

Defunding Controversial Industries: Can Targeted Credit Rationing Choke Firms?*

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Abstract

This paper examines the effects of targeted credit rationing by banks on firms likely to generate negative externalities. We exploit an initiative of the U.S. Department of Justice, labeled Operation Choke Point, which compelled banks to limit relationships with firms in industries prone to fraud and money laundering. Using supervisory loan-level data, we find that, as intended, targeted banks reduce lending and terminate relationships with affected firms. However, most firms fully substitute credit through non-targeted banks under similar terms. Overall, the performance and investment of these firms remain unchanged, suggesting that targeted credit rationing is widely ineffective in promoting change.

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1 Introduction

Stakeholders are increasingly seeking ways to hold companies accountable for their negative externalities on society. A common method has been the active divestment of equity, where investors sell off stocks in firms perceived as socially irresponsible to raise firms' cost of capital and exert pressure to encourage them to address these externalities. While this strategy has gained widespread popularity, recent research has shown its limited effectiveness. In particular, equity divestments are mostly restricted to listed firms and can result in the loss of investor influence within a company (Broccardo, Hart, and Zingales, 2022; Edmans, Levit, and Schneemeier, 2023), these firms may respond by offshoring or divesting parts of their undesirable business (Ben-David, Jang, Kleimeier, and Viehs, 2021; Dai, Duan, Liang, and Ng, 2022), and equity divestments potentially stifle innovation (Cohen, Gurun, and Nguyen, 2023). Additionally, the limited capital behind these efforts restricts their impact (Berk and van Binsbergen, 2022) and can even be counterproductive (Hartzmark and Shue, 2023).

In response to the limitations of equity divestment campaigns, stakeholders have turned to alternative strategies, including targeting access to bank credit for firms believed to be socially undesirable. This approach, known as targeted credit rationing, has gained appeal in recent years due to its ability to impact both publicly-traded and private firms, capitalizing on the persistent nature of bank-firm relationships and the non-transferable nature of banks' private information. However, given the potential countermeasures that affected firms may take, little is known about the effectiveness of these efforts.

In this paper, we study the dynamics of targeted credit rationing, showing that although the intended effects on lending relationships are realized, it does not impact the overall credit availability, performance, or investment of most firms, indicating potential limitations in using credit rationing as a tool for promoting change. Naturally, the main challenge of studying targeted credit rationing is that a bank's decision to extend credit is influenced not only by its expectations of a firm's future cash flows, but also by the bank's non-financial preferences, which may vary over time (e.g., ideological considerations). Our paper addresses this challenge by studying Operation

Choke Point, which provides a near-ideal quasi-random experiment to study the causal effects of targeted credit rationing on firms' operations.

Operation Choke Point was a major initiative led by the U.S. Department of Justice (DOJ), which compelled a subset of banks to limit relationships with firms in certain industries that operated legally but that were believed to pose a high risk for fraud and money laundering—including ammunition, firearms, tobacco, dating and escort services, pornography, and online gambling. This setting provides several key advantages for studying targeted credit rationing. First, the operation was a large and credible shock to banks, as the DOJ—in concert with bank regulators—threatened significant sanctions for banks that failed to comply. Second, according to court documents, the targeting of banks was not based on lending volumes to firms in targeted industries, a claim we confirm in our analysis that additionally finds no relation between the timing of the targeting of banks and several bank and firm characteristics, mitigating concerns surrounding a potential selection bias. Finally, given that the operation impacted a subset of banks at different times, we can identify the effect of this supply-side shock by exploiting its staggered implementation in a dynamic difference-in-differences setting.

To provide an in-depth understanding of a firm's borrowing behavior, we employ confidential, quarterly loan-level data for the U.S. from the Federal Reserve's Y-14Q corporate loan schedule. This matched firm-bank supervisory credit register data set covers the entirety of corporate loans with commitment amounts over \$1 million for banks with at least \$50 billion in total assets, along with firm-level characteristics. Further, we further merge this information with bank-level financial data from publicly-accessible quarterly reports (FR Y-9C).

Our study of targeted credit rationing is organized into three parts. First, we show that, as intended, the operation affected targeted banks' lending behavior. At the intensive margin, we find that targeted banks reduced their committed credit to firms in affected industries. This credit contraction was concentrated on small and medium-sized enterprises (SMEs), which experienced a 10 percent reduction in committed credit. We also find no changes in the share of drawn credit, implying a lower volume of credit utilized by SMEs. This effect is similar across SMEs with

different levels of profitability, liquidity, and leverage prior to the shock. In contrast, we find that the level of committed credit and the share of drawn credit remained unchanged for large firms, also irrespective of their profitability, liquidity, or leverage. These findings suggest that firm size was the key driving factor in the decision by banks to cut lending.

These baseline results are robust to a battery of tests, including (i) adding firm–time fixed effects, and thus focusing on firms with relationships with multiple banks, to better control for credit demand and the non-random matching between firms and banks (Iyer, Peydró, da Rocha-Lopes, and Schoar, 2014; Khwaja and Mian, 2008); (ii) balancing the panel data in a Poisson specification to examine the intensive and extensive margins, combined, while accounting for the issues involving an outcome variable that is positive but can often equal zero (Chen and Roth, 2023; Cohn, Liu, and Wardlaw, 2022; Correia, Guimarães, and Zylkin, 2020), and (iii) using a stacked regression specification to address the potential biases in staggered difference-in-differences settings (Baker, Larcker, and Wang, 2022; Gormley and Matsa, 2011, 2016). We also conduct several falsification tests, such as considering non-affected industries, non-affected cash-intensive industries, and random treatment dates. Overall, we show consistent evidence that targeted banks reduced lending to SMEs in industries affected by the operation.

Second, we examine how the initiative affected the termination of existing bank-firm lending relationships as well as the creation of relationships with other banks. We show that affected firms experience an increase in the frequency at which their accounts with targeted banks are terminated, reinforcing our evidence that banks responded to regulatory pressure. In contrast, the existing relationships with non-targeted banks were preserved. When considering relationship creation, we find that affected firms responded by initiating new relationships with non-targeted banks and—consistent with the intent of the policy—that these firms do not initiate new relationships with already targeted banks. These results suggest that firms managed to mitigate or offset the effects of targeted credit rationing.

Finally, we focus on targeted firms’ aggregate access to credit, performance, and financial distress, providing a more comprehensive assessment of the initiative’s overall impact. We find that

there were no statistically significant changes in the aggregate level and terms of credit following the initiative for the average affected firm. However, when focusing on heterogeneous treatment effects, we show that large profitable firms manage to increase their level of committed credit, suggesting that they hedged against future potential terminations. In contrast, highly levered SMEs experience a modest reduction in total committed credit. These results indicate that targeted credit rationing driven by Operation Choke Point did not reduce overall credit for most firms, except for a small subset, yielding it broadly ineffective. Similarly, we find no impact of the operation on firms' leverage, profitability, or investment. Studying financial distress, we also show that these firms do not exhibit increased volumes of non-performing loans and that their probability of default assessed by banks remained the same.

Altogether, our results indicate that targeted credit rationing does not meaningfully change affected firms' financial and operational performance, suggesting it can be largely ineffective at imposing costs on these firms. Thus, our findings provide a nuanced perspective on the effects of this type of policy. While prior research in different contexts has documented the pivotal role of bank-firm relationships in influencing a firm's access to credit, particularly of smaller firms (e.g., [Beck, Degryse, De Haas, and Van Horen, 2018](#); [Beck, Demirgüç-Kunt, and Maksimovic, 2005](#)), we find that the substitution was relatively seamless during a benign non-crisis period. This result holds for the majority of firms with loan commitments above \$1 million, with the exception of highly-levered SMEs, offering insights into the role of relationships when banks actively terminate accounts with firms in specific industries.

This paper contributes to several branches of literature. First, it contributes to the broader and flourishing literature on responsible investing, which focuses on affecting change through divestment and negative selection, and where investors try to discipline firms by raising their cost of capital.¹ While these actions are gaining popularity, several studies have identified potential shortcomings. For instance, [Oehmke and Opp \(2023\)](#) suggests that divestment only works if responsible

¹Empirical evidence includes [Becht, Franks, and Wagner \(2023\)](#); [Teoh, Welch, and Wazzan \(1999\)](#). Theoretical studies of impact investing include those by [Berk and van Binsbergen \(2022\)](#); [Chowdhry, Davies, and Waters \(2018\)](#); [Green and Roth \(2021\)](#); [Hart and Zingales \(2017\)](#); [Heinkel, Kraus, and Zechner \(2001\)](#).

investors are affected by externalities and coordinate, while [Broccardo, Hart, and Zingales \(2022\)](#) suggests that divestment reduces the ability to voice preferences. Another restricting factor is that these actions are mostly limited to publicly listed firms, leaving private firms beyond the reach of many stakeholders. We contribute to this literature by examining the effectiveness of an alternative approach at the center of policymakers' current discussions.

Our paper also contributes to the growing literature on targeted credit rationing by focusing on an exogenous shock to study the causal effects of an *externally-driven* targeted credit rationing program. More broadly, focusing on this quasi-random intervention, we also answer the following question: can a subset of banks effectively influence the operations of firms that potentially generate negative externalities? Our results show that while the initiative had an early impact on bank lending to firms in affected industries, these firms substituted their relationships between targeted and non-targeted banks, with only the highly-levered smaller firms not managing to offset the effect on lending fully. Overall, we find consistent evidence of no impact on the operations of firms.² Ultimately, our study contributes to the debate around the optimal ways finance can mitigate negative externalities and the potential role of targeting a firm's access to private credit.

Our paper complements a distinct but related literature centered on *internally-driven* credit rationing, where banks themselves are motivated by a keen interest in environmental concerns.³ This literature has provided mixed evidence. On the one hand, [Haushalter, Henry, and Iliev \(2023\)](#) finds that banks occasionally fail to adhere to their own policies on exiting mountaintop mining, leading to inconclusive effects on targeted companies. On the other hand, [Green and Vallee \(2023\)](#) find an effect of banks' disinvestment from the coal sector, revealing that firms cannot fully substitute credit and experience significant operational consequences. Relatedly, [Kacperczyk and](#)

²In a counterfactual scenario in which all regulated banks were simultaneously targeted, it is unclear whether we would have a different overall result, given the increasing importance of non-bank lending in recent years (e.g., [Gopal and Schnabl \(2022\)](#); [Chernenko, Erel, and Prilmeier \(2022\)](#)) and potential substitute lending by foreign banks.

³For example, see [Giannetti, Jasova, Loumioti, and Mendicino \(2023\)](#). [Bellon \(2022\)](#) delves into the connection between lender liability and debtor behavior in environmental compliance, while [Laeven and Popov \(2023\)](#) explores how bank lending to foreign companies shifts with the introduction of carbon taxes. Alternative approaches are taken by [Kleimeier and Viehs \(2021\)](#) and [Ivanov, Kruttli, and Watugala \(2023\)](#), who investigate whether banks price credit risk linked to emissions and fossil fuel reserves, while [Miguel, Pedraza, and Ruiz-Ortega \(2022\)](#) study the impact of climate risk-related capital requirements on Brazilian banks.

[Peydró \(2022\)](#) shows that participation in the Science-Based Targets Initiative (SBTi) influences borrowers’ ability to secure funds without significantly affecting environmental outcomes. Our analysis of externally-driven initiatives complements these studies and provides a comprehensive understanding of the social and environmental impact of targeted bank credit rationing.

2 Institutional Background: Operation Choke Point

Operation Choke Point was a controversial initiative led by the DOJ in collaboration with the Federal Deposit Insurance Corporation (FDIC), aimed at discouraging banks from providing financial services to firms in legal industries but believed to be at a high risk for fraud and money laundering.⁴ The DOJ and bank regulators employed different methods to influence bank behavior, including subpoenas and supervisory guidance. Facing pressure from regulators and the threat of legal repercussions, the targeted banks started terminating services and reducing lending to firms operating in certain industries in early 2013 ([Calomiris, 2017](#)).

The firms affected by Operation Choke Point were those in a list of “high risk” merchants, which included firms in industries such as sales of ammunition, firearms, tobacco, dating and escort services, pornography, and online gambling—see [Table IA1](#) for a complete list of targeted industries. This “high risk” list appears to have originated in the summer of 2011, prompted by the FDIC’s publication of a Supervisory Insights article, “Managing Risks in Third-Party Payment Processor Relationships,” which warned of heightened risks for financial institutions engaged in services with certain industries.⁵ The article highlighted that these merchant categories posed increased reputation risk for financial institutions due to their potentially “questionable or fraudulent” nature. Following the Supervisory Insights article, the FDIC issued official guidance in the form

⁴For example, see Letter from the Office of the Assistant Attorney General to Honorable Bob Goodlatte, Chairman of U.S. House Committee on the Judiciary (August 16, 2017); and Office of Inspector General, The FDICs Role in Operation Choke Point and Supervisory Approach to Institutions that Conducted Business with Merchants Associated with High-Risk Activities (Office of Audits and Evaluations Report No. AUD-15-008, September 2015).

