Competition and Its Effects on Quality in the Retail Financial Services Sector in the United

States

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Author's Declaration

I, Viktor Mák, hereby declare that I am the sole author of this thesis. To the best of my knowledge this thesis contains no material previously published by any other person except where due acknowledgement has been made. This thesis contains no material which has been accepted as part of the requirements of any other academic degree or non-degree program, in English or in any other language. This is a true copy of the thesis, including final revisions.

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Abstract

One of the markers of a well-functioning market in consumer financial services is high-quality services and products. Relying on complaint data from the Consumer Financial Protection Bureau as a proxy for quality, the paper uses regression analysis to suggest that more competitive markets in the consumer financial service sector are associated with higher quality services and products. The relationship is shown to be robust in checking accounts and mortgages, as well as the overall financial sector. Results also suggest that competition influences firms' complaint processing decisions as well, with less relief provided in competitive market and some evidence for higher quality responses to complaints in competitive markets. These empirical findings are novel and have policy implications as a new wave of bank mergers has been proposed. This thesis highlights the importance of competitive markets in protecting consumer welfare and calculates the rise in complaints that can be expected from the proposed BB&T and SunTrust Bank merger.

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Chapter 1: Introduction

Consumers in the United States of America have more options and responsibility when it comes to their financial choices than ever before. With advances in technology and the sophistication of consumer financial markets, the complexity of financial products available to consumers is rising rapidly. This has manifested itself in more choice, in credit cards, loans, mortgages, retirement accounts, and student loans and many other products (Célérier 2013). This trend has also been marked with a shift towards increased personal responsibility of navigating these products (Ryan, Trumbull and Tufano, 2010). This plethora of choice and responsibility is worrisome, as there is both theoretical and empirical evidence that consumers do not always make the best choices (Stucke 2013). Sometimes consumers' bounded rationality and cognitive biases limit them from acting optimally, and sometimes financial firms with perverse incentives trick people into buying products that are not suitable for them (Stucke 2013; Heidhues, Koszegi and Murooka 2012). Irrational choices, misselling, fraud, and abuse in consumer financial products can have disastrous and long-term consequences for the individual and the economy. On the personal level, mounting debt or the wrong products have financial and psychological costs such as feelings of shame and guilt (Foohey 2017). On a societal level, the widespread practice of firms selling mortgages to underinformed and unprepared consumers was partially the cause of the 2008 financial crisis.

Due to the important role of these products and the need to address the above outlined issues, after the 2008 financial crisis, Congress created the Consumer Financial Protection Bureau (CFPB). Then Harvard law professor and chief advocate of consumer financial protection, Elizabeth Warren argued that in the same manner that consumers could not buy a toaster that had a one in five chance of exploding, financial products that have the same risk levels should not go unregulated (Warren 2007). The primary goal of the CFPB is to protect

consumer welfare. The bureau was giving wide-reaching powers to achieve these goals, including supervising most firms involved in consumer finance, making rules, issuing fines and collecting complaints (Ayres 2013).

Besides the tools with which the CFPB was equipped, central to the American regulatory approach is a firm belief in market competition bringing about the best possible outcomes, not only for firms and the economy, but ultimately consumers as well. This belief has been enshrined in the Sherman Antitrust Act of 1890, countless Supreme Court cases and the mandate of all federal regulatory agencies (Stucke 2013). However, there is also reasons to believe that competition might decrease quality in some circumstances (Heidhues, Koszegi and Murooka 2012). For example, defrauding consumers can be profitable and competitive pressure might increase its prevalence and hurt consumers. One example of this is the Wells Fargo scandal of 2016, where two million checking accounts and credit cards were opened in the name of consumers without their knowledge. Wells Fargo employees opened these accounts to meet aggressive sales targets they otherwise could not have met (Tayan 2019). This indecent highlights mixed impact that competition can play and the importance of an oversight agency like the CFPB.

The aim of this paper is to quantitatively examine the role that competition plays in protecting consumer welfare and how it impacts the quality of the financial products consumers use. It aims to answer two research questions. First, what impact does competition have on the quality of consumer financial services? Second, what impact does competition have on firms processing of complaints? This is the only known study to examine the impact of competition on consumer complaints against firms submitted to the CFPB, which is used as the primary indicator of quality. A review of all papers using the CFPB data reveals a gap in the literature on the impact of competition on complaint rates. The analysis demonstrates that more competitive markets have fewer complaints. This trend is shown to be true when looking at complaints submitted against all financial services providers as well as specific products: checking accounts and mortgages. Furthermore, the analysis provides some evidence that firms respond to complaints more favorably in competitive markets but are less likely to provide monetary or nonmonetary relief to consumers. These results reinforcing the positive effects of competition on markets.

The paper contributes to the budding literature on the analysis of the CFPB complaint database and the importance of competition in protecting consumer welfare. When created by Congress, the database was made public so that consumers, firms, and academics could use the data to advance the understanding of how consumers and firms interact in financial markets. This paper is a small contribution to that task. It comes at a particularly important time as mergers proposed by large banks will trigger changes in competition and impact consumers and the source of the data and the CFPB itself has been threatened by political pressure in Washington. There are direct policy implications of the thesis, as Chapter 5 applies the findings of the study to the proposed merger of two large banks and predicts an increase in complaints in the counties affected by the merger. The paper highlights that policy makers and regulators must find a trade off between an increase in complaints and a gain in efficiency for the firms.

The paper is set up in six chapters. Chapter 1 serves as the introduction, Chapter 2 presents the history of consumer financial protection, the CFPB, the complaint process and examines competition theory's predictions for quality. Chapter 3 details the methodology, the data and the models used to test the predictions presented in Chapter 2. Chapter 4 presents the results and Chapter 5 discusses the findings and applies them to a case study, the proposed BB&T and SunTrust merger. Chapter 6 concludes and outlines future areas of possible research.

Chapter 2: Background

Section 2.1: Consumer Financial Protection

The consumer financial markets encompass a broad set of products, services, and firms which people use to manage their financial lives. These products help "pay for purchases and otherwise transfer value (payments), advance funds from the present to the future (savings and investment); advance funds from the future to today (borrowing); and manage risk (insurance)" (Levitin 2012, 320). People use financial tools to receive their wages and make payments with debit accounts, purchase homes with mortgages, save for retirement with pension funds, fund education with student loans, buy vehicles with loans and protect against unexpected harms or damage through insurance. The firms involved in this market are diverse. Retail banks are the most obvious participants, but student loan servicers, payday lenders, credit card companies, and even car dealerships provide products that fall under this category. Personal financial decisions have long term consequences. Interests rates, either paid on deposits or charged on loans can compound, consumers can either protect themselves against risk according to their risk-appetite or find themselves paying for insurance they do not need. Student loans and mortgages can either enable people to improve their quality of life or ladened them with dept (Levitin 2012).

However, consumers are prone to making irrational decisions (Tversky and Kahneman 1974; Stucke 2013; Heidhues, Koszegi and Murooka 2012). In recent decades, financial products have gotten increasingly complex and the trends have shifted towards empowering individuals to make financial choices for themselves (Célérier 2013). Consumers must decide how to invest their pensions, and pick from a dizzying array of mortgages, student loans, and credit card options. Developments in behavioral economics have highlighted the bounded rationality of consumers. Due to cognitive biases, such as a preference for present consumption

or limited ability to process information, consumers often make less than optimal choices (Campbell, Jackson, Madrian and Tufano 2011). Infrequent purchases of products, such as mortgages or pension plans, do not allow consumers to learn from their own past purchases. Furthermore, financial purchases are often private matters, and social taboos around talking about financial matters limit social learning that can occur between people (Campbell, Jackson, Madrian and Tufano 2011).

Yet, not all blame lies with consumers, sales and competitive pressures can compound these distortions as outlined in the Wells Fargo case. As opposed to the medical profession, where doctors are bound to have the patient's best interest in mind, fiduciary responsibility does not extend to all sales people working in the financial sector (Levitin 2012). When the incentives of salespeople and consumers do not align, consumers are sold the wrong products, pay more for products and services that they might not need or understand. Consumers are further disadvantaged as there are information and resource asymmetries between firms and consumers. While consumers select one or two mortgages in their entire lives, firms sell many of them every day and have the benefit of experience and practice. The same is true of legal resources, whereas it might be cost prohibitive for a consumer to seek legal redress for a problem, since firms have many transactions of the same nature, the legal system is much easier for firms to access. These cognitive biases and power imbalances can ruin individuals lives and financial crisis of 2008 shows the damage that this misalignment can cause to the economy. (Campbell, Jackson, Madrian and Tufano 2011). The need to protect consumers and to protect against market failure became the dominant narrative in Washington DC and led politicians to pass reforms to accomplish these two goals.

2.1.1: History of Financial Regulation

Before the 20th century, financial regulation in the United States was conducted at the state level. States regulated the maximum interest rates that banks could charge, the types of financial products that states could sell and had regulation against fraud, misrepresentation and unfair dealing (Levitin 2012). However, the goal of these regulations was not the protection of consumers but rather of the solvency of banks and economic stability. Even other landmark regulations, such as the creation of the Federal Deposit Insurance Corporation, which guaranteed that depositors would not lose deposits under a certain amount in the instance of bank failure, or the Veterans Administration issuing mortgages to returning soldiers after World War II, the main goal was macroeconomic stability and consumer protection was merely a positive side effect. It was only in the second half of the 20th century that the federal government started to exert more control over financial regulation with consumer protection in mind. Starting in 1966, federal bank regulators could review "unsafe and unsound practices" (Levitin 2012, 332).

