

## DYNAMIC REGULATION VIA CONTINGENT CAPITAL

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*Abstract*

*Contingent capital securities are a largely overlooked dynamic regulatory mechanism. This article evaluates the use of contingent capital securities in a dynamic regulatory context, including the use of feedback effects for optimized timing and information for regulation and anticipatory regulation.*

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## I. Introduction

The existing regulatory infrastructure contributes to suboptimal regulatory outcomes,<sup>1</sup> especially when faced with ever-increasing disruptive innovation.<sup>2</sup> Regulatory challenges presented by disruptive innovation are largely associated with (1) facts-based, ex-post, trial-and-error rulemaking with stable and presumptively optimal rules in the existing regulatory framework,<sup>3</sup> (2) the timing of

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<sup>1</sup> Wulf A. Kaal, *Dynamic Regulation for Innovation*, PERSPECTIVES IN LAW, BUSINESS AND INNOVATION 4 (Mark Fenwick et al. eds., 2016); Wulf A. Kaal, *Evolution of Law: Dynamic Regulation in a New Institutional Economics Framework*, in Festschrift zu Ehren von Christian Kirchner 1211 (Wulf A. Kaal et al. eds., 2014) [hereinafter *Evolution of Law*]; Wulf A. Kaal, *Dynamic Regulation to Curtail Excessive Corporate Risk-Taking: A Response to Professor Schwarcz*, 65 EMORY L.J. ONLINE 2061, 2062 (2016) (“[T]he assumption that stable and optimal rules are a necessary and adequate remedy in many ways supports and perpetuates excessive risk-taking by executives, financial crises, and financial regulatory cycles.”); Wulf A. Kaal, *Dynamic Regulation via Governmental Contracts*, LIBER AMICORUM PETER NOBEL 66 (2015) (“Anticipatory dynamic elements in regulation can help minimize costly and suboptimal ex-post trial-and-error experimentation with stable and presumptively optimal rules.”); Wulf A. Kaal & Timothy A. Lacine, *The Effect of Deferred and Non-Prosecution Agreements on Corporate Governance: Evidence from 1993–2013*, 70 BUS. LAW. 61, 62 (2014); Wulf A. Kaal, *Dynamic Regulation of the Financial Services Industry*, 48 WAKE FOREST L. REV. 791, 799 (2013) (“Congress, financial regulators, and the literature on financial regulation rely almost exclusively on ‘stable’ and presumptively ‘optimal’ rules.”); Wulf A. Kaal, *Dampening Financial Regulatory Cycles via Dynamic Regulation—A Comment on Professor McDonnell*, 65 FLA L. REV. F. 32, 33 (2013) (“In short, optimal financial regulation should be countercyclical.”).

<sup>2</sup> Kaal, *Dynamic Regulation for Innovation*, *supra* note 1, at 4 (“Bower and Christensen coined the phrase ‘disruptive innovation,’ pointing out that technological changes that damage established companies typically present different performance attributes that existing customers value and improve such performance attributes so rapidly that established markets can be invaded.”).

<sup>3</sup> See generally Karl R. Popper, *THE POVERTY OF HISTORICISM* (1957) (discussing the scientific method for the social sciences); Christian Kirchner, *Evolution of Law: Interplay Between Private and Public Rule-Making A New Institutional Economics-Analysis*, 4 ERASMUS L. REV. 161 (2012) (“The evolution of institutions and law-making are thus overlapping, but not identical, processes.”).

regulation, and (3) ever-increasing unknown future contingencies in rulemaking.<sup>4</sup>

First, because facts-based, ex-post, trial-and-error rulemaking cannot anticipate regulatory issues created by innovation, rulemakers may not realize—or may realize much too late—what new regulatory demands apply to a given innovation and its associated regulatory issue. Rulemakers' near-exclusive reliance on stable and presumptively optimal rules,<sup>5</sup> created to attain permanent solutions for perceived regulatory issues,<sup>6</sup> ignores the constantly changing environment and the necessity for rules driven by the exponential growth of technology and the associated exponential growth of innovation.