⁵According to the Expert Report of Charles Calomiris, dated January 11, 2017, in the matter of Community Financial Services Association of America, Ltd., et al. v. Federal Deposit Insurance Corporation, et al. (Civil Action No. 14-953-GK), the list of “high risk” merchants was removed shortly after the filing of the initial complaint.

of a Financial Institution Letter further dissuading financial institutions from servicing merchants perceived to be at risk of “higher incidence of consumer fraud or potentially illegal activities” (Calomiris, 2017).⁶ Several FDIC Memoranda of Understanding and Consent Orders corroborated this regulatory stance, as also discussed in Calomiris (2017).

It is difficult to understate the significance and impact of the high-risk merchant list. In addition to influencing both regulators examination policy and banks private business decisions, the list was often directly incorporated into FDIC-mandated Memorandums of Understanding (MOUs) and Consent Orders as “prohibited businesses.”

The experience of one entry on the list firearms and ammunitions merchants effectively traces the downstream influence of the high-risk merchants list. MOUs between supervised banks and FDIC Regional Offices, as well as bank policies submitted pursuant to FDIC Consent Orders, variously “prohibit” payment processing for firearms merchants, characterize loans to firearms dealers as “undesirable,” and generally subject firearms and ammunitions merchants to significantly higher due diligence standards.⁷

In November 2012, attorneys within the DOJ’s Civil Division proposed an internal initiative called *Operation Choke Point*, which recognized that the DOJ could influence bank behavior using the threat of subpoenas and regulatory actions.⁸ For example, an internal memo between DOJ employees, dated November 5, 2012, remarked that “banks [were] sensitive to the risk of civil and/or criminal liability and regulatory actions.”⁹ Consequently, the DOJ began issuing subpoenas to banks and payment processors in 2013, with guidance from the FDIC that included a list of “high risk” merchants.¹⁰ The DOJ issued 60 administrative subpoenas from February 2013 through August 2013, effectively compelling banks to restrict these merchants’ access to finance.¹¹

⁶See also Committee on Oversight and Government Reform Staff Report, dated December 8, 2014, “Federal Deposit Insurance Corporation’s Involvement in ‘Operation Choke Point’.”

⁷See Expert Report of Charles Calomiris, dated January 11, 2017, in the matter of Community Financial Services Association of America, Ltd., et al. v. Federal Deposit Insurance Corporation, et al. (Civil Action No. 14-953-GK).

⁸For example, see “Memorandum: Operation Choke Point”, sent from Joel M. Sweet, Assistant U.S. Attorney, to Stuart F. Delery, Acting Assistant Attorney General, U.S. Department of Justice Civil Division, dated November 5, 2012 (HOCR-3PPP000017-21).

⁹Operation Choke Point: Hearing before the Subcommittee on Oversight and Investigations, dated July 15, 2014.

¹⁰Committee on Oversight and Government Reform Staff Report, dated December 8, 2014, “Federal Deposit Insurance Corporation’s Involvement in ‘Operation Choke Point’.”

¹¹In the Internet Appendix, we include a letter by Jelena McWilliams, former FDIC’s Chairman, acknowledging that “certain FDIC employees acted in a manner inconsistent with FDIC policies in what has been generically described as *Operation Choke Point*.”

It is important to note that Operation Choke Point was not an official law or regulation. Nonetheless, banks saw the initiative as a real and credible threat. According to the 2015 OIG Report, bank executives felt that “*references to specific merchant types in the summer 2011 Supervisory Insights Journal article and in supervisory guidance created a perception among some ... that the FDIC discouraged institutions from conducting business with those merchants.*”

Overall, the initiative resulted in a wave of terminations of bank relationships with merchants enumerated on the FDIC’s “high risk” list from 2013—see a timeline of Operation Choke Point’s most significant events in [Table IA2](#). The scope of the initiative had broad implications for many legal and legitimate businesses. Although payday lenders were one of the main targets of Operation Choke Point ([Stevenson, 2022](#); [Zywicki, 2015](#)), the effects of the initiative on other high risk merchants were also a subject of concern for Congress.¹² Indeed, anecdotal evidence indicates that firms such as firearms and ammunition dealers were also affected by the initiative.¹³

Importantly, Operation Choke Point appeared to affect a random subset of banks—that is, there is no discernible evidence that the collaborators on the initiative had a systematic method of targeting financial institutions. Anecdotally, the indiscriminate nature of the choice of targeted banks can be seen in a report by the Office of Inspector General, which reveals “*no evidence that the FDIC used the high-risk list to target financial institutions.*”¹⁴ This lack of clear criteria introduced a degree of arbitrariness into the initiative’s implementation, which this paper exploits in a staggered difference-in-differences setup to establish causality.

The intent behind Operation Choke Point has been subject to ongoing debate in lawsuits and

¹²For example, see U.S. House Committee on Oversight and Government Reform, Federal Deposit Insurance Corporation’s Involvement in Operation Choke Point (Staff Report 113th Congress, December 2014). [Baugh \(2016\)](#) exploited this initiative to explore the effect of limiting credit to online payday lenders on households’ consumption and borrowing patterns, using data from an aggregator of financial transactions. In addition to the different research question explored in this paper, we focus exclusively on non-financial firms since, as observed in our data, there are relatively few payday lenders borrowing from regulated banks with at least \$50 billion in total assets.

¹³See, for example, Committee on Oversight and Government Reform Staff Report, dated December 8, 2014, “Federal Deposit Insurance Corporation’s Involvement in ‘Operation Choke Point’”; and Hearing Before the Subcommittee on Oversight and Investigations of the U.S. House Committee of Financial Services, dated March 24, 2015, “The Federal Deposit Insurance Corporation’s Role in Operation Choke Point.”

¹⁴Office of Inspector General Report, dated September 2015, “The FDIC’s Role in Operation Choke Point and Supervisory Approach to Institutions that Conducted Business with Merchants Associated with High-Risk Activities.”

Congressional hearings.¹⁵ While the official reason for Operation Choke Point is linked to regulatory concerns regarding increased risk of fraudulent activity among certain merchants, documentary evidence suggests that Operation Choke Point may have been motivated for personal, moral reasons “entirely outside of FDICs mandate” (Calomiris, 2017). A 2014 House Committee Staff Report noted the following:

In a particularly egregious example, a senior official in the Division of Depositor and Consumer Protection insisted that FDIC Chairman Martin Gruenberg's letters to Congress and talking points always mention pornography when discussing payday lenders and other industries, in an effort to convey a “good picture regarding the unsavory nature of the businesses at issue.”¹⁶

Despite the initiative’s apparent success, it received considerable criticism given its potentially illegal and unofficial nature. The program was first made public through an article in The Wall Street Journal on August 8, 2013. Following subsequent public dissent, members of Congress submitted a letter to the FDIC chairman and the U.S. attorney general expressing their concerns regarding the pressure the DOJ was exerting to terminate lawful lending relationships, and, in December 2014, the U.S. House Committee on Oversight and Government Reform issued a report titled ‘Operation Choke Point’ (Calomiris, 2017). Increasingly negative public sentiment and government hearings resulted in the operation’s termination in 2017.

¹⁵See, for example, Second Declaration of Dennis Shaul in the matter of Community Financial Services Association of America, Ltd., et al. v. Federal Deposit Insurance Corporation, et al. (Civil Action No. 14-953-GK); Committee on Oversight and Government Reform Staff Report, dated December 8, 2014, “Federal Deposit Insurance Corporation’s Involvement in ‘Operation Choke Point’”; Hearing Before the Subcommittee on Oversight and Investigations of the U.S. House Committee of Financial Services, dated July 15, 2014, “The Department of Justice’s ‘Operation Choke Point’”; and Hearing Before the Subcommittee on Oversight and Investigations of the U.S. House Committee of Financial Services, dated March 24, 2015, “The Federal Deposit Insurance Corporation’s Role in Operation Choke Point.”

¹⁶Committee on Oversight and Government Reform Staff Report, dated December 8, 2014, “Federal Deposit Insurance Corporation’s Involvement in ‘Operation Choke Point’.”

3 Data and Target Selection

3.1 Federal Reserve Y-14Q Data

Our main data source is confidential quarterly loan-level data for the U.S. obtained from the corporate loan schedule H.1 of the Federal Reserve’s Y-14Q. These data have been collected to support the Dodd-Frank Act’s stress tests and assess bank capital adequacy for large banks. The credit register provides information on all credit exposures with commitment amounts exceeding \$1 million for banks with at least \$50 billion in total assets.¹⁷ These loans account for around 75% of all commercial and industrial lending volume during the period we analyze. In addition to the amount of committed credit for each firm-bank pair, the data set contains information on drawn amounts on credit lines, amounts past due, interest rate spreads, and maturities. We also have information on each bank’s internal assessment of the default probability of a given firm, among other details. Finally, the data set also includes several firm-level information such as total assets, net income, cash holdings, total debt, and capital expenditures.

We supplement this data with financial information at the bank holding company level from publicly available FR Y-9C reports, including consolidated quarterly balance sheets, income statements, and detailed supporting schedules. The Federal Reserve started collecting the Y-14Q data since the second quarter of 2012. Thus, we employ quarterly data spanning the period of the second quarter of 2012 to the second quarter of 2016.

Pivotal to our study, we also determine which banks were part of Operation Choke Point and their targeting date. We accomplish this by manually reviewing publicly available government and legal documents and speaking to former regulators with knowledge of the operation. We present a timeline listing the targeted banks and the corresponding dates in [Figure 1](#).

[Table 1](#) reports key summary statistics for our main data set, with the variable definitions reported in [Table IA3](#). Panel A of [Table 1](#) provides details on the sample of loan-level data at the firm-bank-quarter level. We include information on total committed and utilized credit, credit

¹⁷Recent studies using the Federal Reserve’s Y-14Q data include [Brown et al. \(2021\)](#), [Chodorow-Reich et al. \(2021\)](#), and [Crosignani et al. \(2023\)](#).

terms (interest rate spread, maturity, whether the loan is collateralized), and the lending bank’s information (capital, profitability, liquidity, and size). For our analysis of the effect of the initiative on firm-level outcomes, we aggregate the data across banks at the firm-quarter level. Panel B summarizes this data, including firms’ financial information and summary statistics on the initiation and termination of bank relationships.

3.2 Targeted Banks

To analyze the effect of credit rationing on targeted industries, a key issue is to understand the criteria employed by regulators to target banks, as this consideration can potentially introduce bias in our estimations. To this end, we analyze data on Operation Choke Point’s targeting from expert witness testimonies and other supporting documents. As described in the previous section, we find administrative and regulatory documents suggesting that the selection process was not driven by particular bank characteristics.

To test this claim, we collect information on targeted banks from documentary evidence produced during lawsuits, regulatory reports, internal communications, and hearings. In particular, the empirical design in this paper is primarily based on expert witness testimony from [Calomiris \(2017\)](#), which identifies targeted banks and some of the first known dates in which those banks allegedly began terminating credit to firms in “high-risk industries” while under the influence of Operation Choke Point.¹⁸ Although the exact list of banks targeted by the DOJ is redacted,¹⁹ we find corroborating evidence regarding the involvement of these lenders in other documents.²⁰

We formally examine Operation Choke Point’s selection criteria by estimating the relationship between bank holding company characteristics and the likelihood of being targeted using a Cox

¹⁸The affected firms engaged in legal dispute with banks in [Calomiris \(2017\)](#) were payday lenders, who were among the most vocal in addressing perceived, unfair, banking practices.

¹⁹See U.S. Department of Justice Civil Division Communication, titled “Payment Processor Investigation – Request for Issuance of Subpoenas to Payment Processors and Banks used to Process Fraudulent Payments,” from Michael S. Blume, Consumer Protection Branch, to Stuart F. Delery, Principal Deputy Assistant Attorney General, dated February 8, 2013 (HOCR-3PPP000029-34).

²⁰See, for example, “Statement of Financial Service Centers of America To the U.S. House of Representatives Committee on Financial Services Regarding The Impact of Recent Regulator Supervisory and Enforcement Actions on Consumer Financial Services,” dated April 8, 2014.

proportional hazard model. The key identification assumption in our empirical approach is that the timing of the targeting is unrelated to bank characteristics that could explain a reduction in lending to affected industries. Such a relationship would cause a spurious correlation between Operation Choke Point and credit rationing or lending relationship terminations that would affect the interpretation of our results. We examine this identifying assumption by observing the correlation between the time elapsed before a bank is targeted and a wide range of bank-level variables capturing pre-shock characteristics that might affect a bank's lending portfolio. For banks that were not listed as targeted in Operation Choke Point documents, we set their treatment variable to zero throughout the sample period.

