguishable from zero with company fixed effects or negative with product fixed effects. These findings suggest that companies are not treating different income groups differently, but rather, companies with more complaints from certain income groups are more likely to have deficiencies in their handling of complaints.[17]

Overall, there is only weak evidence that differences in financial restitution are driven by companies failing to process low-income complaints properly, and the primary driver of the differences remains how consumers themselves engage with the complaint process (self-advocating, attaching supporting documentation, etc.).

B Effects of CFPB Monitoring and Enforcement

Next, we analyze how companies respond to receiving a confidential monitoring report from the CFPB. The increased regulatory scrutiny by the CFPB potentially affects the propensity for companies to deliver financial resti-

[17] The same patterns arise when considering education and ethnicity instead of income (Figures E.2 and E.3, and Table E.4, for reference).

tution, and their response may differ across filers from different income groups.

Internet Appendix Figure F.1 provides information on the companies that received a confidential monitoring report from the CFPB between 2020 and 2024. Panel A highlights how 85 companies out of the over 550 companies reviewed between 2020 and 2024 received a confidential monitoring report, as the CFPB sends reports only to the reviewed companies that display poor complaint handling standards. Panel B shows how these companies usually account for around 0.5% of all complaints.

We use the staggered distribution of these confidential monitoring reports to conduct a difference-in-differences analysis of the effects of increased regulatory scrutiny on companies' financial restitution patterns. We use the companies that receive confidential monitoring reports as our treated sample. We restrict our control sample to the companies that were reviewed but never received a report, as long as they had at least 100 yearly complaints in 2018 (prior to the review processes). This restriction on the control sample accounts for the fact that companies that receive monitoring reports tend to be larger. Panel A of Internet Appendix Table G.2 presents the balance t-tests for the treated and the control groups prior to the start of monitoring reviews in 2020. Even imposing a size threshold, treated companies tend to receive, on average, significantly more complaints. Treated companies also tend to attract more deposit-related complaints than control companies (suggesting they are more likely to be banks than specialized entities), and witness a higher rate of filer attachments. However, there is no difference between treated and controls in how many complaints these companies get from low-income (or low-education, or minority filers), on average. Panel B presents balance t-tests for the early-treated companies (receiving confidential monitoring reports in 2020-2021-2022) and the late-treated companies (receiving confidential monitoring reports in 2023-2024). The CFPB first targeted larger banks, then expanded to smaller banks and other financial institutions, which happen to get a higher percentage of complaints from low-income, low-education, and minority filers, on average.

We apply a difference-in-differences methodology to the complaint-level data of these companies:

$$(3) \quad solved\ w/MR_{i,f,c,r,q,tr} = \gamma_c + \gamma_q + \beta_1 \times I(post\text{-}report)_{i,c,q} + \beta_2 \times X_{f,t} + \beta_3 \times I(post\text{-}report)_{i,c,q} \times X_{f,q} + \epsilon$$

In this specification, $solved\ w/MR_{i,f,c,r,q,tr}$ is a dummy equal to 1 if complaint i from filer f in tract tr against company c in quarter q has been solved with monetary relief by company employee r. $I(post\text{-}report)_{i,c,q}$ is a dummy equal to 1 if complaint i is filed against company c in quarter q, after the company has received a confidential monitoring report from the CFPB.[18] $X_{f,q}$ is either a high-income dummy, or the natural logarithm of household median income in filer f's tract tr and quarter q.

We find that after receiving a confidential monitoring report, companies increase the share of complaints resolved with monetary relief by several percentage points. However, they do so mostly for complaints filed by high-income filers. In Panel A of Table 7, we witness non-significant coefficients on $I(post\text{-}report)_{i,c,q}$, but positive and significant coefficients on the interaction between $I(post\text{-}report)_{i,c,q}$ and the income variables. This result suggests that regulatory interventions disproportionately benefit wealthier and more educated individuals. Instead of reducing differences in restitution across demographics, heightened regulatory scrutiny further exacerbates differences in financial restitution.[19]

We then investigate the changes that companies that receive a confidential monitoring report from the CFPB apply to their complaint processing in Panel B of Table 7. We find that self-advocacy increases the likelihood of receiving financial restitution by (0.0178 / 0.0761 =) 23.39% in normal times but by ((0.0178 + 0.0203) / 0.0761 =) 50.07% after the company receives a CFPB monitoring report (Column 1). We find that attaching supporting

[18] $I(post\text{-}report)_{i,c,q}$ is the equivalent of *Treated x Post* in the traditional difference-in-differences setup, while *Treated* and *Post* are being absorbed by company and quarter fixed effects.

[19] We find similar effects of monitoring reports when we use education or ethnicity instead income (Tables E.5 and E.6, Figures E.4 and E.5, for reference).

documentation increases the likelihood of receiving financial restitution by (0.0117 / 0.0761 =) 15.38% in normal times but by ((0.0117 + 0.0162) / 0.0761 =) 36.66% after the company receives a CFPB monitoring report (Column 3). Further, the post-report financial restitution likelihood with attachments gets even higher if the complaint is filed from an above-median-income tract (Column 4).

Since our treatment effects are heterogeneous over time and potentially across groups, we also employ the Callaway and Sant'Anna Estimator in place of the two-way fixed effects diff-in-diffs model. Figure 5 reports the corresponding coefficient plots. Panel A distinguishes between the share of complaints solved with monetary relief coming from below-median-income tracts (left graph) and the share of complaints solved with monetary relief coming from above-median-income tracts (right graph). Looking at the complaints from above-median-income tracts, there is a marked increase in the likelihood of financial restitution after the delivery of the confidential monitoring report. However, for the complaints filed from below-median-income tracts, the uptick is delayed and much smaller, validating the diff-in-diffs results.

We further replicate the Callaway and Sant'Anna analysis using a tighter control sample. While so far we have kept all investigated companies with at least 100 complaints as controls, now we further restrict control companies to the three nearest neighbors of the treated ones based on overall number of complaints, share of complaints regarding loan-related products, and share of complaints with filer attachments.[20] Under this more balanced sample, the post-monitoring report increase in restitution likelihood for high-income complaints but not low-income ones is even more apparent.[21]

Lastly, we explore whether these findings are due to a change in the composition of complaints received by firms that receive monitoring reports by the CFPB. To do so, Appendix Table G.3 replicates the difference-

[20] These were the three dimensions on which the previous treated and control samples differed the most according to the balance tests in Table G.2.

[21] We further replicate the diff-in-diffs analysis on the matched sample in Internet Appendix Table G.4, with similar results.

in-differences analysis but use demographic characteristics—income, education, and ethnicity—as the dependent variable. We find that receiving a monitoring report does not meaningfully change the demographics of people who complain about a company's financial products.

Overall, under increased regulatory scrutiny, companies seem to improve their responsiveness primarily to those consumers who were already more likely to secure restitution. This finding further supports the role of financial aptitude and self-advocacy in determining restitution outcomes—consumers who can effectively navigate the dispute resolution process are best positioned to benefit from regulatory oversight.

V Conclusion

Financial disputes are a pervasive yet understudied aspect of consumer financial markets. This paper provides the first systematic study of financial complaints and restitution using confidential regulatory data from the CFPB. We document a large and growing volume of complaints, with hundreds of millions of dollars in restitution paid out over the past decade. An SIR model calibrated with actual product usage and complaint data suggests scope for additional compensation to consumers in subsequent years, as consumers gain understanding of their financial products and the dispute process.

Our findings highlight the complementary nature of regulatory oversight and financial sophistication or self-advocacy. We find little evidence that firm identity systematically predicts restitution, suggesting that financial disputes are not driven primarily by a subset of bad-acting firms. Instead, product complexity plays a central role, with simpler products like bank accounts and credit cards generating higher restitution rates than mortgages and other structured financial products. Moreover, higher income consumers who actively advocate for themselves—by explicitly requesting refunds, claiming fraud, or providing supporting documentation—are far more likely to receive restitution.

While regulatory scrutiny increases restitution rates, it is most effective when paired with consumer engagement, reinforcing the complementary relationship between regulation and financial sophistication. These findings suggest that ensuring broad access to financial redress requires more than firm oversight. Policies aimed at enhancing financial literacy and making consumer redress mechanisms more accessible could help ensure that financial protections benefit a wide set of consumers.

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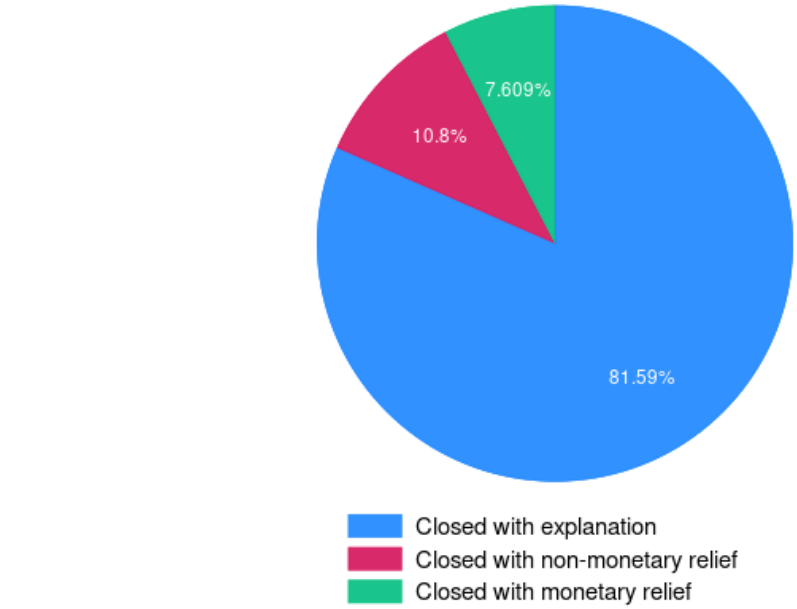
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Figure 1: **Company Answers to Complaints**

The figure illustrates the ways in which companies answer consumer complaints. The vast majority of complaints is closed with an explanation (81.6%), followed by 10.8% closed with an action that does not entail monetary relief, and 7.6% of complaints are solved with monetary relief.

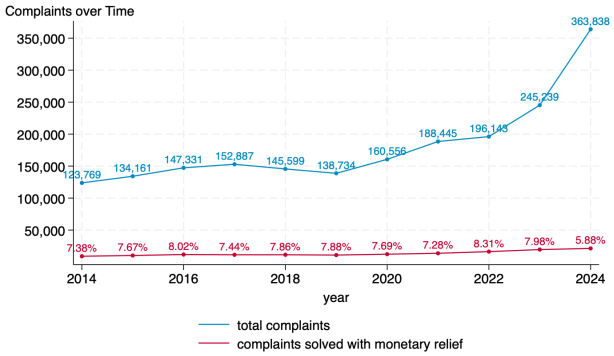


Source: CFPB data, 2014m1 - 2024m12.

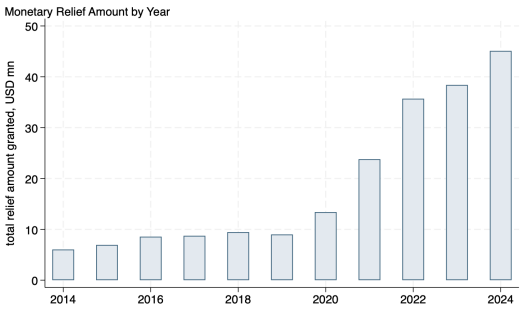
Figure 2: **Complaints Dynamics**

The figure investigates trends in CFPB complaints over time. The graph on the left-hand side of Panel A plots the overall number of complaints filed with the CFPB (blue line, with corresponding labels) and the overall number of complaints that received monetary relief (red line, with labels in terms of percentage of overall complaints) over time. The graph on the right-hand side of Panel A plots the total amount of monetary relief granted each year in millions. Panel B reports the total number of complaints within each product over time—distinguishing across debt collection, cards (debit, credit, prepaid), accounts (checking or savings), mortgage, money transfer (money transfer, virtual currency, or money service), student loan, car loan, other loan (payday, title, personal loan), and other (residual category).

Panel A: Complaints and Monetary Relief over time



Complaints over time



Relief Amount over time

Panel B: Complaints by product over time

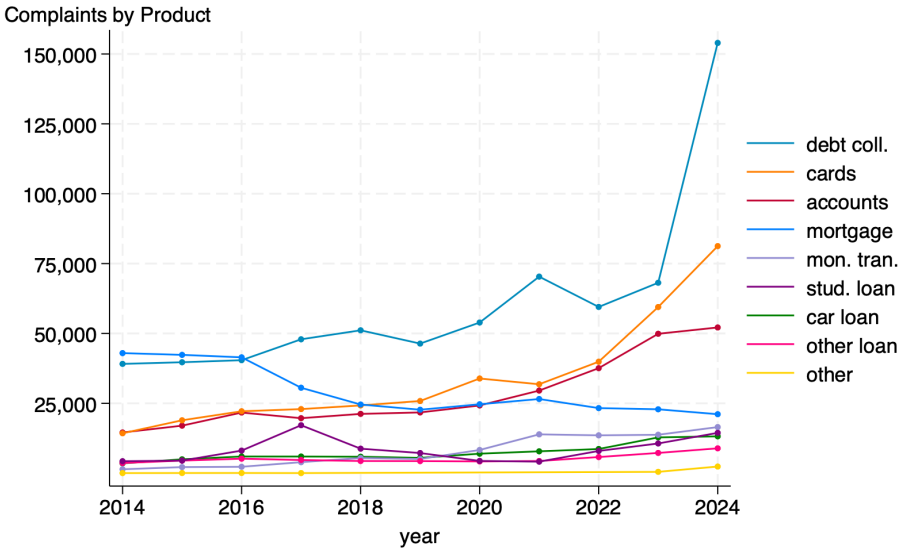


Figure 3: **Financial Restitution - Projection Model**

The figure reports projections of cumulative restitution over the next 10 years according to the SIR model introduced in Section B and thoroughly described in Internet Appendix B. Cumulative restitution is presented across the interquartile range of θ, the filing rate conditional on awareness of the CFPB, as highlighted in Table 2.

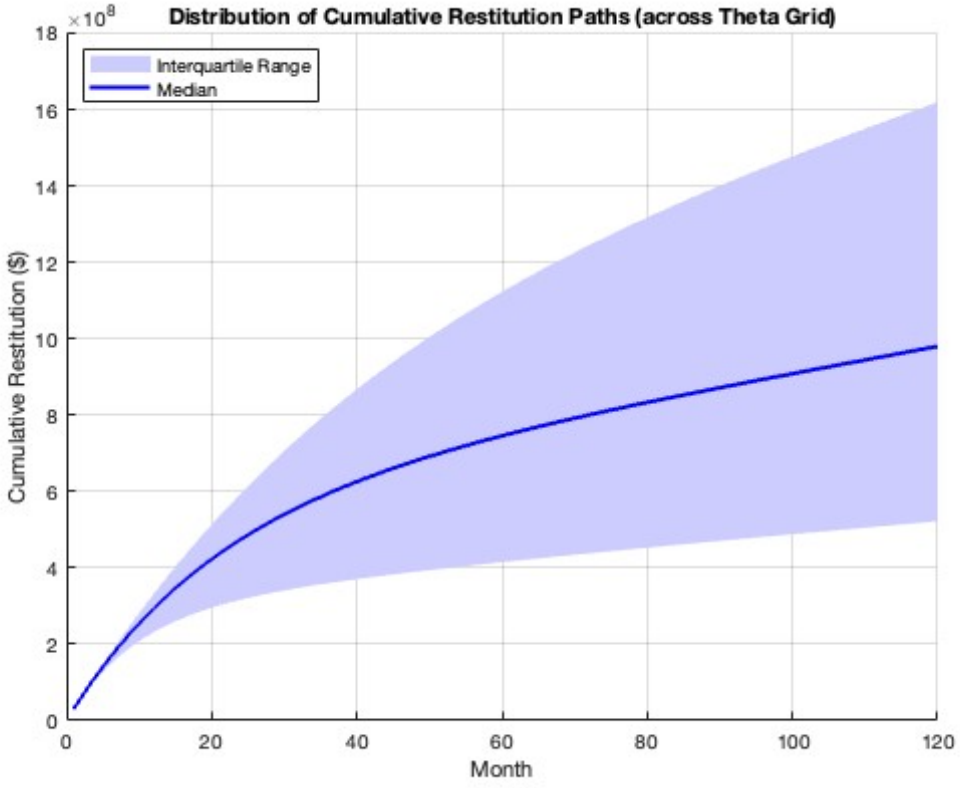
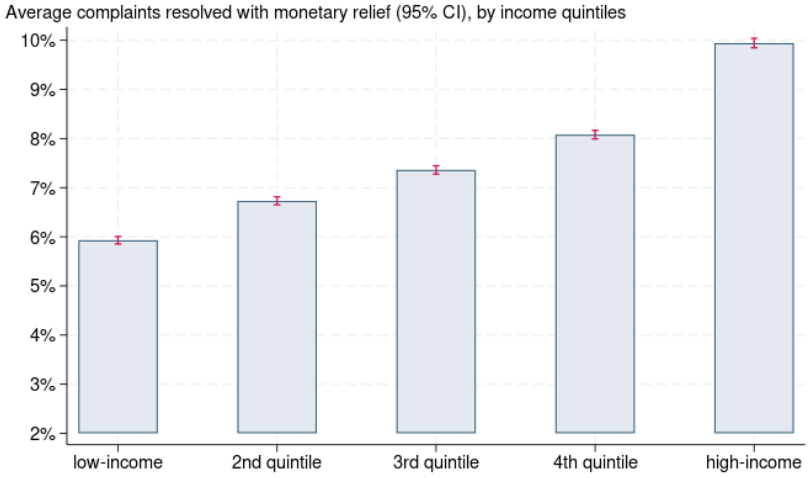


Figure 4: **Financial Restitution Across Demographics**

The figure documents the relationship between financial restitution likelihood and income. Panel A reports the percentage of complaints solved with monetary relief by quintiles of the filer's Census tract household median income. Panel B reports for each product the difference between the share of complaints solved with monetary relief in the highest quintile of filer's tract household median income and the share of complaints solved with monetary relief in the lowest quintile of filer's tract household median income.