By the financial crisis in 2008, federal financial regulation had spread and sprawled between various agencies with at least 12 regulatory agencies responsible for consumer protection. Complaints against national banks versus state-chartered banks were handled by different agencies. Some financial products had their own regulatory agency, and sometimes even more than one, such as mortgages with the Federal Housing Finance Agency, the Department of Housing and Urban Development and Veterans Administration handling complaints against different types of mortgages. This fragmented system left consumers puzzled and did not lead to effective regulation or oversight. In 2000, the Federal Reserve, which handed complaints, reported that over half of the complaints they received were misdirected (Hogarth 2002). In 2007, the Office of the Comptroller of the Currency redirected over 10,000 complaints of the 70,000 it received to the correct regulatory agency (Ayres 2013). These numbers demonstrate insufficient and unclear regulations of complaints.

Levitin (2012) summarizes at length the systemic issues of financial regulation before the crisis. He lists four main flaws with the system: consumer protection fell between the cracks, it was subordinated by regulators concerns for bank profitability, which was seen as the key to economic stability. There was a lack of expertise in consumer financial issues and a race to the bottom between different regulatory agencies as firms could switch between regulators. In retrospect, the warning signs of widespread consumer dissatisfaction were clear in the early 2000s. Complaints against credit cards and payday loans had spiked, bankruptcies had increased, and new, more complex mortgages had become common. Bank regulators remained indifferent and even took steps to limit states from addressing these issues (Levitin 2012).

2.1.2: Creation of the CFPB

After the financial crisis of 2008, stricter financial regulations were imposed on the United States financial sector in hopes of avoiding a similar crisis. Congress wanted to address the fact that the crisis was fueled by the purchase of complex financial products, such as mortgages, which Americans did not understand and could not afford. The passage of the Dodd-Frank Wall Street Reform and Consumer Protection Act commonly referred to as the Dodd-Frank Act, established the Consumer Financial Protection Bureau. The CFPB had broad regulatory powers over the financial sector in the United States, as it was tasked with "rulemaking, supervision and enforcement authority" (Levetine 2012, 322). The CFPB was established as an independent bureau and placed under the jurisdiction of the Federal Reserve. Instead of receiving an annual budget from Congress, the CFPB receives its funding directly from the Federal Reserve, as a fixed ten percent of the operating budget of the Federal Reserve.

This funding mechanism was adopted to protect the CFPB from the political pressures that Congress might try to exert on the bureau (Cooper and Carpenter 2019).

The creation of the CFPB overhauled financial protection in the United States. One of the main advantages was the centralization of financial regulation with a clear mandate on consumer protection. With the splintered framework before, agencies did not have the capacity or the mandate to develop expertise on consumer protection and welfare. Each agency focused on its specific mandate, whether regulating thrift institutions, mortgages, veterans affairs, etc. Neither the data, the technical expertise nor the theory was developed to protect consumers. Through adequate funding and legal mandate, the CFPB has been able to remedy some of these shortcomings (Ayres 2014). One important new feature of the CFPB was its ability to regulate "unfair, deceptive, and abusive acts and practices" as outlined in Section 1031:

"The bureau may take any action authorized to prevent a covered person or service provider from committing or engaging in an unfair, deceptive, or abusive act or practice under Federal law in connection with any transaction with a consumer for a consumer financial product or service, or the offering of an consumer financial product or service" (Alexander 2011, 1108).

The CFPB used this oversight power to investigat firms' practices and fining companies that are found to have committed unfair, deceptive or abusive acts. Two examples of these are cited here from Lucas (2015). The CFPB took action against Ace Cash Express after the company's aggressive and deceptive debt collection practices came to the attention of the agency. Ace Cash Express provided short, two-week, payday loans to low-income consumers. If customers failed to pay back the loans, debt collectors would harass clients by calling them at their workplaces, disclosing their debt to family and friends, and threatening to sue them. These acts were done to encourage consumers to take out new and larger loans to finance their old debt and to pay the fees that came with new loans. The CFPB ruled that these actions were both deceptive and unfair. Ace Cash Express was ordered to pay 10 million dollars in fines (Lucas 2015).

Another example of unfair, deceptive or abusive practices was the debt collection that College Education Services LLC engaged in. The firm offered help to consumers with student loan debt. After obtaining their telephone numbers through online marketing schemes, telemarketers would call the consumers and aggressively offer advice on debt relief for fees ranging from 195 dollars to 2500 dollars. The telemarketers pretended to be debt counselors, assured that clients that their issues would be "100 percent resolved" and often used false information to lure consumers in. The CFPB found that the company created the false impression that they were acting on behalf of consumers interests and had expertise. The owners of the firm were charged 50,000 dollars in fines (Lucas 2015).

Section 2.2: Complaint Collection

Rooting out such practices in the consumer financial markets became a practical way that the CFPB could achieve its mission. One main way that the CFPB uncovers instances of abusive practices is through the complaint database it manages. This section outlines how the CFPB collects complaints, why people lodge complaints and how the agency uses them.

2.2.1: Complaint Collection and Results

The complaint process was designed as a consumer-friendly and approachable process. Consumers can submit complaints via an interactive webpage or a telephone call. Most complaints are received via the webpage (Ayres, 2013). Once the CFPB receives a complaint, it verifies that the consumer has a commercial relationship with the firm and ensures that it is not a duplicate. Beyond its capacity, the CFPB does not make any effort to verify the validity of the complaint. The complaint is passed onto the firm, which has 15 days to respond to the customer. If there is no response within the timeframe, the complaint is marked as untimely. There are six categories of responses in the database, including options such as "closed with explanation", "closed with monetary relief" and "wrong firm". After receiving the response, customers have 30 days to provide feedback to the CFPB and the firm by disputing the response. However, even if they dispute it, the complaint process ends there (Ayres, 2013).

The development of the complaint mechanism at the CFPB was gradual. The Dodd-Frank Act stipulated that the CFPB must create a complaint mechanism to "facilitate the centralized collection of, monitoring of, and response to consumer complaints regarding consumer financial products and services" (Porter 2012, 58). On July 21, 2011, the CFPB started collecting complaints on credit cards. By December 2012, the CFPB added mortgages and today the database covers a range of 18 products (Cooper and Carpenter 2019, 2). As the number of products grew so did the types of companies that fell under the databases jurisdiction. Today, jurisdiction of the CFPB complaint database includes "banks, thrifts and credit union with over 10 billion in assets, and their affiliates, as well as certain nonbank consumers financial service providers, such as mortgage lenders, brokers and servicers, private education lenders, payday lender and larger participants of the consumer reporting and debt collection markets" (Cooper and Carpenter 2019, 2). In the United States, the CFPB complaint database is the most comprehensive database available regarding consumer financial products.

Two examples illustrate the complaint data. Complaint ID Number 3,159,261 arrived on February 21^{st,} 2019 from Texas regarding medical debt collection against The Outsource Group. The consumer claimed that the company never billed them properly for the debt and they were fined incorrectly. The consumer writes in the narrative section "I feel so helpless in this situation and I am hoping something can be done not only for me, but others that have been lied to by this awful company." From the publicly available data, it is known that the company responded, did not provide any monetary relief and the consumer did not dispute the response. The could be interpreted as a success since the company could have explained the incident and satisfied the consumer. Or, the consumer was not satisfied but lost interest in disputing the response. There is no additional information available on the case and today, the complaint is closed. (CFPB Database)

2.2.2: Theoretical Literature on Complains

To better understand the motivations of consumers who complain, its important to look at the literature on complaint theory. Complaints stem from a sense of injustice, dissatisfaction or expectations not being met (Singh and Wilkes 1996; Day 1980). There is evidence for this in the 384,546 complaints that have narratives attached to them in the Consumer Financial Protection Bureau complaint database. The term "justice" is used in 1,526 complaints, as is the word "lied" (10,436 times) and "tricked" (1080 times) (CFPB Database). When consumers feel like they are being treated unfairly, they have two options as outlined by Albert Hirschman. They can leave the commercial relationship and protect their interests by going to another firm or they can voice their concerns. Hirschman termed these options as exit and voice (Hirschman 1970). Depending on the nature of the grievance, market conditions, the personality of the individual, consumers might choose one of these options, both or neither (Dowding, John, Mergoupis and Van Vugt 2000). If they choose to complain, consumers can address the firm directly and seek compensation for the wrong, seek help from a third party such as the courts or a regulatory agency or speak to family and friends to express their dissatisfaction (Day 1980).

Day distinguish between complaints that are expressive and ones that seek remedy or compensation. Day categorizes complaints into two groups: (1) seeking redress or compensation, (2) expressive where consumers wish to pursued others or affect future behavior (Day, 1980). One is an expressive goal, which they achieve by talking to friends and family, leaving bad reviews, or filling out the public narrative section of the complaint at the CFPB. A much more instrumental consideration is seeking compensation after being wronged by the

firm. Typically, the judicial branch of the government and the court system exists for the purpose of enforcing contracts. Yet, there is a high cost of taking cases to court both in terms of time and money invested in litigation. The CFPB complaint mechanism provides consumers a lower cost method of engaging the government in helping arbitrate their claims against companies. Porter highlights the function of the CFPB as an alternative dispute resolution system when courts fail consumers (Porter 2012).

Once a complaint is submitted, successful resolution for consumers depends mostly on the perceived justice regarding how the complaint was handled. According to Blodget (1997), perceived justice has three components: distributive justice, procedural justice, transactional justice. Distributive justice refers to the fairness of the remedy provided by the firm. For example, if a consumer is fined for a late payment on her credit card, but she made the payment on time, a partial refund would not meet this requirement. Procedural justice is determined by the perceived fairness of the policies surrounding the issues and is an assessment of the rules that consumers are subjected to. Finally, transactional justice is determined by the perception of how the customer complaint was handled (Blodgett, Hill and Tax 2011) Was the company polite, timely or empathic? Evidence that transactional justice matters to consumers is present in the CFPB database, where the word "rude" show up 7,547 times (CFPB Database). Similarly, Estelami (2000) highlights three factors for the satisfactory resolution of complaints. They include whether the consumer received compensation, whether the employee behavior displayed empathy or politeness, and promptness. A positive resolution of complaints is important for business as consumers are more likely to maintain their relationship with the firm in case of successful resolution (Estelami 2000).

