

## NOTES

### BANKRUPTCY INSURANCE: A MODULAR APPROACH TO SYSTEMIC RISK

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# NOTES

## BANKRUPTCY INSURANCE: A MODULAR APPROACH TO SYSTEMIC RISK

Ben Klaber\*

### I. INTRODUCTION

Systemic risk, the potential for shocks to spread throughout and destabilize the financial system, has become the central concern of financial market regulation.<sup>1</sup> Any reform effort should bear in mind that systemic failures are nearly impossible to predict.<sup>2</sup> To enable sustainable growth while preventing catastrophic losses in the increasingly complex financial system, reform should focus on innovative mechanisms that mitigate the potential domino effect of failed firms. If financial institutions will be permitted to fail, they must be able to fail safely.<sup>3</sup>

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<sup>1</sup> Hal S. Scott, *The Reduction of Systemic Risk in the United States Financial System*, 33 HARV. J.L. & PUB. POL'Y 671, 673 (2010).

<sup>2</sup> Steven L. Schwarcz, *Regulating Complexity in Financial Markets*, 87 WASH. U. L. REV. 211, 215 (2009).

<sup>3</sup> See Scott, *supra* note 1, at 677–78.

With systemic risk in mind, the Bankruptcy Code effectively exempts many financial institutions and financial products from its proceedings.<sup>4</sup> Although these exemptions provide important benefits of speed and certainty to the bankruptcy process, they actually may increase systemic risk.<sup>5</sup> Some commentators have argued for the repeal of these exemptions.<sup>6</sup> This Note argues for replacing the financial participant exemptions with a new mechanism—bankruptcy insurance—that is inspired by the importance of modularity in complexity theory.

Bankruptcy insurance would make funds available to creditors quickly upon a debtor's bankruptcy filing, satisfying the same amount in claims against the debtor. Bankruptcy insurance would serve as a modular interface between counterparties to maintain liquidity in the markets and prevent devastating chain reactions, thus reducing systemic risk in several ways. First, bankruptcy insurance would mitigate the potential domino effect and market freeze, because creditors could avoid substantial losses and delay. Second, financial institutions, both individually and collectively, would have the incentive to reduce risk to lower insurance premiums. Third, private insurance providers would perform the onerous tasks of collecting information and analyzing systemic risk, and market participants and regulators would reap the rewards at low cost. Finally, with proper implementation, the markets would be less prone to panics caused by counterparty uncertainty.

The bankruptcy insurance mechanism could be implemented in several ways. This Note proposes that systemically important institutions could be required to participate with minimum levels of coverage. Private companies would provide bankruptcy insurance. With increased transparency, reduced transaction costs, and a safety mechanism in place, creditors and market participants would be more willing to interact and spur economic growth.

It should be noted that the bankruptcy insurance intermediaries could become a new source of systemic risk. Thus, these intermediaries would need to be regulated and potentially backstopped by the federal government. When weighing the benefits of enabling economic growth against the expected losses due to systemic risk, regulators should resolve uncertainties in favor of lowering risk because the losses are potentially catastrophic. Part II discusses the nature of

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<sup>4</sup> Edward R. Morrison & Joerg Riegel, *Financial Contracts and the New Bankruptcy Code: Insulating Markets from Bankrupt Debtors and Bankruptcy Judges*, 13 AM. BANKR. INST. L. REV. 641, 650 (2005).

<sup>5</sup> Bryan G. Faubus, *Narrowing the Bankruptcy Safe Harbor for Derivatives to Combat Systemic Risk*, 59 DUKE L.J. 801, 830 (2010).

<sup>6</sup> See, e.g., Stephen J. Lubben, *Repeal the Safe Harbors*, 18 AM. BANKR. INST. L. REV. 319, 321 (2010).

systemic risk and its regulation. Part III explains how the Bankruptcy Code fails in its attempt to alleviate systemic risk. Part IV presents this Note's proposal for a bankruptcy insurance mechanism, and Part V concludes.

## II. SYSTEMIC RISK

### A. Overview of Systemic Risk

Systemic risk has become the central issue for financial regulators.<sup>7</sup> Systemic risk is the potential for institution failures or market shocks to ripple through the financial system, causing massive losses or uncertainty and severely impacting the cost or availability of capital.<sup>8</sup> Systemic risk should not be confused with systematic risk, which is the non-diversifiable risk of downturns caused by normal market swings.<sup>9</sup>

The Great Depression demonstrates how a market crisis can spin out of control, debilitating the entire financial system. After the stock market crashed in 1929, "depositors en masse attempted to convert their bank deposits into cash."<sup>10</sup> Unable to satisfy these demands, many banks failed, contracting the money supply and causing a chain reaction of bank and company failures.<sup>11</sup> Though "an important symbol of systemic risk," a chain of bank failures is not the only systemic threat.<sup>12</sup> Due to the rise of disintermediation and access to the capital markets, shocks can now "spread through capital-market linkages, rather than merely through banking relationships."<sup>13</sup>

Systemic risk arises because financial markets are inherently fragile, and individual participants do not have sufficient incentives to internalize the costs associated with the potential for the system to collapse. Markets are fragile because of liquidity mismatching, complex interconnections, a pro-cyclical bias, and financial innovations with unpredictable effects.<sup>14</sup> In addition, individual market

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<sup>7</sup> Scott, *supra* note 1, at 673.

<sup>8</sup> See Steven L. Schwarcz, *Systemic Risk*, 97 GEO. L.J. 193, 204 (2008).

<sup>9</sup> *Id.*

<sup>10</sup> *Id.* at 199.

<sup>11</sup> *Id.* at 199–200.

<sup>12</sup> *Id.* at 200.

<sup>13</sup> *Id.*

<sup>14</sup> Jeffrey N. Gordon & Christopher Muller, *Confronting Financial Crisis: Dodd-Frank's Dangers and the Case for A Systemic Emergency Insurance Fund*, 28 YALE J. ON REG. 151, 166, 171 (2011).

participants do not minimize systemic risk because of behavioral biases and a type of “tragedy of the commons,”<sup>15</sup> both of which are described below.

The financial system is a network of highly interrelated institutions.<sup>16</sup> Although the system can absorb shocks by spreading risk, the network can also “amplify shocks, potentially leading to systemic collapse.”<sup>17</sup> There are two fundamental mechanisms or “correlations” by which shocks travel throughout the financial system.<sup>18</sup> First, financial firms underestimate and underprice low-probability risk, eroding firm integrity.<sup>19</sup> Second, market participants underappreciate their interconnections, leading to “socially excessive risk levels that increase the fragility of the financial system.”<sup>20</sup> Of great concern for systemic risk regulation, these correlations will likely persist, and “increasing complexity in the financial system will make them even more pervasive and impervious to market-participant correction.”<sup>21</sup>

Behavioral biases exacerbate the problem of systemic risk. Intellectual hazard is “the tendency of behavioral biases to interfere with accurate thought and analysis within complex organizations.”<sup>22</sup> Because financial markets are exceedingly complex, intellectual hazard poses a serious threat.<sup>23</sup> Moreover, intellectual hazard is “most pronounced during boom times—exactly the period when the market most needs independent thought and judgment.”<sup>24</sup>

The “tragedy of the commons” presents another challenge for curbing systemic risk. More common in the environmental context, this situation arises when individual actors maximize the use of a common resource to satisfy their own

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<sup>15</sup> See *infra* Part II.A.

