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## BLOWING HOT AIR: REGULATORY CREDIBILITY AND THE LIVING WILL REQUIREMENT

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Building on the concept of credibility as applied in finance and economics, I introduce a novel perspective on the concept of regulatory credibility, which focuses on beliefs about future regulatory actions rather than solely on the performance of a statutory mandate. I then apply this concept to the decision by the Fed and the FDIC to reject the Living Wills of eleven of the world's largest financial institutions on August 5, 2014.

I argue that the Fed and the FDIC's rejection represents a prime example of a regulatory action that affected the regulated entities not through the direct effect of the rejection, but rather through its indirect effect. In particular, I hypothesize that the rejection affected the credibility of the Living Will requirement, and that this change in regulatory credibility affected the regulated financial institutions.

Based on this analysis, I formulate four testable predictions about how share prices should have reacted to the rejection. I then perform an event study using two separate methodologies and find strong evidence for all four of these predictions. Taken together, these results show both that the regulators' rejection affected their credibility with respect to the Living Will requirement, and that this change in credibility had a significant impact on the financial markets. I then discuss the policy implications of regulatory credibility.

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#### INTRODUCTION

In the aftermath of the global financial crisis of 2007–2008, two terms entered the common lexicon: "bailout" and "too-big-to-fail" (or "TBTF").<sup>1</sup> Responding to an irate public, legislators vowed to end TBTF, so that never again would large financial institutions be "bailed out" with taxpayer money. The statutory expression of this response was the passage of the Dodd–Frank Wall Street Reform and Consumer Protection Act ("Dodd–Frank" or "Act"),<sup>2</sup> which was supposed to end TBTF and bailouts for good. The response from many was simple: "I don't believe you."

I argue that this lack of credibility is problematic. In the context of the regulation of large financial institutions and systemic risk, a lack of credibility can undermine the regulatory goals entirely. Hopefully, the general claim that "credibility matters" will come as a surprise to no one. Indeed, there is a rich literature in law, economics, and political science that studies credibility in different contexts.<sup>3</sup> When used in the context of strategic interactions between parties, the concept of credibility is often associated with commitment devices, which alter the incentives of one or more of the parties. At the same time, however, there is a separate concept of regulatory credibility, which is focused more on how effectively a regulator is fulfilling its mandate. I borrow from both of these strands of literature and develop a new hybrid concept of regulatory credibility, which is particularly well suited for the regulation of systemic risk and the financial sector. This represents the first contribution of this Article.

<sup>1.</sup> While both terms pre-date the most recent financial crisis, they do not appear to have achieved its current level of prominence until more recently. Data from Google Trends indicates that the use of these terms in searches was close to zero between 2004 (the earliest period for which data is available) and 2007, and rose sharply in 2008. GOOGLE TRENDS, https://trends.google.com/trends/ (last visited Jan. 17, 2018) (data on file with author). While the phrase "too-big-to-fail" was also used in the 1980s during the Savings and Loan Crisis, it returned to prominence after the global financial crisis. *See, e.g.*, U.S. GEN. ACCOUNTING OFFICE, GAO/GGD-89-47, TROUBLED FINANCIAL INSTITUTIONS: SOLUTIONS TO THE THRIFT INDUSTRY PROBLEM 123 (1989).

<sup>2.</sup> Dodd–Frank Wall Street Reform and Consumer Protection Act, 12 U.S.C. §§ 5301 et seq. (2012) [hereinafter Dodd–Frank, or Act].

<sup>3.</sup> See infra notes 7–10.

What is regulatory credibility? Fundamentally, my credibility is about your perception of how I will act in the future. Because credibility is about perceptions, we cannot observe or measure it directly without looking inside people's heads. Nevertheless, what I do and say today influences your perceptions of how I will act in the future. If your perceptions of how I will act in the future change, you might change how you behave tomorrow. This strategic interplay is how something ephemeral like credibility can have enormous concrete effects in the world.

Legal scholarship is more accustomed to thinking about legal and regulatory credibility in a binary context: either a statute is valid, or it is not. A law is dead-letter, or it is not. When the concept of credibility is applied to regulation, it also tends to be binary: a regulation is enforced, or it is not.<sup>4</sup> While this concept is useful, it has its limits. First, the fact that a regulator is enforcing a rule or otherwise doing its job *today* does not mean that its statements about how it will enforce a rule or do its job in the *future* are credible. Rather, we must look beyond a regulator's direct actions to uncover a richer concept of regulatory credibility. Second, the binary understanding of regulatory credibility misses the fact that credibility is a spectrum. Like an individual, a regulator can be more or less credible, not simply "credible" or "not credible."

The concept of regulatory credibility that I adopt is simple and powerful. Unfortunately, it can also be difficult to pin down. Because it is both intangible and forward-looking, it is not easily measured. Because it exists on a spectrum rather than as a binary, it is difficult to identify. For example, it is

<sup>4.</sup> For example, when legal scholars discuss credibility in the context of environmental regulation, they are generally referring to whether or not a regulation is *actually being enforced. See, e.g.*, Bruce A. Ackerman & William T. Hassler, *Beyond the New Deal: Coal and the Clean Air Act*, 86 YALE L.J. 1466, 1486 (1980) (describing "the EPA's interest in establishing its credibility by acting in pursuit of short-term goals"). An environmental protection regulation is not credible because the agency responsible for enforcing it simply ceases or fails to do so. *See* Barry Boyer & Errol Meidinger, *Privatizing Regulatory Enforcement: A Preliminary Assessment of Citizen Suits Under Federal Environmental Laws*, 34 BUFF. L. REV. 833, 962 (1985) ("Credibility means being tough (carrying through on threats and promises), being competent (understanding the issues, having access to the decision makers), and being reasonable (compromising where appropriate, looking for areas of common ground).").

much easier to point to the Environmental Protection Agency's inaction in regulating coal emissions than it is to show that a particular regulatory action or announcement affected perceptions about a regulator's future actions. Nevertheless, such perceptions, and changes therein, can have real and important effects. To overlook changes in regulatory credibility of this kind is therefore a serious mistake.

This is particularly true in the financial context. As I describe in more detail, there are two features of finance that make concerns about regulatory credibility unusually important. First, finance is inherently forward-looking; beliefs and perceptions about the future are the fundamental drivers of the financial markets. Second, in the context of systemic risk and the financial system, there is a feedback loop between regulatory *credibility* and regulatory *ability*. If the financial markets do not believe that TBTF is really over, shareholders will want banks to be both large and risky. Because even the most wellintended regulator cannot be everywhere at once, this will tend to push the financial system as a whole toward increased risk-taking. Despite their statements to the contrary, the next time they are faced with a financial meltdown, regulators and legislators might relent, reasoning that a bailout is still better than the alternative. The probability that they will be forced to do so is higher when the risk to the economy is greater. In other words, lack of credibility can be self-fulfilling.

If credibility is about perceptions and beliefs about future behavior, then we should look for evidence of changes in credibility in the place where all the perceptions and beliefs about the future of the entire economy are combined into one convenient number: the stock market. Specifically, if a surprise announcement by a regulator affects that regulator's credibility in the eyes of market participants, this effect should manifest itself in the stock price of affected companies. The standard event study methodology can therefore be used to identify changes in regulatory credibility.

In the Article, I demonstrate this point in the context of Dodd–Frank's "Living Will" requirement. Specifically, I analyze the surprise rejection on August 5, 2014 of the Living Wills of eleven of the world's largest financial institutions<sup>5</sup> by

<sup>5.</sup> Joint Press Release, Bd. of Governors of the Fed. Reserve Sys. & Fed. Deposit Ins. Corp., Agencies Provide Feedback on Second Round Resolution

the Board of Governors of the Federal Reserve (the "Fed") and the Federal Deposit Insurance Corporation (the "FDIC").<sup>6</sup> While many aspects of the Dodd–Frank Act have been thoroughly analyzed and discussed, the Act's Living Will requirement has attracted much less scholarly attention. This is not because the subject is unimportant. The Living Will requirement was designed to be a bulwark against systemic risk. If we have learned anything from the global financial crisis, it is that systemic risk affects Wall Street and Main Street alike. When Lehman Brothers collapsed into the largest and most complex bankruptcy in history,<sup>7</sup> the entire global economy was affected. By forcing the largest financial institutions to plan for their own demise before they run into problems, the Living Will requirement is intended to ensure that something like the Lehman Brothers bankruptcy never happens again.

To implement this regulatory goal, Dodd–Frank and its accompanying regulations give the Regulators sweeping powers to enforce the Living Will requirement. To ensure that each institution's Living Wills represents a credible plan to wind down that institution without harming the rest of the financial system, these powers include everything from a slap on the wrist to the ability to break-up a recalcitrant financial institution. In the context of the modern financial system, this latter power is about as extreme as is gets.

Until now, however, significant barriers have stood in the way of further study of the Living Will requirement. First, the bulk of the content of these plans is kept confidential by the Regulators, making it impossible *ex ante* for scholars to study directly the effectiveness of the requirement in forcing financial institutions to plan for their own demise. Second, despite the fact that the requirement has been in force since July 1, 2012, there remains considerable ambiguity around what, pre-

Plans of "First-Wave" Filers (Aug. 5, 2014) [hereinafter Agencies Provide Feedback on Second Round Resolution Plans of "First-Wave" Filers] (on file with author), http://www.federalreserve.gov/newsevents/press/bcreg/20140805a.htm.

<sup>6.</sup> Hereinafter, I shall refer to the "Fed" and the "FDIC" jointly as the "Regulators."

<sup>7.</sup> See Brett Miller, *The Examiners: Lehman Brothers Shouldn't Be Used to Rewrite Fee Laws*, WALL ST. J.: BANKR. BEAT (Feb. 3, 2015, 12:17 PM), http://blogs.wsj.com/bankruptcy/2015/02/03/the-examiners-lehman-brothers-shouldnt-be-used-to-rewrite-fee-laws/.

cisely, the institutions covered by the requirement must include in order to satisfy the Regulators.<sup>8</sup> This makes it difficult to conduct any analysis that goes beyond the text of the statute and the regulations. Finally, the lack of good data has until now stymied empirical research into the requirement. Given the available data, it is impossible to quantify the impact of the requirement directly. Moreover, because it was passed as part of a massive overhaul of the financial system, looking for an indirect impact around the time of the Act's passage is not a valid approach.

I take a different approach and study the Living Will requirement through the lens of the August 5, 2014 announcement. After a careful analysis of the context of both the requirement and the announcement, I perform an event study to identify the effect of the announcement on the share prices of sixteen large financial institutions: the eleven institutions that were directly affected by the rejection and five other institutions that were just outside the rejected group. I find the same pattern of effects on institutions that were directly affected as on those that were not. This indicates that the market did not interpret the rejection as reflecting anything about the rejected financial institutions themselves. Rather, it reflected something about the Regulators. In particular, it suggests that market participants interpreted the rejection as foreshadowing future regulatory actions. What we see here is the effect of a change in regulatory credibility. To put it plainly, my results indicate that the market interpreted the rejection as an empty

<sup>8.</sup> Writing before the implementation of the requirement in his essay discussing the Living Will requirement in the context of the literature on pre-commitment to bankruptcy treatment, Adam Feibelman repeatedly mentions the uncertainty surrounding the implementation of the requirement. *See, e.g.,* Adam Feibelman, *Living Wills and Pre-Commitment,* 1 AM. U. BUS. L. REV. 93, 94 (2011) (noting the "uncertainty about the ultimate content and operation of the regime"). As discussed in more detail in Part II.A.4, the Regulators themselves recognized this ambiguity and described an iterative process through which both the financial institutions and the Regulators would come to determine the specifics of the requirement over time. *See* Resolution Plans Required, 76 Fed. Reg. 67323, 67331 (Nov. 1, 2011) (to be codified at 12 C.F.R. pts. 243, 381). Judging by the reactions in the press to the events of August 5, 2014, there remains considerable uncertainty around the particulars of the Living Will requirement. *See infra* Part II.B.

statement. The Regulators were, in other words, "blowing Hot Air."

Blowing Hot Air is in some ways the converse of regulatory jawboning. Recent scholarship has characterized jawboning as informal pressure exercised by a government actor at or even beyond the limit of that actor's legal authority.<sup>9</sup> While it is not explicit in the definition, a defining characteristic of jawboning is that while this pressure may have a weak legal foundation, it is taken seriously by the jawboning target. In contrast, when regulators blow Hot Air—such as in the Regulators' rejection of the Living Wills—they are acting well within the scope of their legal authority. Nevertheless, the statement or action is not credible, and is not taken seriously by market participants.

The remainder of this Article proceeds as follows. In Part I, I discuss the concept of regulatory credibility and explain its particular importance in the context of systemic risk and financial regulation. I also relate regulatory Hot Air to literature on jawboning. In Part II, I describe the legal aspects of the Living Will requirement, and provide some anecdotal evidence from contemporary news reports to motivate my empirical analysis. In Part III, I analyze the specific context of the Living Will requirement to uncover the role of regulatory credibility in this setting. Based on this analysis, I identify the companies most likely to have been affected by the rejection, develop four testable hypotheses, and perform an event study. My empirical analysis demonstrates both that the rejection resulted in a change in regulatory credibility, and that this change mattered to the financial institutions in question. Finally, in Part IV, I touch on some policy implications of regulatory credibility.

#### I.

## **R**EGULATORY CREDIBILITY

## A. Regulatory Credibility Defined

The claim that credibility matters is not a novel one. Indeed, there is a rich, cross-disciplinary literature on the role and importance of credibility. The concept is often associated

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<sup>9.</sup> See Derek E. Bambauer, Against Jawboning, 100 MINN. L. REV. 51, 57 (2015).

with commitment—how can an individual, corporation, or governmental entity commit to some future act? While the concept of credible commitment is unquestionably important, in some contexts it can be fruitful to abstract away from the commitment aspect and focus on the credibility of the regulator itself.

This conception of credibility has two key features. First, my credibility has to do with how I am perceived by others. Therefore, it is both external and intangible. My credibility (or lack thereof) exists entirely in the minds of others. Second, my credibility *today* has to do with what you think my actions will be in the future. Credibility is not very meaningful in the context of a one-shot interaction. Nor is it important in the context of a series of instantaneous, or almost instantaneous, interactions. The temporal component of credibility implies a gap between what I say or do today and what I will ultimately say or do at some later date.