Panel A: Monetary relief likelihood on Census tract income quintiles



Panel B: Monetary relief differential (highest - lowest) across products:

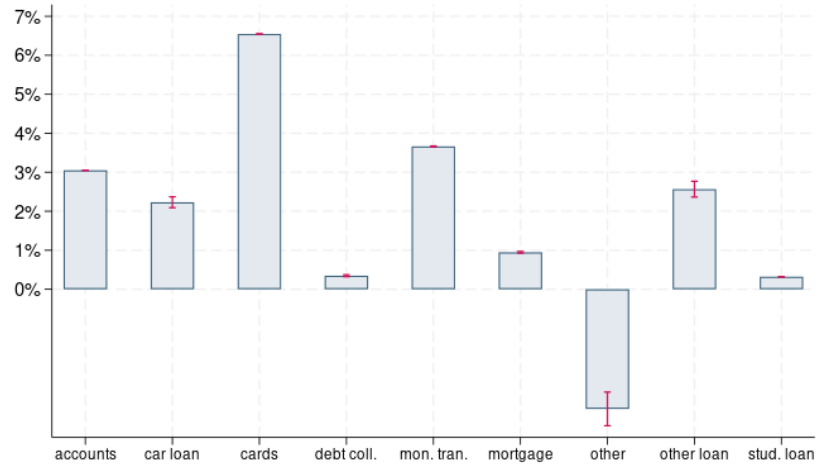
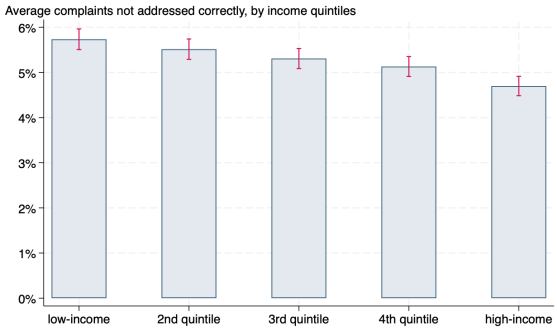
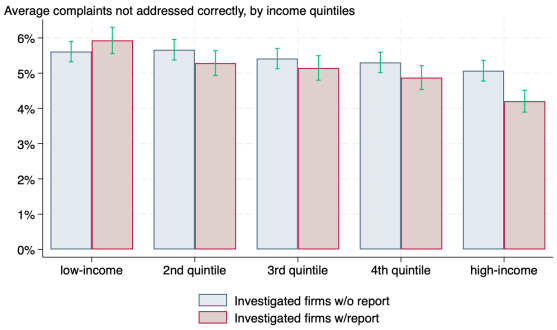


Figure 5: **CFPB Company Monitoring Reviews by filer's census tract income**

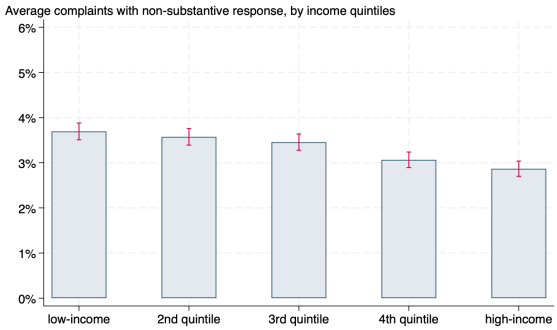
The figure reports the percentage of complaints flagged by the CFPB as having a problematic response (amongst the ones screened as part of the company monitoring reviews) by filer's Census tract household median income quintiles. Panel A reports the share of reviewed complaints flagged as not properly addressed by the company. Panel B reports the share of reviewed complaints flagged as lacking a substantive response. Across panels, plots on the left-hand side report results for all reviewed complaints, plots on the right-hand side distinguish between complaints at reviewed firms that never received a monitoring report (in blue) and complaints at reviewed firms that received a monitoring report at least once (negative feedback from CFPB, in red).

Panel A: Company did not address complaint





Panel B: Company response not substantive



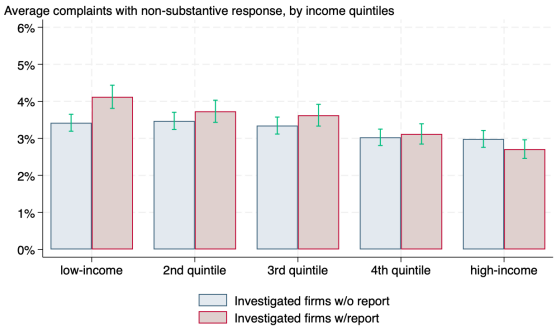
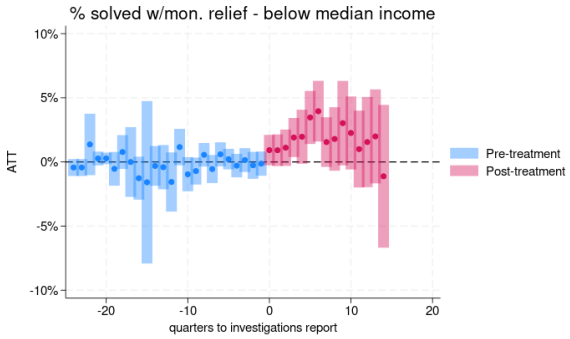


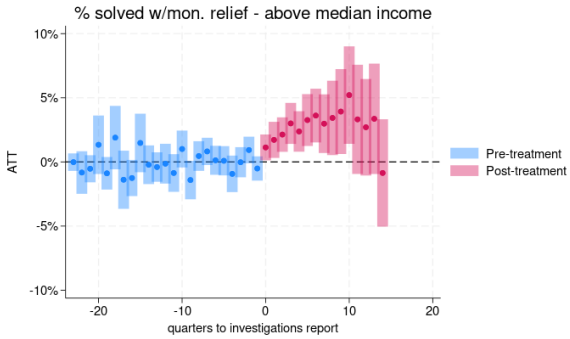
Figure 6: **CFPB Monitoring Reports - Dynamic Difference in Differences**

The figure reports event-study estimates of the effect of the company receiving a monitoring report (negative feedback from the CFPB) on the likelihood of granting financial restitution, using the Callaway and Sant'Anna (2021) difference-in-differences estimator. Across panels, the left-hand side graph is estimated on complaints coming from below median household median income Census tracts, while the right-hand side graph is estimated on complaints coming from above median household median income Census tracts. In Panel A, the treated companies are companies that were reviewed and received a monitoring report (negative feedback from CFPB, treatment), and the controls are companies that were reviewed but did not receive a report and had at least 100 complaints in 2018, prior to the start of the company monitoring reviews. In Panel B, the controls are companies that were reviewed and did not receive a report, and were the nearest neighbors of the treated firms in terms of overall number of complaints, share of loan-related complaints, and share of complaints with filer attachments prior the start of the company review period (matched controls).

Panel A:CFPB reports by low and high income

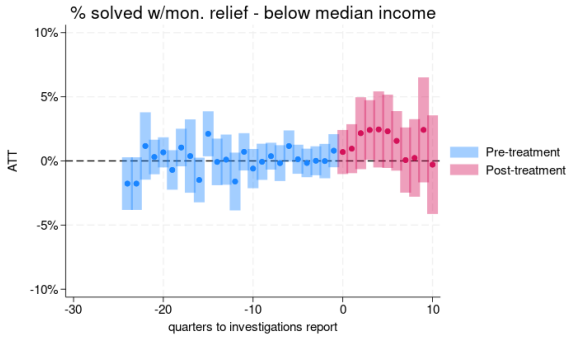


Low-income complaints

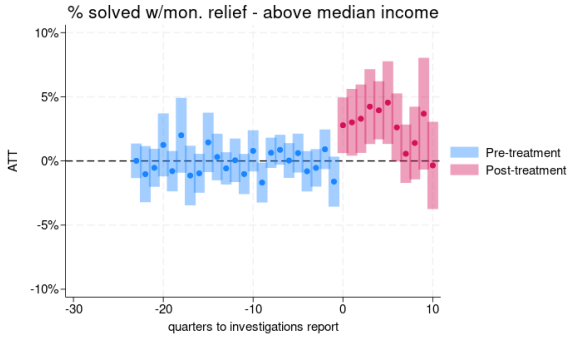


High-income complaints

Panel B: CFPB reports by low and high income, matched sample



Low-income complaints



High-income complaints

Table 1: **Monetary Relief Dynamics**

Description: The table shows financial restitution trends over time and across products. Panel A reports the evolution over time of the following metrics: the number of total complaints, the number of complaints solved with monetary relief (in absolute terms and in percentage), the average relief amount across complaints solved with financial restitution and its standard deviation. Panel B reports the evolution over time of the same metrics by product type instead of year.

Panel A: Monetary relief likelihood and amount over time

year	complaints	solved wMR	% solved wMR	relief mean	relief st. dev.
2014	113,551	8,693	7.65%	694.13	429.71
2015	122,691	9,804	7.99%	706.27	494.88
2016	135,380	11,233	8.30%	762.66	538.85
2017	140,999	10,710	7.60%	815.53	546.06
2018	133,724	10,654	7.97%	887.98	603.62
2019	129,364	10,295	7.96%	873.70	581.50
2020	148,708	11,548	7.77%	1,160.37	775.06
2021	176,256	12,943	7.34%	1,838.83	1,286.96
2022	186,052	15,605	8.39%	2,287.73	1,634.78
2023	225,482	18,004	7.99%	2,132.86	1,458.12
2024	317,988	19,779	6.22%	2,280.20	1,418.00
total	1,830,195	139,268	7.61%	1,471.98	1102.94

Panel B: Monetary relief likelihood and amount across products

product	complaints	solved wMR	% solved wMR	relief mean	relief st. dev.
accounts	283,495	49,303	17.39%	1,202.41	2,411.78
car loan	74,449	2,824	3.79%	1,185.82	2,450.62
cards	343,388	58,804	17.13%	871.47	1,969.61
debt coll.	614,547	4,128	0.67%	1,113.86	2,185.19
mon. tran.	79,094	7,205	9.11%	1,246.01	2,440.12
mortgage	296,096	9,050	3.06%	1,292.67	2,144.43
other	2,800	132	4.71%	910.05	2,124.84
other loan	52,423	2,797	5.34%	1,024.17	2,087.05
stud. loan	83,903	1,739	2.07%	1,762.40	3,220.99

Table 2: **Financial Restitution Projection Model**

Description: The table shows the by-product breakdown of the projected cumulative restitution amounts over the next 10 years (post 2024) according to the SIR Model introduced in Section B and detailed in Internet Appendix B. The model outputs the projected cumulative restitution under different assumptions for θ, the rate of filing a complaint conditional on awareness of the CFPB.

	θ**=0.10**	θ**=0.25**	θ**=0.33**	θ**=0.50**	θ**=0.75**	θ**=0.90**
accounts	$1,659,133,711	$561,444,418	$384,295,404	$223,656,757	$137,652,064	$127,814,558
car loan	$188,472,992	$139,507,424	$119,583,172	$87,799,637	$58,508,086	$54,324,538
cards	$2,034,269,833	$604,640,076	$398,109,732	$222,664,078	$134,137,106	$124,249,446
debt coll.	$85,997,708	$83,979,827	$81,852,821	$77,081,090	$70,340,353	$69,064,326
mortgage	$91,399,390	$71,651,773	$63,546,000	$50,308,169	$37,461,076	$35,537,166
other loan	$82,926,327	$53,356,006	$42,936,902	$28,466,364	$17,530,583	$16,153,437
stud. loan	$121,037,783	$104,855,437	$97,156,102	$82,934,521	$66,435,233	$63,656,824
total	$4,263,237,745	$1,619,434,961	$1,187,480,132	$772,910,616	$522,064,500	$490,800,295

Table 3: **Determinants of Restitution**

Description: The table analyzes the determinants of the likelihood of receiving financial restitution. It reports variance decompositions of regressing *solved wMR*—a dummy variable equal to 1 if the complaint is resolved with monetary relief—on different combinations of quarter fixed effects, company fixed effects, product fixed effects, and filer's county fixed effects. Percentages are based on Mean Squares, which account for the degrees of freedom of the explanatory variables. The first three columns report results from regressions run on the entire sample; Columns 4, 5, and 6 report results from regressions run on the subsample of companies that provide more than one financial product.

	all companies			**companies > 1 product**		
dep. variable	**% model variation explained (MS)**			**% model variation explained (MS)**		
= **solved wMR**	(1)	(2)	(3)	(4)	(5)	(6)
quarter FE	33.33%	0.5%	0.5%	19.42%	0.50%	0.48%
company FE	66.67%	0.24%	0.24%	80.58%	0.52%	0.51%
product FE		99.26%	99.23%		98.98%	98.98%
county FE			0.03%			0.30%
model variation (R-squared)	10.29%	12.18%	12.56%	10.03%	11.94%	12.32%
obs	1,996,702	1,996,702	1,900,172	1,944,294	1,944,294	1,850,105

Table 4: **Demographics and Financial Restitution**

Description: The table investigates the relationship between filer demographics and the likelihood of receiving financial restitution. In Panel A, the outcome variable is $solved\ w/MR_{i,f,c,r,q,tr}$, a dummy variable equal to one if filer f's complaint i from Census tract tr against company c filed in quarter q has been solved with monetary relief by its respondent r, zero otherwise. Panel A regresses this complaint-level information on: $I(above\ med.\ household\ med.\ income)_{i,q,tr}$ (Columns 1 to 3, a dummy variable equal to one if complaint i comes from a Census tract tr that has above median household median income in quarter q) and $ln(household\ med.\ income_{i,q,tr})$ (Columns 4 to 6, the natural logarithm of the household median income in Census tract tr, where complaint i is from). In Panel B, the outcome variable is $Monetary\ Relief\ amount_{i,f,c,r,q,tr}$, the USD amount of relief awarded if the complaint i has been solved with monetary relief (winsorized at the 2.5% level in each tail), and zero otherwise. Panel A reports OLS estimates, while Panel B uses fixed-effects Poisson models due to the nature of the data. Across panels, standard errors are clustered at the company level. ***, **, and * denote 1%, 5%, and 10% statistical significance, respectively.

Panel A: Financial Restitution Likelihood

	solved w/MR$_{i,f,c,r,q,tr}$					
	(1)	(2)	(3)	(4)	(5)	(6)
I(above med. household med. income)$_{i,q,tr}$	0.0101***	0.00951***	0.00868***			
	(0.0019)	(0.0016)	(0.0014)			
ln(household med. income$_{i,q,tr}$)				0.0139***	0.0131***	0.0131***
				(0.0025)	(0.0022)	(0.0022)
quarter FE	x	x	x	x	x	x
company FE	x			x		
company x product FE		x	x		x	x
county FE			x			x
observations	1,828,730	1,826,276	1,826,203	1,828,730	1,826,276	1,826,203
R-squared	0.104	0.137	0.139	0.104	0.137	0.139

Panel B: Financial Restitution Amount

	monetary relief amount$_{i,f,c,r,q,tr}$					
	(1)	(2)	(3)	(4)	(5)	(6)
I(above med. household med. income)$_{i,q,tr}$	0.299***	0.295***	0.271***			
	(0.028)	(0.027)	(0.031)			
ln(household med. income$_{i,q,tr}$)				0.396***	0.384***	0.388***
				(0.029)	(0.028)	(0.033)
quarter FE	x	x	x	x	x	x
company FE	x			x		
company x product FE		x	x		x	x
county FE			x			x
observations	1,517,592	1,439,004	1,433,561	1,517,592	1,439,004	1,433,561

Table 5: **Filer and Company Activity**

Description: The table investigates filer- and company-side determinants of financial restitution. Panel A investigates whether the likelihood of self-advocating in the complaint or attaching a supporting document varies across filer demographics, proxied by the household median income of the filer's Census tract. The outcome variables are $I(filer\ self\text{-}advocacy)_{i,f,c,r,q,tr}$ in Columns 1 to 4, and $I(filer\ attachment)_{i,f,c,r,q,tr}$ in Columns 5 and 6. $I(filer\ self\text{-}advocacy)_{i,f,c,r,q,tr}$ is a dummy variable equal to one if filer f of complaint i has mentioned either "refund" or "fraud" or similar words (see Internet Appendix D) while filing the complaint in either the complaint description/narrative (Columns 1 and 2) or in the desired resolution field (Columns 3 and 4), zero otherwise. $I(filer\ attachment)_{i,f,c,r,q,tr}$ is a dummy variable equal to one if filer f of complaint i has attached a supporting document while filing the complaint, zero otherwise. Panel B investigates whether companies allocate different resources or personnel across complaints filed from different demographics, proxied by the household median income of the filer's Census tract. The dependent variables are $employee\ experience_{i,f,c,r,q,tr}$ in Columns 1 and 2, and $employee\ login\ time_{i,f,c,r,q,tr}$ in Columns 3 and 4. The dependent variable $employee\ experience_{i,f,c,r,q,tr}$ is the natural logarithm of the count of how many complaints the company respondent r of complaint i already solved before handling complaint i. The dependent variable $employee\ login\ time_{i,f,c,r,q,tr}$ is the percentage of days between complaint i's submission and resolution that company respondent r logged into the CFPB complaint system. Across panels, the independent variables of interest are $I(above\ med.\ household\ med.\ income)_{i,q,tr}$ (Columns 1, 3, 5 in Panel A and Columns 1, 3 in Panel B) and $ln(household\ med.\ income_{i,q,tr})$ (Columns 2, 4, 6 in Panel A and Columns 2, 4 in Panel B). $I(above\ med.\ household\ med.\ income)_{i,q,tr}$ is a dummy variable equal to one if complaint c comes from a Census tract tr that has above median household median income in quarter q. $ln(household\ med.\ income_{i,q,tr})$ is the natural logarithm of the household median income in Census tract tr, where complaint i is from. Standard errors are clustered at the company level. ***, **, and * denote 1%, 5%, and 10% statistical significance, respectively.

