

Inequality in Administrative Democracy: Methods and Evidence from Financial Rulemaking

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Abstract

Research on inequality overlooks administrative policymaking, where most U.S. law is currently made, under pressure from vast flows of money, lobbying, and political mobilization. Analyzing a new database of over 260,000 comments on agency rules implementing the Dodd-Frank Act, we identify the lobbying activities of over 6,000 organizations. Leveraging measures of organizations' wealth, participation in administrative politics, sophistication, and lobbying success, we provide the first large-scale assessment of wealth-based inequality in agency rulemaking. We find that wealthier organizations are more likely to participate in rulemaking and enjoy more success in shifting the content of federal agency rules. These patterns are not explained by membership differentials. More profit-driven organizations are also more likely to participate and enjoy more success in shifting the content of federal agency rules. Wealthier organizations' ability to marshal legal and technical expertise appears to be a key mechanism by which wealth leads to lobbying success.

Keywords Inequality; Bureaucratic Policymaking; Interest groups; Lobbying; Rulemaking; Financial Regulation

1 Introduction

Studies of political inequality have revealed profound and durable patterns where wealthier citizens have a disproportionate influence on legislative processes. Work in American politics by Bartels (2008), Baumgartner (2009), Hacker and Pierson (2010), Gilens (2012), Skocpol (2004), Schlozman et al. (2012), and others shows ties between economic and political inequality. In contrast to the large literature on inequality in legislative

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lawmaking, research on inequality in executive-branch agency policymaking is sparse. Fundamental questions about economic and political power have yet to be addressed systematically: Does wealth inequality drive differential lobbying participation during administrative policymaking? Are agency officials more likely to make policy changes that are suggested by wealthier organizations? And, if so, why?

Agency rulemaking has become the primary mode of policymaking in the United States. Agencies routinely use broad legislative grants of authority to make specific and legally-binding rules with vast social and economic effects (West, 1995; Kerwin and Furlong, 2018). Given the scale and importance of agency policymaking and the large volume of data on business and interest group lobbying, rulemaking presents a unique opportunity to study the relationship between wealth inequality and policy influence.

Several factors suggest that inequalities observed in legislative lawmaking persist in administrative policymaking. Business interests are the main lobbying participants in most agency rulemakings (Golden, 1998; Yackee and Yackee, 2006). Firms collectively spend hundreds of millions of dollars lobbying after a bill becomes law, including lobbying the agencies tasked with writing the implementing rules (You, 2017; Ban and You, 2019). Legislators who receive more corporate Political Action Committee (PAC) money from companies are much more likely to lobby federal agencies on behalf of those companies (Powell et al., 2022).

Scholars have focused on inequalities in legislative lobbying and influence in part because quantitative data exist in the form of legislative Lobbying Disclosure Act reports and congressional voting records. Parallel quantitative data on lobbying and policy outcomes are critical to understanding agency policymaking. One major barrier to scholarship on inequality in administrative policymaking has been the lack of measures of wealth inequality, participation, and influence of organizations in agency rulemaking.

To investigate the link between economic and political inequality, we focus on agency rules implementing the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (hereafter Dodd-Frank). We make three primary contributions. First, we create a new database of all 264,709 public comments on proposed rules implementing Dodd-Frank, focusing especially on comments from companies and other organizations. Our data cover over eight hundred regulatory actions (part of 239 rulemaking processes) across seven agencies. Second, we develop a suite of new measurement and analytic tools to study who lobbies during rulemaking, how sophisticated their advocacy efforts are, and which organizations influence final rules (and which do not). Third, we leverage these data and tools to provide the first large-scale assessment of the plausible impacts of wealth inequality during agency policymaking. In doing so, we answer questions on inequality and lobbying participation which were, up to now, only answerable in the legislative process. Our research design advances past work by comparing commenting behavior among similar organizations. For example, we compare the commenting behavior of large banks to other large banks. In doing so, we control for many known sources

of variance in commenting behavior, which yields cleaner tests of the relationship between wealth and policy influence.

We show that wealthy organizations are more likely to participate in administrative policymaking, and even when the less wealthy participate, wealthy organizations are more likely to have their demands met. Six main findings support the conclusion. First, we find that wealthier organizations participate in agency rulemaking at higher rates than less wealthy organizations. We replicate this result within and across various types of for-profit firms and non-profit organizations. Second, we find that for-profit banks are more likely to participate than non-profit banks such as credit unions and savings associations. Third, we find that organizations that spend more money on political campaigns and lobbying are more likely to participate in rulemaking. Fourth, among organizations that participate in rulemaking, we show that organizations that participate frequently are wealthier than those that participate infrequently. Fifth, wealthier organizations advance more technically and legally sophisticated comments than less wealthy organizations. Finally, wealthier organizations are more successful in shifting the content of federal agency rules through their comments.

Using causal mediation analysis, we find that the ability of wealthy organizations to marshall legal and technical expertise appears to be a key mechanism by which wealth leads to lobbying success. Money buys technical and legal sophistication, and sophistication appears to buy changes to regulatory policy content. The sophistication of lobbying appears to explain a large share of the relationship between wealth and lobbying success. In contrast, campaign donations or total lobbying spending do not appear to explain a significant share of the relationship between wealth and lobbying success.

These results have implications for policy reforms. For example, they suggest that limits on campaign contributions would have little effect on the lobbying success of wealthy organizations at this stage of the policy process. However, to the extent that the sophistication mechanism is causal, our results suggest that reform efforts targeting inequalities in access to legal and technical expertise—such as those giving resource subsidies to poorer organizations to write more sophisticated comments and policy recommendations—may be effective in moderating the disproportionate influence of wealth inequality and thus advance administrative democracy.

2 Theory

The past two decades have witnessed an outpouring of political science research on how economic inequality shapes policy outcomes that generate further economic and social inequality. [Bartels \(2008\)](#) established an important empirical case for political inequality by showing that legislative voting patterns in the U.S. Senate disproportionately reflect the preferences of those individuals at the highest levels of the income distribution. [Hacker and Pierson \(2010\)](#) described a “winner-take-all politics” by which wealthier Americans improved and

secured their economic prospects under both liberal and conservative political leadership while the prospects for middle- and working-class Americans stagnated. In *Affluence and Influence*, Gilens (2012) further systematized these findings using survey data and legislative voting records. Many studies support and refine these observations (e.g., Baumgartner, 2009; Winters and Page, 2009; Kelly and Enns, 2010; Schlozman et al., 2012; Page et al., 2013; Gilens and Page, 2014; Witko et al., 2021).

This empirical portrait of the relationship between wealth and political inequality in the U.S. remains severely incomplete, however. Policymaking does not stop when Congress passes a law. Many critical policy decisions are made by administrative agencies, in part because the legislature delegates significant policymaking authority and discretion to these agencies to make public policy (Epstein and O'Halloran, 1999; Huber and Shipan, 2002; Haeder and Yackee, 2020). Because agencies make policy, moneyed interests spend considerable resources to influence administrative and executive decision-making (Haeder and Yackee, 2015; You, 2017). These dynamics are often studied under the concept of regulatory capture (Carpenter and Moss, 2013). Still, few regulatory capture projects speak to questions of wealth-based or economic inequality. Likewise, few studies of political inequality address bureaucratic policymaking.

While Congress routinely passes statutes, their implementation almost always requires federal agencies to devise legally binding standards and procedures (i.e., rules) that make the legislation practically effective (West, 1995; Kerwin and Furlong, 2018). This kind of agency policymaking is pervasive; in 2018 alone, federal agencies finalized over 3,300 rules.

The rulemaking process creates opportunities for influence. The Administrative Procedure Act of 1946 (APA) governs the federal rulemaking process. It requires federal agencies to solicit public comments on their draft policy proposals (also called Notices of Proposed Rulemaking or proposed rules) and to consider any substantive comments before issuing a legally-binding final rule. Agency officials have some discretion to make changes to the proposed rule text based on public comments. Given the potential impact of agency-issued regulations, the firms and other organizations most affected often attempt to influence regulatory policy content by submitting public comments.¹

The exclusion of administrative processes from the study of inequality is a major omission, as bureaucracies are “an essential site of political contestation” (SoRelle, 2020), especially over policies with diffuse beneficiaries and concentrated costs (Lowi, 1964). Financial regulation is a particularly important area as a site of inequality, as the highly balkanized institutional landscape appears set up in such a way as to advantage financial institutions and to frustrate ordinary citizens and consumers (SoRelle, 2020). Indeed, as Barton (2022) notes, financial

¹Federal agency restrictions on ex parte (or “off the public record”) lobbying after the issuance of a proposed rule generally allow researchers to use comments during notice and comment rulemaking to study lobbying (Yackee, 2012).

deregulation since the 1970s has been a surprisingly bipartisan project, with Democrats having advanced these policies even despite their tight relationships with labor unions that have strenuously opposed the weakening of financial rules. Yet policy entrepreneurs in both parties have succeeded in designing laws to delegate decisions to regulators in ways that prevent legislators from being fully aware of their policy choices. Indeed, each rulemaking process presents an opportunity for the financial industry and others to lobby the government agency for policy change. Even the Dodd-Frank Act, which was conceived as an attempt to re-regulate the financial sector, did so while handing considerable authority to federal financial agencies, with over 300 provisions authorizing new rulemaking (Copeland, 2010). At the same time as the Dodd-Frank unquestionably sought (and in many cases succeeded) in strengthening prudential and consumer regulation (Engel and McCoy, 2011), it did so while doing relatively little to change the key structural and individual advantages that financial institutions possess (see, e.g., Young, 2012; Young and Pagliari, 2017a; Braun, 2018; Young et al., 2017; James et al., 2021).

The handful of existing studies that focus on financial rulemaking also present mixed findings about the policy impact of wealth inequality. These studies—which tend to focus on a single agency or a single rule—raise important questions for future scholarship. For example, there are mixed findings regarding the extent of bias in who is able to participate in financial rulemaking. Gordon and Rosenthal (2020) found that a diverse coalition of actors came together to counter the role of larger and more established regulated entities in credit risk retention regulation (see also Ziegler and Woolley, 2016). However, Young and Pagliari (2017b) found that stakeholders beyond affected firms are much less likely to mobilize in the financial sector, especially when a financial rule is technically complex.

Generally, research on bureaucratic politics shows that business interests are well-represented in rulemaking. Wealthier organizations, such as businesses, participate in agency rulemaking by submitting comments at a greater rate than other less wealthy organized interests, such as labor and public interest organizations (Yackee and Yackee, 2006). Past research theorizes that the high costs associated with public comment submission are one reason for this bias. Knowing when and how to participate as regulation is being formulated requires an organization to monitor the bureaucracy's rulemaking activities, which can be complex and arcane (Kerwin and Furlong, 2018; Rossi, 1997). Business interests may pay these high participation costs more readily (Jewell and Bero, 2006). Krawiec (2013) studied public participation patterns early in the rulemaking process for section 619 of Dodd-Frank (commonly known as the Volcker Rule). She found that comments from financial industry firms were more detailed, complex, and lengthy than those from non-financial firms.

Research also shows that business interests are influential in rulemaking. Comments from businesses on proposed transportation and labor regulations better predicted policy changes than non-business comments (Yackee and Yackee, 2006). Similarly, regulatory policy is more likely to change during U.S. Office of Management

and Budget's (OMB) review when more business interests lobby OMB ([Haeder and Yackee, 2015](#)). However, the extent to which this bias toward business interests is a result of inequalities in the resources that businesses and non-business interests have for lobbying agencies is less clear. Studying a sample of Securities and Exchange Commission rules following Dodd-Frank, [Ban and You \(2019\)](#) concluded that the resources an organization devotes to lobbying appeared to influence the likelihood that the SEC would list an organization's name in its final rule. In contrast, [Rashin \(2020\)](#) examined thousands of public comments on SEC rules and found that organization resources did not appear to correlate with a commenter's ability to secure policy changes.

Another strand of recent research has suggested a mechanism by which traditionally disadvantaged interests may curb business influence during rulemaking: band together to lobby in diverse coalitions ([Dwidar, 2021b,a](#)). These studies point to continued inequalities: only certain types of coalitions appear to hold policy influence over agency rules, including those with greater resources. This research suggests that inequalities *among* non-profit interest groups demand scholarly attention, in addition to the relative influence of business *versus* non-profit groups.

Because scholars have yet to directly measure the wealth of interest groups and the sophistication of comments, we do not know if businesses enjoy greater influence *because* of wealth and sophisticated lobbying. The effect of wealth inequality on agency policymaking thus remains an open question.

2.1 Wealth Inequality Hypotheses

We investigate the role that wealth inequality may play during the development of agency rules. We group our arguments under two categories, representing two potential biases²: (1) potential biases in who participates and (2) potential biases in who has influence. We develop several hypotheses about each form of bias.

2.1.1 Differential Lobbying Participation

Wealthy organizations are better able to pay the up-front costs of lobbying. While past research has focused on differences in lobbying participation *across* different organization types (i.e., business firms versus public interest groups), we go a step further to address the effects of wealth differentials *within* organizations of a similar type. For example, we theorize that, even among banks, wealthier banks will participate in rulemaking via the submission of comments on financial rules more often than banks with fewer assets. By comparing similar organizations, we can better isolate whether wealth inequality drives differential lobbying participation in rulemaking.

Differential Participation Hypothesis (H1): Organizations that comment on proposed rules are wealthier than organizations that do not comment on proposed rules.

²Here we refer to bias in the descriptive, Schattschneider-ian, sense of a system favoring the wealthy ([Schnattschneider, 1960](#))

Differential participation may also be driven by the concentration of the costs and benefits of regulatory lobbying (see broadly, [Lowi, 1964](#); [Olson, 1965](#); [Wilson, 1989](#)). For-profit organizations—especially regulated firms—tend to have concentrated stakes in regulations. Wealthy profit-seekers have especially strong incentives and the ability to lobby in rulemaking ([Lib, 2020](#); [Libgober, 2020](#)). Thus, we anticipate differences in participation between for-profit businesses and the industry associations that represent them and other non-profit organizations.

Profit-motivated Participation Hypothesis (H2): Profit-seeking organizations and industry associations will be more likely to comment than other non-profit organizations.

Moreover, we theorize that wealth inequalities in lobbying participation will persist even among those organizations that can pay the initial costs of rulemaking participation. Stated differently, when focused on those entities that have submitted at least one comment to a Dodd-Frank regulation, we argue that more wealthy organizations will, again, hold an advantage over less wealthy organizations by participating in more rulemaking processes.

Differential Frequency of Participation Hypothesis (H3): Among organizations commenting on rulemaking, organizations with greater wealth comment on more rules.

2.1.2 Differential Lobbying Success

Existing research hints at a differential lobbying benefit attached to wealth during rulemaking. For instance, [Haeder and Yackee \(2015\)](#) find more policy change during rulemaking when business interests are more active than other types of organizations, such as public interest groups. Yet, such research does not provide a clean test of wealth inequality. After all, some businesses are large while some are small; some non-profits hold major financial assets while others do not. We thus seek to understand whether wealth inequality drives lobbying influence during rulemaking and whether wealthier organizations see greater lobbying success during rulemaking.

Differential Lobbying Success Hypothesis (H4): Wealthier organizations are more successful in shifting the content of agency rules.

Research suggests wealthier organizations are more influential because they are disproportionately able to marshal the technical expertise necessary to write sophisticated comments for rules ([Wagner et al., 2011](#)). Moreover, agency officials pay greater attention to abstract and technical arguments, such as those in comments from business organizations, while often minimizing the moral and personal arguments found in less

sophisticated comments from individuals (Jewell and Bero, 2006; Mendelson, 2011). Additionally, non-industry comments often lack the specificity and detail that agencies need to change policy (Krawiec, 2013). Consequently, we hypothesize that wealthier entities utilize their resources to produce comments with greater sophistication than less well-resourced groups and that these more sophisticated comments will be more impactful.

Differential Sophistication Hypothesis (H5): Wealthier organizations will use more technical and sophisticated language when commenting on proposed rules.

Dividends of Sophistication Hypothesis (H6): Comments from wealthier organizations will be more successful in affecting the content of agency rules because of comment sophistication.

Together, these hypotheses assess the role of wealth inequality in creating biases both in who participates and who has influence. They can be summarized as (1) wealthy organizations are better able to participate and (2) even when the less wealthy participate, wealthy organizations are more likely to have their demands met. The hypotheses also identify a major theorized mechanism of lobbying influence: that wealthy organizations achieve regulatory policy influence via the legal and technical sophistication of their comments on proposed rules.

3 Data and Methods

To assess the extent of inequality in financial rulemaking, we assembled data on draft and final rules, comments on those rules, the wealth of various organizations, political spending, and lobbying spending. Data sources included the Federal Register, Regulations.gov, Wharton Research Data Services, the Center for Responsive Politics, Federal Financial Institutions Examinations Council, and the Internal Revenue Service. Using comment text and metadata, we link comments to the organizations that submitted them and metadata about each organization that allows us to measure its resources.