2.2.3: Empirical Literature on CFPB Complaints

Complaints are an important source of information, as they serve as a way for consumers to signal to firms and to regulators about their experiences. Understanding patterns in the complaint data can reveal important trends in the quality of products and services that consumers use. The 1.3 million complaints submitted to the CFPB is used as a knowledge base for enforcement and rulemaking. The CFPB Supervision and Examination Manual dictates that: "In addition to shedding important light on the extent and types of concerns of consumers financial products or services, complaints may provide indications of potential regulatory violations, including unfair, deceptive, or abusive acts or practices" (Ayres 2013, 354). Hence, it is an enshrined principle of the agency that complaints should be analyzed to provide information to regulators about emerging practices in the financial market and call attention to specific firms or products. Complaints can also shape regulations, allowing the CFPB to finetune policies (Ayres 2013).

Disappointingly, the publicly available analysis of the database from the CFPB has been limited. The analysis in the CFPB annual report to Congress stands in sharp contrast to the quantity and richness of the data available. In the annual report, there are simple tabulations and percentages expressed about complaints. For example: In 2018, 3 percent of complaints were responded in an untimely manner, or that 27 percent of the 235,400 complaints received in 2018 were related to debt collection (Consumer Response Annual Report 2018). Without attempting to link this data to enforcement actions, or data from other agencies, the CFPB is underutilizing the data.

There is more nuanced analysis available from academics. Since the dataset has been made available, lawyers, computer scientists, economist, and political scientists have used it to test their theories and uncover patterns. The first paper that took an in-depth look at the CFPB complaint database was by Ayres (2013). At the time of the analysis, the database was about

one-tenth the size that it is today. The study assessed about 110,000 complaints. By matching the complaint data to basic demographic data, the analysis discovered correlations between socioeconomic data and complaints, finding that communities that have more Hispanic and African Americans have higher rates of complaints against mortgages. The author also reports extensively on descriptive data for complaint rates for different banks and types of products (Ayres 2013).

A study by Foohey (2017) reveals the emotional motivations that consumers have for lodging complaints. She uses qualitative analysis of the narrative section of the complaints and finds two main motivators in the narratives: (1) anger and frustration about how consumers had been treated or (2) sadness and fear about how the issue will impact their lives. These narratives often include pleas for help. Foohey recommends that the CFPB should take a more proactive role in sending customized reactions to complaints, and providing information and resources to help with specific issues mentioned in the complaint (Foohey 2017). Another paper published in 2018 makes a similar suggestion after using artificial intelligence methods to extract latent topics from the narrative section of each complaint. It proposes that this type of active computer-aided monitoring of the database can help regulators discover patterns and topics of discontent that otherwise might be missed (Bastani, Namavari and Shaffer 2018.).

The role of political ideology in shaping people's propensity to complain was tested by Jung, Garbarino, Briley and Wynhausen (2017). They conclude that conservative communities complain less due to their "system justifying" preferences. However, the authors touch upon an important fact, that even when facing the same quality of service, different communities likely have different local propensity to complain. This can result from different education levels, the trust of government institutions, opportunity costs to complain and many other factors. This has been reinforced by Liu, which highlights cultural differences in complaining between Asian Americans and White Americans (2001). Finally, Begley and Purnanandam test the impact of the Community Reinvestment Act which targets certain underprivileged communities with credit expansion programs. They find increased complaints in the communities and concludes that targeted programs might have harmful effects as banks are given quotas and engage in deceitful or harmful marketing practices to meet them. Begley and Purnanandam's approach of using complaint rates as a proxy for quality is adopted by this thesis. (Begley and Purnanandam 2016).

Hence, the CFPB complaint database servers as a collection of experiences that reveal important facts about the consumer landscape. Certain communities are more likely to complaint about products, targeted programs might hurt communities and complaint behavior is influenced by cultural and political identity. The Bureau uses the data to finetune their policy-making and to guide their enforcement practices in protecting consumers. While some consumers find resolution to the problems through the complaint mechanism, the CFPB does not have the resources or the mandate to investing and assist all consumer who submit complaints to them. Hence, the CFPB relies on other mechanisms to promote consumer welfare, such as market competition. This section concludes by noting the gap in the literature that no study has examined the role of competition between firms has on complaint rates. Since an important pillar of economic regulation has been the role of maintaining and promoting competition, examining the role that competition might play in protecting consumers from poor quality products and services is a natural extension of the literature. The next section outlines the role competition plays in protecting consumers.

Section 2.3: Competition as Consumer Protection

Economists have long studied and preached the positive consequences of competition on markets. In *Wealth of Nations*, one of the founding texts of modern-day economics, Adam Smith highlighted the positive effect it has on quality: "Free competition obliges all bankers to be more liberal in their dealings with their customers, lest their rivals should carry them away" (Smith 2019, 329). In a review of the benefits of competition, Stucke (2013) outlines that competition can lead to: "lower costs and prices for goods and services, better quality, more choice and variety, more innovation, greater efficiency and productivity, economic development and growth, greater wealth equality, a stronger democracy by dispersing economic power, and a greater wellbeing by promoting individual initiative, liberty and free association." (Stucke 2013, 165). It is beyond the scope of this paper to assess all these potential positive characteristics of competition and rather the focuse is set on the effect of competition on consumer welfare. Hirschman outlined that the presence of rivals and the potential loss of customers provides a "wonderful concentration of the mind" for firms to provide higher quality goods (Hirschman, 1970, 20). Fornell (1992) showed that more competitive markets in Sweden provided higher rates of consumer satisfaction due to more differentiated products to meet consumers heterogeneous needs.

The value of competition has long been affirmed in the United States legal system as well. In 1951, the Supreme Court summarized "the heart of our national economic policy long has been faith in the value of competition" (Stucke 2013, 161). In the US regulatory framework, competition between firms is seen as an important tool for protecting consumer welfare and the safety of financial markets. The Sherman Act, the cornerstone of antitrust regulation, passed in 1890 "rests on the premise that the unrestrained interaction of competitive forces will yield the best allocation four economic resources, the lowest prices, the highest quality, and the greatest material progress." (Stucke 2013, 162) One way that federal agencies accomplish this is by closely scrutinizing mergers which reduce competition, ensuring low entries to the barrier.

At odds with the legal and economic theory outlined above, recent literature has highlighted that in certain circumstances, intense competition can give firms the incentive to take advantage of consumers cognitive biases and sell products that are in the firm's best interests and not the consumers. In these cases, increased competition lowers consumer welfare. Stucke (2013) highlights the credit card industry as being prone to marketing and sales techniques that take advantage of these biases. While the literature outlines the theoretical models for when these circumstances might arise, it mostly cites anecdotal evidence and examples for these types of practices (Stucke 2013; Heidhues, Koszegi and Murooka 2012).

2.3.1: Literature Review on Competition in the Retail Financial Sector

The literature on the effects of competition in the banking and financial services is vast for two reasons. First, as outlined in the section above, the list of potential benefits is long, and each generates its own branch of studies. Second, banks provide many services and play diverse roles in the economy. Hence, the literature has branched off in many directions. Some scholars have studied the impacts of competition on bank financial performance, on the ability of banks promote economic development or jobs growth. A substantial review of the field is provided by Berger Demirguc-Kunt, Levine and Haubrich (2003).

Research in the early 1990s found that banks in more concentrated markets charged higher interest rates on business loans and paid lower interest rates on consumer deposits (Berger and Hannan 1989). Another paper found that deposit interest rates were slower to respond to changes in interest rates set by the Federal Reserve in less competitive markets (Neumark and Sharpe 1992). It has also been shown that banks in less competitive markets are less efficient, which the authors hypothesized as the result of a more relaxed approach of managers without fierce competition (Berger and Hannan 1998).

However, the studies on the impacts of competition in quality are rare. One measure of banking quality used in the literature is "advertising intensity, branch density, branch staffing, geographic diversification of the bank network, and employee compensation" (Dick 2007, 55). Dick (2007) finds that markets dominated by large banks have higher quality services, while

fringe small banks offer lower quality service. A study by the Federal Reserve finds that increases in concentration, due to mergers increases quality in some markets in the early 1990s as consumers gained access to a larger network of branches and ATMs. (Board of Governors of the Federal Reserve System 2003). However, an assumption in this approach to proxying for quality is that branch density and staffing are the relevant factors for consumers. By neglecting the subjective experience of consumers, which is harder to measure, there is a gap in the literature on competitions effects on quality. Instead of using physical proxies for it, this paper aims to fill this gap in the literature by using the CFPB complaint data as a proxy for quality. There are intuitive reasons to believe that the number of complaints against a firm to third-party independent regulatory agency can serve as an indicator for quality, as consumers will only complaint if there is something wrong with the quality. This use of the data was also outlined by Begley and Purnanadam (2016).

Chapter 3: Methods

This chapter outlines how the hypothesis and the predictions will be tested. The chapter is broken into two parts. Section 3.1: Empirical Strategy presents the hypothesis and econometric models used to test them. Section 3.2: Data Description and Variable Operationalization presents the source of the data and how it was processed and used to operationalize the key variables.