<sup>16</sup> Iman Anabtawi & Steven L. Schwarcz, *Regulating Systemic Risk: Towards an Analytical Framework*, 86 NOTRE DAME L. REV. 1349, 1355 (2011).

<sup>17</sup> *Id.*

<sup>18</sup> *Id.* at 1354–55.

<sup>19</sup> *Id.* at 1354.

<sup>20</sup> *Id.* at 1355.

<sup>21</sup> *Id.* at 1380.

<sup>22</sup> Geoffrey P. Miller & Gerald Rosenfeld, *Intellectual Hazard: How Conceptual Biases in Complex Organizations Contributed to the Crisis of 2008*, 33 HARV. J.L. & PUB. POL’Y 807, 810 (2010).

<sup>23</sup> *Id.* at 812–13.

<sup>24</sup> *Id.* at 835.

interests, but to the detriment of society as a whole.<sup>25</sup> As applied to systemic risk, financial firms focus on their own risks rather than the potential spillover effects of their interconnectivity, creating an externality.<sup>26</sup> Each market participant has the incentive to maximize exploitation of this “resource,” because the costs are widely distributed.<sup>27</sup> Thus, “financial market participants will progressively pursue their self-interest in the form of socially excessive risk-taking.”<sup>28</sup>

For the foregoing reasons as well as others, “[systemic] failures are predictably unpredictable and inescapable.”<sup>29</sup> Although the 2008 financial crisis centered on specific companies, securities, and underlying assets, it was fundamentally analogous to historic, and likely future, failures. Due to conflicts of interest, complacency, complexity and a type of tragedy of the commons,<sup>30</sup> mispriced and poorly understood risks—though ostensibly diversified—were focused, leveraged, and interconnected to such a degree that modest changes in circumstances led to a catastrophic collapse of the financial system’s temporary equilibrium. Thus, the 2008 financial crisis demonstrates how the financial system repeatedly is susceptible to a small shock unpredictably transforming into a devastating contagion. Individual actors do not have sufficient incentives to prevent or mitigate the damage to society.

## B. Complexity in the Financial System

### 1. Overview of Complexity

The financial system is highly complex. Complexity is “the greatest financial-market challenge of the future.”<sup>31</sup> Systemic risk presents a “meta-complexity problem: the complexity of groups of complex objects.”<sup>32</sup> Complexity can be understood as the “difficulty experienced by an individual in transforming raw information about its components into usable information about the system.”<sup>33</sup>

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<sup>25</sup> See generally Garret Hardin, *The Tragedy of the Commons*, 162 SCI. 1243 (1968).

<sup>26</sup> Anabtawi & Schwarcz, *supra* note 16, at 1375.

<sup>27</sup> *Id.*

<sup>28</sup> *Id.*; see also Schwarcz, *supra* note 8, at 206.

<sup>29</sup> Gordon & Muller, *supra* note 14, at 180.

<sup>30</sup> See Anabtawi & Schwarcz, *supra* note 16, at 1352.

<sup>31</sup> Schwarcz, *supra* note 2, at 212–13.

<sup>32</sup> Manuel A. Utset, *Complex Financial Institutions and Systemic Risk*, 45 GA. L. REV. 779, 837 (2011).

<sup>33</sup> *Id.* at 797.

Complexity depends on the “number of parts or components involved; and the way that these components interact with each other.”<sup>34</sup> The interconnection between the components is the “most important factor affecting the level of complexity.”<sup>35</sup> Some important features of complex systems are emergence, sensitivity to initial conditions, and nonlinearity.<sup>36</sup> These features make complex systems difficult to decompose, manipulate, and predict, therefore potentially inhibiting financial system development.

There are several layers of complexity in the financial system that can lead to and intensify market failures.<sup>37</sup> One layer is financial innovation. Financial innovation may lead to increasingly complex underlying assets, origination models, securities and markets; “obscuring the ability of market participants to see and judge consequences, and making financial markets more susceptible to financial contagion and to fraud.”<sup>38</sup>

Another layer occurs when participants in a complex system exhibit bounded rationality. Complexity affects the willingness of financial institutions to conduct due diligence on securities and counterparties, because “[a]s complexity increases, financial models become less reliable.”<sup>39</sup> When faced with complexity, market participants rely on simplifying heuristics, and they underestimate remote risks that are “less salient, more opaque, and more difficult to model.”<sup>40</sup> This problem of bounded rationality is exaggerated in the context of real time financial markets, where speed is critical.<sup>41</sup> Complexity increases the costs of transparency, causing market participants to either choose alternative mechanisms or forego transactions.<sup>42</sup>

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<sup>34</sup> *Id.* at 798.

<sup>35</sup> *Id.*

<sup>36</sup> Donald T. Hornstein, *Complexity Theory, Adaptation, and Administrative Law*, 54 DUKE L.J. 913, 918–19 (2005).

<sup>37</sup> Schwarcz, *supra* note 2, at 265.

<sup>38</sup> *Id.*

<sup>39</sup> Anabtawi & Schwarcz, *supra* note 16, at 1370.

<sup>40</sup> *Id.*

<sup>41</sup> Utset, *supra* note 32, at 802–03.

<sup>42</sup> *Id.* at 804.

In addition, the structure of the financial system and coordinated behavior lead to information uncertainty and high market sensitivity to information.<sup>43</sup> The indirect-holding system of securities, which simplifies transfers and record keeping, “exacerbates uncertainty by reducing transparency.”<sup>44</sup> Moreover, many market participants rely on sophisticated mathematical techniques that may converge and lead to correlated losses.<sup>45</sup> The problem of information uncertainty becomes “especially dangerous when combined with nonlinear feedback effects and tight coupling—a combination which inadvertently can be created or exacerbated by regulation.”<sup>46</sup> As an example, mark-to-market accounting when markets are unstable triggers forced sales to meet margin calls, which puts downward pressure on asset prices, prompting further forced sales and causing a downward spiral.<sup>47</sup> Therefore, complexity may be the most challenging and the most important impediment to financial system development.