Panel A: Filer activity

	I(filer self-advocacy)$_{i,f,c,r,q,tr}$				I(filer attachment)$_{i,f,c,r,q,tr}$	
	in description		in desired resolution			
	(1)	(2)	(3)	(4)	(5)	(6)
I(above med. household med. income)$_{i,q,tr}$	0.0233***		0.0134***		0.00373***	
	(0.0015)		(0.0016)		(0.0013)	
ln(household med. income$_{i,q,tr}$)		0.0341***		0.0210***		0.00694***
		(0.0021)		(0.0021)		(0.0014)
quarter FE	x	x	x	x	x	x
company x product FE	x	x	x	x	x	x
county FE	x	x	x	x	x	x
observations	1,741,564	1,741,564	1,805,330	1,805,330	1,826,203	1,826,203
R-squared	0.0304	0.0307	0.0242	0.0243	0.281	0.281

Panel B: Company activity

	employee experience$_{i,f,c,r,q,tr}$		employee login time$_{i,f,c,r,q,tr}$	
	(1)	(2)	(3)	(4)
I(above med. household med. income)$_{i,q,tr}$	0.000795		0.0000803	
	(0.0028)		(0.00034)	
ln(household med. income$_{i,q,tr}$)		0.00177		0.000492
		(0.0038)		(0.00044)
quarter FE	x	x	x	x
company x product FE	x	x	x	x
county FE	x	x	x	x
observations	1,427,040	1,427,040	1,330,225	1,330,225
R-squared	0.588	0.588	0.437	0.437

Table 6: **Financial Restitution Mechanisms**

Description: The table investigates how much do the potential determinants on the company and filer side explain of the monetary relief patterns observed in the data. Across panels, Column 1 adds $I(filer\ attachment)_{i,f,c,r,q,tr}$ (a dummy equal to one if filer f of complaint i has attached a supporting document while filing the complaint) and $I(filer\ self\text{-}advocacy)_{i,f,c,r,q,tr}$ (a dummy equal to one if filer f of complaint i mentions words like "relief" or "fraud" and similar ones in the desired resolution), the filer activity variables, to Equation 2. Column 2 further interacts them with income. Column 3 adds respondent fixed effects (the ID of the person the company assigns to answer the complaint), $employee\ experience_{i,f,c,r,q,tr}$ (the natural logarithm of the count of how many complaints company respondent r of complaint i already solved before this one), and $employee\ login\ time_{i,f,c,r,q,tr}$ (the percentage of days between complaint i submission and response that company respondent r logged into the CFPB complaint system), the company activity variables, to Equation 2. Column 4 further interacts them with income. Column 5 includes both filer and company activity variables, and Column 6 further interacts them with income. The independent variable of interest in Panel A is $I(above\ med.\ household\ med.\ income)_{i,q,tr}$, a dummy variable equal to one if complaint i comes from a Census tract tr that has above median household median income in quarter q. The independent variable of interest in Panel B is $ln(household\ med.\ income_{i,q,tr})$, the natural logarithm of the quarter q household median income in Census tract tr, where complaint i is from. Standard errors are clustered at the company level. ***, **, and * denote 1%, 5%, and 10% statistical significance, respectively.

Panel A: filer income as dummy variable

	solved w/MR$_{i,f,c,r,q,tr}$					
	filer activity		company activity		both	
	(1)	(2)	(3)	(4)	(5)	(6)
I(above med. household med. income)$_{i,f,q,tr}$	0.00834***	0.00348***	0.00931***	0.00747*	0.00891***	0.00195
	(0.0014)	(0.00099)	(0.0017)	(0.0039)	(0.0016)	(0.0036)
I(filer self-advocacy)$_{i,f,c,r,q,tr}$	0.0219***	0.0176***			0.0206***	0.0167***
	(0.0031)	(0.0025)			(0.0031)	(0.0027)
I(filer attachment)$_{i,f,c,r,q,tr}$	0.0123***	0.00974***			0.0120***	0.00949***
	(0.0021)	(0.0019)			(0.0019)	(0.0016)
I(filer self-advocacy)$_{i,f,c,r,q,tr}$ × I(above med. hh med. income)$_{i,f,q,tr}$		0.00841***				0.00777***
		(0.0016)				(0.0016)
I(filer attachment)$_{i,f,c,r,q,tr}$ × I(ab. med. hh med. income)$_{i,f,q,tr}$		0.00514***				0.00496***
		(0.0016)				(0.0012)
employee experience$_{i,f,c,r,q,tr}$			0.000237	-0.000587	0.000265	-0.000544
			(0.00095)	(0.00093)	(0.00093)	(0.00091)
employee login time$_{i,f,c,r,q,tr}$			-0.0120***	-0.00489*	-0.0113***	-0.00420
			(0.0032)	(0.0026)	(0.0031)	(0.0026)
employee experience$_{i,f,c,r,q,tr}$ × I(above med. hh med. income)$_{i,f,q,tr}$				0.00168***		0.00164***
				(0.00058)		(0.00058)
employee login time$_{i,f,c,r,q,tr}$ × I(above med. hh med. income)$_{i,f,q,tr}$				-0.0145***		-0.0143***
				(0.0043)		(0.0043)
quarter FE	x	x	x	x	x	x
company x product FE	x	x	x	x	x	x
county FE	x	x	x	x	x	x
respondent FE			x	x	x	x
observations	1,820,166	1,820,166	1,328,922	1,328,922	1,311,748	1,311,748
R-squared	0.142	0.142	0.168	0.168	0.170	0.170

Panel B: filer income as continuous variable

	solved w/MR$_{i,f,c,r,q,tr}$					
	filer activity		company activity		both	
	(1)	(2)	(3)	(4)	(5)	(6)
ln(household med. income$_{i,f,q,tr}$)	0.0125***	0.00724***	0.0143***	0.0111**	0.0137***	0.00459
	(0.0021)	(0.0015)	(0.0025)	(0.0056)	(0.0024)	(0.0050)
I(filer self-advocacy)$_{i,f,c,r,q,tr}$	0.0218***	-0.0631***			0.0206***	-0.0682***
	(0.0031)	(0.014)			(0.0031)	(0.016)
I(filer attachment)$_{i,f,c,r,q,tr}$	0.0123***	-0.0666***			0.0120***	-0.0600***
	(0.0021)	(0.022)			(0.0019)	(0.016)
I(filer self-advocacy)$_{i,f,c,r,q,tr}$ × ln(hh med. income$_{i,f,q,tr}$)		0.00759***				0.00791***
		(0.0014)				(0.0016)
I(filer attachment)$_{i,f,c,r,q,tr}$ × ln(hh med. income$_{i,f,q,tr}$)		0.00702***				0.00641***
		(0.0020)				(0.0015)
employee experience$_{i,f,c,r,q,tr}$			0.000232	-0.0278***	0.000258	-0.0272***
			(0.00095)	(0.0077)	(0.00093)	(0.0078)
employee login time$_{i,f,c,r,q,tr}$			-0.0120***	0.221***	-0.0113***	0.221***
			(0.0032)	(0.067)	(0.0031)	(0.066)
employee experience$_{i,f,c,r,q,tr}$ × ln(hh med. income$_{i,f,q,tr}$)				0.00250***		0.00245***
				(0.00069)		(0.00070)
employee login time$_{i,f,c,r,q,tr}$ × ln(hh med. income$_{i,f,q,tr}$)				-0.0208***		-0.0207***
				(0.0061)		(0.0060)
quarter FE	x	x	x	x	x	x
company x product FE	x	x	x	x	x	x
county FE	x	x	x	x	x	x
respondent FE			x	x	x	x
observations	1,820,166	1,820,166	1,328,922	1,328,922	1,311,748	1,311,748
R-squared	0.142	0.142	0.168	0.168	0.170	0.170

Table 7: **CFPB Monitoring Reports**

Description: The table presents difference-in-differences estimates around the first time a company receives a confidential monitoring report (negative feedback from the CFPB). The sample comprehends all treated companies and, as controls, those companies that were also reviewed but did not receive a report and have at least 100 complaints in 2018 (pre-reviews). Across panels, the outcome variable is $solved\ \ w/MR_{i,f,c,r,q,tr}$, a dummy variable equal to one if filer f's complaint i from Census tract tr against company c filed in quarter q has been solved with monetary relief, zero otherwise. In Panel A, the independent variables of interest are $I(post\text{-}report)_{i,c,q}$, $I(above\ med.\ household\ med.\ income)_{i,q,tr}$, $ln(household\ med.\ income_{i,q,tr}$, and their interactions. $I(post\text{-}report)_{i,c,q}$ is a dummy variable equal to one if complaint i was filed against company c in quarter q, which is after company c has received a monitoring report (negative feedback from the CFPB). $I(above\ med.\ household\ med.\ income)_{i,q,tr}$ is a dummy variable equal to one if complaint i comes from a Census tract tr that has above median household median income in quarter q. $ln(household\ med.\ income_{i,q,tr})$ is the natural logarithm of the household median income in Census tract tr, where complaint i is from. In Panel B, such variables are further interacted with $I(filer\ self\text{-}advocacy)_{i,f,c,r,q,tr}$, a dummy variable equal to one if filer i of complaint c has mentioned either "refund" or similar words or "fraud" and similar words in the desired resolution field while filing the complaint, and $I(filer\ attachment)_{i,f,c,r,q,tr}$, a dummy variable equal to one if filer i of complaint c has attached a supporting document while filing the complaint. Standard errors are clustered at the company level. ***, **, and * denote 1%, 5%, and 10% statistical significance, respectively.

Panel A: Difference-in-differences

	solved w/MR$_{i,f,c,r,q,tr}$					
	(1)	(2)	(3)	(4)	(5)	(6)
I(post-report)$_{i,c,q}$	-0.00586	-0.00847	-0.00817	-0.265***	-0.233***	-0.227***
	(0.011)	(0.011)	(0.011)	(0.057)	(0.049)	(0.050)
I(above med. household med. income)$_{i,q,tr}$	0.00727***	0.00690***	0.00570***			
	(0.0020)	(0.0017)	(0.0014)			
I(post-report)$_{i,c,q}$ × I(above med. hh med. income)$_{i,q,tr}$	0.0203***	0.0178***	0.0174***			
	(0.0040)	(0.0035)	(0.0035)			
ln(household med. income$_{i,q,tr}$)				0.0112***	0.0107***	0.0107***
				(0.0029)	(0.0027)	(0.0025)
I(post-report)$_{i,c,q}$ × ln(hh med. income$_{i,q,tr}$)				0.0239***	0.0207***	0.0202***
				(0.0056)	(0.0048)	(0.0049)
quarter FE	x	x	x	x	x	x
company FE	x			x		
company x product FE		x	x		x	x
county FE			x			x
observations	1,003,708	1,003,541	1,003,388	1,003,708	1,003,541	1,003,388
R-squared	0.106	0.132	0.135	0.107	0.132	0.135

Panel B: Filer Activity

	solved w/MR$_{i,f,c,r,q,tr}$			
	(1)	(2)	(3)	(4)
I(post-report)$_{i,c,q}$	-0.00651	-0.0138	-0.00626	-0.0128
	(0.011)	(0.011)	(0.011)	(0.011)
I(filer self-advocacy)$_{i,f,c,r,q,tr}$	0.0178***	0.0154***		
	(0.0040)	(0.0036)		
I(post-report)$_{i,c,q}$ × I(filer self-advocacy)$_{i,f,c,r,q,tr}$	0.0203***	0.0168***		
	(0.0051)	(0.0052)		
I(above med. household med. income)$_{i,q,tr}$		0.00381***		0.00464***
		(0.0013)		(0.0015)
I(post-report)$_{i,c,q}$ × I(above med. hh med. income)$_{i,q,tr}$		0.0144***		0.0128***
		(0.0035)		(0.0033)
I(above med. hh med. income)$_{i,q,tr}$ × I(filer self-advocacy)$_{i,f,c,r,q,tr}$		0.00497***		
		(0.0016)		
I(post-report)$_{i,c,q}$ × I(above med. hh med. income)$_{i,q,tr}$ × I(filer self-advocacy)$_{i,f,c,r,q,tr}$		0.00456		
		(0.0032)		
I(filer attachment)$_{i,f,c,r,q,tr}$			0.0117***	0.0107***
			(0.0026)	(0.0025)
I(post-report)$_{i,c,q}$ × I(filer attachment)$_{i,f,c,r,q,tr}$			0.0162***	0.0111***
			(0.0046)	(0.0040)
I(above med. hh med. income)$_{i,q,tr}$ × I(filer attachment)$_{i,f,c,r,q,tr}$				0.00195
				(0.0016)
I(post-report)$_{i,c,q}$ × I(above med. hh med. income)$_{i,q,tr}$ × I(filer attachment)$_{i,f,c,r,q,tr}$				0.00866***
				(0.0032)
quarter FE	x	x	x	x
company x product FE	x	x	x	x
county FE	x	x	x	x
observations	991,205	991,205	1,003,388	1,003,388
R-squared	0.137	0.137	0.135	0.136

Appendix to:

The Hidden Costs of Financial Services: Consumer Complaints and Financial Restitution

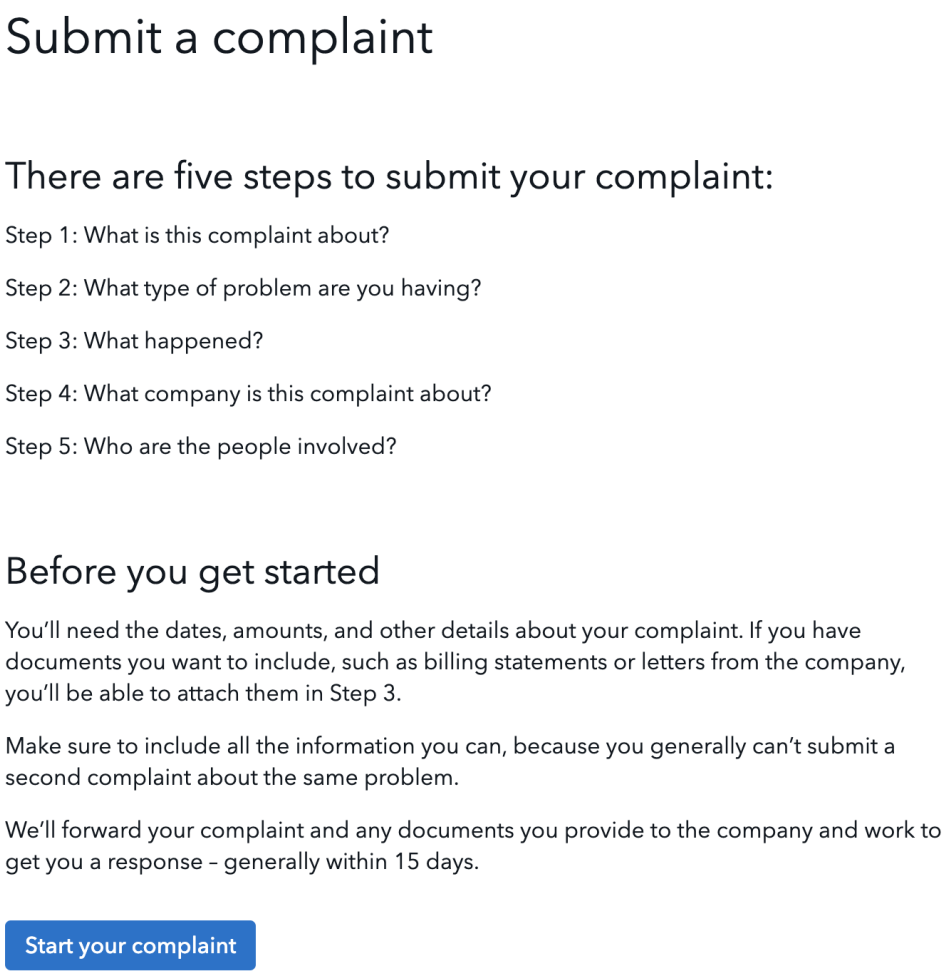
(intended for online publication)

Can be found at this link: Internet Appendix.