Section 3.1: Empirical Strategy

3.1.1: Hypothesis

There are two research questions that Chapter 4 aims to answer. First, do more competitive markets have fewer complaints? The hypothesis derived from the theory states affirmatively that they do. Albert Hirschman attributed competition to have positive effects on quality and firm behaviors, as it serves as an incentive to provide higher quality goods. There is little incentive to provide high-quality goods if a firm enjoys a monopoly, and the incentive grows with competition (Hirschman 1970). Hence, more competitive banking markets are expected to have higher quality services. Competition is expected to limit abusive, unfair and deceptive practices as firms that do not engage in this behavior would build a reputation for it and attract larger market share until firms who practice abusive acts can no longer operate in the market and drop the practices. Hence, the first hypothesis is:

H1: Markets with have higher competition will higher quality services and products.H0: Markets with higher competition are not associated with higher quality services and products

The second research question is related to the processing of complaints. Do more competitive markets have higher quality responses to consumer complaints? The second hypothesis answers this question affirmatively as well. Based on Estelami's work (2000), in competitive markets, it is more expensive to acquire new customers, there are higher marketing budgets and sales department costs and the incentive to retain established customers is higher. High-quality responses ensure that customers are satisfied and remain loyal to the firm. (Estelami 2000) Hence, the second hypothesis is:

H1: Firms provide higher quality responses to complaints in competitive markets.

H0: Firms do not provide higher quality responses to complaints in competitive market.

3.1.2: Models

To test these relationships multivariate linear regression is used. There is a standard set of controls variables used to control for variation in the dependent variable that stems not from competition but other potential sources, such as education, median income, age, race, gender make up of communities. The generalized model:

 $ComplaintRate = \beta_0 CompetitionMeasure + \beta_1 ControlVariables + \beta_3 StateDummies + \varepsilon$

State dummies are included to account for different regulatory and cultural norms around complaining. Since counties from the state are likely to be similar and present clustering within the standard errors, the models adjust for this by clustering the standard errors at the state level. This also addresses any issues of heteroskedasticity that might be present in data. The Complaint Rate is substituted to test more nuanced relationships, by running the model with only checking account and mortgage complaints in the analysis section. For the second research question regarding the quality of response, the Complaint Rate is substituted for quality indicators, timeliness rate, dispute rate, and relief rates. Since these values have either an upper or lower bound where observations concentrate. This can present a challenge for OLS multivariate regressions, a Tobit model is presented in Section 4.4. Note that none of the models and analysis can establish causality between the variables, but even lacking causal link the models show correlations and highlight differences in complaint behavior that communities exhibit and experience.

Section 3.2: Data Description and Variable Operationalization

3.2.1: Measure of Quality

As outlined in earlier sections, quality is a difficult concept to measure as perceptions of it vary greatly between people based on past experiences and expectations. Others have tried to proxy for quality through measurable and physical indicators of quality (Dick 2007). For the purpose of this study, complaints to the CFPB against financial services firms are used as a proxy for bad quality. Consumers only report disappointment and not delight, and so complaints are an indication of poor-quality service. A limitation of the study is that they do not provide any information on the prevalence of acceptable or high-quality service that a consumer experiencing. Complaints to the CFPB are often the last measure that consumers have when they have been treated unfairly, mistreated or abused. Complaints deal with a breach in contracts, errors made by the banks, abusive behavior that customers face and other issues (Foohey 2017). Sometimes complaints are the result of product flaws such as being charged a higher interest rate, and sometimes due to human error or negligence. The quality of the complaint processing is measured using three indicators: whether the firm responded within the 15-day timeframe, whether they provided monetary or nonmonetary relief, and whether the consumer disputed the response.

The primary data used for the analysis comes from the Consumer Financial Protection Bureau. For the analysis, anonymized complaints from 2013 to 2018 are used. Since the CFPB does not release the zip code of complaints where there is a narrative provided, the analysis is limited to the complaints that can be tied to a specific community (N = 600,313). The first step in processing the data is ensuring each complaint is tagged with a uniform and identifiable zipcode, a complaint count of 1, and binary variables or timely response, relief and consumer disputed response when any of those categories apply to the complaint. The complaints are aggregated to the zip code level. This aggregation leads to the count of total complaints in the zip code and three percentages, for the rates of complaints with timely response, relief provided and disputes. The next step is to aggregate the zipcodes to the county level. This is done using a crosswalk file zip as some zip codes are split by county borders. The complaints from these zip codes are split between the neighboring counties based on the attribution ratio of the zip code in each county. Therefore, the complaint variable is not always an integer and there are fractional complaints. This method is adopted from Jung, Garbarino, Briley, and Wynhausen (2017). To control for county size, the total complaints per county is divided by the population of the county to produce per capita complaint rates.

The complaint per county range widely. Los Angeles County has the most absolute complaints with 26,270, but with over 10 million residents, it is also the largest county in terms of population. The average county has 191 complaints (SD = 852) and there are 365 counties with no complaints at all. The average population in these counties is 7,093 (SD = 5768), which is significantly lower than the sample average of 102,907 (SD = 329,842). The presence of low population counties presents a challenge in some of the regression models run. As a lack of complaints can indicate either higher quality banking services or be a reflection that a critical

population threshold is not met for complaints to be expected. The analysis deals with this by running some models twice, so that small counties are included and excluded to ensure that they do not skew results. The Tobit model in Section 4.3 also addresses this issue by censoring observations with zero complaints.

To control for a local propensity to complain, the complaint rate of counties to the FCC is added. This method is adopted from Begley and Purnanandam (2016) and is used to control the different propensity to complain that communities have. Since complaints to the FCC are unrelated to banking complaints, it proxies a measure of how likely communities are to complain to regulators. Any variation above and beyond what the FCC complaint variable explains can be interpreted as variation unique to the financial sector.



Figure 1: CFPB Complaints in the United States, 2014-2018

3.2.2: Measure of Competition

Competition is measured using the Herfindahl-Hirschman Index using the structureconduct-performance paradigm. Based on the work of Joe Bain, this approach to industrial organization states that firm behavior is influenced by the structure of the market in which it competes (Bain 1956). The commonly used measure of market structure is a concentration index the Herfindahl-Hirschman Index (HHI). As the literature highlights, the HHI is not without its flaws. For example, it makes no distinction between the types of banks that make up a market, whereas there is evidence that local, national, state-owned and foreign-owned banks all operate and influence markets differently (Berger Demirguc-Kunt, Levine and Haubrich (2003). More refined measures of competition have been defined. However, due to the data available at the geographic unit and scale used, the HHI was used for the study.

To construct the Herfindahl-Hirschman Index (HHI) market share data is obtained from the Federal Deposit Insurance Corporation, which records information about bank branches in the United States and the deposits attributed to each branch. This data is aggregated to the country level and used to construct two market structure indicators based on market share. There are two indicators that rely on the HHI principle. The first and main indicator for the study, Deposit HHI, is constructed using deposit shares in a county. However, since the distribution of deposits is not uniform in the population this measure skews the competition indicator to overrepresent wealthier consumers. Another indicator, slightly more agnostic to individual wealthy, the Branch HHI, uses the share of physical branches. These values range between 0 and 1. In a monopoly, where one bank controls all the deposits in a county, the Deposit HHI is equal to 1. In a market where many banks share the total deposits and each only controls a small share, the Deposit HHI is closer to 0. Similarly, a value of 1 for Branch HHI indicates that a single firm owns all the banking locations in a county. Somewhat surprisingly, there are 135 counties in the US where there is only one bank present, representing a monopoly. These counties have low populations, with an average of 4,000 people inhabiting them. The average county has a Deposit HHI of .323 (SD= .210). The most competitive county is Johnson County, Kansas with 65 unique banks, 233 branches and HHI value of 0.05. The map shows the distribution of deposit HHI values across the United States.

Retail Banking Competition - HHI



Figure 2: Competition Rates in Banking in the United States, 2015

One of the limitations of this study is the source of the data on the competition indicator. Since the HHI indicators are built using FDIC data, it only reflects the competition in retail deposits and physical bank branches. However, the complaint data is for all firms that offer financial products to consumers. Since there is no publicly available data on competition in the consumer financial services sector, this measure is the best proxy available. It also serves as one of the major limitations of the study. This limitation is addressed by limiting the complaint dataset to products traditionally dominated by banks, checking accounts and mortgages.

3.2.3: Control Variables

The socioeconomic data used to control for variation in complaints that is not the result of competition is obtained from the Census Bureau which provides 5-year estimates through the American Community Survey at the county level. Data from 2015 is used as the control year as it sits in the middle of the complaint data sample (2013-2018). The models use standard controls from the literature (Ravel 2018; Begley and Purnanandam 2016; Jung, Garbarino, Briley, and Wynhausen 2017) which cover measures of education, gender ratio, race, median income, elderly population. For education, the rates of bachelor's degrees are used, the variable for race is the white percent of the population. The median income is used to measure the economic prosperity of a community. In some models, the total deposit with banks is used to control for size and economic status of the community. Jung, Garbarino, Briley, and Wynhausen (2017) demonstrated the role of political values in shaping complaint behavior and hence the 2016 presidential election results are included as a control variable as well. The descriptive statistics can be seen in Table 1 below. All control variables are standardized before being used

Variable	Obs	Mean	Std.Dev.	Min	Max
Complaint CFPB	3143	191.31	851.815	0	26270
Mortgage Complaints	3143	30.534	151.9	0	4678.671
Checking Complaint	3143	7.091	32.336	0	919
Complaints FCC	3143	325.008	1128.358	0	31067.79
Timely rate	2997	.974	.082	0	1
Dispute rate	2997	.119	.16	0	1
Deposit HHI	3112	.323	.21	.054	1
Branch HHI	3112	.267	.207	.035	1
Total Deposits	3112	3400000	2.48e+07	2795	9.20e+08
Mortgage Count	3142	15335.87	43604.94	0	1100000
Rurality	3118	.504	.102	.04	.89
Dem Victory 2016	3119	318	.307	916	.887
Population Over 65	3143	15.883	4.191	3.5	43.4
Female	3143	50.026	2.22	27.9	56.8
White	3143	82.885	16.855	2.7	99.2
College Degree	3142	21.21	9.282	4.7	78.1
Median Income	3142	33595.02	6146.347	15310	75446

Chapter 4: Findings

Chapter 4 presents the results of the analysis. It is divided into two sections based on the two research questions. Section 4.1: Competition and Quality examines the variation in complaints rates based on competition levels using three models. It tests the relationship between competition and total complaints and then subsets of the data representing checking account complaints and mortgage complaints. Section 4.2: Quality of Responses tests the relationship between competition and the quality of the response which are measured via three indicators: timeliness of response, the relief rates and dispute rates of responses per county.