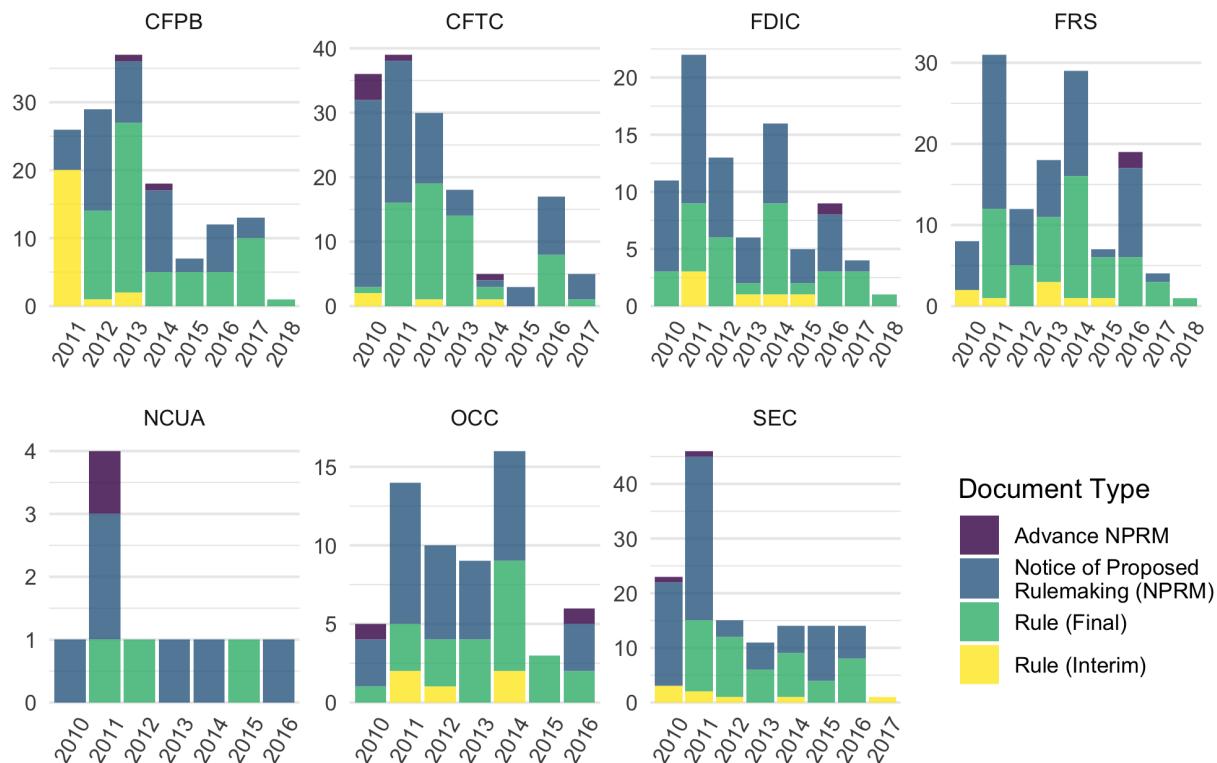
3.1 Agency Rules & Public Comments

From the Federal Register, we collected the text of all rules promulgated under authorities granted by Dodd-Frank between its enactment on July 20, 2010, and July 8, 2018, by the seven primary financial regulators tasked with writing rules under the Dodd-Frank Act: the Consumer Financial Protection Bureau (CFPB), the Commodity Futures Trading Commission (CFTC), the Federal Deposit Insurance Corporation (FDIC), Federal Reserve (FRS), National Credit Union Administration (NCUA), the Office of the Comptroller of the Currency (OCC), the Securities and Exchange Commission (SEC). We also collected all public comments and comment metadata available on these rules from each agency's website or Regulations.gov. In doing so, we collected

key information, including the name of the entity submitting the comment and the comment submission date. We also collected the text of all comments from comment submission forms and file attachments. These data include 264,709 comments on 239 separate rulemaking dockets, covering 802 regulatory actions issued by one or more of these seven agencies.³

Figure 1 shows significant variation in regulatory activity across these agencies. The largest agency in our sample by regulatory volume is the CFPB, while the smallest is NCUA. The figure also shows considerable variation in the range of regulatory actions, including advanced notices of proposed rulemaking (ANPRMs), proposed rules, interim final rules, and final rules.

Figure 1: Dodd-Frank Act Implementing Actions by Agency. Counts of regulatory acts by agency and by year. Regulatory acts include ANPRM, NPRM, Interim Rule, and Final Rules. Only actions implementing Dodd-Frank are included. Note that one complete rulemaking process typically has two and sometimes more associated actions.



³The law firm Davis Polk LLP maintains a list of Dodd-Frank-related rules. Each rule in our sample may be considered a set of connected regulatory actions, generally including a proposed and final rule connected by a Regulation Identifier Number (RIN). We count jointly-issued rules as two rules because agencies collected comments separately.

3.2 The Wealth of Organizations

Our wealth inequality hypotheses focus on the lobbying behavior of organizations during rulemaking. As a result, we developed a suite of new measurement and analytic tools designed to capture measures of wealth for organizations and then linked these measures to lobbying activities. The final dataset is the subset of all comments on Dodd-Frank rules that match an organization with some form of wealth data. This dataset allows us to compare the wealth of organizations that commented on financial rules to the wealth of similar organizations that did not comment on these rules.

The first step in creating the dataset was collecting and digitizing the texts of all public comments on Dodd-Frank rules. We then extracted entity names and matched them to organizations in databases that yield information on wealth. No single database provides information on wealth for all types of organizations. We thus cast a wide net and identified multiple databases of organizations that might participate in financial rulemaking. The six databases below contain nearly 500,000 banks, credit unions, publicly traded companies, and non-profits. We identify 52,672 comments submitted by organizations that appear in one or more of the datasets described below. These databases are:

1. Financial data, including market capitalization, for all publicly traded companies listed on U.S. exchanges during our analysis time frame from the Wharton Research Data Service's Compustat database.
2. Separately, market capitalization for all corporations that filed disclosures with the SEC and are thus listed in the SEC's Central Index Key (CIK) database.
3. Assets under management for all bank and bank-like entities covered by the FDIC.
4. Assets under management for all U.S. credit unions from consolidated call reports published by the NCUA.
5. Total assets and annual revenue for all non-profit organizations as reported by Internal Revenue Service 990 forms.
6. Political Action Committee (PAC) donations from all organizations filing campaign disclosure reports with the Federal Election Commission, as compiled by the Center for Responsive Politics. These reports allow us to calculate each organization's average annual PAC contributions.
7. Lobbying expenditures, as compiled by the Center for Responsive Politics from Lobbying Disclosure Act reports. We then calculate the average annual lobbying expenditures for each organization.

Next, we used an iterative matching procedure to match organizations in these six datasets to those organizations that commented on at least one Dodd-Frank rule. This step took considerable innovation because the names that organizations use to submit comments and the names by which they appear in various databases can differ. Our matching procedure involved several steps. We first identified comments that were likely from an organization, excluding those that were from individuals.⁴ We then linked these comments to the organization with the best matching name or to no organization when our matching algorithm did not identify a high-probability match in any of the databases. We spot-checked our processes for false positive matches by inspecting organizations that matched many comments and false negatives by inspecting especially long or sophisticated comments that did not match a known organization. We improved the matching algorithm through dozens of iterations and added post hoc corrections. This included hand-validating matches for over 30,000 comments, including all comments from entities that submitted 10 or more comments.

These procedures resulted in a dataset of 5,869 distinct organizations that submitted 52,672 unique comments on one or more Dodd-Frank rules. Below, we use these data to compare the wealth of commenting organizations to the 27,064 similar organizations in one of the above wealth databases that did not comment on a Dodd-Frank regulation.

Figure 2: Number of Organizations by Type and Agency to which they Commented. Counts of distinct organizations that have submitted comments to each financial regulator by organizational type. These counts reflect only those comments that have been matched to an organization. The lowest match rate (at the CFPB) still exceeds 20%. See the appendix.

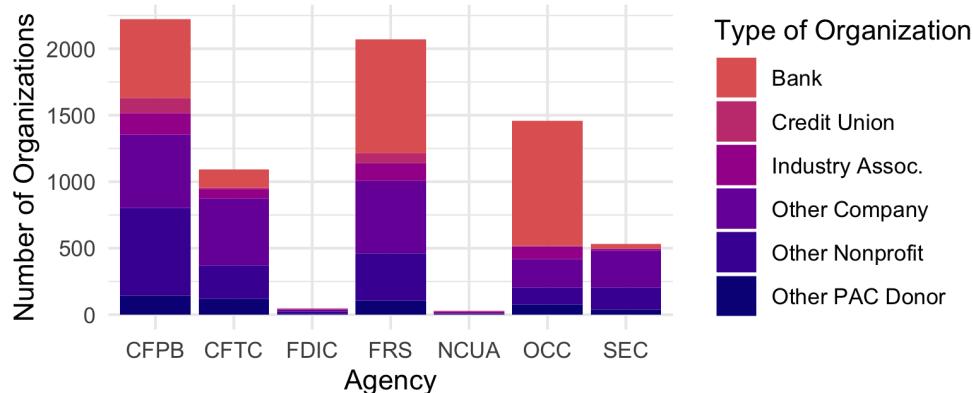
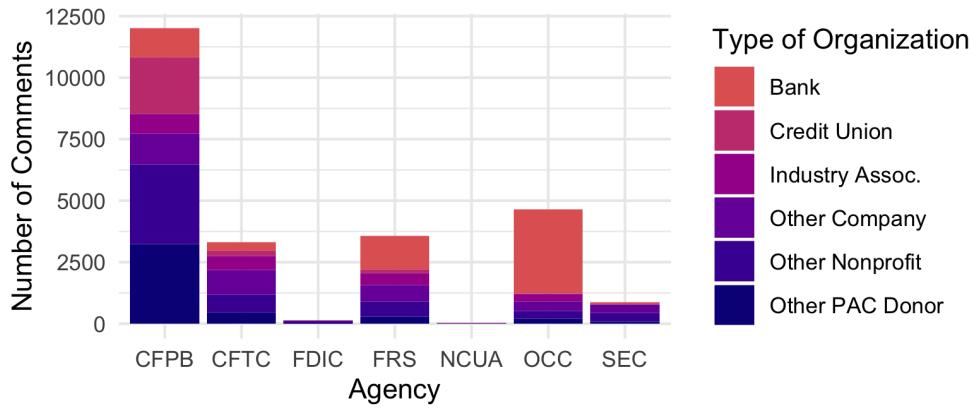


Figure 2 shows the number of unique commenting organizations matched to each database by the agency or agencies to which they submitted comments.⁵ Agencies include the Consumer Financial Protection Bureau

⁴Our study design purposefully sets aside comments from individuals, most of which are form comments, because previous research establishes that form comments are almost always part of a larger “campaign” orchestrated by an organization, and that the organizations that mobilize mass comment campaigns also submit technical comments on the same rules (Judge-Lord, 2021). Those technical comments from organizations are included in our data.

⁵These counts reflect only those comments matched to an organization. Descriptives and details about the matching process are in the appendix.

Figure 3: Number of Comments by Organization Type and Agency. Counts of comments from organizations that have submitted comments to each financial regulator by organizational type. These counts reflect only those comments that have been matched to an organization. Details about the match rate are in the appendix.



(CFPB), Commodity Futures Trading Commission (CFTC), Federal Deposit Insurance Corporation (FDIC), Federal Reserve (FRS), National Credit Union Administration (NCUA), Office of the Comptroller of the Currency (OCC), and Securities and Exchange Commission (SEC). Across all agencies except for the Federal Reserve (FRS), most commenting organizations are non-profits. The next most common type of commenter was federally-insured (FDIC-insured) banks (hereafter “banks”). Organizations that filed with the SEC and donors to PACs were less common. Figure 3 shows the number of comments submitted to each agency by an organization matched to each database described above. There was considerable variation in the number of comments from organizations per rule. For all rules that received more than 25 comments, we matched at least two organizations to asset data. The agency with the largest median number of comments from organizations was the CFPB at 21.

3.3 Profit Motives

We use an organization’s legal incorporation status to infer profit motivations. Some 501(c)(3) non-profits, such as industry associations, are formed to advance narrow private interests. While our data on non-profits does not perfectly capture the extent to which organizations advance public or private interests, we classify an organization as representing “profit-seeking” interests if it is incorporated as either a for-profit company or an industry association.

We also leverage variation in types of banking institutions to infer profit motivations. Compared to credit unions and savings associations, commercial banks’ legal and organizational structures make them more profit-oriented. Commercial banks are often large corporations managed by a board selected by shareholders and tend to serve corporations and wealthier, profit-motivated clients. In contrast, savings associations are chartered

with the narrow purpose of providing affordable residential mortgages. Both types of banks may hold large volumes of assets, but they have very different clients.

3.4 Comment Sophistication

We measure comment sophistication by counting the technical terms in each comment. To capture technical sophistication with respect to the use of finance and banking jargon, we use the Oxford Dictionary of Finance and Banking, which includes 5,260 finance and banking terms. To measure legal sophistication, we count legal citations (for details, see the appendix). When an organization submits a comment with multiple attachments, we measure sophistication by summing up the technical terms and legal citations across all submitted documents. This approach follows the intuition that attachments with additional technical language reflect additional sophistication.

3.5 Lobbying Success

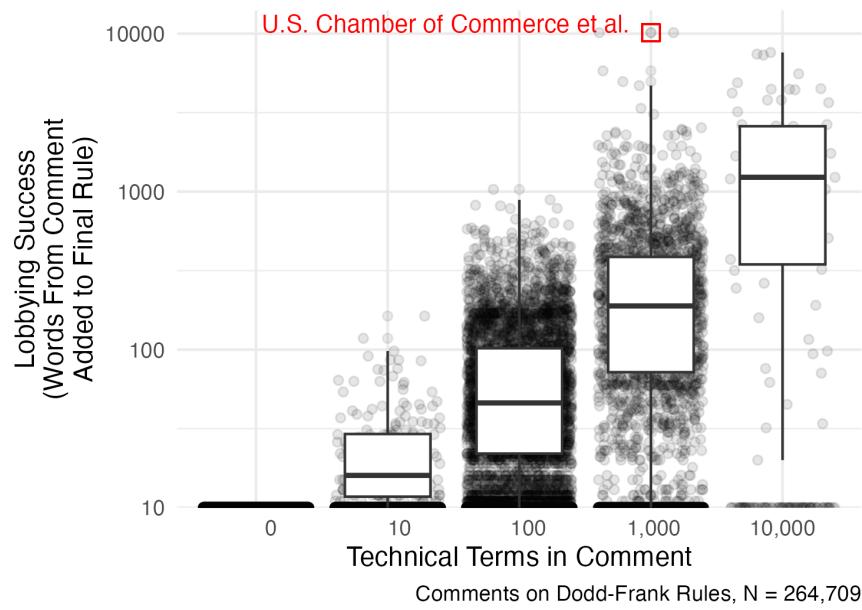
After reviewing an agency's proposed rule, organizations typically use their comments to articulate the policy changes they want the agency to make in the final rule. To approximate the extent to which commenters' requested policy changes are made, we measure the overlap between the text of each organization's comment and the text added to the final rule. Our measure of lobbying success follows the intuition that an organization whose comment text is repeated by the agency in the text of the final rule is more influential in shifting regulatory content in its desired direction than an organization whose comment text is not reflected in changes in the final rule. Stated differently, more text reuse—from comment to final rule—suggests greater lobbying success.

To construct this measure, we first link proposed rules to final rules by their Docket or Regulatory Identification Numbers. We then match comments to proposed rules by publication date. We then tokenize each draft and final rule and comment in groups of 10 words. Ten-word phrases are long enough that they rarely co-occur by chance and are thus a well-validated measure of textual similarity (Wilkerson et al., 2015; Casas et al., 2019; Rashin, 2020). Finally, we count the number of words in phrases of 10 or more that appear in the comment and final rule but do not appear in the draft rule.⁶ For rules with multiple final rules, we take the sum of the comment's alignment with both final rules. When an organization submits a comment with multiple attachments, we include the highest-scoring document as the primary comment. This choice aligns with typical commenter behavior because organizations that submit multiple attachments almost always have a primary comment articulating their lobbying demands.

⁶We exclude any text from the agency's proposed rule in this calculation to ensure that we do not include phrases in an organization's comment that simply quote the proposed rule. Excluding the proposed rule text in our calculations also guards against the possibility that an organization's decision to include particular phrases in their comments is endogenous to the policy changes agencies make during rulemaking. By excluding the text of the proposed rule in our lobbying success measure, we remove the phrases and text that are most likely to be naturally repeated.

Our measure of lobbying success captures the idea that organizations desire policy change in line with their lobbying demands (Mahoney, 2007). It captures “success” by measuring the alignment between specific requests made in an organization’s comment and specific subsequent policy changes. However, lobbying success, as we measure it, does not necessarily prove causality. For example, the organization’s comment and the agency may have both copied the repeated text from a third source. Thus, we cannot definitively say that the comment caused the policy change, but we can say whether or not the organization achieved its stated lobbying objectives.

Figure 4: Lobbying Success by Comment Sophistication



Descriptively, our measures of lobbying sophistication and lobbying success are highly correlated. Our measure of commenter lobbying success increases with the wealth of the commenting organization. Figure 4 shows that the number of words from the comment added to the final rule (the y-axis) correlates with the number of technical words in the comment (the x-axis, binned on a log scale). Box plots show the middle two (25%-75%) quartiles and whiskers extending to 1.5 times the inter-quartile range (the distance between the first and third quartiles).

Figure 4 highlights the comment with the highest score on our measure of lobbying success, a comment to the SEC prepared by the law firm White & Case, LLP for the U.S. Chamber of Commerce, Americans for Limited Government, Ryder Systems, Inc., the Financial Services Institute, Inc., and Verizon. This highly-sophisticated comment included a 19-page cover letter with many technical citations underscoring the Chamber’s “very serious concerns on the impact [that the rule’s] whistleblower requirements will have on... companies’ responsibilities

to act in the best interests of their shareholders.” This comment also included a marked-up draft of the SEC’s proposed rule, suggesting specific changes, several of which were adopted by the SEC.⁷

Other comments with high lobbying success scores include an 84-page comment from Standard & Poor’s Global Ratings credit rating agency to the SEC, a 59-page comment from the Futures Industry Association to the CFTC, and several marked-up versions of proposed SEC rules from investment companies. Overall, Figure 4 shows a positive correlation between the number of technical banking terms in a comment and the amount of text it shares with the final rule. Using these data (comments, their sophistication, and their lobbying success), the following section assesses our hypotheses about the relationship between wealth, political participation, lobbying sophistication, and lobbying success. Notably, section Section 4.2.5 further explores the correlation between sophistication and lobbying success by assessing comment sophistication as a mediator in the relationship between wealth and success.

3.6 Methods

We assess our hypotheses about the relationship between wealth inequality and policy influence using descriptive statistics, regression, and causal mediation analysis. We use Welch t-tests to assess differences between commenters and non-commenters (H₁), for-profit and non-profit organizations (H₂), and frequent and infrequent commenters (H₃). We use regression analyses to assess whether wealth predicts various outcomes of interest. We employ Logit regression to model the binary outcome of commenting as a function of wealth (H₁) and organization type (while controlling for wealth). We model differences between non-profits with for-profits overall and, separately, between for-profit and non-profit types of banks (H₂). The resulting model coefficients allow us to estimate how changes in an organization’s assets and organizational form produce changes in the odds that the organization will comment on a rule. We use Poisson regression to model the count of rules on which an organization comments (H₃), the number of words from a comment added to the final rule (H₄), and the number of technical terms used in a comment (H₅), as a function of wealth. Finally, we employ causal mediation analysis to assess the extent to which campaign donations, lobbying expenditures, and comment sophistication mediate the relationship between wealth and lobbying success (H₆).