Appendix A - Submitting a Complaint on the CFPB Website

Figure A..1: **Filing a complaint on the CFPB website**

The Figure shows the different steps for filing a complaint regarding a checking account.



Submit a complaint

What is this complaint about?

Choose the product or service that best matches your complaint.

- ○ Debt collection
- ○ Credit reporting, credit repair services, or other personal consumer reports
- ○ Mortgage
- ○ Credit card or prepaid card
- ○ Checking or savings account
- ○ Vehicle loan or lease
- ○ Student loan
- ○ Payday loan, title loan, or personal loan (installment loan or personal line of credit)
- ○ Money transfer, virtual currency, or money service (check cashing service, currency exchange, cashier's/traveler's check, debt settlement)

‹ | Previous Step 1 of 5 Next | ›

What type of problem are you having?

Most of the **checking account** complaints we get are about one of the following topics. Select the one that best describes your complaint. You will have the chance to explain your complaint in detail in the next step.

- ○ Opening an account
- ○ Managing an account (deposits, withdrawals, using ATM card, making or receiving payments, cashing a check, fees)
- ○ Closing an account
- ○ Problem caused by your funds being low
- ○ Problem with a lender or other company charging your account
- ○ Problem with credit report or credit score

‹ Previous | Step 2 of 5 | Next ›

What happened?

Describe what happened, and we'll send your comments to the companies involved.

- Include dates, amounts, and actions that were taken by you or the company.
- Do not include personal information, such as your name, account number, address, Social Security number, etc. We may ask for some of this information later, to help the company identify you and your account.

☐ I want the CFPB to publish this description on consumerfinance.gov so that others can learn from my experience. The CFPB will take steps to remove my personal information from this description but someone may still be able to identify me. Learn how it works. I consent to publishing this description after the CFPB has taken these steps.

Publishing this description will not affect how the CFPB handles your complaint.

What would be a fair resolution to this issue?

We'll forward this to the companies involved. Be specific so they know what resolution you are looking for. The company may or may not offer to resolve your complaint.

Attach documents (optional)

Include copies or photos of documents related to your issue, such as contracts, letters, and receipts, and we will forward all materials to the company for review.

Select a file to attach

We accept all file formats, except .dll, .dmg, .exe and .msi, up to 10 MB per file. All uploaded files will be scanned for viruses and will be immediately deleted if one is detected.

Select a file to upload

Previous | Step 3 of 5 | Next

What company is this complaint about?

We'll forward your entire complaint to the company and request they respond within 15 days of receiving it.

Bank or credit union

Company name

Company name

We will forward your complaint to this company and ask for a response.

We need this information to help the company find you in their system and respond to your complaint. (optional)

- [ ] Account number
  This number is on your billing statement
- [ ] Billing address

Previous | Step 4 of 5 | Next

Who are the people involved?

Identify who is involved in this complaint. This could include:

- "Just you" if you are the account holder or borrower
- "You and someone else" if you are submitting for yourself and want to include another account holder or co-borrower
- "Someone else" if you are submitting for someone else as an authorized third party, such as a lawyer, advocate, or power of attorney

◯ Just you

◯ You and someone else

◯ Someone else

Previous | Step 5 of 5 | Review

Table A.1: **Example of Complaint**

Description: The table presents a complaint from the CFPB database, available on the CFPB database webpage. For an explanation of the information attached to each complaint, refer to the CFPB database fields webpage.

Date received	1/17/19
Product	Mortgage
Issue	Trouble during payment process
Company	Ditech Financial LLC
State, Zip code	TX, 781XX
Company response	Closed with explanation

Complaint narrative: I have been trying to get my Private Mortgage Insurance Removed from my mortgage since XX/XX/XXXX when my mortgage dropped below 80 % loan to value. Last year my mortgage was sold from XXXX XXXX (Under mortgage XXXX) to Ditech Mortgage (account XXXX). I reached out to Ditech via a email (after being told to do so via phone representative) request to remove my PMI on mortgage on XX/XX/XXXX and received no response at all from them, I even checked my junk box and nothing was there. My mortgage papers that I signed state an "Automatic Termination of PMI" that states once my loan is below 78 % loan to value PMI will automatically terminate (I have attached this document). I reached out again today on XX/XX/XXXX to make this request via phone and was told initially to send the request that I already sent it too. I asked to speak with a supervisor and after being put on hold for about 30 minutes, I finally spoke to one. They told me that my loan to value must be under 70 % loan to value and that was their policy. After reading this document to the supervisor, I was told that "they don't have that document on file". She sent me a link to send her the form I have. I did so and just told me that I'll be hearing from them in 7-10 business days. Given their past history, I highly doubt that I will hear from them. I did mention to the supervisor and ask her why they weren't staying compliant to the homeowners protection act and she said nothing. From my understand this act requires mortgage companies to drop off PMI once loans are below 78 % LTV and the loan is current. I qualify for both of those items and don't understand why this is such a difficult task.

Appendix B - SIR Model for Complaint Diffusion and Restitution Estimation

We model consumer complaint behavior using a susceptible–infected–recovered (SIR) framework that we adapt to the context of regulatory awareness and financial restitution.

A Model Setup

Let the population be indexed by financial product $p \in \{1, 2, \ldots, P\}$. For each product cell, define:

- $S_p(t)$: share of consumers who experienced an error but are unaware of the CFPB complaint portal at time t;
- $I_p(t)$: share of consumers who are aware and capable of filing a complaint;
- $R_p(t)$: share of consumers who have filed a complaint ("recovered").

We assume the following dynamics:

$$\begin{aligned} \frac{dS_p}{dt} &= -\beta_p S_p(t) I_p(t) \\ \frac{dI_p}{dt} &= \beta_p S_p(t) I_p(t) - \gamma_p I_p(t) \\ \frac{dR_p}{dt} &= \gamma_p I_p(t) \end{aligned}$$

where β_p is the rate of awareness diffusion—interpreted as how quickly knowledge of the complaint process spreads for product p, and γ_p is the resolution rate—the rate at which aware consumers act and submit a complaint. We assume that the resolution rate evolves according to:

$$\gamma_p = \theta \times \pi_p$$

where θ is the filing rate conditional on awareness and π_p is the restitution success probability of any given complaint.

The initial conditions are set as:

$$S_p(0) = 1 - \varepsilon_p, \quad I_p(0) = \varepsilon_p, \quad R_p(0) = 0$$

where ε_p is the initial share of consumers with awareness.

B Solving the Model

We numerically solve the system to obtain the long-run value $R_p(\infty)$, which represents the steady-state fraction of eligible consumers of product p, who file a complaint in the limit. Define:

$$\alpha_p = R_p(\infty),$$

which reflects the projected complaint rate under full awareness diffusion, net of frictions in knowledge.

C Mapping to Restitution Costs

Let:

- ρ_p: observed monetary relief rate for complaints of product p;
- $\bar{R}_p$: average amount of restitution received per successful complaint;
- N_p: number of households holding product p.

Then the projected total cost of financial service errors is:

$$\text{Projected Cost}_p = \alpha_p \times \rho_p \times \bar{R}_p \times N_p$$

Summing across all products:

$$\text{Total Projected Cost} = \sum_p \alpha_p \times \rho_p \times \bar{R}_p \times N_p$$

D Calibration

We calibrate the model by fitting the cumulative observed complaint shares over time, $R_p(t)$, to actual CFPB complaint data by product category. The parameter β_p is chosen to match observed growth rate of complaints for each product. We calibrate ε_p as equal to the total number of complaints in product p divided by the total number of households with a given financial product. This is a lower bound on awareness because it reflects a minimum number of households that have submitted complaints about a financial product. Restitution rates conditional on submitting a complaint (π_p) are drawn from Table 1, Panel B.

The following table lays out the model parameters and data source. Once calibrated, the model generates projections of α_p under counterfactual scenarios of complete awareness or targeted outreach.

Table B.1: **Financial Restitution SIR Model Calibration**

Description: The table shows the by-product breakdown of the SIR Model calibration parameters. β is the annualized 5-year growth rate of complaints over the 2020-2024 time frame (source: public CFPB data). π is the average percentage of yearly complaints solved with monetary relief over the 2020-2024 time frame (source: public CFPB data). μ is the average monetary relief granted to complaints receiving financial restitution in 2024 (source: confidential CFPB data). # 2024 *complaints* is the number of complaints filed in 2024 (source: public CFPB data). *hh w/product* is the number of households using the financial product in question according to either the Federal Board of Governors' 2022 Survey of Consumer Finances or the Federal Reserve of New York's 2024 Q3 Report on Household Debt and Credit. % *hh w/product* is the percentage of households using the financial product in question, derived by dividing *hh w/product* by 132,216,000, the number of total U.S. household according to 2024 Federal Reserve Economic Data. For the product categories "monetary transfers" and "other" (residual category) we were not able to find information on household usage, and they are therefore excluded from the modeling exercise.

	β	π	μ	**# 2024 complaints**	**hh w/product**	**% hh w/product**
accounts	0.2035	0.1548	1,818.32	49,174	130,364,976	0.986
car loan	0.2016	0.0287	1,904.06	12,564	45,085,656	0.341
cards	0.2678	0.1638	1,088.35	77,424	120,448,776	0.911
debt coll.	0.0838	0.0061	1,302.42	65,232	6,081,936	0.046
mon. tran.					NA	NA
mortgage	-0.0072	0.0308	1,536.31	19,882	53,283,048	0.403
other					NA	NA
other loan	0.164	0.0468	1,056.39	8,501	6,743,016	0.051
stud. loan	0.1534	0.0141	2,632.45	13,727	28,690,872	0.217
source	CFPB	CFPB	CFPB	CFPB	SCF, FRB	SCF, FRB, FRED

Appendix C - Respondent Fixed Effects

Table C.1: **Respondent Fixed Effects**

The table investigates whether the relationship between filer demographics and the likelihood of receiving financial restitution is at least partially driven by the precise company employee taking care of the complaint—i.e., the *respondent*. It does so by adding respondent fixed effects to the baseline specification in Equation 2. Since respondent ID information is not always available, Columns 1 and 3 replicate the baseline results of Table 4 over the subsample for which respondent ID information is available. Then, Columns 2 and 4 add respondent fixed effects. ***, **, and * denote 1%, 5%, and 10% statistical significance, respectively.

	solved w/MR$_{i,f,c,r,q,tr}$			
	(1)	(2)	(3)	(4)
I(above med. household med. income)$_{i,q,tr}$	0.00925***	0.00926***		
	(0.0016)	(0.0017)		
ln(household med. income$_{i,q,tr}$)			0.0139***	0.0140***
			(0.0024)	(0.0024)
quarter FE	x	x	x	x
company x product FE	x	x	x	x
county FE	x	x	x	x
respondent FE		x		x
observations	1,410,810	1,410,810	1,410,810	1,410,810
R-squared	0.141	0.166	0.142	0.166

Appendix D - Self-advocacy Jargon

We analyze the textual content of complaints to build two variables, $I(filer\ self\text{-}advocacy\ in\ description)_{i,f,c,r,q,tr}$ and $I(filer\ self\text{-}advocacy\ in\ desired\ resolution)_{i,f,c,r,q,tr}$.
$I(filer\ self\text{-}advocacy\ in\ description)_{i,f,c,r,q,tr}$ is a dummy variable taking the value of one if filer f directly mentions "refund" or "fraud" or similar words in complaint i's description field, and $I(filer\ self\text{-}advocacy\ in\ desired\ resolution)_{i,f,c,r,q,tr}$ is a dummy variable taking the value of one if filer f directly mentions "refund" or "fraud" or similar words in complaint i's desired resolution field.
For "refund", we consider the following similar words: "refunding", "refunded", "refunds", "repay", "reimburse", "reimbursement", "reimbursements", "reimbursing", "reimbursed", "repayment", "repayments", "repaying", "pay back", "paying back", "paid back", "make good", "making good", "made good", "compensate", "compensation", "compensations", "compensating", "compensated", "recoup", "recoups", "recouping", "recouped", "remunerate", "remuneration", "remunerations", "remunerating", "remunerated", "squaring accounts with", "squared accounts with", "square accounts with".
For "fraud", we consider the following similar words: "deceit", "deception", "trickery", "rip-off", "fake", "con", "impostor", "fraudster", "deceive", "deceiving", "deceived", "defraud", "defrauded", "cheat", "cheating", "cheated", "trick", "tricked", "tricking", "mislead", "misled", "misleading", "misguide", "misguided", "misguiding".

Appendix E - Robustness of Demographic Results

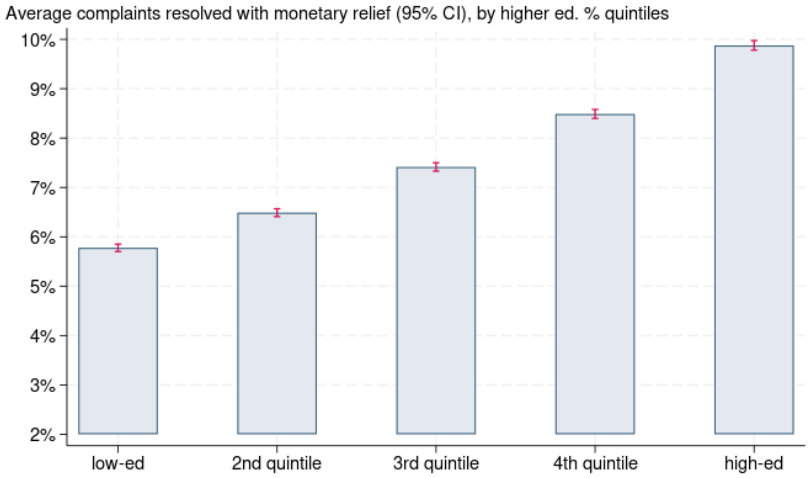
In this Appendix, we replicate the analysis using two alternative demographic measures to the household median income in the Census tract of the complaint filer. In particular, we employ the percentage of population over 25 with a bachelor's degree in the Census tract of the filer (education) and whether the filer belongs to a minority (Asian, Black, Hispanic). Ethnicity is assigned based on Bayesian Improved Surname and Geocoding (BISG) algorithms, which take into account both the race information contained in the surname of the filer, as well as the racial composition of the Census tract where the filer is from.

Using this two measures, Figure E.1 replicates Figure 4; Table E.1 replicates Table 4; Table E.2 replicates Table 5; Table E.3 replicates Table 6; Figure E.2 and Figure E.3 replicate Figure 5; Table E.4 replicates Table G.1; Table E.5 replicates Table 7; Figure E.4 replicates Figure 6, Panel A; Table E.6 replicates Table G.4; and Figure E.5 replicates Figure 6, Panel B.

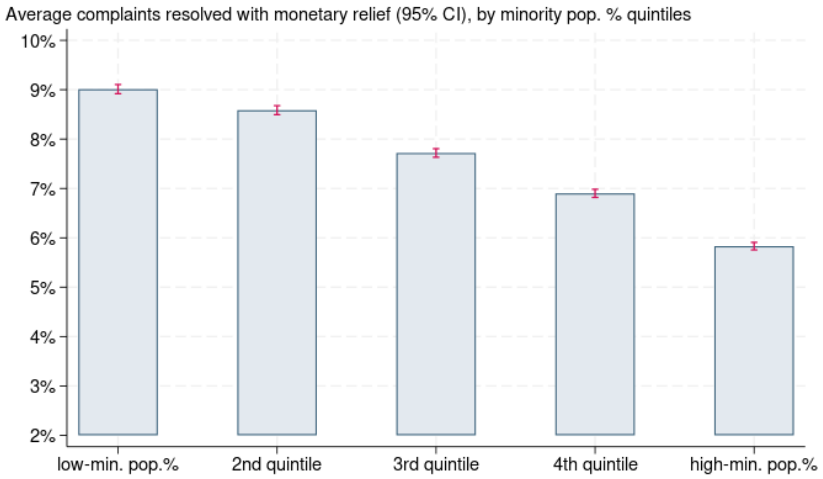
Figure E.1: **The Financial Restitution Gap**

The figure documents the relationship between financial restitution likelihood and filer's census tract education levels (percentage of population 25yo and older with a bachelor's degree) and ethnicity composition (percentage of non-White population). Panel A and B report the percentage of complaints solved with monetary relief by quintiles of the filer's Census tract education and minority population shares, respectively. In Panel C, within each product, the share of complaints solved with monetary relief in the lowest quintile of filer's tract education is subtracted from the share of complaints solved with monetary relief in the highest quintile of filer's tract education. In Panel D, within each product, the share of complaints solved with monetary relief in the highest quintile of filer's tract minority population share is subtracted from the share of complaints solved with monetary relief in the lowest quintile of filer's minority population share.