Section 4.1: Competition and Quality

4.1.1: Total Complaints

The first four models test the explanatory power of competition levels on complaint rates. All four models use the entire complaint dataset that is available. Model 1 uses a per capita complaint rate which has been log transformed with the standard controls and the Deposit HHI. The logarithmic transformation addresses the right-skewed data but drops the counties with no complaints from the model. Hence, the sample is reduced to N=2755. The Deposit HHI coefficient of 1.16 is positive and significant, indicating that a higher concentration of bank deposits leads to higher complaints. Since the dependent variable was log transformed, to interpret these results, the coefficient must be transformed. The Deposit HHI coefficient of 1.16 equates to a 219 percent increase in complaint rates as there is a one unit change in HHI. Since the HHI is a variable that runs from 0 to 1, the coefficients can be interpreted to say that monopoly markets have about twice as many complaints as markets with perfect competition. The R-squared value of 0.28 shows that 28 percent of the variation in

complaint rates is explained by the model. The other variables that return significant results include rurality, median income, and education.

The exercise is repeated in Model 2, except the complaint rate is not log transformed, which results in a sample size of all 3111 counties. The variable of interest, Deposit HHI remains positive but significant only at the 0.95 level.

In Model Three, there are three additional control variables added. Two control for financial market size, the number of mortgages in a county and the total amount of dollars on deposit with banks. By standardizing the counties for the financial markets, these models remove variations in complaint rates that might stem from different utilization of consumption of financial products. Adding these controls is an additional way to ensure that counties are as identical as the data allows. To control for a local propensity to complain, the complaint rate of counties to the FCC is added. With the new controls, the Model 3 and 4 test the complaint rates again, both log transformed and not. The Deposit HHI coefficient remains strongly positive and significant.

Table 3 presents the same models, except the independent variable being tested in the Branch HHI. Instead of relying on the concentration of bank deposits, it uses the Branch HHI, a competition indicator derived from physical branch locations concentration. The results are almost identical to Table 2. The Branch HHI has a positive and significant coefficient in all four models.

	(1)	(2)	(3)	(4)
	complaintpclog	complaintpc	complaintpclog	complaintpc
Deposit HHI	1.160^{***}	0.00239^{*}	1.277^{***}	0.00212^{**}
	(0.282)	(0.000914)	(0.246)	(0.000706)
LogFCC			0.0572	-0.000178
2082.00			(0.0447)	(0.000126)
			2 22 22 22 22 22 22 22 22 22 22 22 22 2	
Mortgagtes			0.000000360	1.39e-09
			(0.00000494)	(1.41e-09)
Total Deposits			-1.55e-09**	-1.44e-12
			(5.61e-10)	(1.00e-12)
Burality	-0.258***	-0.000128	-0 205***	-0 000297**
Iturunty	(0.0428)	(0.000119)	(0.0363)	(0.000110)
101 101 10 1010 1010 1010 1010 1010 10	ACCESSION		x	
Dem Victory 2016	0.0343	0.000229^*	0.0381	0.000225^*
	(0.0396)	(0.000105)	(0.0387)	(0.000110)
Population over 65	-0.0164	-0.000132	-0.00457	-0.000160
uning and the second	(0.0343)	(0.000112)	(0.0372)	(0.000127)
Percent Female	0.00535	0.0000527	0.00123	0.0000628
i creent i chiate	(0.0301)	(0.0000800)	(0.0312)	(0.0000020)
	(0.0001)	(0.0000000)	(0.0012)	(0.0000042)
Percent White	-0.0570	0.0000734	-0.0660	0.000105
	(0.0545)	(0.0000896)	(0.0527)	(0.0000988)
College Degree	0.179***	0.000180	0.164**	0.000226
	(0.0475)	(0.000148)	(0.0551)	(0.000175)
Modion Income	0 10/***	0.000954*	0 107***	0.000950*
median mcome	(0.104)	(0.000204)	(0.107)	(0.000200)
	(0.0373)	(0.000987)	(0.0575)	(0.000100)
Constant	-7.116***	0.0000705	-7.487***	0.00116^{**}
	(0.230)	(0.000778)	(0.175)	(0.000399)
Observations	2755	3111	2755	3106
Adjusted \mathbb{R}^2	0.264	0.117	0.266	0.120

Table 2: Total Complaint Rate Models with Deposit HHI

Standard errors in parentheses, Regression included state dummies, values are not reported * p<0.05, ** p<0.01, *** p<0.001

	(1)	(2)	(3)	(4)
	complaintpclog	complaintpc	complaintpclog	complaintpc
Branch HHI	1.392***	0.00289*	1.556***	0.00269**
	(0.317)	(0.00110)	(0.281)	(0.00091)
LogFCC			0.0762	-0.000141
			(0.0422)	(0.000113)
Montecene			1 17. 09	C CE a 10
Mortgages			(0,000000474)	(1.28×0.0)
			(0.00000474)	(1.28e-09)
Total Deposits			-1.11e-09*	-7.28e-13
10000 D opposito			(4.93e-10)	(7.97e-13)
			(1.000 1.0)	(
Rurality	-0.294^{***}	-0.000215^{*}	-0.230***	-0.000355^{**}
	(0.0384)	(0.0000980)	(0.0363)	(0.000116)
		36 SC	60 - 10 	
Dem Victory 2016	0.0316	0.000230*	0.0347	0.000223*
	(0.0384)	(0.000102)	(0.0372)	(0.000106)
Population over 65	-0.0230	-0.000151	-0.0102	-0.000173
1 optilation over 05	(0.0259)	(0.000101)	(0.0387)	(0.000134)
	(0.0552)	(0.000120)	(0.0501)	(0.000104)
Percent Female	0.0118	0.0000618	0.00736	0.0000703
	(0.0292)	(0.0000790)	(0.0301)	(0.0000828)
		(
Percent White	-0.0478	0.000101	-0.0601	0.000122
	(0.0552)	(0.0000917)	(0.0535)	(0.000101)
0 II D	0 101***	0.000105	0.150**	0.000001
College Degree	(0.191^{+++})	0.000195	0.172^{++}	0.000234
	(0.0473)	(0.000149)	(0.0537)	(0.000172)
Median Income	0 171***	0.000230*	0 172***	0.000227*
median meome	(0.0384)	(0.000200)	(0.0382)	(0.000111)
	(0.0001)	(0.000100)	(0.0002)	(0.000111)
Constant	-7.081***	0.000124	-7.556***	0.000986^{*}
	(0.222)	(0.000750)	(0.178)	(0.000404)
Observations	2755	3111	2755	3106
Adjusted \mathbb{R}^2	0.269	0.126	0.271	0.128

Table 3: Total Complaint Rate Models with Branch HHI

Standard errors in parentheses, Regression included state dummies, values are not reported * p<0.05, ** p<0.01, *** p<0.001

As described in Section 3.2.3, one of the limitations of the models shown above is that both competition indicators measure competition only for banks and not the entire consumer financial services sector. Since the complaint rates include complaints against nonbanks (such as mortgage services, auto-loan originators, payday lenders) the validity of the model above depend on the assumption that competition in the retail banking sector mirrors competition in other sectors of consumer finance. This assumption would likely hold if both competitive landscapes are shaped by similar forces such as regulations, barriers to entry, local consumer demand in markets. However, it is possible that the structure of payday lending, mortgage servicing, student loans, and credit card markets are governed by different competitive forces. Since there is no way to test this assumption, the next two models test the relationship between retail banking competition, using the Deposit HHI and Branch HHI and complaints against products more specific to retail banking: checking accounts and mortgages.

4.1.2: Checking Accounts

Table 4 presents models limiting the analysis of retail banking competition on complaints on checking accounts, a service dominated by retail banks. Models 1 and 2 use the standard controls and two competition indicators Deposit HHI and Branch HHI respectively and a checking account complaint rate per 10,000 residents. Both models return positive and significant results at the 0.95 level. Models 3 and 4 add the controls for the local propensity to complain, the FCC complaints and the two market size indicators, total deposits and Mortgages. Notably, the coefficient for Branch HHI is significant at the .999 level and positive.

