

Financial Goods and Governance: The Complexity of Financial Goods and Regulatory design

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The present global financial crisis continues to challenge governments, financial market participants and clients. Intense debate rages over government intervention in domestic and international financial markets. One might say the devil is in the details of the regulatory regime for financial products and services.¹ To craft effective governance of any economic activity requires an effective yet flexible regulatory regime;² to craft an effective yet flexible regulatory regime requires understanding the nature of the goods and services being transacted.

The term “financial markets” is plural for a reason: diverse, complex goods and services in these markets are traded locally, regionally, internationally. These complex bundles of financial goods and services may be categorized in a variety of ways: as derivative or cash, service or product, simple or complex, “straight” or with embedded securities. Hybrid financial goods—like hybrid financial services firms³—have become ubiquitous. Yet “financial markets” do not encompass the variety of mechanisms used to transact and exchange financial goods, financial services and ownership stakes.

In this paper, I a radical, and radically simple, idea—I suggest we employ a typology of goods to understand how financial products, and the financial firms which buy sell and trade them, develop. By “typing” these financial goods and services along two dimensions – rivalry and excludability – we can examine these financial products as public, private, CPR, and toll goods.⁴ Applying this typology to products in the financial markets (mortgage-backed securities), the regulatory sphere (too-big-to-fail) and firms’ internal markets (labor, ownership), we observe products’ properties sometimes change and fundamentally shift from one type of good to another. Shifts may arise from theoretical development in finance, new technologies, crises, and institutional change in financial firms or in government, or both. These shifts provide innovation and economic advance, but may also sow seeds of disaster.

Fundamentally, investment banks and financial firms are self-designing organizations⁵ whose fluidity permits change. Regulatory regimes, usually established or reformed after crises, are more rigid. A goods typology gives us considerable leverage to understand financial firms and to assess regulatory regimes targeted to achieve effective governance while promoting efficient, fair financial markets.

¹ See Turner (2010), chapters 3, 5, 6, 8; Acharya and Richardson (2009), especially chapters 2, 3, 4, 7; Alessandri and Haldane (2009); McCulley (2009); Reinhart and Rogoff (2009), chapter 17; Barth, Caprio and Levine (2005).

² Financial services specifically, see: Acharya and Richardson (2009), Kroszner (2000),

³ Acharya, Carpenter, et al (2009); McCulley (2009); Jaffee, Nieuwerburgh, Richardson, White and Wright (2009); Mester (2005).

⁴ Weimer and Vining (2005); Ostrom and Ostrom (1977).

⁵ Morrison and Wilhelm (2007); Morrison and Wilhelm (2008); Eccles and Crane (1988), especially chapter 5.

Inherent to my argument is the idea that goods define the market (that is, a good's type leads to the development of a specific market, or other transactional structure, for exchanging the good).⁶ My resulting paper is not, therefore, a market-failure paper; it is, rather, a "market-misunderstood" paper. Regulators struggle to grasp the complexity of these markets, but I do not argue this is due to incapacity on their part. Rather, I argue that regulators and many market participants labor under the idea that most financial products are private goods, and so the process of transmutation and change is not well understood. Hence governments do not explicitly design the necessary regulatory structures around this complex goods typology, while financial firms are *designed* to accommodate goods transmutations.⁷

In days of yore, economic actors were smaller firms, partnerships or individuals. Most offered only one type of good. Occasionally these economic actors were persuaded or forced to offer another type of good (i.e., provision of corvee labor or soldiering, both of which produced public goods). This modern complexity of financial goods has arisen partly through the growth of very large financial services firms and the resulting spread of financial products and services and the concurrent decline of partnerships.

