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## An institutional perspective on governance, power, and politics of financial risk

**Abstract:** Avoidance of risk and increasing returns are the two main motivators in finance. Returns are better understood and perhaps more easily regulated than financial risk, which is a complex and slippery concept. Financial risk may be best conceived of as a complementary good, but the nature of this good varies as the size of the investment position scales up. That is, the effects of financial risk may be conceived of as a private good for a small financial actor, but becomes a club good, then a common pool, and occasionally a public good as the impact of the investment position's financial risk spreads to affect more of society. Examining banking history shows us that banks and bankers have offset risk while retaining returns through structuring financial products and investment vehicles as club goods, thereby enabling financial actors to jointly benefit from ownership while harming those outside the club walls. Not surprisingly, this capacity to push risk outside club walls has grown commensurate with the political influence of banks and bankers. Laying out governance strategies and concepts, I suggest that in some circumstances pervasive club good structures in finance may be employed to gather regulation-enhancing information, to better understand the networked nature of financial risk and to craft self-governance structures.

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### Introduction

Avoiding risk and increasing returns are the two main motivators in banking and finance. Organizational groupings have provided ways to lessen risks and increase potential returns. Organizing also increases the capacity to gather, retain, and transfer information, benefiting both group and group members and providing another guard against risk. Commercial and investment banks have long been the primary organizational structure in financial intermediation, and constitute, along with countries' public financial institutions, the key nodes in financial

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intermediation networks.<sup>1</sup> Within these networks, banks and other financial institutions intermediate across both *space* and *time*. In *space*, a bank accepts deposits from those who have capital and make loans to those who require capital; in *time* this archetypal bank converts short-term deposits into long-term loans, engaging in “qualitative asset transformation.”<sup>2</sup> But qualitative asset transformation holds enormous inherent risks as asset/liability mismatches may strike banks and other financial intermediaries. When a systemic banking crisis occurs, these risks may overwhelm many banks.<sup>3</sup> As the interlinked nature of banking and financial intermediation has become more global in nature over the last two centuries, more banking and currency crises have occurred.<sup>4</sup>

Selmier, Penikas, and Vasilyeva define risk as “the estimated exposure to a situation of uncertain outcome.”<sup>5</sup> Their argument is that financial risk may be privately-consumed in smaller manifestations, but as risk increases, it crosses certain boundary conditions and shifts, or transmutes, from a private good to a good shared with others. As financial networks grew,<sup>6</sup> financial risks sometimes expanded beyond a person or a bank, becoming a kind of common pool of financial risk. When this occurred, economic actors could not escape from this risk even if they were not participants in the initial investments or the financial contracting which sometimes led to systemic problems. This unwilling sharing of risk occurred through three channels: the intermediary nature of banks and financial institutions; the nature of financial networks;<sup>7</sup> and the growing political power of large banks.<sup>8</sup> That is to say, this unwilling sharing of financial risk arises through the growing power of financial intermediaries to push risk out of their corporate structure and onto society.<sup>9</sup> When systemic crises occur, financial risk becomes a public good or, better put, a public bad.

While financial risk insurance may be provided in some countries, the nature of that insurance is often murky as to who is being insured and for what risks the insurance contract is struck.<sup>10</sup> Recognizing that “banking crises are the train

1 Greenbaum and Thakor (1995); *The New York Times*, 30 January 2010, Paul Volcker, “How to Reform Our Financial System.”

2 Boot, Greenbaum, and Thakor (1993); Greenbaum and Thakor (1995).

3 Aliber and Kindleberger (2015); Barth, Caprio, and Levine (2005); Rajan (2006).

4 Reinhart and Rogoff (2009).

5 Selmier, Penikas, and Vasilyeva (2014), 123, following Holton (2004), 22–23.

6 Oatley et al. (2013); Wincoff (2015).

7 Allen and Babus (2009); May, Levin, and Sugihara (2008).

8 Bhidé (2009); Mishkin (2006); Rothschild (1976).

9 Alessandri and Haldane (2009); Bhidé (2009); Polanyi (1944), 6–15 and 130–2.

10 Congleton (2012); Hughes and Mester (1993); Penikas (2012).

wrecks of finance,”<sup>11</sup> governments grew more willing to extend insurance. Banks and other financial intermediaries, cognizant of their increasing economic and political influence, came to count on both the insurance and the inherent capacity to survive. Expanding our understanding beyond the rather simple concept of too-big-to-fail (henceforth TBTF), Mishkin termed this result “too politically important to fail.”<sup>12</sup> But this only captures the result, not the mechanics of expansion of financial firms’ political influence and this extension of insurance to them. Proper governance structures cannot be constructed without understanding these mechanics.

To examine financial risk and understand the mechanics as to how financial intermediaries have been able to lower or externalize their risks, this paper proceeds in four sections. Section 1 proposes a goods typology to examine property rights of financial risk, introducing how financial risk may grow to affect others. Section 2 sketches how historically bankers organized into club structures to lower risk and to self-govern as banking grew into a global industry and governments responded. Section 3 uses the vignette of the Hunt Brothers’ attempt to corner the silver market to illustrate how financial risk may grow from a privately-consumed good to systemic risk levels, becoming a public bad. Section 4 concludes by examining how club discipline may be reintroduced into financial intermediation and under what conditions reintroduction may be possible.

## 1 Mapping a goods typology of financial risk

Property rights of financial goods and products are complex and often misunderstood. Part of this misunderstanding arises from a quasi-religious belief in self-regulating markets<sup>13</sup> consisting solely of private goods—those goods whose property rights are individually owned and from which others may be barred from using or consuming. This belief—grounded in financial economics through the efficient market hypothesis<sup>14</sup>—tends to downplay the nature of financial markets as complex networks in which risks and returns are shared and transmitted under conditions of considerable informational asymmetry.

<sup>11</sup> Barth, Caprio, and Levine (2005), 26.

<sup>12</sup> Mishkin (2006).

<sup>13</sup> Bhidé (2009); Ostrom (2010); Polanyi (1944).

<sup>14</sup> Efficient markets theory, based on concepts of frictionless markets composed of atomistic agents whose market participation internalizes risk, has been accepted to the point where it became performative. These concepts are now undergoing intense debate within financial economics, although earlier works like Barth, Caprio, and Levine, (2005), van Horne (1985), and Rajan (2006) had already questioned some underlying assumptions.