Because of these two features of credibility, it is natural that the concept has been paired with the question of commitment. Legal scholars have done this with enormous success in a wide variety of contexts including contracts,<sup>10</sup> securities regulation,<sup>11</sup> and international law,<sup>12</sup> to name just a few examples. Significantly, the concept of credible commitment has been applied to *regulators* and *legislators*, as well as to private parties.<sup>13</sup> The central question in the context of credible commitment is a valuable complement to credibility, the concept of credibility, the concept of credibility, the concept of credibility need not be paired with a commitment in order to be useful. Even without a commitment, for example, my credibility could tell you something about how I intend to

<sup>10.</sup> See Michael Trebilcock & Jing Leng, The Role of Formal Contract Law and Enforcement in Economic Development, 92 VA. L. REV. 1517 (2006).

<sup>11.</sup> See Edward Rock, Securities Regulation as Lobster Trap: A Credible Commitment Theory of Mandatory Disclosure, 23 CARDOZO L. REV. 675 (2002).

<sup>12.</sup> See Jason Webb Yackee, Bilateral Investment Treaties, Credible Commitment, and the Rule of (International) Law: Do BITs Promote Foreign Direct Investment?, 42 L. & Soc'y Rev. 805 (2008).

<sup>13.</sup> See, e.g., Roberta Romano, The States as a Laboratory: Legal Innovation and State Competition for Corporate Charters, 23 YALE J. ON REG. 209, 213 (2006) (discussing Delaware's "commitment to corporate law responsiveness"); Brian Levy & Pablo T. Spiller, The Institutional Foundations of Regulatory Commitment: A Comparative Analysis of Telecommunications Regulation, 10 J.L. ECON. & ORG. 201 (1994).

act in the future. The importance of regulatory credibility in this context has not been lost on financial economists. For example, in a recent paper, Ephraim Clark and Octave Jokung present a theoretical model that defines "credibility as a cost in the sense that the costs of regulatory enforcement will be higher in a less credible system."<sup>14</sup> As discussed in the next subsection, this application of credibility is particularly important in the context of the financial system.

Surprisingly, this conception of regulatory credibility does not seem to have been adopted in legal literature. Instead, some authors have developed a distinct notion of regulatory credibility. For example, two recent articles that tackle the concept of regulatory credibility in the context of the financial system invoke a concept of credibility that uses neither the perception nor the temporal components of credibility discussed above. Instead, these articles by Miriam Weismann and Weismann et al. use a concept of credibility that is centered on what a regulator or agency is doing today.<sup>15</sup> Specifically, according to Weismann's use of the term, "[i]deally, when the [Inspector General] audit results reveal that the agency has satisfied its congressional mandate, it acts credibly. When the agency does not, it fails."<sup>16</sup> Recognizing that "[t]he problem is that averting crisis through adequate supervision is often difficult to document," Weismann notes that "credible oversight does not mean that oversight is credible only when it demonstrably prevents disaster."17 According to her definition, however, "[a]t a minimum, credible oversight requires that the agency is doing the job it is responsible to do under the law on a relatively continuous basis over time. The agency must exhibit clear focus on the task before it."18 Weismann then applies this concept of credibility to the actions of several govern-

<sup>14.</sup> Ephraim Clark & Octave Jokung, *The Role of Regulatory Credibility in Effective Bank Regulation*, 50 J. BANKING & FIN. 506, 507 (2015).

<sup>15.</sup> Miriam F. Weismann, Achieving the Goal of "Credible" Regulatory Oversight, 15 J. LEGAL, ETHICAL & REG. ISSUES 1, 5 (2012); Miriam F. Weismann, Jason H. Peterson & Christopher A. Buscaglia, *The New Macroprudential Re*form Paradigm: Can It Work?, 16 U. PA. J. BUS. L. 1029 (2014) [hereinafter Weismann et al.].

<sup>16.</sup> Weismann, Achieving the Goal of "Credible" Regulatory Oversight, supra note 15, at 6.

<sup>17.</sup> Id.

<sup>18.</sup> Id.

mental agencies. Continuing with this line of research, the Weismann et al. article adopts the same understanding of regulatory credibility<sup>19</sup> and uses it to analyze elements of the new macroprudential financial regulation that arose out of Dodd–Frank.

The concept of regulatory credibility in Weismann and Weismann et al. appears to be closer to efficacy or effectiveness—is the regulator fulfilling its congressional mandate *today*? While this is undoubtedly worthy of study, I decline to adopt this parallel notion of credibility. Instead, I borrow my concept of credibility from the literature on credible commitment, and apply it in the regulatory context. This hybrid concept of regulatory credibility, as I argue next, is both natural and useful in studying the regulation of systemic risk and the financial system.

Regulatory credibility is an invisible stick. Just like any potential punishment, a credible regulator or regulation hangs over the regulated parties, and acts as a powerful incentive for compliance.<sup>20</sup> It does so by increasing the perceived punishments for non-compliance, thereby increasing the relative payoff from compliance. In short, it makes compliance more attractive to the regulated parties.

At the same time, it is invisible: by its very nature, credibility cannot be observed directly. Despite its importance, there is no way to look at a particular regulator or regulation and measure its level of credibility. Nevertheless, as discussed in Part I.F, it is possible to measure *changes* in regulatory credibility. The reason for this is simple: while the stick itself may be invisible, its effects are not. As a result, we can identify changes in regulatory credibility by studying the reactions of regulated entities to regulatory actions and announcements.

#### **B.** Regulatory Credibility and the Financial System

Several fundamental features of finance make regulatory credibility particularly important to financial regulation. At its core, finance is about perceptions and beliefs about risk and

<sup>19.</sup> Weismann et al., *The New Macroprudential Reform Paradigm, supra* note 15, at 1043–45.

<sup>20.</sup> For a general discussion of the value of incentives in daily life, see IAN AYRES, CARROTS AND STICKS: UNLOCK THE POWER OF INCENTIVES TO GET THINGS DONE (2010).

about the future. The only information that matters in the financial markets is information about the future, and the only thing that gets a return above the risk-free rate is risk. Finance is inherently forward-looking. What it is looking for, in particular, is new information, or changes in information about the future. Market participants can only make money by trading on the basis of information that is not *already* incorporated into prices. Everybody knows about Dodd-Frank, and anybody who cares to look at the statute can see that Section 165(d) of Dodd-Frank requires certain large financial institutions to submit "Living Wills" to the Fed and the FDIC.<sup>21</sup> What is not known with certainty is how the Regulators will enforce this requirement, both when the documents are submitted and in the event of future financial distress. This uncertainty about the future introduces an element of risk, making any information that speaks to these questions valuable. Market participants can therefore be expected to pay close attention. One way for them to glean information about how a regulator will enforce a rule in the future is to look at its statements and actions today, and to infer from that how serious it is about enforcing the rule in the future. In other words, even if they are not making any commitments, their behavior today can still convey valuable information to the market that sheds light on future behavior.

Second, and perhaps even more importantly, there is a feedback loop between the financial system and regulatory credibility that distinguishes this setting from others. By now we are all familiar with the concept of moral hazard in the financial system—the idea that, in the presence of an implied government guarantee, financial institutions will be tempted to become bigger and riskier than they otherwise would. The feedback loop simply adds another layer to this story. For example, suppose financial institutions believe that the Regulators will allow them to fail if their failure would cause a small crisis, but that, despite claims to the contrary, if their failure would cause a large crisis, the Regulators will step in and save them. The obvious rational response by the financial institutions is to become larger and riskier, ensuring that if they ever do get into trouble, their failure would cause financial chaos and force the hand of the Regulators. In other words, because

<sup>21.</sup> See infra Part II.A.

there is the potential for strategic behavior by the financial institutions, the belief in TBTF can be self-fulfilling. Regulatory *credibility* and regulatory *ability* are bound together.

A third reason why credibility is particularly important in the context of the financial system and systemic risk is that in a crisis, the rules are not well defined *ex ante*. It is difficult, if not impossible, for contracting parties or for legislatures and regulators to define precisely what constitutes a financial crisis. However, as Gary Gorton has detailed, when a crisis does occur, courts, regulators, and legislatures have been willing to go to extraordinary lengths to prevent a liquidation of the financial system.<sup>22</sup> In the absence of well-defined, enforceable rules, credibility becomes even more important.

Finally, while crises appear to be an integral, and perhaps even an inevitable, feature of banking systems, they do not happen very often.<sup>23</sup> While few would argue that we should have *more* financial crises, one collateral effect of their infrequency is that regulators do not have to respond to crises very often. As a result, market participants have to glean information about what regulators will do when a crisis occurs by looking for clues elsewhere. Regulatory credibility provides perhaps the most obvious place to look for such clues.

## C. Regulatory Credibility in the Aftermath of the Global Financial Crisis

The Living Will requirement of Dodd–Frank form a part of Congress's attempt to eliminate the TBTF problem relating to certain systemically important financial institutions.<sup>24</sup> While some members of the regulatory and financial community have argued in favor of the Living Will requirement, many

<sup>22.</sup> Gary B. Gorton, Misunderstanding Financial Crises: Why We Don't See Them Coming 98–124 (2012).

<sup>23.</sup> There is a rich literature on financial crises and their tendency to occur periodically, including some particularly enlightening contemporary discussions. *See, e.g., id.* at 22; CARMEN M. REINHART & KENNETH S. ROGOFF, THIS TIME IS DIFFERENT: EIGHT CENTURIES OF FINANCIAL FOLLY (2009).

<sup>24.</sup> *See, e.g.*, Jerome H. Powell, Member, Bd. of Governors of the Fed. Reserve Sys., Speech at the Institute of International Bankers 2013 Washington Conference: Ending "Too Big to Fail" (Mar. 4, 2013) (describing the Living Will requirement as one of two "important new regulatory tools" created by Dodd–Frank to "empower regulators to handle [the failure of a large financial institution] without destabilizing the financial system or exposing taxpayers to loss").

others have expressed skepticism about the requirement's ability to end TBTF. For example, in his discussion of incentiverobust financial regulation, Charles Calomiris wrote approvingly of the ex ante assignment of assets through Living Wills.<sup>25</sup> According to his analysis, the clear, written, pre-crisis allocation of each asset belonging to a financial institution makes it much easier to respond during a crisis.<sup>26</sup> Unfortunately, financial institutions "have little incentive to clarify such matters in advance, since the lack of clarity improves their chances of receiving a bailout."27 The Living Will requirement is therefore seen as a necessary and desirable solution to this problem.<sup>28</sup> Jeffrey Lacker and Gary Stern, President and CEO of the Federal Reserve Bank of Richmond and former President of the Federal Reserve Bank of Minneapolis, respectively, expressed even more optimism about the Living Will requirement, describing it as the component of Dodd-Frank "that truly does have the potential to eventually eliminate too-big-to-fail."29

Taking the opposite position in his testimony before Congress, Richard Fisher of the Federal Reserve Bank of Dallas articulated his view that "'living wills' are likely to prove futile in helping navigate a real-time 'systemic' failure."<sup>30</sup> "Given the complexity and opacity of the TBTF institutions and the ability to move assets and liabilities across subsidiaries and affiliates (as well as off-balance sheet, including through huge and fastmoving derivative positions), a living will would likely be ineffective when it really mattered."<sup>31</sup> As a result, he does "not have much faith in the living will process to make any material

31. Id.

<sup>25.</sup> See generally Charles W. Calomiris, Incentive-Robust Financial Reform, 31 CATO J. 561 (2011).

<sup>26.</sup> *Id.* at 586.

<sup>27.</sup> Id.

<sup>28.</sup> Id.

<sup>29.</sup> Jeffrey M. Lacker & Gary H. Stern, *Large Banks Need 'Living Wills'*, WALL ST. J. (June 12, 2012, 7:17 PM), http://www.wsj.com/news/articles/SB10001424052702303665904577454930776158186.

<sup>30.</sup> Correcting 'Dodd-Frank' to Actually End 'Too Big to Fail': Hearing on "Examining How the Dodd-Frank Act Could Result in More Taxpayer-Funded Bailouts" Before the H. Comm. on Fin. Servs., 113th Cong. 9 (2013) (statement of Richard W. Fisher, President & CEO, Federal Reserve Bank of Dallas), http:// www.dallasfed.org/assets/documents/news/speeches/fisher/2013/ fs130626.pdf.

difference in TBTF risks and behaviors."<sup>32</sup> In the same vein, Nizan Packin argues that Living Wills "should not be perceived as a comprehensive, satisfactory regulatory solution to the toobig-to-fail problem."<sup>33</sup>

There is also empirical evidence to suggest that while Dodd–Frank made significant progress in reducing the market's belief that large financial institutions carry an implicit government guarantee, it did not eliminate it entirely. For example, a recent study found that while the so called "too-bigto-fail" discount—the lower borrowing cost of TBTF institutions attributable to their TBTF status—fell after the passage of the Dodd–Frank Act, it was not entirely eliminated.<sup>34</sup> This remaining portion of the TBTF discount may suggest continuing, albeit weakened, bailout expectations in the market.

## D. Blowing Hot Air vs. Jawboning

Blowing Hot Air is in many ways the converse of regulatory "jawboning." In a recent article, Derek Bambauer defined jawboning as "a specific type of informal pressure by a government actor on a private entity: one that operates at the limit of, or outside, that actor's authority."<sup>35</sup> Such informal pressure may take the form of a bluff—a threat that the government actor has no legal power to follow through on.<sup>36</sup> Nevertheless, this threat is intended to coerce the private entity into acceding to the government actor's demands. Focusing on the use of jawboning against Internet intermediaries, Bambauer then argues that such actions are pernicious.

Whereas jawboning involves a coercive threat that is beyond the regulator's legal powers, when a regulator blows Hot Air, the regulator is referring to an action that is entirely within its legal authority. Moreover, because the term jawboning implies that the statement in question exerts some pressure on the private entity, a necessary attribute of regulatory jawboning is that the statement by the regulator is *credible*. In other words, for a threat to constitute jawboning, market par-

<sup>32.</sup> Id.

Nizan Packin, The Case Against the Dodd-Frank Act's Living Wills: Contingency Planning Following the Financial Crisis, 9 BERKELEY BUS. L.J. 29 (2013).
 Bhanu Balasubramnian & Ken B. Cyree, Has Market Discipline on

Banks Improved After the Dodd-Frank Act?, 41 J. BANKING & FIN. 155 (2014). 35. Bambauer, supra note 9, at 57.

<sup>36.</sup> Id. at 55.

ticipants must believe that the regulator intends to impose some kind of punishment on a defiant party. On the other hand, when a regulator is blowing Hot Air, market participants do not believe that it will follow through on its statements, *even though it has the legal authority to do so.* Its statements, in other words, are not credible.

#### E. Regulatory Credibility and Regulatory Uncertainty

Regulatory credibility requires a delicate balance—a regulator must avoid making statements that are either too lenient or too strict. If a regulator's statements are so strict that they are perceived as empty threats, the regulator risks falling into the trap of the boy who cried wolf—sounding the alarm so often that the alarm becomes ignored as just another nuisance.

