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Bank Holding Company Lobbying Activity upon Regulation and its Impact upon Non-Traditional Revenue

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Bank holding companies exert influence at every step of the legislative and regulatory process. In our paper, we ask if banks frequently comment upon proposed financial rulings with a goal of favorable regulatory change. We explore if bank lobbying leads to having their opinion worded into the final form of the regulation. By making use of an original collection of political and financial, quarterly panel data, we find banks use multiple mechanisms of influence while lobbying regulatory agencies. Using a revolving door lobbyist increases the probability of success. This is important, since banks lobby to preserve gains in non-traditional revenues.

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I. Introduction

As a reaction to the financial crisis of 2007 to 2009, the Dodd-Frank Act brought about significant changes to banking regulation. Key elements of this act included macro- and micro-prudential regulatory reform in order to prevent the near collapse of the U.S. economy and related global financial markets. The Act also mandated the creation of a number of new financial regulatory agencies (Copeland 2013). These changes could lead to highly complex, costly, and burdensome regulation, making it nearly impossible for a large number of banks to compete efficiently.

Lobbying, however, does not end when Congress passes the final bill. Large bank holding companies continue to lobby, and perform extremely well, past the congressional bill stage. Firms and individuals do not just accept new regulations as the regulatory agency proposes. For bank regulation, such the Dodd-Frank Act, bank holding companies (BHCs) frequently lobby the regulatory agency in an attempt to have their opinions and arguments heard and to encourage favorable changes to the regulation. They exert their influence at every step of the legislative process where financial regulatory reforms are enacted into law, such as the Dodd-Frank Act, and throughout the promulgation process of creating its regulations.¹

However, risk taking behavior on the part of BHCs and inadvertent risk incentives, by the same regulatory reform and bank regulations, remain in the years following reform (Bank of International Settlements 2018). The ability of BHCs to influence banking and financial regulations draws attention to an inequality of representation that exists in the rulemaking process in the U.S. government and financial regulatory agencies (Igan and Lambert 2019). Large organizations, such as businesses and specifically large BHCs, are a dominant, well-organized force that lobby regulators during the promulgation process. This is especially the case with salient and novel regulation, which carries the potential to greatly impede bank operations, revenues, and profit.

It is in this setting that a bank lobbies to present its point of view and not just accept the new regulation as the regulatory agency proposes. The relationship between a large BHC and bank regulator from the perspective of the regulator is one of information asymmetry and externalities, where communication plays a vital role in the formulation of proper regulation. With that said, there is no one perfect regulation; as such, providing information to regulators upon the proposal of rules is essential to a well-functioning and competitive banking industry.

BHCs normally communicate their preferences using at least three unique methods under the auspices of ex-post lobbying, or lobbying during the rule making stage, in order for the argument to be worded into final regulation in their favor. The unique methods BHCs employ include ex-post lobbying, the formation of persuasive comments, the oral presentation of arguments, and the use of revolving door lobbyists.

Large bank holding companies (BHCs) lobby federal financial regulatory agencies of the United States government during the rulemaking process, which is known as *ex-post lobbying*. Nearly 50% of all lobbying takes place ex-post or after bill passage, in contrast to lobbying Congress ex-ante or before passage. Congress mandates a regulatory agency with promulgating and, at times, enforcing various provisions of a law.

¹ It is important to note that before, during, and after bill passage, lobbyists working for large banks outnumbered congressional members by a ratio of 20 to 1. Citigroup, Wells Fargo, and J.P. Morgan spent a collective \$116 million in lobbying U.S. Congress in 2010 to 2012. While lobbying financial regulatory agencies, the same three BHCs spent a collective \$84.5 million from 2010 to 2012 (Rivlin 2013).

Commenting activity upon proposed rulemaking is just one of several instruments used in lobbying, simultaneously or at different stages of policy-making. It may involve only a written comment or an oral presentation at a meeting with regulators or both. Comments by BHC lobbyists upon proposed and final regulations are a form of ex-post lobbying. When a bank is cited in a final regulation in the U.S. Federal Register, it is an indication that the bank has offered a substantive and informative argument in its comment. Banks that are successful in being cited also tend to be successful in maintaining or increasing non-traditional income. The citation indicates that it is probable their opinion has been heard, and regulatory relief could follow.

A revolving door lobbyist, hereafter RDL, is a trusted lobbyist who previously worked in an official capacity for a financial regulatory agency or in a different governmental capacity. They may be a highly knowledgeable individual or one who maintains a network of contacts within these agencies but currently represents a bank or BHC. As an example, a recent paper finds that among the nearly 3,000 firms that lobbied the U.S. Securities and Exchange Commission on one of the Dodd-Frank related proposed regulations, at least 88 of these firms employed a former SEC regulator. Moreover, large banks will often hire an RDL from an outside lobbying firm, if not on staff, when expertise and/or technical knowledge is required to defeat a proposed regulation that threatens key revenue sources (Ban and You 2019).

The primary objective of this study is to investigate if BHCs, upon facing salient regulation, frequently lobby regulators or ex-post lobby in an attempt to have their opinions and arguments heard with the goal of favorable regulatory change. A second objective of this paper explores whether banks that lobby financial regulatory agencies will be cited and published in the final regulation. Coordinated ex-post lobbying efforts, including the use of revolving door lobbyists, will allow BHCs to continue or increase those revenues that may be at risk, non-traditional revenue sources.

We illustrate several findings. First, a BHC makes use of multiple mechanisms of influence while lobbying regulators. A BHC that participates in commenting upon proposed rules will be more successful at having its view mentioned in the final regulation, ensuring that at the very least its opinion has been heard. Second, we find that upon hiring a revolving door lobbyist, externally or internally, who is highly knowledgeable and well connected, the probability of having the BHC's comment worded into the final regulation will increase (Bertrand, Bombardini, and Trebbi 2014; Ban and You 2019). Therefore, a 1% increase in the use of revolving door lobbyists by a BHC leads to an 8.7% increase in the number of citations of a firm's comment in the related final regulation. The third finding is that a 1% increase in the lobbying of regulators by a BHC will positively and significantly increase that BHC's non-traditional revenues by 1.48%.²

The contributions of our research are many. First, this research involves only large BHCs and is one of the first studies to do so.³ The majority of regulatory lobbying studies focus upon broad

² The following is a brief outline to our research findings and the accompanying tables. The regression results found in Tables 3 to 5 relate to our principle findings and main discussion section. Figure 1 illustrates the influence of ex-post lobbying upon non-traditional revenue. We also include a data appendix. The reader will find Table A1, Descriptive Raw Statistics, as well as Table A2 which relates to the pairwise correlation matrix. Table A3 and Table A4 encompass the regression results of our control variable that relate to Equation 1 and Equation 2, respectively. Table A5 includes a negative binomial estimation regression of Equation 1 for robustness purposes. In addition, Table A6 consists of a pooled OLS estimation model regression of Equation 2, again, for robustness purposes.

³ Bank holding companies serve as the unit of analysis in this study for a number of reasons: First, these firms play a crucial economic function and policy role in the United States and globally. BHCs generate

swaths of industries and interest groups. The second contribution is that these findings have advanced the knowledge of how multiple mechanisms of influence upon regulators and regulation may further impact revenues for BHCs. The third contribution includes an original data collection that combines multiple political and financial data sources, inclusive of nine financial regulatory agencies.

II. Literature review and hypothesis development

The focus of this study is on one specific highly regulated industry, bank holding companies, which tend to be large, have numerous resources, and are highly complex. We build upon lobbying of regulation by further analyzing the impact of being awarded or afforded a final citation and its effect upon a BHC's non-traditional revenue. Over the last two decades, there have been vast improvements in the regulatory lobbying literature concerning the understanding of how frequent firms lobby, who they lobby, and how the lobbying is organized.

Ex-post lobbying

To facilitate the intense ex-post lobbying of regulators, congressional members vaguely word laws on purpose, which allows large BHCs to further their influence (You 2017). Interest groups and banks devote much of their resources toward influencing the entire spectrum of policy-making, not just the U.S. Congress.⁴ A regulatory agency must take into consideration and review all comments that are deemed "substantive," and all agencies must integrate parts of the comments into the final regulation (Rashin 2020).