We use financial measures prior to the targeting of the first bank to address concerns related to anticipation. We consider the bank's size, tier 1 capital, liquidity, and profitability ratios. We further consider the bank's share of lending to targeted industries, both in terms of volume and number of relationships with firms in those industries. Finally, we consider the average profitability as well as the average liquidity and leverage of the firms in a bank's portfolio.

The results reported in [Table 2](#) suggest that targeting of banks was unrelated to their size, performance, or their share of lending to high-risk industries, as identified by the FDIC. Indeed, the estimated coefficients show that the financial characteristics of the bank holding companies are unrelated to the selection by the DOJ for Operation Choke Point. These results are consistent with our discussions with former regulators and our review of legal documents, which indicate little relationship between targeting and financial characteristics. Notably, prior loans to targeted industries are unrelated to the timing of being targeted.

3.3 Targeted Firms

We identify firms that were targeted by the DOJ using as a baseline the list of targeted sub-industries identified by the FDIC and listed in the expert witness report ([Calomiris, 2017](#)). Using this list, we manually search for the NAICS codes corresponding to the targeted industries on the NAICS Association website. For each industry, we conduct keyword searches, summarized in [Ta-](#)

ble IA4, to obtain the associated six-digit industry NAICS codes. When required, we supplement the NAICS code search process. Given the potential illegality of certain targeted industries, we exclude firms in industries such as cable box de-scramblers, credit card schemes, debt consolidation scams, get rich products, government grants, home-based charities, life-time guarantees and memberships, money transfer networks, Ponzi schemes, racist materials, and travel clubs. In addition, as it is standard in the literature, we remove financial firms. In the context of our paper, this implies we exclude the relatively few payday lenders borrowing from regulated banks with at least \$50 billion in total assets. Our final data set contains 5,670 affected firms, 595 of which are publicly listed.

4 Bank-Level Analysis

We start our analysis by examining whether Operation Choke Point affected lending to firms in affected industries by targeted banks, relative to lending by non-targeted banks.

4.1 Empirical Specification

Our baseline specification is a staggered difference-in-differences model, exploiting the fact that firms that operated in the same industry and location borrowed from banks that were targeted at different points in time or were never targeted.²¹ Specifically, we estimate:

$$Y_{f,i,b,t} = \beta_1 I(Post_{b,t}) I(ChokePoint_b) + X_{b,t} \gamma + \delta_b + \delta_f + \delta_{t,size,industry,state} + \varepsilon_{f,i,b,t}, \quad (1)$$

where $Y_{f,i,b,t}$ is one of our outcomes of interest (e.g., committed credit, share of drawn credit, interest rate spread) for firm f , operating in industry (six-digit NAICS code) i , borrowing from bank b , at the calendar-quarter t time. Our baseline specification includes bank (δ_b) and firm fixed effects (δ_f) to control for time-invariant heterogeneity of both banks and firms. We include time–

²¹A key assumption is that firms were not matched to banks in a way that might affect our results. We address this issue in Section 4.3. To construct an appropriate control group, we exclude banks that did not lend to any firms in the targeted industries during the sample period.

firm size–industry–state fixed effects ($\delta_{t,size,industry,state}$), with size attributed by quartiles to control for time-varying trends that affect firms of similar size operating in the same six-digit NAICS code and state. $I(Post_{b,t})$ is an indicator variable at the bank level and is set to one following the targeting of the bank by Operation Choke Point. $I(ChokePoint_b)$ is an indicator variable at the bank level and is set to one for banks that were targeted by Operation Choke Point. The vector γ includes time-varying bank controls such as size, capital, liquidity, and profitability. The primary coefficient of interest, β_1 , captures the within bank-firm changes following the targeting of the bank by Operation Choke Point. Standard errors are double clustered at the bank and state level.²²

4.2 Effect of Operation Choke Point on Credit Supply

We present the results of the estimation of Equation 1 in Table 3. The coefficient in column (1) is negative and statistically significant at the 1% level, suggesting that banks targeted by the DOJ reduced their level of committed credit to firms in “high-risk” industries, relative to control banks, by approximately 3.4%. In column (2), we use our preferred specification including a tighter set of fixed effects (time–firm size quartiles–six-digit NAICS industry code–state, all interacted), and the effects remains large (4.6%) and statistically significant at the 1% level.

Given the literature documenting the heterogeneous effect of financing across firms based on their size, we consider how lending practices change across large firms and SMEs—as in Chodorow-Reich et al. (2021), for instance, firms are classified as SMEs if their assets are less than \$250 million. As reported in column (3) of Table 3, we find that the reduction in lending is concentrated among these smaller firms, with a decline of 9.5% in committed credit. In contrast, we find no significant effect for large firms. We next consider the share of drawn credit in columns (4) to (6), defined as the volume of utilized credit divided by the level of committed credit. We find no significant effect, suggesting that the level of credit drawn by firms changes proportionately to

²²The state in which firms are located impacts the regulation of their activities in some cases. For instance, in 2011, the Department of Justice changed the way the federal government interpreted the Wire Act of 1961, which criminalized and prohibited the operation of certain betting or wagering businesses, such as online gambling. Over the following years, six states legalized online casino games, one of the targeted industries in our analysis.

changes in committed credit.

We then analyze the dynamic effects of Operation Choke Point on committed credit by plotting the dynamic coefficients relative to the quarter before the targeting by the DOJ. The evidence in [Figure 2](#) presents two key pieces of evidence. First, and crucial for our identification strategy, it shows that the parallel trends assumption holds in our setting—the point estimates before the program are close to zero and statistically insignificant in the entire pre-program period, indicating that there is no differential pre-trend in lending activity to firms in affected industries by targeted vs. non-targeted banks. Second, following the targeting, there is a gradual and significant decrease in committed credit between treated and control banks to firms within the same affected industry.

Next, we explore the drivers of the decline in total committed credit. As reported in [Table IA5](#), we find evidence that targeted banks reduce not only committed credit lines but also the rollover of term loans for affected firms. Lastly, we study whether the terms of the credit to affected firms are impacted, following the empirical specification described in [Equation 1](#). The results in [Table IA6](#) suggest no effect on interest rate spreads (columns 1 and 2). In contrast, the results in columns (3) and (4) show that SMEs experience a decline in maturity of approximately 2.2 months, or 4.5% of the mean maturity of 46 months. We also find that affected firms are more likely to post collateral, an effect driven by the terms imposed on small and medium-sized firms (columns (5) and (6)).

4.3 Additional Tests of Operation Choke Point on Credit Supply

The previous results suggest that the operation reduced lending by targeted banks to firms in affected industries. In this subsection, we conduct a series of additional tests to mitigate several concerns related to our tests and interpretation. First, we explore whether our results are biased based on our empirical specification. Second, we examine whether our results are biased due to the issues identified by the recent literature on staggered differences in differences designs. Third, we consider whether our results are affected by loans with volumes close to the reporting threshold. Finally, we assess whether our results might be driven by events other than Operation Choke Point.

4.3.1 Empirical Specification

We first rule out the possibility that our empirical specification drives our estimates. In column (1) of Panel A, we present the estimates of a fixed effects Poisson specification on the level of committed credit and find similar economics and statistical results as in [Table 3](#). Next, we balance our sample by adding zeros to bank-firm-year observations with no reported loans to examine the intensive and extensive margins, combined, and estimate an OLS model.²³ We report the estimates in column (2) of Panel A, where we find similar results to our baseline. In column (3), we present the estimates resulting from the balanced panel but using a Poisson specification to account for the issues involving an outcome variable that is positive but can often equal zero ([Chen and Roth, 2023](#); [Cohn, Liu, and Wardlaw, 2022](#); [Correia, Guimarães, and Zylkin, 2020](#)). We again find consistent evidence that there was a contraction in credit supply in response to Operation Choke Point. Finally, we use these three alternative estimation approaches for the share of drawn credit (columns 4 through 6) and estimate no statistical change around the initiation of Operation Choke Point, again matching our baseline estimates in [Table 3](#).

4.3.2 Firm-bank matching

Another potential concern is that firms that borrow from targeted banks differ from those that borrow from other banks (e.g., have different demand for credit), even if these two types of firms operate in the same six-digit NAICS industry, have similar size, and are headquartered in the same state. To mitigate this concern, in column (1) of Panel B ([Table 4](#)), we present the results of a specification that includes firm-time fixed effects to better control for credit demand and the non-random matching between firms and banks ([Iyer, Peydró, da Rocha-Lopes, and Schoar, 2014](#); [Khwaja and Mian, 2008](#)). Exploiting variation within firms that borrow from multiple banks, we find that the coefficient is still negative, large, and statistically significant. This finding suggests that, for the same firm, targeted banks reduce lending more than non-targeted banks. Similar to

²³In our baseline intensive margin specification, following a relationship termination, the bank-firm pair would exit the sample.

our baseline, in column (3) of Panel B, we find no change in the share of drawn credit when using a similar approach.

4.3.3 Biases in differences-in-differences designs

We explore whether our results are affected by the biases identified by the recent literature on staggered differences-in-differences designs—see [Roth, SantAnna, Bilinski, and Poe \(2023\)](#), for instance, for a detailed review. We repeat our analysis using the stacked regression estimator methodology developed by [Gormley and Matsa \(2011, 2016\)](#) and described in [Baker, Larcker, and Wang \(2022\)](#) and present the results in columns (2) and (4), where we find estimates for the log of committed credit and share of drawn credit, respectively, that are largely consistent with those obtained using the two-way fixed effects methodology.

4.3.4 Minimum Reporting Threshold

The credit register provides information on credit exposures exceeding \$1 million for banks with more than \$50 billion in assets. Thus, one potential concern is that data truncation affects our results. In our setting, if a bank reduces the committed amount from \$1.01 million to \$0.99 million, it would be identified as an account termination and bias our results.

To alleviate the concern that this threshold is biasing our results, we run an additional test excluding loans close to the reporting threshold. Specifically, we exclude loans below \$5 million and re-estimate our baseline specification. We report the results in column (3) of Panel B ([Table 4](#)), where we find evidence suggesting that our results are not driven by loans close to the reporting threshold. In particular, we find that the level of credit commitment decreases for firms in high-risk industries that borrow from targeted banks, relative to non-targeted banks. These results resemble those in the baseline test, including all loans. Further, in column (6) of Panel B, we still do not observe a change in the share of drawn credit, again similar to our baseline.

An additional potential concern is that affected firms can initiate relationships with or increase borrowing from non-reporting banks, those with assets below the \$50 billion threshold. We address

this potential issue in Section 6.2, where we show that affected firms, on average, do not experience a significant change in total debt.

4.3.5 Banks and Industry Trends

A potential remaining concern is that Operation Choke Point targeted banks that could have already be cutting lending to specific industries for reasons unrelated to Operation Choke Point. To address this concern, we run a falsification test to analyze whether targeted banks cut lending to other industries. First, we run our test on non-affected industries in general—that is, excluding those industries targeted by the initiative. We present the results in column (1) of Panel C (Table 4), where we find that the coefficient is statistically indistinguishable from zero. We then run our test on a subset of industries potentially at high risk of being associated with money laundering—as identified by the NAICS association in conjunction with industry experts—but that was not targeted by Operation Choke Point.²⁴ We present the results in column (2) of Panel C and find that the coefficient is again statistically indistinguishable from zero. Further, we address the concern that the results are biased by specific drivers of the timing of each bank’s targeting date. We conduct a placebo test to mitigate this concern by randomizing treatment dates for affected banks. We run our baseline test 1,000 times, randomizing the targeting dates, and present the mean coefficient in column (3) of Panel C, where we find no significant effect. Finally, we re-run these additional tests for the share of drawn credit in columns 4 through 6 of Panel C and estimate no statistical relation, consistent with our baseline results in Table 3. Overall, these sets of tests provide further confidence that targeted banks were limiting the supply of credit to firms in affected industries.

4.4 Heterogeneity Across Firm Characteristics

We examine whether specific types of firms were more affected by Operation Choke Point. More specifically, we explore whether banks rationed credit differently for firms in different financial situations. To test this, we expand our empirical specification by interacting our main explanatory

²⁴Industries included are gasoline stations, convenience stores, liquor stores, parking lots, among others.

variables with a series of firm-level ratios that proxy for financial strength. In particular, we include profitability, liquidity, and leverage measures, splitting the sample based on their pre-period values.

Testing the relationship between financial strength and committed credit, columns (1) to (3) of [Table 5](#) shows consistent evidence that SMEs were affected irrespective of their profitability, liquidity, or leverage. These results underline our evidence that targeted credit rationing primarily sorted on firm size, and not financial strength. We also find no differences across firms with different financial strength when focusing on the share of drawn credit—see columns (4) to (6).