## 2. Managing Complexity

Two approaches to managing complexity are standardization and centralization, both of which enable market participants to more easily grasp financial products.<sup>48</sup> Whereas standardization requires limiting the available range of securities, centralization concentrates expertise and leverages economies of scale.<sup>49</sup> Centralization enables “approaches to, and levels of, due diligence that would be uneconomic for dispersed investors to undertake.”<sup>50</sup>

Another approach to managing complexity is modularity, where the system is separated into units, known as modules, whose interdependencies are “sparse and standardized.”<sup>51</sup> Modularity reduces uncertainty because each module “can

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<sup>43</sup> Schwarcz, *supra* note 2, at 231.

<sup>44</sup> *Id.* (noting “third parties cannot readily determine who ultimately owns, and thus has credit exposure to, specific securities because there is no single location from which third parties can easily get that information.”).

<sup>45</sup> *Id.* at 231–32.

<sup>46</sup> *Id.* at 232.

<sup>47</sup> *Id.* at 232–33.

<sup>48</sup> Anabtawi & Schwarcz, *supra* note 16, at 1390–91.

<sup>49</sup> *Id.*

<sup>50</sup> *Id.*

<sup>51</sup> Henry E. Smith, *Modularity in Contracts: Boilerplate and Information Flow*, 104 MICH. L. REV. 1175, 1176 (2006).



function and develop in relative isolation.”<sup>52</sup> “Information hiding,” a technique used by systems engineers, is the “hallmark of modularity.”<sup>53</sup> Through information hiding, “only certain kinds of information can be passed from module to module, reducing the need to know what’s going on in the other black boxes.”<sup>54</sup> Modules can develop relatively independently because of this flexible interface, and “changes will not have costly ramifications elsewhere.”<sup>55</sup>

Asset-partitioning is an instructive example of modularization because a corporation’s creditors do not need to examine the owner’s personal liabilities, and the owner’s creditors do not need to scrutinize the corporation’s liabilities.<sup>56</sup> Modularity has the potential to reduce systemic risk because “[a] module can be added, subtracted, altered, et cetera, in response to stress from outside the system, without causing the rest of the system to fail.”<sup>57</sup> Modularity is recognized as a central feature of adaptive, evolutionary processes in biology.<sup>58</sup> Modularity promotes the evolution of complexity<sup>59</sup> and diminishes the consequences of change.<sup>60</sup> Modularity utilizes formalism to overcome the challenges of complexity because institutions can transact with less sensitivity to extremely nuanced context.<sup>61</sup> Thus, modularity in the financial system can increase stability and predictability. Specifically, information hiding is a powerful device for managing systemic risk as complexity expands.

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<sup>52</sup> *Id.* at 1177.

<sup>53</sup> *Id.* at 1185.

<sup>54</sup> *Id.* at 1177.

<sup>55</sup> *Id.*

<sup>56</sup> *Id.* at 1187–88.

<sup>57</sup> *Id.* at 1201.

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

<sup>59</sup> See generally Gerhard Schlosser, *The Role of Modules in Development and Evolution*, in MODULARITY IN DEVELOPMENT AND EVOLUTION 554 (Gerhard Schlosser & Günter P. Wagner eds., 2004).

<sup>60</sup> See generally Kim Sterelny, *Symbiosis, Evolvability, and Modularity*, in MODULARITY IN DEVELOPMENT AND EVOLUTION 496 (Gerhard Schlosser & Günter P. Wagner eds., 2004).

<sup>61</sup> See Smith, *supra* note 51, at 1203.

### 3. Market Solutions to Complexity

To facilitate efficient transactions, financial institutions have developed ways to work around complexity.<sup>62</sup> One such market solution is “blind debt,” which is an example of information hiding.<sup>63</sup> Repo lenders can rely on sufficient collateral and extremely short maturities to “ignore complexities hiding within the borrower,”<sup>64</sup> essentially treating the borrower as a “black box.”<sup>65</sup> Indeed, leading into the recent crisis, complex financial institutions increasingly depended on short-term repos.<sup>66</sup>

Another example of a market solution to the complexity problem is the credit default swap (“CDS”), where the purchaser pays for protection against a predefined credit event.<sup>67</sup> Typically, a CDS is used for hedging purposes like an insurance policy.<sup>68</sup> CDSs have changed the way credit markets function, and it appears that they have already mitigated potential systemic failures from large corporate and sovereign defaults, such as Enron and Argentina.<sup>69</sup>

However, the widespread use of market mechanisms to avoid complexity, including blind debt and CDSs, may have perverse consequences for systemic risk. Because of its widespread adoption and then the sudden, collective shift toward transparency, the blind-debt strategy may have “increased systemic risk and helped trigger and exacerbate the financial crisis of 2007–2009.”<sup>70</sup> As for CDSs, “the increase in derivatives-based hedging strategies may contribute to systemic risk by increasing the ‘linkages among market participants.’”<sup>71</sup> During the 2008 crisis, AIG “became obligated to post billions of dollars in collateral that it didn’t have” because of its CDS positions, consequently teetering on the brink of a bankruptcy

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<sup>62</sup> Utset, *supra* note 32, at 816.

<sup>63</sup> *Id.*

<sup>64</sup> *Id.*

<sup>65</sup> *Id.* at 796.

<sup>66</sup> *Id.*

<sup>67</sup> Faubus, *supra* note 5, at 811.

<sup>68</sup> *Id.* at 812–13.

<sup>69</sup> *Id.* at 814.

<sup>70</sup> Utset, *supra* note 32, at 816.

<sup>71</sup> Faubus, *supra* note 5, at 814.

that would have had “potentially devastating implications.”<sup>72</sup> Moreover, information hiding can conceal systemic risk.<sup>73</sup>

Despite their risks and shortcomings, it is important for regulators to recognize that information hiding mechanisms can provide important benefits to individual market participants, enabling growth and liquidity.<sup>74</sup> Moreover, with proper implementation, such mechanisms can also help reduce systemic risk.<sup>75</sup> Because “failures are almost inevitable in complex systems,” modularity will be a key device for managing systemic risk by decoupling components and preventing spillover effects.<sup>76</sup>

### C. Systemic Risk Regulation

#### 1. Overview of Systemic Risk Regulation

According to the tragedy of the commons theory, “absent intervention, financial market participants will progressively pursue their self-interest in the form of socially excessive risk-taking.”<sup>77</sup> Moreover, according to behavioral psychology theory, market participants will not sufficiently account for the impact of systemic risk, which manifests itself very rarely compared to other market risks.<sup>78</sup> Thus, some form of regulation is necessary to prevent or internalize externalities caused by systemic risk.<sup>79</sup>

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<sup>72</sup> Zachary J. Gubler, *The Financial Innovation Process: Theory and Application*, 36 DEL. J. CORP. L. 55, 88 (2011).

<sup>73</sup> Utset, *supra* note 32, at 816.

<sup>74</sup> *Id.* at 835 (“[O]n an individual basis, collateralized short-term debt is a very efficient way of dealing with the high information costs that creditors would face if they had to fully pierce through the borrowing institution’s complexity.”).