Complexity of the property rights of financial risk, and the instruments used to manage that risk, have challenged governance of financial transactions. We can put these challenges into focus by categorizing financial risks along axes defining legal rights of consumption and usage.<sup>15</sup> Four types of financial risk result, as shown in [Table 1](#): risk as a private good borne solely by a buyer; risk shared through members of a club (although some members may have greater executive power over the underlying risk positions); common pools where risks are shared among a community but where “consumption of risk” may damage the common pool (as detailed below); and risk borne by a national citizenry and managed by a public entity. McNutt proposed that non-private goods are all simply different kinds of public goods determined by boundary conditions ranging from very local (club goods) to somewhat local (common pools) to national<sup>16</sup> (public goods, which are usually considered as part of a citizen’s access within the boundaries of a nation-state<sup>17</sup>).

Viewing boundary conditions merely in geographic terms is becoming increasingly inaccurate in finance or in broader economic terms. As Schwartz argues in this special issue, modern corporations’ capacity to create club goods (he prefers the term “franchise goods”) is directly dependent on acquiring and protecting intellectual property rights and shifting risks out into the broader public. In other words, contesting property right boundaries to lower costs, while capturing greater profits, has become important to corporations’ strategies.

Future costs and profits have grown more difficult to estimate in finance due to increasingly complex financial products<sup>18</sup> and more comprehensive financial market governance which includes implicit forms of insurance.<sup>19</sup> This complicates understanding inherent financial risks, which are sometimes shared and transmitted without all actors being fully cognizant of these risks<sup>20</sup> or wishing to accept the risk.<sup>21</sup> This lack of understanding occurs because the capacity to offset risk requires the risk holder to estimate her exposure to an outcome which may be uncertain to her. Knight’s famous distinction between business risk and uncertainty is partially

15 McNutt (1999); Ostrom and Ostrom (1977); Weimer and Vining (2005).

16 McNutt (1999).

17 Public goods are actually not fully defined by citizenship. If a Brazilian citizen goes to Japan, she would be protected by Japan’s national defense merely by being within Japanese boundaries. If Japan is attacked, the Japanese Self Defensive Forces would not exclude her from the public defense umbrella provided within Japan’s national boundaries.

18 Allen and Santomero (1997); van Horne (1985).

19 Congleton (2012); Goodhart (2010); *The Economist*, 1 October 2009, Beatrice Weder di Mauro, “The Dog That Didn’t Bark,” [http:// www.economist.com/node/14539774](http://www.economist.com/node/14539774).

20 May Levin, and Sugihara (2008); Rajan (2006).

21 Bhidé (2009); Selmier (2013).

**Table 1:** Generic Goods typology and the Assumption of Risk

Consumption or Usage	Rival	Non-Rival
<b>Excludability</b>	<b>Private Goods:</b> <i>risk is borne by buyer; seller may offer guarantees [but this constitutes another, separable, good]</i>	<b>Club Goods:</b> <i>Risk is shared throughout the membership; some members may have executive power to enter risk positions</i> <i>[McNutt views this as local public good]</i>
<b>Non-Excludability</b>	<b>Common pools [CPRs]:</b> <i>risk is shared throughout CPRs; some users may have power to restrict access to CPR, thereby affecting risk</i> <i>[McNutt views this as public good]</i>	<b>Public Goods:</b> <i>risk is borne throughout the “public” entity by citizens</i>  <i>[McNutt views this as pure public good]</i>

Source: author’s conception of risk assignment, categorization from McNutt, 1999; Ostrom & Ostrom, 1977.

predicated upon information asymmetry; if information is available, *and the risk holder can access that information*, then risk can be probabilistically estimated. Estimation enables insurance contracting,<sup>22</sup> so risk may also be taken on through underwriting an insurance contract and offset by buying one.<sup>23</sup> But such contracts are inherently based on the writer’s and buyer’s estimation of risk and on their understanding of the property rights surrounding that risk. In other words, the actor seeking insurance against risk, or writing an insurance contract to take on risk, needs to estimate what is owned and how it is owned or controlled.

Table 2 below is a two-by-two-by-two cube showing financial products and structures employed in managing risks. Both financial products, as well as institutional arrangements, are employed to obtain profits and manage risks. The top layer presents *Products and Services*, the bottom layer presents *Institutional arrangements*. The cube shows the extensive presence of club goods and club good structures in finance, which serve to share risk<sup>24</sup> while concurrently concentrating profit.<sup>25</sup> The Cube allows us to visualize how financial risk may have started

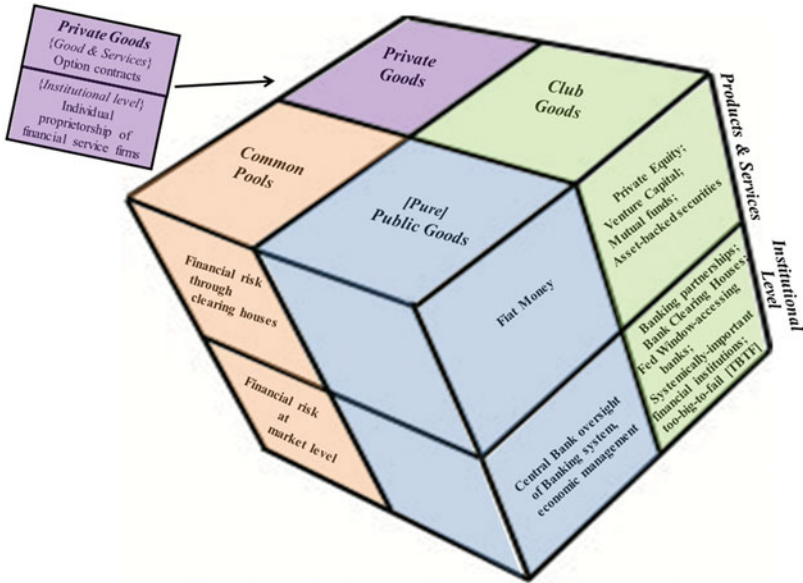
<sup>22</sup> Knight (1921, 1924).

<sup>23</sup> Knight (1921); Watkins (1922).

<sup>24</sup> Dowd (1994); Gorton and Mullineaux (1987).

<sup>25</sup> Nair (2016); Selmier (2014).

**Table 2:** 2 × 2 × 2 Cube of financial products and structures employed in managing risk



Sources: General typology constructed from author’s works, Ostrom & Ostrom, 1977, Weimar & Vining, 2005.

as a private good on the *Products and Services* layer, but then be transmuted into any of the four types of *Institutional* arrangements on the lower layer. Some of these transmutation paths—which involve changes in property rights—are sketched in this paper.