Changes in financial firms' structures have also altered their internal labor markets and the exchange of ownership stakes. When larger actors were partnerships, the managing partners have their worth and reputation at stake, which made for more deliberative strategies and approaches which encompass a broader picture. But partnerships have declined significantly in the financial services industry of most countries, due in part to their inherent structural difficulties growing beyond a limited size.⁸ Their space has been filled by large financial services corporations.⁹ Managers of these large financial services firms may regard "externalities" differently than partnerships, or individuals, or government agencies.¹⁰ Large banks were incented to pursue too-big-to-fail status (TBTF) for lower costs of funds and for insurance. Banks and other financial services firms¹¹ which achieved TBTF were able to privatize the

⁶ Private "markets" may be inefficient to transact in some goods, like public goods or common pool resources.

⁷ Kay (2010, 219) notes, "Because the supervisor's conception of good practice is necessarily drawn from current practice, supervision is supportive of existing business models and resistant to new entry. Extensive and intrusive: yet ineffective and protective of the existing structure of the industry and the interests of its major players."

⁸ Partnership structure: Morrison and Wilhelm (2007, 2008); for historical perspective, Ferguson (1999).

⁹ Recent representative studies include: Alessandri and Haldane (2009); Barth, Caprio and Levine (2005); Jaffee, Nieuwerburgh, Richardson, White and Wright (2009); Kay (2010); Morrison and Wilhelm (2007); McCulley (2009); Saunders, Smith and Walter (2009); Stallings and Studart (2005); Woolley (2010).

¹⁰ Principal-agent problems arise as professional managers' own reputations and personal worth are less at risk, have more limited operational knowledge of larger firms, and whose personal incentives may be less closely aligned with corporate incentives.

¹¹ For simplicity's sake, and to reflect blending of financial businesses into different financial institutions, I use the term "banks" to mean the banking activities and bankers, and include "non-bank banks" in this term (see fn 23).

gains, while socializing the losses. As I argue within, TBTF therefore became a kind of common pool resource.

I lay out my argument in four sections. The first section explains the goods typology which I later employ to analyze the financial markets and the structure of banking and investment banking firms. The second examines the build-up to the present financial crisis with a focus on transmutation of financial goods and changes in financial institutions' structures, which led to the crisis. The third considers perverse incentives, like pursuit of TBTF, and offers governance suggestions, including: consider "narrow banking"; charge for the advantages of systemic insurance; allow multiple regulators to overlap and monitor; include banks, investors and other "private monitors" in the governance structure; encourage partnerships and incent individuals to think longer-term; resist the temptation in robust capital markets to think we have attained "a permanently-high plateau". Lastly, I propose several questions to continue this research program, which this paper merely introduces. Throughout the paper I weave ideas of goods typology with regulatory design and financial firm strategy.

I. Crafting a Goods Typology- examining property rights and governance

Financial goods transactions have generally been considered to take place in private goods markets by most observers, hence the oft-expressed desire for unfettered, free, financial markets. In a financial market consisting of private goods, property rights are owned by a single, defined entity; the owner can exclude others from using that good once purchased. Consider a listed share, which is purchased by a buyer on a stock exchange. Complete transfer of ownership rights from buyer to seller occurs on the settlement date. Those rights are considered exclusive and, once sold, are taken out of the market by the private owner and, therefore, subtracted from pool of goods available for use by another.

While one can argue that these conditions hold for this specific share transaction, I submit this is an anachronistic way to view all financial goods, and a view which has not been strictly true for decades if not centuries. As an example, consider four complicating factors in this simple share example: once purchased, the share may be resold, and therefore is not strictly subtracted from the pool of goods; two, new shares may be issued by the company which rank *pari passu* with previously issued shares;¹² three, the property rights attached to the share may be altered either through market structure, corporate

¹² *Pari passu*: shares have the same rights and are completely fungible.

action, bankruptcy or other legal means; four, the number of shares held influences the holders' de facto, and occasionally de jure, powers and property rights.

Given this complexity with a simple listed share, we require a robust methodology to understand the governance challenges of financial markets and the business structure of financial firms. We can gain traction by sorting the types of products and services in the world of global finance. Of course, among the complexities which arise are the different types of goods, the hybridized nature of a good comprised of several types, and goods "transmutations". To begin this discussion we must employ a method to categorize goods. Our categorization technique must be parsimonious, encompassing the range of possible goods.