It is not that the wolf in the fable did not exist; it is just that it was not a threat at the time of the boy's cries. Similarly, a regulator's threat might be real in the sense that it has the legal authority to carry it out. However, if the regulated entities believe that the regulator does not seriously intend to act on its authority, the regulator will lose credibility. A regulator might also commit the even more serious sin of overplaying its hand and making a threat that it does not have the authority (legal or otherwise) to carry out.

Alternatively, a regulator can underplay its hand, and develop a reputation for under-enforcement. For example, a regulator might use its discretion to systematically decline to enforce its own rules. While some degree of discretion is necessary and desirable, if taken too far it can harm regulatory credibility. A final way for a regulator to lose credibility is to behave in a manner that causes the regulated parties to question its competence. An actor that cannot even maintain a reputation for competence is unlikely to be able to maintain its credibility.

What these things have in common is that they are unintended consequences of regulatory actions that generate uncertainty about *future* regulatory actions. In fact, regulatory credibility is a close cousin of regulatory uncertainty. Consider the case of a rule that restricts the actions of a financial institution or other actor. Suppose further that agents are uncertain about whether or not the relevant regulators will actually enforce the rule. In this context, any action that reduces the actors' perceptions of the probability that the rule will actually be enforced corresponds to a reduction in regulatory credibility. Conversely, any action that increases this perceived probability corresponds to an increase in regulatory credibility. In other words, an increase in uncertainty about whether a regulator will enforce a rule corresponds, in this setting, to a reduction in regulatory credibility.<sup>37</sup>

### F. How to Spot Changes in Regulatory Credibility

While it is difficult to measure regulatory credibility directly, we have good reason to believe that its effects matter in the real world.<sup>38</sup> This means that the easiest way to study regulatory credibility is through indirect means: by identifying likely changes in regulatory credibility and zooming in to investigate the effects of these changes.

One of the benefits of this approach is that it does not require that we assume that the regulated entities are perfectly rational or omniscient. After all, the point of regulatory credibility is that it is a perception in the minds of the regulated. What matters is not the expectations of a perfectly rational, fully informed regulated entity. Instead, what matters is what the *actual* entities actually expect.

## 1. Look for Reactions to Regulatory Actions That Affect More Than Just the Directly Affected Groups

So far, so vague: if this were all we had to go on, we would be more or less at a loss. Fortunately, the theory of regulatory credibility can provide us with far more concrete guidelines to use for spotting changes in regulatory credibility. First, when an action affects regulatory credibility, any effect of that action is likely to be felt on more than just the entities that were the

<sup>37.</sup> Note that the relationship between regulatory uncertainty and regulatory credibility is, in part, context dependent. For example, suppose that, *ex ante*, actors were reasonably certain that a rule meant to restrict the actions of a bank or other actor would not be enforced. In such a case, while there was very little regulatory credibility, we might also say that there was very little regulatory uncertainty, since actors are actually quite certain that enforcement will not occur. Now suppose that a regulator takes an action that increases the actors' perceived probability of enforcement from close to 1% to 25%. While this action would increase the credibility of the rule, we could also interpret it as an increase in regulatory uncertainty.

<sup>38.</sup> See supra Parts I.A-E.

direct target of that action. For example, consider a regulator that, like the boy who cried wolf, announces that it is going to start aggressively enforcing some rule.<sup>39</sup> Suppose that, by chance, this action was taken against some, but not all, of the entities affected by this rule. For example, perhaps, mostly by chance, some entities (call them group A) are up for review today, while the rest (group B) are up for review a year from now. The regulator's action would only have a direct effect on group A. The regulatory credibility effect, however, should be the same for both groups. After all, the only reason group B was unaffected was luck. In short, any effect on A separate from the effect on B can be interpreted as the direct effect of the action, while any effect that is common to both A and B can be attributed to the indirect effect of the action via its effect on regulatory credibility. The reason for this is simple: regulatory credibility should affect the two groups in the same way.

## 2. Look for Reactions That Are Superficially Counterintuitive

Second, regulatory credibility can result in effects that are superficially counterintuitive. For example, a regulatory action that looks strict might actually decrease regulatory credibility, and vice versa. This suggests that we should look for such counterintuitive reactions. A regulatory action that looks strict on the surface, but which results in a reaction that is in line with a relaxation of the regulation in question is a prime suspect for a change in regulatory credibility. The same is true for an action that looks lenient, but which induces a reaction that is in line with a strengthening of the regulation.

Of course, it is also possible that an action that looks strict *actually was* strict, and thus increased the regulator's regulatory credibility, thereby inducing a reaction that is in line with a strengthening of the regulation. Unfortunately, in such cases, it is difficult or impossible to distinguish the direct effect of the action from its indirect effect via regulatory credibility. As a result, these situations are not very useful for identifying regulatory credibility.

<sup>39.</sup> See supra Part I.E.

#### BLOWING HOT AIR

## 3. Look for Places Where Credibility Will Be Relatively More or Less Important

A third and final tip is to take advantage of situations in which regulatory credibility will be more or less important to the entities in question. For example, consider a regulatory action that affected both domestic and foreign entities. It stands to reason that the credibility of the regulator behind this action might be more important to the domestic entities than it is to the foreign ones. One reason for this is that while the regulator in question may be the domestic entities' primary regulator, the foreign entities are likely to have their own home-country regulators to answer to. Alternatively, it may be the case that the types of regulatory threats in question are simply never as credible when made to foreign firms as they are to domestic ones.<sup>40</sup>

Another place where regulatory credibility's importance can vary across entities is in the case of multiple regulators. Just as foreign entities might have their own home-country regulators to answer to, an entity that must answer to multiple domestic regulators might be much less affected by the credibility of one particular regulator than an otherwise identical entity that answers *only* to that regulator. As a result, in studying regulatory credibility, it may be useful to look for regulatory actions that affect both types of entities, and to look for differential effects across the groups.

#### II.

## THE LIVING WILL REQUIREMENT

The Living Will requirement is a perfect case study in regulatory credibility. The whole point of the requirement is that large financial institutions know more about their own structure than regulators do. Moreover, as discussed below, the regulations require these financial institutions to submit their Living Wills on an ongoing basis, *before* any sign of financial distress. The Regulators are then charged with determining

<sup>40.</sup> Depending on the context, the opposite could be true. Perhaps because of reasons of political economy, the foreign entities could be much more dependent on the good graces of the regulator than the domestic ones. The specific context of the regulatory action should help to pin down the likely direction of this effect.

whether these Living Wills satisfy the requirements of the statute.

As a result, there is no set of objective criteria that will show that the Regulators have fulfilled their mandate. Instead, there is a delicate dance between the Regulators and the regulated—if the financial institutions *feel* that the Regulators are watching closely, and are prepared to take serious action if necessary, then there will be no *need* for such action, since the financial institutions will produce Living Wills that accord with the requirements of the statute and the regulations. Every once in a while a financial institution might make a mistake, but, in general, compliance should be extremely high. At the same time, if the financial institutions do not fear the consequences of shirking their obligations, the requirement becomes meaningless. More importantly, the *appearance* of robust enforcement, if it is not credible, might be evidence that the Regulators are not credible.

In light of this, it is natural to study the August 5, 2014 rejection of the Living Wills of eleven of the world's largest financial institutions. To do so, I begin with an overview of Dodd–Frank's Living Will requirement, describing the nature and purpose of a Living Will as well as some of the specific statutory and regulatory requirements. I then discuss the specifics of the rejection event itself: the determination on August 5, 2014 that the 2013 Living Wills of the "First Wave" filers were deficient, and the reaction to this announcement in the financial news. I refer to this announcement as the "rejection" by the Regulators.

#### A. The Dodd–Frank Living Will Requirement

The statutory provisions related to the Living Will requirement are contained within Title I of the Act. These statutory provisions are operationalized by regulations jointly promulgated by the Fed and the FDIC.<sup>41</sup> Pursuant to Dodd–Frank § 165(d),<sup>42</sup> certain financial institutions (termed "covered companies")<sup>43</sup> must report to the Fed, the FDIC, and the Fi-

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<sup>41.</sup> While these regulations were promulgated jointly, they are codified separately in 12 C.F.R. § 243 (2017), also known as Regulation QQ, and 12 C.F.R. § 381 (2017) [both hereinafter 12 C.F.R. § 243 (2017)].

<sup>42. 12</sup> U.S.C. § 5365(d) (2012).

<sup>43.</sup> See 12 C.F.R. § 243.2 (2017).

nancial Stability Oversight Council "the plan of such company for rapid and orderly resolution in the event of material financial distress or failure."<sup>44</sup> This plan is what has become known as a Living Will.<sup>45</sup> The statute provides a partial list of what these Living Wills should include<sup>46</sup> and authorizes the Fed and the FDIC to require additional information from the covered company.<sup>47</sup>

Once submitted by the covered company, the Fed and the FDIC review the Living Will.<sup>48</sup> Should they find that a covered company's Living Will is deficient, in the sense that it is "not credible or would not facilitate an orderly resolution of the covered company under the Bankruptcy Code,"<sup>49</sup> the Regulators can require the covered company to submit a revised Living Will.<sup>50</sup> If the covered company does not cure this deficiency within the appointed time, either by failing to submit a revised Living Will or by submitting one that does not satisfy the Regulators, they may respond with enforcement actions. These actions can range from imposing additional regulatory requirements to restrictions on growth or activities.<sup>51</sup> In extreme cases, the Regulators can even break up the covered company.<sup>52</sup> These consequences are discussed in more detail below.

<sup>44. 12</sup> U.S.C. § 5365(d)(1).

<sup>45.</sup> See 12 C.F.R. § 243 (2017).

<sup>46.</sup> See 12 U.S.C. §§ 5365(d)(1)(A)-(C).

<sup>47. 12</sup> U.S.C. 5365(d)(1)(D) (requiring that the plans include "any other information that the Board of Governors and the Corporation jointly require by rule or order").

<sup>48. 12</sup> U.S.C. § 5365(d)(3).

<sup>49. 12</sup> C.F.R. § 243.5 (2017).

<sup>50. 12</sup> U.S.C. § 5365(d) (4); *see also* 12 C.F.R. § 243.5 (2017). In addition to a finding that a covered company's Living Will is deficient, the Fed and the FDIC can make a determination that a Living Will is "informationally incomplete or that substantial additional information is necessary to facilitate review." 12 C.F.R. § 243.5(a) (2) (2017). In such cases, the Regulators will inform the covered company of the areas in which the Living Will is incomplete, or advise it of what additional information is required. The covered company is then given 30 days (or such other time as determined by the Regulators) to resubmit an information. 12 C.F.R. § 243.5(a) (2) (i)–(ii) (2017).

<sup>51. 12</sup> U.S.C. § 5365(d)(5)(A); see also 12 C.F.R. § 243.6(a) (2017).

<sup>52. 12</sup> U.S.C. § 5365(d)(5)(B); see also 12 C.F.R. § 243.6(c) (2017).

#### 1. Purpose of the Living Will Requirement

Like much of the Dodd–Frank Act, the Living Will requirement is intended to promote the financial stability of the United States.<sup>53</sup> The Regulators charged with implementing the Living Will requirement have also articulated this goal. For example, according to testimony before Congress, the FDIC's goal in implementing the Living Will requirement is:

[T]o ensure that firms that could pose a systemic risk to the financial system develop and maintain resolution plans that identify each firm's critical operations and core business lines, map those operations and core business lines to each firm's material legal entities, and identify and address the key obstacles to a rapid and orderly resolution in bankruptcy. Ensuring that any institution, regardless of size or complexity, can be effectively resolved through the bankruptcy process will contribute to the stability of our financial system and will avoid many of the difficult choices regulators faced in dealing with systemic institutions during the last crisis.<sup>54</sup>

According to the Regulators, the Living Will requirement does so in three ways. First, the existence of the Living Wills "will support the [FDIC]'s planning for the exercise of its resolution authority... by providing [it] with an understanding of the... covered companies' structure and complexity as well as their resolution strategies and processes."<sup>55</sup> Second, the information contained within the Living Wills will "assist the [Fed] in its supervisory efforts to ensure that ... covered companies operate in a manner that is both safe and sound and that does not pose risks to financial stability generally."<sup>56</sup> Finally, the

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<sup>53.</sup> See 12 U.S.C. § 5365(a)(1); see also Resolution Plans Required, 76 Fed. Reg. 67323, 67323 (Nov. 1, 2011) (to be codified at 12 C.F.R. pts. 243, 381).

<sup>54.</sup> Who Is Too Big to Fail? Does Dodd-Frank Authorize the Government to Break Up Financial Institutions?: Hearing Before the Subcomm. on Oversight & Investigations of the H. Comm. on Fin. Servs., 113th Cong. 13–42 (2013) [hereinafter Who Is Too Big to Fail?] (statement of James R. Wigand, Director, Office of Complex Financial Institutions, Federal Deposit Insurance Corporation & Richard J. Osterman, Jr., Acting General Counsel, Federal Deposit Insurance Corporation), http://financialservices.house.gov/uploadedfiles/113-14.pdf.

<sup>55.</sup> Resolution Plans Required, 76 Fed. Reg. 67323, 67323 (Nov. 1, 2011) (to be codified at 12 C.F.R. pts. 243, 381).

<sup>56.</sup> Id.

Regulators maintain that they "will enhance the [Regulators'] understanding of the U.S. operations of foreign financial institutions and improve efforts to develop a comprehensive and coordinated resolution strategy for a cross-border firm."<sup>57</sup>

### 2. Coverage of the Living Will Requirement

Broadly speaking, large financial institutions are subject to the Living Will requirement. Specifically, the statute applies to nonbank financial companies supervised by the Fed, as well as to bank holding companies with total consolidated assets of at least \$50 billion.<sup>58</sup> This includes foreign banks, foreign companies that are bank holding companies, and foreign companies that are treated as bank holding companies under § 8 of the International Banking Act.<sup>59</sup>

Recognizing both the limited resources of the Regulators to review the plans, and the desire of many in the financial industry for more time to prepare, the initial Living Will filing requirement was phased in over a period of 18 months.<sup>60</sup> Covered companies in the first group, composed of banks with \$250 billion or more in total nonbank assets (or, in the case of foreign covered companies, \$250 billion in total U.S. nonbank assets), were required to submit their initial Living Wills by July 1, 2012.<sup>61</sup> This group has been referred to as the "First Wave" filers.<sup>62</sup> The second group consisted of covered companies excluded from the First Wave, which had \$100 billion or more in total nonbank assets (or, in the case of foreign covered companies, \$100 billion in total U.S. nonbank assets).<sup>63</sup>

<sup>57.</sup> Id.