4 Results

In this section, we investigate each of our six hypotheses in turn. First, we examine inequalities in which organizations participate in financial rulemaking. Second, we examine inequalities in lobbying influence among organizations that participate. In doing so, we test our hypotheses about wealth, access, and influence in the policy process using two broad types of variation: (1) variation among organizations that did comment and

⁷See more details on this and other comments that score high on our measure of lobbying success in the appendix.

similar organizations that did not comment on rules implementing the Dodd-Frank Act and (2) variation in lobbying sophistication and success among organizations that did comment.

4.1 Wealth Inequality in Lobbying Participation

First, we compare levels of resources among commenting organizations and similar organizations that did not comment.

4.1.1 Wealthier organizations are more likely to participate

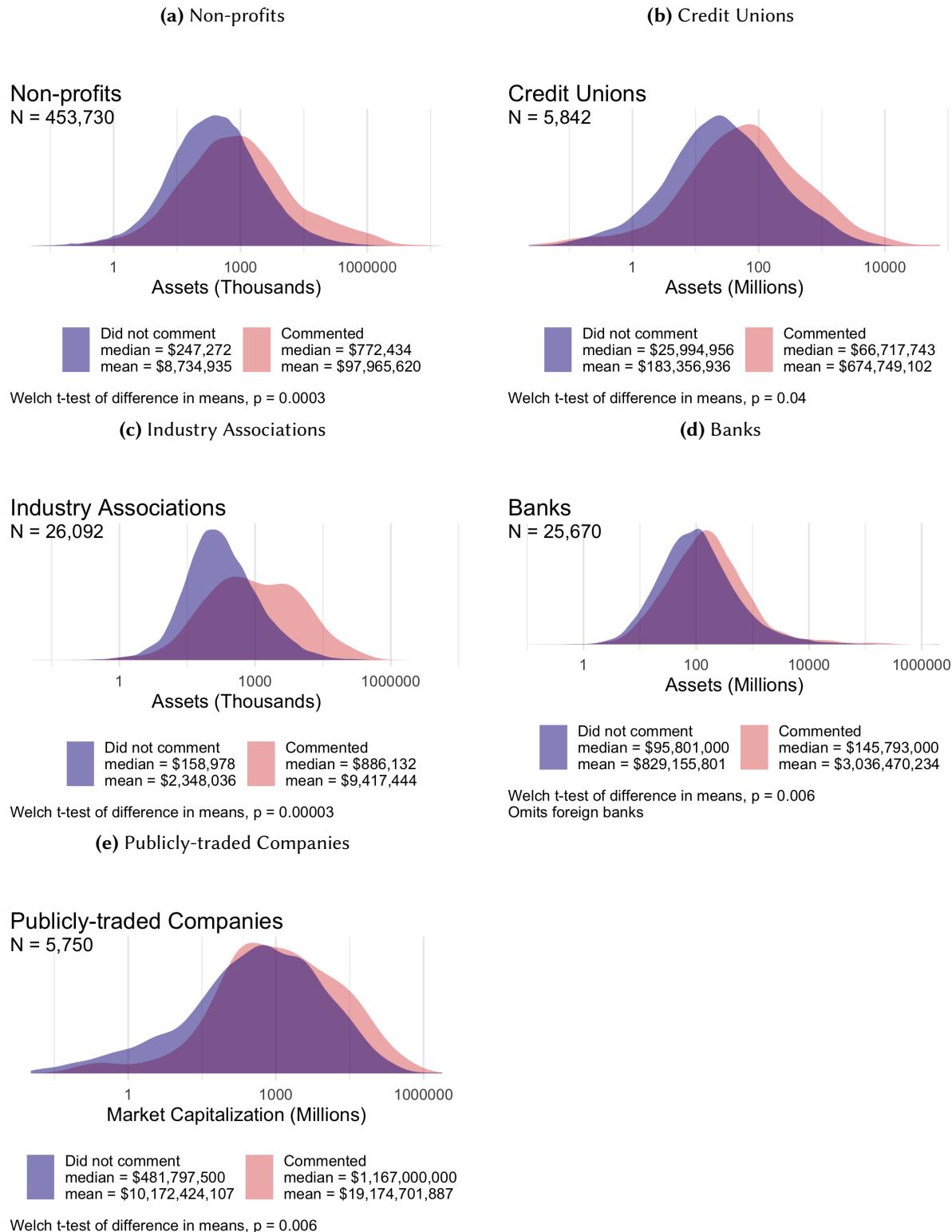
The *Differential Participation Hypothesis* (H_1) posits that organizations that comment on financial rules will be wealthier than organizations that do not comment. Because our data included the full population of similar organizations (e.g., all banks or all non-profits) that could reasonably be expected to submit comments, only some of which did submit comments, we can assess the relationship between wealth inequality participation in the policy process.

Overall, we find strong support for the hypothesis for all types of organizations in our data: organizations that comment are much wealthier on average than similar organizations that do not comment. Figure 5 shows distributions of wealth for organizations that commented on any Dodd-Frank rule and those that did not. The x-axes show measures of wealth: assets or market capitalization. Because the x-axes of the plots in Figure 5 are logged, small differences on the right side of the plotted distributions represent large substantive differences in wealth. Statistical tests for differences between means show that differences within industry associations, other non-profits, banks, and publicly-traded firms are significant at the 0.01 level. Differences between commenting and non-commenting credit unions are significant at the 0.05 level. Logistic regression results (Table 1) support the conclusion that the odds of commenting increase with an organization's wealth among banks, publicly-traded firms, credit unions, industry associations, and other non-profits.

Non-profits. Panel (a) in Figure 5 shows that non-profits that comment on proposed financial regulations tend to be significantly better resourced than we would expect from a random sample of non-profits. The average assets of non-profits participating in Dodd-Frank rulemaking were about eleven times larger than non-profits that did not participate; the average assets of non-profits that did not comment was about \$9 million, whereas the average assets of non-profits that did comment had approximately \$98 million.

Credit unions. Similarly, panel (b) in Figure 5 shows that credit unions that comment on proposed financial regulations also tend to have more assets than those that do not participate. The average credit union that did not comment has about \$183 million in assets, whereas the average credit union that did comment had about \$675 million. That is, the average commenting credit union is more than three times as large as the average credit union that did not comment.

Figure 5: Financial Resources of Organizations that Did and Did Not Comment



Industry associations. Industry associations that participate in rulemaking also tend to have more resources, almost five times more, than those that do not. Panel (c) in Figure 5 shows that the average non-commenting industry association had about \$2 million in assets, whereas the average commenting industry association had about \$9 million.

Banks. Panel (d) in Figure 5 shows that, on average, banks that comment on proposed financial regulations are better resourced than we would expect from a random sample of banks. Banks that participated in financial rulemaking had over three times the average assets of banks that did not participate.

Publicly-traded companies. Panel (e) in Figure 5 shows similar distributions over market capitalization (the total value of a company's stock) for publicly-traded companies. Companies that comment on proposed financial regulations are wealthier than those that do not. Specifically, they have much more capital, as measured by the total value of their stock. The median market capitalization of companies that commented was about double that of the median company that did not comment. Logit models predicting the odds of commenting (the first column in Table 1 and Figure 9) show the same result: companies with higher market capitalization are more likely to comment.

4.1.2 Organizations that spend more on political campaigns are more likely to comment

Figure 6: Political Spending of Organizations that Did and Did Not Comment



Panel (a) of Figure 6 shows that organizations that comment on Dodd-Frank rules also donate more to political campaigns via PACs compared to organizational PAC donors who do not comment. This further supports the *Differential Participation Hypothesis* (H_i). Among organizations that donate to PACs, the average campaign spending per two-year cycle was \$54,000 for those that did not submit a comment, while the average for those that did comment on a Dodd-Frank rule was \$85,000 ($p < 0.01$). Logit models in the appendix also show that PAC donations are a strong predictor of commenting behavior. Panel (b) of Figure 6 shows that organizations that commented on Dodd-Frank rules also tend to spend more on traditional lobbying than those that did not comment, but these differences are not significant at the 0.05 level.

4.1.3 Profit-driven organizations are more likely to comment than non-profits

The *Profit-Motivated Participation* Hypothesis (H₂) posited that for-profit organizations are more likely to participate in rulemaking than non-profit organizations. We find strong support for this hypothesis when we analyze the data overall (i.e., comparing for-profit companies with non-profits) and when we compare for-profit banks (commercial banks) to those that are non-profit (credit unions and savings associations). 12% of commercial banks commented on Dodd-Frank rules. In contrast, only 3% of non-profit savings associations, 2% of non-profit credit unions, and 0.2% of other non-profits commented. Commercial banks were six times more likely to comment on a Dodd-Frank rule than the average Credit Union and 60 times more likely to comment than the average non-profit organization.

Banks are more likely to comment than credit unions and other types of non-profits, even when controlling for differences in assets. Table 1 shows the results of logit models predicting the log odds of commenting by organization type (bank, credit union, industry association, or other non-profit organization) and total assets. Based on model 2 from Table 1, Figure 7 shows that the predicted probability of commenting increases as all types of organizations gain more assets. Wealthier banks, credit unions, and other non-profits are more likely to comment than less wealthy ones. This further supports the *Differential Participation* Hypothesis (H₁).

The relationship between wealth and commenting behavior is strongest for industry associations, further supporting the *Profit-Motivated Participation* Hypothesis (H₂). Compared to other non-profits, those that represent profit-seeking businesses (industry associations) are much more likely to deploy more resources toward influencing public policy as they gain assets (see fig-mp-all-predict and appendix Table 4).

Figure 7: Predicted Probability of Participating in Dodd-Frank Rulemaking by Assets and Type of Organization

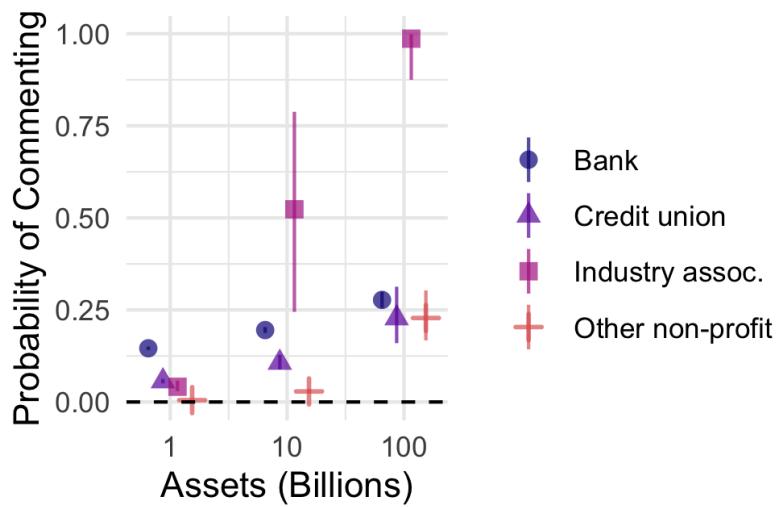


Table 1: Log Odds of Commenting on Any Dodd-Frank Rule

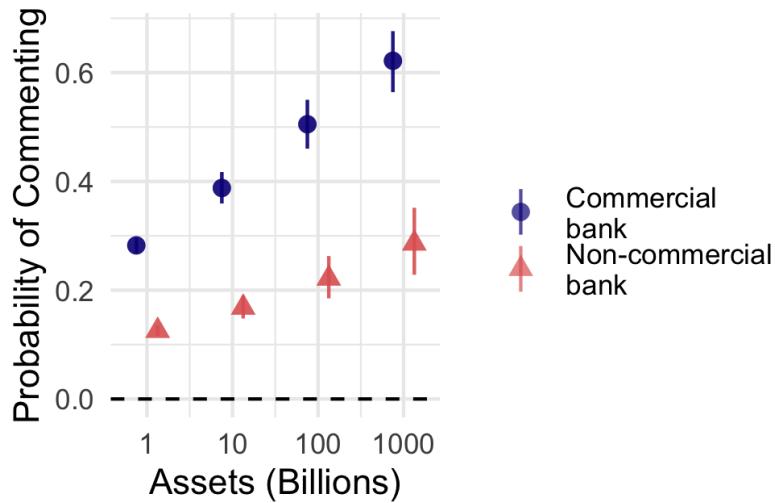
| | (1) | (2) | (3) |
|-----------------------------------|---------------------|----------------------|----------------------|
| Dependent Variable | Commented | Commented | Commented |
| Log(Market Capitalization) | 0.109*** (0.018) | | |
| Log(Assets) | | 0.206*** (0.015) | 0.207*** (0.013) |
| Credit union | | -1.189*** (0.078) | |
| Industry assoc. | | -2.551*** (0.063) | |
| Other non-profit | | -4.111*** (0.039) | |
| Log(Assets) x Credit Union | | 0.200*** (0.059) | |
| Log(Assets) x Industry assoc. | | 1.693*** (0.263) | |
| Log(Assets) x Other non-profit | | 0.834*** (0.047) | |
| Non-commercial bank | | | -1.009*** (0.055) |
| Log(Assets) x Non-commercial bank | | | -0.058** (0.022) |
| Num.Obs. | 5797 | 495 129 | 25 670 |
| Log.Lik. | -1371.259 | -21 829.469 | -10 702.495 |

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Reference category = Banks for model 2, commercial banks for model 3

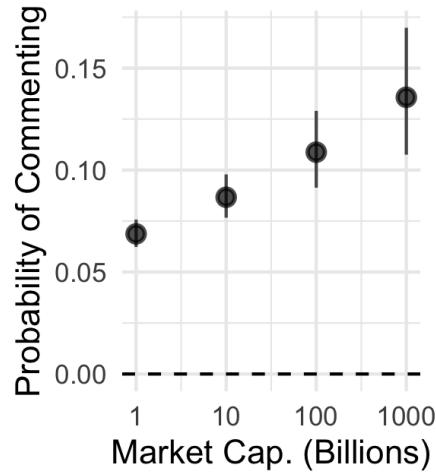
To further test this hypothesis, we subset our data to banks and estimate the odds of commenting across different types of banks. Figure 8 (based on model 3 from Table 1) shows that for-profit banks (i.e., commercial banks) are significantly more likely to comment than non-commercial banks (i.e., non-profit savings associations and savings associations), further supporting the link between profit motives and lobbying activity. For example, among banks with a mean asset amount of approximately 1 billion USD, our model predicts a commercial bank to have a 29% probability of commenting. Meanwhile, a non-profit savings association with the same asset resources has only a 12% probability of commenting. This further supports the *Profit-motivated Participation Hypothesis* (H2). Moreover, assets remain a significant predictor of whether an organization comments even controlling for differences in the type of bank institution. This provides additional evidence for the *Differential Participation Hypothesis* (H1).

Figure 8: Predicted Probability of Participating in Dodd-Frank Rulemaking by Type of Bank



Finally, we estimate the probability of commenting among publicly traded companies based on their market capitalization. This alternative measure of corporate wealth yields the same conclusion: companies with greater wealth are more likely to comment. This is true even among large publicly-traded companies. Figure 9 (based on the results shown in model 1 of Table 1) shows that the predicted probability of commenting nearly doubles from about 7% to about 14% as a company goes from having a market capitalization of one billion to one trillion.

The main takeaway thus far is that resources correlate with commenting behavior; wealthier organizations are more likely to participate in regulatory lobbying than less wealthy organizations. If representation is largely about who shows up to participate in the policy process, companies with high market capitalization, organizations that give more to political campaigns, and banks, credit unions, and non-profits with more assets

Figure 9: Predicted Probability of Participating in Dodd-Frank Rulemaking by Market Capitalization

are better represented than similar organizations with lower market capitalization, less political spending, and fewer assets. Both within and across different types of organizations, wealthier organizations are more likely to be at the table when important policy decisions are made.

4.2 Wealth Inequality among Organizations that Lobby

We now investigate wealth inequalities within the subset of organizations that do participate in rulemaking. By focusing on variation among organizations that all commented on at least one Dodd-Frank rule, we can have even more confidence that we are comparing similar organizations.

4.2.1 Frequent participants are wealthier than those who participate less frequently

The *Differential Frequency of Participation* Hypothesis (H_3) posits that, among commenters, wealthy organizations will participate more frequently. To test this hypothesis, we count the number of Dodd-Frank rules on which each participating organization commented. Figure 10 shows that organizations that comment on more rules tend to be wealthier. Given that most organizations comment on few rules, we sort commenters by the number of rules on which they comment and compare the wealth of the top 10% to the bottom 90%. In the appendix, we show similar results comparing organizations that commented on five or more rules to those that commented on fewer than five rules.

Panel (a) of Figure 10 shows that most of the non-profits in the top 10% of most frequent commenters had assets over \$1 million. In contrast, non-profits in the bottom 90% (i.e., low-frequency commenters) had assets under \$1 million. Panel (b) of Figure 10 shows that most of the credit unions in the top 10% of most frequent commenters had greater assets than the average credit union in the bottom 90%. Panel (c) of Figure 10 shows

that most of the industry associations in the top 10% of most frequent commenters had greater assets than the average industry association in the bottom 90%. Most of the industry associations in the top 10% of most frequent commenters had assets over \$10 million. In contrast, industry associations in the bottom 90% (i.e., low-frequency commenters) had assets under \$1 million. Panel (d) of Figure 10 shows that, even among banks, a large share of the most frequent commenters had assets over \$1 billion. Yet, nearly all banks that were less frequent commenters—most of which only commented on one rule—had far less than \$1 billion in assets. Panel (e) of Figure 10 shows that, among publicly-traded companies, the majority of frequent commenters had market capitalization over \$10 billion. In contrast, most companies that were less frequent commenters had under \$10 billion in market capitalization. Overall, while these differences are only statistically significant for industry associations and publicly-traded companies, the general pattern is in the direction predicted by Hypothesis 3: frequent commenters also tend to be more wealthy organizations.

4.2.2 Wealthier commenters have greater lobbying success

The final three hypotheses focus on the association between wealth inequality and lobbying success: The *Differential Lobbying Success Hypothesis* (H4) posits that wealthy organizations will be more successful in their regulatory lobbying. The final two hypotheses address why we may see this pattern emerge. For instance, is it because wealthy organizations spend more on political campaigns and lobbying targeting Congress or because they employ more legal and technical expertise when they comment on proposed rules?

Figure 11 provides descriptive support for Hypothesis 4. For banks and other companies, we see a positive correlation between an organization’s wealth and its lobbying success. The pattern is less clear for non-profits. In other words, wealthier companies appear to be more successful in shifting the content of final rules than similar—but less wealthy—companies. The y-axes of plots in Figure 11 indicate the number of words that appear in 10-word phrases in both an organization’s comment and the final rule (but were not present in the proposed rule). The x-axes of each plot in Figure 11 represent different indicators of wealth binned on a log scale. The differences in means capture the extent to which wealth is correlated with lobbying success (as measured by the amount of text added to an agency’s final policy documents containing exact phrases used by or suggested by an organization’s comment).