5 Bank-Firm Relationships

A core aspect of Operation Choke Point was to cut off banking relationships for affected firms. Having established that targeted banks reduced their supply of credit to firms in affected industries at the intensive margin, we turn our attention toward bank-firm relationships. In this section, we first discuss our empirical strategy to explore this issue and then discuss the results on the termination and creation of bank relationships.

5.1 Empirical Specification

To study bank-firm relationships, we aggregate data at the firm-quarter level to examine whether Operation Choke Point had an overall impact on firms in affected industries. As before, our baseline specification is a staggered difference-in-differences model, where we exploit the fact that firms that operate in the same industry and location borrowed from banks that were targeted at different points in time or were never targeted. Specifically, we estimate:

$$Y_{f,i,t} = \beta_1 I(Post_{f,t}) I(Exposed Firm_f) + \delta_b + \delta_f + \delta_{t,size,industry,state} + \varepsilon_{f,i,t}, \quad (2)$$

where $Y_{f,i,t}$ is our outcome of interest at the firm-quarter level, studying firm f , operating in the industry i , at the calendar-quarter t time. Our baseline specification includes main bank fixed effect (δ_b) and firm fixed effects (δ_f) to control for time-invariant heterogeneity of banks and firms. Main

bank is defined as the bank with the most lending to a firm in a quarter, which might vary over time. We include time–firm size quartiles–six-digit NAICS industry–state fixed effects $(\delta_{t,size,industry,state})$ to control for time-varying trends that affect firms of similar size operating in the same industry and state. $I(Exposed Firm_f)$ variable is the exposure to the shock considering all banks lending to a given firm, using as weights the pre-period share of credit with each bank. $I(Post_{f,t})$ is an indicator variable at the firm level and is set to one following the targeting of any bank that lends to the firm, or zero otherwise. Importantly, the specification in [Equation 2](#) studies shocks at the firm level, whereas the specification described in [Equation 1](#) allows us to study the effect of Operation Choke Point at the bank level. Our primary coefficient of interest, β_1 , captures the within-firm changes following the targeting of a bank from which the firm borrows. Standard errors are double clustered at the main bank and state levels.

5.2 Termination and Creation of Relationships

We start by examining whether firms linked to targeted banks experience account terminations and present the results in [Table 6](#). We estimate a variation of [Equation 2](#) with the outcome variable defined a dummy equal to one if, for a given time period, a firm got a relationship terminated in the following quarter with any bank (columns 1–2), with a treated bank (columns 3–4), or with a control bank (columns 5–6), and zero otherwise. The coefficient reported in column (1) is small and statistically indistinguishable from zero, suggesting that affected firms do not experience a significant change in the number of account terminations following Operation Choke Point. This effect is similar across firm sizes, as shown in column (2). However, when we examine heterogeneous effects across bank types (targeted versus non-targeted), we find results that are consistent with our finding on the effectiveness of the initiative. Specifically, we show that affected firms experience an increase in the frequency at which their accounts with targeted banks are terminated (column 3). This effect is significant, with an increase in the frequency of account terminations of 4.5 percentage points, corresponding to an increase of 94% over the baseline level of 4.8 percent. This effect is driven by a significant increase in account terminations for small and medium firms and

by a similar effect on large firms (column 4). In addition, we find that affected firms experience a reduction in the frequency at which their accounts with non-targeted banks are terminated (column 5), suggesting that these firms try to mitigate the impact of Operation Choke Point on credit availability. More specifically, this frequency declines by 4.2 percentage points, a decline equivalent to 87.5% of the baseline level. This effect is large and significant for both SMEs and large firms. This finding is consistent with the evidence presented in the expert witness report of [Calomiris \(2017\)](#) and with the idea that affected firms try to preserve their relationships with non-targeted banks.

In [Table 7](#) we explore the effect of the initiative on the development of new relationships. The outcome variable is now defined a dummy equal to one if, in a given time period, a firm created a relationship with any bank (columns 1–2), with a treated bank (columns 3–4), or with a control bank (columns 5–6), and zero otherwise. We find that, on average, affected firms increase the rate at which they initiate new relations with banks by 3.4 percentage points, or approximately 32% of the baseline level (column 1). We find that this effect is driven by new accounts opened by SMEs (column 2). As with account terminations, we then explore heterogeneous effects across bank types. We find that, following the targeting of their banks, affected firms initiate fewer relationships with banks singled out by Operation Choke Point (column 3). This effect is large across firm sizes and statistically significant for SMEs (column 4). In addition, we find that these firms significantly increase the rate of initiation of new relationships with non-targeted banks, evidenced by the large and significant coefficients in columns (5) and (6), which translate into an average increase of 74% over the baseline level.

We provide the results of this analysis further split across different types of SMEs and large firms in [Table IA7](#) and [Table IA8](#). Overall, we find that targeted banks terminate relationships with all types of firms, regardless of their size and ratios of profitability, liquidity, or leverage. Similarly, firms of all types preserve relationships with non-targeted banks. When we study the creation of new relationships with treated banks, we find a large and similar decline across all firm types, although the effect is statistically significant only for SMEs. This effect does not depend on these firms' profitability, liquidity, or leverage ratios. Last, we find that all types of firms increase

the rate at which they initiate relationships with non-targeted banks, regardless of their type.

Overall, the evidence presented in this subsection suggests that banks targeted by Operation Choke Point effectively terminate accounts with firms in affected industries. In response, these firms initiate new relationships or preserve relationships with non-targeted banks to mitigate or offset the effect of Operation Choke Point. However, given the results presented so far, the net effect on firms' access to credit is still unclear. On one hand, a long-term banking relationship can be beneficial to borrowers as it may lessen information asymmetries through the generation of private information, enabling the bank to offer improved loan conditions (Petersen and Rajan, 1994). On the other hand, banks could potentially leverage this exclusive information to exploit firms and provide less favorable terms (Rajan, 1992). In the next section, we explore this issue in more detail.

6 Firm-Level Borrowing

Having shown that targeted banks terminate relationships with affected firms and that these firms respond by establishing new relationships with non-targeted banks, we now explore the overall effect of Operation Choke Point on firms. We start by studying the effect of the initiative on firm-level access to credit and then we analyze its impact on firm performance and operations.

6.1 Net Effect on Committed and Utilized Credit

We first examine the effect on total committed credit and share of drawn credit for affected firms. As before, we use aggregate data at the firm-quarter level. For spread and maturity, we calculate a weighted average of the terms using the volume of credit as the weight.

The results are reported in Table 8. We find that affected firms experience no change in aggregate committed credit, with statistically insignificant coefficients across specifications in columns (1) through (3)—that is, for not only the average firm but also for large firms and SMEs. When we analyze the share of drawn credit in columns (4) through (6), we also find that all the coeffi-

coefficients are statistically indistinguishable from zero, pointing to no overall effect on total committed or drawn credit. Overall, these findings indicate that affected firms were generally able to offset the reduction in committed credit by targeted banks by obtaining more committed credit from non-targeted banks.

When we study the impact of firms with different characteristics, we find evidence of mostly homogeneous effects across firm types. More specifically, we find that the majority of coefficients in [Table 9](#) for both aggregate committed credit and the share of drawn credit are not statistically significant, with two important exceptions. First, large profitable firms manage to increase their level of committed credit, suggesting that they hedged against future potential terminations (column 1). In contrast, highly levered SMEs experience a modest reduction in total committed credit (column 3). These results indicate that targeted credit rationing driven by Operation Choke Point did not reduce overall credit for most firms, except for a small subset, yielding it broadly ineffective.

Finally, we also examine potential changes in firm-level loan terms and find that these firms do not seem to experience aggregate changes in interest rate spreads, as evidenced in columns (1) and (2) of [Table IA9](#). However, they experience a shortening in the maturity of the loans of approximately 2.5 months, or about 5% of the mean maturity (column 3). This effect is concentrated on SMEs (column 4). We also find an increase in the likelihood of these firms pledging collateral, but again only among SMEs (columns 5 and 6).

6.2 Financial Performance of Affected Firms

Given the impact of Operation Choke Point on banking relationships, we additionally examine the impact of the initiative on the financial and operational performance of affected firms. We follow the specification in [Equation 2](#) and analyze firm-level measures, such as leverage, profitability, and investment.

The estimates presented in [Table 10](#) suggest no observable change, on average, for firms exposed to targeted banks. The coefficients in columns (1) and (2) suggest that there was no effect on leverage, as defined by total debt over assets. This finding is consistent across firm sizes and

mitigates concerns related to the truncation of our data, given that this data includes lending by all banks. These firms also do not experience changes in the level of profitability, as measured by return on assets (columns 3 and 4). Similarly, we find no effect on investment, as measured by capital expenditures scaled by assets (columns 5 and 6).

We find similar results across firm types. In particular, the coefficients in [Table IA10](#) suggest that the initiative was ineffective at impacting firms of different characteristics. We find that the overall effect on leverage, profitability, and investment was economically small and statistically insignificant regardless of firm size, profitability, liquidity, and leverage ratios. We also find no effect on firms' delinquency, as measured by the level of non-performing loans (columns (1) and (2) of [Table IA11](#)), a finding that is homogeneous across firm sizes. Last, we test whether banks change their assessment of the probability of default of affected firms but still find no effect (columns (3) and (4) of [Table IA11](#)).

Overall, our results show that targeted credit rationing had a neutral effect on firms' performance. Although Operation Choke Point had an initial effect on lending by targeted banks, affected firms responded by lending from other banks. The borrowing terms of these new loans did not differ significantly from the original terms that those firms had with the targeted banks. More generally, we find that these firms did not experience an impact in terms of total committed or drawn credit, leverage, profitability, or investment, suggesting that credit rationing had an insignificant effect on firms in targeted industries.

7 Conclusion

Over the last decade, stakeholders have increasingly searched for mechanisms to affect the operations of firms that generate negative externalities. These actions can be undertaken by shareholders, who can exercise voting rights or divest, or by banks, which can ration credit. Thus, assessing the effectiveness of targeted credit rationing in disrupting the operations of these firms is crucial. Nonetheless, the empirical evidence on this issue is scarce.

In this paper, we exploit a regulatory initiative that provides exogenous variation in credit rationing to firms in specific industries. Using supervisory loan-level data, we document that credit rationing does affect banking relationships, with targeted banks reducing lending and terminating relationships with firms in affected industries. However, these firms initiate new relationships with non-targeted banks and manage to obtain loans with similar terms to the ones they had. Using financial statements data, we show that these firms do not experience measurable changes in performance. Overall, our findings highlight that target credit rationing by a subset of banks can be ineffective. Our findings have significant implications for current debates on whether credit rationing to specific industries helps bring about change.

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FIGURE 1: TIMELINE OF TARGETING

This figure plots a segment of the timeline of the targeting of bank holding companies (BHC) by the Department of Justice (DOJ) used in our paper.

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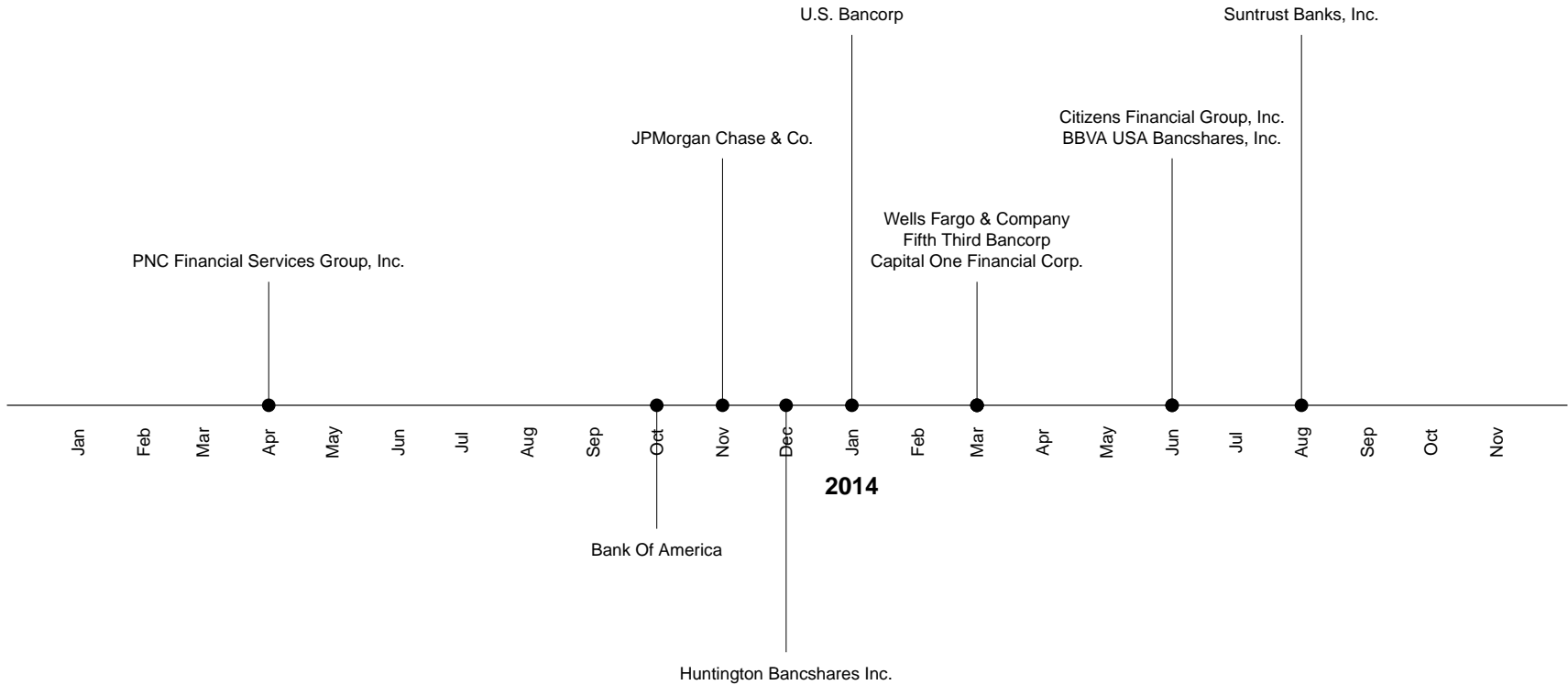


FIGURE 2: COMMITTED CAPITAL AROUND OPERATION CHOKE POINT

This figure plots coefficients from a difference-in-differences specification, where the dependent variable is the natural logarithm of total committed credit at the bank-firm-quarter level. The horizontal axis is in event time relative to the quarter before targeting by Operation Choke Point. The estimated coefficients and their corresponding 95% confidence intervals correspond to the difference in the total committed credit lending between treated and control banks, within the same treated industry. Data Source: Federal Reserve Y-9C.