<sup>75</sup> Faubus, *supra* note 5, at 814 (“This use of CDSs to insure against credit risk—if widespread—may contribute to a more resilient economy that is less susceptible to system-wide shocks resulting from the failure of a major market participant.”).

<sup>76</sup> Schwarcz, *supra* note 2, at 215.

<sup>77</sup> Anabtawi & Schwarcz, *supra* note 16, at 1375; *see also* Schwarcz, *supra* note 8, at 206.

<sup>78</sup> Schwarcz, *supra* note 8, at 206; *see also* Anabtawi & Schwarcz, *supra* note 16, at 1354 (“[W]e believe that managers of financial firms systematically underestimate the likelihood of encountering low-probability adverse events.”).

<sup>79</sup> Schwarcz, *supra* note 8, at 206.

Until now, regulation of systemic risk has focused mostly on preventing bank failure.<sup>80</sup> Traditionally, disclosure to reduce asymmetric information has been the primary market-regulatory mechanism;<sup>81</sup> however, disclosure is less effective in the systemic risk context. For several reasons, “mandating increased disclosure would do relatively little to deter systemic risk and may even be counterproductive.”<sup>82</sup> First, individual market participants have incentives to protect themselves but not the entire system.<sup>83</sup> Second, market participants already exchange information with counterparties.<sup>84</sup> Third, markets and transactions are becoming increasingly complex.<sup>85</sup> Finally, traders’ increased caution may reduce liquidity.<sup>86</sup> Thus, regulators should focus on cost-effective, supplemental protections rather than disclosure to manage systemic risk.<sup>87</sup>

There are two fundamental challenges that any financial market reform must address. First, market participants “deal with the complexity problem at the lowest cost possible.”<sup>88</sup> Second, groups of institutions increase systemic risk by collectively adopting similar practices, such as blind debt.<sup>89</sup> Thus, regulators must recognize the fundamental drivers behind pervasive complexity-based solutions that emerge to enable market evolution and growth.<sup>90</sup> Regulators should focus on areas where “there is a nonlinear increase in the sources of complexity at issue with no corresponding jump in the potential value created.”<sup>91</sup>

Before proceeding with suggested guidelines for effective regulation of systemic risk, it is important to note the uphill battle that regulators face. It is

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<sup>80</sup> *Id.* at 210.

<sup>81</sup> *Id.* at 218.

<sup>82</sup> *Id.* at 238.

<sup>83</sup> *Id.*

<sup>84</sup> *Id.*

<sup>85</sup> *Id.* at 219.

<sup>86</sup> *Id.*

<sup>87</sup> Schwarcz, *supra* note 2, at 241.

<sup>88</sup> *Id.*

<sup>89</sup> Utset, *supra* note 32, at 786.

<sup>90</sup> *See id.* at 835.

<sup>91</sup> Kathryn Judge, *Fragmentation Nodes: A Study in Financial Innovation, Complexity, and Systemic Risk*, 64 STAN. L. REV. 657, 715 (2012).

extraordinarily difficult to predict systemic failures, and regulators often have the tools but fail to use them or hesitate to acquire the necessary authority to curtail potential failures.<sup>92</sup> Historical approaches offer the primary lesson that “attempts to regulate systemic risk can be imperfect and messy.”<sup>93</sup> Indeed, intensive and detailed regulation of capital has been ineffective, demonstrating that “more regulation does not necessarily translate into less systemic risk.”<sup>94</sup> Moreover, systemic risk today extends far beyond the traditional banking system.<sup>95</sup>

## 2. Guiding Principles for Systemic Risk Regulation

As an important starting point, the government should not regulate systemic risk unless doing so would make the financial markets more efficient.<sup>96</sup> Efficiency requires that the costs of regulation do not exceed its benefits.<sup>97</sup> Because systemic risk may implicate health and safety issues, regulation developed in other contexts for “catastrophic events or large, irreversible effects where the actual level of risk is indeterminate” may be relevant.<sup>98</sup> Under those circumstances, “regulators often apply a precautionary principle that presumes benefits will outweigh costs.”<sup>99</sup> Even from a cautionary perspective, though, most approaches to regulating systemic risk provide insufficient benefits to justify their cost.<sup>100</sup>

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<sup>92</sup> Saule Omarova & Adam Feibelman, *Risks, Rules, and Institutions: A Process for Reforming Financial Regulation*, 39 U. MEM. L. REV. 881, 894 (2009).

<sup>93</sup> Schwarcz, *supra* note 8, at 213.

<sup>94</sup> Scott, *supra* note 1, at 680.

<sup>95</sup> Schwarcz, *supra* note 8, at 213; *see also* FINANCIAL STABILITY OVERSIGHT COUNCIL, U.S. DEP’T OF THE TREASURY, FSOC 2011 ANNUAL REPORT ii, (2011), *available at* <http://www.treasury.gov/initiatives/fsoc/Documents/FSOCAR2011.pdf> (explaining that identifying and mitigating potential threats to financial stability “is an inherently difficult exercise [because] [n]o financial crisis emerges in exactly the same way as its predecessors, and the most significant future threats will often be the ones that are hardest to diagnose and preempt”).

<sup>96</sup> Robert A. Prentice, *The Inevitability of A Strong SEC*, 91 CORNELL L. REV. 775, 838 (2006).

<sup>97</sup> Schwarcz, *supra* note 8, at 210.

<sup>98</sup> *Id.* at 234–35.

<sup>99</sup> *Id.* at 235.

<sup>100</sup> *Id.* at 238 (“Regulation aimed at averting panics would likely fail to anticipate all the causes of these panics, would not necessarily deter even identified panics, and could impede market growth . . . and placing limits on inter-institution financial exposure or micromanaging institutions to diversify risk through hedging might retard investment, whereas institutions are market-driven anyway to diversify risk.”).

The increasingly complex financial system will require iterative, innovative solutions to enable continued growth and to prevent catastrophic failure. Regulation of systemic risk should focus on efficiency, stability, and protecting health and safety.<sup>101</sup> Concepts from systems engineering, such as modularity and information hiding, are useful.

For dynamic, complex systems like financial markets, a principles-based approach has an important advantage over detailed rules: the content “can be filled in more dynamically and insightfully by those with the greatest understanding of the relevant situations.”<sup>102</sup> As opposed to the traditional information-hoarding, adversarial relationship between industry and regulator, a “New Governance” approach would focus on creating an adaptive learning system that “pulls industry experience into regulatory decision making, and establishes robust ongoing communication mechanisms.”<sup>103</sup> Regulation would embody its expectations for industry by being “outcome-oriented, problem-solving, [and] self-reflexive.”<sup>104</sup> Private parties would have incentives to develop and bargain for innovative, low-cost means to reduce systemic risk against a baseline of prescriptive regulation.<sup>105</sup> The regulatory framework would recognize the volatility of the markets, the blurring boundaries between products and markets, and the inevitability of financial institution failures.<sup>106</sup> By avoiding regulatory gaps and overlaps and recognizing the importance of linkages, “macroprudential” regulation would improve supervision of the stability of the overall system.<sup>107</sup>

Learning from the costly ex-post efforts to address systemic risk during the recent crisis, regulation should prevent and mitigate losses by “weaken[ing] correlations within the financial system that serve to transmit systemic risk.”<sup>108</sup> Such measures are crucial because these correlations will increasingly arise and

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<sup>101</sup> *Id.* at 207–08.