As we are dealing with goods which may be owned or shared, it is essential that we be able to specify the underlying property rights assumptions under which those goods are bought, sold, shared and divided. This would create a typology of goods under which we could discuss effective regulatory frameworks and, in future work, design commensurate regulatory institutions.

Economists and political scientists have long debated the nature of goods, seeking a goods typology which would enable a better understanding of each archetypal good's market. Samuelson (1954) argued for parsing goods into public and private consumption goods. He also noted that an optimal solution to public goods allocation could not be found. He argued this challenge existed because an "omniscient calculating machine" did not exist, a point which is still valid today. Tiebout (1956) provided three interesting and important twists on Samuelson's theory of public goods: one, he defined a public good as "one which should be produced, but for which there is no feasible method of charging the consumers;"¹³ two, he suggested that many public goods were delivered at a local level, which, three, allowed consumers to select the package of public goods which suited them and to select that package by choosing to move or not to move, thereby voting with their feet.

Questions of property rights surrounding the transfer and ownership of goods continued to be probed in the economics literature. Demsetz (1967) noted that transactions, at least market-based ones, involve the exchange of property rights. While other disciplines may have focused on this exchange, Demsetz argued economists had not previously dealt with the questions surrounding them. He noted:

¹³ Tiebout (1956), p. 417.

“property rights develop to internalize externalities when the gains of internalization become larger than the cost of internalization. Increased internalization, in the main, results from changes in economic values, changes which stem from the development of new technology and the opening of new markets, changes to which old property rights are poorly attuned.” (Demsetz, 1967: 350)

It is precisely on this property rights view of transactions, wherein rights develop to internalize externalities and the development of those rights are influenced and even transformed by technological advance, institutional change, and crises, on which I wish to focus.

Ostrom and Ostrom (1977) suggested that a simple way to categorize goods would be to use two continuous properties to type various products and services. *Exclusivity* would increase as the degree to which ownership of a good may be restricted, by the seller of the good, through conditions and requirements imposed by the seller. They noted that public television is provided on an unrestricted basis; anyone with access to the medium would be able to see the programming, so it would be a non-exclusive good. *Subtractability* would increase as the acquisition or consumption of a good removes

that good from the remaining pool of goods which might be enjoyed. Aligning goods along the two axes of *Exclusion* and *Jointness of Use* (which the Ostroms referred to as *Subtractability*, and is now commonly called *Rivalry*) results in four sets of archetypal products and services, or goods. Private goods include many consumer goods, such as bread, clothes, or haircuts, which are generally excludable and subtractable.

Figure 1: from Ostrom & Ostrom (1977)	Jointness of Use or Consumption	
	Alternative Use	Joint Use
Feasible Exclusion	<u>Private good</u> : bread, shoes, automobiles, haircuts, books, etc.	<u>Toll good</u> : Theatre, night club, telephone service, toll road, cable TV, electric power
Infeasible Exclusion	<u>Common pool resource</u> : water pumped from a ground water basin, fish taken from an ocean, crude oil extracted from an oil field	<u>Public good</u> : peace and security, national defense, mosquito abatement, fire protection, weather forecasts, “public” TV

But note the cleavage which develops as we differentiate between immediately-consumed goods, such as bread and haircuts, versus a consumer durable like a car, which may have several owners over its lifespan. Toll and club goods, including toll roads, telephone service, or theater tickets, are also excludable but not subtractable. Ostrom and Ostrom used the purchase of a car or a loaf of bread as an archetypal example of a subtractable, or rivalrous, good—once consumed, no one else may buy and eat that loaf of bread. Of course neither of these characteristics is dichotomous, and goods should instead be viewed as varying by a measure of degrees.