4.2.3 Wealthier companies are more sophisticated at lobbying

We now turn to possible explanations for the positive relationship between wealth and lobbying success. The *Differential Sophistication Hypothesis* (H5) suggests wealthier organizations submit more sophisticated comments than less wealthy entities. Figure 12 provides evidence of just such a relationship. It shows that the comments from wealthier organizations tend to include more technical language specific to finance and banking. This

Figure 10: Frequent and Infrequent Commenters (By Percentile of the Number of Dockets on Which Each Organization Commented) by Resources (Log Scale)

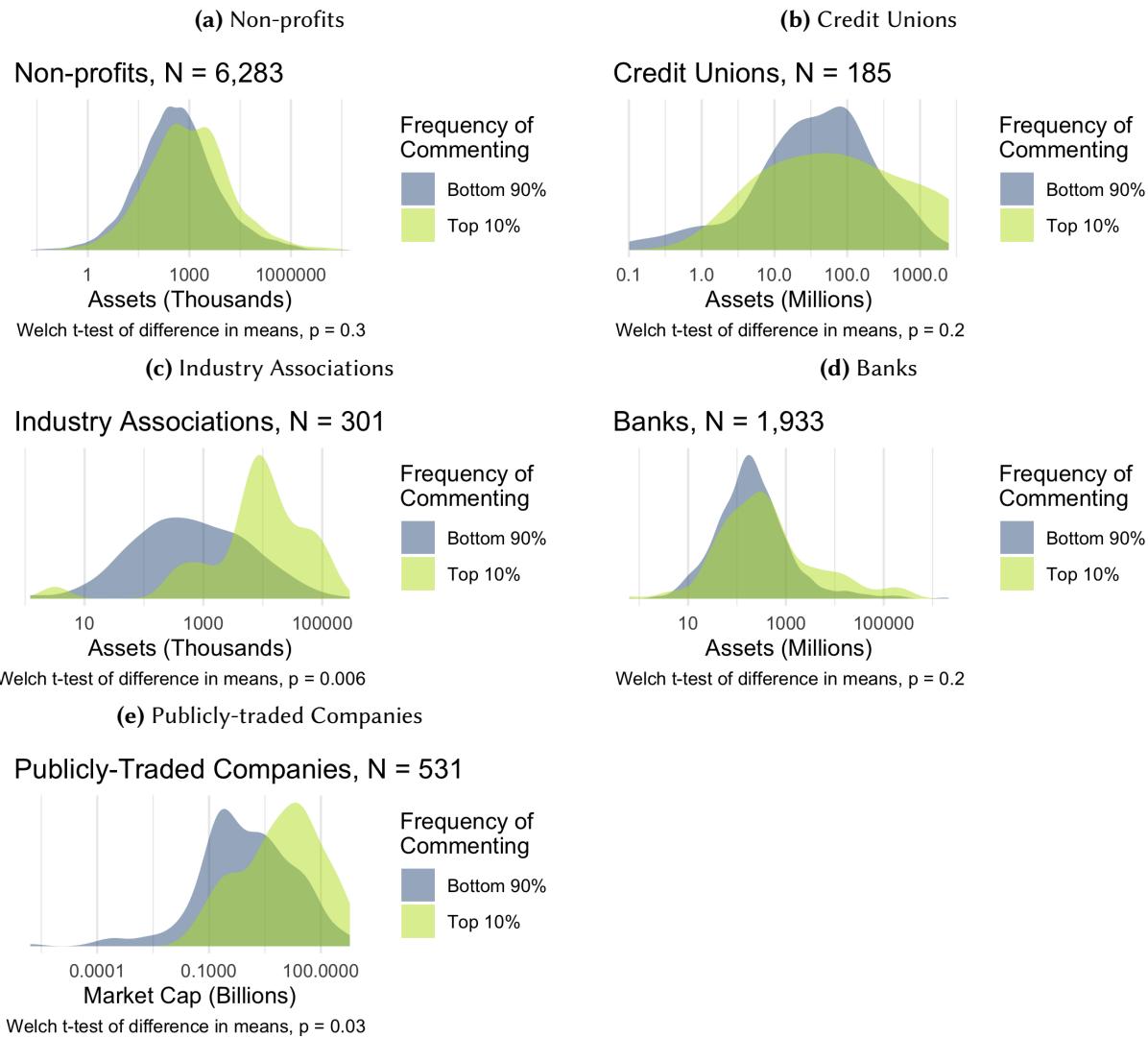


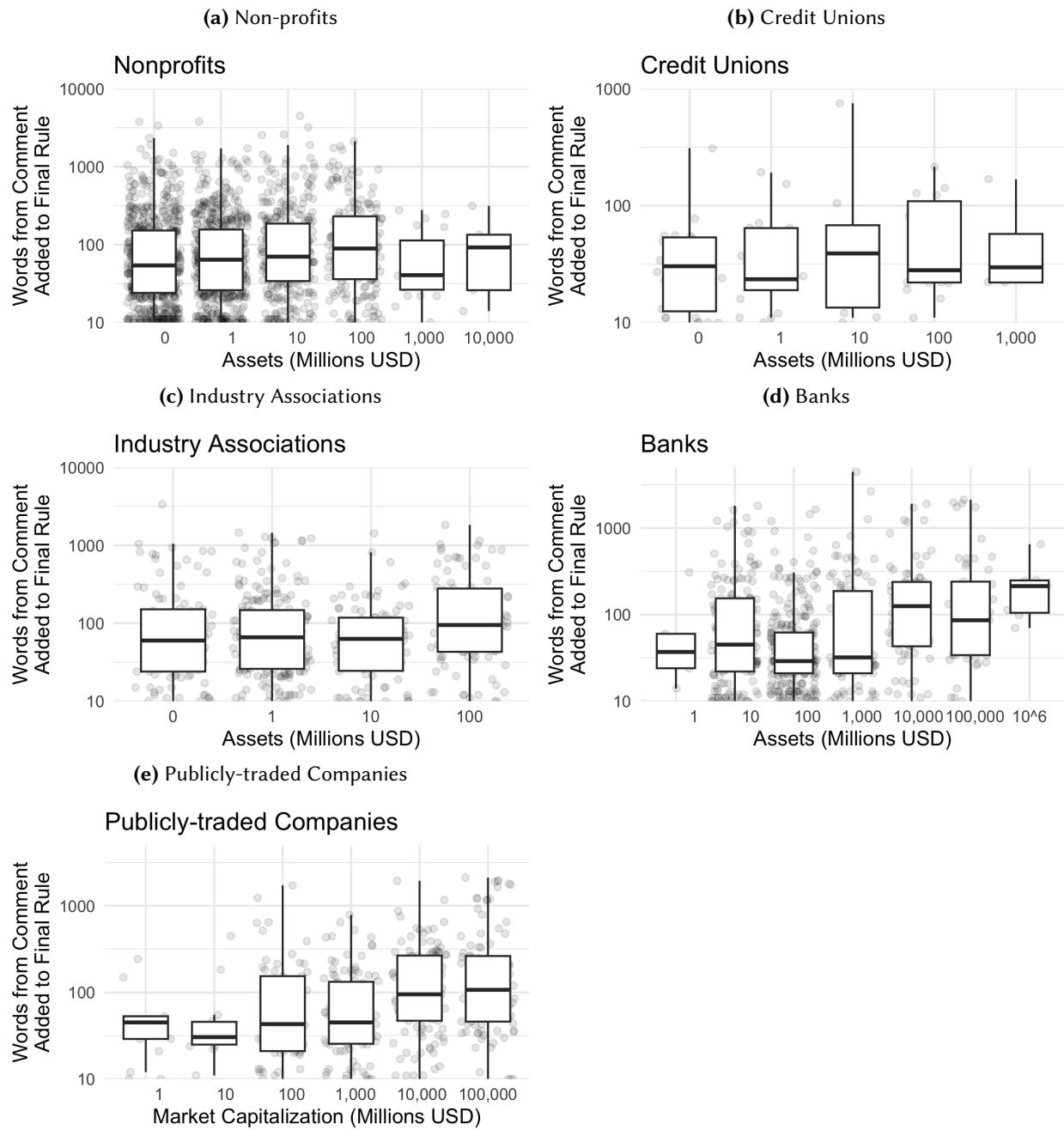
Figure 11: Amount of Text Repeated in Final Rules by Commenter Resources


Table 2: OLS Models of Lobbying Success by Comment Sophistication

| | (1) | (2) |
|----------------------|----------------------|-----------------------|
| Dependent Variable | Efficacy | Efficacy |
| Technical Terms | 0.088*** (0.003) | |
| Legal Citations | 13.698*** (0.883) | |
| Log(Technical Terms) | | 40.175*** (3.826) |
| Log(Legal Citations) | | 142.614*** (8.031) |
| Num.Obs. | 9035 | 9035 |
| Log.Lik. | -69 582.862 | -70 202.319 |

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Poisson regression yields similar results (see appendix)

pattern is especially strong for banks and publicly traded companies. For example, nearly every comment from a company with market capitalization over \$50 billion contained over 100 technical terms, while companies with lower market capitalization tended to submit less sophisticated comments.

4.2.4 More sophisticated comments correlate with greater lobbying success

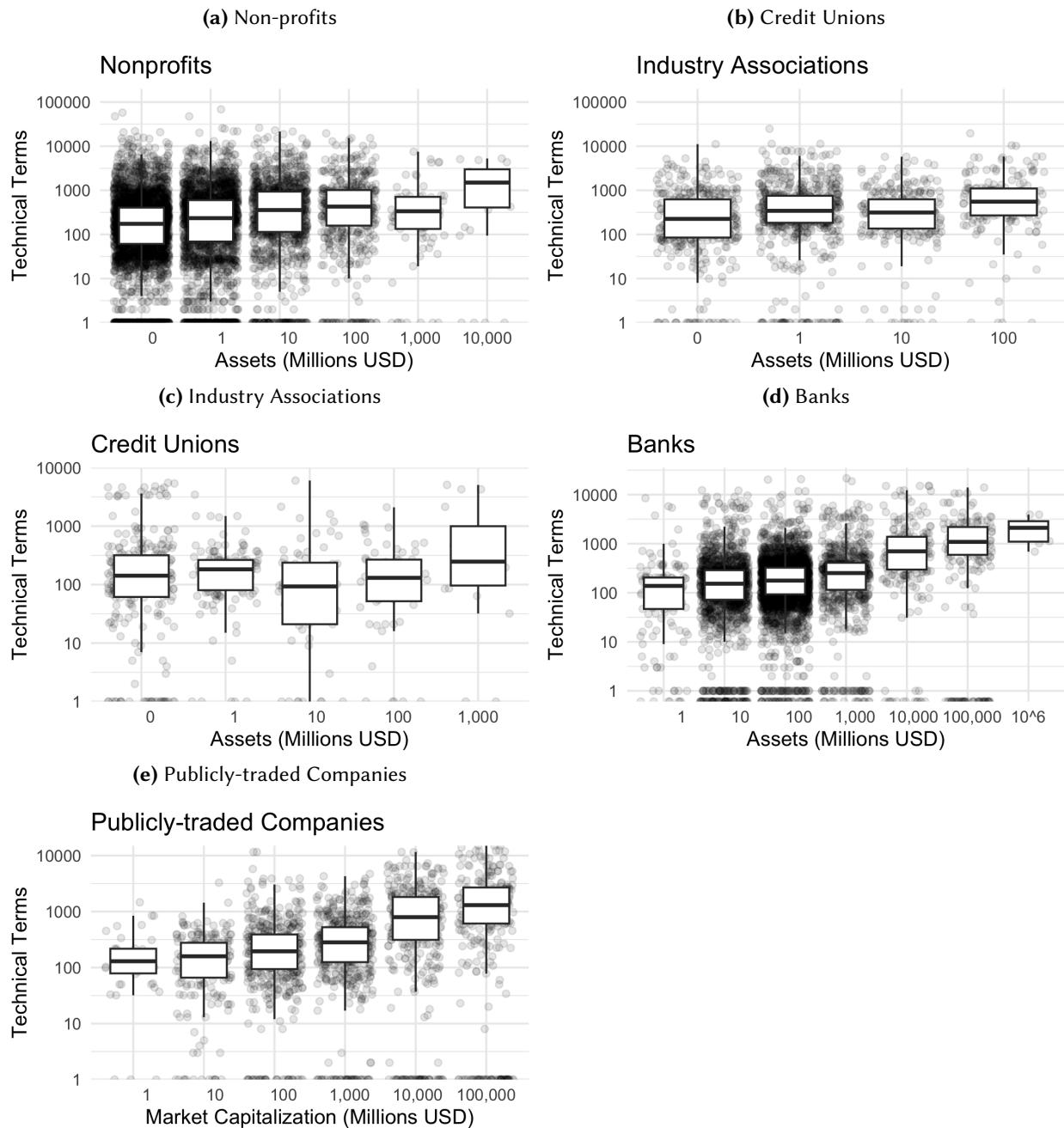
We theorize in the *Dividends of Sophistication* Hypothesis (H6) that comments from wealthier organizations are more successful in shifting the content of financial rules *because* wealthier organizations submit more sophisticated comments. We investigate this proposed mechanism for unequal influence by assessing the relationship between legal and technical sophistication and lobbying success.

Table 2 shows that comments that use more sophisticated technical language are more likely to contain text that was added to the final rule. Table 2 shows estimates of lobbying success from regression models where the key predictor variable is the number of technical terms or legal citations in a comment. Both models suggest a statistically significant relationship. Substantively, the use of 10 additional technical finance or banking terms in an organization's comment is associated with an additional word being added to the text of the final rule. Each additional legal citation in a comment is associated with about 14 additional words from that comment added to the final rule. By "additional words," we mean words from a 10-word phrase that appears in the organization's comment and in the final rule but was not present in the draft rule.

4.2.5 Legal and technical sophistication explains the lobbying success of wealthy companies

Finally, to further evaluate the *Dividends of Sophistication* Hypothesis (H6), we use mediation analysis to examine the extent to which the sophistication of the comments may explain the relationship between wealth and

Figure 12: Amount of Technical Language by Assets



lobbying success. Mediation analysis can take various forms, from structural equation models and sequential testing of additional variables to more modern techniques rooted in causal inference (MacKinnon, 2012). As recent work has shown (Imai et al., 2011), causal analysis of mediator variables requires strong assumptions that are unlikely to be satisfied in the complex observational setting of this study. Still, we consider observational analysis of mediation hypotheses worthwhile for the same reason we regard other non-identified, descriptive studies as valuable: they permit the repeated testing of hypotheses that can inform important scholarly and policy debates where randomized studies are problematic or unlikely.

We follow the estimation strategy and approach of the more modern literature in causal inference and conduct this analysis through the mediation package in R (Tingley et al., 2014). In this literature, causal mediation analysis aims to decompose an average treatment effect into its parts. The treatment effect is also called the total effect, meaning the effect of a treatment on an outcome. This total effect is the sum of the direct effect, the effect that a treatment has directly, and the indirect effect, which is the effect through some mediator. The mediator is often thought of as a mechanism by which a treatment transforms into an outcome. Hypothetically, an effect may have multiple, potentially interrelated mediators, making the analysis more complex and challenging.

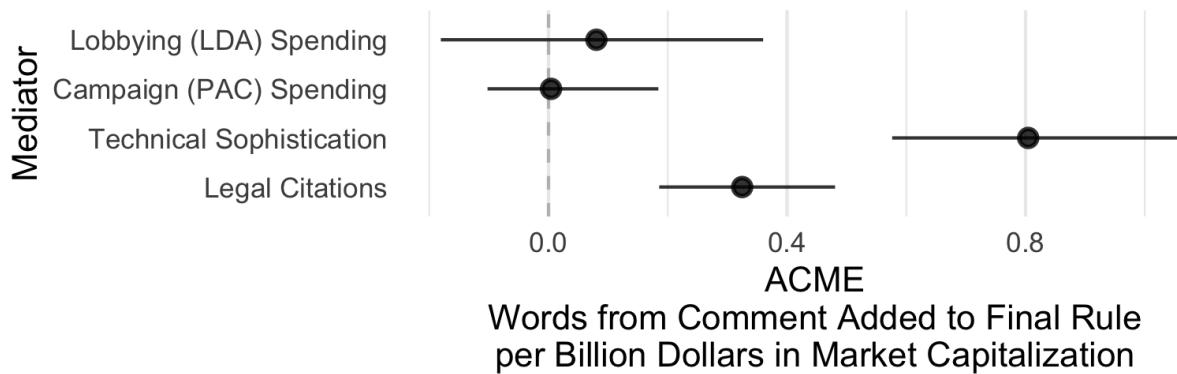
Here, we focus on the publicly-traded companies that submitted comments to our Dodd-Frank rules. Because the correlation between wealth and lobbying success (corresponding to the “total effect” in this analysis) was largest for these companies (see Figure 11), we use this subset to examine how sophisticated lobbying may be mediated by the relationship between wealth and lobbying success. In this analysis, the company’s market capitalization is the key predictor variable, lobbying success is the dependent variable in the main models, and comment sophistication is the key mediator our hypothesis expects (i.e., the dependent variable outcome in the mediator model).

In conducting our mediation analysis, we examine four causal pathways⁸ between wealth and lobbying success: (1) donating to political campaigns via PACs, (2) spending on lobbying covered by the Lobbying Disclosure Act, (3) using more technical language in public comments, or (4) using more legally-sophisticated language in public comments. We test each mediator individually because they are not causally sequential (Imai and Yamamoto, 2013). Mediation analysis conducted in this fashion suggests that the bulk of the relationship between wealth and lobbying success is attributable to wealthier organizations submitting more sophisticated comments. Market capitalization is highly correlated with using technical terms in comments, which is

⁸We use the term causal pathways to refer to the fact that this analysis assumes a causal model, in the same way, that OLS with selection on observable assumes a causal model. To interpret the findings and point estimates of mediation analysis as causally identified requires stronger assumptions than we think are justified. To do that, we would need to assume that the relationship between wealth and lobbying success is causal and that the mediator(s) examined are the only possible causal pathways between wealth and lobbying success. That is, we must assume there is only a direct effect of wealth and a mediated effect through the proposed mediator. We think this is unlikely because of inter-relationships between the mediators and the possibility of omitted variables that cause wealth and the proposed causal pathways.

associated with lobbying success. The Average Conditional Marginal Effect (ACME) estimates in Figure 13 show that both technical and legal sophistication appear to help explain the relationship between wealth and lobbying success ($p < 0.05$). Moreover, Appendix Figure 31 shows that the ACME for technical sophistication is a large share of the Total Effect of wealth on lobbying success. Thus, we see support for Hypothesis 6: much of the relationship between market capitalization and our measure of lobbying success results from wealthier organizations submitting more sophisticated comments. This conclusion is robust to focusing on technical or legal sophistication, but technical sophistication explains a larger share of the relationship between wealth and lobbying success than legal sophistication.