	(1)	(2)	(2)	(4)
	checking complaint	checking complaint	checking complaint	checking complaint
Deposit HHI	0.655*	checking_complaint	0 502*	checking_complaint
Deposit IIII	(0.263)		(0.332)	
	(0.200)		(0.204)	
Branch HHI		0.754^{*}		0.847^{***}
		(0.314)		(0.115)
		· /		· · ·
LogFCC			-0.0395	-0.00740
			(0.0402)	(0.0204)
Mortgages			0.00000330	-0.000000348
			(0.00000386)	(0.00000564)
Total Doposite			2 200 10	2 200 10
Total Deposits			(4.12e-10)	(8.20e-10)
			(4.126-10)	(0.200-10)
Rurality	-0.0761*	-0.0948**	-0.106	-0.206***
J	(0.0346)	(0.0340)	(0.0618)	(0.0362)
		((· · · · · /	(1 /
Dem Victory 2016	0.0457	0.0466	0.0441	-0.0261
	(0.0358)	(0.0348)	(0.0370)	(0.0277)
				212212
Population over 65	0.0524**	0.0484**	0.0440*	0.0345
	(0.0170)	(0.0171)	(0.0186)	(0.0231)
Porcont Fomalo	0.00653	0.00487	0.00360	0.00368
I ercent remaie	(0.0242)	(0.0241)	(0.00500)	(0.0107)
	(0.0242)	(0.0241)	(0.0250)	(0.0137)
Percent White	-0.0566	-0.0508	-0.0486	-0.0826**
	(0.0430)	(0.0417)	(0.0455)	(0.0257)
	V	V	X	()
College Degree	0.00630	0.0101	0.0168	0.0167
	(0.0183)	(0.0180)	(0.0213)	(0.0285)
	2 222200			1 1 1 1 1 1 1
Median Income	0.172***	0.166***	0.170***	0.108***
	(0.0415)	(0.0397)	(0.0428)	(0.0261)
Constant	0.400	0.270	0.179	0.226*
Constant	-0.402	-0.379	-0.175	(0.220)
Observations	3111	2111	3106	3106
$\Delta divised R^2$	0.054	0.056	0.054	0.048
Aujusteu It	0.004	0.000	0.004	0.040

Table 4: Checking Account Complaint Rates with All Counties

Standard errors in parentheses, Regression included state dummies, values are not reported * p<0.05, ** p<0.01, *** p<0.001

Since there are significantly fewer complaints regarding checking account (N=22,000 complaints) there is a significant portion of low population counties that do not have any complaints. It is likely that in many of these counties, the lack of complaints results from the small populations and not high quality of service. The average checking account complaint rate per capita for the entire sample is 0.0000794, which is equivalent to 1 complaint per 12,595 people. Hence, the smallest counties in the sample, with populations as low as 400 skewing the results. To ensure against this, in Table 5, counties with no complaints are excluded from the

analysis. This reduction excludes a significant portion of counties, as N=3143 is reduced to N=1631. As expected, the HHI coefficients in all four models are positive and statistically significant.

Table 5: Checking Account Complaint Rates with Counties with Complaints						
8	(1)	(2)	(3)	(4)		
	checking_no0	$checking_no0$	checking_no0	checking_no0		
Deposit HHI	3.166^{**}		2.417^{**}			
	(1.010)		(0.752)			
Branch HHI		4.450**		3.624***		
		(1.365)		(0.253)		
LogECC			-0 380**	-0.276***		
Logi CO			(0.113)	(0.0370)		
			(0.110)	(0.0010)		
Mortgages			0.00000344^{**}	0.00000290***		
			(0.00000107)	(0.000000686)		
Total Deposits			-7.42e-10	2.32e-11		
			(9.83e-10)	(9.25e-10)		
Dunality	0.0600	0.0550	0.176	0.990***		
Ruranty	(0.0290)	(0.0339)	(0.111)	(0.0524)		
	(0.0580)	(0.0405)	(0.111)	(0.0524)		
Dem Victory 2016	0.0483	0.0271	0.0729	-0.0911*		
	(0.0643)	(0.0622)	(0.0597)	(0.0448)		
			e 1/2520000			
Population over 65	0.268^{***}	0.238^{***}	0.189^{***}	0.177^{***}		
	(0.0558)	(0.0491)	(0.0384)	(0.0378)		
Demonst Female	0.0220	0.0627	0.0602	0.0599		
rercent remaie	(0.0229)	(0.0452)	0.0005	(0.0322)		
	(0.0419)	(0.0455)	(0.0440)	(0.0540)		
Percent White	-0.123	-0.0884	-0.0207	-0.0980*		
	(0.0685)	(0.0665)	(0.0836)	(0.0419)		
	(0.0000)	(0.0000)	(0.0000)	(0.0110)		
College Degree	0.0167	0.0694	0.104^{*}	0.176^{***}		
	(0.0352)	(0.0370)	(0.0451)	(0.0450)		
				02 02		
Median Income	0.288^{***}	0.248^{***}	0.277^{***}	0.182^{***}		
	(0.0668)	(0.0588)	(0.0698)	(0.0408)		
Constant	-1 266*	-1 420**	0.894	1 268***		
C SHOULD	(0.484)	(0.523)	(0.462)	(0.196)		
Observations	1633	1633	1633	1633		
Adjusted R^2	0.198	0.244	0.236	0.251		
	0.100		0.200	~~		

Standard errors in parentheses, Regression included state dummies, values are not reported * p<0.05, ** p<0.01, *** p<0.001

4.1.3: Mortgages

Table 6 examines mortgage complaints, where traditional banks play a dominant role in issuing mortgages. Mortgages are often the largest and most important financial product that consumers purchase in their lives (Ayres 2013). As of June 2019, of the 1.3 million complaints, close to 280,000 were relate to mortgages, about 21 percent (CFPB Database). Although the trends are changing, and non-bank lenders are playing a larger role in the mortgage market, banks still originate about half of all mortgages in the United States ("Non-bank firms are now big players in America's mortgage market" 2019). The advantage of testing complaint rates for mortgages is that unlike most products, the data can be standardized. The total number of mortgages per county is available and hence complaint rates are expressed relative to the number of mortgages in a county and not population. In all four models, the competition indicator is positive. The coefficient of 4.416 on Model 3 can be interpreted to mean that there are 4.416 more complaints expected per 10,000 mortgages in perfect monopolies than in perfectly competitive markets.

	(1)	(2)	(3)	(4)
	mortgages10k	mortgages10k	mortgages10k	mortgages10k
Deposit HHI	4.143**		4.416**	
• • • • • • • • • • • • • • • • • • •	(1.369)		(1.642)	
Branch HHI		5 919**		5 747**
Dranch IIII		(1.516)		(1.799)
		(1.010)		(1.155)
LogFCC			0.289	0.370
			(0.414)	(0.414)
Total Deposits			1.19e-08	1.25e-08
			(7.41e-09)	(7.15e-09)
Rurality	-4.253***	-4.431***	-3.789***	-3.891***
9	(0.937)	(0.940)	(1.001)	(0.987)
	(· · · /	(and the second	· · · · ·	
Dem Victory 2016	0.472	0.471	0.461	0.456
	(0.685)	(0.686)	(0.690)	(0.693)
Population over 65	0.0779	0.0379	0.0823	0.0474
- P	(0.415)	(0.410)	(0.407)	(0.403)
	()	()	()	()
Percent Female	0.0342	0.0545	0.0333	0.0532
	(0.191)	(0.193)	(0.185)	(0.187)
Percent White	-1 720	-1 664	-1 743	-1.693
rereent winte	(0.899)	(0.887)	(0.882)	(0.871)
	(0.000)	(0.001)	(0.002)	(0.011)
College Degree	1.705^{**}	1.733**	1.631**	1.645^{**}
	(0.552)	(0.549)	(0.576)	(0.571)
Nr. 11. T	0.044	0.000	0.005	0.010
Median Income	-0.244	-0.290	-0.265	-0.318
	(0.489)	(0.496)	(0.471)	(0.475)
Constant	14.51***	14.55***	12.44**	11.94**
	(3.008)	(2.971)	(3.673)	(3.603)
Observations	3111	3111	3106	3106
Adjusted \mathbb{R}^2	0.353	0.355	0.353	0.355

Table 6: Mortgage Complaint Rates with All Counties

Standard errors in parentheses, Regression included state dummies, values are not reported * p < 0.05, ** p < 0.01, *** p < 0.001

Similar to checking accounts, there is a significant number of counties without any mortgage complaints (1012). These counties are dropped to ensure that the counties with missing values do not skew the results (N= 2099). Models 1 and 2 use the standard set of controls and return positive and significant coefficients. The Deposit HHI coefficient, 8.39, is statistically significant. Similarly, the Branch HHI also has a significant and positive coefficient of 12.64 and an R-square of 0.33. Adding the control additional control variables in Models 3 and 4 returns the same results, positive and significant.

	(1)	(2)	(3)	(4)
	mortgage10k	mortgage10k	mortgage10k	mortgage10k
Deposit HHI	8.390^{*}		7.580^{*}	
	(3.545)		(3.582)	
		10 01**		10.057**
Branch HHI		12.64**		12.357**
		(4.636)		(4.702)
LogFCC			-0.328	-0.328
Logi CC			(0.734)	(0.734)
			(0.104)	(0.104)
Total Deposits			9.04e-09	9.04e-09
			(9.28e-09)	(9.28e-09)
Rurality	-3.492^{**}	-3.943^{***}	-3.695^{**}	-3.695^{**}
	(1.075)	(1.011)	(1.171)	(1.171)
Dome Wistows 2016	0.459	0.946	0.420	0.420
Dem Victory 2016	0.453	(1.074)	(1.077)	0.430
	(1.075)	(1.074)	(1.077)	(1.077)
Population over 65	0.602	0.513	0.529	0.529
	(0.545)	(0.533)	(0.539)	(0.539)
	000000	N. 1997		
Percent Female	-0.374	-0.241	-0.347	-0.347
	(0.346)	(0.338)	(0.339)	(0.339)
Percent White	-3 035*	-2 938*	-2 980*	-2 980*
r creent tt inte	(1.471)	(1.429)	(1.437)	(1.437)
	(1.471)	(1.120)	(1.407)	(1.407)
College Degree	1.927^{*}	2.105^{**}	2.010^{*}	2.010^{*}
	(0.742)	(0.752)	(0.824)	(0.824)
Median Income	-0.287	-0.427	-0.303	-0.303
	(0.619)	(0.643)	(0.606)	(0.606)
Constant	14.81***	13.98**	16.79***	16.79***
	(3.923)	(4.080)	(4.781)	(4.781)
Observations	2099	2099	2099	2099
Adjusted R^2	0.305	0.312	0.305	0.305

Table 7: Mortgage Complaint Rates with Counties with Complaints

Standard errors in parentheses, Regression included state dummies, values are not reported * p < 0.05, ** p < 0.01, *** p < 0.001

4.1.4: Analysis of Results

The analysis conducted above shows a clear and consistent result that competition is associated with fewer complaints in all the models. Both Deposit and Branch HHI indicators showed that in greater competition there were fewer overall complaints in the retail financial services sector. Then, Section 4.1.2 and Section 4.1.3 showed that this relationship holds for checking accounts and mortgages, regardless of whether counties with no complaints are excluded. The models also were robust to different control variables being included. Hence, the hypothesis that more competitive markets have fewer complaints and higher quality services is accepted.