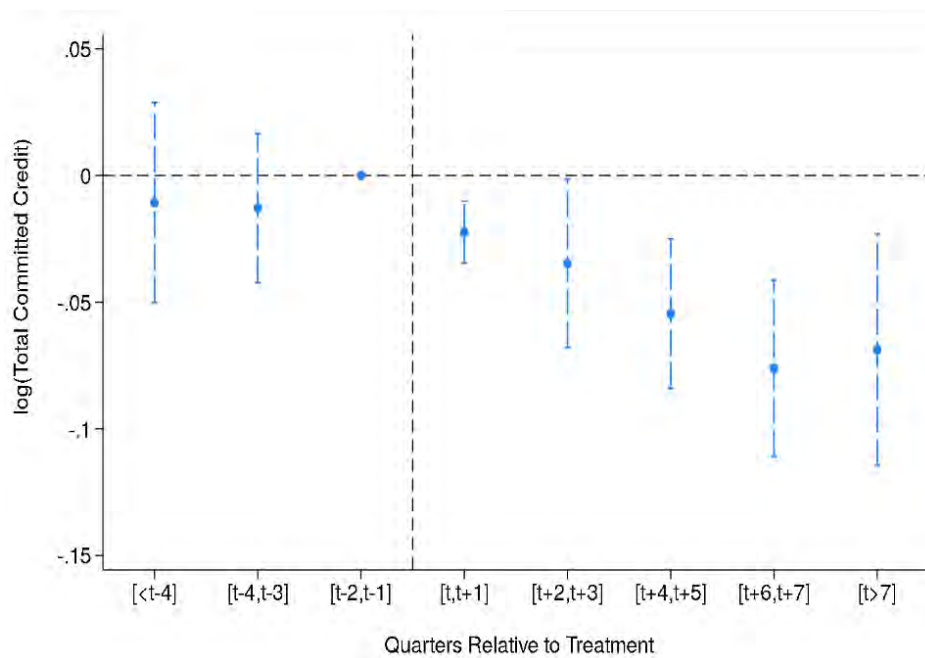


TABLE 1: SUMMARY STATISTICS

The table reports the summary statistics for firm-bank-quarter-level and firm-quarter-level characteristics relating to bank lending between the thirty largest bank holding companies and U.S. firms. Variable definitions are reported in the Appendix. The sample period covers 2012 Q2 to 2016 Q2. Data Source: Federal Reserve Y-14Q and Y-9C.

	N	Mean	p50	SD
	(1)	(2)	(3)	(4)
<i>Panel A: Firm-Bank-Quarter</i>				
Total Committed Exposure	51,105	29.822	5.981	90.073
Share of Drawn Credit	51,105	0.545	0.604	0.393
Bank Size	51,105	20.076	19.713	1.281
Bank Capital	51,105	8.996	9.167	1.214
Bank Profitability	51,105	0.980	1.009	0.502
Bank Liquidity	51,105	13.307	11.318	10.647
<i>Panel B: Firm-Quarter</i>				
Total Committed Exposure	41,891	36.381	3.867	182.492
Share of Drawn Credit	41,891	0.637	0.767	0.386
SME	41,891	0.845	1.000	0.362
Large Firm	41,891	0.155	0.000	0.362
Relationship Creation with Any Bank	41,891	0.106	0.000	0.308
Relationship Termination with Any Bank	41,891	0.048	0.000	0.214
Relationship Creation with Treated Bank	41,891	0.069	0.000	0.254
Relationship Termination with Treated Bank	41,891	0.024	0.000	0.154
Relationship Creation with Control Bank	41,891	0.039	0.000	0.194
Relationship Termination with Control Bank	41,891	0.025	0.000	0.155
Total Debt to Assets	41,891	0.298	0.260	0.248
Return on Assets	41,891	0.095	0.063	0.156
Capital Expenditures to Assets	41,891	0.022	0.000	0.046

TABLE 2: SELECTION MODEL

The table reports the coefficient estimates of a proportional hazard model (Cox, 1972) where the dependent variable is the time until the targeting of a bank by OCP, or the “event”. For the banks in our sample that are not targeted, the model takes the “event” as not occurring (censored). The explanatory variables are defined at the bank-holding company level and are measured prior to the first targeting. Variable definitions are reported in the Appendix. Standard errors are in parentheses. ***, **, * denote significance at the 1%, 5%, and 10% level, respectively. Data Source: Federal Reserve Y-14Q and Y-9C.

	Bank Targeted								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Bank Size	0.458 (0.299)								
Bank Capital		0.105 (0.291)							
Bank Liquidity			-0.641 (0.473)						
Bank Profitability				0.310 (0.395)					
Bank Share of Lending to Targeted Industries					0.182 (0.269)				
Bank Share of Firm Relationships in Target Industries						-0.167 (0.292)			
Profitability of Firms in a Bank’s Portfolio							0.121 (0.306)		
Liquidity of Firms in a Bank’s Portfolio								0.327 (0.236)	
Leverage of Firms in a Bank’s Portfolio									-0.058 (0.317)
Observations	30	30	30	30	30	30	30	30	30

TABLE 3: IMPACT OF OPERATION CHOKE POINT ON EXISTING LENDING

This table reports the impact of Operation Choke Point on existing lending. The regression uses firm-bank-quarter level data to compare lending between treated and control banks, within the same treated industries. The regressions use the following dependent variables to estimate the effects on lending: columns (1)-(3) use the natural logarithm of committed capital; and columns (4)-(6) use the share of drawn credit. *Post* is an indicator variable at the bank level and is set to one following the targeting of the bank by OCP. *Treated Banks* is an indicator variable at the bank level and is set to one for banks that were targeted by OCP. *Large Firm* is an indicator variable at the firm level and is set to one if the firms assets is greater than or equal to \$250 million. *SME* is an indicator variable at the firm level and is set to one if the firms assets is less than \$250 million. Bank controls include bank size, capital, liquidity, and profitability. Standard errors are double clustered at the bank and state level and are robust to heteroscedasticity. ***, **, * denote significance at the 1%, 5%, and 10% level, respectively. Data Source: Federal Reserve Y-14Q and Y-9C.

	Log(Committed Credit)			Share of Drawn Credit		
	(1)	(2)	(3)	(4)	(5)	(6)
Treated Banks × Post	-0.034*** (0.012)	-0.046*** (0.015)		-0.001 (0.004)	0.001 (0.006)	
Treated Banks × Post × SME			-0.095*** (0.026)			0.001 (0.009)
Treated Banks × Post × Large Firm			0.020 (0.040)			0.001 (0.012)
Firm FE	Y	Y	Y	Y	Y	Y
Bank FE	Y	Y	Y	Y	Y	Y
Time FE	Y	-	-	Y	-	-
Time × Firm Size Quartiles × Industry × State FE	N	Y	Y	N	Y	Y
Bank Controls	N	Y	Y	N	Y	Y
Observations	51,105	51,105	51,105	51,105	51,105	51,105

TABLE 4: ROBUSTNESS TESTS

This table reports the impact of Operation Choke Point on existing lending within treated industries using various robustness tests. The dependent variables include committed credit and share of drawn credit. *Post* is an indicator variable at the bank level and is set to one following the targeting of the bank by OCP. *Treated Banks* is an indicator variable at the bank level and is set to one for banks that were targeted by OCP. Regressions include bank controls, such as bank size, capital, liquidity, and profitability. Standard errors are double clustered at the bank and state level and are robust to heteroscedasticity. ***, **, * denote significance at the 1%, 5%, and 10% level, respectively. Data Source: Federal Reserve Y-14Q and Y-9C.

	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Balanced Panel	Committed Credit (\$bn)			Share of Drawn Credit		
	Poisson, Unbalanced Panel	OLS, Balanced Panel	Poisson, Balanced Panel	Poisson, Unbalanced Panel	OLS, Balanced Panel	Poisson, Balanced Panel
Treated Banks x Post	-0.067** (0.033)	-0.026** (0.010)	-0.159*** (0.048)	0.000 (0.014)	-0.022 (0.058)	-0.022 (0.047)
Observations	51,105	86,101	86,101	51,105	86,101	86,101
Panel B: Robustness Tests	Log(Committed Credit)			Share of Drawn Credit		
	Firm × Time FE (Khwaja-Mian)	Stacked Regression	Committed Credit Exposure Above \$5m Only	Firm × Time FE (Khwaja-Mian)	Stacked Regression	Committed Credit Exposure Above \$5m Only
Treated Banks × Post	-0.073** (0.029)	-0.061*** (0.021)	-0.047** (0.017)	0.003 (0.014)	0.005 (0.006)	-0.002 (0.012)
Observations	12,884	241,617	12,023	12,884	241,617	12,023
Panel C: Falsification Tests	Log(Committed Credit)			Share of Drawn Credit		
	Non-Affected Industries	Non-Affected Cash-Intensive Industries	Random Treatment Date (1000 reps)	Non-Affected Industries	Non-Affected Cash-Intensive Industries	Random Treatment Date (1000 reps)
Treated Banks × Post	0.008 (0.017)	0.004 (0.039)	0.000 (0.018)	0.004 (0.039)	0.010 (0.009)	0.000 (0.006)
Observations	12,884	86,101	51,105	12,884	86,101	51,105

TABLE 5: IMPACT OF OPERATION CHOKE POINT ON EXISTING LENDING

This table reports the impact of operation choke point on existing lending across firm characteristics. The regression uses firm-bank-quarter level data to compare lending between treated and control banks, within the same treated industries. The regressions use the following dependent variables to estimate the effects on lending: columns (1)-(3) use the natural logarithm of committed capital; and columns (4)-(6) use the share of drawn credit. *Post* is an indicator variable at the bank level and is set to one following the targeting of the bank by OCP. *Treated Banks* is an indicator variable at the bank level and is set to one for banks that were targeted by OCP. *Large Firm* is an indicator variable at the firm level and is set to one if the firms assets is greater than or equal to \$250 million. *SME* is an indicator variable at the firm level and is set to one if the firms assets is less than \$250 million. High and low measures of firm profitability, liquidity, and leverage are split relative to pre-period median values. Standard errors are double clustered at the bank and state level and are robust to heteroscedasticity. ***, **, * denote significance at the 1%, 5%, and 10% level, respectively. Data Source: Federal Reserve Y-14Q and Y-9C.