<sup>58. 12</sup> U.S.C.  $\S$  5365(a) (2012). Because of this, for simplicity, I use the terms banks and financial institution interchangeably.

<sup>59. 12</sup> U.S.C. § 3106(a) (2012); 12 C.F.R. § 243.2(f)(1)(iii) (2017).

<sup>60.</sup> Agencies Provide Feedback on Second Round Resolution Plans of "First-Wave" Filers, *supra* note 5.

<sup>61.</sup> See id.; see also 12 C.F.R. § 243.3(a)(1)(i) (2017).

<sup>62.</sup> Specifically, the First Wave filers are: Bank of America, Bank of New York Mellon, Barclays, Citigroup, Credit Suisse, Deutsche Bank, Goldman Sachs, JPMorgan Chase, Morgan Stanley, State Street Corp., and UBS. *See* Agencies Provide Feedback on Second Round Resolution Plans of "First-Wave" Filers, *supra* note 5.

<sup>63.</sup> This group includes BNP Paribas SA, HSBC Holdings plc, Royal Bank of Scotland Group plc, and Wells Fargo & Company. *See* Joint Press Release, Bd. of Governors of the Fed. Reserve Sys. & Fed. Deposit Ins. Corp., Agencies Release Public Sections of Resolution Plans for Four Institutions (July 2,

Members of this group were required to submit their initial Living Wills by July 1, 2013.<sup>64</sup> All other covered companies were placed in the Third Wave and were required to submit their initial Living Wills by December 31, 2013.<sup>65</sup> Once they have made their initial submissions, and as long as they remain covered companies,<sup>66</sup> each bank must annually submit a Living Will "on or before each anniversary date of its" initial submission.<sup>67</sup>

### 3. Contents of a Living Will

The regulations require that each Living Will contain at least eight components: an executive summary,<sup>68</sup> a strategic analysis,<sup>69</sup> a detailed discussion of the covered company's corporate governance relating to resolution planning,<sup>70</sup> a detailed description of the covered company's organizational structure (and related information),<sup>71</sup> detailed information regarding the covered company's management information systems,<sup>72</sup> detailed information regarding interconnections and interdependencies,<sup>73</sup> supervisory and regulatory information,<sup>74</sup> and the contact information for a senior management official designated as the "point of contact regarding the resolution plan."<sup>75</sup>

<sup>2013) (</sup>on file with author), http://www.federalreserve.gov/newsevents/press/bcreg/20130702b.htm.

<sup>64. 12</sup> C.F.R. § 243.3(a)(1)(ii) (2017).

<sup>65.</sup> *Id.* § 243.3(a)(1)(iii). According to Congressional testimony by the FDIC, the "third wave filers include approximately 115 firms." *See Who Is Too Big to Fail?, supra* note 54.

<sup>66.</sup> The rules regarding when a company ceases to be a covered company are contained within 12 C.F.R. \$ 243.2(f)(2) (2017).

<sup>67. 12</sup> C.F.R. § 243.3(a)(3) (2017).

<sup>68.</sup> *Id.* § 243.4(b).

<sup>69.</sup> Id. § 243.4(c).

<sup>70.</sup> Id. § 243.4(d).

<sup>71.</sup> Id. § 243.4(e).

<sup>72.</sup> Id. § 243.4(f).

<sup>73.</sup> Id. § 243.4(g).

<sup>74.</sup> Id. § 243.4(h).

<sup>75.</sup> Id. § 243.4(i).

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## 4. Regulatory Consequences of a Failure to Satisfy the Living Will Requirement

The consequences of failing to satisfy the Living Will requirement are potentially devastating for a financial institution. Under both the statute and the regulations, the Regulators are empowered to take a wide range of actions against a covered company that fails to submit a satisfactory Living Will. In the event that the FDIC and the Fed jointly determine that a covered company's Living Will "is not credible or would not facilitate an orderly resolution" under the Bankruptcy Code, the statute requires that the Regulators notify the covered company of the deficiencies,<sup>76</sup> and that the covered company submit a revised resolution plan that satisfies the Regulators.<sup>77</sup> Should the covered company fail to resubmit a Living Will that includes the required revisions before the deadline provided by the Regulators, the statute empowers the Fed and the FDIC jointly to impose restrictions on the covered company. In particular, they may "impose more stringent capital, leverage, or liquidity requirements, or restrictions on the growth, activities, or operations of the company or any subsidiary thereof, until such time as the company resubmits a plan that remedies the deficiencies."78

Repeat offenders face even more severe regulatory actions. In particular, if the Regulators have taken one or more of the actions described in the preceding paragraph, and if after two years the covered company has *still* failed to resubmit a satisfactory Living Will, the Regulators may order it to "divest certain assets or operations . . . to facilitate an orderly resolution of such company."<sup>79</sup> In other words, the Regulators are empowered to break up recalcitrant financial institutions.

These enforcement provisions are tempered somewhat by the provisions relating to the issuance of a deficiency notice and the decision to take enforcement action. In particular, the

<sup>76. 12</sup> U.S.C. § 5365(d)(4)(A) (2012).

<sup>77.</sup> *Id.* § 5365(d)(4)(B).

<sup>78.</sup> *Id.* § 5365(d)(5)(A).

<sup>79.</sup> *Id.* § 5365(d) (5) (B). The regulations appear to interpret the statute as implying a third requirement before divestiture may be ordered: that the Fed and the FDIC "jointly determine that the divestiture of such assets or operations is necessary to facilitate an orderly resolution of the . . . [bank] under the Bankruptcy Code in the event the company was to fail." 12 C.F.R. § 243.6(c) (3) (2017).

regulations provide that "[p]rior to issuing any notice of deficiencies . . . determining to impose requirements or restrictions . . . or issuing a divestiture order . . . the [Fed] [s]hall consult with each [Financial Stability Oversight] Council member that primarily supervises any such subsidiary; and [m]ay consult with any other . . . supervisor as the [Fed] considers appropriate."<sup>80</sup>

Recognizing the fact that covered companies faced tremendous uncertainty regarding the specifics of the Living Will requirement, the Fed and the FDIC sought to reassure them. For example, in responding to comments from the financial industry, the Regulators stated that:

[t]here is no expectation by the [Fed] and the [FDIC] that the initial resolution plan iterations submitted after this rule takes effect will be found to be deficient, but rather the initial resolution plans will provide the foundation for developing more robust annual resolution plans over the next few years.<sup>81</sup>

Statements such as these may have made the actions of August 5, 2014 all the more surprising to both the banks themselves, and to the financial markets.

## B. August 5, 2014

## 1. The Announcement

At 4:30 P.M. on August 5, 2014, the Fed and the FDIC rejected the 2013 Living Wills of all eleven First Wave filers.<sup>82</sup> While the announcements were made in a joint press release, the two Regulators used slightly different language. The FDIC borrowed language directly from the statute and the regulations, making the determination that the Living Wills "submitted by the first-wave filers are not credible and do not facilitate an orderly resolution under the U.S. Bankruptcy Code."<sup>83</sup> The Fed was more circumspect, determining "that the [eleven] banking organizations must take immediate action to improve their resolvability and reflect those improvements in their

<sup>80. 12</sup> C.F.R. § 243.7 (2017).

<sup>81.</sup> Resolution Plans Required, 76 Fed. Reg. 67,323, 67,331 (Nov. 1, 2011) (to be codified at 12 C.F.R. pts. 243, 381).

<sup>82.</sup> Agencies Provide Feedback on Second Round Resolution Plans of "First-Wave" Filers, *supra* note 5.

<sup>83.</sup> Id.

2015 plans."<sup>84</sup> Perhaps in order to address any speculation that the Fed would resist any future attempt by the FDIC to impose restrictions on these banks, the announcement went on to state explicitly that:

[t]he agencies agreed that in the event that the firstwave filers have not, on or before July 1, 2015, submitted plans responsive to the identified shortcomings, the agencies expect to use their authority under section 165(d) to determine that a resolution plan does not meet the requirements of the Dodd–Frank Act.<sup>85</sup>

In other words, the Regulators stated that they were giving these eleven banks eleven months to come up with satisfactory Living Wills, or the banks would face regulatory interventions.

#### 2. Reactions to the Announcement

The responses to the announcement in the financial press were mixed. Some publications ran stories that highlighted the differences in language between the Fed and the FDIC and suggested that the announcement *reduced* the credibility of the Living Will requirement. For example, *The New York Times* Editorial Board described the determination as "the Fed's latest indulgence," and suggested that the fact that the Fed had declined to join the FDIC in making a determination that the Living Wills were not credible—opting instead to grant the banks eleven months to remedy the situation—was evidence that the Fed was "giving them what they want."<sup>86</sup>

This interpretation is in sharp contrast to some of the other coverage. For example, in his "Heard on the Street" column, David Reilly called the response of the Regulators "no idle threat," and described the statement's reference to § 165(d) as "[t]he nuclear option. Just mentioning it puts real

<sup>84.</sup> Id.

<sup>85.</sup> *Id.* Section 165(d) of Dodd–Frank is codified as 12 U.S.C. § 5365(d) (2012).

<sup>86.</sup> Editorial, *Too Big to Regulate*, N.Y. TIMES (Aug. 10, 2014), http:// www.nytimes.com/2014/08/10/opinion/sunday/too-big-to-regulate.html. *The Financial Times* also ran a story that made reference to this, although it did so in a much less critical manner. *See* Gina Chon, *Fed Blow to Banks Over 'Living Wills*, 'FIN. TIMES (Aug. 17, 2014), http://www.ft.com/intl/cms/s/0/ 617d442c-24c4-11e4-ae78-00144feabdc0.html#axzz3MDRz3OwF.

strength behind their efforts."<sup>87</sup> In its news coverage, *The Wall Street Journal* described the rejection as "a sweeping rebuke to Wall Street."<sup>88</sup> It is also worth noting that the *New York Times* editorial was not published until August 9, four days after the event. The contemporaneous coverage in *The New York Times* had a very different tone. In describing the motivation for the rejection, the *New York Times* coverage stated that:

[t]he regulators want to be able to show Congress and the public that they are not afraid to tighten the screws on large lenders. Supporters of Dodd–Frank may also welcome the crackdown because it could deflect criticism that the legislation did not do enough to rein in large banks.<sup>89</sup>

Coverage in *Bloomberg, The Financial Times* and *The Wall Street Journal* focused on the fact that the banks had been given little guidance as to what the Regulators wanted in the Living Wills, suggesting that, under the circumstances, the rejection may have been too harsh.<sup>90</sup>

Of course, all of these statements from the financial press should be taken with a generous helping of salt. While they are useful for understanding the context of the event and for illus-

<sup>87.</sup> David Reilly, *Fed Shreds Big Banks' Wills*, WALL ST. J. (Aug. 5, 2014), http://www.wsj.com/articles/heard-on-the-street-fed-shreds-big-banks-wills-1407276603.

<sup>88.</sup> Ryan Tracy, Victoria McGrane & Christina Rexrode, U.S. Tells Big Banks to Rewrite 'Living Will' Bankruptcy Plans, WALL ST. J. (Aug. 5, 2014), http://www.wsj.com/articles/fed-fdic-rebuke-bankruptcy-plans-of-11-of-na tions-biggest-banks-1407270607.

<sup>89.</sup> Peter Eavis, *Regulators Fault Big Banks' 'Living Wills*', N.Y. TIMES (Aug. 5, 2014), http://dealbook.nytimes.com/2014/08/05/federal-reserve-and-f-d-i-c-fault-big-banks-living-wills.

<sup>90.</sup> See, e.g., Gina Chon & Tom Braithwaite, US Watchdogs Reject Banks' 'Living Wills', FIN. TIMES (Aug. 5, 2014), http://www.ft.com/intl/cms/s/0/ 5ae158d6-1cdd-11e4-88c3-00144feabdc0.html?siteedition=UK#axzz3MDRz3 OwF (mentioning "the 'ambush nature' of the regulatory announcement"); Jesse Hamilton, Big Banks' 'Living Wills' Get Failing Grade, BLOOMBERG (Aug. 6, 2014), http://www.bloomberg.com/news/2014-08-05/biggest-u-s-bankstold-to-simplify-their-living-wills-.html ("Wall Street banks spent two years asking U.S. regulators what they should put in hypothetical bankruptcy plans to prove they aren't 'too big to fail.' The agencies broke their silence yesterday with a grade: Fail."); Editorial, Dodd–Frank Goes 0 for 11, WALL ST. J. (Aug. 7, 2014), http://www.wsj.com/articles/dodd-frank-goes-0-for-11-1407368348 ("Plenty of bankers will tell you they were given little guidance . . . and felt blind-sided by the results.").

trating the fact that the rejection did not go unnoticed, on their own they cannot establish that the rejection actually mattered. To do so requires a formal analysis.

## III.

## Identifying Changes in Regulatory Credibility

In order to do a formal statistical analysis, we first need to determine which companies to include in the sample. Having done so, guided by the discussion in Part I.F, the next step is to formulate specific testable hypotheses regarding the effect of the rejection on share prices. We can then perform an event study to test these hypotheses. If our hypotheses are borne out by the analysis, we can safely conclude that the regulatory event did indeed affect regulatory credibility.

#### A. Who? Identify the Affected Companies

In considering the effects of the rejection on share prices, should we restrict attention to the eleven financial institutions that had their Living Wills rejected? Naively, one might assume that the eleven First Wave filers were the only companies affected by the rejection. Under this approach, we would expect to observe an effect on the share prices of affected companies, but not on the share prices of companies that were not affected.

There is, however, a flaw in this reasoning. The rejection affected *all* companies in the First Wave, and *no* company outside the First Wave. It stands to reason, therefore, that market participants interpret this result as affecting both companies in the First Wave and companies right outside the First Wave-for example, those in the Second Wave. In other words, the market might interpret the "across the board" rejection as a signal that *any* company that might have submitted a Living Will would have been rejected. Like groups A and B discussed in Part I.F.1, the Second Wave filers were just "lucky" when it came to timing. As a result, the rejections say less about the companies themselves than it does about the Regulators. As introduced in Part I.F.1 and discussed in more detail in Part III.B, this suggests a useful test of the regulatory credibility theory: if it is regulatory credibility, rather than a direct effect of the rejection that is driving any observed stock market reaction, we would expect to see similar effects across both groups.