Television's product development provides an important example of transmutation of a good's property rights through both technological and institutional change. First freely broadcast (with commercials to pay for costs), television was then also provided as a non-commercial public good and also as a club good through cable and satellite arrangements (that is, exclusivity is feasible through subscription fees, but the programming may be jointly enjoyed by the subscribers). A debate in the mid-1960's between Paul Samuelson and Jora Minasian (1964) over the economics of optimal television broadcast methods provides insight into the property rights behind the public goods. Samuelson used the concept of pure public goods to argue that restriction of television access through subscription services (made possible by the development of decoder technology) should not be permitted by the FCC. Minasian argued that optimality was hard to distinguish in this case: even if costs were not directly borne by viewers, costs existed to provide television broadcast. So optimality on commercial television was determined by commercial-purchasing firms' views of commercials' efficacy. Subscription television optimality would reflect viewers' program choices. Minasian suggested these would likely not result in the same outcomes. Samuelson agreed, clarifying his argument by making two related points: one, FCC policy deserved closer scrutiny, and more important, two, he addressed the broader issues of exclusion and refinement of non-excludable goods, including public goods.¹⁴

Technological and institutional change may also convert a public good from to private as well as the reverse pattern, as Moore observed in the disappearance of commons land in England (1966: 65-72). Enclosure of the commons eliminated a grazing source for less-propertied peasants, who were displaced into new forms of employment in the mills and factories of an industrializing Europe. Three salient points should be taken from Moore's work: first, the good itself—access to pasturage—remained, but the ownership structure of the good transmuted from a common pool resource to a private good through the process of enclosure (goods can shift in nature from non-exclusive to exclusive); two, although neither planned or intended, enclosure completely changed the nature of English peasantry (one might term these occurrences as unintended circumstances, externalities, collateral damage, depending on the observer's view of the consequences); three, while the process started some two centuries earlier, the last legal rights to commons pasturage were not abolished in England until 1889 (the time lag between alignment of formal and informal institutions may be long, or never close).

¹⁴ Alchian (1951: 213) noted "It must be noticed that the meaningfulness of "maximum profits -a realized outcome which is the largest that could have been realized from the available actions"-is perfectly consistent with the meaninglessness of "profit maximization"-a criterion for selecting among alternative lines of action, the potential outcomes of which are describable only as distributions and not as unique amounts. "

Even one of the classic examples of a what we now consider a public good, roads, may not be quite so simple. Drawing on his earlier work on historical development of roads in England, as well as work on typing other goods, Benson (2004) examines the question, “Are Roads Public Goods, Club Goods, Private Goods, or Common Pools?” Yes, he answers, all of the above. During the island’s history, roads might be classified as having been each of these goods types. But, drawing on Samuelson’s definition of a pure public good, Benson argues that English roads were never true public goods due, in part, to the externalities caused by overuse and underprovisioning. He argues, in essence, that congestion made roads into common pool goods.

This argument may ignore the finer points of congestion, which may have an influence on any good, as Weiner and Vining (2005) point out and I summarize in Figure 2. While severe capacity limits exist on roads and theatres which are not as evident on cable networks and telephone service, congestion-induced limits exist for these network services. Generally, overconsumption results for all good types except for toll/club goods as consumers ignore social or external costs. More efficient goods allocation methods may be employed other than markets. Another way to look at this is to argue that while markets fail when congestion is introduced, or are weakened in many cases, in the case of toll goods congestion may actually create a more efficient market.

Figure 2 **Four Types Matrix of Goods and Services**
Introducing Congestion into Demand

		Rivalry	
		Rivalrous	Nonrivalrous
Excludability	Excludable	Private Goods: Overconsumption because consumers respond to price rather than marginal social cost	Toll/Club Goods: Private consumption can be efficient if priced at marginal social cost; peak-load required if congestion variable
	Nonexcludable	Common-Pool Resources: Consumers respond to marginal private cost rather than marginal social cost-- overconsumption results	Public Goods: Overconsumption because consumers ignore external cost

From: Figure 5.2, *Weimer and Vining, 2005*; text selected by author

Efficacy of market structures vary according to the type of good traded. For purely private goods— where complete property rights pass from seller to buyer, the goods are easily quantified,¹⁵ the good may be immediately consumed—market structures may be free, or at least freer, than with other goods types. These markets lend themselves most readily to classic Smithian invisible hand transactions where transaction prices, input and delivery costs, and production figures are easily enumerated so that supply and demand dynamically balance.