Club structures are often used by corporate and financial actors to push risk out into society (public bads), thereby capturing return without compensating for risk. Such property right structures, part and parcel of banking’s institutional history for millennia, may evolve into vehicles which destabilize markets and economies, enable rent-seeking, and weaken regulatory outcomes. A club can be defined as “a voluntary group deriving mutual benefits from sharing one or more of the following [categories]: production costs, the members’ characteristics, or a good characterized by excludable benefits.”<sup>26</sup> Members obtain profit or risk-minimization benefits, or both, through joint ownership of a financial product or a portfolio of financial products. There are three factors which complicate members’ incentives in such a club. One, the good obtained may be perceived as beneficial by

<sup>26</sup> Sandler and Tschirhart (1997), 335.

some but not by others within the club good structure, as conditioned by individual risk preferences. Two, benefits are not necessarily equal within the club's "walls"; although all may benefit, often some get more than others. And three, assuming shared rationality, responsibility, and information access across club members is sometimes not an accurate depiction of the information sets of all members within the financial club in question.

All three of these factors obtain in part because of informational and power asymmetries: Not all within the "walls" have the same information and, even when they do, they may not have the same influence or legal status.<sup>27</sup> This is increasingly the case in modern financial intermediation, where larger investment firms may exert considerable influence on the corporations in which they invest.<sup>28</sup> There is nothing inherently nefarious about these asymmetries, per se. But negotiations over information access and interpretation provide incentives to advocate for influence and legal status. Young, Marple, and Heilman<sup>29</sup> map out social ties between financial institutions and the U.S. Securities and Exchange Commission (SEC), finding that tighter social ties lead to more advocating and lobbying to influence SEC regulations. This influence of social ties engenders a "stronger effect on structurally prominent firms" as well as the SEC.<sup>30</sup> Prominence not only conditions influence, but also conditions the ways in which financial risk positions taken on may manifest in different types of financial goods and structures.

In a private financial transaction as shown in the top box in [Table 2](#), risk is born by the buyer. For the purposes of governance and even consumption, risk may be considered as a complementary good which comes packaged with the primary good acquired or shared.<sup>31</sup> The seller may offer guarantees regarding the good, but these guarantees actually constitute another, separable good which may or may not come packaged with the primary good purchased.<sup>32</sup> Risk-sharing increases as the number of joint consumers or users increases, from club members to members of a common pool resource (CPR) to those enjoying a public good within boundaries.

<sup>27</sup> Büthe (2010); Tsingou (2015).

<sup>28</sup> Fichtner, Heemskerk, and Garcia-Bernardo (2017).

<sup>29</sup> Young, Marple, and Heilman (2017); also see Tsingou (2015).

<sup>30</sup> Young et al. (2017), 353.

<sup>31</sup> Selmier, Penikas, and Vasilyeva (2014).

<sup>32</sup> Selmier (2014), 332, conceptualizes "the idea of financial goods defined as indivisible units, and financial products as amalgamations of one or more financial goods...a share could be divided into component parts that we might term financial goods. For instance, the dividend stream, voting rights, and fractional company ownership are separable components, combined to form the financial product that constitutes a share."

To illustrate how the nature of risk as a good may change—that is, how the property rights surrounding financial risk may change—consider a representative investor, Josephine. Josephine does not acquire risk directly, but obtains it through acquiring some other good such as a technology stock. The nature and type of this complementary good is conditioned by the size of the risk position acquired and by the initial state obtaining when it is acquired.<sup>33</sup>

Josephine's investment position and her risk position are conditioned by her network status within a financial network structure. If Josephine is an average individual investor, the risk that accompanies her acquisition of a technology stock would be a private good (top left box in Table 2). She alone bears the risk. If Josephine is a senior partner in a hedge fund and takes a large position in that technology stock, then the financial risk acquired affects all who work in her hedge fund due to the club good structure of the hedge fund, in that all who work at Josephine's fund share in gains and losses through their compensation and employment.<sup>34</sup> Note that Josephine's actions have changed the property rights around the underlying investment risk to a club good structure embedded at an institutional level (bottom back box in Table 2). Moreover, if other firms observe Josephine's behavior and begin to emulate it, then their additional risk encumbrance creates a new, expanded club consisting of those other firms and employees exposed to the financial risk contained in the technology stock.

If Josephine's hedge fund investments are of such size that market-wide or international effects may occur if the value of her assets expands or contracts, then embedded financial risk is more accurately typed as a common pool or even a public good or bad, depending on the outcome of the underlying investment. A prominent modern example would be the collapse of Long-term Capital Management in 1998. Expanding risk may cause regulatory problems and social costs on firms, and in domestic and international markets. Governance challenges surrounding such risks arise through engaging in behavior which may take advantage of an implicit insurance policy<sup>35</sup> which enables an actor to consume risk without requiring specified and direct payment.<sup>36</sup> This implicit insurance policy

<sup>33</sup> Initial conditions may significantly increase the risk taken whether the actor is aware of that increased risk position or not. Consider adding to an investment position through leverage when the investment market in question is already highly-valued. The actor may assume the risk position encumbered is lower than it actually may be.

<sup>34</sup> Penikas (2012); Selmier, Penikas, Vasilyeva (2014).

<sup>35</sup> *The New York Times*, 30 January 2010, Paul Volcker, "How to Reform Our Financial System"; *The Economist*, 1 October 2009, Beatrice Weder di Mauro, "The Dog That Didn't Bark," <http://www.economist.com/node/14539774>.

<sup>36</sup> Congleton (2012); Selmier, Penikas, Vasilyeva (2014).



is sometimes described as evidence of moral hazard,<sup>37</sup> but may in fact be broader in origin, scope and effect than this term implies. Part of the externality which an archetypal public good addresses may be considered a manifestation of risk.

Systemic risk has likely increased since the financial crisis, as financial economists Admati and Hellwig note, “the consequences of letting a large bank fail are probably more severe today than in the case of Lehman Brothers in 2008, but saving them might cripple their countries.”<sup>38</sup> The next section sketches how and why financial risk came to be shared so completely within a world wherein “economic liberalism...evolved into a veritable faith in man’s secular salvation through a self-regulating market.”<sup>39</sup> Information and technology conjoined with economic development to change the nature of financial risk. As banking changed from a relationship between private banks and clients to a community of bankers and clients, then into emerging national and international financial networks, financial risk underwent a process of transmutation from private and club goods toward systemic risk forms akin to CPRs and public goods.