Figure 13: Political Spending, Lobbying, Technical Sophistication, and Legal Sophistication as Proposed Mediators between Wealth and Lobbying Success



Mediation analysis allows us to compare alternative influence mechanisms. One alternative mechanism goes through campaign contributions and power in Congress. If organizational wealth enables greater political contributions, political contributions buy power in Congress, and if agency officials are concerned about congressional sanction when revising rules, campaign contributions may drive lobbying success. This argument is similar to research by [Gordon and Hafer \(2005\)](#) suggesting that large organizations exert influence through repeated political contributions. We use PAC contributions as the proposed mediator to test this alternative argument.

Finally, we use lobbying expenditures as the mediator. Since disclosed lobbying expenditures target both Congress and agency officials, this causal pathway could operate via congressional sanction (as with the campaign spending via PACs) or more directly through lobbyists persuading agency officials to adopt their client's preferred policy language.

In both cases, the ACME is small and not statistically significant. This implies that increasing a corporation's wealth increases its expenditure on candidates and lobbyists, but this does not then translate into influence on change from draft to final agency rule. The differing estimates of mediation effects suggest that PAC contributions

and reported lobbying expenditures are not as substantial mechanisms of influence in changes between draft and final rules.⁹

4.2.6 Alternative interpretation: Wealth as a stand-in for membership.

One alternative explanation for our findings is that wealthy organizations have more influence because they represent more people. If true, then organizational wealth is merely a stand-in for organizational membership. This would affect the implications of our analyses. Upon investigation, however, the wealth-membership association fails to explain the patterns in the data. The “most likely” case for this pattern to occur would be in non-profit organizations. Thus, to test these relationships, we examine the active membership base of non-profits. We find that organizations with larger numbers of volunteers are no more likely to comment or have lobbying success when they are larger (Appendix Figure 18). In fact, controlling for the number of volunteers, assets remains a significant predictor of whether a non-profit organization will comment, and the coefficient on assets is unaffected by including an organization’s number of volunteers in the model.

Second, our findings in section Section 4.1.3 suggest that net of wealth, for-profit organizations still enjoy greater advantages than non-profit organizations. To be consistent with pluralist democracy, for-profit organizations would need to represent the interests of more people, on average, than non-profit organizations of similar size.

5 Conclusion

Capital-based wealth inequality increased dramatically over the twentieth century, especially in the United States (e.g., [Piketty, 2014](#); [Saez and Zucman, 2020](#)). Political science research has documented profound and durable patterns where wealth inequality in the United States leads to disproportionate influence in congressional policymaking, but inequality in administrative policymaking has largely escaped systematic study.

We provide novel data and tools to study the relationship between wealth, representation, and inequality in administrative policymaking for the first time. Specifically, we collect the most comprehensive data ever assembled on one of the most sweeping regulatory statutes ever enacted in the United States: the Dodd-Frank Act of 2010. This legislation delegated significant powers to federal agencies to flesh out statutory policies, restrictions, meaning, and standards in rulemaking. The degree of administrative discretion was vast, and our new dataset permits a direct examination of the regulatory policy content created by government agencies in response, as well as attempts to impact those policies by outside organizations.

⁹This does not mean that political spending and lobbying do not have large effects on earlier stages of the policy process, including the drafting of proposed rules.

Our systematic approach—covering all rules across multiple agencies implementing the same landmark piece of legislation—allows unique comparisons within and across agencies and types of organizations. It is the first study of which we are aware to systematically measure the wealth of those participating in agency rulemaking. By combining changes in rules with data from comments and their authors, we can assess the relative level of lobbying access and lobbying effectiveness that different types of organizations enjoy.

We find support for our hypotheses predicting that disparities in wealth lead to inequality in administrative policymaking. We find two kinds of bias in rulemaking: bias in participation and bias in influence. Wealthy organizations are more likely to participate in regulatory lobbying than less wealthy organizations. These findings hold even when comparing similar organizations—such as when comparing wealthy banks to less wealthy banks. In the end, if representation is primarily shaped by who shows up, then these results suggest that wealthy organizations are better represented during financial rulemaking.

We also find evidence that inequalities in wealth drive lobbying influence. For example, market capitalization is strongly correlated with lobbying success among publicly-traded firms. Market capitalization is also highly correlated with comment sophistication, which, in turn, is associated with lobbying success. Mediation analysis suggests that much of the strong association between organizational wealth and organizational lobbying success is a result of the technical and legal sophistication present within the organization’s comment, not political power gained through campaign contributions or spending on lobbying firms.

These results hold important implications for reform efforts aimed at ameliorating the effects of wealth inequality on government policy ([OIRA, 2023](#)). For instance, reforms that provide resources to select organizations to develop more sophisticated comments and policy recommendations may be an effective means to level the playing field between differentially resourced lobbying entities. Such a strategy would resemble subsidized legal representation used in other kinds of policies. The novel feature is that this would be aimed at reducing inequality in administrative policymaking—i.e., rulemaking. Efforts similar to this are already underway at some agencies, including at the U.S. Federal Energy Regulatory Commission.¹⁰ This article’s findings suggest that such reforms merit close study.

Future work is needed to extend this article’s findings. For instance, following [Ban and You \(2019\)](#), additional research is needed to make explicit comparisons between the legislative and regulatory policymaking processes to provide a more complete picture of how inequality may manifest across policymaking in America’s key political institutions. Future work could also assess the relationship between wealth inequality in other areas of agency decision-making, such as spending, permitting, and enforcement decisions.

¹⁰See: <https://www.ferc.gov/equity>

In the end, this study presents a model for studying inequality in U.S. policymaking. With the rise of the administrative state, scholars have documented the importance of agency rulemaking (Kerwin and Furlong, 2018), institutional bias toward businesses (Yackee and Yackee, 2006), and the massive value businesses gain from lobbying agencies (Libgober, 2020). Our data and analysis methods enable a new view of the biases in participation and influence in agency rulemaking. The consistent patterns in wealth disparities and impacts that we uncover advance our understanding of lobbying, money in politics, and how these pressures shape democracy in the modern administrative state.

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Table 3: Comments, Comment Attachments, Comment Sophistication, Comment Lobbying Success, and Commenter Wealth Data on Rules Implementing the Dodd-Frank Act

| Agency | Attachments | Comments | Sophistication Measures | Success Measures | Wealth Data |
|--------|-------------|----------|-------------------------|------------------|-------------|
| CFPB | 85192 | 231589 | 231589 | 231589 | 17469 |
| CFTC | 13728 | 37675 | 37675 | 37675 | 5105 |
| FDIC | 811 | 807 | 807 | 807 | 135 |
| FRS | 7156 | 7116 | 7116 | 7116 | 3808 |
| NCUA | 66 | 66 | 66 | 66 | 29 |
| OCC | 11926 | 12017 | 12017 | 12017 | 4852 |
| SEC | 10240 | 9368 | 9368 | 9368 | 935 |

Appendix

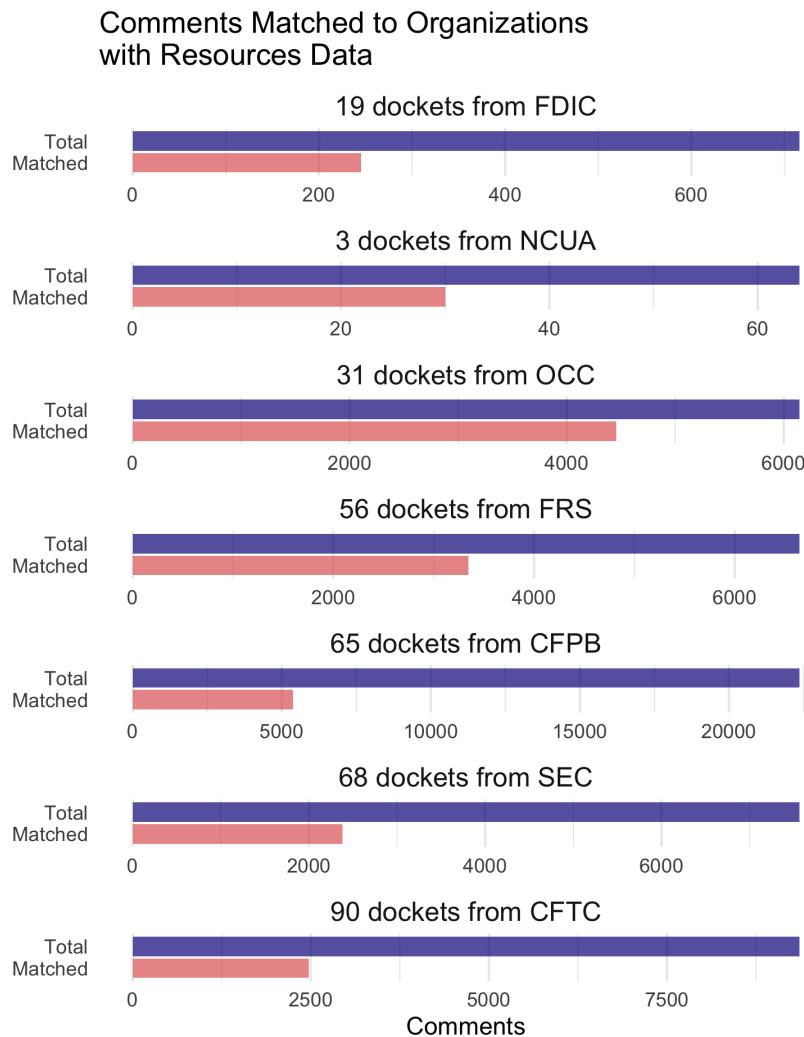
6 Data collection and processing

Table 3 and Figure 14 show the number of rulemaking processes (dockets) and comments in our data by agency. Identifying comments from organizations and matching those organizations to metadata about their resources required significant effort. To match comments to organizations found in various databases, we first extract entity names from the text or from comment metadata where available. We then use a custom probabilistic matching algorithm that was iteratively built to correctly match organizations in these data using a combination of term-frequency times inverse document frequency (TF-IDF) and Jaccard distance. For each commenter, we start with the most uncommon token (word) in the entity name string and search for names in each dataset that have that token. For example, if Klamath First Federal Bank submitted a comment, the algorithm first looks for names with the token “Klamath.” We then rank the resulting candidate matches using a modified Jaccard index that scores each token in the commenter’s name that matches a token in the candidate name in inverse proportion to the token’s frequency in the commenter dataset (normalizing by the sum of the inverse frequencies of all the tokens in the commenter’s name, matching or otherwise) so that ‘more informative’ words contribute more to the match score. We then set a threshold match score that, upon inspection, yields correct matches. Finally, we then hand-validated over 30,000 comments, including all matches that occurred ten times or more and a sample of others and implement a custom set of corrections based on this validated set.

6.1 Entity extraction and matching

Figure 14 shows the number of rulemaking dockets and the number of comments matched to organizations with resource data by agency.

Figure 14: Dockets and Comments Matched to Asset Data by Agency

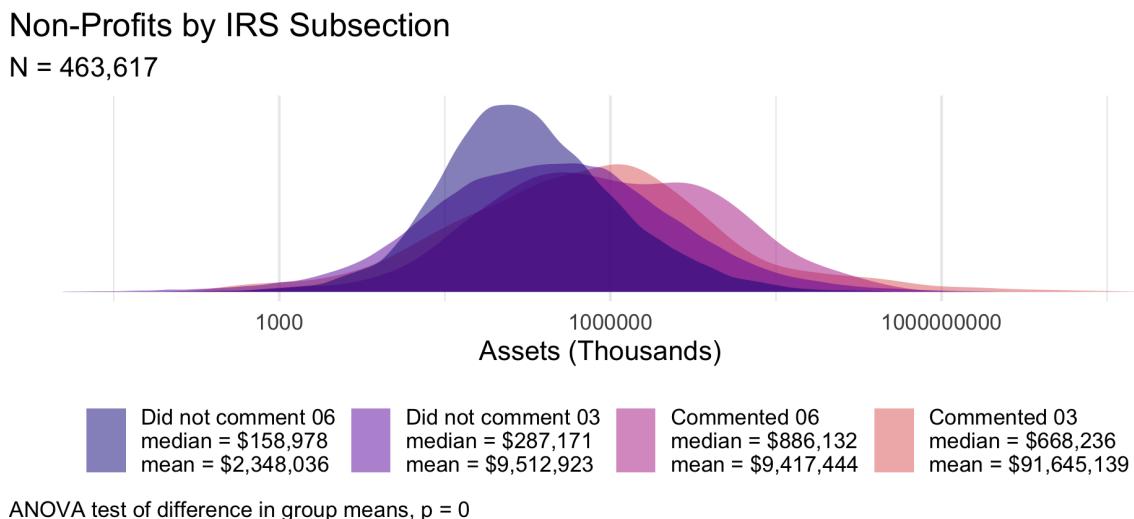


7 Additional descriptives

7.1 Types of Non-Profits

Figure 15 shows that the relationship between assets and commenting shown in Figure 5 also appears when we look at different types of non-profits. Specifically, we focus on the difference between business leagues — 501(c)(6)s — and charities — 501(c)(3)s. The difference between the groups means are statistically significant using a one-way ANOVA, although we note that in the six pairwise t-tests between all the groups the differences between the 501(c)(6)s that commented and the 501(c)(3)s that did not and the 501(c)(6)s that commented and those that did not were not statistically significant.

Figure 15: Non-profits that Did and Did Not Comment by Type

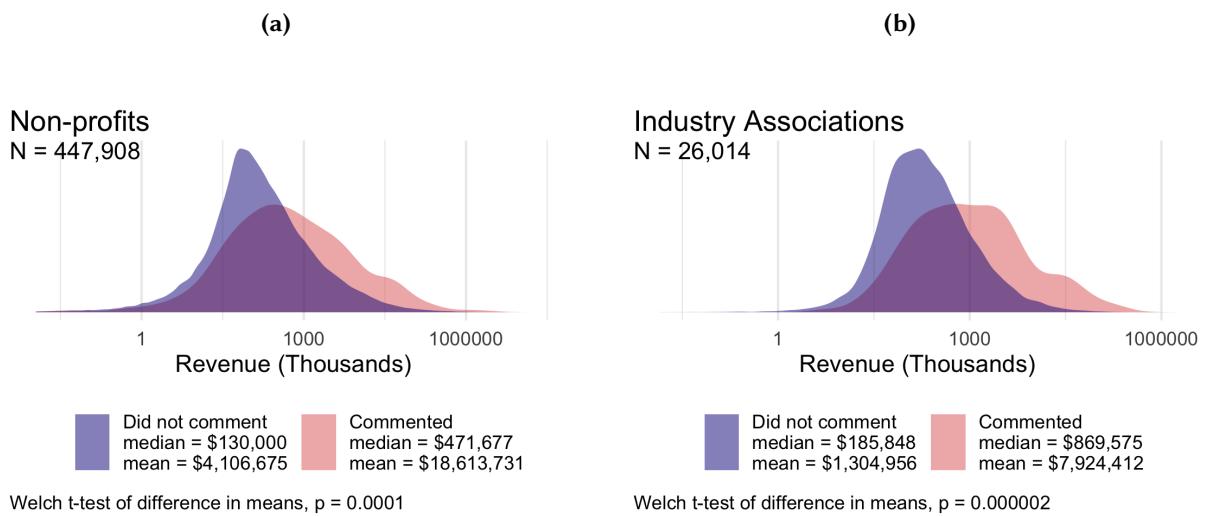


7.2 Non-profit revenue

Figure 16 shows that the relationship between assets and commenting shown in Figure 5 also appears when we look at revenue rather than assets. Indeed the relationship between revenue and commenting is much stronger than the relationship between assets and commenting. We focus on assets in the body of the text because it is more comparable to wealth measures from for-profit organizations.

7.3 Non-profit volunteers

Figure 17 shows that the a non-profit's assets and the number of volunteers it has are not especially correlated for the sample of organizations that commented on a Dodd-Frank rule. This offers further evidence that the relationship between wealth and lobbying success we observe should not be interpreted as larger membership

Figure 16: Revenue of Non-profits that Did and Did Not Comment

organizations being more successful. Rather, it is wealthy organizations, regardless of membership that enjoy success rulemaking.