Further, the timing of regulation in an environment of exponential innovation is a significant problem for regulators. Formal rulemaking in the existing regulatory infrastructure is overly time-consuming<sup>7</sup> and the speed of product innovation often makes regulations pertaining to an innovative product obsolete before such regulations are finalized.<sup>8</sup>

Finally, the existing regulatory infrastructure, with stable and presumptively optimal rules, is largely incapable of addressing the unknown future contingencies associated with disruptive innovation. Given the pace of innovation,<sup>9</sup> future contingencies in rulemaking are likely to grow substantially, making the dynamic anticipation of future contingencies increasingly important for rulemaking.

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<sup>4</sup> See Wulf A. Kaal & Erik P.M. Vermeulen, *How to Regulate Disruptive Innovation—From Facts to Data*, 57 JURIMETRICS (forthcoming 2017) (manuscript at 21–22), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2808044](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2808044) [<https://perma.cc/F99E-74W4>].

<sup>5</sup> See *Evolution of Law*, *supra* note 1, at 1212; Kaal, *Dynamic Regulation via Government Contracts*, *supra* note 1, at 73; Kaal, *Dynamic Regulation of the Financial Services Industry*, *supra* note 1, at 779.

<sup>6</sup> *Evolution of Law*, *supra* note 1, at 1218.

<sup>7</sup> See Cass R. Sunstein, *Is the Clean Air Act Unconstitutional?*, 98 MICH. L. REV. 303, 371 (1999); Thomas O. McGarity, *Some Thoughts on “Deossifying” the Rulemaking Process*, 41 DUKE L.J. 1385, 1386 (1992).

<sup>8</sup> Jo Ann S. Barefoot, *Disrupting FinTech Law*, 18 FINTECH L. REP. 1, 10 (2015).

<sup>9</sup> See *supra* notes 2, 4 & 8 and accompanying text (discussing disruptive innovation).

The issuance of contingent capital securities (CCS) is a promising dynamic regulatory mechanism that can help address the aforementioned suboptimal regulatory outcomes associated with disruptive innovation. Contingent capital<sup>10</sup> is an automatic mechanism for increasing capital while reducing debt with the long-term benefit of lowering leverage.<sup>11</sup> The conversion feature of contingent capital shows great promise to provide a mechanism for general risk control in financial institutions<sup>12</sup> and could enhance regulatory capital

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<sup>10</sup> For purposes of this article, the term contingent capital will be used. There are other names for the same concept. *See, e.g., An Expedited Resolution Mechanism for Distressed Financial Firms: Regulatory Hybrid Securities*, SQUAM LAKE WORKING GRP. WORKING PAPER (Council on Foreign Relations, New York, N.Y.), Apr. 2009 [hereinafter Squam Lake Working Group] (referring to “regulatory hybrid securities”); Mark J. Flannery, *Stabilizing Large Financial Institutions with Contingent Capital Certificates* (Oct. 6, 2009) (unpublished manuscript), [http://www3.unisi.it/dbmf/vari%20pdf%20dottorato/Flannery\\_\\_stabilizing\\_with\\_cocos.pdf](http://www3.unisi.it/dbmf/vari%20pdf%20dottorato/Flannery__stabilizing_with_cocos.pdf) [https://perma.cc/T324-LLGY] (referring to “contingent capital certificates”); Julie Dickson, Superintendent, Office of the Superintendent of Fin. Insts. Can., *Remarks to the Financial Services Invitational Forum: Too-Big-to-Fail and Embedded Contingent Capital 4* (May 6, 2010), <http://www.osfi-bsif.gc.ca/eng/docs/jdlh20100506.pdf> [https://perma.cc/ZTJ5-E362] (referring to “embedded contingent capital”); *CoCo Nuts: Lloyds Is First Out of the Gate with a New Kind of Capital*, THE ECONOMIST (Nov. 5, 2009), [http://www.economist.com/node/14816673?story\\_id=14816673](http://www.economist.com/node/14816673?story_id=14816673) [https://perma.cc/Z7ZQ-5WFC] (referring to “CoCos” as a short form for the concept of contingent capital).