<sup>102</sup> Cristie L. Ford, *New Governance, Compliance, and Principles-Based Securities Regulation*, 45 AM. BUS. L.J. 1, 36 (2008).

<sup>103</sup> *Id.* at 28.

<sup>104</sup> *Id.* at 33.

<sup>105</sup> Hornstein, *supra* note 36, at 944.

<sup>106</sup> Michael Taylor, *The Search for A New Regulatory Paradigm*, 49 MERCER L. REV. 793, 800 (1998).

<sup>107</sup> Douglas W. Arner, *Adaptation and Resilience in Global Financial Regulation*, 89 N.C. L. REV. 1579, 1610–11 (2011).

<sup>108</sup> Anabtawi & Schwarcz, *supra* note 16, at 1352.

combine as the complexity of the financial system grows.<sup>109</sup> Because interconnectedness compounds complexity, “reform should focus on reducing the interconnections so that firms can fail safely.”<sup>110</sup> This Note proposes that the use of insurance intermediaries will effectively curtail the interconnectedness of the financial system.

Systemic risk regulation also should address the problem of coordinated behavior among market participants.<sup>111</sup> In fact, regulators must be careful because regulation and market standards can increase systemic risk through coordinated activity.<sup>112</sup> Moreover, market participants are unlikely to police themselves because the use of standards reduces transaction costs.<sup>113</sup> Any reform, therefore, should “anticipate the impact of rules and market standards that encourage uniform behavior, either by changing expectations or minimizing the negative effects of coordination.”<sup>114</sup> As an example, deposit insurance discourages bank runs by adjusting depositors’ expectations to prevent uniform reactions that lead to panic-induced withdrawals.<sup>115</sup>

Regulators should also account for the bounded rationality of market participants. Because behavioral biases, such as intellectual hazard, contribute to systemic risk, “policymakers would do well to pay greater attention to the findings of behavioral finance when they formulate or evaluate proposals for reform.”<sup>116</sup> For example, oversight of financial stability may not be as effective if those responsible are “simply recycled regulators and central bankers” who will not “bring new ideas to the table.”<sup>117</sup>

As a complement to government regulation, market forces could provide warnings and impose discipline if the market has superior information and prices

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<sup>109</sup> *Id.*

<sup>110</sup> Scott, *supra* note 1, at 677–78.

<sup>111</sup> Charles K. Whitehead, *Destructive Coordination*, 96 CORNELL L. REV. 323, 325 (2011).

<sup>112</sup> *Id.* at 327.

<sup>113</sup> *Id.* at 330.

<sup>114</sup> *Id.* at 360.

<sup>115</sup> *Id.* at 359–60.

<sup>116</sup> Miller & Rosenfeld, *supra* note 22, at 835.

<sup>117</sup> *Id.* at 838.

are not distorted, for example, by financial institution bailouts.<sup>118</sup> Indeed, enabling the proper functioning of market forces, such as CDSs, is a strong reason for relying on the bankruptcy process, as this Note proposes. Without a credible belief that companies will be permitted to fail, CDS prices will be distorted, and participants may have difficulty managing their credit exposures.

Although principles-based, adaptive regulation is an attractive means to deal with the highly complex financial system, this approach may become less effective as regulators and market participants experience increasing difficulty operating as a community due to increasing internationalization and complexity.<sup>119</sup>

In sum, there are no *solutions* to systemic risk; the financial system is adaptive not static. Overly costly, prescriptive, and constraining regulatory measures should be avoided. Principles-based regulation and low-cost, market-based mechanisms that are well suited for a highly complex system would foster sustainable financial market growth. Regulators should also focus on maintaining credibility and investor confidence.<sup>120</sup>

### 3. The Current Approach to Systemic Risk Regulation

Recent regulatory efforts to address systemic risk are inadequate, because they are typically backward-looking—responding to specific aspects of the recent crisis—and because “financial innovation can rapidly make existing regulation weak or ineffective.”<sup>121</sup> Although the Dodd-Frank Act creates an important framework for macroprudential regulation, it falls short on specificity<sup>122</sup> and root-cause solutions.<sup>123</sup>

Dodd-Frank gives the FDIC “important new resolution authority for failing nonbank financial institutions.”<sup>124</sup> The FDIC preempts the role of a bankruptcy

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<sup>118</sup> Scott, *supra* note 1, at 683–84.

<sup>119</sup> Schwarcz, *supra* note 2, at 264–65.

<sup>120</sup> Gordon & Muller, *supra* note 14, at 156 (“In other words, we are better off if the relevant parties believe that the government will protect the financial sector rather than nationalize it or abandon it in a crisis.”).

<sup>121</sup> Anabtawi & Schwarcz, *supra* note 16, at 1361.

<sup>122</sup> Utset, *supra* note 32, at 837.

<sup>123</sup> Reza Dibadj, *Dodd-Frank: Toward First Principles?*, 15 CHAP. L. REV. 79, 80 (2010).

<sup>124</sup> Gordon & Muller, *supra* note 14, at 190.



court by stepping in as receiver for the purpose of an “orderly liquidation.”<sup>125</sup> Importantly, Dodd-Frank “makes receivership the only way to assist a large, troubled financial firm.”<sup>126</sup> Resolution authority can work well for idiosyncratic failure, and it may also be effective at stemming contagion from a single firm’s collapse.<sup>127</sup> However, regulators cannot easily comprehend and predict spillover effects, and “firms are exposed to the additional systemic risk of ‘similarity.’”<sup>128</sup> Thus, there are substantial limitations on the FDIC’s ability to control systemic risk. Dodd-Frank, therefore, helps to resolve individual failures but fails to “provide a satisfactory mechanism to ‘resolve’ a financial crisis.”<sup>129</sup>

Even more troubling, regulators will have no other option except to impose multiple receiverships of large financial institutions in the event of collective failures, leading to “the nationalization of much of the financial sector.”<sup>130</sup> By crowding out private capital that could restore stability, this nationalization strategy will “accelerate the path from instability to a full-scale crisis” and “increase the incidence of financial crises.”<sup>131</sup> Thus, Dodd-Frank creates a “nuclear option” and mistakenly assumes that “the self-interest of private actors will so moderate risk-taking by financial firms that systemic failures will never happen.”<sup>132</sup>

#### 4. Potential Approaches to Systemic Risk Regulation

Several proposed reforms could reduce systemic risk without nationalizing the financial sector. A “Systemic Emergency Insurance Fund” would have the authority to support the financial system during a crisis without waiting for legislative action.<sup>133</sup> The SEIF could assist the FDIC’s resolution plans, financial firms, or the Fed, but only with a consensus of the Treasury, the Fed and the FDIC.<sup>134</sup> Financial institutions would provide the funding, estimated at \$1 trillion,

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<sup>125</sup> *Id.*

<sup>126</sup> *Id.* at 153.