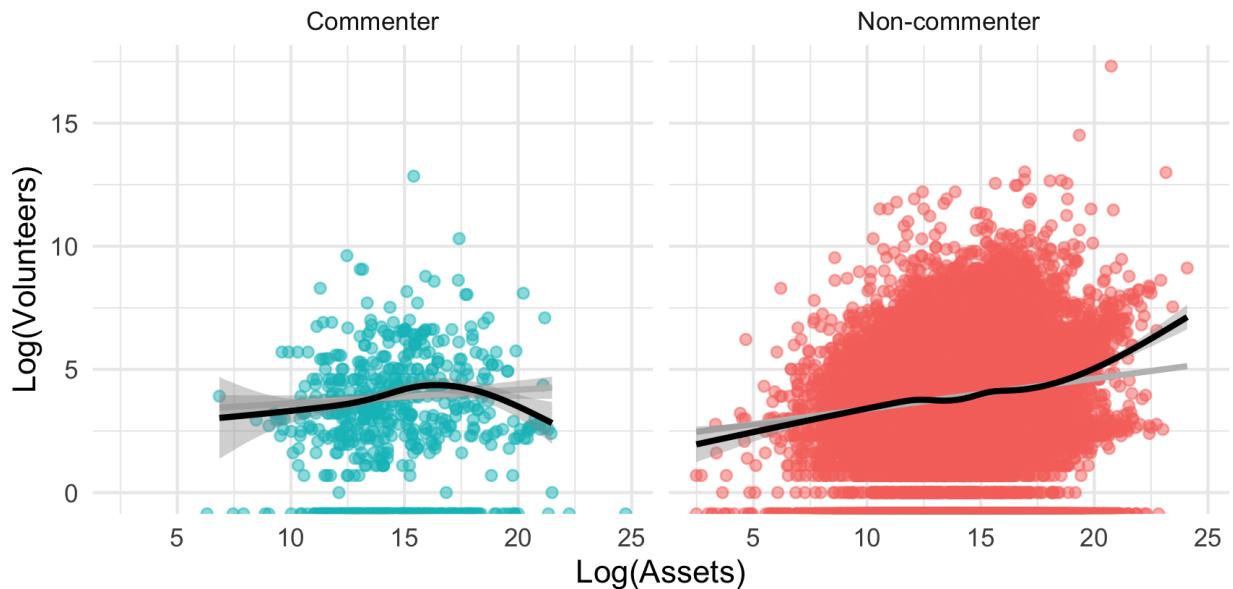
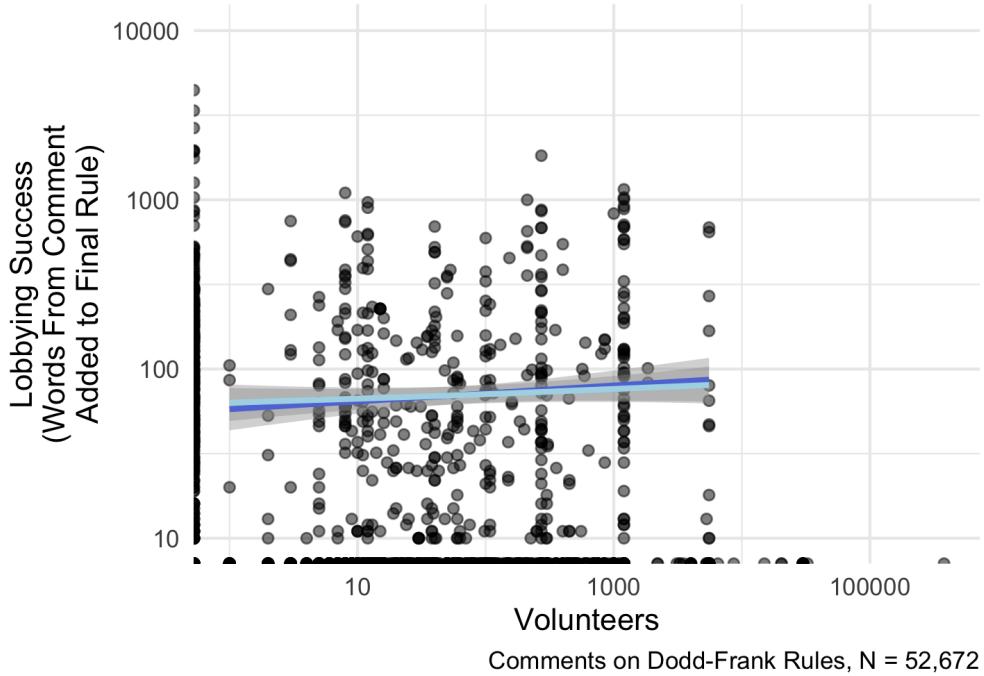
Figure 17: Volunteers of Non-profits that Did and Did Not Comment

Figure 18 shows that the a non-profit's number of volunteer does not predict its level of lobbying success.

7.4 Histograms

Figures 19, 20, and 21 present histograms of wealth distributions by whether an organization commented on a Dodd-Frank rule.

Figure 18: Efficacy by Number of Volunteers

7.4.1 Variation within classes of banks

When we look within categories of banks, we see that the wealthier banks within each class are also more likely to submit comments on financial rules than similar banks with less wealth. Figure 20 shows that, within each class of bank (i.e., commercial banks, commercial banks, state banks, and savings associations), wealthier banks participate in financial rulemaking more than less wealthy banks. While the differences within types of banks are fairly large, these differences in means only reach statistical significance at the 0.05 level for for-profit categories of banks.

Figure 20 shows wealth distributions for four prominent types of banks: commercial banks, commercial banks, state banks, and non-profit savings associations. The top-left panel of Figure 20 shows that commercial banks that comment are wealthier than those that did not comment. The modal commercial bank that commented has 40 percent more assets than the modal commercial bank that did not comment. The top-right panel of Figure 20 shows that commercial banks banks that comment are wealthier than those that did not comment. The modal commercial bank that commented has nearly twice the assets of the modal commercial bank that did not comment. Similarly, the bottom-left panel of Figure 20 shows that the average assets of state banks that commented were three times the average assets of the state banks that did not comment. While savings associations are less likely to comment than more profit-oriented banks, such as commercial banks (see

Figure 19: Financial Resources of Organizations that Did and Did Not Comment

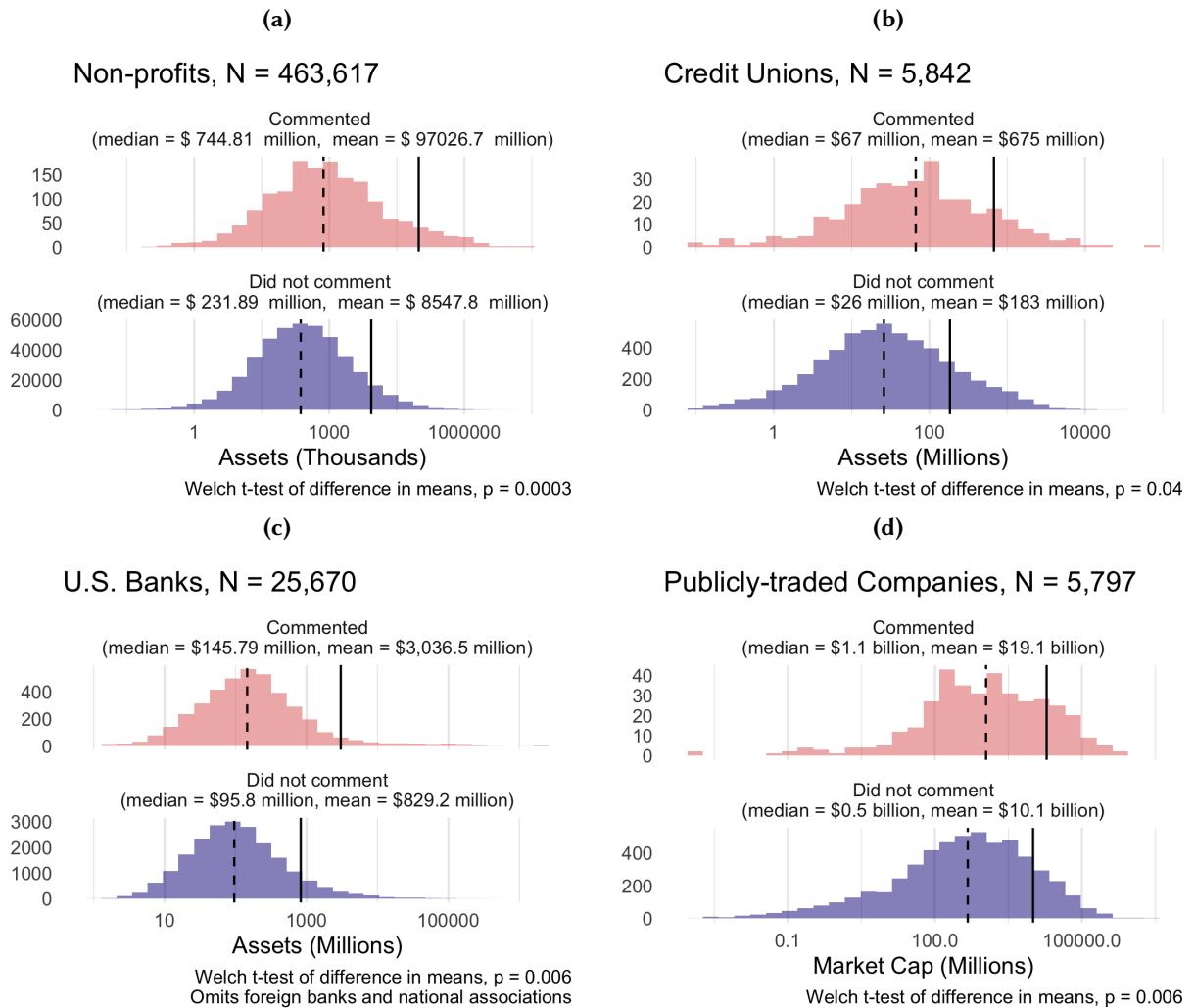
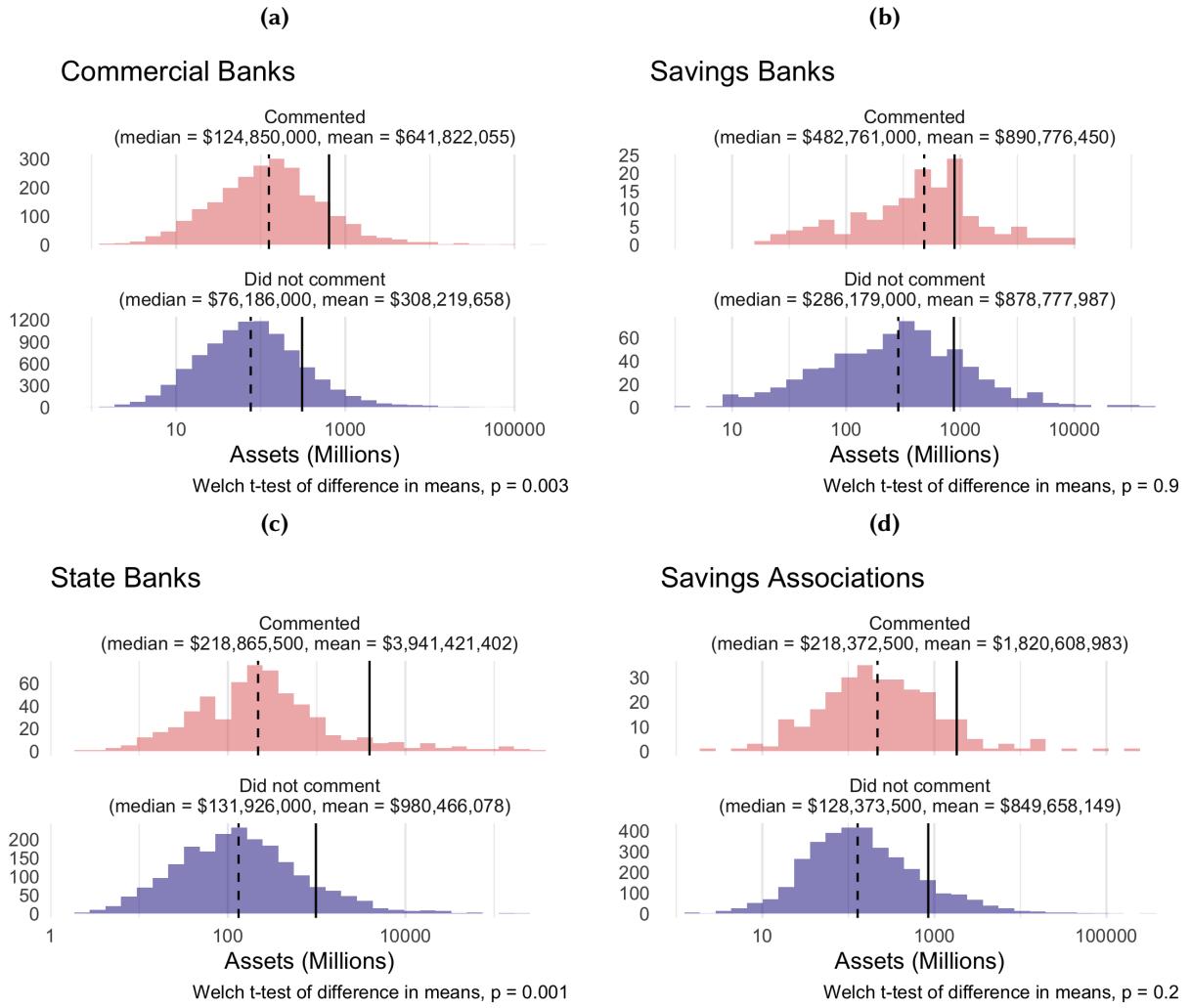


Figure 25), the bottom-right panel of Figure 20 shows that when savings associations do comment, they tend to be the wealthier ones.

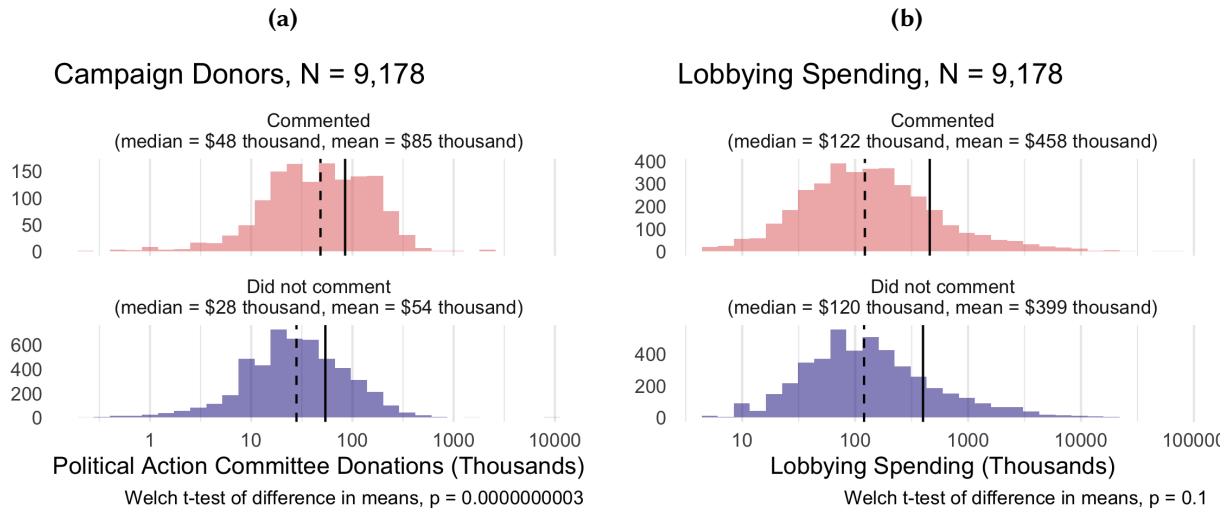
Figure 20: Financial Resources of Banks that Did and Did Not Comment



7.4.2 Variation among organizations that donate to campaigns and spend money on lobbying

7.5 Frequent commenters by number of Dodd-Frank rules

Note that commenting on *more rules* is not the same as submitting *more comments* overall. Many wealthy organizations only submit one sophisticated comment per rulemaking docket. Some organizations also submit many comments on the same rule as a form of public pressure. Pressure campaigns are mostly organized by public interest groups but are also occasionally organized by regulated companies (Judge-Lord, 2021). For example, Axcess Financial (a payday lending company) and Advance Financial (a credit union) both mobilized over 1000 comments from their retail stores on the Consumer Financial Protection Bureau's Payday Loan

Figure 21: Political Spending of Organizations that Did and Did Not Comment

Rule. Mobilizing public pressure is different from lobbying. Our analysis here focuses on the breadth, not the amplitude of lobbying.

8 Regression tables

8.1 The Odds of Commenting by Wealth

Table 4 presents alternative specifications of the model shown in column 2 of Table 1, using linear instead of logged terms and omitting interaction terms. In all specifications, the results are essentially the same. The only differences appear in the interaction terms between the linear and logged asset models. Banks remain more likely to comment than credit unions and other nonprofits across the distribution of support. In the linear models, this difference is larger at higher asset levels, whereas in the logged model this difference is smaller at higher (logged) asset levels.

Figure 24 (Table 5) shows the results of separate logit models predicting the log odds of commenting on a Dodd-Frank rule by assets for banks, credit unions, and non-profits. These models show that wealthier organizations of all three types are significantly more likely to comment. Of these three types of organizations, the marginal effect of assets on the log odds of commenting is the largest for banks.

Column 1 of Table 1 presented a model that pooled data bank, credit union, and nonprofit assets. For robustness, Table 5 presents regression tables estimating separate models for each type of organization.