## 2 An Institutional history perspective on risk in banking

Modern finance and banking consist of highly-networked ecologies<sup>40</sup> but, in fact, banking and financial contracting have long been economic activities in which financial risk and reward were shared across networks. Club structures have been quite common over the history of banking.<sup>41</sup> Financial actors have employed two club forms to share risk among a larger number of actors: The first is creation of larger structures that distribute risk across a membership whose members are compensated through possible profit-sharing, as shown in the *Products and Services* layer of Table 2’s cube. These include private equity, venture capital partnerships, and mutual funds. The second form consisted of governance structures whose purpose was to manage risk and contagion within the members of that structure. Table 2 lists, on the *Institutional* level, some of these modern forms of banking clubs such as banking partnerships; bank clearing houses; banks which can access the Federal Reserve “window” for funding; and systemically-important financial institutions (SIFIs). In the construction of club forms on both levels,

37 Bhidé (2009); Congleton (2012); Goodhart (2010).

38 Admati and Hellwig (2013) 12.

39 Polanyi (1944), 131.

40 Allen and Babus (2009); May Levin, and Sugihara (2008); Winecoff (2015).

41 Dowd (1994); Goodhart (1987); Nair (2016).

bankers and financiers have learned over two centuries how to “socialize” risk in order to lower their probability of collapse.

The dominant strain of modern international commercial and investment banking throughout the world<sup>42</sup> can be traced back to the Atlantic Trade after the Napoleonic Wars.<sup>43</sup> As this trade expanded, some merchants took on financial obligations outside their own trading houses through credit extension. These merchants became merchant bankers as they migrated toward a purer form of financing business while leaving the physical movement of cotton, iron, and wool to others.<sup>44</sup> Reputation and trust were essential in a world where “Anglo-American merchant-bankers achieved monetary gain by lending the prestige of their name without lending any money whatsoever in most cases.”<sup>45</sup> High levels of risk were distributed across the network to offset risk exposure to the longer-term nature of lending, shipping risks, exposure to uncertain commodity prices and the intense competition: Scottish merchant banks, for instance, were willing to “face almost any risk for the sake of the difference between 4 percent at home and 4 ½ percent across the Atlantic.”<sup>46</sup>

Boot, Greenbaum, and Thakor<sup>47</sup> argue risk was managed in banking partnerships by employing two forms of capital: (1) the partners’ financial capital within the firm and (2) human capital which was “liquefied through accessing the partners’ networks of contacts.”<sup>48</sup> But human capital is more accurately viewed as consisting of two parts: reputation gained through interactions with clients, fellow bankers, the general public and governments, and informational capital. Informational capital consisted of partners’ tacit knowledge concerning clients and other bankers in the nineteenth century; as the twentieth century progressed, more and more extensive financial market information was garnered through transactions and through processing power.<sup>49</sup> Reputational and informational forms of capital were both critical in protecting financial capital through risk discovery,<sup>50</sup> minimization, and avoidance.

Within networks, merchant banks were club good structures which established boundaries delineated by family ties or through strong co-religionist or

<sup>42</sup> Hayes and Hubbard (1990); Selmier (2013).

<sup>43</sup> Chapman (1984); Hidy (1941); Killick (1974).

<sup>44</sup> Dorfman (1951); Hidy (1941); Morrison and Wilhelm (2008).

<sup>45</sup> Hidy (1941), 58.

<sup>46</sup> W. T. Jackson quoted in Chapman (1984), 98.

<sup>47</sup> Boot, Greenbaum, and Thakor (1993).

<sup>48</sup> Selmier (2013), 13.

<sup>49</sup> Boot (2000); van Cleveland and Huertas (1985); Morrison and Wilhelm (2004, 2008).

<sup>50</sup> Discovery used here in the economic sense of discerning price or factor value.

cultural links<sup>51</sup> to manage financial risk (as shown in Table 2, lower back box). Financial risk began to move outside these merchant banks almost with their establishment, but remained within clubs wherein merchant banks were members. These clubs spread risk-bearing tasks across a number of merchant banks using instruments such as structured syndicates to create partial ownership of ships and shipping ventures.<sup>52</sup> This practice extended earlier trading and financing arrangements which had arisen in Venice, the Ottoman Empire, and on the Indian subcontinent.<sup>53</sup> Another instrument distributing risk was the sophisticated syndication of enormous bond issues necessary to finance both sides during the Napoleonic Wars.<sup>54</sup> War bond issues stimulated a “two-way system of raising and simultaneously spending vast sums of money [which] acted like a bellows, fanning the development of western capitalism and of the nation-state itself,”<sup>55</sup> highlighting the strategic nature of banking to governments.

As industrial development required more capital, latter nineteenth-century banking operations spread risks through both long-lasting and one-off partnerships, setting the foundations for more sophisticated, pan-industry syndication efforts to share financial risk. Some efforts pooled the expertise of investment bankers (the direct descendants of merchant banks) with capital-endowed insurance companies.<sup>56</sup> Financial innovations like these created new ways to distribute risk across a broader range of actors. This in turn increasingly interconnected actors not only through creditor-debtor relationships but through complex risk-sharing arrangements, creating early CPRs of financial risk through broader syndication pools.

As these networks developed and deepened, traditional partnerships proved inadequate in both risk management and in capital adequacy terms. Partnerships carried insufficient capital as needs for railroad financing grew in the second half of the nineteenth century.<sup>57</sup> In response to capital requirements and increasing risks, some banking firms grew very rapidly between the late nineteenth century and the onset of the Great Depression.<sup>58</sup> As an example, National City Bank of New York (predecessor to Citibank) grew from a president and two clerks in the 1890s to 500 employees by the beginning of World War I, then rapidly expanded outside the

51 Chapman (1984); Cassis (1985); Nair (2016).

52 Chapman (1984); Hidy (1941); Killick (1974).

53 Frank (1998), 68–72; Fratianni and Spinelli (2006); Nair (2016).

54 Buchinsky and Polak (1993); Kennedy (1987) 76–84; Rasler and Thompson (2000).

55 Kennedy (1987), 77.

56 Chapman (1984), 87–9.

57 Chapman (1984); Ferguson (1999), 56–61, 84–87.

58 For further explanations see Selmier (2013), 15–25.

United States so that by 1917 there were some 1,600 domestic employees and 600 employees stationed overseas.<sup>59</sup> As global interlinkages in the financial network grew, American and German banks responded to such growth<sup>60</sup> by putting pressure on banks in other parts of the world: The amalgamation of twenty small private banks into “Barclays Bank in 1896 [occurred in London] at the very moment when the private deposit bank was receiving its last blow.”<sup>61</sup>