<sup>127</sup> *Id.* at 194.

<sup>128</sup> *Id.* at 195.

<sup>129</sup> *Id.* at 154.

<sup>130</sup> *Id.* at 195.

<sup>131</sup> *Id.* at 202.

<sup>132</sup> *Id.* at 153.

<sup>133</sup> *Id.* at 151.

<sup>134</sup> *Id.* at 205.

based on assessments of their contributions to systemic risk.<sup>135</sup> Market participants would mutually bear the risk, internalizing costs and having the incentive to warn regulators of potential instability.<sup>136</sup> Although there are some attractive features of this proposal, particularly the cost-bearing incentives, regulators should thoughtfully consider alternatives before creating another massive government-run program.

Because interconnectedness is a key feature of systemic risk, regulators should encourage safeguards that address counterparty risk such as controlled exposures and sufficient collateral to prevent chain reactions.<sup>137</sup> Derivatives clearinghouses can reduce systemic risk by breaking interconnectedness.<sup>138</sup> Utilizing the information hiding technique, central clearance of derivative transactions would reduce the uncertainty and costs associated with counterparty risk.<sup>139</sup> Although clearinghouses provide the important function of reducing interconnections in the system, it is important to note that they also *concentrate* systemic risk.<sup>140</sup>

According to one cost/benefit analysis, a market liquidity provider of last resort was found to be the approach with “the best chance of success under any number of circumstances.”<sup>141</sup> Other potentially viable approaches studied were market discipline, ad hoc responses and reducing leverage.<sup>142</sup> Under the recommended approach, a governmental entity could support the markets “in order to more loosely couple the feedback effects.”<sup>143</sup> Recognizing the inevitability of

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<sup>135</sup> *Id.* at 151.

<sup>136</sup> *Id.*

<sup>137</sup> Scott, *supra* note 1, at 734.

<sup>138</sup> *Id.* at 687; *see also id.* at 687–88 (“A clearinghouse reduces counterparty risk, fundamentally, by collectivizing losses by becoming the counterparty to each contract. Thus, the impact of the failure of one institution is borne by all the members of the clearinghouse, not just by individual counterparties. Of course, this pooling of risk will result in risk to the clearinghouse—if the clearinghouse were to fail central clearing would amplify, not reduce, systemic risk.”).

<sup>139</sup> Schwarcz, *supra* note 2, at 263.

<sup>140</sup> Jeremy C. Kress, *Credit Default Swaps, Clearinghouses, and Systemic Risk: Why Centralized Counterparties Must Have Access to Central Bank Liquidity*, 48 HARV. J. ON LEGIS. 49, 92 (2011) (“CDSs increase interconnections in the financial system, creating systemic risks; CCPs, in trying to reduce those interconnections, concentrate systemic risk.”).

<sup>141</sup> Schwarcz, *supra* note 8, at 241–42.

<sup>142</sup> *Id.* at 238.

<sup>143</sup> Schwarcz, *supra* note 2, at 247.

system failures and attempting to mitigate the consequences, the liquidity provider strategy would “address market breakdowns while minimizing moral hazard.”<sup>144</sup> Although the liquidity provider could actually turn a profit by purchasing distressed securities,<sup>145</sup> the nonlinear feedback properties of the financial system might render the implementation of this reactive approach challenging and socially costly. Determining when and how to step in and support the markets would not be a simple task.

These suggested approaches, such as a market liquidity provider of last resort, account for complexity, and they have the potential to reduce systemic risk per unit of economic growth. As a complement to some or all of these measures, this Note proposes a new private market mechanism—bankruptcy insurance—to enable financial market development while reducing systemic risk and mitigating its consequences.

### III. BANKRUPTCY EXEMPTIONS

#### A. Systemic Risk Exemptions

With systemic risk in mind, the Bankruptcy Code effectively exempts many financial institutions and financial products from its proceedings.<sup>146</sup> Because the business model of many financial institutions poses problems for bankruptcy law and its perceived delays,<sup>147</sup> “[f]inancial contracts have long received special treatment under the Bankruptcy Code.”<sup>148</sup> Core provisions of the Code, such as the automatic stay and the prohibition on ipso facto clauses, are limited for several types of financial products.<sup>149</sup> A debtor’s bankruptcy frees counterparties to terminate agreements, liquidate positions and set off claims.<sup>150</sup>

Congress amended the Bankruptcy Code with the Bankruptcy Abuse Prevention and Consumer Protection Act of 2005 (BAPCPA).<sup>151</sup> BAPCPA

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<sup>144</sup> Anabtawi & Schwarcz, *supra* note 16, at 1404.

<sup>145</sup> Schwarcz, *supra* note 8, at 229.

<sup>146</sup> Morrison & Riegel, *supra* note 4, at 650.

<sup>147</sup> Gordon & Muller, *supra* note 14, at 180.

<sup>148</sup> Morrison & Riegel, *supra* note 4, at 641.

<sup>149</sup> *Id.* at 641–42.

<sup>150</sup> *Id.*

<sup>151</sup> Bankruptcy Abuse Prevention and Consumer Protection Act of 2005, Pub. L. No. 109-8.

extended the safe harbor provisions to additional parties and markets.<sup>152</sup> A “swap” under the revised Code effectively includes all derivative contracts.<sup>153</sup> The Code, therefore, “moved from protecting particular parties to protecting entire markets.”<sup>154</sup> Thus, the Bankruptcy Code essentially “exempts ‘sophisticated’ financial participants” from fundamental provisions.<sup>155</sup>

These “safe harbors” are thought necessary to prevent systemic failures in financial markets.<sup>156</sup> Otherwise, debtors could assume profitable contracts to realize gains and reject unprofitable contracts to limit liability for losses.<sup>157</sup> Due to this imbalance, the debtor’s counterparty could experience its own insolvency and perpetuate a vicious cycle by resorting to the same contract “cherry-picking.”<sup>158</sup> The safe harbors were created to maintain liquidity in troubled markets.<sup>159</sup>

### B. Shortcomings of the Systemic Risk Exemptions

Although these exemptions provide important benefits of speed and certainty, they do not reduce and may actually increase systemic risk.<sup>160</sup> The safe harbors contravene important bankruptcy protections, including contract terminations, to the debtor’s detriment.<sup>161</sup> Collectively, the safe harbors provide a debtor’s counterparty with the choice of whether to terminate a derivative contract.<sup>162</sup> Counterparties, therefore, can “engage in opportunistic behavior and inefficiently consume a debtor’s limited assets.”<sup>163</sup> Counterparties have the incentive to “rush to sell derivatives, and buy replacement derivatives, upon a firm’s financial distress.”<sup>164</sup> Without the automatic stay, the debtor has little bargaining power to

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<sup>152</sup> Rhett G. Campbell, *Financial Markets Contracts and BAPCPA*, 79 AM. BANKR. L.J. 697 (2005).