Lobbyists, through their representation, often provide valuable information to the regulators. This helps strike a balance between regulation that functions for industry yet meets the needs of other key participants, including the public (Igan and Lambert 2019; Rashin 2020).⁵ Through tracking comments on proposed regulation and meetings by specific interest groups with regulators, certain authors are able to identify if an opinion was heard and acknowledged (Ban and You 2019, 5).⁶

Barriers to entry exist in regulatory lobbying, where firms continue to lobby once they have begun the process (De Figueiredo and Richter 2014). When facing regulation that threatens

income from bank and non-bank sources. Further, these revenue sources cross a number of industries, as such, they are regulated by multiple U.S. financial regulatory agencies. Finally, these banks are resilient and maintain sufficient assets and resources to lobby extensively.

⁴ According to the Administrative Procedure Act of 1946 (APA), Section 553, part C, "After notice required by this section, the agency shall give interested persons an opportunity to participate in the rule making through submission of written data, views, or arguments with or without opportunity for oral presentation" (Rashin 2020, 8).

⁵ It is important to be able to ascertain whether an argument has been incorporated into the final form of regulation, with the appropriate transmission of information, and made on behalf of solely the corporate interests or if it is being produced with the public's interest at heart. This is similar to the discussion of informational lobbying versus regulatory capture (Igan and Lambert 2019; Rashin 2020).

⁶ Ban and You (2019) find that first, those Congressional members who comment and have the capacity to discipline an agency are often cited in final regulations. Second, they find firms that lobby both U.S. Congress and regulatory agencies will be more likely to have their opinion acknowledged in the final form of a SEC regulation.

important resources, large firms, including large BHCs, will lobby with a high propensity and intensity (Libgober and Carpenter 2018; Rashin 2020; Ban and You 2019).

A fundamental objective of this paper is to determine if increases in a BHC's lobbying upon regulation and financial regulatory agencies leads agencies to acknowledge the opinion of the commenting BHC in the final regulation.

A number of other points lend support. First, a significant correlation exists between the frequency of commenting by firms on proposed regulation and actual changes in the final version of the regulation (Golden 1998; Yackee and Yackee 2006; Haeder and Yackee 2015). Next, the more often comments include new information, data, and industry specific jargon in a concise manner, the more frequently the firms' views are then incorporated into a final regulation (Rashin 2020, 28). Another point is the strong relationship between the number of lobbying report submissions and the number of meetings with the SEC, which are highly associated with the citations in the SEC's final rule (Ban and You 2019).

A number of recent advances in the literature of ex-post lobbying lend a certain degree of strength to my first argument and its direction. In a recent paper, the application of advanced algorithms for purposes of content analysis is used to identify if a commenter's arguments and preferences have been included in any changes to a final regulation when compared to its proposed form (Rashin 2020).

In a subsequent advance, Libgober and Carpenter (2018) make use of the stock market intraday price reactions of commenting firms. By applying event study methods, they isolate and observe significant excess returns for those firms that comment upon proposed regulation and also have their preferences included in the final regulation. Stock price reactions of the commenting firms, upon the release of the final regulations, are then compared to those firms who abstain from commenting. Further, the finalized regulations of the Dodd-Frank Act are observed by highly informed and vigilant investors. The effect of commenting, overall, for these publicly traded financial firms results in approximately \$3.2 to \$7.8 billion dollars in excess market returns (Libgober and Carpenter 2018). While this is an indirect measure, their method does speak to the influence of large firms that commented upon 22 proposed final rule pairs as promulgated by the U.S. Federal Reserve.

Lobbying of a regulatory agency upon a final regulation does not always lead to the agency acknowledging an opinion or comment by a bank. There exists evidence that stands contrary to this paper's first argument. In a random sample, Golden (1998) applies content analysis to analyze 10 proposed regulations, from notice of proposed rulemaking and receipt of comments to final regulation and publication in the Federal Register. She finds only eight of the 10 proposed regulations are changed following comments. However, only one proposed regulation underwent significant change while others underwent minor changes of little substance. Golden (1998) notes that the one regulation which was changed significantly was most likely owed to private interest groups forming a united front in their objections to the rule.⁷ When comparing findings by Golden (1998) and a more recent study by West (2004), each author arrives at similar conclusions, yet for different underlying reasons. Both authors determine that while private, interest groups may often

⁷ Golden (1998) mentions that there exists a dearth of public participation in the commenting stage that follows the notice of the proposed rulemaking process. Moreover, she notes that agencies might have made further significant changes had the private interest groups been united in their objections or concerns. West (2004) notes the difficulty "for a person with cursory understanding" to distinguish changes between proposed and final regulation, in part, due to the highly technical nature of agency regulations and the issues at stake (West 2004, 71).

frequently comment upon proposed regulation. They further find that this will not guarantee an acknowledgement of a firm's opinion in the final form of the regulation or a change to a final regulation. West (2004) relies upon interviews as a primary source, complemented by an examination of 42 proposed to final regulations. Moreover, he notes that of the 16 regulations that were amended before producing the final regulations, only five of the 16 were changed in a significant manner. Those five regulations are more than likely changed, in part, due to comments by private interest groups and, in other part, due to political interference by elected officials.

The mixed results, in particular, the findings of the above noted authors, are likely owed to different methods applied by authors when analyzing and attributing changes to final rules by specific interest groups given the related comments upon proposed regulation. Some of these methods used by past authors include interviews, human coding, and content analysis (Ban and You 2019).

A further concept that stands contrary to the first argument is that if a large resourceful firm or BHC finds a proposed regulation as salient or unfavorable, they may apply several alternative techniques in order to influence the outcome of a rule. A few of these include applying intense congressional oversight of a regulatory agency, ensuring lengthy confirmation battles for agency leadership, and inundating an agency with comments, as they legally must review all comments received (Rashin 2020).

The above points in support and contrary to this study's first argument lead us to a testable hypothesis.

Hypothesis 1 (H1): In securing a citation in a final rule of a U.S. federal financial regulatory agency, large BHCs will perform ex-post lobbying of regulators in the form of commenting during promulgation.

Revolving door lobbyists

The second argument posits that large BHCs that actively comment and are successful in forming a persuasive argument for the regulator will be cited in a final regulation. Further, through coordinated ex-post lobbying efforts, this citation will allow BHCs to continue or increase non-traditional revenue sources.

The first point of support for the above argument contends that BHCs will apply lobbying in a well-coordinated effort at influential stages of the promulgation process, depending upon the topic's level of salience. The methods employed combine various forms of lobbying, including lobbying congress, the use of revolving door lobbyists, and the disbursement of campaign contributions (Ban and You 2019).

There are several key stages within the rule promulgation process, where the influence of lobbying tends to have much success. Lobbying during "on the record" and "off the record" meetings heavily influences the content of a proposed rule and possibly blocks a regulation from the regulatory agenda (Krawiec 2013). Another stage utilized by BHCs is when rules are deemed to be "economically significant." These significant rules must undergo a review process by the Office of Information and Regulatory Affairs (OIRA) in this next key stage, allowing more opportunities for industry to meet with regulators (Haeder and Yackee 2015).

The second point of support is that the use of revolving door lobbyists (RDL) increases a BHC's possibility of a favorable outcome when lobbying regulation (Ban and You 2019). If the

topic is complex or politically salient, BHCs will find it advantageous to hire an external revolving door lobbyist to compose comments or to represent a bank's interests.

The revolving door lobbyists play a key role by using their policy expertise or their valuable connections, acting as key negotiators in a meeting, or composing a comment before finalizing a regulation (Bertrand, Bombardini, and Trebbi 2014; Vidal, Draca, and Fons-Rosen 2012). In a recent study, it was found that the firms that hire former SEC regulators to represent their interests through meetings or comments increase their chances of the firm being cited in a final regulation (Ban and You 2019, 5).

Hypothesis 2 (H2): The use of a revolving door lobbyist by a BHC to lobby regulation leads to the likelihood of an increase in citations and/or an increase in non-traditional revenue streams.