	Log(Committed Credit)			Share of Drawn Credit		
	(1)	(2)	(3)	(4)	(5)	(6)
Treated Banks × Post × SME × Low Profitability	-0.102*** (0.024)			0.003 (0.009)		
Treated Banks × Post × SME × High Profitability	-0.083** (0.034)			-0.002 (0.011)		
Treated Banks × Post × Large Firm × Low Profitability	-0.020 (0.051)			0.012 (0.015)		
Treated Banks × Post × Large Firm × High Profitability	0.110 (0.072)			-0.026 (0.020)		
Treated Banks × Post × SME × Low Liquidity		-0.097*** (0.032)			-0.003 (0.009)	
Treated Banks × Post × SME × High Liquidity		-0.086*** (0.028)			0.013 (0.013)	
Treated Banks × Post × Large Firm × Low Liquidity		0.045 (0.074)			0.014 (0.020)	
Treated Banks × Post × Large Firm × High Liquidity		-0.005 (0.090)			-0.013 (0.020)	
Treated Banks × Post × SME × Low Leverage			-0.075** (0.030)			0.008 (0.011)
Treated Banks × Post × SME × High Leverage			-0.120*** (0.031)			-0.007 (0.009)
Treated Banks × Post × Large Firm × Low Leverage			-0.038 (0.063)			-0.012 (0.021)
Treated Banks × Post × Large Firm × High Leverage			0.073 (0.051)			0.012 (0.014)
Firm FE	Y	Y	Y	Y	Y	Y
Bank FE	Y	Y	Y	Y	Y	Y
Time × Firm Size Quartiles × Industry × State FE	Y	Y	Y	Y	Y	Y
Bank Controls	Y	Y	Y	Y	Y	Y
Observations	51,105	51,105	51,105	51,105	51,105	51,105

TABLE 6: **TERMINATION OF BANKING RELATIONSHIPS**

This table reports the impact of Operation Choke Point on the termination of bank relationships. Columns (1)-(2) study relationships with any bank, columns (3)-(4) focus on relationships with treated banks, and columns (5)-(6) focus on relationships with control banks. *Firm Exposure to Treated Bank* is an indicator variable at the firm level and is set to one if the firm had a relationship with a targeted bank. *Post* is an indicator variable at the firm level and is set to one following the targeting of any bank that lends to the firm. *Large Firm* is an indicator variable at the firm level and is set to one if the firms assets is greater than or equal to \$250 million. *SME* is an indicator variable at the firm level and is set to one if the firms assets is less than \$250 million. Standard errors are double clustered at the firm’s main bank and state level and are robust to heteroscedasticity. ***, **, * denote significance at the 1%, 5%, and 10% level, respectively. Data Source: Federal Reserve Y-14Q and Y-9C.

	Relationship Termination					
	with Any Bank		with Treated Banks		with Control Banks	
	(1)	(2)	(3)	(4)	(5)	(6)
Firm Exposure to Treated Bank × Post	0.003 (0.008)		0.045*** (0.005)		-0.042*** (0.007)	
Firm Exposure to Treated Bank × Post × SME		0.005 (0.008)		0.044*** (0.005)		-0.039*** (0.007)
Firm Exposure to Treated Bank × Post × Large Firm		-0.015 (0.020)		0.056*** (0.017)		-0.073*** (0.010)
Time × Industry × Firm Size Quartiles × State FE	Y	Y	Y	Y	Y	Y
Main Bank FE	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y
Observations	41,891	41,891	41,891	41,891	41,891	41,891

TABLE 7: CREATION OF BANKING RELATIONSHIPS

This table reports the impact of Operation Choke Point on the creation of bank relationships. Columns (1)-(2) study relationships with any bank, columns (3)-(4) focus on relationships with treated banks, while columns (5)-(6) focus on relationships with control banks. *Firm Exposure to Treated Bank* is an indicator variable at the firm level and is set to one if the firm had a relationship with a targeted bank. *Post* is an indicator variable at the firm level and is set to one following the targeting of any bank that lends to the firm. *Large Firm* is an indicator variable at the firm level and is set to one if the firms assets is greater than or equal to \$250 million. *SME* is an indicator variable at the firm level and is set to one if the firms assets is less than \$250 million. Standard errors are double clustered at the firm’s main bank and state level and are robust to heteroscedasticity. ***, **, * denote significance at the 1%, 5%, and 10% level, respectively. Data Source: Federal Reserve Y-14Q and Y-9C.

	Relationship Creation					
	with Any Bank		with Treated Banks		with Control Banks	
	(1)	(2)	(3)	(4)	(5)	(6)
Firm Exposure to Treated Bank × Post	0.034*** (0.012)		-0.042** (0.016)		0.079*** (0.023)	
Firm Exposure to Treated Bank × Post × SME		0.036*** (0.012)		-0.043** (0.017)		0.080*** (0.023)
Firm Exposure to Treated Bank × Post × Large Firm		0.015 (0.038)		-0.038 (0.032)		0.063** (0.023)
Time × Industry × Firm Size Quartiles × State FE	Y	Y	Y	Y	Y	Y
Main Bank FE	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y
Observations	41,891	41,891	41,891	41,891	41,891	41,891

TABLE 8: CHANGE IN FIRM LEVEL BORROWING

This table reports the impact of Operation Choke Point on firm level borrowing. The regressions use firm-quarter level data to compare changes in total credit between treated firms of treated and control banks. The dependent variable of columns (1)-(3) is the natural logarithm of committed capital, while columns (4)-(6) use the share of drawn credit. *Firm Exposure to Treated Bank* is an indicator variable at the firm level and is set to one if the firm had a relationship with a targeted bank. *Post* is an indicator variable at the firm level and is set to one following the targeting of any bank that lends to the firm. *Large Firm* is an indicator variable at the firm level and is set to one if the firms assets is greater than or equal to \$250 million. *SME* is an indicator variable at the firm level and is set to one if the firms assets is less than \$250 million. Standard errors are double clustered at the firm’s main bank and state level and are robust to heteroscedasticity. ***, **, * denote significance at the 1%, 5%, and 10% level, respectively. Data Source: Federal Reserve Y-14Q and Y-9C.

	Log(Committed Credit)			Share of Drawn Credit		
	(1)	(2)	(3)	(4)	(5)	(6)
Firm Exposure to Treated Bank × Post	-0.029 (0.017)	0.005 (0.013)		0.009 (0.008)	0.003 (0.009)	
Firm Exposure to Treated Bank × Post × SME			-0.003 (0.011)			0.003 (0.009)
Firm Exposure to Treated Bank × Post × Large Firm			0.084 (0.051)			0.003 (0.015)
Time × Industry × Firm Size Quartiles × State FE	N	Y	Y	N	Y	Y
Time FE	Y	-	-	Y	-	-
Main Bank FE	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y
Observations	41,891	41,891	41,891	41,891	41,891	41,891

TABLE 9: CHANGE IN FIRM LEVEL BORROWING

This table reports the impact of Operation Choke Point on firm level borrowing across firm characteristics. The regressions use firm-quarter level data to compare changes in total credit between treated firms of treated and control banks. The dependent variable of columns (1)-(3) is the natural logarithm of committed capital, while columns (4)-(6) use the share of drawn credit. *Firm Exposure to Treated Bank* is an indicator variable at the firm level and is set to one if the firm had a relationship with a targeted bank. *Post* is an indicator variable at the firm level and is set to one following the targeting of any bank that lends to the firm. *Large Firm* is an indicator variable at the firm level and is set to one if the firms assets is greater than or equal to \$250 million. *SME* is an indicator variable at the firm level and is set to one if the firms assets is less than \$250 million. High and low measures of firm profitability, liquidity, and leverage are split relative to pre-period median values. Standard errors are double clustered at the firm’s main bank and state level and are robust to heteroscedasticity. ***, **, * denote significance at the 1%, 5%, and 10% level, respectively. Data Source: Federal Reserve Y-14Q and Y-9C.

	Log(Committed Credit)			Share of Drawn Credit		
	(1)	(2)	(3)	(4)	(5)	(6)
Firm Exposure to Treated Bank × Post × SME × Low Profitability	-0.009 (0.018)			0.006 (0.005)		
Firm Exposure to Treated Bank × Post × SME × High Profitability	0.006 (0.012)			-0.001 (0.017)		
Firm Exposure to Treated Bank × Post × Large Firm × Low Profitability	0.047 (0.067)			0.026 (0.029)		
Firm Exposure to Treated Bank × Post × Large Firm × High Profitability	0.225** (0.083)			-0.086 (0.066)		
Firm Exposure to Treated Bank × Post × SME × Low Liquidity		-0.004 (0.009)			0.006 (0.009)	
Firm Exposure to Treated Bank × Post × SME × High Liquidity		-0.002 (0.028)			-0.005 (0.015)	
Firm Exposure to Treated Bank × Post × Large Firm × Low Liquidity		0.041 (0.050)			-0.007 (0.012)	
Firm Exposure to Treated Bank × Post × Large Firm × High Liquidity		0.173 (0.136)			0.023 (0.045)	
Firm Exposure to Treated Bank × Post × SME × Low Leverage			0.017 (0.016)			0.004 (0.010)
Firm Exposure to Treated Bank × Post × SME × High Leverage			-0.031** (0.014)			0.003 (0.014)
Firm Exposure to Treated Bank × Post × Large Firm × Low Leverage			0.077 (0.059)			-0.015 (0.025)
Firm Exposure to Treated Bank × Post × Large Firm × High Leverage			0.098 (0.069)			0.028 (0.023)
Time × Industry × Firm Size Quartiles × State FE	Y	Y	Y	Y	Y	Y
Main Bank FE	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y
Observations	41,891	41,891	41,891	41,891	41,891	41,891

TABLE 10: CHANGE IN FIRM PERFORMANCE

This table reports the impact of Operation Choke Point on firm performance. The dependent variables are total debt to assets (columns 1-2), return on assets (column 3-4), and total capital expenditures to assets (column 5-6). *Firm Exposure to Treated Bank* is an indicator variable at the firm level and is set to one if the firm had a relationship with a targeted bank. *Post* is an indicator variable at the firm level and is set to one following the targeting of any bank that lends to the firm. *Large Firm* is an indicator variable at the firm level and is set to one if the firms assets is greater than or equal to \$250 million. *SME* is an indicator variable at the firm level and is set to one if the firms assets is less than \$250 million. High and low measures of firm profitability, liquidity, and leverage are split relative to pre-period median values. Standard errors are double clustered at the firm’s main bank and state level and are robust to heteroscedasticity. ***, **, * denote significance at the 1%, 5%, and 10% level, respectively. Data Source: Federal Reserve Y-14Q and Y-9C.

	Total Debt/Assets		ROA		Capex/Assets	
	(1)	(2)	(3)	(4)	(5)	(6)
Firm Exposure to Treated Bank × Post	0.005		0.002		-0.002	
	(0.007)		(0.004)		(0.002)	
Firm Exposure to Treated Bank × Post × SME		0.007		0.002		-0.002
		(0.006)		(0.004)		(0.002)
Firm Exposure to Treated Bank × Post × Large Firm		-0.010		0.004		-0.000
		(0.022)		(0.008)		(0.004)
Time × Industry × Firm Size Quartiles × State FE	Y	Y	Y	Y	Y	Y
Main Bank FE	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y
Observations	41,891	41,891	41,891	41,891	41,891	41,891

Defunding Controversial Industries

INTERNET APPENDIX FOR ONLINE PUBLICATION

FIGURE IA1: SAMPLE ANNOUNCEMENTS OF RELATIONSHIP TERMINATIONS

- In June 2014, Chemical Bank informed Advance America that, [a]fter evaluating the Payroll Advance businesses serviced by Chemical Bank, and due to the overall risks associated with Money Services Business transactions, our financial institution has decided to reduce the services we provide to these types of business account. This reduction in service entailed the closing of Advance Americas accounts.
- In August 2014, SunTrust issued a press release announcing that [w]e have decided to discontinue banking relationships with three types of businesses specifically payday lenders, pawn shops and dedicated check-cashers due to compliance requirements.
- In December 2016, MainSource Bank informed Advance America by letter that the bank had made the strategic decision to discontinue deposit account and banking services to businesses identified as money service businesses.

FIGURE IA2: LETTER BY JELENA MCWILLIAMS TO HONORABLE BLAINE LUETKEMEYER



FEDERAL DEPOSIT INSURANCE CORPORATION

JELENA McWILLIAMS
CHAIRMAN

November 15, 2018

Honorable Blaine Luetkemeyer
House of Representatives
Washington, D.C. 20515

Dear Congressman Luetkemeyer:

This is in further response to your October 15, 2018, letter expressing concerns about allegations of past misconduct at the FDIC.

I assumed my duties as Chairman of the Federal Deposit Insurance Corporation with utmost respect for the rule of law and for the obligation of the United States government to be accountable to its citizens. I have seen first-hand what happens when these values are not respected. Growing up in communist Yugoslavia under a system where ordinary citizens could not question the government, I witnessed the abuses that can arise when those in power are accountable only to themselves.

I am deeply invested in transparency and accountability at the FDIC. These principles are paramount to maintaining the public trust. As such, I am troubled that certain FDIC employees acted in a manner inconsistent with FDIC policies in what has been generically described as "Operation Choke Point."¹ To ensure that the FDIC's commitment to integrity remains unequivocally clear, I am asking an outside law firm to review the prior actions taken by the FDIC in this matter so that I can better ascertain the effectiveness of our response.