<sup>153</sup> Morrison & Riegel, *supra* note 4, at 643.

<sup>154</sup> *Id.*

<sup>155</sup> *Id.* at 650.

<sup>156</sup> *Id.* at 642.

<sup>157</sup> *Id.*

<sup>158</sup> *Id.*

<sup>159</sup> Faubus, *supra* note 5, at 801.

<sup>160</sup> *Id.* at 830.

<sup>161</sup> *Id.* at 838.

<sup>162</sup> Lubben, *supra* note 6, at 326.

<sup>163</sup> Faubus, *supra* note 5, at 801.

<sup>164</sup> Lubben, *supra* note 6, at 322.

prevent this opportunistic run on its assets, leading to further distress.<sup>165</sup> Moreover, slower creditors and those with non-exempt liabilities could suffer significant harm, leading to additional insolvencies, some of which may be systemically important.<sup>166</sup> In short, the safe harbors shift costs onto distressed firms and increase the likelihood of failures, which could have systemic implications.<sup>167</sup> Thus, contrary to their purpose, “the safe harbors may merely substitute one kind of systemic risk for another.”<sup>168</sup>

Because of the safe harbors, Chapter 11 is “very nearly unworkable for financial companies like AIG and Lehman.”<sup>169</sup> AIG’s near collapse during the 2008 crisis illustrates how the safe harbors can destabilize financial institutions. The CDS counterparties could have triggered a run on AIG’s assets by terminating their contracts and seizing collateral, “further destabilizing the company and leaving slower creditors ‘stuck with a company whose value took a tremendous dive after counterparties got first dibs on its carcass.’”<sup>170</sup> Moreover, in some circumstances, the Code is overly protective of debtors’ counterparties. The safe harbors are doing “double-duty” for counterparties who are involved in both financial contracts and debtor-issued securities.<sup>171</sup>

Given that the safe harbors lead to opportunistic behavior, unfair results, and the potential to escalate failures, it is important to determine how necessary they really are. To the contrary, the traditional bankruptcy process, without the help of such safe harbors, “has been surprisingly effective in most cases.”<sup>172</sup> Under certain circumstances, bankruptcy can assist distressed financial firms.<sup>173</sup> The argument that bankruptcy is too slow ignores ample contrary evidence.<sup>174</sup> Only minor adjustments would be necessary to accommodate systemically important financial

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<sup>165</sup> Faubus, *supra* note 5, at 827, 829.

<sup>166</sup> *Id.* at 829.

<sup>167</sup> *Id.* at 830.

<sup>168</sup> *Id.* at 801.

<sup>169</sup> Lubben, *supra* note 6, at 321.

<sup>170</sup> Faubus, *supra* note 5, at 804–05.

<sup>171</sup> Morrison & Riegel, *supra* note 4, at 660.

<sup>172</sup> Kenneth Ayotte & David A. Skeel, Jr., *Bankruptcy or Bailouts?*, 35 J. CORP. L. 469, 498 (2010).

<sup>173</sup> *Id.* at 477.

<sup>174</sup> Lubben, *supra* note 6, at 334.

institutions.<sup>175</sup> Because speed can be critical in a systemic risk context, this Note proposes bankruptcy insurance, a mechanism that would quickly, predictably soften the blow of bankruptcies in the financial system. Moreover, the bankruptcy process avoids numerous problems associated with “last-minute rescue lending.”<sup>176</sup> For example, recoveries are more predictable under bankruptcy rules than under an ad-hoc rescue system.<sup>177</sup> Bankruptcy offers “a well-understood structure, with pre-existing traditions and standards.”<sup>178</sup>

In sum, the Bankruptcy Code safe harbors do not accomplish their objective, may actually increase systemic risk, and may not be necessary in the first place. Given these shortcomings, can Congress repeal the safe harbors and apply the time-tested bankruptcy proceedings to the financial industry without putting the whole system at grave risk? Indeed, some commentators have suggested that Congress should repeal these exemptions.<sup>179</sup> This Note proposes replacing these exemptions with a new mechanism—bankruptcy insurance—that is inspired by complexity theory and is designed to address the problem of systemic risk.

#### IV. PROPOSAL: BANKRUPTCY INSURANCE

Confronted with the challenge of immeasurable, increasing complexity in the financial markets, this Note proposes bankruptcy insurance to serve as a modular interface between counterparties to maintain liquidity and prevent devastating chain reactions. This recommendation is premised on the notion that procedures facilitating safe financial institution failures would reduce systemic risk.<sup>180</sup> Moreover, given that failures are essentially inevitable, a successful strategy also would mitigate the consequences.<sup>181</sup>

Bankruptcy insurance would make funds available to creditors quickly upon a debtor’s bankruptcy filing, passing the money through the debtor and satisfying the same amount in claims against the debtor. Under this mechanism, creditors would avoid waiting months for a resolution through the bankruptcy court process, and

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<sup>175</sup> Ayotte & Skeel, *supra* note 173, at 498.

<sup>176</sup> *Id.*

<sup>177</sup> *Id.* at 488.

<sup>178</sup> Lubben, *supra* note 6, at 334.

<sup>179</sup> *See, e.g.*, Lubben, *supra* note 6, at 321.

<sup>180</sup> Scott, *supra* note 1, at 710.

<sup>181</sup> Schwarcz, *supra* note 2, at 266.

they would enjoy a set minimum recovery. Just as consumers purchase extended warranties on flat-screen televisions, bankruptcy insurance could become an added term for financial transactions. The bankruptcy insurance mechanism could be implemented in several ways. This Note proposes a new private market mechanism that could be mandatory for systemically important institutions and regulated at the federal level.

The private markets could supply debtors with this new product, requiring little public expense.<sup>182</sup> Systemically important institutions could be required to participate with minimum levels of coverage. Bankruptcy insurance coverage levels could be publicly disclosed to reduce uncertainty among market participants. The Financial Stability Oversight Council (FSOC) should regulate the insurance providers to promote the safety of this new mechanism. Insurers should be forced to disclose financial system information and analysis to the FSOC, which would lighten the burden on taxpayers. The FSOC could disclose debtors' insurance rates to provide the markets with valuable transparency.