¹⁵ Complications with non-excludable goods arise with the difficulty of quantifying the good. How do interested parties count a unit of peace, or the exact amount of extractable oil in an oil field until the field is fully depleted? Note also that, when a good or “resource unit” is extracted from a common pool, that good may be transmuted into a private good (that is, a fish, a gallon of water, a barrel of oil).

Complications increase with other types of goods. Club goods may lend themselves more easily to side payments, where admittance to the club may be negotiated outside standard market negotiations. Club and toll goods markets are also where natural monopolies and oligopolies form due to large capital expenditures or the natural structure of resource markets, or both. These factors complicate market transactions and make regulation more difficult. As I describe below, aspects of banking hew to club goods markets.¹⁶ Common pools spawn a wide variety of market structures, ranging from nongovernmental arrangements,¹⁷ to more complex governmental structures to effectively allocate finite assets.¹⁸ Public goods, by contrast, face problems of free-riding and under-provision when left to in a private market without an enforcement agent. As a result, governmental intervention through regulation and provision is more effective than private markets. However, this leads to unintended effects. Regulation helps with the free-riding and underprovision, but often leads to larger, less economically-efficient government.

In addition, the institutional arrangements for trading common pool resources and public goods make exclusion very difficult. People may enjoy the benefits of public goods, such as peace, pollution control, and public television, but infeasible exclusion leads to free-rider problems. Why pay for the good when someone else will pay? Common-pool resources such as fisheries and forest products share the same dilemma of infeasible exclusion and the resulting problems, with the compounding issue of alternative use for the good. If one fisherman does not harvest a fish, another likely will.

Determining all the interested parties in any transaction has always proved challenging. Dewey famously commented: “the Public consists of all those who are affected by the indirect consequences of transactions to such an extent that it is deemed necessary to have those consequences systematically provided for.”¹⁹ Ostrom, Tiebout and Warren (1961) argued that local government, rather than national government, was a more efficient provider of many public goods and services. Their argument hinged

¹⁶ These include access to financing, investment banking, preferential funding, and regulatory benefits. Regulatory capture theories are closely related to club goods theory. Peltzman (1976), formalizing Stigler’s (1971) model in which diminishing returns cap group size, noted: “what the ‘capture literature’ treats as an ad hoc detail—that the political process automatically admits powerful outsiders to the industry’s councils’—is in fact integral to the regulatory processes.”

¹⁷ see Ostrom (1990), Dietz, Ostrom, Stern (2003) for representations of existing governance structures.

¹⁸ Hardin (1968) famously argued that common pools were subject to “tragedies” of overuse; Olson (1965) countered, showing that collective action problems could be overcome if conditions were created for cooperation. Hardin (1998) noted that his initial argument had been predicated on the idea that “the way to avoid disaster in our global world is through a frank policy of ‘mutual coercion, mutually agreed upon.’”

¹⁹ Ostrom, Tiebout and Warren (1961: 833), quoting John Dewey, *The Public and Its Problems* (New York, 1927).

on a governance concept which came to be called subsidiarity—public governance should be handled by the lowest, most local, competent provider of that governance rather than a larger, more distant entity which would lack understanding of the local affairs, be unable or unwilling to tailor adequate policy to the questions at hand and most importantly, not be subject to the punishment which taxpayers might mete out for incompetent action. Extending Tiebout's (1956) argument that taxpayers could vote with their feet to express unhappiness with a policy, they suggested as well as that interested taxpayers would be part of an organizing political community.