Section 4.2: Quality of Responses

The second section analyzes the impact of competition on the quality of responses from firms. There are three measures of the quality of responses that can be derived from the complaint data: whether the firm responded within the 15-day timeframe, whether they provided monetary or nonmonetary relief, and whether the consumer disputed the response. These categories are outlined by Estelami (2000) as important to consumers. This section of the paper analyzes the effects of competition on these indicators and tests the second hypothesis that firms provide higher quality responses in competitive markets. The results are presented in Table 8. In all cases, counties with zero values for the variables are excluded.

4.2.1: Timeliness

Models 1 and 2 in Table 8 show that regarding the rate of timeliness response, neither of the competition indicators are shown to correlate to competition. This finding could result from an average timeliness rate of 97 percent and over half of the counties have a 100 percent timely response rate to complaints. Companies are required by law to respond to complaints within 15 days, and since the start of the database, companies have realized the importance of processing complaints quickly to meet regulatory requirements. Regardless, the results show that competitive counties do not have higher rates of timely responses. None of the control variables are statistically significant either, meaning that this analysis does not uncover any pattern in the timeliness of responses.

4.2.2: Dispute Rates

However, a timely response from the firm does not guarantee that firms resolve the issue in favor of the consumer or provided a high-quality response. Rejecting the claims of the consumer or skirting responsibility are responses as well. Another indicator of quality is the rate at which consumers dispute responses. Once firms provide an answer to the complaints, consumers have the option to dispute it. The assumption here is that higher quality responses from the firm, whether it is a polite, detailed explanation or monetary compensation are less likely to be disputed. Here, Model 3 and 4 show that Deposit HHI and Branch HHI are positive and significant at 0.166 and 0.178, respectively. Competition does play a role. In both models, the Deposit and Branch competition indicators are significant at the 0.99 level with positive coefficients. The more concentrated the banking market, the more likely consumers are to dispute responses.

4.2.3. Relief Rates

The third indicator of quality is the rate at which firms provide relief to consumers. In models 5 and 6, competition is negatively associated with relief rates. Deposit HHI and Branch HHI have coefficients of -0.0298 and -0.0449, meaning that more competitive markets have fewer complaints resolved with relief. This is surprising and rejects the expected results. More competitive markets have slimmer profit margins in the banking sector, and this result could be explained by less generous management (Berger and Hannan 1998).

	(1)	(2)	(3)	(4)	(5)	(6)
	timelyrate	timelyrate	disputerate_no0	disputerate_no0	relief_rate	relief_rate
Deposit HHI	0.0164		0.166^{***}		-0.0298*	
	(0.0131)		(0.0295)		(0.0144)	
Branch HHI		0.0193		0.178***		-0.0449**
		(0.0121)		(0.0313)		(0.0152)
			a			1 222 7070
Rurality	0.000356	-0.000198	0.0195*	0.0170	-0.0257***	-0.0234***
	(0.00214)	(0.00201)	(0.00935)	(0.00957)	(0.00555)	(0.00520)
Mortgages	-8.38e-09	-1.19e-08	0.000000133	0.000000111	-1.78e-08	-7.32e-09
	(1.86e-08)	(1.86e-08)	(8.31e-08)	(8.28e-08)	(3.70e-08)	(3.56e-08)
Total Deposits	-1.02e-12	4.05e-12	4 36e-11	9 71e-11**	-2.36e-11	-3.04e-11
Total Deposito	(1.79e-11)	(1.84e-11)	(5.88e-11)	(3.57e-11)	(2.08e-11)	(2.18e-11)
	()	()	(0.000)	(******=*)	()	()
Dem Victory 2016	0.00226	0.00224	-0.0244^{**}	-0.0237*	-0.00663	-0.00631
	(0.00183)	(0.00188)	(0.00892)	(0.00922)	(0.00396)	(0.00395)
Population over 65	0.000938	0.000838	0.0116^{*}	0.0113^{*}	-0.00390	-0.00346
Ω.	(0.00165)	(0.00167)	(0.00488)	(0.00488)	(0.00222)	(0.00219)
Parcont Fomala	0.00100	0.00102	0.000442	0.000242	0.00522	0.00562*
rercent remaie	(0.00109)	-0.00103	-0.000443	(0.000542)	(0.00522)	-0.00505
	(0.00130)	(0.00133)	(0.00714)	(0.00707)	(0.00200)	(0.00208)
Percent White	-0.00120	-0.00108	-0.0192^{*}	-0.0184^{*}	-0.00189	-0.00238
	(0.00214)	(0.00212)	(0.00834)	(0.00846)	(0.00424)	(0.00425)
College Degree	0.0000467	0.000175	0.0115*	0.0128*	0.00360	0.00312
Conego Degree	(0.00191)	(0.00192)	(0.00560)	(0.00563)	(0.00312)	(0.00320)
	(()	((0.0000)	(0.000-)	(
Median Income	0.00218	0.00204	-0.000497	-0.00148	-0.00964^{**}	-0.00910^{**}
	(0.00255)	(0.00259)	(0.00632)	(0.00613)	(0.00304)	(0.00306)
Constant	0.961***	0.962***	0.0494	0.0587^{*}	0.170***	0.170***
	(0.00735)	(0.00667)	(0.0289)	(0.0266)	(0.0145)	(0.0144)
Observations	2971	2971	2028	2028	2755	2755
Adjusted R^2	0.000	0.001	0.090	0.088	0.048	0.050

Table 8: Quality of Response and Competition

Standard errors in parentheses, Regression included state dummies, values are not reported * p<0.05, ** p<0.01, *** p<0.001

4.2.4. Analysis of Results

To summarize the results for the second research question, competition plays a much more mixed role in influencing how firms process complaints than it did for quality. Competition nor any of the other control variable have no discernable effect on the timeliness rate. Dispute rates of complaint responses is lower in more competitive markets, which serves as an indicator that firms provide higher quality response. Finally, competition is negatively associated with relief rates, which should be interpreted to mean that firms in more competitive markets provide less relief to consumers.

4.3 Tobit Models

Another way to address the issue that the dependent variable is not continuous and has limits on the values it can take is using a tobit regression model. In the earlier sections the issue of the dependent variable, such as complaint rates, dispute or timelyrates, reaching the lower bound of 0 was dealt with by dropping these counties from the analysis. In this section, instead of dropping these units, the tobit model is used to censors them at the lower bound of 0.

Table 9 shows that the main relationship in question, between competition and total complaint rates is positive and significant under the tobit model as well. Hence, Model 1 validates the findings in earlier sections. However, the coefficients for checking account and mortgage complaints while still positive, lose their significance under this model. For the secondary indicators of quality, the dispute rate also losses significance and the coefficient is negative. Relief rates are still negatively correlated with competition as before and no relationship between timely rates is uncovered, even when censoring for both values of 1 and 0. The discrepancy between the results for the second research question could only be resolved with further analysis of the data and refinement of the models.

	(1)	(9)	(2)	(4)	(5)	(6)
	(1)	(2)	(3)	(4) disputarata	(a)	(0)
	complaintpe	checking	mortgages	disputerate	umelyrate	rener_rate
Deposit HHI	0.00211**	0.611	3 834	-0.0517	0.0164	-0.0549*
Deposit IIII	(0.00211)	(0.380)	(2.246)	(0.0381)	(0.0109)	(0.0222)
	(0.000100)	(0.000)	(2.240)	(0.0001)	(0.0105)	(0.0222)
LogFCC	-0.0000433	0.181^{*}	1.949^{***}			
0	(0.000109)	(0.0707)	(0.475)			
	· · · · · ·	χ	с			
Rurality	-0.000239*	-0.164	-3.189^{***}	-0.0196^{*}	0.000352	-0.0413^{***}
	(0.000106)	(0.108)	(0.929)	(0.00842)	(0.00189)	(0.00891)
Mortgages	-2.90e-10	-0.00000193^*		-0.000000161'	-8.44e-09	-0.000000100
	(1.40e-09)	(0.00000794)		(6.85e-08)	(1.37e-08)	(6.01e-08)
Total Deposite	1 180 19	2.020.10	2 810 10	5 110 11	1.020.12	6 640 11*
Total Deposits	(0.140.12)	(5.140.10)	(0.520.00)	(2.080.11)	(1.720.11)	(2.920.11)
	(9.14e-15)	(0.14e-10)	(9.556-09)	(3.96e-11)	(1.72e-11)	(3.23e-11)
Dem Victory 2016	0.000282^{*}	0.0302	0.987	-0.00211	0.00227	-0.00721
	(0.000118)	(0.0845)	(0.790)	(0.00695)	(0.00152)	(0.00580)
			, , , , , , , , , , , , , , , , , , ,	3		
Population over 65	-0.000269	-0.0372	-1.202	-0.0253^{**}	0.000932	-0.0136^{***}
	(0.000146)	(0.0538)	(0.648)	(0.00771)	(0.00137)	(0.00347)
-						
Percent Female	0.0000680	-0.0109	0.364	0.00425	-0.00110	-0.00613
	(0.0000902)	(0.0501)	(0.248)	(0.00594)	(0.00120)	(0.00356)
Percent White	0.000124	-0.0920	-1 280	0.00209	-0.00120	0.000877
r creent winte	(0.000124)	(0.0945)	(1.043)	(0.00200)	(0.00120)	(0.00634)
	(0.000100)	(0.0540)	(1.040)	(0.00112)	(0.00104)	(0.00034)
College Degree	0.000170	0.000674	1.314	0.0160^{*}	0.0000414	0.00560
0	(0.000178)	(0.0513)	(0.671)	(0.00766)	(0.00175)	(0.00413)
		x	Ç 7			
Median Income	0.000246^{*}	0.229^{***}	-0.386	-0.00639	0.00218	-0.0105^{*}
	(0.000114)	(0.0628)	(0.570)	(0.00736)	(0.00192)	(0.00413)
Constant	0.000268	0 005***	1.000	0.0450	0.001***	0.170***
Constant	0.000368	-2.085	1.996	0.0450	0.901	(0.0000)
Daoudo D9	0.000404)	(0.799)	(4.140)	(0.0288)	(0.0003)	(0.0222)
Cheenvetiene	-0.0209	0.0720	0.0851	0.2000	-0.0095	-0.3330
Observations	3100	3100	3100	2971	2971	2700