While much of this creeping institutionalization during the first two-thirds of the nineteenth century occurred through private institutions, this changed in the last third of the century. Capie, Goodhart, and Schnadt suggest that 1873 may be a “natural dividing line for a history of central banking,” and this inflection point in central banks institutionalization and expanding roles is also an inflection point in governance of financial risk.<sup>62</sup> Wars in the Americas, Asia, and especially Europe had convinced governments of the need to raise money, but government-established central banking and the international links between those central banks were still just emerging and often ad hoc.<sup>63</sup> Issuance of fiat currency<sup>64</sup> provided a public good at the *Products and Services* layer as shown in Table 2. Pulled by ideas developed by Bagehot, Jevons, and others, and pushed by a series of financial crises,<sup>65</sup> European central banks began to take on the role of Lender of Last Resort (LOLR).<sup>66</sup> Governments recognized that the aggregation of actors willing to take on risk in financial markets constituted not only a kind of common pool resource which could be tapped in times of war, but also could be employed for national economic development. To support this resource, governments began to provide the institutional level public goods of central banking (Table 2, lower front-most box). Spreading establishment of central banks indicated that governments believed that bank clearinghouses could not extend common pool resources of financial risk consistently, or nationally, and so provision of common pools and public goods in finance became institutionalized.

Bank clearinghouses had developed to process bankers’ drafts which were drawn on member banks. Their growth and expansion into self-governance provide examples of complex institutional risk-sharing arrangements which

<sup>59</sup> Cleveland and Huertas (1985), 32, 89–91.

<sup>60</sup> Einzig (1935); Ferguson (1999), 95; Tilly (1989).

<sup>61</sup> Cassis (1985), 218.

<sup>62</sup> Capie, Goodhart, and Schnadt (1994), 10.

<sup>63</sup> Eichengreen (1996); Gallarotti (1995).

<sup>64</sup> Cohen (1998), 27–31, 125–34; Helleiner (2002).

<sup>65</sup> Bagehot (1873); Jevons (1876); Eichengreen (1996); Gallarotti (1995).

<sup>66</sup> Polanyi argues this was a political move (1944), 215, “In the last resort, impaired self-regulation of the market led to political intervention,” but your author argues for a more complex battery of reasons.

sometimes crossed national boundaries in their provision of common pools of financial risk. Nair details how Chettiar bankers established clearinghouses which spanned across the Bay of Bengal and much of coastal Southeast Asia toward the end of the nineteenth century.<sup>67</sup> Chettiar banking houses lent through an extended banking club which set interest rates and imposed discipline. Similarly, rates set within bankers' clubs in the City—a square mile of London that was the world's financial center in the nineteenth century—not only allowed local clearing operations, but also affected rates globally as telegraph networks wove the financial world together.<sup>68</sup> In essence, extended clubs provided access to extended common pools of financial risk.

Dowd argues that clearinghouses were structured as banking clubs while additionally providing a public good in the form of confidence in banking systems through “the ability of the clearinghouse to protect the integrity of the banks by controlling the risks they take.”<sup>69</sup> But disciplining member banks and collectively-arranging rescue operations were, by design, localized with varying geographic spread.<sup>70</sup> The considerable challenges facing clearinghouses revolved around regulatory issues, capital adequacy within the *local* system, and the requirement for strict enforcement. Participating banks had to be within reasonable daily traveling distances in nineteenth-century terms in order to clear transactions.

Clearinghouses could deal with less severe banking panics, and sometimes suspended member banks.<sup>71</sup> But there were cases where panics necessitated significant outside help<sup>72</sup> or even led to the chaotic dissolution of the clearinghouse. In effect, as the network grew in size and complexity, geographic limits on the common pool of financial risk necessitated new governance structures for these emerging networks. As communication, transportation, and financial linkages increased, the resultant financial risk from larger financial networks could not be managed by clearinghouses,<sup>73</sup> and they became more reluctant to commit to more distant banks as shown in the 1907 financial crisis in the United States.<sup>74</sup> As financialization brought banking to a more central, more politically-powerful position in the early twentieth century, some banks within the local clearinghouses grew to sizes much greater than others, and these larger banks sometimes left the

67 Nair (2016).

68 Bagehot (1873); Chapman (1984); Hoag (2006); Odlyzko (2000).

69 Dowd (1994), 294; see also Salter and Tarko (2017, in this special issue).

70 See Moen and Tallman (1999); Wicker (2000).

71 Dowd (1994); Gorton and Mullineaux (1987).

72 Moen and Tallman (1999).

73 Goodhart (1987); Gorton and Mullineaux (1987).

74 Wicker (2000).

clearinghouses.<sup>75</sup> The above-mentioned complexity of the network and expanding common pools of financial risk combined with larger banks' concern over risk exposure to weaker banks within the clearinghouse impelled their exit. These larger financial institutions' concentrations of capital and political power increased their importance to governments as their critical position in networks came to be understood and even embraced. And as non-bank actors, which were outside the clearinghouses, became more prominent, financial risk in the network grew. The primary catalyst for the 1907 financial crisis was the collapse of the Knickerbocker Trust, which was not a bank.<sup>76</sup>

Governments, recognizing the power and risk accumulating within larger banks and the increasing financialization within national economies, realized that ad hoc club-like structures like clearinghouses were too local, too vulnerable, and too weak in enforcement power to effectively deal with systemic financial risk in industrializing economies. Clearinghouses gave way to powerful, government-run central banking institutions.<sup>77</sup> The international ambitions of U.S. banks in the early twentieth century, their increased local and global interconnectedness, and recurrent banking crises played a major role in the U.S. government's decision to centralize monetary governance. This culminated in the founding of the U.S. Federal Reserve Bank in 1913.<sup>78</sup> The last "club-like" central banking was conducted through the Bank of England, which was finally, fully converted into a government unit in 1944.<sup>79</sup> To provide better oversight of countries' banking system and economies, and better manage fiat currencies (note the public goods and institutions mentioned in [Table 2](#), foremost two boxes), central banks were established in Latin America, Asia, and Africa; advice and consultancy of economists from the Bank of England and the U.S. Federal Reserve led to many central banks being established in the image of the Bank of England, the Federal Reserve, or an amalgam of the two.<sup>80</sup>

Systemic financial risk has remained a challenge, and such risk arises not only through banks but through the shadow banking institutions as well. The Hunt Brothers' attempt to corner the silver market showed the emerging global nature of financial risk. This story also illustrates how the manifestation of financial risk depends on position size.