Non-traditional revenues

The lobbying of financial regulatory agencies by BHCs is an important element of this investigation, yet, just as crucial is studying the impact of this activity by BHCs upon bank revenue, specifically non-traditional revenue. One reason BHCs lobby is that they find non-traditional revenues valuable, and those revenues act as a hedge against market interest rate movements. The traditional intermediation model that relies substantially upon interest income, such as deposit taking and lending, further provides banks with capital to generate non-interest income. Non-traditional revenue allows large BHCs to further diversify their revenue streams, especially in periods of low or volatile interest rates. For example, these low interest rates, typical of post-crisis years, "induce" banks to shift some of their activities from interest generating to fee-based and trading, as their net interest margins tend to compress (Brei, Borio, and Gambacorta 2019).

Another associated reason is that they complement traditional revenue sources. While the shift toward non-traditional revenues began more than 20 years ago, their ability to allow for diversification and complement traditional revenues still remains. For example, some non-traditional revenue sources can be less sensitive to overall business conditions than traditional revenues (Bernanke and Kuttner 2005; Brei, Borio, and Gambacorta 2019). For example, a number of non-traditional, non-interest revenues, including insurance and investment banking, are not directly exposed to macro-economic conditions, such as the interest rate. This is in contrast to traditional banking revenue, which consists of net-interest revenue. Traditional intermediation revenue can be highly variable at times due to its relation with interest rate movement (DeYoung and Roland 2001; Bernanke and Kuttner 2005; Brunnermeier, Dong, and Palia 2019).

Further, in a universal banking model, similar to many BHCs, relationship banking is often combined with transactional based revenue activities. Having both types of revenue under one roof allows a bank to expand product and service lines, leading to increased cross-selling opportunities (Ghosh 2020). Negative or weakly correlated revenues may strengthen the large BHCs' benefit of a diversified portfolio of both types of income sources.

Several examples are provided, illustrating how lobbying upon regulatory measures, by delivering persuasive comments to regulators and successfully being cited in a final regulation, allowed the BHCs to gain a degree of regulatory relief and/or concessions. In turn, this allowed the BHCs to maintain, adapt, or increase non-traditional revenues.

For example, the Durbin Amendment, which passed with the Dodd-Frank Act on July 21, 2010, posed a great threat to fee incomes for large BHCs. While the ex-post lobbying efforts by banks, including comments and meetings, was not a complete success, it managed to mitigate substantial potential damage and risk posed to their fee incomes. Banks faced a reduction in interchange fees that they charged merchants from approximately 44 cents to the Federal Reserve mandated 21 cents (Mukharlyamov and Sarin 2019).

Through persuasive comments, meetings, and use of former regulators in their lobbying efforts, banks managed to maintain a 1% compensation on each transaction for costs owed to anti-fraud provisions and a more flexible, less costly approach to the application of the anti-fraud provisions. The Federal Reserve's interim rule represented preservation of a policy win, specifically for card issuing banks such as American Express and Capital One (Libgober and Carpenter 2018, 21).

The Volcker Rule, Section 619 of the Dodd-Frank Act of 2010, through its key provisions, sets out to limit proprietary trading and restricts the banks' ability to work with certain institutions such as hedge funds. The proposed rule was released on November 7, 2011, by the U.S. Federal Reserve. Following comments received from Goldman Sachs and Morgan Stanley, among numerous others, it was clear the proposed version of the regulation would impede normal trading functions, such as market making and hedging, and substantially reduce liquidity. The final rule was released by the Federal Reserve on December 10, 2013. Upon analyzing the differences in the proposed and final regulation, two major victories for large BHCs are found in the inclusion of permissible market making activities and the elimination of Appendix B from the final rule. Appendix B sought to clarify what is considered appropriate market making activity. In 2015, the final regulation was approved by five financial regulatory agencies and began its implementation stage, while still providing an extension period for banks to exit illiquid investments. Moreover, banks continued to lobby regulators and managed to roll back or extend implementation on other key provisions (Libgober and Carpenter 2018, 21).

Contrary to the above points of support, there are other means, apart from lobbying, in which BHCs maintain or increase their non-traditional revenue sources, including lobbying for exemptions and the practice of regulatory arbitrage. BHCs may lobby for preferential discretionary treatment under the FDIC's Prompt Correction Action Guidelines (Igan and Lambert 2019). BHCs have previously employed regulatory arbitrage to circumvent U.S. regulatory capital requirements, in order to continue derivative trading activities (Acharya, Schnabl, and Suarez 2013).

Hypothesis 3 (H3): Together with ex-post lobbying, citations of a BHC in an agency's final rule, following a lobbyist visitation of comment, allows BHCs to maintain or increase non-traditional revenue streams.

In conclusion, I build upon the recent advances of two streams of literature that concern the following: the banking industry and the bank holding companies and lobbying of federal financial regulatory agencies. I address the impact of lobbying upon regulation and its effect on firm revenue as a natural extension of previous studies from these two literature streams. Specifically, this paper investigates one highly regulated industry, bank holding companies, and the impact of lobbying financial regulators upon non-traditional, non-interest revenue sources over the span of 15 years. Yet to be addressed by other authors, we investigate the effect of lobbying of regulation upon non-traditional revenues of BHCs to fill this gap.

III. Methodology and data

Sample attributes

A comprehensive sample of bank holding companies is included in this study using the Federal Reserve's Board of Governors National Information Center.⁸ The FR Y-9C Federal Reserve forms list the quarterly income and expenses of BHCs in interest and non-interest revenue format. This serves as a primary resource for BHC accounting and financial information. The purpose behind the selection of this sample is based on the idea that larger BHCs tend to lobby and comment more (Ban and You 2019; De Figueiroda and Richter 2014).

As the bank holding companies sampled were chosen according to our design and taken from the U.S. Federal Reserve website, specifically from the Federal Financial Institutions Examination Council's (FFIEC) Peer Groups 1 and 9. In addition to the choice of peer group, there are two noteworthy changes that take place to the main sample. The sample originally began with 82 BHCs of both foreign and domestic origin that consisted of a number of smaller BHCs with less than \$25 billion in consolidated total assets from Q1 2003 to Q1 2018.

The first sample change resulted in a reduction to 51 BHCs, with the requirement that each BHC have assets of greater than \$25 billion in the first quarter of 2003, lobby U.S. Congress or U.S. federal regulatory agencies, and trade publicly for at least three quarters of the sample time of this study. The BHCs that did not meet the asset size requirements were excluded. It has been found that larger banks and bank holding companies, as measured in total assets, have the resources to maintain complex product offerings, such as those found in non-traditional revenue sources (Copeland 2012; Apergis 2014). This is one of the main justifications for increasing the asset size requirement for those BHCs in the quarterly sample.

The second sample change took place through a reduction in the frequency of the sample observation. The sample was further reduced from BHC-quarter or quarterly to BHC-year or annual observation. This is primarily owed to the high number of observations with zero comment activity at the quarterly level and with banks of total asset size below \$25 billion. The decision was made to reduce the sample from quarterly to annually in an attempt to further normalize the distribution of comments, citation, and ex-post lobbying variables and increase the significance upon key determinant variables. The sample reduction results in a list of BHCs that lobby regulators more frequently than smaller ones (De Figueirodo and Richter 2014; You 2017; Ban and You 2019). This left only three BHCs that did not lobby: Sterling Bank, AmSouth Bank, and Comerica.

Variables

To control for effects upon bank performance, Equations 1 and 2 include control variables that also affect performance, valuation, profitability, leverage, and risk. A vector $(\phi_c X_{i,t-1})$ (+/-) of control variables includes the following: bank (v_i) (+) and year (v_t) (+), fixed effects, and the residual error term ($\varepsilon_{i,t}$) (-/+). The control variables first include a proxy for BHC size, total assets (natural logarithm of total assets), non-interest income share (total non-interest income to total operating income), level of BHC capitalization also serving as a regulatory capital measure (tier one leverage ratio), asset mix (total loans to assets ratio), share of deposit funding structure (total

⁸ <https://www.ffiec.gov/nicpubweb/nicweb/HCSGreaterThan10B.aspx>

Table 1. Equation 1: Description of variables.