<sup>11</sup> John C. Coffee, Jr., *Systemic Risk After Dodd-Frank: Contingent Capital and the Need for Regulatory Strategies Beyond Oversight*, 111 COLUM. L. REV. 795, 806 (2011) (promoting contingent capital as an alternative to bankruptcy or bailouts). Coffee suggests a contingent capital design where “(1) The conversion ratio would be deliberately designed to protect the debt holders from loss by instead diluting the existing equity holders, and (2) the debt security would convert into a fixed return preferred stock with cumulative arrearages and significant voting rights.” *Id.* Coffee avers that converting the debt security into preferred stock creates a “countervailing voting constituency to offset the voting power of risk-tolerant common shareholders, thereby reducing the pressure on corporate managers to accept greater risk and leverage.” *Id.* Under Coffee’s proposal, conversion would be triggered when the common stock price significantly decreases. *Id.*

<sup>12</sup> Wulf A. Kaal, *Initial Reflections on the Possible Application of Contingent Capital in Corporate Governance*, 26 NOTRE DAME J.L., ETHICS & PUB. POL’Y 281, 294–96 (2012) (discussing the promise and benefits of contingent capital); Raghuram G. Rajan, *Too Systemic to Fail: Consequences, Causes, and*

requirements by creating a regime for providing countercyclical regulatory capital.<sup>13</sup> By internalizing bank failure costs, contingent capital may be able to minimize moral hazard,<sup>14</sup> avoid financial contagion,<sup>15</sup> and limit systemic risk.<sup>16</sup>

This article has five parts. Following this Introduction, Part II outlines the core elements of the theory of dynamic regulation and dynamic regulatory mechanisms. Part III describes the central tenets of contingent capital securities and their function in financial markets. Part IV explains how contingent capital securities can function as a dynamic regulatory mechanism, and Part V concludes.

## II. *Dynamic Regulation*

As I have previously argued, supplementing the regulatory infrastructure with dynamic elements can reduce suboptimal regulatory

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*Potential Remedies* 25, 28 (Bank for Int'l Settlements, Working Paper No. 305, 2010), <http://www.bis.org/publ/work305.pdf> [<https://perma.cc/5SWW-6M7W>] (“[C]ontingent capital is like installing sprinklers. . . . [W]hen the fire threatens, the sprinklers will turn on.”). *But see* Christian Koziol & Jochen Lawrenz, *Contingent Convertibles. Solving or Seeding the Next Banking Crisis?*, 36 J. BANKING & FIN. 90, 91 (2012) (suggesting that CoCo bonds may “create negative externalities, in the sense that the (destabilizing) risk-shifting problem induced by CoCo bonds may overcompensate the (stabilizing) effect of providing a pre-committed recapitalization to banks.”).

<sup>13</sup> See William C. Dudley, President & Chief Exec. Officer, Fed. Reserve N.Y., Remarks at the Institute of International Bankers Membership Luncheon: Some Lessons from the Crisis (Oct. 13, 2009), <http://www.newyorkfed.org/newsevents/speeches/2009/dud091013.html> [<https://perma.cc/7Q59-DZUC>] (proposing that CCS can be used to adequately capture risk).

<sup>14</sup> See Mark J. Flannery, *No Pain, No Gain? Effecting Market Discipline via “Reverse Convertible Debentures,”* in CAPITAL ADEQUACY BEYOND BASEL: BANKING, SECURITIES, AND INSURANCE 171, 181 (Hal S. Scott ed., 2005) (“Frequent trigger evaluations eliminate moral hazard incentives and expose the RCD to surprisingly low default risk.”).