Ostrom, Tiebout and Warren (1961) argued further that overlapping jurisdictions at the local level were not a sign of disorganized or inefficient local government, but rather emblematic of regulatory and political competition to craft the more effective policy. They termed this situation, of competing governmental agencies and an engaged public, as a polycentric model. Polycentricity involves multiple centers of decision-making that function autonomously on some issues but would coalesce to work on other issues, forming an interdependent system when required. This type of system would govern the dilemma at hand rather than for the convenience of government.²⁰

Polycentric governance could work well in the fluid environment of finance, where financial institutions change, and financial goods transmutate, frequently. McGinnis and Hanisch (2005: 9) argue that

“tensions between individual self-interest and collective goals can be ameliorated (but never eliminated) through the careful design of institutional mechanisms of social choice, rule-making, monitoring, and dispute resolution... Any solution to one dilemma of collective action necessarily generates additional dilemmas in its wake.”

However, finance has become global. Overlapping governance structures would have to consist of globally respected institutions with the capacity to enforce, or at least influence, property rights disputes. Such institutions may not be confined only to government but could, as Ostrom, Tiebout and Warren suggested, include other interested parties. I discuss this idea in the third section of this paper.

In the end, the type of good traded is, fundamentally, based on the property rights accorded to that type of good. It should come as no surprise that many governance dilemmas stem from the range of

²⁰ Similar approaches include McGinnis (1999), which examines bioregionalism and managing to the scale of the ecosystem; Hooghe and Marks (2003) examine how multi-level governance works in the EU through formal and ad-hoc institutions; Imperial (2005) explores collaborative governance in watershed management and beyond, arguing for a flexible approach, and Jones et al.'s (1997) network governance exploration into complex-task industries with uncertain demand yet stable, sustainable labor supply.

possibilities and difficulties in definition, delineation, and transfer of the property rights of goods.²¹ Even where a single good may be in question in a local market, governance becomes complex. Ostrom (1990) details numerous examples of successful sharing of common pool resources through locally-managed institutional arrangements, including sharing forestry resources in a remote Japanese forest, extensive examples of fishery rights shared among fisherman, and others. But complexity increases as factors, such as the size of the market, the number of goods, the types of goods, effects of the market transactions, each increase in scale and/or scope.

In fact, outside of private goods transactions, where rivalrous consumption and excludability greatly simplify property rights, it is more accurate to consider packages of property rights bundled together rather than a single, defined ownership right. Schlager and Ostrom (1993) apply this idea to common pool resources, and a quick summary of their thoughts helps our analysis. They argue that property rights associated with common pool resource goods are tiered: *access and withdrawal* is the lowest rights bundle, in which a user may enter a common pool resource by not harvest anything.

Management empowers the owner to regulate use of the resource and make improvements, but not *exclude* others from access nor determine how access rights might be transferred. *Alienation*, the highest bundle of rights, empowers the property rights owner to sell or lease lower-tiered rights.

I apply three points from Schlager and Ostrom's analysis the subsequent discussion of financial goods, financial firms' internal markets, and the creation of a new common pool resource, too-big-to-fail: One, property rights to goods outside of private goods are better viewed as bundles as opposed to a single right. Two, this tiering of rights helps to understand a government's bundle of rights in goods' transactions, as well as a private sector entity's. Three, because additional economic benefit is derived from moving up the hierarchy of property rights, financial firms will attempt to gain political leverage to better their hierarchical standing (as one would expect of any economic actor).

²¹ This idea should require no support. Hobbes, Rousseau, de Toqueville, the Federalist Papers debated extensively the nature of property rights as a foundation of government.

II. Prelude to the Crisis: banking fragility, politics, and the mutability of goods

Dealing in, managing and transferring property rights is an essential part of the business of financial firms. To understand how financial products transmutate and why financial firms' ownership structures and employment contracts have changed, we need to understand the business and politics of banking.