Then again, the First Wave filers are, by definition, the financial institutions with the largest presence in the United States. For example, it is possible that the Fed and the FDIC chose the distinction between the First and Second Wave filers<sup>91</sup> based on important attributes of the companies in these two categories. If the First Wave filers are fundamentally different from other (not quite so) large financial institutions, the market might recognize this. As a result, we might observe a differential effect from the rejection on First and Second Wave filers, not because of an effect on regulatory credibility, but rather because of the fundamental differences between the companies in the two categories. Therefore, while these additional companies should be included in the analysis-to make sure that what we are seeing is really an effect on regulatory credibility—we must recognize that this factor will make it *more* likely that we will find a difference between the companies that were within the rejected group, relative to those outside of it. Luckily, this also means that if we do not find evidence of such a difference, we know that we have done so under unfavorable conditions, making the results more robust and reliable.

#### **B.** What? Formulate and Test Hypotheses

The theory that regulatory credibility matters and that the rejection affected regulatory credibility leads to four specific predictions about how share prices should have reacted to the rejection. If all four of these predictions are borne out by the data, we can be confident that the rejection affected regulatory credibility in a way that can be detected through the stock market.

First, and most obviously, we would expect there to be a statistically significant share price reaction on the rejection day. Second, as introduced in Part III.A, the rejection should have affected *both* the First Wave filers *and* the financial institutions just outside the First Wave. Third, this effect should be above and beyond any effect on the market as a whole, and perhaps even beyond any effect on the financial industry as a whole. Finally, since the credibility of the Fed and the FDIC is

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<sup>91. 12</sup> C.F.R. § 243.3(a)(1)(i)-(ii) (2017).

primarily relevant for American financial institutions, the rejection should have had a differential effect on domestic financial institutions relative to foreign ones. As discussed below, some of these predictions are even *stronger* than is strictly necessary for these conclusions, making the ultimate result of this analysis even more compelling.

### 1. The Event Study Methodology

Because we are interested in the stock market response to a specific announcement—in this case, the rejection—the most natural empirical analysis to employ is the event study methodology. This methodology is well established,<sup>92</sup> and is commonly employed in legal literature.93 In the classic implementation, the researcher begins by computing the "betas" of the stocks or portfolios of stocks in question by regressing their returns on factors that are known to be related to stock returns during an estimation window. These betas are then used to compute predicted returns during the event window, which represents the period of time during which the researcher believes that the event in question should affect the stock returns. The differences between the actual (observed) returns and the predicted returns are called the abnormal returns. These abnormal returns are added together to construct the cumulative abnormal returns ("CARs"). An event study is said to find statistically significant results if the CARs are significantly different from zero.

As discussed in Part III.A, I include data both from financial institutions that were rejected and those that were not. This is because I am *not* simply looking for the direct effect of

<sup>92.</sup> For the standard reference for the event study methodology in the finance literature, see A. Craig MacKinlay, *Event Studies in Economics and Finance*, 35 J. ECON. LIT. 13 (1997). For a discussion of the event study methodology for a legal audience, see Sanjai Bhagat & Roberta Romano, *Event Studies and the Law: Part I: Technique and Corporate Litigation*, 4 AM. L. & ECON. REV. 141 (2002) [hereinafter Bhagat & Romano I].

<sup>93.</sup> See, e.g., Bhagat & Romano I, supra note 92 (reviewing the use of the event study methodology in corporate litigation); Sanjai Bhagat & Roberta Romano, Event Studies and the Law: Part II: Empirical Studies of Corporate Law, 4 AM. L. & ECON. REV. 380 (2002). Indeed, a recent search on Lexis Advance for the phrase "event study" returns 327 cases, 322 documents classified as "Statutes and Legislation," 4251 briefs, pleadings and motions, and 484 documents classified as "Expert Witness Analysis" (search conducted on Feb. 16, 2018).

the rejection on the affected companies. Instead, as discussed in Part III.B, if the rejection affected the *credibility* of the Living Will requirement, the effect should extend beyond the companies that were directly affected by the rejection. This is the second prediction in Part III.B. In particular, I study the stock price response of sixteen companies: the eleven First Wave filers, as well as five other large financial institutions. Four of these institutions—AIG, HSBC, Prudential, and Wells Fargo when combined with the eleven First Wave filers, comprise fifteen of the seventeen companies whose most recent Living Wills (prior to the rejection) had been made public on July 2, 2014.<sup>94</sup> In addition, I include data from one financial institution, Royal Bank of Scotland ("RBS"), whose Living Will was not released on that date because the Fed and FDIC had granted them an extension.<sup>95</sup>

I obtain stock return data from the University of Chicago Center for Research in Security Prices<sup>96</sup> and pricing factor data from Kenneth French's website.<sup>97</sup> Summary statistics for the return data are available in Table A.1 of *Appendix A*. I also perform additional robustness tests by including a proxy for the financial sector as a control variable in my analysis, as well as a placebo analysis on this proxy. Finally, in order to address concerns about correlated error terms, I adapt an alternative event study methodology used by Greenstone, Oyer and Vissing-Jørgensen in their study of the impacts of mandatory disclosure on stock returns and operating performance,<sup>98</sup> and ap-

<sup>94.</sup> Joint Press Release, Bd. of Governors of the Fed. Reserve Sys. & Fed. Deposit Ins. Corp., Agencies Release Public Sections of Resolution Plans (July 2, 2014), http://www.federalreserve.gov/newsevents/press/bcreg/20140702b.htm. Unfortunately, data for the final financial institution, Bankia SA, were unavailable for this event study. GE Capital is also omitted, as at the time of the announcement GE Capital was wholly owned by General Electric Company. A second financial institution, BNP Paribas, was also granted an extension, but was omitted from this analysis because its stock does not trade on any exchanges in the United States.

<sup>95.</sup> Id.

<sup>96.</sup> CHI. BOOTH: CTR. RES. SECURITY PRICES (CRSP), http://www.crsp. com/ (last visited 2016).

<sup>97.</sup> Kenneth R. French, *Current Research Returns*, http://mba.tuck.dart mouth.edu/pages/faculty/ken.french/data\_library.html (last visited Aug. 5, 2016).

<sup>98.</sup> Michael Greenstone, Paul Oyer & Annette Vissing-Jørgensen, Mandated Disclosure, Stock Returns, and the 1964 Securities Acts Amendments, 121 Q.J. ECON. 399 (2006) [hereinafter Greenstone et al.].

ply it to the August 5th rejection. This analysis is presented in Appendix B.

## 2. Testing Changes in Regulatory Credibility

Before we can proceed with the empirical analysis, we need some testable predictions, or hypotheses. My first prediction—that there was a statistically significant share price reaction on the rejection day—amounts to the statement that "something happened to share prices on August 5, 2014." While it is clearly not sufficient to establish that regulatory credibility was the channel through which the rejection affected stock prices, it is certainly necessary for doing so.

My second prediction—that the effect should be similar as between First and Second Wave filers-builds on the discussion in Part III.A, which established that financial institutions just outside the First Wave should be included among the companies that might be affected by the rejection. In fact, we can make a prediction that is much stronger than this. On the one hand, if the only effect of the rejection was the *direct* effect of having one's Living Will rejected, then we would expect to find a stock price reaction only among the First Wave filers. On the other hand, if the primary effect of the rejection was indirect, through its effect on regulatory credibility, we should expect to see the same pattern of reactions on both the First Wave filers and on the financial institutions just outside the First Wave. Finally, it is also possible that both the direct and the indirect effects were acting at the same time, either working in the same direction or in opposite directions. This implies that even if regulatory credibility was affected by the rejection and this effect was reflected in share prices, the effect on companies inside and outside the First Wave could still be different. Conversely, however, if we find the *same* pattern of effects on these two groups, it should be viewed not only as strong evidence that regulatory credibility matters and was affected by the rejection, but also that the primary effect of the rejection was through its effect on regulatory credibility.

My third prediction—that the effect should be separate from changes in the stock market as a whole—is to some extent already baked into the event study methodology. As discussed in Part III.B.1, this methodology is designed to isolate the effect of the rejection on the firms in question, *controlling*  *for* changes in factors that are known to affect stock prices.<sup>99</sup> Nevertheless, it is always possible that there was something else that happened to companies in the financial sector on August 5th, which the standard event study methodology does not fully capture. For example, there could have been some other event which boosted the share prices of all financial sector companies on that day, but which, for some reason, did not affect the standard pricing factors. This other event could have nothing at all to do with the Living Will requirement, and it would therefore be a mistake to attribute this effect to regulatory credibility. To guard against this possibility, I include an additional variable that controls for changes in the financial sector as a whole.

Finally, my fourth prediction-that the rejection would have had a stronger effect on domestic financial institutions than on foreign ones—is perhaps the most important for distinguishing the regulatory credibility theory from some other channel. There are a variety of reasons why this could be. First, as discussed in Part I.F.3, while a foreign company faces regulation in the United States, it is also subject to separate regulations in its home country. Imagine, for example, that the regulatory requirements are at least as stringent and as credible in the foreign company's home country as they are in the United States. If the regulations become less stringent or credible in the United States, it may make no difference to the foreign company, since it must continue to comply with the regulations in its home country and anticipate the behavior of its own domestic regulator. The regulatory requirements of the company's home country therefore act as a floor-once the requirements in the United States relax beyond that floor, they cease to be binding from the perspective of the foreign company. Once that happens, a further reduction in the credibility of the U.S. regulators won't make any difference. Conversely, if the regulatory requirements in the United States began as being less stringent or credible than those of the foreign company's home country, and then increased to the point of being more stringent, the effect of this change on the foreign company will be more muted than on the domestic company. From the foreign company's perspective, the effective change is the difference between its home country re-

<sup>99.</sup> See supra Part III.B.1.

quirements and the new (higher) US requirements. By assumption, this change is smaller than the effective change experienced by a domestic company.

Second, it is quite possible that some of the threats that the Regulators are empowered to wield are simply less credible to begin with when deployed against foreign companies for reasons of political economy. One could easily imagine that an attempt by the Fed and the FDIC to break up a European financial institution might draw the attention of the regulators in the company's home country. While there have certainly been recent examples of authorities in the United States imposing large monetary penalties against foreign financial institutions,<sup>100</sup> it is perhaps implausible that they would go so far as to impose on them the types of activity restrictions contemplated by the Act and the regulations. It is therefore possible that such a threat by U.S. regulators against a foreign financial institution will not have the same level of credibility as the same threat would against a domestic one.

Finally, because these companies operate in a competitive environment, an improvement in the regulatory landscape in the United States might actually have an *adverse* effect on foreign financial institutions (and vice versa), even if the effective regulatory scheme for the foreign companies is unchanged. This could be the case if, for example, market participants believed that such a change would permit U.S. institutions to increase their market share at the expense of their foreign competitors.

## 3. Empirical Analysis

Now that we have our four hypotheses, we can turn to the data. In order to accurately estimate the predicted returns, I estimate the first stage regression by regressing returns on the

<sup>100.</sup> One recent example was a \$8.9 billion fine against BNP Paribas for doing business with countries subject to US sanctions. Ben Protess & Jessica Silver-Greenberg, *BNP Admits Guilt and Agrees to Pay* \$8.9 *Billion Fine to U.S.*, N.Y. TIMES, July 1, 2014, at B1. Another was a \$2.6 billion fine against Credit Suisse for conspiring to commit tax fraud against the United States. Robert W. Wood, *Credit Suisse: Guilty*, \$2.6 *Billion Fine, But Avoids Death in U.S.*—*UBS Was Luckier*, FORBES (May 19, 2014), http://www.forbes.com/sites/robert wood/2014/05/19/credit-suisse-guilty-2-5-billion-fine-but-avoids-death-in-u-s-ubs-was-luckier.

three Fama–French factors.<sup>101</sup> The Fama–French factors are widely used within the finance literature for estimating or predicting the returns on assets.<sup>102</sup> Formally, I use the data from the estimation window to estimate the model:

$$r_{it} = \alpha_i + \beta_{m,i} * (r_{m,t} - r_{f,t}) + \beta_{SMB,i} * SMB_t + \beta_{HML,i} * HML_t + \varepsilon_{it}$$
(1)

Where  $r_{it}$  is the return of firm *i* on date *t*,  $r_{m,t}$  and  $r_{g,t}$  are the market returns and the risk free rates on date *t*, respectively, *SMB*<sub>t</sub> and *HML*<sub>t</sub> are the returns on the SMB and HML factor portfolios on date *t*, respectively, and  $\varepsilon_{it}$  is the error term for firm *i* on date *t*.

I then use these estimates to calculate abnormal returns, which are defined as:

$$AR_{it} = r_{it} - \hat{r}_{it} \tag{2}$$

where

$$\hat{r}_{it} = \hat{\alpha}_i + \hat{\beta}_{m,i} * \left(r_{m,t} - r_{f,t}\right) + \hat{\beta}_{SMB,i} * SMB_t + \hat{\beta}_{IIML,i} * HML_t$$
(3)

and  $\hat{\beta}$  is the estimate of  $\beta$ , as estimated using the regression model in equation (1).

In the baseline methodology for this investigation, the estimation window covers the period from August 1, 2013 to July 21, 2014 (eleven trading days before the August 5th event), which constitutes approximately one year.<sup>103</sup> The estimation window covers the two-day period from August 5, 2014 to August 6, 2014. Allowing a two-week buffer between the estima-

<sup>101.</sup> The three Fama-French factors are the market risk premium, "SMB" (small minus big, where "small" and "big" refer to market capitalization), and "HML" (high minus low, where "high" and "low" refer to book-to-market ratio). *See, e.g.*, Eugene F. Fama & Kenneth R. French, *The Cross-Section of Expected Stock Returns*, 47 J. FIN. 427 (1992).

<sup>102.</sup> See JOHN H. COCHRANE, ASSET PRICING 438 (Rev. Ed. 2005) ("The Fama–French model is one of the most popular multifactor models that now dominate empirical research.").

<sup>103.</sup> As an initial robustness test, I varied the length of the estimation window and found similar results. For example, I reduced the estimation window to 100 days, and found that it had little effect on the results. These results are presented in Tables A.2 and A.3 of Appendix A. I did find a small reduction in the magnitude of the t-statistics relating to domestic banks, which I attributed largely to the reduced sample size.

tion window and the event window is meant as a precaution against information "leakage."

I begin by examining the two-day CARs and t-statistics for all the financial institutions in my sample. Upon initial inspection, these results do not seem to follow any pattern—the effect of the event is positive for some, negative for others, and is generally not statistically significant. Perhaps most importantly, the direction of the effect does not appear to be related to whether or not a particular financial institution was among the eleven banks that had their Living Wills rejected. This is consistent with the second prediction in Part III.B.2, and is precisely what we would expect if regulatory credibility is in fact driving these results.