<sup>15</sup> See generally, GOLDMAN SACHS GLOB. MKTS. INST., EFFECTIVE REGULATION: ENDING “TOO BIG TO FAIL”, (2009) [hereinafter GOLDMAN SACHS, EFFECTIVE REGULATION], <http://www.goldmansachs.com/our-thinking/archive/effect-reform-part-5.pdf> [<https://perma.cc/A8YT-9W6Q>] (showing what could have happened if contingent capital had been in place during the recent economic crisis).

<sup>16</sup> See Coffee, *supra* note 11, at 806 (suggesting that contingent capital should be designed to create a standard for SIFIs).

outcomes.<sup>17</sup> Dynamic regulation as a regulatory supplement can help address the shortcomings of the existing rulemaking framework and curtail increased demands on the institutional infrastructure.

The timeliness and quality of information is the focus of rulemaking in a dynamic framework.<sup>18</sup> The increased availability of relevant, decentralized, and timely information for rulemaking in a dynamic framework can help facilitate rulemakers' predictions and anticipation of otherwise unforeseeable contingencies, making anticipatory action by rulemakers possible.<sup>19</sup>

As such, feedback effects are a central tenet of the theory of dynamic regulation. Feedback effects occur when an informational exchange process exists between public and private rulemakers, outcomes and institutions, rules and rulemaking processes, and jurisdictions.<sup>20</sup> Feedback effects in a dynamic regulatory framework can enhance the availability of institution-specific and decentralized information to support the rulemaking process.<sup>21</sup> Rather than acquiring necessary information after rules have emerged as suboptimal, feedback effects help increase the availability of relevant information for rulemaking ex ante and anticipate necessary revisions before rules emerge as suboptimal.<sup>22</sup>

Adapting rules to future contingencies is the focal point for rulemaking in a dynamic framework.<sup>23</sup> Anticipatory regulation uses institution-specific, timely information and feedback effects to create new rules.<sup>24</sup> Anticipatory dynamic regulation can help minimize costly and suboptimal ex-post, trial-and-error experimentation with stable and presumptively optimal rules.<sup>25</sup>

Dynamic regulation uses several tools to accomplish anticipatory rulemaking. For instance, deferred prosecution agreements

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<sup>17</sup> See generally *Evolution of Law*, supra note 1; Kaal, *Dynamic Regulation of the Financial Services Industry*, supra note 1.

<sup>18</sup> *Evolution of Law*, supra note 1, at 3; see Kaal, *Dynamic Regulation of the Financial Services Industry*, supra note 1, at 819.

<sup>19</sup> Kaal, *Dynamic Regulation of the Financial Services Industry*, supra note 1, at 819.

<sup>20</sup> *Evolution of Law*, supra note 1, at 1, 4 & 8.

<sup>21</sup> *Id.* at 2–3.

<sup>22</sup> *Evolution of Law*, supra note 1, at 2–3; Kaal, *Dynamic Regulation of the Financial Services Industry*, supra note 1.

<sup>23</sup> *Evolution of Law*, supra note 1, at 11.

<sup>24</sup> *Id.* at 12.

<sup>25</sup> *Id.* at 3.

(DPAs)<sup>26</sup> and venture capital investments provide some estimation of existing innovative trends and such trends' associated regulatory challenges.<sup>27</sup> DPAs and venture capital investment decisions increase the availability of relevant, decentralized, and timely information for rulemaking and facilitate feedback effects. By increasing the availability of such information *ex ante*, dynamic regulatory tools help lower unforeseen contingencies in the rulemaking process pertaining to innovation.