The FDIC has an obligation to ensure that the banks we supervise are operating in a safe and sound manner. We have a responsibility to ensure that these banks have processes and procedures in place to identify fraudulent or illegal activity, whether it occurs at the bank or at vendors or customers with whom the bank has relationships. The exercise of these fundamental FDIC responsibilities must be borne out of our laws and regulations. They must never be based on personal beliefs or political motivations. Regulatory threats, undue pressure, coercion, and intimidation designed to restrict access to financial services for lawful businesses have no place at this agency.

¹ The FDIC's role in Operation Choke Point and Supervisory Approach to Institutions that Conducted Business with Merchants Associated with High-Risk Activities, Office of the FDIC Inspector General, Rep. No. AUD-15-008 at iv (September 2015).

The FDIC's guidance is clear: insured institutions are encouraged "to take a risk-based approach in assessing individual customer relationships rather than declining to provide banking services to entire categories of customers."² Institutions "that can properly manage customer relationships and effectively mitigate risks are neither prohibited nor discouraged from providing services to any category of customer accounts or individual customer operating in compliance with applicable state and federal law."³

We have placed clear limitations on the ability of any FDIC personnel to recommend the termination of account relationships, including requirements that any such recommendations be made in writing, that Regional Directors review such recommendations, and that all such recommendations are reported to the FDIC Board of Directors and Division Directors.⁴ The memorandum also makes clear that examiners should not use "informal," unwritten suggestions related to account terminations or criticism of a bank's "management or mitigation of risk associated with deposit accounts."⁵ No recommendation should be made to terminate an account relationship based solely on reputational risk to the institution.⁶ Independently, banks must also make responsible decisions about whether servicing any particular customer is consistent with their business plan, risk-appetite, and management capabilities – a decision most appropriately left with the bank's management and directors.

To reiterate these principles, I have directed additional training for our examination workforce to ensure that we adhere to the highest standards of conduct and respect the rule of law. The leaders of our examination workforce already have conducted targeted discussions with their staffs, and we will incorporate case studies on "Operation Choke Point" into our formal examiner training.

Consistent with my "Trust through Transparency" initiative, I also ask that anyone aware of any improper conduct by the FDIC to email me at Transparency@FDIC.gov. Any allegation of misconduct will be investigated fully and any employee engaged in the activity will be disciplined appropriately.

Under my leadership, the FDIC's oversight responsibilities will be exercised based on our laws and our regulations, not on personal or political beliefs.

Sincerely,

Jelena McWilliams

² FDIC Financial Institution Letter, FIL-5-2015 (28 January 2015).

³ *Id.*

⁴ FDIC Memorandum to Regional Directors (28 January 2015).

⁵ *Id.* See also Statement of the FDIC Board of Directors on the Development and Communication of Supervisory Recommendations (29 July 2016).

⁶ FDIC Memorandum to Regional Directors (28 January 2015).

TABLE IA1: FDIC LIST OF MERCHANTS INVOLVED IN “HIGH-RISK” ACTIVITIES

This table reproduces the lists of thirty merchants categories the FDIC’s advisory notice identified as being involved in “high-risk” activities.

Merchants Categories Listed By the FDIC	
(1) Ammunition Sales	(16) Life-Time Memberships
(2) Cable Box De-scramblers	(17) Lottery Sales
(3) Coin Dealers	(18) Mailing Lists/Personal Info
(4) Credit Card Schemes	(19) Money Transfer Networks
(5) Credit Repair Services	(20) On-line Gambling
(6) Dating Services	(21) PayDay Loans
(7) Debt Consolidation Scams	(22) Pharmaceutical Sales
(8) Drug Paraphernalia	(23) Ponzi Schemes
(9) Escort Services	(24) Pornography
(10) Firearms Sales	(25) Pyramid-Type Sales
(11) Fireworks Sales	(26) Racist Materials
(12) Get Rich Products	(27) Surveillance Equipment
(13) Government Grants	(28) Telemarketing
(14) Home-Based Charities	(29) Tobacco Sales
(15) Life-Time Guarantees	(30) Travel Clubs

TABLE IA2: KEY DATES OF OPERATION CHOKE POINT

This table summarises the key dates of Operation Choke Point and provides key dates of its initiation and termination. The initial supervisory insight article that contained the 30 merchant categories was generated in the Summer of 2011, while the initial inception of the OCP started on November 2012.

Date	Event
<i>Summer 2011</i>	FDIC issues a Supervisory Insight Article Article warning banks of high risks activities associated with doing business with a list of 30 merchant categories, including payday lenders, firearm sellers, etc.
<i>January 2012</i>	FDIC Issues New Guidance Document indicating that banks could face consequences for failing to adequately manage relationships involving borrowers that engage in industries with higher incidences of consumer fraud and potentially illegal activities.
<i>November 2012</i>	Inception of Operation Choke Point Attorneys within the DOJ’s Civil Division proposed an internal initiative intended to protect consumer from fraud perpetrated by fraudulent merchant, financial institutions, and financial intermediaries. Initiative named Operation Choke Point.
<i>February – August 2013</i>	Initial Waves of Subpoenas DOJ issued 60 administrative subpoenas to entities for which the Department determined it had evidence of potential consumer fraud.
<i>2013 – 2016</i>	Continuation of Operation Choke Point Banks are targeted by the DOJ for their lending relationships with specific industries.
<i>August 2017</i>	Official Termination of Operation Choke Point Operation choke point officially ended in August 2017. FDIC commits to Congress to provide additional training for its examiners, and to cease issuing similar information and unwritten suggestions to banks it regulates.

TABLE IA3: VARIABLE DEFINITIONS

Variable	Description
Average Long-term Debt of Firms in a Bank's Portfolio	Weighted average long-term debt (based on utilized exposure) of firms in the bank's loan portfolio
Average Profitability of Firms in a Bank's Portfolio	Weighted average ratio of net income to sales (based on utilized exposure) of firms in the bank's loan portfolio
Average Short-term Debt of Firms in a Bank's Portfolio	Weighted average short-term debt (based on utilized exposure) of firms in the bank's loan portfolio
Average Total Debt of Firms in a Bank's Portfolio	Weighted average debt (based on utilized exposure) of firms in the bank's loan portfolio
Bank Capital	Ratio of bank's core capital to total assets, multiplied by 100
Bank Liquidity	Ratio of bank's liquid assets to total assets, multiplied by 100
Bank Profitability	Ratio of bank's net income to total assets, multiplied by 100
Bank Share of Firm Relationships in Target Industries	Ratio of number of relationships with firms in targeted industries to total number of relationships
Bank Share of Lending to Targeted Industries	Ratio of loan amount committed in targeted industries to total loan amount committed
Bank Size	Natural logarithm of assets of the bank holding company in thousands of dollars
Capital Expenditures to Assets	Ratio of firm's capital expenditure to assets
Large Firm	Indicator variable that equals one if the firm's assets is greater than or equal to \$250 million, and zero otherwise
Liquidity of Firms in a Bank's Portfolio	Weighted average liquidity (based on utilized exposure) of firms in bank's loan portfolio
Profitability of Firms in a Bank's Portfolio	Weighted average profitability (based on utilized exposure) of firms in bank's loan portfolio
Relationship Creation with Any Bank	Indicator variable that equals one if the firm obtained a new lending relationship with any bank, and zero otherwise
Relationship Creation with Treated Bank	Indicator variable that equals one if the firm obtained a new lending relationship with a treated bank, and zero otherwise
Relationship Creation with Control Bank	Indicator variable that equals one if the firm obtained a new lending relationship with a control bank, and zero otherwise
Relationship Termination with Any Bank	Indicator variable that equals one if the firm experienced a termination of a lending relationship with any bank, and zero otherwise
Relationship Termination with Treated Bank	Indicator variable that equals one if the firm experienced a termination of a lending relationship with a treated bank, and zero otherwise
Relationship Termination with Control Bank	Indicator variable that equals one if the firm experienced a termination of a lending relationship with a control bank, and zero otherwise
Return on Assets	Ratio of firm's net income to assets
Share of Drawn Credit	Ratio of utilized credit to total committed credit
SME	Indicator variable that equals one if the firm's assets is less than \$250 million, and zero otherwise
Total Committed Exposure	Committed exposure in \$ billions
Total Debt to Assets	Ratio of firm's debt to assets

TABLE IA4: INDUSTRY NAICS CODES

This table lists the the industries that were targeted as part of Operation Choke Point. Column (1) lists the the industries that were outlined in the DOJ bulletin. Column (2) lists the search terms used to find the relevant NAICS codes. Column (3) lists the related NAICS codes that were identifies as corresponding to the respective industries.

Industry (1)	Search Terms (2)	NAICS Codes (3)
Ammunition/Firearm Sales	ammunition, firearm, gun	332992, 332993, 339920, 325920, 321920, 424690, 332994, 332439, 332994, 423910, 423990
Coin Dealers	coin	339910, 423940, 453310, 453998
Credit Repair Services	credit repair	541990
Drug Paraphernalia	drug, paraphernalia	446110, 325412, 446199, 325411
Escort Services/Pornography	escort, dating, porn, adult	812990
Firework Sales	firework	325998, 423920, 453998, 713990
Lottery Sales	lottery	713290, 334118
Mailing List/Personal Info.	mailing list	511140, 541860, 561431
Online Gambling	gambling, online gambling	713290, 519130
Pharmaceutical Sales	pharmaceutical	424210, 325412, 325411, 325199
Surveillance Equipment	surveillance, monitor, monitoring	334511, 561621, 334290, 453998
Telemarketing	telemarketing	561422
Tobacco Sales and Tobacco Paraphernalia	tobacco, cigarette, nicotine	424940, 312230, 111910, 453991, 453998, 424590, 339910, 321920, 333249, 115114, 333111, 339999, 326299, 316998

TABLE IA5: **IMPACT OF OPERATION CHOKE POINT ACROSS CREDIT TYPES**

This table reports the impact of Operation Choke Point on existing lending across credit types. The regression uses firm-bank-quarter level data to compare lending between treated and control banks, within the same treated industries. The regressions are split based on the following outcome variables: total committed account of credit lines (columns 1-2); total committed credit on term loans (columns 3-4); and committed credit amounts of other credit types (columns 5-6). ? discusses differences between credit types in more detail. *Post* is an indicator variable at the bank level and is set to one following the targeting of the bank by OCP. *Treated Banks* is an indicator variable at the bank level and is set to one for banks that were targeted by OCP. *Large Firm* is an indicator variable at the firm level and is set to one if the firms assets is greater than or equal to \$250 million. *SME* is an indicator variable at the firm level and is set to one if the firms assets is less than \$250 million. Bank controls include bank size, capital, liquidity, and profitability. Standard errors are double clustered at the bank and state level and are robust to heteroscedasticity. ***, **, * denote significance at the 1%, 5%, and 10% level, respectively. Data Source: Federal Reserve Y-14Q and Y-9C.

	Committed Amount, Credit Lines		Committed Amount, Term Loans		Committed Amount, Other Credits	
	(1)	(2)	(3)	(4)	(5)	(6)
Treated Banks × Post	-0.027 (0.019)		-0.059 (0.043)		-0.265 (0.157)	
Treated Banks × Post × SME		-0.082** (0.036)		-0.146*** (0.052)		-0.235 (0.156)
Treated Banks × Post × Large Firm		0.019 (0.031)		0.055 (0.087)		-0.284 (0.209)
Time × Firm Size Quartiles × Industry × State FE	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y
Bank FE	Y	Y	Y	Y	Y	Y
Bank Controls	Y	Y	Y	Y	Y	Y
Observations	31,676	31,676	16,594	16,594	3,387	3,387

TABLE IA6: CHANGE IN LOAN TERMS

This table reports the impact of Operation Choke Point on loan terms. The regression uses firm-bank-quarter level data to compare lending between treated and control banks, within the same treated industries. The regressions use the following dependent variables to estimate the effects on lending: columns (1)-(2) use average interest rate spread; columns (3)-(4) use average loan maturity (months); and columns (5)-(6) use an indicator variable that sets to one if collateral is required for any loan between a bank-firm pair. *Post* is an indicator variable at the bank level and is set to one following the targeting of the bank by OCP. *Treated Banks* is an indicator variable at the bank level and is set to one for banks that were targeted by OCP. *Large Firm* is an indicator variable at the firm level and is set to one if the firms assets is greater than or equal to \$250 million. *SME* is an indicator variable at the firm level and is set to one if the firms assets is less than \$250 million. Bank controls include bank size, capital, liquidity, and profitability. Standard errors are double clustered at the bank and state level and are robust to heteroscedasticity. ***, **, * denote significance at the 1%, 5%, and 10% level, respectively. Data Source: Federal Reserve Y-14Q and Y-9C.