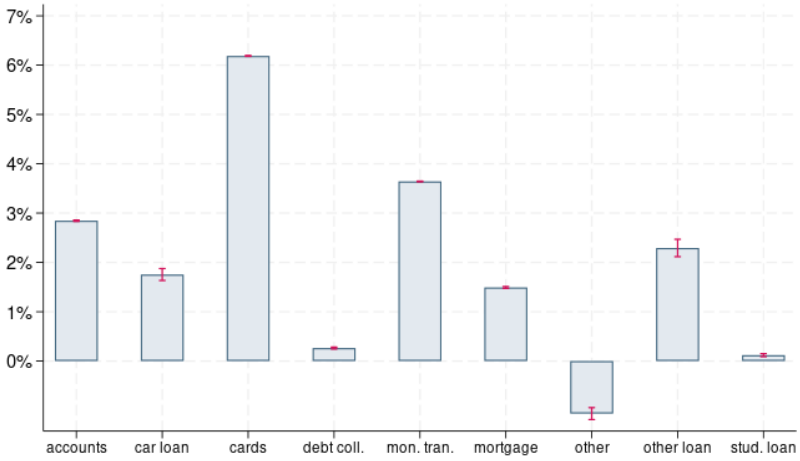
Panel A: Monetary relief likelihood on Census tract education quintiles



Panel B: Monetary relief likelihood on Census tract minority share quintiles



Panel C: Monetary relief differential (Education, highest - lowest) across products



Panel D: Mon. rel. differential (Min. Share, lowest - highest) across products:

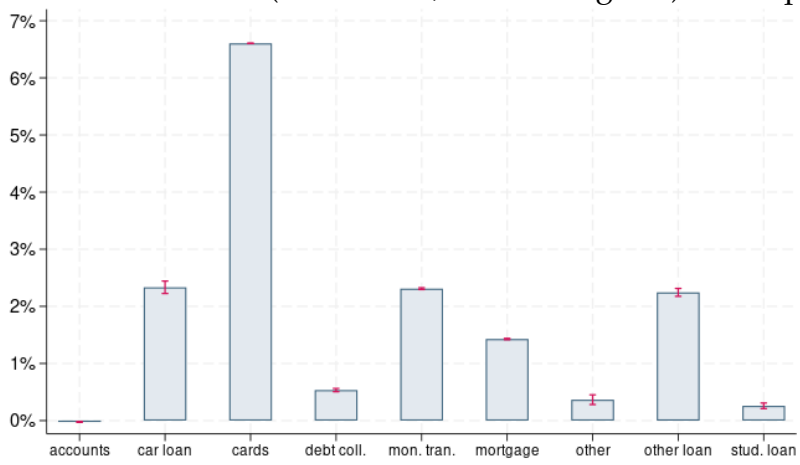


Table E.1: **The Financial Restitution Gap - Baseline effects on Financial Restitution Likelihood and Amounts**

Description: The table investigates the relationship between filer demographics and the likelihood of receiving financial restitution. In Panel A and Panel C, the outcome variable is $solved\ w/MR_{i,f,c,r,q,tr}$, a dummy variable equal to one if filer f's complaint i from Census tract tr against company c filed in quarter q has been solved with monetary relief, zero otherwise. In Panel B and Panel D, the outcome variable is $Monetary\ Relief\ amount_{i,f,c,r,q,tr}$, the USD amount of relief awarded if the complaint i has been solved with monetary relief (winsorized at the 2.5% level in each tail), and zero otherwise. We use fixed-effects Poisson models to estimate Panels B and D due to the nature of the data. Panel A and Panel B regress financial restitution likelihood and amounts on $I(above\ med.\ \%\ pop.\ w/higher\ ed.)_{i,q,tr}$, a dummy variable equal to one if complaint i comes from a Census tract tr that has above median percentage of population over 25 with a bachelor's degree in quarter q, in Columns 1 to 3, and on $\%\ pop.\ w/higher\ ed._{i,q,tr}$, the percentage of population over 25 with a bachelor's degree in census tract tr and quarter q where complaint i is filed from, in Columns 4 to 6. Panel C and Panel D regress financial restitution likelihood and amounts on $I(minority\ \ filer)_{i,f,c,r,q,tr}$, a dummy variable equal to one if complaint i comes from filer f who is non-white, in Columns 1 to 3, and on dummies for Asian, Black, and Hispanic filer ethnicity in Columns 4 to 6. Across panels, standard errors are clustered at the company level. ***, **, and * denote 1%, 5%, and 10% statistical significance, respectively.

Panel A: Financial Restitution Likelihood, Education

	solved w/MR$_{i,f,c,r,q,tr}$					
	(1)	(2)	(3)	(4)	(5)	(6)
I(above med. % pop. w/higher ed.)$_{i,q,tr}$	0.0117***	0.00935***	0.00847***			
	(0.0021)	(0.0016)	(0.0014)			
% pop. w/higher ed.$_{i,q,tr}$				0.0675***	0.0539***	0.0541***
				(0.012)	(0.0095)	(0.0094)
quarter FE	x	x	x	x	x	x
company FE	x			x		
company x product FE		x	x		x	x
county FE			x			x
observations	1,828,730	1,826,276	1,826,203	1,828,730	1,826,276	1,826,203
R-squared	0.104	0.137	0.139	0.104	0.137	0.139

Panel B: Financial Restitution Amount, Education

	monetary relief amount$_{i,f,c,r,q,tr}$					
	(1)	(2)	(3)	(4)	(5)	(6)
I(above med. % pop. w/higher ed.)$_{i,q,tr}$	0.278***	0.256***	0.236***			
	(0.029)	(0.024)	(0.024)			
% pop. w/higher ed.$_{i,q,tr}$				1.403***	1.269***	1.289***
				(0.14)	(0.12)	(0.12)
quarter FE	x	x	x	x	x	x
company FE	x			x		
company x product FE		x	x		x	x
county FE			x			x
observations	1,517,592	1,439,004	1,433,561	1,517,592	1,439,004	1,433,561

Panel C: Financial Restitution Likelihood, Ethnicity

	solved w/MR$_{i,f,c,r,q,tr}$					
	(1)	(2)	(3)	(4)	(5)	(6)
I(minority filer)$_{i,f,c,r,q,tr}$	-0.00243**	-0.00269***	-0.00173**			
	(0.0011)	(0.00072)	(0.00068)			
I(Asian filer)$_{i,f,c,r,q,tr}$				0.0239***	0.0158***	0.0146***
				(0.0042)	(0.0031)	(0.0030)
I(Black filer)$_{i,f,c,r,q,tr}$				-0.0149***	-0.0116***	-0.00953***
				(0.0032)	(0.0024)	(0.0020)
I(Hispanic filer)$_{i,f,c,r,q,tr}$				-0.00435***	-0.00386***	-0.00330***
				(0.0016)	(0.0011)	(0.00091)
quarter FE	x	x	x	x	x	x
company FE	x			x		
company x product FE		x	x		x	x
county FE			x			x
observations	1,828,730	1,826,276	1,826,203	1,828,730	1,826,276	1,826,203
R-squared	0.104	0.137	0.139	0.104	0.137	0.139

Panel D: Financial Restitution Amount, Ethnicity

	monetary relief amount$_{i,f,c,r,q,tr}$					
	(1)	(2)	(3)	(4)	(5)	(6)
I(minority filer)$_{i,f,c,r,q,tr}$	-0.000605	-0.0318*	-0.0831***			
	(0.023)	(0.017)	(0.025)			
I(Asian filer)$_{i,f,c,r,q,tr}$				0.316***	0.222***	0.147***
				(0.050)	(0.031)	(0.042)
I(Black filer)$_{i,f,c,r,q,tr}$				-0.419***	-0.396***	-0.379***
				(0.033)	(0.031)	(0.036)
I(Hispanic filer)$_{i,f,c,r,q,tr}$				-0.0466	-0.0658**	-0.143***
				(0.033)	(0.031)	(0.027)
quarter FE	x	x	x	x	x	x
company FE	x			x		
company x product FE		x	x		x	x
county FE			x			x
observations	1,517,592	1,439,004	1,433,561	1,517,592	1,439,004	1,433,561

Table E.2: **Filer and Company Activity**

Description: The table investigates whether filer and company actions in the complaint resolution process vary across filer demographics. Panel A investigates whether the likelihood of self-advocating in the complaint or attaching a supporting document varies across high- and low-education tracts. Panel B investigates whether the likelihood of self-advocating in the complaint or attaching a supporting document varies by ethnicity. Across these two panels, the outcome variables are $I(filer\ self\text{-}advocacy)_{i,f,c,r,q,tr}$ and $I(filer\ attachment)_{i,f,c,r,q,tr}$. $I(filer\ self\text{-}advocacy)_{i,f,c,r,q,tr}$ is a dummy variable equal to one if filer f of complaint i has mentioned either "refund" or similar words or "fraud" and similar words (see Internet Appendix D) while filing the complaint in either the complaint description/narrative or in the desired resolution field, zero otherwise. $I(filer\ attachment)_{i,f,c,r,q,tr}$ is a dummy variable equal to one if filer f of complaint i has attached a supporting document while filing the complaint, zero otherwise. Panel C investigates whether the resources companies assign to complaint resolution vary across high- and low-education tracts. Panel D investigates whether the resources companies assign to complaint resolution vary with filer's ethnicity. Across these two panels, the dependent variables are $employee\ experience_{i,f,c,r,q,tr}$ and $employee\ login\ time_{i,f,c,r,q,tr}$. The dependent variable $employee\ experience_{i,f,c,r,q,tr}$ is the natural logarithm of the count of how many complaints company respondent r of complaint i already solved before handling complaint i. The dependent variable $employee\ login\ time_{i,f,c,r,q,tr}$ is the percentage of days between complaint i's submission and resolution that company respondent r logged into the CFPB complaint system. Across Panels A and C, the independent variables of interest are $I(above\ med.\ \%\ pop.\ w/higher\ ed.)_{i,q,tr}$, a dummy variable equal to one if complaint i comes from a Census tract tr that has above median % of population 25 and older with a bachelor's degree in quarter q, and $\%pop.\ w/higher\ ed._{i,q,tr}$, the percentage of population 25 and older with a bachelor's degree in quarter q in Census tract tr where complaint i is from. The independent variables of interest in Panel B and D are dummy variables for Asian, Black, and Hispanic filer ethnicity according to Bayesian Improved Surname and Geocoding (BISG). Throughout, standard errors are clustered at the company level. ***, **, and * denote 1%, 5%, and 10% statistical significance, respectively.

Panel A: Filer activity, education

	I(filer self-advocacy)$_{i,f,c,r,q,tr}$				I(filer attachment)$_{i,f,c,r,q,tr}$	
	in descr.	in desired res.	in descr.	in desired res.		
	(1)	(2)	(3)	(4)	(5)	(6)
I(above med. % pop. w/higher ed.)$_{i,q,tr}$	0.0265**		0.0194**		0.00569**	
	(0.0018)		(0.0017)		(0.0013)	
% pop. w/higher ed.$_{i,q,tr}$		0.164**		0.122**		0.0393**
		(0.0098)		(0.0095)		(0.0076)
quarter FE	x	x	x	x	x	x
company x product FE	x	x	x	x	x	x
county FE	x	x	x	x	x	x
observations	1,741,564	1,741,564	1,805,330	1,805,330	1,826,203	1,826,203
R-squared	0.0306	0.0309	0.0244	0.0245	0.281	0.281

Panel B: Filer activity, ethnicity

	I(filer self-advocacy)$_{i,f,c,r,q,tr}$		I(filer attachment)$_{i,f,c,r,q,tr}$
	in descr.	in desired res.	
	(1)	(2)	(3)
I(Asian filer)$_{i,f,c,r,q,tr}$	-0.00590	0.00868*	-0.0016
	(0.0045)	(0.0051)	(0.016)
I(Black filer)$_{i,f,c,r,q,tr}$	-0.0171**	-0.0106**	0.00586**
	(0.0026)	(0.0031)	(0.0024)
I(Hispanic filer)$_{i,f,c,r,q,tr}$	-0.0250**	-0.0141**	0.00840**
	(0.0030)	(0.0022)	(0.0019)
quarter FE	x	x	x
company x product FE	x	x	x
county FE	x	x	x
observations	1,741,564	1,805,330	1,826,203
R-squared	0.0303	0.0242	0.281

Panel C: Company activity, education

	employee experience$_{i,f,c,r,q,tr}$		employee login time$_{i,f,c,r,q,tr}$	
	(1)	(2)	(3)	(4)
I(above med. % pop. w/higher ed.)$_{i,q,tr}$	0.00405		0.0000195	
	(0.0031)		(0.00043)	
% pop. w/higher ed.$_{i,q,tr}$		0.0166		0.00105
		(0.017)		(0.0021)
quarter FE	x	x	x	x
company x product FE	x	x	x	x
county FE	x	x	x	x
observations	1,427,040	1,427,040	1,330,225	1,330,225
R-squared	0.588	0.588	0.437	0.437

Panel D: Company activity, ethnicity

	employee experience$_{i,f,c,r,q,tr}$	employee login time$_{i,f,c,r,q,tr}$
	(1)	(2)
I(Asian filer)$_{i,f,q,tr}$	-0.0157	-0.00344*
	(0.013)	(0.0019)
I(Black filer)$_{i,f,q,tr}$	-0.000625	0.000471
	(0.0049)	(0.00064)
I(Hispanic filer)$_{i,f,q,tr}$	-0.00437	0.000210
	(0.0045)	(0.00062)
quarter FE	x	x
company x product FE	x	x
county FE	x	x
observations	1,427,040	1,330,225
R-squared	0.588	0.437

Table E.3: **Financial Restitution Mechanisms**

Description: The table investigates how much do the potential determinants on the company and filer side explain of the monetary relief patterns observed in the data. Across panels, Column 1 adds $I(filer\ attachment)_{i,f,c,r,q,tr}$ (a dummy equal to one if filer f of complaint i has attached a supporting document while filing the complaint) and $I(filer\ self\text{-}advocacy)_{i,f,c,r,q,tr}$ (a dummy equal to one if filer f of complaint i mentions words like "relief" or "fraud" and similar ones in the desired resolution), the filer activity variables, to Equation 2. Column 2 further interacts them with the education/ethnicity variables. Column 3 adds respondent fixed effects (the ID of the person the company assigns to answer the complaint), $employee\ experience_{i,f,c,r,q,tr}$ (the natural logarithm of the count of how many complaints company respondent r of complaint i already solved before handling complaint i), and $employee\ login\ time_{i,f,c,r,q,tr}$ (the percentage of days between complaint i's submission and response that company respondent r logged into the CFPB complaint system), the company activity variables, to Equation 2. Column 4 further interacts them with the education/ethnicity variables. Column 5 includes both filer and company activity variables, and Column 6 further interacts them with the education/ethnicity variables. The independent variable of interest in Panel A is $I(above\ med.\ \%\ pop.\ w/higher\ ed.)_{i,q,tr}$, a dummy variable equal to one if complaint i comes from a Census tract tr that has above median percentage of population 25 and older with a bachelor's degree in quarter q. The dependent variable of interst in Panel B is $\%pop.\ w/higher\ ed._{i,q,tr}$, the percentage of population 25 and older with a bachelor's degree in quarter q in Census tract tr where complaint i is from. The independent variables of interest in Panel C are and dummies for Asian, Black, and Hispanic filer ethnicity according to Bayesian Improved Surname and Geocoding (BISG). Standard errors are clustered at the company level. ***, **, and * denote 1%, 5%, and 10% statistical significance, respectively.