Table 7 and Table 6 present alternative specifications to the model in column 3 of Table 1. Table 6 presents models without interactions and without logging assets. Table 7 presents models that break out more categories of banks, rather than lumping them into commercial and non-commercial banks. Figure 25 and Table 7 show

Figure 22: Number of Dockets on Which Each Type of Organization Commented

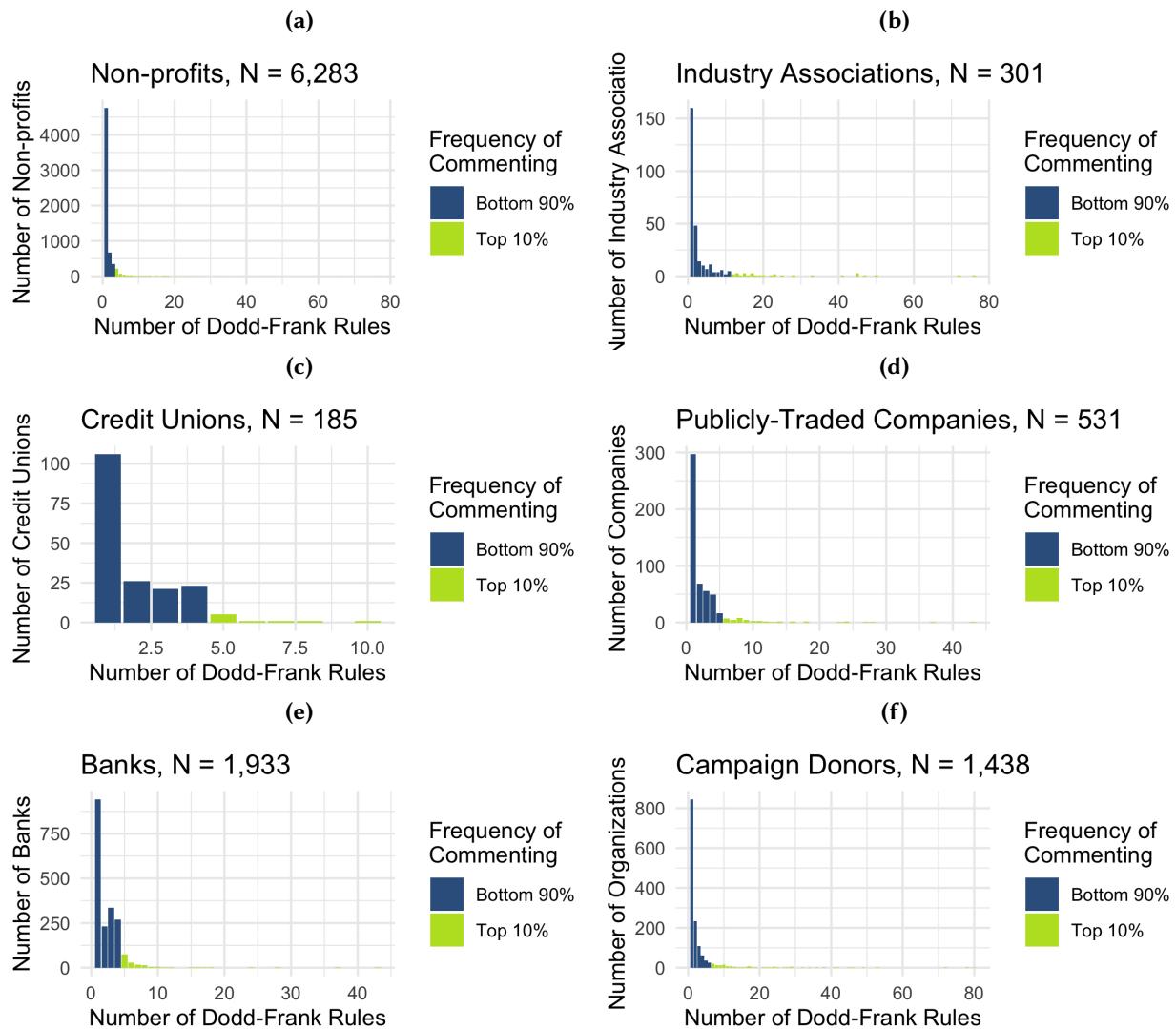


Figure 23: Frequent and Infrequent Commenters (By the Number of Dockets on Which Each Organization Commented) by Resources (Log Scale)

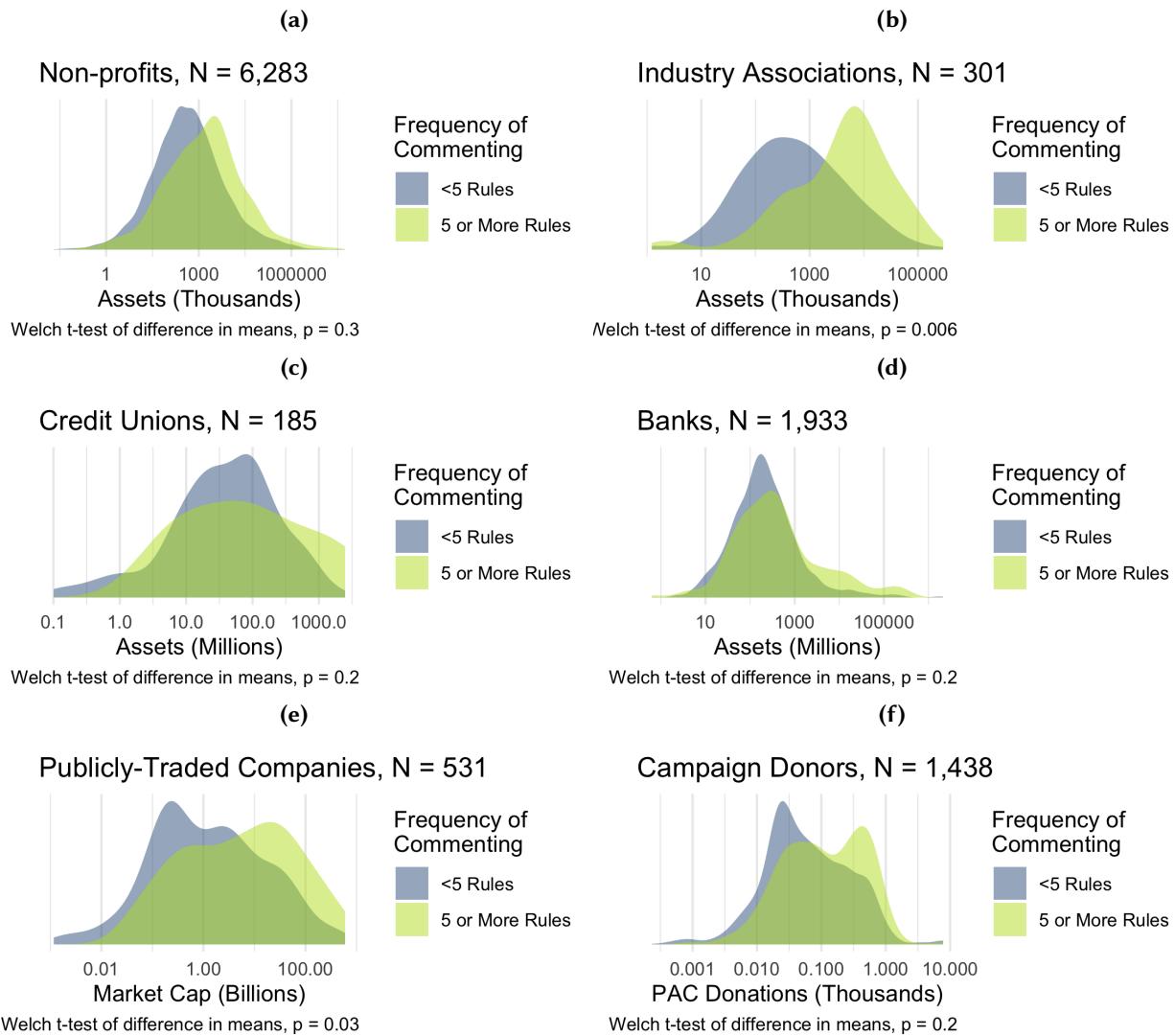


Table 4: Log Odds of Commenting on Any Dodd-Frank Rule

| | (1) | (2) | (3) | (4) |
|--------------------------------|----------------------|----------------------|----------------------|----------------------|
| Dependent Variable | Commented | Commented | Commented | Commented |
| Assets (in Billions) | 0.000*** (0.000) | 0.000** (0.000) | | |
| Credit union | -1.128*** (0.059) | -1.170*** (0.061) | -1.013*** (0.060) | -1.189*** (0.078) |
| Industry assoc. | -2.715*** (0.059) | -2.717*** (0.059) | -2.439*** (0.062) | -2.551*** (0.063) |
| Other non-profit | -4.238*** (0.034) | -4.241*** (0.034) | -3.969*** (0.038) | -4.111*** (0.039) |
| Assets x Credit union | | 0.015** (0.005) | | |
| Assets x Industry assoc. | | 0.026+ (0.015) | | |
| Assets x Other non-profit | | 0.012*** (0.002) | | |
| Log(Assets) | | | 0.261*** (0.014) | 0.206*** (0.015) |
| Log(Assets) x Credit Union | | | | 0.200*** (0.059) |
| Log(Assets) x Industry assoc. | | | | 1.693*** (0.263) |
| Log(Assets) x Other non-profit | | | | 0.834*** (0.047) |
| Num.Obs. | 495 129 | 495 129 | 495 129 | 495 129 |
| Log.Lik. | -22 091.168 | -22 073.176 | -21 950.973 | -21 829.469 |

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Reference category = Banks

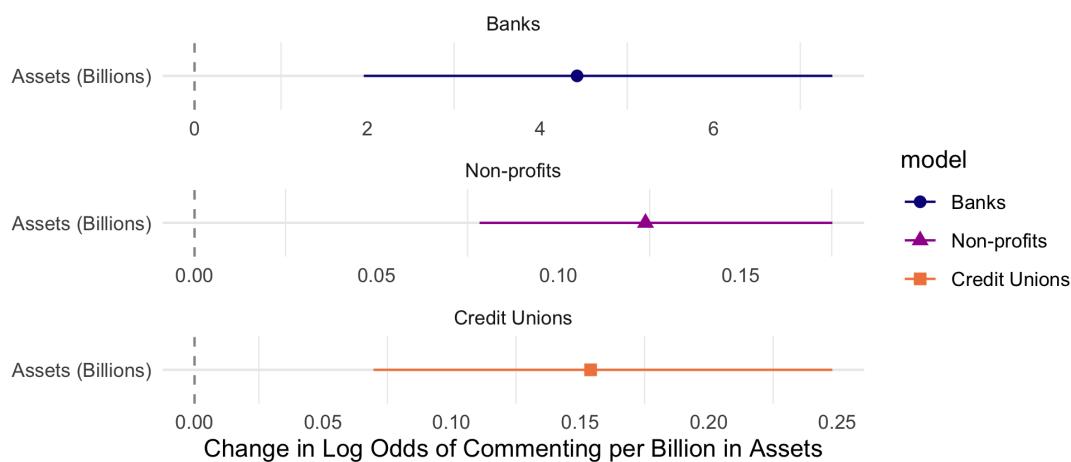
Figure 24: Log Odds of Participating in Dodd-Frank Rulemaking by Assets

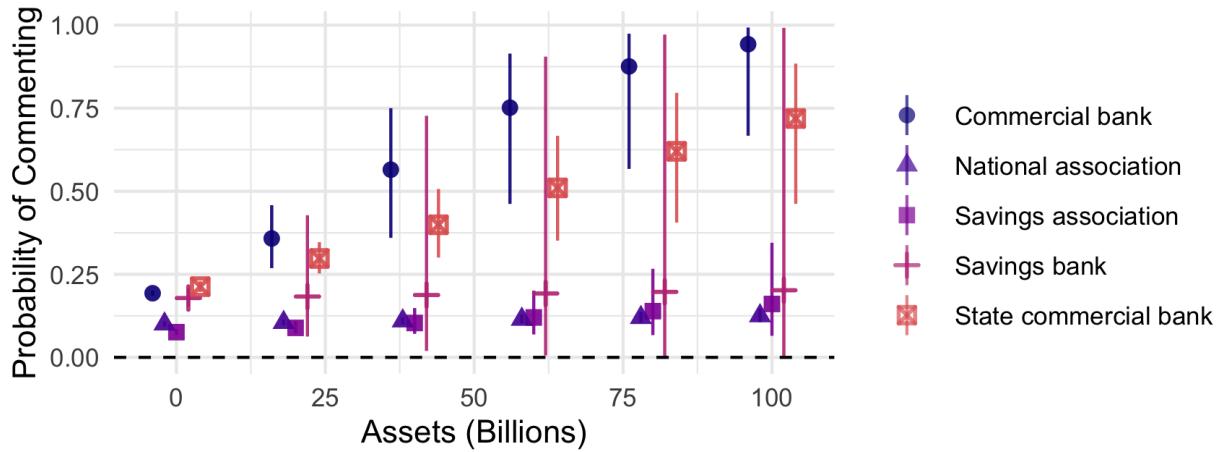
Table 5: Log Odds of Commenting on Any Dodd-Frank Rule

| | Banks | Non-profits | Credit Unions |
|--------------------|--------------------|---------------------|---------------------|
| Dependent Variable | Commented | Commented | Commented |
| Assets (Billions) | 0.004** (0.001) | 0.120*** (0.024) | 0.154*** (0.046) |
| Num.Obs. | 25 670 | 463 617 | 5842 |
| Log.Lik. | -11 100.811 | -9927.730 | -1254.445 |

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

that commercial banks were disproportionately represented in Dodd-Frank rulemaking and non-commercial banks (e.g. savings associations) were less represented, even controlling for asset differences. This provides further support for the *Profit-motivated Participation Hypothesis* (H2).

Likewise, assets remain a significant predictor of whether an organization comments even controlling for differences in the type of bank institution. This provides additional evidence for the *Differential Participation Hypothesis* (H1).

Figure 25: Predicted Probability of Participating in Dodd-Frank Rulemaking by Type of Bank

8.2 The Odds of Commenting by Political Spending

Figure 26 (Table 8) shows the results of logit models predicting the log odds of commenting on a Dodd-Frank rule by each organization's average or total political action committee contributions. These models show that organizations that spend more on political campaigns are significantly more likely to comment.

Table 6: Log Odds of Commenting on Any Dodd-Frank Rule by Bank Type

| | (1) | (2) | (3) | (4) |
|-----------------------------------|--------------------|----------------------|----------------------|----------------------|
| Dependent Variable | Comment | Comment | Comment | Comment |
| Assets (Billions) | 0.004** (0.001) | 0.006*** (0.002) | 0.029*** (0.005) | |
| Non-commercial bank | | -0.834*** (0.038) | -0.813*** (0.038) | -1.009*** (0.055) |
| Assets x Non-commercial bank | | | -0.026*** (0.006) | |
| Log(Assets) | | | | 0.207*** (0.013) |
| Log(Assets) x Non-commercial bank | | | | -0.058** (0.022) |
| Num.Obs. | 25 670 | 25 670 | 25 670 | 25 670 |
| Log.Lik. | -11 100.811 | -10 840.390 | -10 822.941 | -10 702.495 |

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

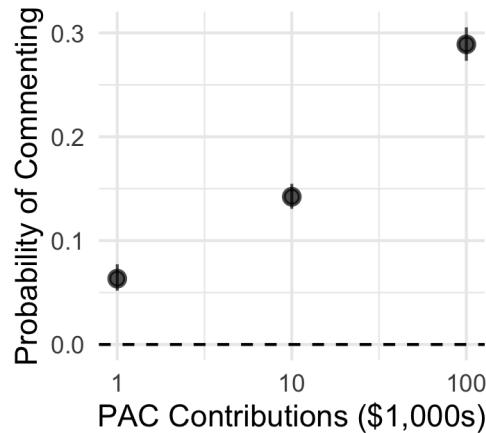
Non-commercial banks include savings associations and national associations.

Table 7: Log Odds of Commenting on Any Dodd-Frank Rule by Bank Type

| | (1) | (2) |
|-----------------------|--------------------|---------------------|
| Dependent Variable | Comment | Comment |
| Assets (Billions) | 0.004** (0.001) | 0.006*** (0.002) |
| National Bank | | 0.292*** (0.074) |
| Commercial Bank | | 1.079*** (0.066) |
| Savings Bank | | 0.964*** (0.109) |
| State Commercial Bank | | 1.215*** (0.077) |
| Num.Obs. | 25 670 | 25 670 |
| Log.Lik. | -11 100.811 | -10 800.787 |

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Reference category = savings associations

Figure 26: Predicted Probability of Participating in Dodd-Frank Rulemaking by Political Spending**Table 8:** Log Odds of Commenting on Any Dodd-Frank Rule by Bank Type

| | (1) | (2) | (3) | (4) |
|------------------------------------|---------------------|---------------------|---------------------|---------------------|
| Dependent Variable | Commented | Commented | Commented | Commented |
| Avg. PAC Spending (Thousands/Year) | 0.002*** (0.000) | | | |
| Total PAC Spending (Thousands) | | 0.000*** (0.000) | | |
| Log(Avg. PAC Spending) | | | 0.389*** (0.028) | |
| Log(Total PAC Spending) | | | | 0.277*** (0.016) |
| Num.Obs. | 6399 | 6399 | 6399 | 6399 |
| Log.Lik. | -3299.087 | -3239.313 | -3214.713 | -3164.063 |

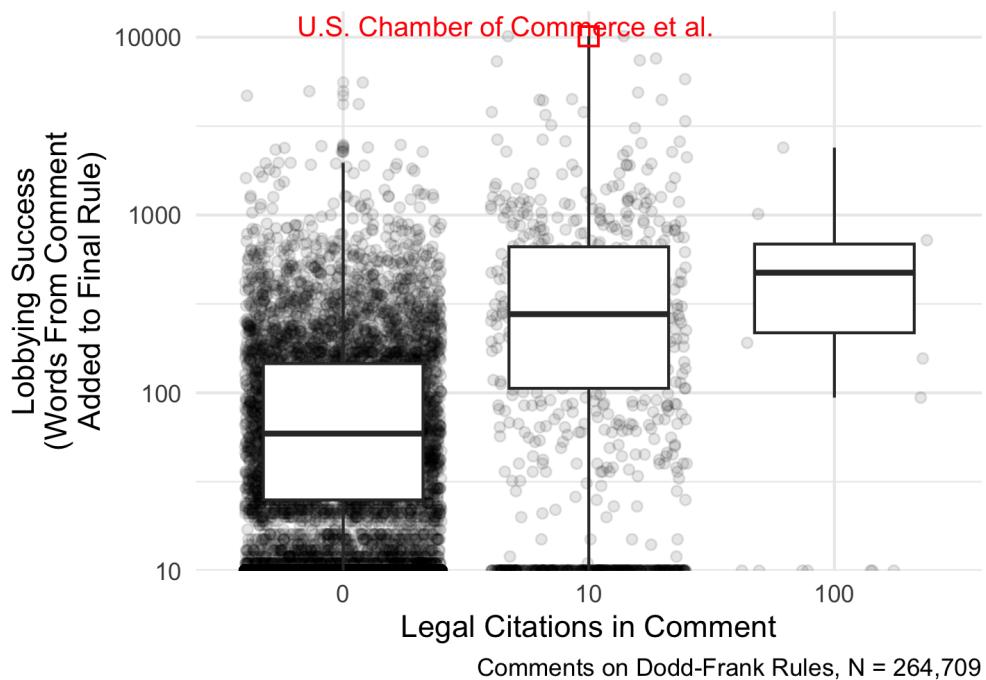
+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

9 Measuring comment sophistication with legal citations

Our analyses investigating the *Differential Sophistication* (H5) and *Dividends of Sophistication* (H6) hypotheses rely on a measure of comment sophistication based on the number of technical terms used in a given comment. However, using technical terms is only one way to gauge sophistication. An alternate measure would be the number of legal citations in the comment. Wealthier organizations may be more influential by using sophisticated legal arguments in commenting.

This section replicates the descriptive and regression analyses conducted in sections 4.2.3 and 4.2.4, using the number of legal citations as the measure of comment sophistication. We count the number of citations to the U.S. Code, Supreme Court cases, appellate and district court cases, the code of federal regulations, and the federal register. Like in the analyses relying on technical terms, we sum up citations across all the submitted documents of a commenter. Figure 27 shows a strong relationship between legal citations and comment lobbying success, again highlighting the comment from the Chamber of Commerce discussed in Section 3.

Figure 27: Lobbying Success by Comment Sophistication



Our findings on wealth technical sophistication (H5) hold even with an alternative legal measure of sophistication. Figure 28 shows that the number of words from the comment added to the final rule is correlated with the number of legal citations. Like the analyses using technical terms, the figure also shows a positive correlation between the number of legal citations in a comment and the amount of text it shares with the final rule.