<sup>75</sup> Gorton and Mullineaux (1987); Moen and Tallman (1999).

<sup>76</sup> Moen and Tallman (1999); Wicker (2000).

<sup>77</sup> Capie et al. (1994); Helleiner (2002).

<sup>78</sup> Broz (1997); Capie et al. (1994); Eichengreen (1996), 40-6.

<sup>79</sup> Tilly (1989), 197.

<sup>80</sup> Capie et al. (1994); Helleiner (2002), 140-157.

### 3 Cornering the Silver Market: The Hunt brothers Illustrate Global Systemic Risk

For drama and illustration of the transmutation of financial risk, few vignettes provide a picture of systemic financial risk like that of the Hunt Brothers and their attempt to corner the silver market between 1974 and 1980. [Table 2](#) helps to illustrate this path of transmutation. In the mid-1970s, the Brothers acquired an estimated \$20 million in physical silver, but realized that they could not have much effect on market prices by acquiring silver in physical form.<sup>81</sup> They switched strategies to buying silver futures in order to increase their leverage and to more quickly gain a significant position. Other large speculators bet against them and, initially, succeeded in deflating the rising silver price. Undeterred, the Brothers continued to acquire silver positions through the futures markets.<sup>82</sup> At this stage these inherent financial risks constituted private goods personally taken on by the Brothers as well as assumed by their family's privately-held oil company.

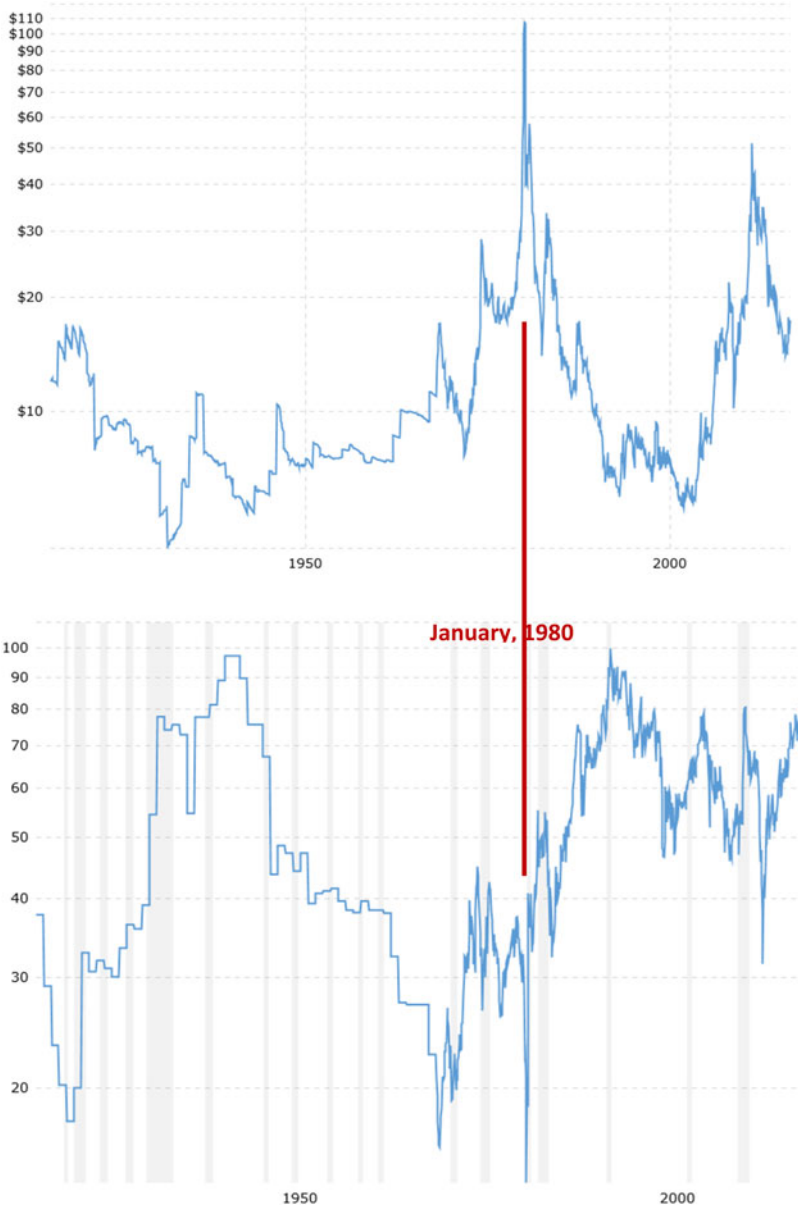
Typically a buyer of futures contracts “unwinds” her position by selling her contract at a profit as expiry approaches, if the price of the underlying commodity increased over the holding period. The original seller of the contract may purchase an equivalent contract to unwind his position. In this case no physical silver changes hands. But in early 1980s the Brothers demanded physical delivery rather than unwind their futures positions,<sup>83</sup> arranged for warehousing space to store the silver, and continued to buy future contracts by pledging assets in their family oil company. Silver prices spiked in January of 1980, as physical delivery could not be made due to shortages. Even before this point was reached, financial risks tied to silver had become a club good—investors, speculators, and companies which used silver in industrial operations were severely affected as can be gleaned from [Chart 1](#)'s top half showing silver's 100-year price trend.

While commodity prices experience volatile price swings throughout cycles, the effect of the Brothers' buying was unusually large. The bottom half of [Chart 1](#) demonstrates this through the 100-year, gold-to-silver price ratio,

<sup>81</sup> Physical silver refers to silver in metal form, such as coin, bars, ounces or tons, agreed to be delivered from a mine, refinery or dealer. Silver futures refers to a financial contract in which the buyer has the right to demand delivery of the physical good at, or over, a specified period in the future at a specified price. The buyer obtains only an option to pay for the silver, but does not yet own the “underlying” silver on which the financial futures contract is written. The seller of the contract need not have position of the physical silver underlying the contract.

<sup>82</sup> Abolafia and Kilduff (1988), 184-5.

<sup>83</sup> Meaning the seller of the futures contract must deliver the amount of silver specified in the contract, and cannot “unwind” the position.