Panel A: filer education as dummy variable

	solved w/MR$_{i,f,c,r,q,tr}$					
	filer activity		company activity		both	
	(1)	(2)	(3)	(4)	(5)	(6)
I(above med. % pop. w/higher ed.)$_{i,f,q,tr}$	0.00799***	0.00334***	0.00887***	0.00576	0.00841***	0.000710
	(0.0013)	(0.00083)	(0.0016)	(0.0036)	(0.0016)	(0.0034)
I(filer self-advocacy)$_{i,f,c,r,q,tr}$	0.0218***	0.0174***			0.0206***	0.0169***
	(0.0031)	(0.0025)			(0.0031)	(0.0027)
I(filer attachment)$_{i,f,c,r,q,tr}$	0.0123***	0.0101***			0.0120***	0.00956***
	(0.0021)	(0.0018)			(0.0019)	(0.0016)
I(filer self-advocacy)$_{i,f,c,r,q,tr}$ × I(ab. med. % pop. w/higher ed.)$_{i,f,q,tr}$		0.00869***				0.00725***
		(0.0017)				(0.0018)
I(filer attachment)$_{i,f,c,r,q,tr}$ × I(ab. med. % pop. w/higher ed.)$_{i,f,q,tr}$		0.00433***				0.00477***
		(0.0016)				(0.0013)
employee experience$_{i,f,c,r,q,tr}$			0.000238	-0.000780	0.000266	-0.000715
			(0.00094)	(0.00095)	(0.00093)	(0.00094)
employee login time$_{i,f,c,r,q,tr}$			-0.0120***	-0.00395	-0.0112***	-0.00329
			(0.0032)	(0.0025)	(0.0031)	(0.0025)
employee experience$_{i,f,c,r,q,tr}$ × I(ab. med. % pop. w/higher ed.)$_{i,f,q,tr}$				0.00208***		0.00199***
				(0.00054)		(0.00054)
employee login time$_{i,f,c,r,q,tr}$ × I(ab. med. % pop. w/higher ed.)$_{i,f,q,tr}$				-0.0164***		-0.0161***
				(0.0046)		(0.0045)
quarter FE	x	x	x	x	x	x
company x product FE	x	x	x	x	x	x
county FE	x	x	x	x	x	x
respondent FE			x	x	x	x
observations	1,820,166	1,820,166	1,328,922	1,328,922	1,311,748	1,311,748
R-squared	0.142	0.142	0.167	0.168	0.170	0.170

Panel B: filer education as continuous variable

	solved w/MR$_{i,f,c,r,q,tr}$					
	filer activity		company activity		both	
	(1)	(2)	(3)	(4)	(5)	(6)
% pop. w/higher ed.$_{f,q,tr}$	0.0510***	0.0258***	0.0565***	0.0407*	0.0535***	0.0115
	(0.0090)	(0.0060)	(0.011)	(0.022)	(0.010)	(0.021)
I(filer self-advocacy)$_{i,f,c,r,q,tr}$	0.0217***	0.0113***			0.0205***	0.0114***
	(0.0031)	(0.0022)			(0.0031)	(0.0026)
I(filer attachment)$_{i,f,c,r,q,tr}$	0.0123***	0.00740***			0.0120***	0.00645***
	(0.0021)	(0.0023)			(0.0019)	(0.0017)
I(filer self-advocacy)$_{i,f,c,r,q,tr}$ × % pop. w/higher ed.$_{f,q,tr}$		0.0470***				0.0407***
		(0.0092)				(0.0098)
I(filer attachment)$_{i,f,c,r,q,tr}$ × % pop. w/higher ed.$_{f,q,tr}$		0.0218***				0.0246***
		(0.0082)				(0.0064)
employee experience$_{i,f,c,r,q,tr}$			0.000241	-0.00215**	0.000269	-0.00206*
			(0.00095)	(0.0011)	(0.00093)	(0.0011)
employee login time$_{i,f,c,r,q,tr}$			-0.0120***	0.00698	-0.0113***	0.00743
			(0.0032)	(0.0046)	(0.0031)	(0.0045)
employee experience$_{i,f,c,r,q,tr}$ × % pop. w/higher ed.$_{f,q,tr}$				0.0108***		0.0105***
				(0.0029)		(0.0030)
employee login time$_{i,f,c,r,q,tr}$ × % pop. w/higher ed.$_{f,q,tr}$				-0.0866***		-0.0851***
				(0.026)		(0.026)
quarter FE	x	x	x	x	x	x
company x product FE	x	x	x	x	x	x
county FE	x	x	x	x	x	x
respondent FE			x	x	x	x
observations	1,820,166	1,820,166	1,328,922	1,328,922	1,311,748	1,311,748
R-squared	0.142	0.142	0.168	0.168	0.170	0.170

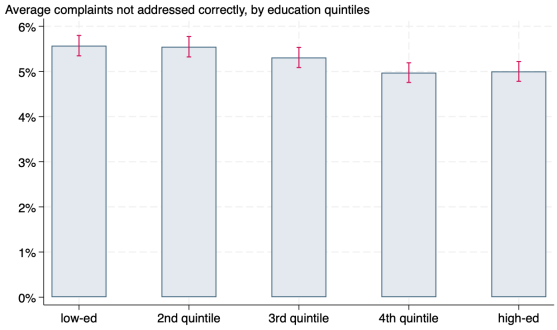
Panel C: filer ethnicity

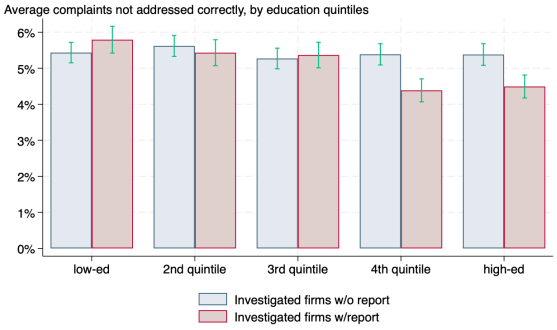
	solved w/MR$_{i,f,c,r,q,tr}$					
	filer activity		company activity		both	
	(1)	(2)	(3)	(4)	(5)	(6)
I(Asian filer)$_{i,f,q,tr}$	0.0146***	0.00321	0.0163***	0.0133	0.0160***	0.000795
	(0.0030)	(0.0034)	(0.0028)	(0.010)	(0.0027)	(0.0095)
I(Black filer)$_{i,f,q,tr}$	-0.00934***	-0.00420***	-0.00998***	-0.00589	-0.00983***	-0.000420
	(0.0020)	(0.0016)	(0.0022)	(0.0049)	(0.0021)	(0.0046)
I(Hispanic filer)$_{i,f,q,tr}$	-0.00318***	-0.00236**	-0.00319**	0.000182	-0.00306***	0.00106
	(0.00091)	(0.0011)	(0.0010)	(0.0026)	(0.0010)	(0.0026)
I(filer self-advocacy)$_{i,f,c,r,q,tr}$	0.0219***	0.0223***			0.0207***	0.0211***
	(0.0031)	(0.0030)			(0.0031)	(0.0031)
I(filer attachment)$_{i,f,c,r,q,tr}$	0.0124***	0.0118***			0.0120***	0.0115***
	(0.0021)	(0.0021)			(0.0019)	(0.0018)
I(filer self-advocacy)$_{i,f,c,r,q,tr}$ × I(Asian filer)$_{i,f,q,tr}$		0.0154***				0.0124***
		(0.0031)				(0.0030)
I(filer self-advocacy)$_{i,f,c,r,q,tr}$ × I(Black filer)$_{i,f,q,tr}$		-0.00963***				-0.00908***
		(0.0020)				(0.0019)
I(filer self-advocacy)$_{i,f,c,r,q,tr}$ × I(Hispanic filer)$_{i,f,q,tr}$		-0.00408***				-0.00290*
		(0.0012)				(0.0015)
I(filer attachment)$_{i,f,c,r,q,tr}$ × I(Asian filer)$_{i,f,q,tr}$		0.0137***				0.0137***
		(0.0020)				(0.0030)
I(filer attachment)$_{i,f,c,r,q,tr}$ × I(Black filer)$_{i,f,q,tr}$		-0.00447**				-0.00526***
		(0.0021)				(0.0018)
I(filer attachment)$_{i,f,c,r,q,tr}$ × I(Hispanic filer)$_{i,f,q,tr}$		0.00150				0.00140
		(0.0014)				(0.0019)
employee experience$_{i,f,c,r,q,tr}$			0.000253	0.000495	0.000281	0.000541
			(0.00094)	(0.00098)	(0.00093)	(0.00097)
employee login time$_{i,f,c,r,q,tr}$			-0.0120***	-0.0134***	-0.0112***	-0.0129***
			(0.0031)	(0.0031)	(0.0031)	(0.0030)
employee experience$_{i,f,c,r,q,tr}$ × I(Asian filer)$_{i,f,q,tr}$				0.00276**		0.00232*
				(0.0014)		(0.0014)
employee experience$_{i,f,c,r,q,tr}$ × I(Black filer)$_{i,f,q,tr}$				-0.00299***		-0.00291***
				(0.00084)		(0.00084)
employee experience$_{i,f,c,r,q,tr}$ × I(Hispanic filer)$_{i,f,q,tr}$				-0.000863*		-0.000909*
				(0.00051)		(0.00048)
employee login time$_{i,f,c,r,q,tr}$ × I(Asian filer)$_{i,f,q,tr}$				-0.0245***		-0.0194***
				(0.0074)		(0.0070)
employee login time$_{i,f,c,r,q,tr}$ × I(Black filer)$_{i,f,q,tr}$				0.0234***		0.0237***
				(0.0049)		(0.0049)
employee login time$_{i,f,c,r,q,tr}$ × I(Hispanic filer)$_{i,f,q,tr}$				0.00297		0.00259
				(0.0036)		(0.0035)
quarter FE	x	x	x	x	x	x
company x product FE	x	x	x	x	x	x
county FE	x	x	x	x	x	x
respondent FE			x	x	x	x
observations	1,820,166	1,820,166	1,328,922	1,328,922	1,311,748	1,311,748
R-squared	0.142	0.142	0.168	0.168	0.170	0.170

Figure E.2: **CFPB Company Monitoring Reviews by filer's census tract education**

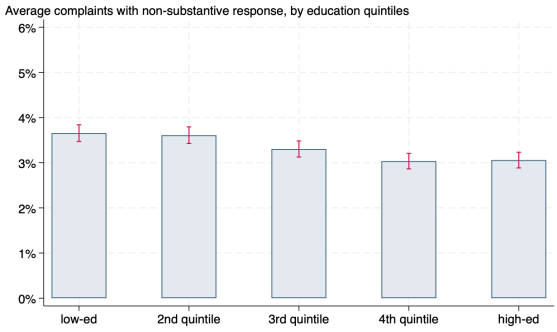
The figure reports the percentage of complaints flagged by the CFPB as having a problematic response amongst the ones screened (as part of the company monitoring reviews) by quintiles of filer's Census tract percentage of population 25 and older with a bachelor's degree. Panel A reports the share of reviewed complaints flagged as not properly addressed by the company. Panel B reports the share of reviewed complaints flagged as lacking a substantive response. Across panels, plots on the left-hand side report results for all reviewed complaints, plots on the right-hand side distinguish between complaints at reviewed firms that never received a monitoring report (in blue) and complaints at reviewed firms that received a monitoring report at least once (negative feedback from CFPB, in red).

Panel A: Company did not address complaint





Panel B: Company response not substantive



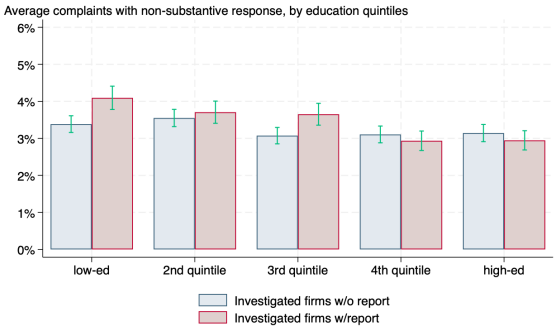
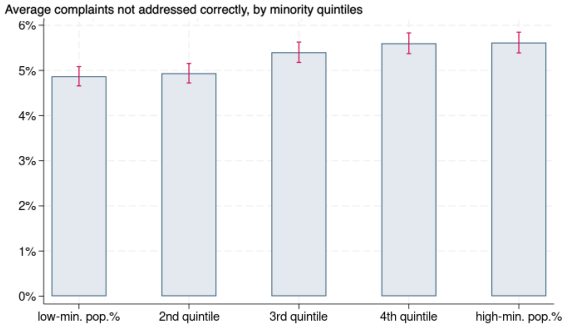
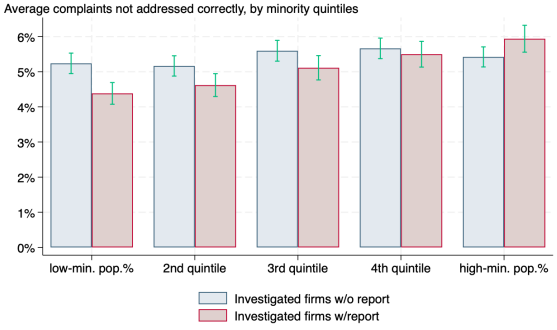


Figure E.3: **CFPB Company Monitoring Reviews by filer's census tract minority share**

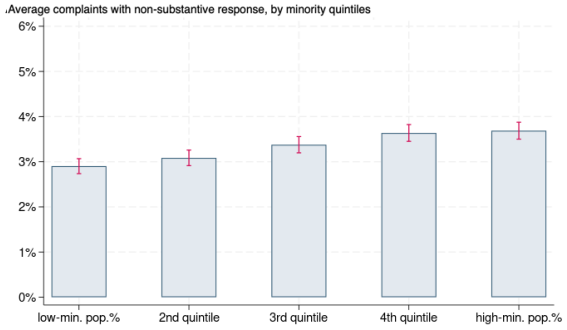
The figure reports the percentage of complaints flagged by the CFPB as having a problematic response amongst the ones screened (as part of the company monitoring reviews) by quintiles of filer's Census tract minority share (percentage of non-White population). Panel A reports the share of reviewed complaints flagged as not properly addressed by the company. Panel B reports the share of reviewed complaints flagged as lacking a substantive response. Across panels, plots on the left-hand side report results for all reviewed complaints, plots on the right-hand side distinguish between complaints at reviewed firms that never received a monitoring report (in blue) and complaints at reviewed firms that received a monitoring report at least once (negative feedback from CFPB, in red).

Panel A: Company did not address complaint





Panel B: Company response not substantive



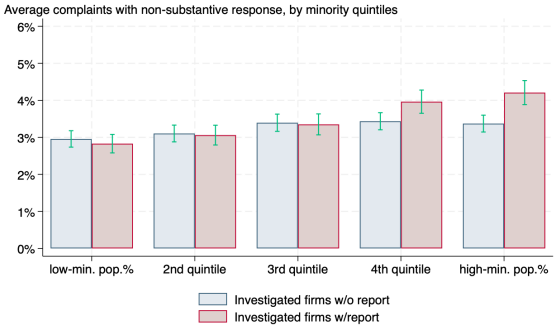


Table E.4: **CFPB Company Monitoring Reviews across Demographics**

Description: The table presents estimations regarding the likelihood of the CFPB flagging a reviewed complaint as either not properly addressed by the company (columns 1 to 3 across panels), or not having received a substantive response from the company (columns 4 to 6 across panels). The tables regress these likelihoods on quintiles of the filer's education (percentage of population over 25 with a bachelor's degree in the filer's Census tract, Panel A), and on the ethnicity of the filer according to BISG algorithms (dummy variables for Asian, Black, or Hispanic filer, Panel B). Standard errors are clustered at the company level. ***, **, and * denote 1%, 5%, and 10% statistical significance, respectively..

Panel A: Education

	I(company not address compl.)$_{i,f,c,r,q,tr}$			I(response not substantive)$_{i,f,c,r,q,tr}$		
	(1)	(2)	(3)	(4)	(5)	(6)
% pop. w/higher ed. quintile$_{i,q,tr}$	-	-	-	-	-	-
% pop. w/higher ed. quintile$_{i,q,tr}$=2	-0.000269	0.00193	0.00144	-0.000469	0.00123	0.000768
	(0.0013)	(0.0017)	(0.0014)	(0.0012)	(0.0013)	(0.0010)
% pop. w/higher ed. quintile$_{i,q,tr}$=3	-0.00227	0.00190	0.0000636	-0.00319**	-0.0000597	-0.00163
	(0.0016)	(0.0018)	(0.0024)	(0.0015)	(0.0014)	(0.0018)
% pop. w/higher ed. quintile$_{i,q,tr}$=4	-0.00561***	0.000393	-0.00218	-0.00590***	-0.00128	-0.00364
	(0.0020)	(0.0017)	(0.0032)	(0.0016)	(0.0014)	(0.0022)
% pop. w/higher ed. quintile$_{i,q,tr}$=5	-0.00516**	0.00225	-0.00111	-0.00554***	0.0000343	-0.00306
	(0.0022)	(0.0019)	(0.0040)	(0.0016)	(0.0015)	(0.0029)
quarter FE	x			x		
company FE		x			x	
product FE			x			x
observations	194,338	193,914	194,338	194,338	193,914	194,338
R-squared	0.0138	0.0583	0.00587	0.0142	0.0653	0.00511

Panel B: Ethnicity

	I(company not address compl.)$_{i,f,c,r,q,tr}$			I(response not substantive)$_{i,f,c,r,q,tr}$		
	(1)	(2)	(3)	(4)	(5)	(6)
I(Asian filer)$_{i,f,c,r,q,tr}$	-0.00245	0.00417*	0.00194	0.000921	0.00491**	0.00309
	(0.0027)	(0.0023)	(0.0037)	(0.0020)	(0.0019)	(0.0035)
I(Black filer)$_{i,f,c,r,q,tr}$	0.00626***	0.00188	0.00335	0.00476**	0.00182	0.00282*
	(0.0021)	(0.0021)	(0.0021)	(0.0019)	(0.0015)	(0.0015)
I(Hispanic filer)$_{i,f,c,r,q,tr}$	0.00122	0.00162	0.000496	0.00226	0.00276**	0.00197
	(0.0018)	(0.0015)	(0.0021)	(0.0017)	(0.0013)	(0.0019)
quarter FE	x			x		
company FE		x			x	
product FE			x			x
observations	194,338	193,914	194,338	194,338	193,914	194,338
R-squared	0.0137	0.0583	0.00586	0.0140	0.0653	0.00506

Table E.5: **CFPB Monitoring Reports - Difference in Differences**

Description: The table presents difference-in-differences estimates around the first time a company receives a monitoring report (negative feedback from the CFPB). The sample comprehends all treated companies and, as controls, those companies that were also reviewed but did not receive a report and have at least 100 complaints in 2018 (pre-reviews). Across panels, the outcome variable is $solved\ w/MR_{i,f,c,r,q,tr}$, a dummy variable equal to one if filer f's complaint i from Census tract tr against company c filed in quarter q has been solved with monetary relief by respondent r, zero otherwise. Across panels, the independent variable $I(post\text{-}report)_{i,c,q}$ is a dummy variable equal to one if complaint i was filed against company c in quarter q, which is after company c has received a monitoring report (negative feedback from the CFPB). In Panel A, the other independent variables of interest are $I(above\ med.\ \%\ pop.\ w/higher\ ed.)_{i,q,tr}$, a dummy variable equal to one if complaint i comes from a Census tract tr that has above median % of population over 25 with a bachelor's degree in quarter q, and its continuous version $\%pop.\ w/higher\ ed._{i,q,tr}$. In Panel B, the other independent variables of interest are dummy variables for Asian, Black, and Hispanic filer according to Bayesian Improved Surname and Geocoding (BISG). Panel C and D further interact these variables with $I(filer\ self\text{-}advocacy)_{i,f,c,r,q,tr}$, a dummy variable equal to one if filer i of complaint c has mentioned either "refund" or similar words or "fraud" and similar words while filing the complaint in the desired resolution field, and $I(filer\ attachment)_{i,f,c,r,q,tr}$, a dummy variable equal to one if filer i of complaint c has attached a supporting document while filing the complaint. Standard errors are clustered at the company level. ***, **, and * denote 1%, 5%, and 10% statistical significance, respectively.