Equation 1	
$Citations_{i,t} = B_0 + B_1 Ln(1 + Ex - postLobby)_{i,t-1} + B_2 Comments_{i,t-1} + \delta_1 RevolvingDoorLobbyist_{i,t-1} + \phi_C X_{i,t-1} + v_i + v_t + \varepsilon_{i,t}$	
Variables	Variable definitions
Citations	Recognition of a BHC through citation or mention of name in a final regulatory ruling, as having contributed a comment of substance to a proposed ruling. The federal regulatory agency mentions the BHC's comment in a finalized form of regulation in the U.S. Federal Register. Citations represented the number of mentions for a BHC commenting, across not one rule but multiple rules, originally within a quarter and then dropped to a yearly mean for firm final rule citations.
Ex-post lobbying	The lobbying of a regulatory agency by a BHC after a bill passes the final vote stage in the U.S. Senate. The lobbying is related to a specific regulation that is being promulgated by a key financial regulatory body. The ex-post lobbying may take multiple forms, including meeting and comments and the use of revolving door lobbyists.
Comments	The letters or statements of opinion of a BHC relating to specific proposed regulation following a solicitation of comment period by the regulatory agency. Positions and attendees of meetings are duly noted and set equal to a comment letter for the purpose of this study.
Revolving door lobbyist	Indicator variable: A lobbyist who previously worked in an official capacity for a financial regulatory agency, or in a different governmental capacity, yet currently represents a bank or BHC. Frequently this individual maintains a network of contacts within these agencies or is highly specialized in their knowledge banking and investment banking products and services. This is a dummy variable with a "1" indicating the person is an RDL and "0" if they are not an RDL.
Ln (Total assets)	Control variable: Total assets is calculated as the natural logarithm of assets, unadjusted for inflation. It is the only control variable orthogonalized due to its high correlation with other control variables.
Tier one leverage	Control variable: Measures a bank's level of capital adequacy by applying the ratio of core capital to its total assets, i.e., Tier 1 capital to a bank's total consolidated assets. Tier 1 capital is a bank's common equity, retained earnings, reserves, and certain instruments with discretionary dividends and no maturity.
Total loans to total assets	Control variable: The BHC's total loans outstanding as a percentage of total assets.
Share of deposit funding	Control variable: The non-interest bearing domestic deposits divided by the total of non-interest and interest bearing deposits, including money market funds, i.e., the share of deposits in deposits and money market funding.
Profitability	Control variable: Return on equity serves as a proxy for BHC profitability. It equals the ratio of net income or loss and is divided by a firm's total holding company equity capital.
Expected credit risk	Control variable: Provision for loan and lease losses divided by total assets.
Non-interest income share	Control variable: The BHC's share of non-interest income divided by total net operating revenue.
Annual asset growth	Control variable: The BHC's current year's rate minus its previous year's growth rate divided by the previous year's growth rate for total asset growth rate.

Table 2. Equation 2: Description of variables.

Equation 2	
$Non - TraditionalRevenue_{i,t} = \gamma_0 + \gamma_1 Ln(1 + Ex - postLobby)_{i,t-1} + \gamma_2 Citations_{i,t-1} + \delta_1 RevolvingDoorLobbyist_{i,t-1} + \phi_C X_{i,t-1} + v_i + v_t + \varepsilon_{i,t}$	
Variables	Variable definitions
Non-traditional revenue	Dependent variable: This category includes trading revenues, investment banking and underwriting of securities, fees and commissions, venture capital revenues, insurance commissions and fees, and interest income from trading assets, less interest expenses.
Citations	Recognition of a BHC through citation or mention of its name in a final regulatory ruling, as having contributed a comment of substance to a proposed ruling. The federal regulatory agency mentions the BHC's comment in a finalized form of regulation in the U.S. Federal Register.
Ex-post lobbying	The lobbying of a regulatory agency by a BHC after a bill passes the final vote stage in the U.S. Senate. The lobbying is related to a specific regulation that is being promulgated by a key financial regulatory body.
Revolving door lobbyist	Indicator variable: A lobbyist, representing a bank or BHC, who previously worked in an official capacity for a financial regulatory agency, or in a different governmental capacity, and maintains a network of contacts within these agencies. This is a dummy variable with a "1" indicating the person is an RDL, and "0" if they are not an RDL.
Ln (Total assets)	Control variable: Total assets is calculated as the natural logarithm of assets, unadjusted for inflation. It is the only control variable orthogonalized due to high correlation with other control variables.
Tier One leverage	Control variable: Measures a bank's level of capital adequacy by applying the ratio of core capital to its total assets, i.e., Tier 1 capital to a bank's total consolidated assets. Tier 1 capital is a bank's common equity, retained earnings, reserves, and certain instruments with discretionary dividends and no maturity.
Total loans to total assets	Control variable: The BHC's total loans outstanding as a percentage of total assets.
Share of deposit funding	Control variable: The non-interest bearing domestic deposits divided by the total of non-interest and interest bearing deposits, including money market funds, i.e., the share of deposits in deposits and money market funding.
Profitability	Control variable: Return on equity serves as a proxy for BHC profitability. It equals the ratio of net income or loss and is divided by a firm's total holding company equity capital.
Expected credit risk	Control variable: Provision for loan and lease losses divided by total assets.
Non-interest income share	Control variable: The BHC's share of non-interest income divided by total net operating revenue.
Annual asset growth	Control variable: The BHC's current year's rate minus its previous year's growth rate, divided by the previous year's growth rate, for total asset growth rate.

deposits out of the sum of deposits - money market funding), profitability (return on equity), annualized growth in total assets, and expected credit risk (loan loss provision to total assets).

Equation 1 examines if multiple forms of ex-post lobbying lead to a higher probability of a regulatory agency citing a BHC's comment in a final regulation. The dependent variable, citations ($Citations_{i,t}$), also measures the number of citations that integrate substantive comments from BHCs in a final regulation. Comments ($Comments_{i,t-1}$) (+) represents comments on specific

proposed regulations composed by BHC representatives and delivered to the financial regulatory agencies. The websites of a number of financial regulatory agencies and the U.S. Federal Register serve as sources for these citations of firm comments in the finalized regulation. Independent variables are, from left to right, the constant (B_0) (+) and the ex-post lobbying variable ($Ex-postlobby_{i,t-1}$) (+). Ex-post lobbying signifies the lobbying of a regulatory agency by a BHC after a bill passes the final vote stage in the Senate. The lobbying is related to a specific regulation that is being promulgated by a financial regulatory body. The ex-post lobbying may take multiple forms, including comments and the use of revolving door lobbyists. This examination follows the methodology of You (2017) and Ban and You (2019) in calculating these variables. In this equation, revolving door lobbyist ($Revolvingdoorlobbyist_{i,t-1}$) (+) is treated as dummy variable which will equal 1 if an RDL is used as a lobbyist by a BHC, and 0 if not.

Equation 2 begins with the dependent variable BHC non-traditional revenue ($Non-TraditionalRevenue_{i,t}$) for a BHC i during time t . The right side of the equation comprises the constant (γ_0), which precedes the variable ex-post lobbying ($Ex-postlobby_{i,t-1}$). Ex-post lobbying is described in the previous paragraph. All remaining variables and expected signs are described in the previous two paragraphs. A complete description and definition of each variable may be found in Tables 1 and 2.

Data and equations

Data collection: Ex-post lobbying, revolving door lobbyists, comments, and citations

The combination of unique lobbying activity reports of BHCs with other forms of ex-post lobbying, including the commenting activity across nine financial regulatory agencies, takes place across several stages. The first step involves matching congressional activity, including the more controversial enacted bills and the final vote date for each enacted bill, with BHC lobbying activity. The final vote date serves the purpose of determining when ex-post lobbying or lobbying after bill passage begins (You 2017). In the end, the number of bills collected from the www.congress.gov website totaled 3,174. Congressional activity including only bills enacted into law and vote date corresponds to the 108th – 111th sessions of the U.S. Congress (2003 to 2018).