To illustrate this process, a hypothetical debtor (Debtor A) could purchase bankruptcy insurance policies from one or more providers for a set amount (Payout) to be paid if Debtor A enters bankruptcy within a certain period of time (Period). The Payout could be for the benefit of either specific creditors or classes of creditors, likely general unsecured. Policy premiums would depend on Debtor A's risk of failure as well as the Payout and Period terms. To facilitate transparency and to reduce transaction costs, Debtor A could publicly disclose its bankruptcy insurance positions on a regular basis. Insurance providers could monitor both individual and systemic risks, working with Debtor A to manage risk. Because the risk of failure would include Debtor A's susceptibility to shocks in the financial system, Debtor A would have a strong incentive to restrain its contribution to systemic risk.

Potential creditors would be more willing to transact with Debtor A as the Payout increases as a percentage of liabilities, and Debtor A's bankruptcy insurance rates would provide creditors with valuable information. Insurance providers would centralize data, models, and analyses regarding the health of the financial system, and they would have competitive incentives to accurately measure and charge for risk. Insurance providers would also be closely regulated to

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<sup>182</sup> In fact, bankruptcy insurance may also become a popular product in other industries outside of the financial system.

prevent underestimation of devastating rare events, particularly if the providers have counterproductive short-term incentives.

Upon Debtor A's default, creditors would obtain highly predictable recoveries within a short period of time, and Debtor A's assets would remain available through traditional bankruptcy proceedings. Creditors could appropriately manage the risk of loss or delay of the uninsured portions of their liabilities. Thus, Debtor A could fail without triggering many more defaults, and creditors of Debtor A's creditors would be less likely to speculate about spillover effects, which otherwise could cause markets to panic and collapse.

The proposed approach offers several advantages, guided by the complexity view of the financial system. Bankruptcy insurance would be an evolving private market solution preferable to a dominant government entity, such as the FDIC. Market participants could transact without substantial cost and uncertainty from counterparty risk, leveraging the concept of information hiding. With increased transparency, reduced transaction costs and a safety mechanism in place, creditors and market participants would be more willing to interact and spur economic growth.

Bankruptcy insurance would reduce systemic risk in several ways. The potential domino effect and market freeze would be mitigated, because creditors could avoid substantial losses and delay. Creditors would receive prompt payments to cover a portion of their outstanding liabilities. Moreover, debtors' assets would not be depleted by opportunistic transactions. Furthermore, frenzied "grab races" would occur with less frequency because creditors would be assured of a substantial minimum recovery.

If bankruptcy insurance were used widely, financial institutions individually and collectively would have the incentive to reduce risk to lower insurance premiums. To obtain a lower rate, debtors would provide highly transparent information to insurers. Debtors might also explain to insurers how their collective procedures, best practices, and interconnected exposures reduce risk. The cost of this mechanism would be borne by market participants in accordance with the risk they pose, and participants would have incentives to improve individual and systemic risk management.

Private insurance providers would perform the onerous tasks of collecting information and analyzing systemic risk, which market participants and regulators would utilize. Moreover, insurance provider competition would lead to multiple perspectives and methods that would reduce systemic risk as compared to a single government entity. The economies of scale and concentration of expertise are particularly valuable in the systemic risk context because of the severe constraints on individual participant rationality and resources. Such centralization is beneficial in the face of overwhelming complexity.



With proper implementation, the markets would be less prone to panics caused by counterparty uncertainty. The market as a whole would have greater faith in the structure of the financial system. The effect of bankruptcy insurance would be similar to that of the FDIC, which prevents bank runs by “alleviating fear that banks will default on deposit accounts.”<sup>183</sup>

Alternatively, if bankruptcy insurance is not widely embraced, Congress could simply repeal the bankruptcy exemptions and rely on the markets to develop their own solutions. Indeed, the CDS market could operate as a purely private form of credit insurance. Clearinghouses could be utilized to promote stability in the CDS market. Moreover, other private mechanisms, such as certifications, best practices, and disclosure could provide more transparency. Such an approach is a viable alternative; however, bankruptcy insurance has some advantages. Bankruptcy insurance would prevent debtor asset depletion and increase overall market transparency and confidence. Moreover, systemically important financial institutions could fail safely with less uncertainty.

This Note has reiterated the point that the financial participant exemptions in the current Bankruptcy Code do not serve their purpose and may even increase systemic risk. This Note has also argued that traditional bankruptcy proceedings, with minor adjustments, can successfully handle financial institution failures. Regulators’ ultimate choice of implementation should depend on private market participants’ ability to manage systemic risk, which may vary over time. Regulators continually should monitor how incentives and behavioral biases affect the financial system.

It should be noted that the bankruptcy insurance intermediaries could become a new source of systemic risk. Thus, these intermediaries would need to be regulated and potentially backstopped by the federal government. Even clearinghouses, for example, have been known to fail.<sup>184</sup> Regardless of the scheme adopted, regulators should be careful with implementation because any mandate based on an objective risk management algorithm may actually increase systemic risk due to effects on both risk taking and risk concentration.<sup>185</sup> To foster careful risk management and mitigate unforeseen failures, insurers could prefund a market

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<sup>183</sup> Schwarcz, *supra* note 8, at 210.

<sup>184</sup> Steven L. Schwarcz, *Intermediary Risk in A Global Economy*, 50 DUKE L.J. 1541, 1555 (2001).

<sup>185</sup> Philip Z. Maymin & Zakhar G. Maymin, *Any Regulation of Risk Increases Risk*, 26 FIN. MARKETS & PORTFOLIO MGMT. 299 (2012)

liquidity provider or an alternative last resort mechanism based on assessments of their newfound contributions to systemic risk. Regulation should weigh the benefits of enabling economic growth against the expected losses due to systemic risk, resolving uncertainties in favor of lowering risk because the losses are potentially catastrophic. Bankruptcy insurance would not solve the challenging problem of systemic risk, and it should not be regarded as an exclusive approach. Regulators will need to address many behavioral biases and structural forces that intensify systemic risk. Because of the inherent unpredictability of financial markets, reactive measures—such as a market liquidity provider of last resort—may also be necessary.

## V. CONCLUSION

There are no straightforward solutions to the problem of systemic risk. The financial system is an increasingly complex, interconnected network through which shocks can be nonlinearly transmitted with devastating repercussions. Systems engineers utilize valuable tools, such as information hiding, to manage complex systems. Financial regulators should learn from complexity theory and adopt principles-based, adaptive approaches with particular emphasis on fostering socially beneficial uses of modular mechanisms.

One such potential mechanism is bankruptcy insurance. The creation of this new market would reduce transaction costs and uncertainty, increase transparency and fairness, internalize social costs, and improve investor confidence. Market participants could continue to transact at millisecond speed without analyzing every last detail of their counterparties. Thus, bankruptcy insurance would facilitate economic growth and market liquidity, while reducing systemic risk and mitigating its consequences. By increasing modularity in this complex system, financial institutions could fail safely through the time-tested bankruptcy process.