**Chart 1:** 100 year trends for Silver Price and Gold/Silver ratio [CPI-adjusted]

Sources: <http://www.macrotrends.net/1470/historical-silver-prices-100-year-chart>; <http://www.macrotrends.net/1441/gold-to-silver-ratio> (Accessed June 15, 2016).



indicating that by the later 1970s silver prices were registering their highest prices compared with gold over this century. The only time silver had risen this high against gold was in the post-WW I depression and during the artificially-low gold prices in the emergent inflation of the late 1960s, when the price of gold was still directly tied to the U.S. dollar. The Brothers had cornered the global silver market, causing a huge disruption in other commodities. At this time many futures contract writers who had sold a contract but did not have the physical silver could not deliver, and a huge panic ensued.

Over these six years, the Brothers' risk position had grown from a private good (when they were a smaller buyer of the physical metal) to a club good as industrial users of silver, such as film companies, were unwillingly pulled into the risk pool created through their speculation. Their continued buying in the market transmuted the risk position into a common pool as the financial risk affected all market participants. The Brothers' speculation impaired both usage and even access to the futures markets as a resource to manage risk exposures to silver and other commodities. In the end, the pool of risk became a public "bad" as economic disruption caused by spikes in other commodities became more severe.

The Brothers were finally stopped when their banks called in the loans used to acquire all that silver.<sup>84</sup> After a nine-year legal battle, the Brothers paid a large fine, lost a significant portion of their family oil company and were barred for life from trading in the American commodity markets.<sup>85</sup> As one might imagine, their banks were concerned not only with the economic implications of the Brothers' speculative actions and the banks' resulting financial risks. As regulatory sanctions and legal cases mounted up against the Brothers, their bankers were subjected to additional scrutiny. And other customers' opinions on the sagacity of lending to the Brothers may also have influenced the banks. So regulatory concerns, potential damage to reputation, and risk exposure to the Brothers all weighed on the minds of their bankers. Some readers might suggest that this vignette shows that the system worked by countering and ultimately punishing the Brothers. But that is an incomplete conclusion. That the Brothers' actions became the prime factor in a fivefold increase in the price of silver, boosting other commodity prices, and damaging trust and reputation in the financial system and in the banks themselves.

<sup>84</sup> *The Economist*, 26 January 1980a. "Over-Exposed." 70–71. Accessed March 8, 2013, on *The Economist* Historical Archive; *The Economist*, 10 May 1980b. "Kismet, Nelson." Accessed March 8, 2013, on *The Economist* Historical Archive. The banks were not only concerned about the economic implications of Brothers' massive attempt to corner the silver market, but also the regulatory sanctions and legal cases mounting up against the Brothers' actions. One can also suppose that the network effects of the silver price spike on their other customers also influenced the banks.

<sup>85</sup> *The New York Times*, 21 December 1989, Kurt Eichenwald, "2 Hunts Fined and Banned from Trades."

Their actions also showed that governing financial markets required understanding that underlying financial risks can shift from private to club to common pool to public good. That is, financial markets are not simply markets, per se.

## 4 Can club good structures be used to govern financial risk?

*We are now trusting as many people as we ought to trust, and as yet there is no wild excess of misplaced confidence which would make us trust those whom we ought not to trust.*<sup>86</sup>

Bagehot's analysis of stability in the City's<sup>87</sup> credit markets sketched in the network parameters of trust, confidence and risk which existed within the world's financial center circa 1873. A century later, the network had grown to a global size wherein counter-party risk was more difficult to uncover and in which informal clubs and common pools of risk could arise without participators' acquiescence or even knowledge.

Financial intermediaries continued to employ two forms of clubs to minimize, avoid, or disperse risks: creating larger organizations to engineer and manage investment opportunities, and self-governing through organizations which disciplined members and enabled them to balance their books through clearing and transfer operations. The *first form* spawned a large and diverse number of organizational iterations, including syndicates, mutual funds, private equity firms and venture capital funds, multiline financial conglomerates, and diversified insurance companies, as detailed in Table 2 on both the *Products and Services* layer and on the *Institutional* layer, while the *second form* has been underdeveloped and sometimes turned to financial firms' benefit rather than to their governance.

As previously noted, benefits and access to information are not necessary equal within the club walls, those making decisions for the club may have higher risk preferences, and larger firms and greater financial capital often translated into greater compensation. These complicating factors became interrelated and fed on each other in the latest financial crisis and its aftermath.<sup>88</sup> A string of successes compounded the difficulty in untangling success factors but confirmed in the minds of some financiers that personal skill was the determinant factor. With bonuses determined on production, deal closure, and trading success, the bonus

<sup>86</sup> Bagehot (1873), 148.

<sup>87</sup> Of this centuries-old financial heart of London, Chapman wrote ((1984), 180): "this parochial square mile did not change very much until after the Second World War."

<sup>88</sup> Bhidé (2009).

recipient was incentivized to produce, close deals, or trade more,<sup>89</sup> and “pushing the envelope” became routine.<sup>90</sup> Implicit or explicit insurance from government sources further altered the banker’s or trader’s perception of risk, thereby pushing her/him toward more risk-accepting transaction patterns.<sup>91</sup> The Term Securities Lending Facility provides a case in point. The American Government bought risk-encumbered assets of banks and insurance companies, acting as an ex-post provider of insurance by taking on some banks’ assets, thereby increasing banks’ reserves and enhancing the quality of their remaining assets. Financial firms and “regulatory agencies...mistook crisis insurance for ordinary insurance.”<sup>92</sup>

But these financial firms are staffed with bankers and financiers who had become “slaves of the market” due,<sup>93</sup> in part, to a perverse incentive structure where they face a “compensation function that is convex in returns, that is, one that encourages risk taking because the upside is significant, while the downside is limited.”<sup>94</sup> Acharya, Mehran, and Sundaram propose an incentive methodology to align the risk in a bank or financial institution with its organization structure (as a club): require incentive compensation in cash which vests over a longer term and, if the bank enters a predefined period of “stress,” the cash accounts would revert to the bank.<sup>95</sup> This method is an improvement on the so-called “malus” (that is, bonus clawbacks) proposals made after the onset of the financial crisis.<sup>96</sup>

Regulators also face perverse internal incentives. Financial economist and Bundesbank Board Member Beatrice Weder di Mauro wrote: “As soon as crisis strikes, the optimal choice for policymakers differs from the pre-announced policy, the authorities will usually offer support. The banks anticipate this behaviour and run even more risks as a result.”<sup>97</sup> The larger the financial institution became, the greater the government’s support. Enabled by technology and empowered through capital concentration, some banks and financial institutions grew to great size and became TBTF.<sup>98</sup> Banks paid premiums well over recognized

<sup>89</sup> Ibid.; Penikas (2012); Rajan (2006).