Table 9: Tobit Regression Models

Standard errors in parentheses, Regression included state dummies, values are not reported

* p < 0.05,** p < 0.01,*** p < 0.001

4.4 Discussion of Findings

The results of the analysis show that the relationship between competition and quality is positive, consistent, and robust. The models presented in Table 2, 4 and 6 and Table 9 tested competition and total complaints, complaints against checking accounts and mortgages and verified the theory that more competition leads to fewer complaints. These results were consistent with different regression models, different control variables, and different subsets of the data. These results suggest that firms tend to be more receptive to consumer interest in

competitive markets, knowing that consumers have alternatives. The analysis finds no largescale trends of increased competition leading to increased abusive practices as the Well Fargo and some in the literature have suggested. Any increased fraud that might occur due to competition are outweighed by the positive effects of competition. Perhaps these trends only emerge at the competitive end of the market spectrum, but the findings assert a positive relationship between competition and quality.

The findings for the second research question are mixed. Partially confirming the hypothesis are the results presented in Table 8 which showed that firms respond to consumers in competitive markets with higher quality responses but less generously when it comes to relief. However, the Tobit regression in Table 9 confirmed that firms are less generous in competitive markets but rejected the hypothesis that firms provide higher quality response. A more nuanced analysis of this relationship is warranted in future studies.

Uncovering a strong and robust correlation between the quality and competition opens a new door for research into understanding the impacts of market structure and consumer protection. There are two ways forward with this research. First, more advanced statistically models should be applied to the data to understand the relationship better. The impact of changing levels of competition at various ends of the scale are likely to be different. Exogenous shocks to competition, such as bank mergers, should be analyzed to see if they result in predicted results.

Additionally, the two key variables, competition and quality could be operationalized in more data intensive, and sophisticated ways. In this paper, the HHI was used as there is available data and the use of the HHI has been established by the literature. Yet, new sources of data that estimate competition in other financial sectors besides banking would complete this approach, as would a method that accounts for the size and nature of the institution. Similarly, quality could also be measured in a more holistic way. The physical proxy approach as Dick (2007) used ATM networks and advertising budgets and a more subjective one such as complaints complement each other. The field remains open for a study to incorporate both these measures. Finally, the legal and regulatory implications of this relationship should be developed as well. It was beyond the scope of this study to examine how these findings fit into the current legal debate on antitrust and consumer protection in the United States.

Chapter 5: SunTrust and BB&T Merger

A limitation of the above-outlined models is that it examines correlations between variables but does not estimate causation. One way to estimate causation is through natural experiments, such as a random, or semi-random shock to competition indicators in markets in the United States. Bank mergers present such an occurrence. However, there has been a limited number of bank mergers since the creation of the CFPB database in 2012. Bank consolidations are heavily dependent on economic conditions and regulatory approval, and after the 2008 financial crisis there was a strict regulatory attitude in Washington and bank mergers were discouraged. However, as the economy improved, changes in regulatory approach after the 2016 elections are opening the next wave of bank mergers. The next section applies the relationships uncovered in Chapter 4 to the proposed SunTrust and BB&T merger.

Section 5.1: Case Study

After the election of 2016, the price of bank and financial services stocks rose significantly. The driving factor was the belief that under a Republican-controlled Congress and business-friendly President Donald Trump, the regulation of the financial sector would be eased and the financial sector would become more profitable (Imbert and Cheng 2016). President Trump was quick to deliver on this. He nominated Mick Mulvaney to lead the CFPB who made his position clear on consumer protection. Regarding the CFPB database, Mulvaney stated: "I don't see anything in here that I have to run a Yelp for financial services sponsored by the federal government. I don't see anything in here that says that I have to make all of those public" (Merle 2018, 1).

On February 7, 2019, two of the largest banks in the United States, SunTrust and BB&T announced a proposed merger ("BB&T and SunTrust announce a merger" 2019). As of May, the deal is still under review. However, if the two banks merge, there will be significant

consolidation in the banking sector as the 225 billion dollars of assets of BB&T are combined with SunTrust's 215 billion. The new bank will be the 6th largest in the country. By combining the branch network of the two banks, it will also have 3100 branches, 740 which was less than 2 miles from each other. These branches are likely to be closed to save on costs, further reducing competition in local markets. The merger is expected to save the new company1.6 billion dollars by 2022 as the new merged bank can use many of the same backend services at scale (call centers, security, savings on regulatory filings, etc.). However, Representative Maxine Waters has questioned the benefits that the merger will bring to consumers and suggested the House Committee on Financial Services must closely scrutinize the deal. (Ensing and Prang 2019).

Using the model developed in Chapter 4 for Total Complaints, this section calculates the impact of the merger on expected complaint rates in the communities affected by the merger. The assumed relationship that this calculation makes does not depend on SunTrust and BB&T treating consumers worst. Rather, using Bain's structure-conduct-performance paradigm, the calculation assumes that in markets where there is decreased competition, all firms will react to this new reality of the market structure (Bain 1956). Hence, the individual complaint history or quality of the two merged bank is not relevant, rather it is the market conditions and market complaint rates of affected communities that is relevant.

Using market share data from 2015, to remain consistent with the data usage for constructing the model, there are 198 counties that are affected by the BB&T and SunTrust merger which reported a total of 34,006 complaints per year to the CFPB. The average Deposit HHI in these counties is 0.182, indicating greater competition than the sample average of 0.32. A new Deposit HHI indicator is calculated for these counties by combining the assets of BB&T and SunTrust. With the banks merged, in the affected county, the average Deposit HHI indicator will increase by 0.015 (SD = 0.01), a relatively small increase. The largest jump in

HHI in an affected county is 0.197. The county average will increase to 0.209, with a standard deviation of 0.031. The regression coefficient of .0023868 from Table 3, Model 2 is used to calculate an expected difference of complaints. The coefficient is multiplied by the expected change in HHI and the population to convert the per capita result to total complaints. The annual increase in complaints from the merger is 452, in addition to the current rate of 34,000 complaints. Hence, the merger represents a 1.3 percent increase in complaints, which equals about 2.2 complaints per county.

The merger of these banks and the removal of a significant source of competition will affect all the actors in the market. Consumers will have fewer options to choose from and all firms in the market will face less pressure from each other to provide higher quality service and products. As competition is eased, so is the pressure to avoid poor quality service. There is no apolitical or objective way to interpret these numbers. One could argue that a 1.3 percent increase in complaints, or 2.2 complaints per county can be justified by gains in efficiency, broader ATM and branch networks. On the other hand, the argument can be made that no move that will lead to increased complaints that document fraud, abusive selling can be justified.

Given the political climate in Washington, the bank merger is likely to be approved. This merger and future ones present an opportunity for future studies to examine these shocks to competition as a quasi-experiment. Using a difference in differences technique would allow policymakers and statisticians to develop a deeper understanding of these mechanisms and communities and firms react to semi-random changes to competition.

Chapter 6: Conclusion

The paper established the need for financial regulation and consumer protection due to the shortcomings of consumers in making rational choices and because of the prevalence of manipulative and abusive sales practices and abuse. The creation of the CFPB and its complaint database is one way which the current regulatory approach mitigates these flaws. Yet, the agency cannot directly oversee the entire consumer financial market in the United States, and consumer financial protection also replies on market mechanisms, namely, competition. The aim of the study was to determine what role, if any, competition played in improving the quality for consumers and the outcomes to complaints.

In Chapter 4, the study looked at how competition influenced the complaint rates in communities and how firms responded to complaints. Until this paper, no known study had looked at the impact of varying levels of competition on complaint rates in the United States. Results showed that more competitive markets had lower complaint rates for the entire consumer financial services sector as well as specifically for checking accounts and mortgages. The second round of analysis suggested the timeliness of the response was not impacted by competition and firms were less likely to offer relief to consumers in more competitive markets. Regarding dispute rates of company responses, the analysis showed mixed providing some evidence for higher quality responses in competitive markets but also warranting further investigation.

The implications of these findings were outlined in Chapter 5 by modeling the increase in complaints by the proposed BB&T and SunTrust bank merger. It was shown that based on the complaint models built in Chapter 4, that the decrease in competition in the 198 communities affected by the merger is expected to lead to 452 more complaints per year, or a 1.3 percent increase in complaints. The paper has outlined new directions that research should continue. More sophisticated definitions of competition and quality are natural ways for the research to evolve, as would a close study of the effects of bank mergers on complaint rates. Only by developing a deeper understanding of these dynamics can policymakers effectively protect consumers.

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