The next step in the first stage involves merging all congressional bill and vote data with BHC ex-post lobbying and revolving door lobbyist data to form a large SQL relational database. The Center for Responsive Politics (CRP), www.opensecrets.org, serves as the source for all BHC related ex-post lobbying data. By merging this data, the author can identify all sample BHC lobbying activity and related expenditures.

The second stage involves collecting and matching BHC comment and meeting activity on proposed regulations and any citation of the BHC in the related final regulation, together with BHC ex-post lobbying and congressional data in the same quarter and year. In a further step, the comment upon proposed regulation and the related final regulation are then queried for the name of BHCs used in this study. All comment letter and meeting data between BHC representatives and regulators are collected and sourced from one of five major regulatory agencies and four additional agencies.⁹ Aside from each U.S. financial regulatory agency website, further sources

⁹ The five primary financial regulators, include the U.S. Securities Exchange Commission, U.S. Commodities Futures Trading Commission, U.S. Federal Deposit Insurance Corporation, Federal Reserve, and the U.S. Department of Treasury. The four additional agencies are the U.S. Consumer Financial

for comment, meeting, and regulation data include www.regulations.gov and the U.S. Federal Register.

Several tools are instrumental in identifying and matching BHC names within related financial agency regulation. The author applies natural language processing (NLP) and python related algorithms, including fuzzy logic matching and NLP shallow parsing or “text chunking” (Chopra, Joshi, and Mathur 2016). These non-trivial algorithms are used in identifying commenter names and citations of BHC comments within a final regulation. In the end, the proposed and final regulations consisted of 180 web parsed pairs of proposed and final regulation.

From interest and non-interest to traditional and non-traditional BHC activity

The author uses the FR Y-9 format to divide revenue data into three categories: traditional, non-traditional, and securitization. Copeland (2012) constructs these categories so that any new form of revenue earned falls into either securitization or non-traditional revenues. The Federal Reserve requires BHCs to report using the FR Y-9 forms yearly, while the FR Y-9C is done on a quarterly basis. The FR Y-9 forms display the categories of interest and non-interest revenues and expenses. This analysis applies and builds upon the taxonomy of Copeland (2012). The author begins by translating interest and non-interest revenue into the three categories of traditional, securitization, and non-traditional revenues, where the latter serves as a key explanatory variable in this study. The non-traditional revenue category includes trading revenues, investment banking and underwriting of securities fees and commissions, venture capital revenues, insurance commissions, and fees and interest income from trading assets less interest expenses (Copeland 2012).¹⁰

Equations

In order to examine Hypothesis 1 and 2, we use Equation 1. Further, in order to test Hypothesis 2 and 3, Equation 2 is put forth.

$$Citations_{i,t} = B_0 + B_1 \ln(1 + Ex - postlobby)_{i,t-1} + B_2 Comments_{i,t-1} + \delta_1 RDL_{i,t-1} + \phi_C X_{i,t-1} + v_i + v_t + \varepsilon_{i,t} \quad (1)$$

$$Non - traditional Revenue_{i,t} = \gamma_0 + \gamma_1 \ln(1 + Ex - postlobby)_{i,t-1} + \gamma_2 Citation_{i,t-1} + \delta_1 RDL_{i,t-1} + \phi_C X_{i,t-1} + v_i + v_t + \varepsilon_{i,t} \quad (2)$$

Methodology

Choice of estimators

The structure of the data includes 51 unique BHCs across 15 years from 2003 to 2018. This leads one to determine if and what type of panel data estimation procedure is appropriate. The objective of Equation 1 is to study the effect of three determinant variables—revolving door lobbyist, ex-

Protection Bureau, U.S. Office of Comptroller of Currency, U.S. Office of Thrift Supervision, and the Federal Financial Institutions Examination Council.

¹⁰ In the final category, “interest income from trading assets, the interest expense term is equal to the fraction of interest income from trading assets to total interest income, multiplied by total interest expense, assuming all interest expenses are proportionally divided across interest income revenue sources” (Copeland 2012, 92).

post lobbying, and citations upon the non-traditional revenue of each bank holding company across time—while controlling for time invariants and differences between BHCs. Fixed effects is chosen as the primary estimation model, as the assumptions for random effects are stringent. Further, I estimate using the Breusch-Pagan Lagrange multiplier, in addition to the Hausman estimation procedure, while seeking the more appropriate estimation model. Pooled ordinary least squares, which allows for between and within estimation, is included for robust perspective.

Given that there exists a large number of zero observations for the comment and citation variables, the results in regression Equations 1 and 2 were left skewed at “0” in the original quarterly dataset, which continued into the annual sample. It was decided then to transform at least one variable. Taking the natural log of (1 + ex-post lobbying), assisted to a certain degree in normalizing the variables distribution.

Descriptive statistics

Preliminary descriptive results from Table A1 demonstrate similar results with respect to comment letters and citations. Just as previously found, similar to Ban and You (2019) and Carpenter and Libgober (2018), citations of BHCs clearly outnumber comments by BHCs upon related proposed regulations. Further inspection leads one to believe that these are also highly salient regulations that potentially impact and restrict important revenue from sources such as trading, investment banking, and securitization. The correlation illustrated in Table A2 between comments and citations is somewhat high, at 0.44. Summary results indicate an annual maximum of 111 BHC final citations, with a minimum of 0 and a standard deviation of approximately 9 citations, while comments has an annual range from a minimum of 0 to a maximum of 21 with a standard deviation of approximately 3. The number of BHCs that were cited in the final rule form of regulation by agencies clearly are similar to the results for firms of larger asset size. Ex-post lobbying has a low level of correlation with citations, at 0.05, and 0.08 with comments and 0.129 with non-traditional revenues. While I transform all non-traditional revenue using the natural log, the raw non-traditional revenue variable has a mean value of \$3,654,232,000, with a standard deviation of \$7,984,043,000 and a minimum of \$4,201,000 with a maximum value of \$62,000,000,000. A strong relationship exists between ex-post lobbying and its effect upon the dependent variable citations in Equation 1. The same is true of the relationship between ex-post lobbying the dependent variable non-traditional revenue in Equation 2. Table A1 includes descriptive statistics, while Table A2 includes the correlation matrix. Both tables are located in the data appendix.

Robustness measures

All independent and control variables in Equations 1 and 2 were lagged by one period with the intent to prevent reverse causality. As the total assets' variable is highly correlated with both independent and control variables, this is transformed and orthogonalized. As a final step to ensure the integrity of the panel data, in Equation 1 we apply bank-fixed effects, while employing year dummy variables in the Tobit model estimation, in essence applying both firm and year fixed effects. The bank-fixed effects control for unobserved heterogeneity across BHCs, such as bank level strategy, managerial talent, and CEO compensation. Year fixed effects, in the form of dummy variables, control for changes in the political, regulatory, and institutional environments over the time span of 2003 to 2018. In the end, we applied bank and year fixed effects to both Equations 1 and 2, in addition to robust clustered standard errors at the BHC level.

Initial regressions - controls

Upon examining the control variable vector in Equations 1 and 2, found in Tables A3 and A4, the author finds overall that these variables remain statistically significant and consistent with theory.¹¹ Several variables within each regression lost significance in the control panel, as the data is transformed from quarterly to annually.

Bank lobbying may lead to riskier banking practices, including holding riskier loan portfolios (Igan and Lambert 2019). In the end, both regressions of the control variables upon both dependent variables do indeed illustrate the impact upon several aspects of bank performance. This begins to suggest a picture of large BHCs that lobby. A number of these banks lobby often, maintain larger non-traditional revenue sources, and pose higher risk as a result of higher leverage, loan loss provision, and liquidity levels (Gibson, Odabasioglu, and Padovani 2018; Igan and Lambert 2019).