Banks and bank managers have long been sophisticated political actors embedded in political systems. Banks rely on governmental support and guidance, and are monitored by national and international organizations established for governance purposes. Banks lobby these organizations as well as other political actors²² and, in part, set up and prosecute their business practices to arbitrage regulatory bodies' intent.²³ Banks are also "privately monitored" by investors and other interested parties. In short, banking systems are ideal environments for polycentric governance approaches. I broadly define "banks" to mean the banking activities and bankers, and include activities of "non-bank banks".²⁴

In the course of financing businesses and individuals, banks are privy to extensive amounts of non-public information. The information derived from this relationship banking is sought after by political leaders²⁵ and other interested parties, who observe banks' actions. However, these interested parties are on the other side of the informational divide, which gives banks an edge in creating effective, profitable financial products and selling those products. However, this informational advantage also comes to banks at a price--banks are subject to severe financial fragility. This inherent fragility arises due to banks' intermediation roles: as institutions, they stand between depositor and borrower, funneling capital from one to the other. Failure or panic on either side could cause a bank collapse. Banks also tend to "fund short and lend long", in that depositors' funds are usually shorter-term in nature, while loans tend to be over much longer periods. Bridging this intertemporal gap brings great risk as well.

For these reasons, governmental actors are pulled and pushed toward banks and banks' power. They are pulled by banks' ability to gather and deploy capital, and pushed by the perceived need to monitor and regulate banking activity. These government officials experience an additional tug of war in that

²² See Boot & Thakor (1996) on self-interested bank regulation; Barth, Caprio and Levine (2005) consider the interplay between banks and regulators.

²³ See Alessandri and Haldane (2009); McCulley (2009); Barth, Caprio and Levine (2005) among others.

²⁴ For clarifications and definitions, see McCulley (2009); Stallings and Studart (2006); Allen (2001); Roubini (2008).

²⁵ European leaders used the Rothschilds' letter envoy system to send messages (Ferguson, 2000); see also Feis' descriptions of the interplay between international politics and finance (1930); Polyani (2001); Pauly (2001); Cohen (1996). Relevant banking-related economic development studies include Geddes (1994); Haggard & Maxfield (1996); Kang (2003); Kessler (2000); von Mettenheim & Del Tedesco Lins (2008). Stallings & Studart (2005).

they face a conflict between acting for the public good and pursuing their private gain in their dealings with banks and banking regulation. Barth, Caprio and Levine note, “banking crises are the train wrecks of finance,”²⁶ and these impacts often ripple beyond the financial sector. In 2005, banking scholar Aliber (2005) commented that the years since 1970 “have been the most tumultuous in international monetary history.” His comment rings even truer with subsequent events.

Banking system fragility is endemic, and as banking has become more global, so systemic risks to the global financial system have increased. Recent surveys of banking systems reveal both developing and developed countries have experienced banking system problems.²⁷ Lowering the level of this systemic risk is a major motivating factor behind the actions of many national and international political actors. Policymakers attempt to factor these risks into their policy decisions about the financial system and the broader economy. Alessandri and Haldane (2009) suggest the worm has completely turned:

“...there is one key difference between the situation today and that in the Middle Ages. Then, the biggest risk to the banks was from the sovereign. Today, perhaps the biggest risk to the sovereign comes from the banks. Causality has reversed.”²⁸

One does not have to look all the way back to the Middle Ages to find a time when bank fragility was not the prime risk in governance. Engagement between governments and banking systems increased in the latter part of the 19th century. Coalescence of an interlinked international financial system necessitated signaling and coordinated actions and, occasionally, assistance between central banks.²⁹ Financial system governance was weak—central banking was new and uncertain, and the U.S., the world’s largest economy, would not establish the Federal Reserve Bank until 1913. But the Crash of 1907, which led to cries to restrain the large banks and Trusts, changed policy toward Wall Street and the banks. Government policy changed from *laissez faire* to a more interventionist style. This led to one of many shifts in the structure and business of banking over the last century.