Panel A: Difference-in-differences, Education

	solved w/MR$_{i,f,c,r,q,tr}$					
	(1)	(2)	(3)	(4)	(5)	(6)
I(post-report)$_{i,c,q}$	-0.00659	-0.00883	-0.00857	-0.0208**	-0.0210**	-0.0206**
	(0.011)	(0.011)	(0.011)	(0.010)	(0.010)	(0.010)
I(above med. % pop. w/higher ed.)$_{i,q,tr}$	0.00723***	0.00591***	0.00475***			
	(0.0018)	(0.0015)	(0.0013)			
I(post-report)$_{i,c,q}$ × I(ab. med. % pop. w/higher ed.)$_{i,q,tr}$	0.0216***	0.0185***	0.0181***			
	(0.0045)	(0.0038)	(0.0038)			
% pop. w/higher ed.$_{i,q,tr}$				0.0428***	0.0356***	0.0352***
				(0.011)	(0.0096)	(0.0094)
I(post-report)$_{i,c,q}$ × % pop. w/higher ed.$_{i,q,tr}$				0.111***	0.0948***	0.0936***
				(0.024)	(0.020)	(0.020)
quarter FE	x	x	x	x	x	x
company FE	x			x		
company x product FE		x	x		x	x
county FE			x			x
observations	1,003,708	1,003,541	1,003,388	1,003,708	1,003,541	1,003,388
R-squared	0.106	0.131	0.135	0.107	0.132	0.135

Panel B: Difference-in-differences, Ethnicity

	solved w/MR$_{i,f,c,r,q,tr}$			
	(1)	(2)	(3)	(4)
I(post-report)$_{i,c,q}$	0.00643	0.00223	0.00235	0.00266
	(0.013)	(0.012)	(0.012)	(0.012)
I(minority filer)$_{i,f,c,r,q,tr}$	-0.00223	-0.00183	-0.000444	
	(0.0016)	(0.0012)	(0.0011)	
I(post-report)$_{i,c,q}$ × I(minority filer)$_{i,f,c,r,q,tr}$	-0.00484	-0.00398	-0.00432*	
	(0.0029)	(0.0026)	(0.0026)	
I(Asian filer)$_{i,f,c,r,q,tr}$				0.00751**
				(0.0031)
I(post-report)$_{i,c,q}$ × I(Asian filer)$_{i,f,c,r,q,tr}$				0.0225***
				(0.0051)
I(Black filer)$_{i,f,c,r,q,tr}$				-0.00400**
				(0.0019)
I(post-report)$_{i,c,q}$ × I(Black filer)$_{i,f,c,r,q,tr}$				-0.0278***
				(0.0059)
I(Hispanic filer)$_{i,f,c,r,q,tr}$				-0.00106
				(0.0016)
I(post-report)$_{i,c,q}$ × I(Hispanic filer)$_{i,f,c,r,q,tr}$				-0.00778**
				(0.0038)
quarter FE	x	x	x	x
company FE	x			
company x product FE		x	x	x
county FE			x	x
observations	1,003,708	1,003,541	1,003,388	1,003,388
R-squared	0.105	0.131	0.134	0.135

Panel C: Filer self-advocating and attachments, education

	solved w/MR$_{i,f,c,r,q,tr}$			
	(1)	(2)	(3)	(4)
I(post-report)$_{i,c,q}$	-0.00651	-0.0146	-0.00626	-0.0129
	(0.011)	(0.010)	(0.011)	(0.010)
I(filer self-advocacy)$_{i,f,c,r,q,tr}$	0.0178***	0.0151***		
	(0.0040)	(0.0036)		
I(post-report)$_{i,c,q}$ × I(filer self-advocacy)$_{i,f,c,r,q,tr}$	0.0203***	0.0175***		
	(0.0051)	(0.0053)		
I(above med. % pop. w/higher ed.)$_{q,tr}$		0.00255**		0.00388***
		(0.0013)		(0.0014)
I(post-report)$_{i,c,q}$ × I(ab. med. % pop. w/higher ed.)$_{q,tr}$		0.0158***		0.0130***
		(0.0041)		(0.0041)
I(ab. med. % pop. w/higher ed.)$_{q,tr}$ × I(filer self-advocacy)$_{i,f,c,r,q,tr}$		0.00561***		
		(0.0018)		
I(post-report)$_{i,c,q}$ × I(ab. med. % pop. w/higher ed.)$_{q,tr}$ × I(filer self-advocacy)$_{i,f,c,r,q,tr}$		0.00325		
		(0.0032)		
I(filer attachment)$_{i,f,c,r,q,tr}$			0.0117***	0.0109***
			(0.0026)	(0.0025)
I(post-report)$_{i,c,q}$ × I(filer attachment)$_{i,f,c,r,q,tr}$			0.0162***	0.0106**
			(0.0046)	(0.0042)
I(ab. med. % pop. w/higher ed.)$_{q,tr}$ × I(filer attachment)$_{i,f,c,r,q,tr}$				0.00157
				(0.0015)
I(post-report)$_{i,c,q}$ × I(ab. med. % pop. w/higher ed.)$_{q,tr}$ × I(filer attachment)$_{i,f,c,r,q,tr}$				0.00944***
				(0.0020)
quarter FE	x	x	x	x
company x product FE	x	x	x	x
county FE	x	x	x	x
observations	991,205	991,205	1,003,388	1,003,388
R-squared	0.137	0.137	0.135	0.136

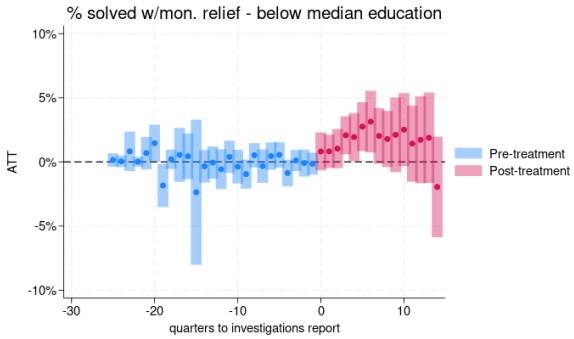
Panel D: Filer self-advocating and attachments, ethnicity

	solved w/MR$_{i,f,c,r,q,tr}$			
	(1)	(2)	(3)	(4)
I(post-report)$_{i,c,q}$	-0.00651	-0.00522	-0.00626	-0.00347
	(0.011)	(0.012)	(0.011)	(0.012)
I(filer self-advocacy)$_{i,f,c,r,q,tr}$	0.0178***	0.0178***		
	(0.0040)	(0.0039)		
I(post-report)$_{i,c,q}$ × I(filer self-advocacy)$_{i,f,c,r,q,tr}$	0.0203***	0.0208***		
	(0.0051)	(0.0053)		
I(Asian filer)$_{i,f,c,r,q,tr}$		0.00314		0.00498
		(0.0037)		(0.0036)
I(post-report)$_{i,c,q}$ × I(Asian filer)$_{i,f,c,r,q,tr}$		0.0213***		0.00933
		(0.0056)		(0.0066)
I(Asian filer)$_{i,f,c,r,q,tr}$ × I(filer self-advocacy)$_{i,f,c,r,q,tr}$		0.0118**		
		(0.0045)		
I(post-report)$_{i,c,q}$ × I(Asian filer)$_{i,f,c,r,q,tr}$ × I(filer self-advocacy)$_{i,f,c,r,q,tr}$		-0.000227		
		(0.0063)		
I(Black filer)$_{i,f,c,r,q,tr}$		-0.00241		-0.00266
		(0.0019)		(0.0019)
I(post-report)$_{i,c,q}$ × I(Black filer)$_{i,f,c,r,q,tr}$		-0.0225***		-0.0210***
		(0.0055)		(0.0066)
I(Black filer)$_{i,f,c,r,q,tr}$ × I(filer self-advocacy)$_{i,f,c,r,q,tr}$		-0.00441**		
		(0.0020)		
I(post-report)$_{i,c,q}$ × I(Black filer)$_{i,f,c,r,q,tr}$ × I(filer self-advocacy)$_{i,f,c,r,q,tr}$		-0.0117**		
		(0.0051)		
I(Hispanic filer)$_{i,f,c,r,q,tr}$		-0.000804		-0.00139
		(0.0016)		(0.0016)
I(post-report)$_{i,c,q}$ × I(Hispanic filer)$_{i,f,q,tr}$		-0.00479*		-0.0113**
		(0.0028)		(0.0045)
I(Hispanic filer)$_{i,f,c,r,q,tr}$ × I(filer self-advocacy)$_{i,f,c,r,q,tr}$		-0.000794		
		(0.0023)		
I(post-report)$_{i,c,q}$ × I(Hispanic filer)$_{i,f,c,r,q,tr}$ × I(filer self-advocacy)$_{i,f,c,r,q,tr}$		-0.00519		
		(0.0067)		
I(filer attachment)$_{i,f,c,r,q,tr}$			0.0117***	0.0116***
			(0.0026)	(0.0025)
I(post-report)$_{i,c,q}$ × I(filer attachment)$_{i,f,c,r,q,tr}$			0.0162***	0.0144***
			(0.0046)	(0.0045)
I(Asian filer)$_{i,f,c,r,q,tr}$ × I(filer attachment)$_{i,f,c,r,q,tr}$				0.00591**
				(0.0025)
I(post-report)$_{i,c,q}$ × I(Asian filer)$_{i,f,c,r,q,tr}$ × I(filer attachment)$_{i,f,c,r,q,tr}$				0.0200***
				(0.0057)
I(Black filer)$_{i,f,c,r,q,tr}$ × I(filer attachment)$_{i,f,c,r,q,tr}$				-0.00238
				(0.0018)
I(post-report)$_{i,c,q}$ × I(Black filer)$_{i,f,c,r,q,tr}$ × I(filer attachment)$_{i,f,c,r,q,tr}$				-0.0138***
				(0.0047)
I(Hispanic filer)$_{i,f,c,r,q,tr}$ × I(filer attachment)$_{i,f,c,r,q,tr}$				0.000456
				(0.0017)
I(post-report)$_{i,c,q}$ × I(Hispanic filer)$_{i,f,c,r,q,tr}$ × I(filer attachment)$_{i,f,c,r,q,tr}$				0.00589
				(0.0052)
quarter FE	x	x	x	x
company x product FE	x	x	x	x
county FE	x	x	x	x
observations	991,205	991,205	1,003,388	1,003,388
R-squared	0.137	0.137	0.135	0.136

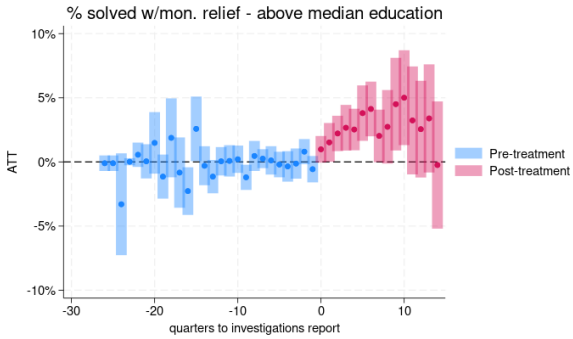
Figure E.4: **CFPB Monitoring Reports - Dynamic Difference in Differences**

The figure reports the dynamic difference-in-differences Callaway and Sant'Anna (2021) estimators of the percentage of complaints solved with monetary relief each quarter by each company around receiving a monitoring report. The subsamples distinguish between high and low education (percentage of population over 25 with a bachelor's degree, in Panel A), and between minority and White complaints (in Panel B). The sample is restricted to companies that were reviewed and received a monitoring report (negative feedback from CFPB, treatment) and reviewed companies that did not receive a report and had at least 100 yearly complaints prior to the start of the company reviews period (controls).

Panel A: CFPB reports by low and high education

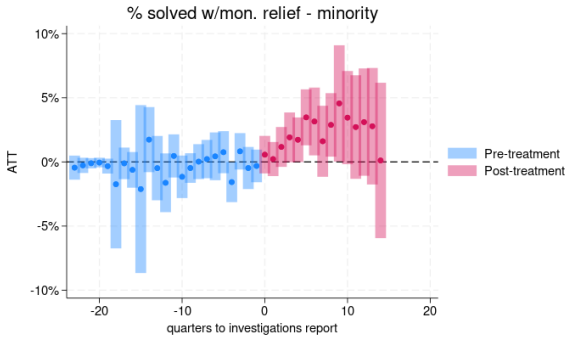


Low-education complaints

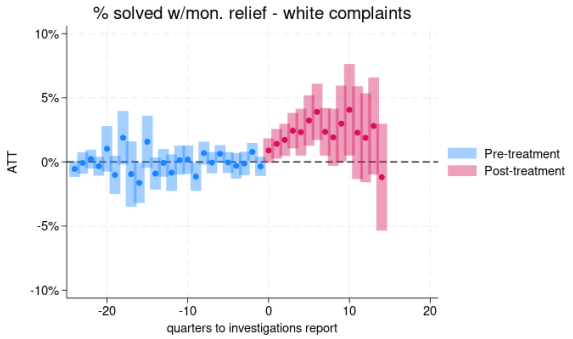


High-education complaints

Panel B: CFPB reports by minority and white filer



Minority complaints



White complaints

Table E.6: **CFPB Investigations - Difference in Differences, Matched Sample**

Description: The table presents difference-in-differences estimates around the first time a company receives an investigation report (negative feedback from the CFPB). The sample comprehends all treated companies, and, as controls, for each treated company the three closest companies in terms of overall number of complaints, share of complaints from loan-related products, and share of complaints with filer attachments in 2018 (pre-reviews). Across panels, the outcome variable is $solved\ w/MR_{i,f,c,r,q,tr}$, a dummy variable equal to one if filer f's complaint i from Census tract tr against company c filed in quarter q has been solved with monetary relief by respondent r, zero otherwise. $I(post\text{-}report)_{i,c,q}$ is a dummy variable equal to one if complaint i was filed against company c in quarter q, which is after company c has received an investigation report (negative feedback from the CFPB). The table regresses $solved\ w/MR_{i,f,c,r,q,tr}$ on the interaction of $I(post\text{-}report)_{i,c,q}$ with the filer's census tract education level being above median and the filer's census tract education level ($I(above\ med.\ \%\ pop.\ w/higher\ ed.)_{q,tr}$ and $\%\ pop.\ w/higher\ ed._{q,tr}$, in Panel A), and with the filer's ethnicity according to BISG algorithms (dummy variables for non-white, Asian, Black, or Hispanic filer, in Panel B). Standard errors are clustered at the company level. ***, **, and * denote 1%, 5%, and 10% statistical significance, respectively.