IV. Discussion of results

The purpose of Equation 1, found in Table 3, is to examine the propensity of a BHC to lobby regulators, as reported in U.S. Congressional and financial regulatory reporting, and to comment on proposed regulation with the intent to have the BHC's argument cited in a final form of a regulation. Citation of a BHC's comment on a proposed regulation in its related final regulation demonstrates that, at the very least, the opinion of the BHC is heard (Ban and You 2019; Haeder and Yackee 2015; Rashin 2020). Equation 1 demonstrates a strong and positive relation of revolving door lobbyists, ex-post lobbying, and comments upon being cited in a final form of a regulation, i.e., citation. Each coefficient on the three independent variables illustrates a positive and significance level of $P < 0.01$. For a 1% increase in ex-post lobbying, the BHC will see an increase in the number of citations by an amount of 0.005 citations. To reiterate, correlation levels are fairly low, yet the correlation between comments and citations is at 0.44. This evidence leads me to accept Hypothesis 1. Found in Table A5, of the Data Appendix, this paper further includes a negative binomial regression model, similar to Ban and You (2019), for purposes of robustness. Table A5 demonstrates similar results for Equation 7, illustrating a positive strong relationship between ex-post lobbying, the dependent variable, and the number of citations. The dependent variable, citations, is a count variable, and the model estimates are consistent with the Tobit model applied in Equation 1. Table 5, which also includes Equation 1 regressions using Tobit and MLS estimation, further demonstrates the application of a fixed effects model, yet using year level dummy variables to enhance the robustness of estimates.¹²

It is evident the important role which the revolving door lobbyist plays in lobbying campaigns for large BHCs. As illustrated in Equation 1, Table 5, the use of a revolving door lobbyist by a BHC may indeed lead to a final rule citation and perhaps a favorable change in final regulation. There is no guarantee that any accompanying rule change will be affirmative, but it is the larger institutions, such as BHCs, that are able to obtain favorable rule change (Libgober and Carpenter 2018; Rashin 2020). In interpreting the regression coefficients in Equation 1, we find that a 1% increase in the use of revolving door lobbyists by BHCs leads to an increase of .092% in the

¹¹ Table A3 and Table A4 illustrate the control variable regressions for Equations 1 and 2, which are found in the data Appendix.

¹² We include a pooled OLS model of regression for Equation 2. This table is included for robustness measures and is found at the end of the data Appendix.

Table 3. Regression Equation 1.

Dependent Variable: Citations	
$Citation_{i,t} = B_0 + B_1 Ln(1 + Ex - postlobby)_{i,t-1} + B_2 Comments_{i,t-1} + \delta_1 RDL_{i,t-1} + \phi_C X_{i,t-1} + v_i + v_t + \varepsilon_{i,t}$	
Variables	Tobit
Ex-post Lobbying	0.809*** (0.283)
Comments	1.798*** (0.440)
Revolving Door Lobbyist	8.791*** (3.093)
Ln (Total Assets)	2.698** (1.116)
Tier One Leverage	-0.967** (0.442)
Total Loans to Total Assets	5.758 (7.375)
Share of Deposit Funding	-16.41** (6.897)
Profitability	23.22 (24.32)
Expected Credit Risk	-2.855 (243.1)
Non-Interest Income Share	7.605 (5.669)
Annual Asset Growth	-2.607 (2.760)
Constant	-23.05*** (6.550)
BHC Fixed Effects	Yes
Year Fixed Effects	Yes
Observations	468
Number of Bank Holding Companies	51

Notes: Robust standard errors appear in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The dependent variable, Citations, is censored at the left-hand side by zero. In this table, the author applied a Tobit model using maximum likelihood estimation with clustered errors at BHC level. Several forms of this regression model were performed that include bank and year fixed effects. As a robustness measure, Table 10, incorporates a negative binomial model using random effects estimation, that is found in the data appendix.

Table 4. Regression Equation 2.

Dependent Variable: Non-traditional revenue	
$Non - TraditionalRevenue_{i,t}$ $= \gamma_0 + \gamma_1 Ln(1 + Ex - postLobby)_{i,t-1} + \gamma_2 Citations_{i,t-1}$ $+ \delta_1 RevolvingDoorLobbyist_{i,t-1} + \phi_C X_{i,t-1} + v_i + v_t + \varepsilon_{i,t}$	
Variables	Fixed Effects
Citations	0.002
	(0.003)
Ex-post Lobbying	0.015***
	(0.005)
Revolving Door Lobbyist	0.0319
	(0.059)
Ln (Total Assets)	0.0488
	(0.072)
Tier One Leverage	6.68e-05
	(0.000)
Total Loans to Total Assets	-1.492***
	(0.467)
Share of Deposit Funding	-0.897**
	(0.365)
Profitability	0.505
	(0.396)
Expected Credit Risk	13.85**
	(6.676)
Non-Interest Income Share	0.313***
	(0.117)
Annual Asset Growth	0.215***
	(0.061)
Constant	14.16***
	(0.292)
BHC Fixed Effects	Yes
Year Fixed Effects	Yes
Observations	467
R-squared	0.129
Number of Bank Holding Companies	51

Notes: Robust standard errors appear in parentheses. *** p<0.01, ** p<0.05, * p<0.1. A primary interest is to study the effects of the hypothesized variables across time. As the main regression model for Equation 2 makes use of within estimators, we applied a robust fixed effects panel data regression model using 51 BHCs from years 2003 to 2018. Further, in Table 11 in the data appendix section, the author includes a pooled ordinary least squares regression model as a robust and secondary treatment of the panel data.

Table 5. Regression Equation 1.

Equation 1. Dependent variable: Citations	
$Citation_{i,t} = B_0 + B_1 Ln(1 + Ex - postlobby)_{i,t-1} + B_2 Comments_{i,t-1} + \delta_1 RDL_{i,t-1} + \phi_C X_{i,t-1} + v_i + v_t + \varepsilon_{i,t}$	
Variables	Tobit
Ex-post Lobbying	0.504**
	(0.244)
Comments	0.852**
	(0.391)
Revolving Door Lobbyist	9.292***
	(3.371)
Ln (Total Assets)	4.349***
	(1.284)
Tier One Leverage	-1.860***
	(0.712)
Total Loans to Total Assets	6.100
	(8.995)
Share of Deposit Funding	-18.60***
	(6.847)
Profitability	34.02
	(28.23)
Expected Credit Risk	323.2
	(380.2)
Non-Interest Income Share	9.262
	(6.341)
Annual Asset Growth	-3.012
	(3.602)
YR1	-
YR2	-
YR3	2.337
	(9.391)
YR4	1.216
	(9.933)
YR5	14.54*
	(8.360)
YR6	9.525
	(8.332)
YR7	18.87**
	(7.798)
YR8	7.045
	(8.753)
YR9	8.895

	(7.553)
YR10	26.35***
	(8.845)
YR11	24.72***
	(9.368)
YR12	27.40***
	(8.835)
YR13	17.50***
	(6.048)
YR14	14.04***
	(5.067)
YR15	17.53***
	(6.170)
YR16	-
Constant	-29.60***
	(8.860)
BHC Fixed Effects	Yes
Year Fixed Effects	Yes
Observations	468
Number of Bank Holding Companies	51

Notes: Robust standard errors appear in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Each independent and control variable was lagged by one period in an attempt to mitigate for reverse causality. The author applied two types of regression models. The dependent variable, Citations, is censored at the left-hand side by zero. First, we used a Tobit model using maximum likelihood estimation with clustered errors at BHC level. In this table, a similar iteration of Equation 1 incorporates the fixed effects Tobit application, while using year dummy variables. In Table A5, due to the dependent variable, Citations, which acts as a count variable, the author applied a negative binomial model using random effects estimation. The latter application acts as a robustness measure.

number of citations of a firm's comment(s) that are mentioned in the related final regulation. Furthermore, as a natural extension, results from Equation 2 lend an amount of credence to how BHCs use revolving door lobbyists as an instrument of influence, together or separately, with other mechanisms of influence. The coefficient for revolving door lobbyist in Equation 2 using the application of a fixed effects panel data model is not found to be significant. For robustness purposes, the pooled OLS regression of Equation 2 demonstrates a significant and positive relation between revolving door lobbyist and non-traditional revenue at the 10% level. Moreover, the correlation coefficients between revolving door lobbyist and citations from Equation 1 and non-traditional revenue from Equation 2 demonstrate significance below a 5% level, as found in Table A2. The overall evidence leads me to accept Hypothesis 2, where the use of a revolving door lobbyist leads to an increase in a BHC's citations or an increase in non-traditional revenues or both.