<sup>90</sup> *Vanity Fair*, August 2009., Michael Lewis, “The Man Who Crashed the World,” 98–105.

<sup>91</sup> Goodhart (2010).

<sup>92</sup> Congleton (2012), 408–9.

<sup>93</sup> Bell and Hindmoor (2015).

<sup>94</sup> Rajan (2006), 515.

<sup>95</sup> Acharya, Mehran, and Sundaram (2016).

<sup>96</sup> See arguments presented in Hakenes and Schnabel (2014), as to why malus schemes are not effective incentive methods.

<sup>97</sup> *The Economist*, 1 October 2009, Beatrice Weder di Mauro, “The Dog That Didn’t Bark,” <http://www.economist.com/node/14539774>.

<sup>98</sup> Selmier (2013); *The New York Times*, 30 January 2010, Paul Volcker, “How to Reform Our Financial System.”

value to acquire other banks in order to become members of the TBTF “club” and obtain a lower cost-of-capital.<sup>99</sup> The public good provided by government management of banking stability has been turned into a club good. When Schwartz notes that “choice of [the term] ‘clubs’ distracts attention away from the issue of what exactly creates the excludability that distinguishes a club good from a public good,”<sup>100</sup> we can answer that the excludability comes from lowered financial risk and greater return, in the case of TBTF.

The systemic financial risks engendered by those in the TBTF club have been addressed in two ways since the crisis began: through requiring the largest financial institutions to pay a “SIFI premium”—an additional layer of core capital for the largest financial institutions—and through application of the Volcker Rule, which requires some separation of proprietary trading from other banking operations in and, in some cases, beyond the United States.<sup>101</sup> Both the SIFI premium and application of the Volcker Rule are conditioned by the power of the central banking authorities to apply them. Negotiations surrounding rules and restrictions applied within and beyond national borders are subject to political jostling.<sup>102</sup> Those negotiating international regulatory efforts keep one eye on domestic interests and the other on stability in international markets.<sup>103</sup> The resulting political interplay clouds critical international efforts such as when and how to launch LOLR operations.

Kindleberger argues that LOLR in its ideal form is emblematic of a pure public good.<sup>104</sup> But LOLR operations are by their very nature political, as the hegemon (since WWII, the United States) must decide how and where to intervene and how to finance the intervention. Turmoil resulting in the aftermath of the 2007 global financial crisis was rough, as evidenced by the People’s Bank of China’s Vice Chairman’s comment: “The international community should not overlook the risks arising from the international monetary system and pay adequate attention to surveillance over the countries that issue the world’s major currencies.”<sup>105</sup> Her pique—and that of the Chinese government—was echoed by other countries at what was seen as U.S. currency manipulation. But the Federal Reserve believed it had to radically inflate its balance sheet in order to act like a LOLR.

**99** Brewer and Jagtiani (2013); Hughes and Mester (1993).

**100** Schwartz (2017), 195.

**101** Cukierman (2013); *The New York Times*, 30 January 2010, Paul Volcker, “How to Reform Our Financial System.”

**102** Culpepper and Reinke (2014).

**103** Oatley and Nabors (1998); Quaglia (2017).

**104** Aliber and Kindleberger (2015); see also Bagehot (1873); Goodhart (1987).

**105** Hu (2009).

The *second form* of clubs to minimize, avoid, or disperse risks proved in the latest financial crisis to vary considerable in risk management effectiveness. The more influential member organizations relied in part on the social ties of their individual employees to influence regulation and governance.<sup>106</sup> While some self-regulating organizations have been established to good effect, other self-regulating organizations serve more as talking shops and lobbying centers rather than centers of discipline and self-governance.

The LIBOR (London Interbank Overnight Rate) scandal in 2012 showed how club governance could fail, but also provides a lesson in how it might succeed. LIBOR is the rate at which banks lend to each other in overnight London markets and is used as a benchmark guide for setting the prices of millions of financial contracts including swaps, forward contracts, loans, and repurchase agreements. The LIBOR rate was established each day by polling a small number of banks (sixteen for the three-month LIBOR) then taking the average of the middle banks. That is, the highest and lowest quartiles of banks' responses were removed and the middle half's responses were then averaged.<sup>107</sup> The scandal in 2012 erupted when it was found that traders at a few banks had conspired to artificially fix rates. LIBOR-fixing is very important to global finance for the information it provides, and clearly the banks involved in LIBOR-fixing constitute a club which benefits from privileged access. The British Bankers' Association had been tasked with the daily polling and calculations required, a duty now given over to exchange operator ICE.<sup>108</sup>

Chiu argues that "Regulators have the option of turning LIBOR into a public good, [but that] may in fact be counterproductive to achieving the preservation of LIBOR and the restoration of market confidence surrounding the benchmark."<sup>109</sup> As outside observers do not have access to the same level of information, the simplest governance mechanism is to force those banks participating in the club to self-police and, if a conspiracy is uncovered, to report. Failing to report would be dealt with by expulsion from the club and/or large fines. In fact, significant fines have been levied with good effect.<sup>110</sup>

Clubs in banking can be used as disciplining organizations: The question is should they be used. Mishkin's comment that financial firms grow to become "too politically important to fail" is germane here as political power is one factor behind financial intermediaries' capacity to push risk out of their corporate

<sup>106</sup> Tsingou (2015); Young et al. (2017).

<sup>107</sup> Hou and Skeie (2014).

<sup>108</sup> Chiu (2016).

<sup>109</sup> Ibid., 196.

<sup>110</sup> Ibid.; Hou and Skeie (2014).

structure onto society. How this has occurred—through evolution of property rights structures—is a factor in growing power of financial institutions yet also may provide a stick to reintroduce club discipline.

As government support is sometimes necessary and profits are higher for those in the club, threatened expulsion when self-regulation fails is a powerful stick. This requires combining microprudential regulatory frameworks with macroprudential supervision. Governmental supervisory efforts cannot really “focus on a single risk at an individual institution”<sup>111</sup> because the informational asymmetries *within* financial intermediaries are already so great that it is difficult for those outside, no matter how powerful, to adequately supervise. Rather, governments should reinforce club discipline within financial firms and within the industry clubs spanning firms, imposing self-governance in selected sectors as well as enforcing microprudential regulation. Holding financial intermediaries accountable for their own and their partners’ actions and thereby reimposing risks inherent in reputational capital is possible, but would require a balance of governmental regulation with imposed self-regulation where governments would intervene and punish upon evidence of transgression.

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<sup>111</sup> Houben (2013), 210.

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