### III. *Contingent Capital*

Section 165(b) of the Dodd-Frank Act authorizes the Board of Governors of the Federal Reserve to utilize contingent capital.<sup>28</sup> Section 115(c) of the Dodd-Frank Act requires a study on the feasibility of contingent capital in the United States.<sup>29</sup> CCS issuance is a promising dynamic regulatory mechanism that could minimize the suboptimal regulatory outcomes associated with disruptive innovation. Contingent capital is an automatic mechanism for increasing capital while reducing debt with the long-term benefit of lowering leverage.<sup>30</sup> For purposes of this article, contingent capital is the predefined conversion of a certain percentage of financial institutions' debt securities into equity securities. Strained financial institutions may find the automatic conversion of debt into equity via contingent capital securities an attractive alternative to being forced into restructuring or liquidation.<sup>31</sup> The conversion feature of CCS has the potential to change the control dynamic, power, and dependencies within systemically important financial institutions (SIFIs). Given this potential, CCSs could help

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<sup>26</sup> See Kaal & Lacine, *supra* note 1, at 117 ("DPA feedback effects can help create a framework for dynamic and anticipatory forms of regulation as a regulatory supplement.").

<sup>27</sup> Kaal & Vermeulen, *supra* note 4.

<sup>28</sup> Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, § 165(b)(1)(B), 124 Stat. 1376, 1424 (2010) (codified at 12 U.S.C. § 5365 (2012)).

<sup>29</sup> § 115(c) (codified at 12 U.S.C. § 5325 (2012)).

<sup>30</sup> See Coffee, *supra* note 11, at 805 (averring that contingent capital can counter leverage debt). For a reading that is critical in the context of automation of financial regulation, see generally AMAR BHIDÉ, *A CALL FOR JUDGMENT: SENSIBLE FINANCE FOR A DYNAMIC ECONOMY* (2010).

<sup>31</sup> See Coffee, *supra* note 11, at 805.

fill a void left by regulators' inability to supervise financial institutions effectively, often the result of insufficient public funding.

Policymakers and academics<sup>32</sup> support contingent capital as a policy tool because it shows great promise for internalizing bank failure costs,<sup>33</sup> stabilizing SIFIs, and preparing SIFIs for future financial crises.<sup>34</sup> They have identified several core objectives associated with contingent capital securities, which include: signaling default risk,<sup>35</sup> providing incentive to increase capital,<sup>36</sup> preventing bailouts,<sup>37</sup> decreasing risk taking,<sup>38</sup>

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<sup>32</sup> See, e.g., DAVID SKEEL, *THE NEW FINANCIAL DEAL: UNDERSTANDING THE DODD-FRANK ACT AND ITS (UNINTENDED) CONSEQUENCES* (2011); Coffee, *supra* note 11, at 801–08.

<sup>33</sup> See, e.g., *id.* at 84–85; Darrell Duffie, *A Contractual Approach to Restructuring Financial Institutions*, in *ENDING GOVERNMENT BAILOUTS AS WE KNOW THEM* (George P. Schultz et al. eds., 2010); Flannery, *supra* note 14, at 173–74; Coffee, *supra* note 11, at 803–08; Robert L. McDonald, *Contingent Capital with a Dual Price Trigger*, 9 J. FIN. STABILITY 230 (2013).

<sup>34</sup> See Flannery, *supra* note 14, at 171 (“Requiring each bank to maintain high levels of equity capitalization could substantially reduce the incidence of bank distress.”).

<sup>35</sup> See Raghuram Rajan, *Opinion, More Capital Will Not Stop the Next Crisis*, FIN. TIMES (Oct. 1, 2009), <https://www.ft.com/content/a830fcf6-aed1-11de-96d7-00144feabdc0> [<https://perma.cc/QKS8-6XNT>] (suggesting that CCS should be used to raise capital “when regulators see a crisis coming”); Dudley, *supra* note 13.

<sup>36</sup> See Charles W. Calomiris & Richard J. Herring, *Why and How to Design a Contingent Convertible Debt Requirement*, 25 J. APPLIED CORP. FIN. 39 (2013); Squam Lake Working Group, *supra* note 10.

<sup>37</sup> See *id.* at 39 (averring that contingent capital could help prevent the “too big to fail” problem); Coffee, *supra* note 11, at 806 (promoting contingent capital as an alternative to bailouts); Squam Lake Working Group, *supra* note 10, at 4 (suggesting that hybrid securities would help prevent bailouts).