Figure 28: Amount of Legal Language by Assets (Among Comments from Banks on Dodd-Frank Rules)

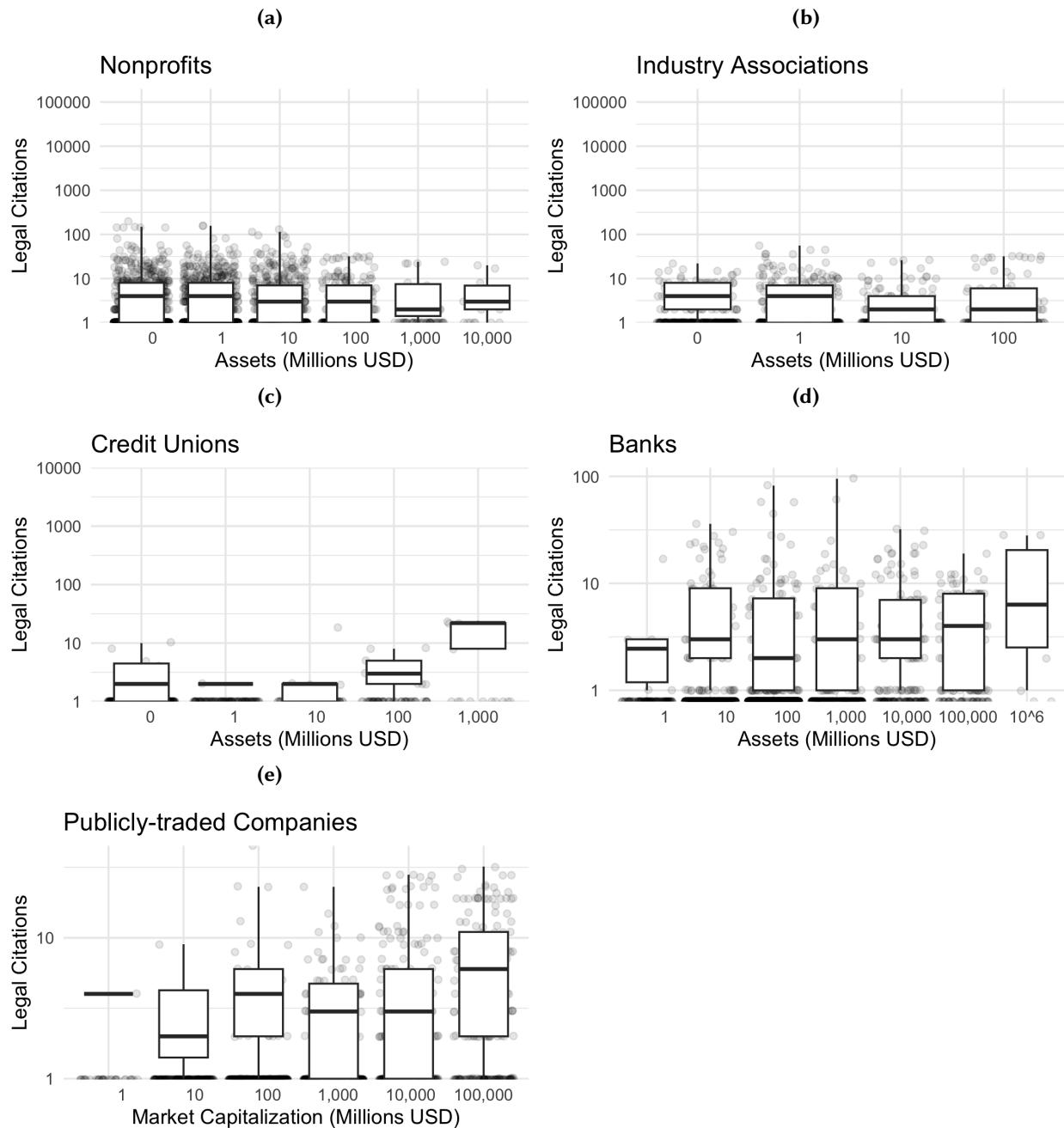


Table 9: Poisson Models of Lobbying Success by Comment Sophistication

| | (1) | (2) |
|----------------------|---------------------|---------------------|
| Dependent Variable | Efficacy | Efficacy |
| Technical Terms | 0.000*** (0.000) | |
| Legal Citations | 0.020*** (0.000) | |
| Log(Technical Terms) | | 0.798*** (0.001) |
| Log(Legal Citations) | | 0.175*** (0.001) |
| Num.Obs. | 9035 | 9035 |
| Log.Lik. | -1 146 644.127 | -590 664.069 |

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Findings regarding the relationship between technical sophistication and the number of words from a comment added to final rule (efficacy) are robust to alternative specifications. Table 9 re-estimates the models from Table 2 using Poisson regression. While Poisson regression is more appropriate for counts of words added to the final rule, the coefficients are more difficult to interpret than the OLS results in Table 9.

Analyses on sophistication and influence (H6) also hold up when using a measure of legal sophistication. Figure 27 shows that comments using more legal language are more likely to contain text added in the final rule.

Figure 29: OLS Models of Lobbying Success by Legal Language

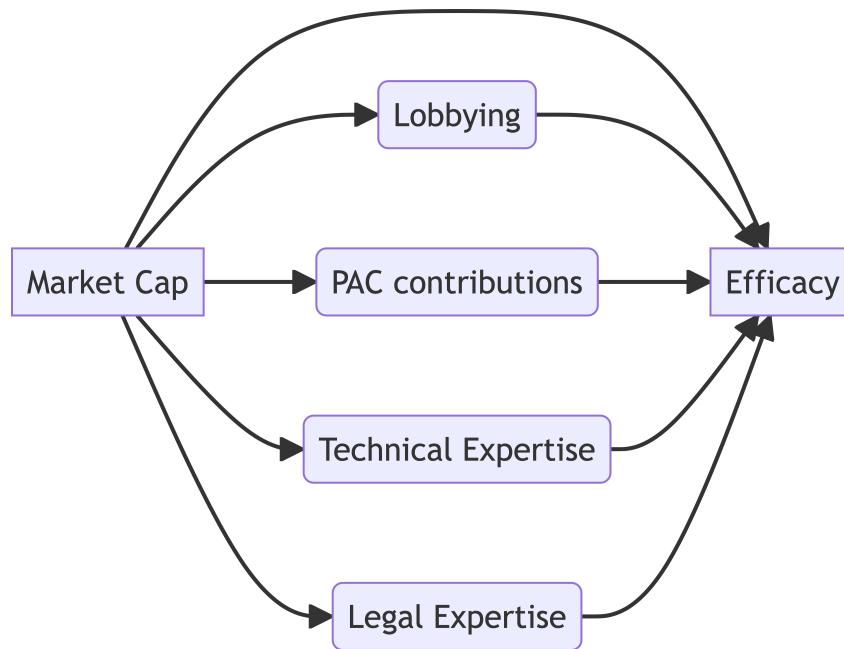
10 Mediation

Lobbying and PAC contributions are both forms of political spending that would influence the rulemaking process in a direct financial way. Technical expertise and legal expertise are both measured using dictionary techniques, looking at banking terms and legal citations, respectively. The expertise pathways each come from a sense that large companies employ experts who have meaningful advice to give to agencies, whether it be on finer points of the law or nuance in how regulations should be enforced to capture the correct behaviors.

Money itself can influence the efficacy, if there is a portion of efficacy that is purely a function of wealth. For example, if attention was driven by the wealth of a company, then this might be a direct relationship from the market cap of the company to the efficacy of their comments.

Figure 30 formalizes these potential pathways into a basic DAG.

Figure 30: Stylized pathways of influence from wealth to efficacious comments.



To test the different pathways, we require some strong assumptions.

1. There is a causal relationship from the market cap of a company to the efficacy of comments.
2. The paths included in the analysis are the full enumeration of possible paths.
3. The relationships can be described by linear models and binarized treatments.

Note that while these assumptions are possible, our estimation is not identified. Further, we are technologically limited by existing software for mediation analysis (see the [mediation R package](#)).

Figure 31 demonstrates that the Average Conditional Marginal Effect (ACME) for technical sophistication is nearly identical to the Total Effect of market capitalization on lobbying success. This means that technical sophistication explains nearly all of the greater success of wealthier companies. Legal sophistication also explains a large share of the total relationship when we use legal citations as an alternative mediator. This suggests that legal citations explain much of the greater success of wealthier companies.

Figure 31: Political Spending, Lobbying, Technical Sophistication, and Legal Sophistication as a Proposed Mediators Between Wealth and Lobbying Success

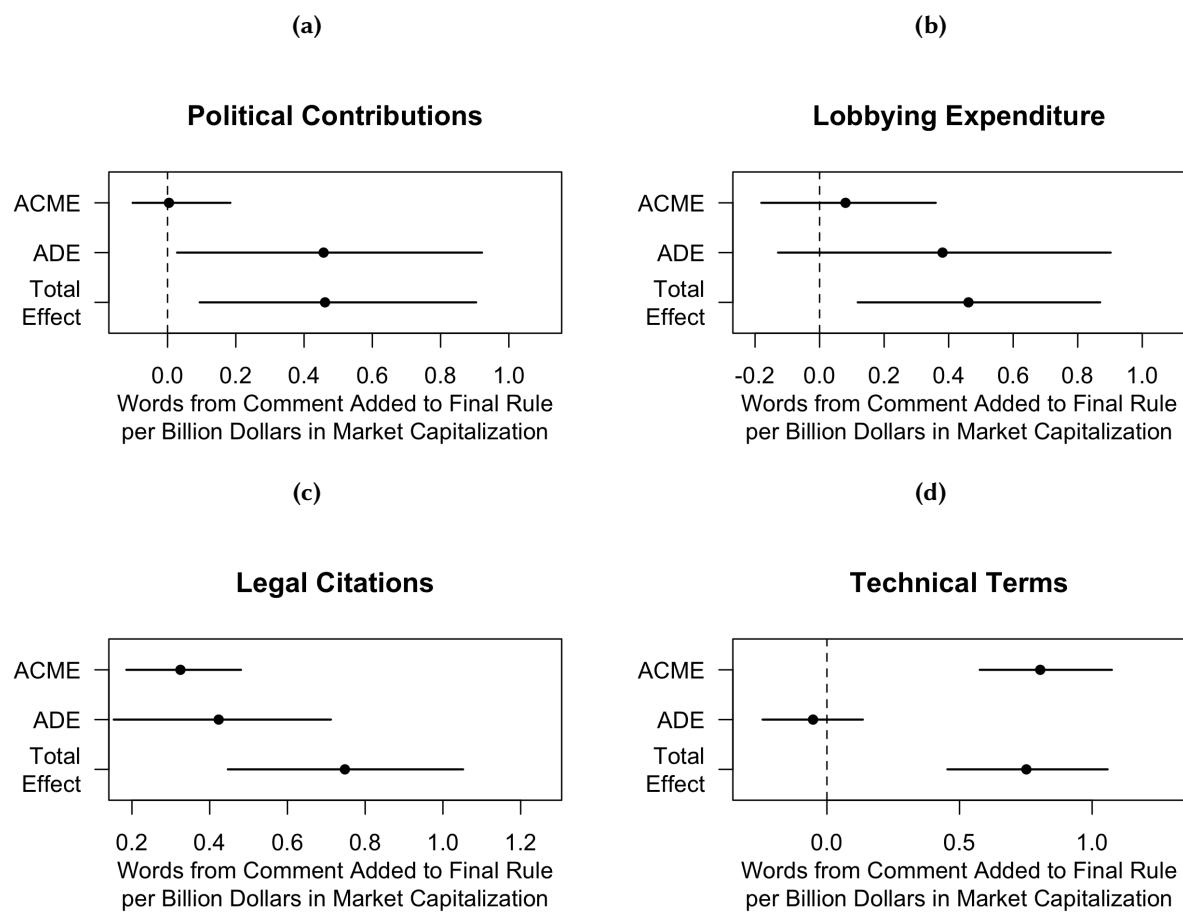


Table 10: Models for Mediation Analysis

| | (1) | (2) | (3) | (4) | (5) |
|----------------------------------|------------------------|----------------------|---------------------|---------------------|--------------------|
| Dependent Variable | PAC Spending | LDA Spending | Technical Terms | Legal Citations | Efficacy |
| Market Capitalization (Billions) | 121.287*** (13.818) | 50.977*** (4.107) | 6.688*** (1.036) | 0.015*** (0.003) | -0.317* (0.126) |
| Lobbying Spending | | | | 0.012*** (0.004) | |
| PAC Spending | | | | -0.003** (0.001) | |
| Technical Terms | | | | 0.118*** (0.006) | |
| Legal Citations | | | | 2.090 (2.216) | |
| Num.Obs. | 299 | 299 | 299 | 299 | 299 |
| Log.Lik. | -3505.358 | -3142.570 | -2730.868 | -992.886 | -2001.372 |

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

11 Measuring change between draft and final rules

In dealing with endogeneity, one methodological choice merits elaboration: we excluded text from the proposed rule when measuring lobbying success but not when measuring sophistication. This choice rests on the underlying concepts we are attempting to measure. In measuring text reuse, we aim to capture ideas that were not yet in the policy when the comment was submitted. Thus, text copied from the agency's proposal must be excluded. Indeed, text that appears in both the draft and final rule is what did *not* change. If a commenter attached a marked-up version of the proposed rule, we aim to exclude all but their suggested changes.

In contrast, in measuring sophistication, we aim to assess how much the commenter utilizes expertise to engage in technical policy debates. Here, attaching a marked-up version of the proposed rule captures the underlying concept of sophistication. Thus, our counts of technical banking terms do not exclude the text of the draft rule. Even if they are the agency's terms, engaging with its texts indicates sophistication. For example, the comment with the most legal terms from a bank contained a 4-page comment and 112 pages of attachments, 105 of which were the full proposed rule. These 105 pages were excluded from our measure of text reuse but included in the legal and banking terms count.

12 Validation of text re-use as a measure of lobbying success

Our algorithm works in the following steps: Match each comment to the proposed rule that came after the proposed rule and before the final rule. For a simple sequence (1) proposed rule, (2) comment, (3) final rule, this step is perfunctory. Not all rulemaking sequences, however, follow this template. Some have multiple proposed rules. Suppose a rule has 2 proposed rules and a final rule and a comment came after the second proposed rule (i.e. (1) proposed rule, (2) proposed rule two, (3) comment, and (4) final rule). We would match the comment to the second proposed rule, since this comment is likely responding to that version of the proposed rule rather than the first one.

For the proposed-final pair, tokenize the proposed and final rule into sentences and then remove the text of the proposed rule from the final rule.

Re-tokenize both the proposed and final rules into 10-grams. Find the overlap between proposed and final rules, keeping track of the position index of the 10-grams. 10-grams that are consecutive in the proposed rule should be treated as consecutive n-grams for the purpose of counting consecutive words. In this manner, two consecutive 10-grams would have a sequence length of 11 and not 20.

This algorithm has a few notable strengths. First, it focuses on text that is both legally binding and the explanation for why it is legally binding. Second, the results are easy to interpret: efficacy is simply the number

of words in a comment and its corresponding final rule. There are, however, several drawbacks. Notably, not all sequences in both comments and final rules are equally influential. Second, when there are multiple proposed and final rules, the algorithm relies on the date a comment is submitted to match the comment to the right proposed-final pair. This is problematic when a comment is written about one proposed rule but submitted after a subsequent proposed rule is released.

Below, we shed light on why several comments have efficacy values that are particularly high.

- 1) <https://www.sec.gov/comments/s7-33-10/s73310-110.pdf>, Efficacy score = 10131

This letter is unusual in that its members (Americans for Limited Government, Ryder Systems, Inc., Financial Services Institute, Inc., U.S. Chamber of Commerce, Verizon, and White & Case, LLP) are all part of multiple coalitions and submitted multiple comments. The Chamber of Commerce, for example, submitted five comments and attended seven meetings and was a part of two separate coalitions.

- 2) <https://www.sec.gov/comments/s7-33-10/s73310-35.pdf>, Efficacy score = 10131

This is the same letter as above, submitted twice to the SEC although recorded by the SEC as a separate comment. Reassuringly it has the same efficacy!

- 3) <https://comments.cftc.gov/Handlers/PdfHandler.ashx?id=24275>, Efficacy score = 7593

- 4) <https://comments.cftc.gov/Handlers/PdfHandler.ashx?id=24205>, Efficacy score = 7411

- 5) <https://www.sec.gov/comments/s7-41-11/s74111-230.pdf>, Efficacy score = 7312

The following three comments (<https://comments.cftc.gov/Handlers/PdfHandler.ashx?id=24275>, <https://comments.cftc.gov/Handlers/PdfHandler.ashx?id=24205>, <https://www.sec.gov/comments/s7-41-11/s74111-230.pdf>) are all related. The CFTC, OCC, FRB, FDIC, and SEC all worked together to develop rules to prohibit banking companies from engaging in proprietary trading (trading securities with their own money instead of clients'). While all five agencies worked together to write a final rule, in the end the CFTC wrote one rule and the OCC, FRB, FDIC, and SEC wrote another. Despite the different final rules, the agencies "the CFTC and the other agencies have worked closely together to develop the same rule text and supplementary information, except for information specific to the CFTC or the other agencies, as applicable."

The comment <https://comments.cftc.gov/Handlers/PdfHandler.ashx?id=24275> is a 340-page letter from Occupy the SEC, a group affiliated with Occupy Wall Street, submitted on the CFTC's version of the final rule. It was cited 285 times in the preamble to the final rule.

The comment <https://comments.cftc.gov/Handlers/PdfHandler.ashx?id=24205> is a 325-page letter from Occupy the SEC and was submitted on the CFTC's version of the final rule. It was cited 284 times in the preamble to the final rule.

The comment <https://www.sec.gov/comments/s7-41-11/s74111-230.pdf> is a 325-page letter from Occupy the SEC and was submitted to the OCC, FRB, FDIC, and SEC's version of the rule. It was cited 284 times in the preamble to the final rule.

6) <https://www.sec.gov/comments/s7-25-11/s72511-55.pdf>, Efficacy score = 5809

SIFMA is cited over 500 times by the CFTC in the preamble to the final rule.

7) <https://www.sec.gov/comments/s7-18-11/s71811-32.pdf>, Efficacy score = 5563

Standard & Poors's letter to the SEC is cited over 200 times by the SEC in the preamble to the final rule.

8) <https://comments.cftc.gov/Handlers/PdfHandler.ashx?id=25016>, Efficacy score = 4965

Not only did the FIA help develop the guidelines that were codified into a final rule, the FIA's letter was cited 98 separate times by the CFTC in the preamble to the final rule.

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