	Interest Rate Spread		Maturity		Collateral	
	(1)	(2)	(3)	(4)	(5)	(6)
Treated Banks × Post	0.023 (0.024)		-1.190 (0.899)		0.168*** (0.044)	
Treated Banks × Post × SME		0.046 (0.038)		-2.197* (1.090)		0.177*** (0.040)
Treated Banks × Post × Large Firm		-0.012 (0.035)		0.551 (0.908)		0.132 (0.080)
Time × Firm Size Quartiles × Industry × State FE	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y
Bank FE	Y	Y	Y	Y	Y	Y
Bank Controls	Y	Y	Y	Y	Y	Y
Observations	25,835	25,835	37,619	37,619	17,318	17,318

TABLE IA7: TERMINATION OF BANKING RELATIONSHIPS ACROSS FIRM CHARACTERISTICS

This table reports the impact of Operation Choke Point on the termination of bank relationships across firm characteristics. Columns (1)-(2) study relationships with any bank, columns (3)-(4) focus on relationships with treated banks, and columns (5)-(6) focus on relationships with control banks. *Firm Exposure to Treated Bank* is an indicator variable at the firm level and is set to one if the firm had a relationship with a targeted bank. *Post* is an indicator variable at the firm level and is set to one following the targeting of any bank that lends to the firm. *Large Firm* is an indicator variable at the firm level and is set to one if the firms assets is greater than or equal to \$250 million. *SME* is an indicator variable at the firm level and is set to one if the firms assets is less than \$250 million. High and low measures of firm profitability, liquidity, and leverage are split relative to pre-period median values. Standard errors are double clustered at the firm’s main bank and state level and are robust to heteroscedasticity. ***, **, * denote significance at the 1%, 5%, and 10% level, respectively. Data Source: Federal Reserve Y-14Q and Y-9C.

	Relationship Termination								
	with Any Bank		with Treated Banks			with Control Banks			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Firm Exposure to Treated Bank × Post × SME × Low Profitability	0.008 (0.009)			0.046*** (0.005)			-0.039*** (0.007)		
Firm Exposure to Treated Bank × Post × SME × High Profitability	0.001 (0.008)			0.040*** (0.006)			-0.039*** (0.007)		
Firm Exposure to Treated Bank × Post × Large Firm × Low Profitability	-0.015 (0.014)			0.052*** (0.012)			-0.068*** (0.010)		
Firm Exposure to Treated Bank × Post × Large Firm × High Profitability	-0.014 (0.049)			0.072* (0.041)			-0.091*** (0.022)		
Firm Exposure to Treated Bank × Post × SME × Low Liquidity		0.006 (0.010)			0.043*** (0.007)			-0.038*** (0.007)	
Firm Exposure to Treated Bank × Post × SME × High Liquidity		0.004 (0.006)			0.045*** (0.007)			-0.041*** (0.007)	
Firm Exposure to Treated Bank × Post × Large Firm × Low Liquidity		-0.017 (0.019)			0.058*** (0.017)			-0.075*** (0.014)	
Firm Exposure to Treated Bank × Post × Large Firm × High Liquidity		-0.011 (0.024)			0.051* (0.029)			-0.069*** (0.017)	
Firm Exposure to Treated Bank × Post × SME × Low Leverage			-0.001 (0.008)			0.036*** (0.007)			-0.037*** (0.007)
Firm Exposure to Treated Bank × Post × SME × High Leverage			0.014 (0.014)			0.054*** (0.010)			-0.040*** (0.007)
Firm Exposure to Treated Bank × Post × Large Firm × Low Leverage			0.000 (0.024)			0.051** (0.023)			-0.055*** (0.010)
Firm Exposure to Treated Bank × Post × Large Firm × High Leverage			-0.038 (0.027)			0.062*** (0.022)			-0.098*** (0.022)
Time × Industry × Firm Size Quartiles × State FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Main Bank FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	41,891	41,891	41,891	41,891	41,891	41,891	41,891	41,891	41,891

TABLE IA8: CREATION OF BANKING RELATIONSHIPS ACROSS FIRM CHARACTERISTICS

This table reports the impact of Operation Choke Point on the creation of bank relationships across firm characteristics. Columns (1)-(2) study relationships with any bank, columns (3)-(4) focus on relationships with treated banks, and columns (5)-(6) focus on relationships with control banks. *Firm Exposure to Treated Bank* is an indicator variable at the firm level and is set to one if the firm had a relationship with a targeted bank. *Post* is an indicator variable at the firm level and is set to one following the targeting of any bank that lends to the firm. *Large Firm* is an indicator variable at the firm level and is set to one if the firms assets is greater than or equal to \$250 million. *SME* is an indicator variable at the firm level and is set to one if the firms assets is less than \$250 million. High and low measures of firm profitability, liquidity, and leverage are split relative to pre-period median values. Standard errors are double clustered at the firm's main bank and state level and are robust to heteroscedasticity. ***, **, * denote significance at the 1%, 5%, and 10% level, respectively. Data Source: Federal Reserve Y-14Q and Y-9C.

	Relationship Creation								
	with Any Bank		with Treated Banks			with Control Banks			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Firm Exposure to Treated Bank × Post × SME × Low Profitability	0.034***			-0.042**			0.077***		
	(0.011)			(0.016)			(0.023)		
Firm Exposure to Treated Bank × Post × SME × High Profitability	0.041***			-0.043**			0.085***		
	(0.014)			(0.017)			(0.024)		
Firm Exposure to Treated Bank × Post × Large Firm × Low Profitability	0.014			-0.034			0.057***		
	(0.037)			(0.030)			(0.019)		
Firm Exposure to Treated Bank × Post × Large Firm × High Profitability	0.022			-0.054			0.087*		
	(0.062)			(0.057)			(0.047)		
Firm Exposure to Treated Bank × Post × SME × Low Liquidity		0.042***			-0.037**			0.080***	
		(0.013)			(0.014)			(0.023)	
Firm Exposure to Treated Bank × Post × SME × High Liquidity		0.018			-0.061**			0.081***	
		(0.021)			(0.028)			(0.023)	
Firm Exposure to Treated Bank × Post × Large Firm × Low Liquidity		0.008			-0.042			0.063**	
		(0.042)			(0.038)			(0.027)	
Firm Exposure to Treated Bank × Post × Large Firm × High Liquidity		0.030			-0.030			0.063*	
		(0.046)			(0.038)			(0.033)	
Firm Exposure to Treated Bank × Post × SME × Low Leverage			0.036***			-0.045**			0.083***
			(0.012)			(0.018)			(0.023)
Firm Exposure to Treated Bank × Post × SME × High Leverage			0.037**			-0.039**			0.076***
			(0.017)			(0.018)			(0.024)
Firm Exposure to Treated Bank × Post × Large Firm × Low Leverage			0.007			-0.062			0.075***
			(0.039)			(0.043)			(0.015)
Firm Exposure to Treated Bank × Post × Large Firm × High Leverage			0.028			-0.005			0.047
			(0.077)			(0.053)			(0.041)
Time × Industry × Firm Size Quartiles × State FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Main Bank FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	41,891	41,891	41,891	41,891	41,891	41,891	41,891	41,891	41,891

TABLE IA9: CHANGE IN FIRM LEVEL LOAN TERMS

This table reports the impact of Operation Choke Point on firm level loan terms. The regressions use firm-quarter level data to compare changes in total credit between treated firms of treated and control banks. The regressions use the following dependent variables to estimate the effects on lending: columns (1)-(2) use average interest rate spread; columns (3)-(4) use average loan maturity (months); and columns (5)-(6) use an indicator variable that sets to one if any of a firm’s loans require collateral. *Firm Exposure to Treated Bank* is an indicator variable at the firm level and is set to one if the firm had a relationship with a targeted bank. *Post* is an indicator variable at the firm level and is set to one following the targeting of any bank that lends to the firm. *Large Firm* is an indicator variable at the firm level and is set to one if the firms assets is greater than or equal to \$250 million. *SME* is an indicator variable at the firm level and is set to one if the firms assets is less than \$250 million. Standard errors are double clustered at the firm’s main bank and state level and are robust to heteroscedasticity. ***, **, * denote significance at the 1%, 5%, and 10% level, respectively. Data Source: Federal Reserve Y-14Q and Y-9C.

	Interest Rate Spread		Maturity		Collateral	
	(1)	(2)	(3)	(4)	(5)	(6)
Firm Exposure to Treated Bank × Post	0.010 (0.035)		-2.554** (1.244)		0.107** (0.044)	
Firm Exposure to Treated Bank × Post × SME		0.028 (0.029)		-2.523* (1.310)		0.122*** (0.037)
Firm Exposure to Treated Bank × Post × Large Firm		-0.185 (0.114)		-2.874 (2.699)		-0.118 (0.135)
Time × Industry × Firm Size Quartiles × State FE	Y	Y	Y	Y	Y	Y
Main Bank FE	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y
Observations	41,891	41,891	41,891	41,891	41,891	41,891

TABLE IA10: CHANGE IN FIRM PERFORMANCE ACROSS FIRM CHARACTERISTICS

This table reports the impact of Operation Choke Point on firm performance across firm characteristics. The regressions use firm-quarter level data to compare changes in total credit between treated firms of treated and control banks. The dependent variables are total debt to assets (columns 1-3), return on assets (column 4-6), and total capital expenditures to assets (column 7-9). *Firm Exposure to Treated Bank* is an indicator variable at the firm level and is set to one if the firm had a relationship with a targeted bank. *Post* is an indicator variable at the firm level and is set to one following the targeting of any bank that lends to the firm. ***, **, * denote significance at the 1%, 5%, and 10% level, respectively. Data Source: Federal Reserve Y-14Q and Y-9C.

	Total Debt/Assets			ROA			Capex/Assets		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Firm Exposure to Treated Bank × Post × SME × Low Profitability	0.014 (0.009)			0.005 (0.005)			-0.002 (0.002)		
Firm Exposure to Treated Bank × Post × SME × High Profitability	-0.007 (0.006)			-0.004 (0.003)			-0.002 (0.002)		
Firm Exposure to Treated Bank × Post × Large Firm × Low Profitability	0.003 (0.019)			0.006 (0.009)			-0.003 (0.004)		
Firm Exposure to Treated Bank × Post × Large Firm × High Profitability	-0.058 (0.048)			-0.000 (0.009)			0.009 (0.006)		
Firm Exposure to Treated Bank × Post × SME × Low Liquidity		0.010 (0.007)			0.002 (0.003)			-0.003 (0.002)	
Firm Exposure to Treated Bank × Post × SME × High Liquidity		-0.004 (0.011)			-0.001 (0.007)			-0.000 (0.003)	
Firm Exposure to Treated Bank × Post × Large Firm × Low Liquidity		-0.004 (0.029)			0.005 (0.008)			0.002 (0.004)	
Firm Exposure to Treated Bank × Post × Large Firm × High Liquidity		-0.023 (0.019)			0.003 (0.015)			-0.005 (0.005)	
Firm Exposure to Treated Bank × Post × SME × Low Leverage			0.001 (0.007)			0.001 (0.004)			-0.002 (0.002)
Firm Exposure to Treated Bank × Post × SME × High Leverage			0.014 (0.011)			0.003 (0.004)			-0.002 (0.002)
Firm Exposure to Treated Bank × Post × Large Firm × Low Leverage			-0.015 (0.034)			0.012 (0.009)			-0.003 (0.004)
Firm Exposure to Treated Bank × Post × Large Firm × High Leverage			-0.005 (0.014)			-0.007 (0.010)			0.003 (0.005)
Time × Industry × Firm Size Quartiles × State FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Main Bank FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	41,891	41,891	41,891	41,891	41,891	41,891	41,891	41,891	41,891

TABLE IA11: CHANGE IN FIRM PERFORMANCE (NPL AND DEFAULT PROBABILITY)

This table reports the impact of Operation Choke Point on firm performance. The dependent variables are level of non-performing loans (columns 1-2), and probability of default (column 3-4). *Firm Exposure to Treated Bank* is an indicator variable at the firm level and is set to one if the firm had a relationship with a targeted bank. *Post* is an indicator variable at the firm level and is set to one following the targeting of any bank that lends to the firm. *Large Firm* is an indicator variable at the firm level and is set to one if the firms assets is greater than or equal to \$250 million. *SME* is an indicator variable at the firm level and is set to one if the firms assets is less than \$250 million. Standard errors are double clustered at the firm’s main bank and state level and are robust to heteroscedasticity. ***, **, * denote significance at the 1%, 5%, and 10% level, respectively. Data Source: Federal Reserve Y-14Q and Y-9C.

	NPL		Pr(Default)	
	(1)	(2)	(3)	(4)
Firm Exposure to Treated Bank × Post	-0.001 (0.002)		0.000 (0.005)	
Firm Exposure to Treated Bank × Post × SME		-0.001 (0.001)		-0.000 (0.005)
Firm Exposure to Treated Bank × Post × Large Firm		-0.008 (0.005)		0.009 (0.012)
Time × Industry × Firm Size Quartiles × State FE	Y	Y	Y	Y
Main Bank FE	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y
Observations	41,891	41,891	18,601	18,601