Panel A: Difference-in-differences, Education

	solved w/MR$_{i,f,c,r,q,tr}$					
	(1)	(2)	(3)	(4)	(5)	(6)
I(post-report)$_{i,c,q}$	0.00535	0.00684	0.00695	-0.00483	-0.00154	-0.00132
	(0.0071)	(0.0066)	(0.0065)	(0.0088)	(0.0080)	(0.0080)
I(above med. % pop. w/higher ed.)$_{i,q,tr}$	0.0133***	0.0114***	0.00948***			
	(0.0028)	(0.0028)	(0.0026)			
I(post-report)$_{i,c,q}$ × I(above med. % pop. w/higher ed.)$_{i,q,tr}$	0.0162***	0.0136***	0.0135***			
	(0.0050)	(0.0047)	(0.0048)			
% pop. w/higher ed.$_{i,q,tr}$				0 0.0760***	0.0668***	0.0664***
				(0.017)	(0.018)	(0.017)
I(post-report)$_{i,c,q}$ × % pop. w/higher ed.$_{i,q,tr}$				0.0816***	0.0678**	0.0669**
				(0.028)	(0.026)	(0.027)
quarter FE	x	x	x	x	x	x
company FE	x			x		
company x product FE		x	x		x	x
county FE			x			x
observations	561,018	560,953	560,741	561,018	560,953	560,741
R-squared	0.00131	0.000993	0.000687	0.0599	0.0862	0.0918

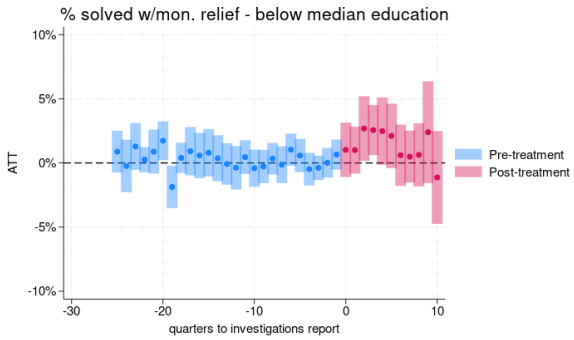
Panel B: Difference-in-differences, Ethnicity

	solved w/MR$_{i,f,c,r,q,tr}$			
	(1)	(2)	(3)	(4)
I(post-report)$_{i,c,q}$	0.0154**	0.0153**	0.0156**	0.0163**
	(0.0072)	(0.0069)	(0.0069)	(0.0068)
I(minority filer)$_{i,f,c,r,q,tr}$	-0.000568	-0.000476	0.00105	
	(0.0026)	(0.0023)	(0.0021)	
I(post-report)$_{i,c,q}$ × I(minority filer)$_{i,f,c,r,q,tr}$	-0.00687**	-0.00561*	-0.00603*	
	(0.0033)	(0.0034)	(0.0034)	
I(Asian filer)$_{i,f,c,r,q,tr}$				0.0146**
				(0.0058)
I(post-report)$_{i,c,q}$ × I(Asian filer)$_{i,f,c,r,q,tr}$				0.0148**
				(0.0067)
I(Black filer)$_{i,f,c,r,q,tr}$				-0.0104**
				(0.0041)
I(post-report)$_{i,c,q}$ × I(Black filer)$_{i,f,c,r,q,tr}$				-0.0217***
				(0.0074)
I(Hispanic filer)$_{i,f,c,r,q,tr}$				0.00100
				(0.0035)
I(post-report)$_{i,c,q}$ × I(Hispanic filer)$_{i,f,c,r,q,tr}$				-0.0105**
				(0.0050)
quarter FE	x	x	x	x
company FE	x			
company x product FE		x	x	x
county FE			x	x
observations	561,018	560,953	560,741	560,741
R-squared	0.0583	0.0851	0.0910	0.0918

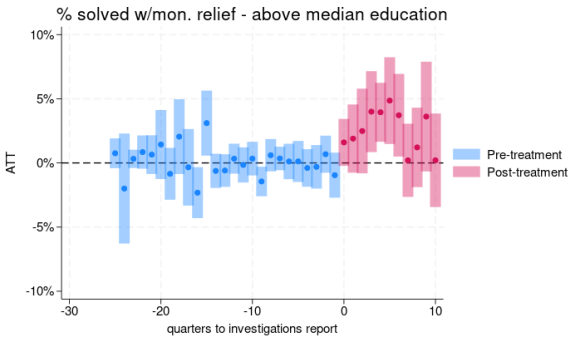
Figure E.5: **CFPB Investigations - Dynamic Difference in Differences, Matched Sample**

The figure reports the dynamic difference-in-differences Callaway and Sant'Anna (2021) estimators of the percentage of complaints solved with monetary relief each quarter by each company around receiving an investigation report. Panel A distinguishes between low and high education in the filer's tract (left- and right-hand side graphs, respectively) while Panel B distinguishes between Minority and White filers (left- and right-hand side graphs, respectively). Please refer to Panel B of Figure 6 for results on income. The sample is restricted to companies that were reviewed and received and investigation report (negative feedback from CFPB, treatment) and reviewed companies that did not receive a report and were similar to treated firms in terms of overall number of complaints, share of loan-related complaints, and share of complaints with filer attachments prior the start of the investigations period (controls).

Panel A: CFPB reports by low and high education

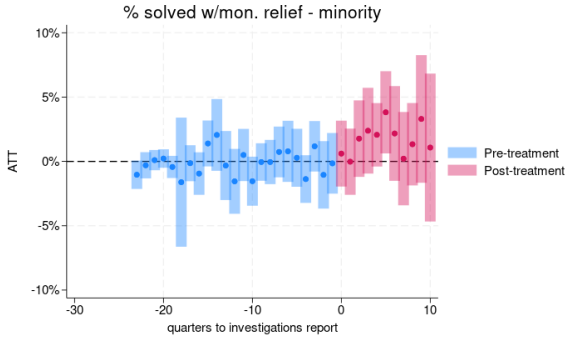


Low-education complaints

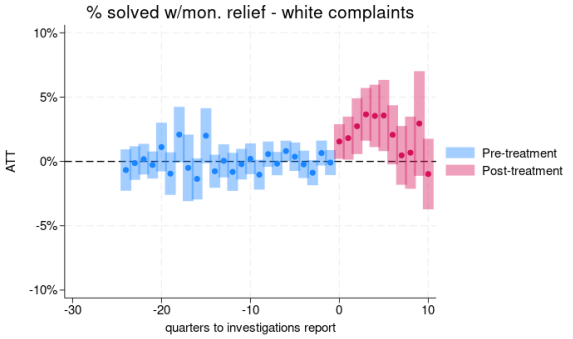


High-education complaints

Panel B: CFPB reports by minority and white filer



Minority complaints



White complaints

Appendix F - Companies Receiving a Monitoring Report

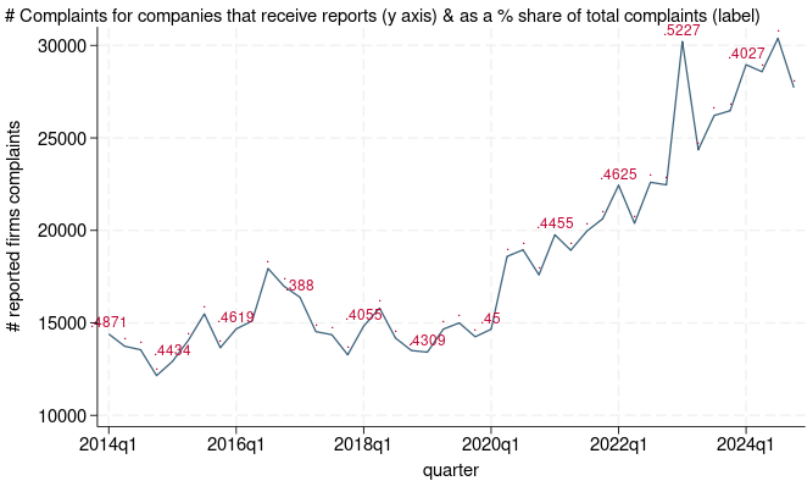
Figure F.1: **Firms Receiving a CFPB Monitoring Report**

The figure reports information on CFPB monitoring reports. Panel A illustrates how many firms the CFPB has sent monitoring reports to between 2021 and 2024 (sign of negative feedback from the agency). Panel B plots the evolution over time of the total number of complaints received by firms that the CFPB has sent a monitoring report to between 2014 and 2024. The labels in red represent the share that these complaints represent of overall complaints, in percentage.

Panel A: Monitoring reports per year

Year	Reported Firms
2021	14
2022	20
2023	31
2024	20

Panel B: Complaints of reported firms



Appendix G - CFPB Investigation Difference-in-Differences, Robustness

Table G.1: **CFPB Company Monitoring Reviews across Demographics**

Description: The table presents estimations regarding the likelihood of the CFPB flagging a reviewed complaint as either not properly addressed by the company (Columns 1 to 3 across panels), or not having received a substantive response from the company (Columns 4 to 6 across panels). The tables regress these likelihoods on quintiles of the filer's Census tract household median income. Standard errors are clustered at the company level. ***, **, and * denote 1%, 5%, and 10% statistical significance, respectively.

	I(company not address compl.)$_{i,f,c,r,q,tr}$			I(response not substantive)$_{i,f,c,r,q,tr}$		
	(1)	(2)	(3)	(4)	(5)	(6)
household med. income quintile$_{i,q,tr}$=1	-	-	-	-	-	-
household med. income quintile$_{i,q,tr}$=2	-0.00216	0.00103	-0.000363	-0.00117	0.00144	0.000171
	(0.0017)	(0.0016)	(0.0011)	(0.0014)	(0.0012)	(0.00097)
household med. income quintile$_{i,q,tr}$=3	-0.00421**	0.00119	-0.00109	-0.00237*	0.00194^{+}	-0.0000329
	(0.0016)	(0.0015)	(0.0013)	(0.0013)	(0.0012)	(0.00095)
household med. income quintile$_{i,q,tr}$=4	-0.00571***	0.00178	-0.00153	-0.00606***	-0.0000156	-0.00299^{+}
	(0.0018)	(0.0015)	(0.0030)	(0.0016)	(0.0012)	(0.0018)
household med. income quintile$_{i,q,tr}$=5	-0.00946***	0.00113	-0.00314	-0.00759***	0.000674	-0.00318
	(0.0025)	(0.0017)	(0.0027)	(0.0021)	(0.0014)	(0.0023)
quarter FE	x			x		
company FE		x			x	
product FE			x			x
observations	194,338	193,914	194,338	194,338	193,914	194,338
R-squared	0.0139	0.0583	0.00586	0.0142	0.0653	0.00510

Table G.2: **The Financial Restitution Gap - Diff-in-Diffs, Balance Tests**

Description: The table compares treated vs. controls (Panel A) and treated early vs. treated late (Panel B) before 2020 (the start of the company monitoring reviews at the CFPB). In panel A, Column 1 reports the pre-2020 quarterly average of the variables outlined across companies that will end up receiving a monitoring report (negative feedback from CFPB). Column 2 does the same for control companies, i.e., companies that will be reviewed but will not receive a monitoring report, and also had at least 100 complaints in 2018. In panel B, Column 1 reports the pre-2020 quarterly average of the variables outlined across companies that will end up receiving a monitoring report (negative feedback from CFPB) late in the company monitoring reviews time period (2023-2024). Column 2 does the same for companies that will end up receiving a monitoring report (negative feedback from CFPB) early in the reviews time period (2020-2021-2022). Across panels, Column 3 reports the difference across the previous two columns. ***, **, and * denote 1%, 5%, and 10% statistical significance, respectively.

Panel A: Treated vs Controls

	Reported	**Control**	**Difference**
	(1)	(2)	(3)
ln(# complaints)	4.60	3.16	1.44***
% deposit-related complaints	39.21%	9.47%	29.74%***
% loan-related complaints	60.78%	90.54%	-29.75%***
% complaints w/filer attachment	13.71%	8.91%	4.80%***
% complaints from bottom income quartile	27.81%	27.83%	-0.02%
% complaints from bottom education quartile	27.30%	27.34%	-0.04%
% complaints from minorities	22.84%	23.71%	0.87%

Panel B: Treated Late vs Treated Early

	Late Report	**Early Report**	**Difference**
	(1)	(2)	(3)
ln(# complaints)	3.42	5.59	-2.18***
% deposit-related complaints	12.11%	61.75%	-49.64%***
% loan-related complaints	87.89%	38.25%	49.64%***
% complaints w/filer attachment	11.77%	15.32%	-3.55%***
% complaints from bottom income quartile	31.82%	24.47%	7.35%***
% complaints from bottom education quartile	31.19%	24.06%	7.12%***
% complaints from minorities	25.17%	20.91%	4.26%***

Table G.3: **CFPB Investigations - Difference in Differences, Testing Complaints Composition**

Description: The table presents difference-in-differences estimates around the first time a company receives an investigation report (negative feedback from the CFPB). The sample comprehends all treated companies and, as controls, those companies that were also reviewed but did not receive a report and have at least 100 complaints in 2018 (pre-reviews). In Columns 1 to 3, the outcome variable is $I(\textit{low-income complaint})_{q,tr}$, a dummy variable equal to one if complaint i against company c has been filed in quarter q by filer f from a Census tract tr that is in the bottom quartile of Census tracts by household median income, zero otherwise. In Columns 4 to 6, the outcome variable is $I(\textit{low-education complaint})_{q,tr}$, a dummy variable equal to one if complaint i against company c has been filed in quarter q by filer f from a Census tract tr that is in the bottom quartile of Census tracts by percentage of population over 25 with a bachelor's degree, zero otherwise. In Columns 7 to 9, the outcome variable is $I(\textit{minority complaint})_{i,f,c,r,q,tr}$, a dummy variable equal to one if complaint i was filed against company c in quarter q by filer f who is either Asian, Black or Hispanic according to BISG algorithms. Across columns, $I(\textit{post-report})_{i,c,q}$ is a dummy variable equal to one if complaint i was filed against company c in quarter q, which is after company c has received an investigation report (negative feedback from the CFPB). Standard errors are clustered at the company level. ***, **, and * denote 1%, 5%, and 10% statistical significance, respectively.

	I(low-income complaint)$_{q,tr}$			I(low-ed. complaint)$_{q,tr}$			I(minority complaint)$_{i,f,c,r,q,tr}$		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
I(post-report)$_{i,c,q}$	0.00523	0.00244	0.00591*	0.00427	0.00314	0.00537**	0.0307***	0.0249***	0.0181***
	(0.0040)	(0.0040)	(0.0031)	(0.0035)	(0.0034)	(0.0022)	(0.0090)	(0.0086)	(0.0064)
quarter FE	x	x	x	x	x	x	x	x	x
company FE	x			x			x		
company x product FE		x	x		x	x		x	x
county FE			x			x			x
observations	1,003,708	1,003,541	1,003,388	1,003,708	1,003,541	1,003,388	1,003,708	1,003,541	1,003,388
R-squared	0.0228	0.0274	0.208	0.0199	0.0243	0.206	0.0178	0.0218	0.188

Table G.4: **CFPB Investigations - Difference in Differences, Matched Sample**

Description: The table presents difference-in-differences estimates around the first time a company receives an investigation report (negative feedback from the CFPB). The sample comprehends all treated companies and, as controls for each treated company, the three closest reviewed companies to each treated company in terms of overall number of complaints, share of complaints from loan-related products, and share of complaints with filer attachments in 2018 (pre-investigations). Across panels, the outcome variable is $solved\ w/MR_{i,f,c,r,q,tr}$, a dummy variable equal to one if filer f's complaint i from Census tract tr against company c filed in quarter q has been solved with monetary relief by respondent r, zero otherwise. $I(post\text{-}report)_{i,c,q}$ is a dummy variable equal to one if complaint i was filed against company c in quarter q, which is after company c has received an investigation report (negative feedback from the CFPB). The tables regress $solved\ w/MR_{i,f,c,r,q,tr}$ on the interaction of $I(post\text{-}report)_{i,c,q}$ with the filer's census tract income being above median ($I(above\ med.\ household\ med.\ income)_{q,tr}$) or the filer's census tract income ($ln(household\ med.; income_{i,q,tr})$). Standard errors are clustered at the company level. ***, **, and * denote 1%, 5%, and 10% statistical significance, respectively.

	solved w/MR$_{i,f,c,r,q,tr}$					
	(1)	(2)	(3)	(4)	(5)	(6)
I(post-report)$_{i,c,q}$	0.00514	0.00713	0.00737	-0.197***	-0.149**	-0.146**
	(0.0068)	(0.0064)	(0.0064)	(0.063)	(0.066)	(0.068)
I(above med. household med. income)$_{i,q,tr}$	0.0116***	0.0123***	0.0105***			
	(0.0026)	(0.0028)	(0.0025)			
I(post-report)$_{i,c,q}$ × I(above med. household med. income)$_{i,q,tr}$	0.0166***	0.0130***	0.0128***			
	(0.0040)	(0.0043)	(0.0044)			
ln(household med. income$_{i,q,tr}$)				0.0175***	0.0183***	0.0180***
				(0.0038)	(0.0044)	(0.0042)
I(post-report)$_{i,c,q}$ × ln(household med. income$_{i,q,tr}$)				0.0187***	0.0145**	0.0142**
				(0.0057)	(0.0060)	(0.0061)
quarter FE	x	x	x	x	x	x
company FE	x			x		
company x product FE		x	x		x	x
county FE			x			x
observations	561,018	560,953	560,741	561,018	560,953	560,741
R-squared	0.0593	0.0860	0.0916	0.0598	0.0864	0.0919