Moreover, the differential pattern between domestic and foreign financial institutions is consistent with the fourth prediction in Part III.B.2, and therefore provides further evidence for the regulatory credibility hypothesis. As Panel A of Table 1 shows, with the sole exception of Prudential, the direction of the effect on domestic financial institutions is positive. Similarly, the direction of the effect on foreign banks is negative, as shown in Panel B of Table 1. Pursuing this result, I pool the financial institutions into two categories, domestic and foreign, and investigate the average CAR of these two groups separately. Following the standard event study methodology, I calculate the average CAR and the average standard error within each group, and use these to calculate a test statistic. The results of these analyses are presented in Table 2.

These results confirm the effect uncovered in Table 1. In particular, the rejection has a highly statistically significant (p<.01) positive effect on the share price of the domestic financial institutions. Equally importantly, the magnitude of this effect was meaningful: the CAR of .01 corresponds to a 1% increase in returns over the two-day window, which is approximately equal to one standard deviation of the returns in this group. On the other hand, the effect on the foreign group, while negative, is not statistically significant.

The results in Tables 1 and 2 are therefore consistent with all four predictions from Part III.B.2. Table 2 demonstrates that there was a statistically significant effect on the share prices, which conforms to the first prediction. Table 1 demonstrates that the pattern of effects is similar across both the First Wave filers and companies just outside the First Wave. As discussed in Part III.B.2, this evidence goes beyond what is necessary to conform with the second prediction of the regulatory credibility hypothesis and should therefore be interpreted as particularly strong evidence. Because of the event study methodology, these effects are above and beyond any effect on the market (and other pricing factors) as a whole, which conforms with the third prediction. Finally, Tables 1 and 2 demonstrate that the rejection event's effect on domestic financial institutions was very different from its effect on foreign ones. Indeed, there was a negative, but statistically insignificant effect on foreign banks, while there was a positive and statistically significant effect on domestic banks. As with the second prediction, this evidence goes beyond the fourth prediction. Taken together then, Tables 1 and 2 are in line with all four predictions from Part III.B.2, and are particularly compelling with respect to two of these predictions.

We can push this analysis even further. Consider, for example, the third prediction, that the effect of the rejection should be separated from other changes in the stock market or financial sector. While Tables 1 and 2 do provide evidence that conforms with this prediction, as discussed in Part III.B.2, the fact that the event took place on a single day means that there was always a possibility that something *else*, other than the rejection of the Living Wills, was affecting the entire financial industry on that day. While the event study methodology is designed to account for any such changes that also affected the standard pricing factors, it might miss changes that were specific to a particular industry. Therefore, as an additional precaution, I perform the event study analysis a second time, this time augmenting the three Fama-French factors with a fourth factor which allows me to control for the financial industry as a whole. To do so, I include in my first stage regression an index fund representing the financial industry.<sup>104</sup> To the extent that this index represents the entire financial industry, this approach will capture these movements in the predicted return, allowing me to isolate the effect of the rejection on large financial institutions, separate and distinct from any effect on the financial industry as a whole. As an added benefit, if the rejection did have an effect, this approach is virtually

<sup>104.</sup> Specifically, I use the SPDR S&P Bank ETF as my proxy (ticker KBE) [hereinafter KBE].

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guaranteed to result in an underestimation of the CARs during the estimation window. The reason for this is that the banks under study make up a substantial portion of the index. I am therefore effectively controlling for a portion of the effect that I am looking for. While this will almost certainly make it more difficult for me to find results, it also means that any results that I do find should be understood as being extremely conservative estimates. More importantly, from an econometric perspective, it means that if I am still able to find statistically significant results, I can be confident that they are not statistical artefacts.

TABLE 1: DOMESTIC V. FOREIGN FINANCIAL INSTITUTIONS

	CAR	t-statistic
Panel A: Dom	estic Financial In	nstitutions
AIG	.010601	.8760492
BNYM	.0148254	1.467821
BofA	.023151	1.680437
Citi	.0166306	1.358021
GS	.0026336	.2527308
JPM	.009261	.8582397
MS	.0058045	.4242803
Prudential	0021038	1380196
SSt	.0143733	1.260036
WF	.0011692	.160821

Panel B	: Foreig	n Finat	ncial Ir	istitutions

BAR	0156265	8140658
CS	0010371	0647894
DB	0093893	6064767
HSBC	0015288	1383001
RBS	0122506	5313138
UBS	0001427	0087374

	CAR	t-statistic	p-value
Domestic	.0096346	2.56	0.011
Foreign	0066625	-0.95	0.344

TABLE 2: AVERAGE CARS, DOMESTIC AND FOREIGN

The results with the KBE control included are presented in Table 3.<sup>105</sup> As expected, the magnitude of the effect on domestic financial institutions is reduced by the inclusion of the control. The amount of this reduction, however, is relatively small (a reduction from .0096 to .0080). While the inclusion also causes the t-statistic on the average CAR for domestic banks to fall, it remains statistically significant (p<.05). This result provides additional evidence that is consistent with the third prediction from Part III.B.2, since we can now say that the events of August 5, 2014 had an effect on the largest financial institutions that went *above and beyond* any effect on the financial industry as a whole.

 TABLE 3: AVERAGE CARS, DOMESTIC AND FOREIGN—

 KBE CONTROL

	CAR	t-statistic	p-value
Domestic	0.00804373	2.20	0.028
Foreign	-0.00688363	-0.98	0.327

Taking a "belt and suspenders" approach, I go another step beyond this. Specifically, I perform what is known as a "placebo test" and test whether there was an effect on my financial industry proxy during the event window. To do so, I use my KBE control variable as the dependent variable instead of using the stock returns of the affected banks. Like the previous robustness test, the purpose of this analysis is to rule out the possibility that my results are being driven by an effect on large financial market as a whole, rather than by an effect on large financial institutions. The results of this analysis, presented in Table 4, show that this is not the case: now the CAR is less than half the size of the CAR for domestic banks overall, and is extremely statistically insignificant (p-value =

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<sup>105.</sup> For a table that reproduces the results in Table 1 with the inclusion of the KBE control, see Appendix A, Table A.4.

.439). As predicted in Part III.B.4 then, all the evidence indicates that the effect of the rejection was concentrated on the largest financial institutions.

TABLE 4: PLACEBO REGRESSION WITH KBE AS DEPENDENT VARIABLE

CAR	t-statistic	p-value
0.00485	0.77	0.439

What does all of this mean? So far, we have found (i) a statistically significant effect on domestic banks, (ii) which is consistent between the rejected banks and the banks just outside the rejected group, (iii) above and beyond any changes in the market, or the financial industry as a whole, and (iv) no effect on foreign banks. In other words, all four predictions from Part III.B.2 are borne out by the data, making the event study a resounding success. We have found strong evidence for the joint hypothesis that regulatory credibility matters, and that the rejection affected regulatory credibility. As a result, we can conclude that regulatory credibility matters.

## C. Why? What was the Effect on Regulatory Credibility?

We have achieved the primary empirical goals of this Article—to establish that a change in regulatory credibility can be identified, and that the rejection had an effect on regulatory credibility. We can now push this analysis one step further and explore how it might have done so.

Whether the rejection had a positive or a negative effect on bank share prices should depend on two factors: the *desirability* of the Living Will requirement from the perspective of shareholders, and whether the rejection increased or decreased regulatory credibility. Given these two factors, Table 5 summarizes how we should expect share prices to have responded to the rejection. The results of the event study in Part III.B indicate that, with respect to domestic financial institutions, we are in one of the two shaded regions. If the Living Will requirement was undesirable (from the perspective of the shareholders of large financial institutions), then the event study should be interpreted as evidence that the rejection reduced regulatory credibility. Alternatively, if shareholders of large financial institutions liked the Living Will requirement, then the empirical results are evidence that the rejection increased regulatory credibility.

	Living Will Require	Living Will Requirement Perceived as: Desirable Not Desirable		
	Desirable			
Rejection	Positive	Negative		
Increased Credibility	Effect	Effect		
Rejection	Negative	Positive		
Decreased Credibility	Effect	Effect		

TABLE 5: DIRECTIONAL EFFECT OF REJECTION ON SHARE PRICE

### 1. Regulatory Credibility and Domestic Financial Institutions

The conventional wisdom coming out of the financial crisis is that the shareholders of large financial institutions benefit from bailouts and from the implicit subsidy that bailout expectations create. The obvious implication of this is that the shareholders of large financial institutions dislike the Living Will requirement, since the robust enforcement of the requirement would result in severe losses to bank shareholders in the event of a future crisis. If this is the case, the results of the event study in Part III.B indicate that the rejection reduced regulatory credibility.

While this explanation is highly plausible, it is still possible that the reverse is true, and that shareholders of large financial institutions actually benefit, either directly or indirectly, from the Living Will requirement. First, it could be the case that addressing systemic risk in the financial sector represents a collective action problem, or "prisoner's dilemma,"<sup>106</sup>

<sup>106.</sup> For the canonical analysis of collective action problems, see MANCUR OLSON, THE LOGIC OF COLLECTIVE ACTION: PUBLIC GOODS AND THE THEORY OF GROUPS (1971). See also Elinor Ostrom, Collective Action and the Evolution of Social Norms, J. ECON. PERSP., Summer 2000, at 137, 137 ("[T]he prisoner's dilemma game, along with other social dilemmas, has come to be viewed as the canonical representation of collective action problems."). The logic of this is that while the shareholders of each individual bank are better off if systemic risk is reduced, a financial crisis harms all of them. At the same time, however, it is in no individual bank's interest to plan for its own demise, since such planning makes it more likely that the bank will be allowed to fail in the event of a future crisis. The fact that a single shareholder might

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and that the Living Will requirement represents a solution to this problem. Alternatively, it could be the case that there has been a failure of corporate governance at large banks, and the managers of these banks are taking on *even more* risk than the shareholders would like.<sup>107</sup> If shareholders were unable to reign in managers using conventional corporate governance techniques, and the Living Will requirement was more successful in doing so, it is possible that the requirement actually benefited bank shareholders. Unfortunately, the share price reaction of the domestic financial institutions alone cannot distinguish between these two explanations.

#### 2. Regulatory Credibility and Foreign Financial Institutions

Fortunately, the effect on foreign financial institutions helps not only to identify an effect on regulatory credibility, it also helps to tease out the direction of this effect. The analyses in Part III.B.3 indicate that the effect on foreign financial institutions was essentially zero. Under the alternative approach, discussed in Appendix B, we find that this effect was actually negative. How does that square with the discussion in Part III.C.1?

Consider first the bottom right quadrant. Suppose, in other words, that the conventional wisdom is right, and that the shareholders of large financial institutions benefit from bailout expectations. As discussed in Part III.C.1, this benefit,

own stock in more than one financial institution is not, itself, enough to solve this problem. While it is true that the problem would disappear if all the banks were owned by a single shareholder, as long as there is any competition within the financial industry, the incentives to take actions that are individually beneficial but collectively harmful will persist. This is similar to the analysis of collusion in cartels.

<sup>107.</sup> While this version of events is hard to prove directly, it is supported by at least some circumstantial evidence. For example, Lucian Bebchuk, et al. demonstrate that while shareholders of Bear Sterns and Lehman Brothers experienced "disastrous" returns during the 2000–2007 period, the incentive compensation schemes provided their top managers with "net positive payoffs for the period, after accounting for the losses they suffered on their holdings." Lucian A. Bebchuk, Alma Cohen & Holger Spamann, *The Wages of Failure: Executive Compensation at Bear Stearns and Lehman 2000–2008*, 27 YALE J. ON REG. 257, 273 (2010). While the authors are careful to note that they do not specifically investigate whether these managers actually acted on these incentives, or whether managers actually anticipated the collapse, they do conclude that the payoffs provided them with excessive risktaking incentives. *Id.* at 274–75.

coupled with a reduction in regulatory credibility, would lead to a positive effect on the share prices of domestic financial institutions. It is easy to see how this could also lead to a negative or null effect on foreign financial institutions. As discussed in Part III.B, if the foreign financial institutions face regulations that are as strict or stricter in their home countries, a reduction in the credibility of the US regulator makes no difference, since it must continue to comply with its home country regulations. Alternatively, the Living Will requirement may simply never have been as important or credible with respect to foreign financial institutions. Therefore, a change in the credibility of the US regulator would have a much more muted, and perhaps even a null, effect.

Combining this with the fact that the financial industry is highly interconnected, it stands to reason that a more favorable regulatory landscape in the United States might actually have an adverse effect on foreign financial institutions, since these foreign financial institutions might lose market share to their American rivals.

Indeed, this is the only sensible interpretation. Consider the alternative. Suppose instead that we are in the top left quadrant with respect to domestic financial institutions. As discussed in Part III.C.1, this implies that the shareholders of large domestic financial institutions like the Living Will requirement, and that the rejection increased the credibility of the requirement with respect to domestic financial institutions. Can we come up with a story in which this leads to a reduction in the share prices of foreign financial institutions? The prisoner's dilemma explanation does not work—as we learned in 2007–2008, financial crises do not respect national borders. If the reason the Living Will requirement was desirable was because it helped to reduce systemic risk, any boost to its ability to do so should have had the same effect on foreign financial institutions.

What about the second explanation, that there had previously been a failure of corporate governance at large financial institutions, which caused them to take on more risk than the shareholders would have liked? If this was not the case with foreign financial institutions, this could account for the null reaction, and perhaps, in a competitive environment, for a negative reaction of foreign financial institutions. The problem is that there is scant evidence that foreign financial institutions were less prone to risk-taking in the lead-up to the financial crisis than were domestic ones. For example, on August 9, 2007, more than a year before the collapse of Lehman Brothers,<sup>108</sup> BNP Paribas, France's largest bank, halted redemptions on three investment funds.<sup>109</sup> About a month later, in September 2007, Northern Rock, a large British financial institution, suffered a run,<sup>110</sup> beginning the process that would lead to its collapse and ultimately to its nationalization by the UK government in February 2007.<sup>111</sup> In October 2008, the UK government bailed out The Royal Bank of Scotland (RBS), another large UK financial institution.<sup>112</sup>

Taken together, these events, while anecdotal, suggest that a high degree of risk taking was not unique to US financial institutions. This makes it unlikely that an increase in the credibility of the Living Will requirement would have a null or negative effect on foreign financial institutions but a positive one on domestic ones.

If this were not enough, there is also some circumstantial evidence that, at least by 2014, shareholders of large US financial institutions were not desperately seeking additional means, beyond normal corporate governance mechanisms, to reign in management. This evidence comes from the so-called "Say on Pay" votes. In addition to imposing the Living Will requirement, § 951(a) of the Dodd–Frank Act<sup>113</sup> requires all companies subject to the Securities Exchange Act to hold advi-

<sup>108.</sup> Lehman Brothers filed for bankruptcy protection under Chapter 11 of the Bankruptcy Code on September 15, 2008. *See* Voluntary Petition, In re Lehman Bros. Holdings, 445 B.R. 143 (Bankr. S.D.N.Y. 2011) (No. 08-13555(JMP)). The petition was signed on Sunday, September 14, 2008 and was filed the following business day, on Monday, September 15, 2008.