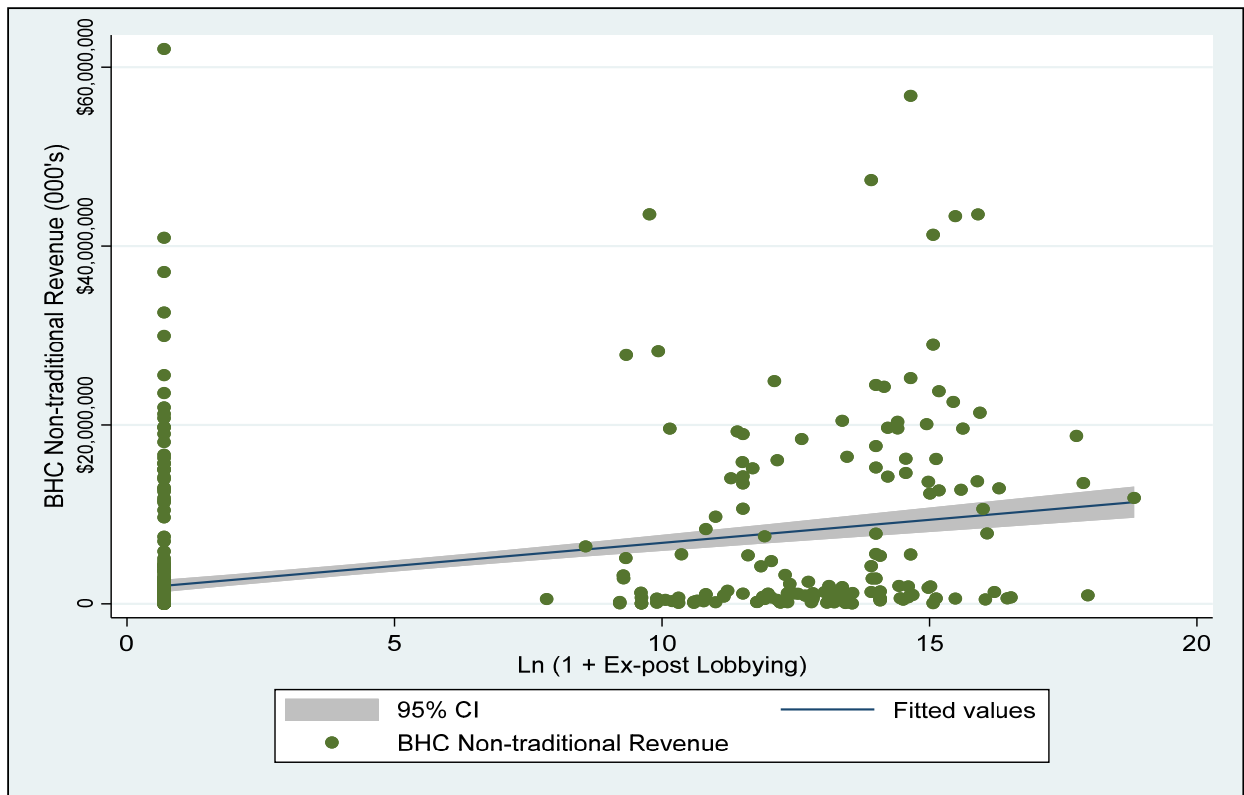
The objective of Equation 2 is to explore the use of multiple forms of ex-post lobbying and if having a BHC's comment cited in a final regulation leads to an increase in non-traditional revenue.

Equation 2 is located in Table 4. While the citations variable shows no significance in the pooled OLS regression, the panel data fixed effects model demonstrates a significant relation for ex-post lobbying. For a 1% increase in ex-post lobbying, we find a 0.000148% increase in non-traditional revenue.

The results of Equations 1 and 2 lead to partial evidence for accepting Hypothesis 3. While we are quite cautious, the evidence seems to indicate the examination of BHC participation in the regulatory promulgation process is progressing in the correct direction.

While we applied the pooled OLS regression as a robustness measure, I do believe there is partial evidence for the validity of these hypotheses using this set of panel data. The entry and exit of BHCs is quite common for a number of reasons. These reasons can include: a BHC that enters or exits the sample due to the renaming of the bank, the BHC falling below the original consolidated asset value of \$10 billion, the BHC undergoing a merger, or an acquisition that changes its charter. Whatever the reason or reasons may be, the panel is unbalanced, leading several BHCs to exist within the sample only for a portion of 2003 to 2018. Wooldridge (2019) notes that a pooled OLS is employed when one selects a different sample for the period of the panel data, which may lead to partial validity of the pooled OLS estimates applied in this paper.

Figure 1. Estimated impact of BHC ex-post lobbying upon non-traditional revenue using a 95% confidence interval.



V. Conclusion

The first contribution of this research emanates from its unique focus and perspective. A majority of the recent studies within this literature stream of lobbying upon regulation has analyzed a broad spectrum of firm types and industry sectors. This paper takes a narrower approach by focusing on one unique interest group, bank holding companies. The first research question that this paper poses is what is the propensity of a bank holding company to lobby financial regulators and what do they stand to gain? We find that increasing the propensity of comments and the hiring of a former agency official while lobbying the regulator leads to a higher likelihood of having the BHC's opinion heard and their stance mentioned in the final regulation.

The second research question that this paper asks is: Do the various forms of lobbying a regulator or being cited in a final regulation following a visitation or comment lead to a change in the non-traditional revenue of a BHC? Following an examination of lobbying of the U.S. Congress by BHCs, Gibson, Odabasioglu, and Padovani (2018) identify a need for future research into other forms of political participation. Therefore, another contribution this research provides is to fill a part of this gap in the literature by answering this second research question. There exists a positive relationship which points to an increase in ex-post lobbying of a BHC that leads to an increase of BHC's total non-traditional revenue based on regression results. In addition, an increase exists in the hiring of a revolving door lobbyist that will subsequently result in a rise of non-traditional revenues. While the citation variable in the regression of Equation 2 is insignificant, it still remains positive. Moreover, this paper finds a significant relationship between BHCs that comment upon citations in Equation 1. These findings are in keeping with recent research. We confirm that BHCs may lobby regulators to preserve gains in all important revenue sources or to increase potentially risky non-traditional revenue streams.

The final contribution of this research is the creation of an original data set. Spanning the years 2003 to 2018, the financial and political activity of each sample BHC is identified on a quarterly basis. The SQL database combines three forms of BHC political participation: lobbying, both ex-ante, or before passage; ex-post, revolving door lobbyists; and regulations across nine financial regulatory agencies. The use of unique natural language processing matching algorithms identify which banks are mentioned in each of 180 web-parsed pairs of proposed and final form regulations.

Limitations and implications for future research

The sample included in this paper involves 51 bank holding companies. One potential limitation relates to the sample size of this study and the related comment and citation activity of BHCs. When comparing the 51 BHCs to the samples of several recent papers, a large difference in sample size is apparent. This could be one potential reason for the large number of zero observations. Just as previous studies have illustrated, market share and asset size matter when commenting and being cited in a final rule.

Another limitation relates to meeting data in the wake of the Dodd-Frank reform and formulation of related proposed rules. While all data on commenting is available from 2003 to 2018, meeting data was not. Meeting data is quite helpful in identifying and determining parties represented on both sides.

The implications of the evidence presented in this paper are wide ranging, touching upon banking, finance, and the rulemaking bodies of literature. Two important areas of future study are implicated by this research. The first area involves whether and when the commenting of a BHC

leads to a favorable rule change and if this leads to regulatory relief. Another important area that warrants more investigation is the impact of a rule change due to regulatory lobbying on the specific components of non-traditional and traditional revenue.

Large bank holding companies will and are always adapting to the present and future regulatory landscape.

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Data Appendix

Table A1. Descriptive raw statistics.