<sup>38</sup> See George Pennacchi et al., *Contingent Capital: The Case of COERCs* 9, 13 (INSEAD, Working Paper No. 2011/51/FIN 2013), <http://www.ieseg.fr/wp-content/uploads/CoercRev31Mar2013.pdf> [<https://perma.cc/S3MX-XJED>] (suggesting that their COERC proposal would reduce the risks of bonds); Dudley, *supra* note 13 (averring that because bank difficulties would trigger conversion, this dilution of shareholders creates an incentive for bank managers to “manage not only for good outcomes on the upside of the boom, but also against bad outcomes on the downside”).

minimizing moral hazard,<sup>39</sup> avoiding financial contagion,<sup>40</sup> and limiting systemic risk.<sup>41</sup>

Contingent capital may support and optimize general risk control in financial institutions.<sup>42</sup> By internalizing bank failure costs, contingent capital can minimize moral hazard,<sup>43</sup> and appropriate use of contingent capital triggers can further lower default risk of CCS.<sup>44</sup> Further, contingent capital may be more efficient than raising capital requirements, because the capital injection is available only when it is needed<sup>45</sup> and, when triggered, only enough CCS converts as is necessary to recapitalize the firm.<sup>46</sup> Contingent capital may also incentivize SIFI management to decrease financial institutions' risk taking.<sup>47</sup> The threat of dilution of stock holdings, in combination with a threat of loss due to conversion could help reduce shareholder pressure on SIFI management to take increasing risks.<sup>48</sup> In situations where conversion had a negative effect on stock price,<sup>49</sup> management

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<sup>39</sup> See Flannery, *supra* note 14, at 181.

<sup>40</sup> See GOLDMAN SACHS, EFFECTIVE REGULATION, *supra* note 15, at 6 (noting that if the appropriate triggers are in place, it could prevent bank runs—though if the trigger is based on market prices, it could worsen bank runs).

<sup>41</sup> See Coffee, *supra* note 11, at 806.

<sup>42</sup> See Rajan, *supra* note 12, at 28 (discussing the benefits of contingent capital compared to conventional capital requirements). *But see* Koziol & Lorenz, *supra* note 12, at 91 (summarizing the drawback to contingent capital).

<sup>43</sup> See Flannery, *supra* note 14, at 181.

<sup>44</sup> See generally *id.*

<sup>45</sup> See *supra* Part III.

<sup>46</sup> See Flannery, *supra* note 14, at 187–88.

<sup>47</sup> See Dudley, *supra* note 13 (“If the bank encounters difficulties, triggering conversion, shareholders would be automatically and immediately diluted. This would create strong incentives for bank managements to manage not only for good outcomes on the upside of the boom, but also against bad outcomes on the downside.”); Coffee, *supra* note 11, at 806. Coffee avers that converting the debt security into preferred stock creates a “countervailing voting constituency,” which offsets the voting power of “risk-tolerant common shareholders, thereby reducing the pressure on corporate managers to accept greater risk and leverage.” *Id.*

<sup>48</sup> See Dudley, *supra* note 13 (“If shareholders had faced the potential of automatic and substantial dilution, they may have demanded better risk management and disclosure during the boom.”).

<sup>49</sup> A potential effect of CCS conversion on stock prices will likely be evaluated in future research. See Suresh Sundaresan & Zhenyu Wang, *On the Design of Contingent Capital with Market Trigger*, 70 J. FIN. 881, 900 (2015)

could be incentivized further to maintain and manage risk to avoid reputational loss and income reduction due to losses in stock options.<sup>50</sup> Accordingly, contingent capital could create a regime for providing countercyclical regulatory capital<sup>51</sup> that further enhances regulatory capital requirements of the Federal Reserve<sup>52</sup> and under Basel III.<sup>53</sup>

#### *IV. Dynamic Regulation Via Contingent Capital*

Contingent capital is a dynamic regulatory mechanism because (1) capital injection is available only if and when needed; (2) signaling to regulators of impending regulatory issues via conversion of CCS to near worthless equity creates feedback effects; and (3) contingent capital may also incentivize management to lower their risk taking on behalf of the financial institution.<sup>54</sup> Contingent capital accordingly exemplifies and supports the core tenets of dynamic regulation, which include improved information for rulemaking, feedback effects, and anticipatory regulation).