<sup>109.</sup> Sebastian Boyd, BNP Paribas Freezes Funds as Loan Losses Roil Markets, BLOOMBERG (Aug. 9, 2007), http://www.bloomberg.com/news/articles/ 2007-08-09/bnp-paribas-freezes-funds-as-loan-losses-roil-markets; BNP Paribas suspends funds because of subprime problems, N.Y. TIMES (Aug. 9, 2007), http:// www.nytimes.com/2007/08/09/business/worldbusiness/09iht-09bnp.7054 054.html.

<sup>110.</sup> Hyun Song Shin, Reflections on Northern Rock: The Bank Run that Heralded the Global Financial Crisis, J. ECON. PERSP., Winter 2009, at 101, 101.

<sup>111.</sup> NAT'L AUDIT OFF., THE NATIONALISATION OF NORTHERN ROCK (2009), https://www.nao.org.uk/wp-content/uploads/2009/03/0809298.pdf.

<sup>112.</sup> UK banks receive £37bn bail-out, BBC NEWS (Oct. 13, 2008), http://news.bbc.co.uk/2/hi/business/7666570.stm.

<sup>113.</sup> Securities Exchange Act of 1934 § 14A(1)(c)(1), 15 U.S.C. § 78n-1(a)(1) (2012).

sory votes on executive compensation at least every 3 years.<sup>114</sup> While these advisory votes are not binding on the board of directors,<sup>115</sup> losing a Say on Pay vote is considered to be extremely embarrassing for management.<sup>116</sup>

It stands to reason that if shareholders like the Living Will requirement because it represents an external means of reigning in management, they are likely to *also* take advantage of *other* means of doing so. Because Say on Pay votes represent one such means, I investigate the results of these votes.

I begin by collecting the results of the annual Say on Pay votes for the ten domestic (i.e., US) financial institutions in question for 2014.<sup>117</sup> All of these votes occurred between April 8, 2014 and May 22, 2014, between two-and-a-half and four months before the events of August 5th. The votes should therefore be reasonably representative of the general sentiments of shareholders towards management in the months leading up to the August 5th announcement. The results of these votes are presented in Table 6. Because the 80% threshold appears to be a focal point in Say on Pay votes, banks in which the Say on Pay vote did not pass with more than 80% of the vote are shaded in grey.

To put these results in context, out of 2,275 companies with Say on Pay votes in 2014, 88% reported shareholder approval rates of greater than 80%, 10% reported shareholder approval rates of between 50% and 80%, and 2% reported approval rates of less than 50%.<sup>118</sup> Returning to Table 6, nine of the ten banks (90%) had approval rates of over 80%. In other words, the shareholders of the banks in question, who re-

<sup>114.</sup> Id.

<sup>115.</sup> *Id.* § 78n-1(c)(1).

<sup>116.</sup> See, e.g., James F. Cotter, Alan R. Palmiter & Randall S. Thomas, The First Year of Say-on-Pay Under Dodd-Frank: An Empirical Analysis and Look Forward, 81 GEO. WASH. L. REV. 967, 969 (2013) ("At some companies, management suffered the embarrassment of failed say-on-pay votes"); Matt Orsagh, "Say on Pay": How Voting on Executive Pay Is Evolving Globally — and Is It Working?, CFA INSTITUTE (Dec. 26, 2013), http://blogs.cfainstitute.org/marketin tegrity/2013/12/26/say-on-pay-how-votes-on-executive-pay-is-evolving-globally-and-is-it-working ("Because a relatively small number of companies receive a failed pay vote in a given market each year, a negative vote on pay embarrasses a board.").

<sup>117.</sup> All data is from Farient Advisors "Farient Pay Tracker" tool. *Farient Pay Tracker*, FARIENT ADVISORS, https://farient.com/insights/pay-tracker/.

<sup>118.</sup> *Id.* 

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sponded positively to the events of August 5th, do not appear to be rejecting executive compensation packages any more often than the shareholders in the rest of the economy. This provides additional circumstantial evidence against the agency cost interpretation.

	Outcome	"Yes" Vote	Date
AIG	Accept	98.2%	2014-05-12
BNYM	Accept	93.4%	2014-04-08
BofA	Accept	93.5%	2014-05-07
Citi	Accept	85.0%	2014-04-25
GS	Accept	83.4%	2014-05-19
JPM	Accept	78.6%	2014-05-22
MS	Accept	92.6%	2014-05-13
Prudential	Accept	85.8%	2014-05-14
SSt	Accept	94.1%	2014-05-20
WF	Accept	97.9%	2014-05-02

TABLE 6: 2014 SAY ON PAY VOTES

#### 3. Conclusion: The Rejection Reduced Regulatory Credibility

We are left with the inevitable conclusion that the rejection on August 5, 2014 reduced regulatory credibility. No other explanation fits all the available data. The prisoner's dilemma story, in which all shareholders benefit from a reduction in systemic risk, cannot explain the differential effect between foreign and domestic financial institutions. The agency cost story is neither consistent with the risks taken by foreign financial institutions, nor is it consistent with the results of the Say on Pay votes of domestic financial institutions. Meanwhile, not only is the view that the shareholders of large US financial institutions disliked the Living Will requirement consistent with conventional wisdom, it is also the only interpretation that is consistent with all the evidence.

## IV.

#### POLICY IMPLICATIONS

What are regulators to do with these findings? We have seen that regulatory credibility matters, and that coming down hard on regulated entities can actually make a regulation and a regulator less credible. This suggests that regulators should take credibility into account in making decisions.

The most obvious reason for this is that, at the risk of sounding pedantic, the purpose of a regulator is to enforce some regulation. We have already seen that credibility helps advance this goal. In other words, it is a tool for the effective enforcement of regulations. It follows then, that regulators should take regulatory credibility into account in their enforcement behavior.

While this may seem like a departure from traditional regulatory theory, it is entirely consistent with the behavior of modern regulators. Regulators have considerable discretion in making enforcement decisions, and it is common practice for them to consider deterrent effects when exercising that discretion. For example, a regulator may choose to aggressively pursue an enforcement action against a high-profile actor, even if that actor's behavior is not particularly egregious. This is based on a theory of deterrence: an action taken against a high-profile actor is likely to draw increased attention, and thereby increase the deterrent effect of the regulator's enforcement action.

One prominent example of this is the decision by the Securities and Exchange Commission (the "SEC"), along with the Department of Justice (the "DOJ"), to aggressively pursue a high-profile action against Martha Stewart for illegal insider trading.<sup>119</sup> According the to the SEC's 2003 complaint, in 2001, Stewart sold certain shares of the stock of a pharmaceutical company called ImClone Systems, Inc. after receiving material, nonpublic information, thereby avoiding losses of \$45,673.<sup>120</sup> During this period, Stewart was a household name,<sup>121</sup> with a net worth estimated to be well over \$600 mil-

<sup>119.</sup> Kathleen F. Brickey, From Boardroom to Courtroom to Newsroom: The Media and the Corporate Governance Scandals, 33 J. CORP. L. 625, 632 (2008) (noting the "unusual level of publicity" that the case received, and stating that "[f]rom the outset, the investigation into Stewart's fortuitously timed sale attracted enormous media attention that predictably intensified as her criminal trial date approached.").

<sup>120.</sup> Complaint, SEC v. Martha Stewart & Peter Bacanovic (S.D.N.Y. 2003) (No. 03-4070), https://www.sec.gov/litigation/complaints/comp18169.htm.

<sup>121.</sup> Jyoti Thottam, Why They're Picking on Martha, TIME (June 8, 2003) http://content.time.com/time/magazine/article/0,9171,457334,00.html.

lion.<sup>122</sup> At the time, the decision to aggressively pursue Stewart was widely thought to be based in part on the deterrent effect of a high profile enforcement action.<sup>123</sup>

Periodic "crackdowns" are another manifestation of regulatory action aimed at deterrence. Just as regulators sometimes use their discretion to pursue certain high-profile actors, they will also sometimes pursue a large number of actions related to a certain type of behavior. A recent example of this is the crackdown, again by the SEC and the DOJ, on alleged insider trading by hedge fund traders that began in late 2009.<sup>124</sup> Other instantiations of this are periodic crackdowns by the Internal Revenue Service on abusive tax shelters.<sup>125</sup>

<sup>122.</sup> Chris Isidore, *Martha's Net Worth Sinks*, CNN MONEY (June 24, 2002) http://money.cnn.com/2002/06/24/news/companies/martha\_holdings/ index.htm (noting that "Stewart was ranked the 381st-richest American by Forbes magazine, which estimated her net worth at \$650 million.").

<sup>123.</sup> See, e.g., Kurt Eichenwald, Prosecuting Martha Stewart: The Government; Prosecutors Have Reasons for Stalking Celebrities, N.Y. TIMES (June 5, 2003) http://www.nytimes.com/2003/06/05/business/prosecuting-martha-stewart-government-prosecutors-have-reasons-for-stalking.html (quoting "Christopher Bebel, a former lawyer with the Securities and Exchange Commission and a former federal prosecutor," as stating that "[t]he deterrent effect [of pursuing Stewart] is immeasurable . . . . Even if the government puts a thousand hours into building this case against Martha Stewart, the risk-reward ratio is enormously positive and constitutes a very prudent allocation of government resources."); see also Thottam, supra note 121 (noting that "[Robert] Mintz, a former federal prosecutor, says it is an accepted principle of prosecution to use celebrated cases in this way," and quoting Mintz as saying that "[t]here's nothing improper in the general deterrent effect."). Some were critical of the decision to pursue Stewart so aggressively, implying that she was unfairly pursued for her celebrity. Id. Without passing judgement on the merits of these claims, I note that if anything, these complaints underscore the general principal that deterrence is a factor in enforcement decisions.

<sup>124.</sup> See, e.g., Benjamin Bain, Hedge Fund Woes After U.S. Crackdown Don't Surprise SEC's Chair, BLOOMBERG (Oct. 14, 2016), https://www.bloomberg. com/news/articles/2016-10-14/hedge-fund-woes-after-u-s-crackdown-don-t-surprise-sec-s-chair (discussing the effect of the "sweeping crackdown against insider trading in recent years" by "U.S. prosecutors and regulators" on hedge fund returns).

<sup>125.</sup> *See, e.g.*, News Release, Internal Revenue Service, Tax Day Reminder: Treasury, IRS Continue Crackdown on Abusive Tax Shelters IR-2003-51 (Apr. 15, 2003), https://www.irs.gov/newsroom/tax-day-reminder-treasury-irs-continue-crackdown-on-abusive-tax-shelters (highlighting the fact that "the Treasury Department and the Internal Revenue Service are moving aggressively to combat abusive tax avoidance transactions.").

The relative deterrent effect of different potential regulatory actions has also attracted significant scholarly attention. One prominent example of this is Louis Kaplow's work on optimal deterrence, which provides a theoretical framework for designing enforcement decisions when some individuals have limited knowledge or information.<sup>126</sup> Other scholars have investigated the deterrent effect of regulatory actions in certain specific substantive areas, such as securities law,<sup>127</sup> tax,<sup>128</sup> and environmental regulations.<sup>129</sup>

The effect of regulatory statements and actions on regulatory credibility is simply another factor that regulators should consider in making their enforcement decisions. Like the decision to pursue a high-profile actor, or to crackdown on a specific activity, the decision to engage in activities that increase regulatory credibility can have a substantial deterrent effect. More to the point, a decision that *weakens* regulatory credibility can take a toll on the regulator's power of deterrence. In other words, the argument that regulators should take into account the effect of their statements and actions on regulatory credibility is entirely consistent with both current practice and scholarship. Indeed, a concern for regulatory credibility can be interpreted as a "meta" deterrent effect.

Having established that regulators should take the meta deterrent effect of regulatory credibility into account, we can do a little better than simply asserting that "regulatory credibility should be considered in enforcement decisions." In fact, we can take much of our discussion from Part I—which laid out the types of behaviors that can reduce regulatory credibility and flip it on its head to create a list of regulatory "Dos and Don'ts."

<sup>126.</sup> Louis Kaplow, Optimal Deterrence, Uninformed Individuals, and Acquiring Information about Whether Acts Are Subject to Sanctions, 6 J.L. ECON & ORG. 93 (1990).

<sup>127.</sup> See, e.g., Diane Del Guercio, Elizabeth R. Odders-White & Mark J. Ready, The Deterrent Effect of the Securities and Exchange Commission's Enforcement Intensity on Illegal Insider Trading: Evidence from Run-up before News Events, 60 J.L. ECON. 269 (2017).

<sup>128.</sup> See, e.g., Garrison Grawoig DeLee, Abusive Tax Shelters: Will the Latest Tools Really Help, 57 S. CAL. L. REV. 431 (1984); Mark P. Gergen, The Logic of Deterrence: Corporate Tax Shelters, 55 TAX L. REV. 255 (2002), http://heinon line.org/HOL/P?h=hein.journals/taxlr55&i=265.

<sup>129.</sup> Raymond J. Burby & Robert G. Paterson, *Improving Compliance with State Environmental Regulations*, 12 J. POL'Y ANALYSIS & MGMT. 753 (1993).

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First, a regulator should avoid, at all costs, making the same mistake as the boy who cried wolf. While making bold statements might be attractive in the short run, in the long run they will backfire if they are not backed up by action. This means that a regulator must not make idle threats—threats that it does not seriously intend to carry out. This is especially true with respect to threats that it does not have the legal authority to follow through with. Moreover, even threats that a regulator has the legal authority to carry out can be problematic if the regulated entities do not believe that such authority will actually be exercised.

On the flip side, regulators should also be careful not to develop a reputation for under-enforcement. If a regulator begins to be perceived as "weak," its enforcement ability can become severely curtailed. It is not enough for a regulator to have *power*. It must also have *respect*.

#### CONCLUSION

In this Article, I developed the concept of regulatory credibility, and argued that it plays an important role, particularly in financial markets. I then used the Living Will requirement and the announcement of August 5, 2014 to demonstrate how changes in regulatory credibility can be identified. Using an event study, I showed that the regulators' rejection affected their credibility with respect to the Living Will requirement, and provided evidence that the announcement reduced regulatory credibility. Finally, I discussed some of the policy implications of the theory of regulatory credibility.