Variable	Number of observations	Mean	Maximum	Minimum	Standard deviation	Fifth percentile
Non-traditional Revenue	592	\$3,654,232	\$62,000,000	\$4,201	\$7,984,043	\$42,848
Citations	599	2.26	111.00	0.00	8.67	0.00
Comments	599	1.27	21.00	0.00	2.71	0.00
Ex-post Lobbying	598	3.34	18.83	0.00	5.78	0.00
Revolving Door Lobbyist	599	0.50	1.00	0.00	0.50	0.00
Total Assets	592	\$335,000,000	\$2,610,000,000	\$15,50,340	\$545,000,000	\$12,700,000
Tier One Leverage	573	11.13	878.92	-2.12	38.91	5.12
Total Loans to Total Assets	592	0.52	0.83	0.02	0.22	0.08
Share of deposit funding	588	0.23	0.89	0.00	0.17	0.00
Profitability	591	0.05	0.67	-0.54	0.07	-0.04
Expected Credit Risk	592	0.00	0.04	0.00	0.01	0.00
Non-Interest Income Share	592	0.50	4.36	0.07	0.28	0.20
Annual Asset Growth	540	0.03	4.21	-1.00	0.41	-0.66

Note: Dollar figures are in the thousands(000's) based upon the reporting figures drawn from the Federal U.S. Reserve's FR Y-9C quarterly reporting of Bank Holding Companies.

Table A2. Pairwise correlation matrix.

	Citations	Comments	Non-traditional Revenue	Total Assets	Tier One Leverage	Total Loans to Total Assets	Share of Deposit Funding	Profitability	Expected Credit Risk	Non-Interest Income Share	Ex-post Lobbying	Revolving Door Lobbyist
Citations	1.000											
Comments	0.447*	1.000										
Non-traditional Revenue	0.386*	0.456*	1.000									
Total Assets	0.346*	0.581*	0.659*	1.000								
Tier One Leverage	-0.022	-0.031	-0.046	-0.049	1.000							
Total Loans to Total Assets	-0.195*	-0.273*	-0.425*	-0.304*	0.029	1.000						
Share of Deposit Funding	-0.044	0.078	-0.127	0.095*	-0.057	-0.161*	1.000					
Profitability	0.025	0.000	0.056	0.002	0.003	-0.012	0.075	1.000				
Expected Credit Risk	-0.022	-0.032	-0.078	-0.034	-0.008	0.348*	-0.220*	-0.348*	1.000			
Non-Interest Income Share	-0.108	0.117*	0.181*	0.059	0.056	-0.545	-0.011	0.049	-0.160*	1.000		
Ex-post Lobbying	0.052	0.083*	0.122*	0.245*	-0.004	-0.027	0.022	0.006	0.030	-0.024	1.000	
Revolving Door Lobbyist	0.189*	0.259*	0.305*	0.291*	0.035	-0.295*	0.031	0.032	0.054	-0.250*	0.121*	1.000

Note: Correlation coefficients of 5% significance or less are starred, $P < (0.50)$ based on non-missing annual observations.

Table A3. Regression Equation 1. Control variables only.

Dependent Variable: Citations		
$Citation_{i,t} = B_0 + \phi_C X_{i,t-1} + v_i + v_t + \varepsilon_{i,t}$		
Variables		Tobit
Ln (Total Assets)		8.694***
		(1.912)
Tier One Leverage		-0.711
		(0.508)
Total Loans to Total Assets		-7.828
		(9.249)
Share of Deposit Funding		-17.87**
		(7.785)
Profitability		41.23
		(28.57)
Expected Credit Risk		516.7**
		(259.6)
Non-Interest Income Share		10.35
		(7.182)
Annual Asset Growth		-3.020
		(3.440)
Constant		-11.49
		(7.417)
BHC Fixed Effects		Yes
Year Fixed Effects		Yes
Observations		468
Number of Bank Holding Companies		51

Notes: Robust standard errors appear in parentheses; *** p<0.01, ** p<0.05, * p<0.1. The dependent variable, Citations, is censored at the left-hand side by zero. In the main regression, in Table 3, we performed a Fixed Effects Tobit model using Maximum Likelihood estimation with clustered errors at BHC level. Therefore, in this table, we applied a similar, yet different strategy, regressing only controls variables upon the dependent variable, Citations, using the fixed effects Tobit model. The coefficient estimates are consistent with theory.

Table A4. Regression Equation 2. Control variables only.

Dependent Variable: Non-traditional Revenue	
$Non - TraditionalRevenue_{i,t} = \gamma_0 + \phi_C X_{i,t-1} + v_i + v_t + \varepsilon_{i,t}$	
Variables	Fixed Effects
Ln (Total Assets)	0.115* (0.070)
Tier One Leverage	0.000 (0.000)
Total Loans to Total Assets	-1.551*** (0.466)
Share of Deposit Funding	-0.786** (0.365)
Profitability	0.613 (0.397)
Expected Credit Risk	19.55*** (6.446)
Non-Interest Income Share	0.291** (0.118)
Annual Asset Growth	0.207*** (0.062)
Constant	14.23*** (0.291)
BHC Fixed Effects	Yes
Year Fixed Effects	Yes
Observations	467
R-squared	0.105
Number of bank holding companies	51

Notes: Standard errors appear in parentheses; *** p<0.01, ** p<0.05, * p<0.1. Of primary interest is to study the effects of the hypothesized variables across time. In this table, while using within estimators, we applied a robust fixed effects model. This table demonstrates a control variable regression, where the estimates are consistent with theory.

Table A5. Regression Equation 1. Robustness model.

Dependent Variable: Citations	
$Citation_{i,t} = B_0 + B_1 Ln(1 + Ex - postlobby)_{i,t-1} + B_2 Comments_{i,t-1} + \delta_1 RDL_{i,t-1} + \phi_C X_{i,t-1} + v_i + v_t + \varepsilon_{i,t}$	
Variables	Negative Binomial
Ex-post Lobbying	0.051*** (0.018)
Comments	0.112*** (0.020)
Revolving Door Lobbyist	0.866*** (0.263)
Ln (Total Assets)	0.342*** (0.096)
Tier One Leverage	-0.086* (0.048)
Total Loans to Total Assets	1.323* (0.710)
Share of Deposit Funding	-1.240* (0.688)
Profitability	1.895 (1.406)
Expected Credit Risk	3.873 (21.88)
Non-Interest Income Share	0.613** (0.307)
Annual Asset Growth	-0.122 (0.333)
Constant	-3.348*** (0.524)
BHC Fixed Effects	Yes
Year Fixed Effects	Yes
Observations	468
Number of Bank Holding Companies	51

Notes: Robust standard errors appear in parentheses; *** p<0.01, ** p<0.05, * p<0.1. The dependent variable, Citations, is censored at the left-hand side by zero. In Table A5, due to this dependent variable that acts as a count variable, the author applied a negative binomial model using random effects estimation. The model is used as a robustness measure.

Table A6. Regression Equation 2. Robustness model.

Dependent Variable: Non-traditional revenue	
$Non - TraditionalRevenue_{i,t}$ $= \gamma_0 + \gamma_1 Ln(1 + Ex - postLobby)_{i,t-1} + \gamma_2 Citations_{i,t-1}$ $+ \delta_1 RevolvingDoorLobbyist_{i,t-1} + \phi_C X_{i,t-1} + v_i + v_t + \varepsilon_{i,t}$	
Variables	Pooled OLS
Citations	0.001 (0.007)
Ex-post Lobbying	0.014 (0.011)
Revolving Door Lobbyist	0.384* (0.205)
Ln (Total Assets)	1.075*** (0.010)
Tier One Leverage	-0.003*** (0.001)
Total Loans to Total Assets	-1.740** (0.761)
Share of Deposit Funding	-1.017 (0.696)
Profitability	2.868** (1.386)
Expected Credit Risk	7.023 (19.69)
Non-Interest Income Share	0.560 (0.679)
Annual Asset Growth	0.118 (0.204)
Constant	13.92*** (0.691)
BHC Fixed Effects	Yes
Year Fixed Effects	Yes
Observations	467
R-squared	0.663
Number of Bank Holding Companies	51

Notes: Robust standard errors appear in parentheses; *** p<0.01, ** p<0.05, * p<0.1 A primary interest is to study the effects of the hypothesized variables across time. In this table, the author includes a pooled ordinary least squares regression as a robust and secondary treatment of the panel data found in Equation 2.