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(suggesting that under their design of contingent capital, where the state-contingent conversion ratio prevents value transfer, the prices would be kept “smooth’ at conversion”).

<sup>50</sup> Even though there is a trend toward a reduction in stock option compensation, management may still receive a certain percentage of their compensation in stock options. See Guido Ferrarini & Maria Cristina Ungureanu, *Economics, Politics, and the International Principles for Sound Compensation Practices: An Analysis of Executive Pay at European Banks*, 64 *VAND. L. REV.* 429, 460–61 (2011).

<sup>51</sup> Dudley, *supra* note 13.

<sup>52</sup> See 12 U.S.C. § 5371 (Supp. I 2015) (describing the minimum risk-based capital requirements); John H. Cochrane, Opinion, *The More Bank Capital, the Safer the Bank*, *WALL ST. J.* (July 15, 2011), <https://www.wsj.com/articles/SB10001424052702304911104576444482440753132> [<https://perma.cc/B5SS-A9HJ>] (“The Federal Reserve wants another 3% for ‘systemically important’ banks,” bringing the total regulatory capital requirement to 10 percent and that the Federal Reserve’s Dan Tarullo even proposed a 14 percent capital requirement.”).

<sup>53</sup> Basel III calls for 7 percent regulatory capital, up from 3 percent. Press Release, Basel Comm. on Banking Supervision, Group of Governors and Heads of Supervision Announces Higher Global Minimum Capital Standards (Sept. 12, 2010), <http://www.bis.org/press/p100912.pdf> [<https://perma.cc/CZ2S-H623>]; see also Rajan, *supra* note 35 (suggesting that CCS should be used to raise capital “when regulators see a crisis coming”).

<sup>54</sup> Coffee, *supra* note 11, at 805–06; see also Dudley, *supra* note 13.

First, contingent capital has the potential to optimize information for rulemaking.<sup>55</sup> CCS, when issued and triggered, produce highly valuable, real time, decentralized information on the financial wellbeing of a given regulated entity.<sup>56</sup>

Second, contingent capital creates feedback effects because the conversion of debt to equity signals to regulators that the respective entity's management that was unable to avoid the trigger from debt to equity, which calls for increased regulatory scrutiny.<sup>57</sup> In essence, the occurrence of the trigger from debt to equity creates real-time regulatory information that would require months or years to generate in centralized system, and enables regulators to start a regulatory investigation if and when it is needed.<sup>58</sup>

Finally, contingent capital enables anticipatory regulation because regulators may observe and react in real time to triggering events, before entities encounter financial calamity. Additionally, depending on the disclosure regime that pertains to the respective CCS, regulators will also be able to understand what financial disclosures can affect the stability of such CCS.<sup>59</sup> Such information may allow regulators to anticipatorily adjust their regulatory requirements and the intensity of regulatory investigations.<sup>60</sup>

## V. Conclusion

The issuance of CCS is a promising dynamic regulatory mechanism that can help address the suboptimal regulatory outcomes associated with disruptive innovation. While most of the design features of CCS and their triggering events are underdeveloped, despite these shortcomings, CCS could help allows regulators to anticipate regulatory needs in real-time, supported by feedback effects and improved information for regulation.

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<sup>55</sup> Kaal, *Dynamic Regulation of the Financial Services Industry*, *supra* note 1, at 816.

<sup>56</sup> *Id.* at 825.

<sup>57</sup> *Id.*

<sup>58</sup> *Id.*

<sup>59</sup> *Id.*

<sup>60</sup> *Id.*