## APPENDIX A: SUPPLEMENTARY TABLES

TABLE A.1: SUMMARY STATISTICS - STOCK RETURNS

	All	Treated	Untreated	Domestic	Foreign
Panel A: Stock Return Data, All					
Mean	0.00038016	0.0000789	0.00068223	0.00048993	-0.00010337
Standard Deviation	0.0133185	0.01320326	0.01374617	0.01230753	0.01498667
25th Percentile	-0.00704864	-0.00751878	-0.0064284	-0.00659079	-0.00822375
50th Percentile (Median)	0.00045565	0	0.00060248	0.00058298	-0.00033135
75th Percentile	0.00810115	0.0080793	0.00803522	0.00772746	0.00877555
Panel B: Stock Return Data, Esti	mation Window	Only			
Mean	0.0003547	0.00019504	0.00070595	0.00058618	-0.00003111
Standard Deviation	0.01329567	0.01321656	0.01346686	0.01237191	0.01470325
25th Percentile	-0.00706171	-0.00742675	-0.00618643	-0.00649895	-0.00802975
50th Percentile (Median)	0.00032442	0.00017172	0.00061352	0.00061892	-0.00019397
75th Percentile	0.00813396	0.00813548	0.00808059	0.00780307	0.00880743

Panel A presents summary statistics for the period from August 1, 2013 to August 6, 2014. It therefore covers the estimation window, the event window, and the 10-day "buffer" period in between the two periods. Panel B presents the statistics for the estimation window only.

Name	CAR	t-statistic
AIG	0.0149085	1.608593
BAR	-0.0102006	-0.4653902
BNYM	0.0104521	0.9843506
BofA	0.0256611	1.591652
Citi	0.0148155	1.070097
CS	-0.0030023	-0.2105828
DB	-0.006953	-0.4606001
GS	0.0012927	0.1288421
HSBC	-0.0089151	-0.9542271
JPM	0.0094738	0.8835606
MS	0.0065893	0.5158743
Prudential	-0.006523	-0.4768958
RBS	-0.0162297	-0.8177469
SSt	0.0132518	1.266654
UBS	0.0027726	0.228928
WF	-0.0004263	-0.0525564
AIG	0.0149085	1.608593

TABLE A.2: ALL FINANCIAL INSTITUTIONS - 100 DAY Estimation Window

# TABLE A.3: AVERAGE CARS, DOMESTIC AND FOREIGN - 100 DAYEstimation Window

	CAR	t-statistic	p-value
Domestic	0.00894956	2.40	0.016
Foreign	-0.00708803	-1.08	0.279

# TABLE A.4: ALL FINANCIAL INSTITUTIONS, INCLUDING KBE CONTROL

Name	CAR	t-statistic
AIG	0.0096979	0.8051669
BAR	-0.0160011	-0.8338456
BNYM	0.0122553	1.284644
BofA	0.0196582	1.510067
Citi	0.0140616	1.192811
CS	-0.0017171	-0.1074362
DB	-0.009018	-0.5827745
GS	0.0019494	0.1877482
HSBC	-0.000281	-0.0256945
JPM	0.0069465	0.6699361
MS	0.0049231	0.3611071
Prudential	-0.0003502	-0.0232323
RBS	-0.0125203	-0.5430714
SSt	0.0121683	1.10158
UBS	-0.0017642	-0.1089493
WF	-0.000873	-0.1288465
AIG	0.0096979	0.8051669

## Appendix B: Alternative Event Study Methodology

While the classic implementation of the event study methodology has many merits, one drawback is that the standard errors computed in this manner do not account for correlations between the error terms, which can result in an incorrect measure of statistical significance. Researchers in finance and economics are well aware of this problem, which can be particularly problematic in settings such as this where the event in question occurred on a single day for all firms. In order to address this, I adapt the event study methodology used by Greenstone, Oyer and Vissing-Jørgensen in their study of the impacts of mandatory disclosure on stock returns and operating performance.<sup>130</sup> Greenstone et al. studied the effect of the 1964 Securities Acts Amendments (which imposed mandatory disclosure requirements on certain over-the-counter stocks) on the share prices and operating performance of affected firms. While their specific research question is certainly different from mine, their empirical methodology is easily adapted to my context.

Consistent with Greenstone et al., I estimate the following regressions:

$$r_{t} - r_{KBE,t} = (\alpha - \alpha_{KBE}) + \Delta\beta_{1} * (r_{m,t} - r_{f,t}) + \Delta\beta_{2} * SMB_{t} + \Delta\beta_{3} * HML_{t} + \Delta\beta_{4} * EventWindow_{t} + (4)$$
  
$$\Delta\beta_{5} * EventWindow_{t} * Domestic_{t} + \Delta\beta_{6} * Domestic_{t} + (\varepsilon_{t} - \varepsilon_{KBE,t})$$

and

$$r_{t} - r_{KBE,t} = (\alpha - \alpha_{KBE}) + \Delta\beta_{1} * (r_{m,t} - r_{f,t}) + \Delta\beta_{2} * SMB_{t} + \Delta\beta_{3} * HML_{t} + \Delta\beta_{4} * EventWindow_{t} + (5) \\ \Delta\beta_{5} * EventWindow_{t} * Rejected_{t} + \Delta\beta_{6} * Rejected_{t} + (\varepsilon_{t} - \varepsilon_{KBE,t})$$

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<sup>130.</sup> See Greenstone et al., supra note 98.

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Where  $\Delta\beta_i = (\beta_i - \beta_{i,KBE})$  and, as above, KBE represents an index fund representing the financial industry. In equation (4),  $\Delta\beta_5$  represents the average difference in returns between domestic and foreign banks during the event window *in excess of changes in the financial industry as a whole, and controlling* for the Fama-French factors and inherent differences between domestic and foreign banks. In the same vein, in equation (5),  $\Delta\beta_5$ represents the average difference in returns between rejected and non-rejected banks during the event window *in excess of changes in the financial industry as a whole,* again *controlling* for the Fama-French factors and inherent differences between the rejected and non-rejected banks. Following Greenstone et al., I cluster the standard errors by day, which allows for correlation across banks within days.<sup>131</sup>

The results are presented in Table B.1. In columns (1) and (2), I present the results from the methodology that most closely matches the methodology described in Part III.B: the standard errors are corrected only for heteroskedasticity, not for cross-correlation, and the regressions use data from August 1, 2013 to August 6, 2014, with a two-day event window covering August 5 and 6, 2014. I then expand beyond these baseline results in several ways. First, in columns (3) and (4), I present the same estimates, this time with standard errors clustered by day.<sup>132</sup>

There are two key features of this analysis. First, we continue to see the same pattern of results, which are entirely consistent with all four predictions from Part III.B. The coefficients on *Rejected\*EventWindow* are not statistically significant in either specification. This indicates that a t-test cannot reject the null hypothesis that the rejection had the same effect on the First Wave and the non-First Wave filers. The rejected/notrejected dichotomy, in other words, does not explain the share price responses to the rejection. This supports the view that the rejection had no *direct* effect on the financial institutions in question.

<sup>131.</sup> Id. at 427-28.

<sup>132.</sup> Note that the coefficient estimates are the same in columns (1) and (3), and in columns (2) and (4). This is because clustering does not affect the point estimates of the coefficients in the regression, only their standard errors.

On the other hand, the coefficients on *Domestic\*Event* Window are positive and highly statistically significant in both columns (1) and (3). The statistical significance of these coefficients (p-value <0.001 in both models) indicates that a t-test strongly rejects the null hypothesis that the domestic and foreign financial institutions in the sample were affected the same way by the rejection. At the same time, the coefficients on EventWindow in columns (1) and (3) are negative and highly statistically significant (p-value <0.01). Indeed, the coefficients on both Domestic\*EventWindow and EventWindow are generally *more* statistically significant than the equivalent estimates presented in Tables 2 and 3. Not only do these results indicate that the share price reaction was more positive for domestic financial institutions than it was for foreign ones, they indicate that while the share price response was positive for the domestic financial institutions, it was actually *negative* for the foreign ones.

Even more importantly, while clustering typically causes standard errors to increase, thereby reducing the statistical significance of the results, in this case the clustered standard errors of interest are sometimes even *smaller* than the baseline, heteroskedasticity-robust, standard errors. We can therefore be confident that these results are not a statistical artefact, but rather represent a genuine fact about the world—that the rejection of August 5, 2014 affected financial institutions differentially based on whether they were domestic or foreign, *not* based on whether they were rejected or not. The most plausible explanation for this pattern of effects is that the rejection affected regulatory credibility.

To interpret the estimated coefficients in Table B.1, begin with the estimated coefficient on *EventWindow*. For example, in column (1), the estimated coefficient is -0.00546 and is statistically significant at the 99% confidence level. Because the event window is two days, we can multiply this number by two to find that the two-day CAR effect on *foreign* banks during the estimation window is approximately -0.01. To find the abnormal effect on *domestic* banks, we must add the coefficient on *Domestic\*EventWindow* to the coefficient on *EventWindow*, and again multiply by two, giving a net effect on *domestic* banks of

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approximately 0.004.133 An F-test of the statistical significance of the net effect of *EventWindow* + *Domestic\*EventWindow* in column (1) returns an F-statistic of 5.03 and a p-value of 0.0249, indicating that the positive CAR for domestic banks during the event window is statistically significant beyond the 95% level. In columns (2) and (4), by contrast, the coefficients on *Rejected*\**EventWindow* are not statistically significant, indicating that the test cannot reject the hypothesis that there is no difference between the rejected and the non-rejected banks. As discussed above, all of these effects are measured above and beyond any change in the financial sector as a whole, and are therefore most comparable to the results presented in Table 3. Overall, while this second methodology delivers slightly different coefficient estimates, the direction of the estimated coefficients is the same. If anything, this methodology tends to result in even higher levels of statistical significance, likely because it is more powerful (from a statistical perspective).

Next, in columns (5)-(8), I repeat the analysis, but include in the regression data from the thirty trading days after the event. Finally, in columns (9)-(12), I add separate *After* dummies, which capture any effect on the returns after the event window. The results from these alternative specifications are very similar to those in columns (1)-(4), indicating that including data from after the event has almost no effect on the estimates. Perhaps more importantly, with one exception, the estimated coefficients on *After*, *After\*Domestic* and *After\*Rejected* are not statistically significant in any of the specifications. An F-test fails to reject the null hypothesis that *After* + *After\* Domestic* = 0 in columns (9) and (11) (with p-values of 0.3169 and 0.5143 respectively), and that *After* + *After\*Rejected* = 0 in columns (10) and (12) (p-values of 0.7078 and 0.8154 respectively).

In addition to ensuring that the results discussed above are robust, columns (9) and (11) tell a deeper story. The analysis shows no meaningful effect in the "after" period—in particular, it shows no evidence of a reversal, at least not within

<sup>133.</sup> The coefficient on *Domestic* should not be included in computing the abnormal effect of the rejection on domestic banks. That coefficient captures any *normal* differences between domestic and foreign banks, and should therefore be interpreted as a control variable.

the thirty trading days after the event. This means that the effect identified during the event window was not a temporary "blip" that was undone after a few weeks. In other words, the effect of the August 5, 2014 rejection on regulatory credibility was not just a transitory one.

			TABLE B	8.1: ALT	ERNATIV	E EVENT	STUDY	Methoi	VOLOGY			
	(1) Domestic, no cluster	(2) Rejected, no cluster	(3) Domestic, cluster	(4) Rejected, cluster	(5) Domestic, includes 30 days after, no cluster	(6) Rejected, includes 30 days after, no cluster	(7) Domestic, includes 30 days after, cluster	(8) Rejected, includes 30 days after, cluster	(9) Domestic, includes after dummy, no cluster	(10) Rejected, includes after dummy, no cluster	(11) Domestic, includes after dummy, cluster	(12) Rejected, includes after dummy,
EventWindow	-0.00546** (0.00182)	-0.00236 (0.00166)	-0.00546** (0.00184)	-0.00236** (0.000821)	-0.00515** (0.00181)	-0.00199 (0.00165)	-0.00515** (0.00175)	-0.00199* (0.000821)	-0.00525** (0.00181)	-0.00216 (0.00166)	-0.00525** (0.00175)	$-0.00216^{**}$ (0.000828)
Domestic * EventWindow Domestic	0.00765*** (0.00202) 0.000534 (0.000382)		0.00765*** (0.00131) 0.000534 (0.000507)		0.00757*** ( $0.00200$ ) 0.000619 ( $0.000355$ )		0.00757*** (0.00129) 0.000619 (0.000476)		$0.00765^{**}$ (0.00201) 0.000534 (0.000383)		0.00765*** (0.00131) 0.000534 (0.000507)	
Rejected * EventWindow		0.00245 (0.00218)		0.00245 (0.00180)		0.00228 (0.00218)		0.00228 (0.00180)		0.00245 (0.00218)		0.00245 (0.00180)
Rejected		-0.000622 (0.000383)		-0.000622 ( $0.000380$ )		-0.000445 ( $0.000356$ )		-0.000445 (0.000358)		-0.000622 (0.000383)		-0.000622 (0.000380)
After									-0.00123 (0.000863)	$-0.00191^{*}$ (0.000844)	-0.00123 (0.00150)	-0.00191 (0.00121)
After * Domestic									0.000830 (0.000950)		0.000830 (0.00145)	
After * Rejected										0.00173 (0.000958)		0.00173 (0.00108)
Observations Clustered Standard Errors?	4,096 NO	4,096 NO	4,096 Yes, by Dav	4,096 Yes, by Dav	4,560 NO	4,560 NO	4,560 Yes, by Dav	4,560 Yes, by Dav	4,560 NO	4,560 NO	4,560 Yes, by Dav	4,560 Yes, by Dav
F-Statistic p-value of F-test	5.03 0.0249	0.00 0.9519	7.20 0.0078	0.00 0.9555	6.22 0.0126	0.04 0.8459	10.57 0.0013	0.04 0.8505	6.14 0.0133	0.04 0.8413	10.41 0.0014	0.04 0.8456
Adjusted R <sup>2</sup>	0.066	0.066	0.066	0.066	0.069	0.068	0.069	0.068	0.069	0.068	0.069	0.068
*** p<0.001, ** p<0 numbered columns, " *EventWindow. "p-va	1.01, * p<0.05. 'F-Statistic" refe ilue of F-test" re	Heteroskedastici ars to the F-statis fers to the p-valu	ty robust and cli the on a test of e of the reported	ustered standan EventWindow F-statistic.	d errors in paren + Domestic*Eve	thesis, as indica utWindow. For c	ted. EventWind sven-numbered	ow represents the columns, "F-Sta	: trvo-day window J tistic" refers to the	rom August 5, 20 F-statistic on a t	14 to August 6, est of EventWim	2014. For odd- low + Rejected

TABLE B.1: ALTERNATIVE EVENT STUDY METHODOLOGY

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## BLOWING HOT AIR

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