Banking then consisted primarily of merchant and investment banking, and commercial banking, rather than the advent of consumer banking which came in the latter third of the 20th century. Following these changes in investment banking motivates my argument of technological innovation and the resulting

²⁶ Barth, Caprio and Levine (2005), p. 26.

²⁷ Acharya and Richardson (2009); Alessandri and Haldane (2009); McCulley (2009); Barth, Caprio and Levine (2005); Rajan (1992); Rajan and Winton (1995); Reinhart and Rogoff (2009); Reinhart (2009).

²⁸ Alessandri and Haldane, 2009

²⁹ Eichengreen (1996), pp. 27—44. Eichengreen notes the BoE signaled its intentions through discount rate moves, and that central banks increasingly came to each others help, particularly after the Barings crisis of 1890.

change in the banking industry ownership and employment contracts. It will also lay the groundwork for the next section on too-big-to-fail (TBTF), and how a polycentric approach to governance may be the optimal approach to an industry where the institutions and business practices often change.

As noted above, banks are heavily dependent on information. In the case of investment banks, information, reputation and human capital have historically been at least as important as monetary capital. Investment banks grew out of the mid-19th century merchant banking firms, which assisted trade on Atlantic coasts by financing shipments, agriculture and the nascent industrial firms.³⁰ As trading disputes were difficult to resolve in courts due to underdeveloped commercial law, traders looked to long-standing relationships with merchant banks to fund operations. In other words, property rights were difficult to establish and defend, and merchant banks step in to fill this void.

As commercial law became more sophisticated in the Atlantic ports, traders began to rely on legal contracts and needed fewer reputational contracts. Merchant banks, relying on their networks and reputation to fund the expanding industrial firms, changed into investment banks. The structure of these banking entities reflected the long-term, closely-knit nature of the industry: small partnerships with clerks, who learned their skills on the job to become, after a long apprenticeship, partners in their own right. Partnership shares were illiquid, tying partners and those clerks who wished to stay and were sufficiently skilled, into firms for life. Ownership of merchant and early investment banks were a kind of club good. Entrance was predicated on years of work, yet “consumption” of the good was nonrivalrous. In fact, rivalry among partners and/or clerks could destroy the investment banking franchise.

So reputation—of the firm and its partners—became a key form of capital for these firms. Reputation’s natural building blocks were the networks within which firms operated and the tacit knowledge which partners passed on the skilled clerks so that they might succeed them and carry on the firm.³¹ Reputation was, and still remains, a critical part of investment banking specifically and banking in general, and is the foundation of relationship banking.³²

But technology has shaken the tenets of reputation in banking, and this problem must be addressed to rework an adequate governance structure.

³⁰ This section draws from Morrison and Wilhelm (2007).

³¹ Morrison and Wilhelm (2004, 2007); Boot, Greenbaum & Thakor (1993); Ferguson (1999)

³² Boot, 2000.

Investment banking remained in partnership structure until the last fifty years, when technological advances in computers and financial engineering forced many partnerships to dramatically expand and become public companies. To understand fully the effects of the demise of partnerships, it helps to understand the nature of mentoring inside these firms. Mentoring created a unique structure in the banking industry, as a senior banker took on a small number of underlings and trained them, over years, to succeed him. Partners could not sell their shares unless their fellow partners agreed, and so the need to maintain the firm was deeply ingrained. Boot, Greenbaum and Thakor (1993) argue this created two forms of capital in a banking partnership: one, the physical capital in the firm, and two, the reputational capital which was liquefied through establishing a sterling reputation. This enabled a well-regarded firm to leverage its physical capital to structure financing deals. Morrison and Wilhelm (2004) expand this to describe a form of human capital: this reputational asset, plus the tacit knowledge of the partnership which is literally passed down through generations. In both areas of human capital, partners' reach is limited: they can only train, and monitor, a limited number of apprentices.

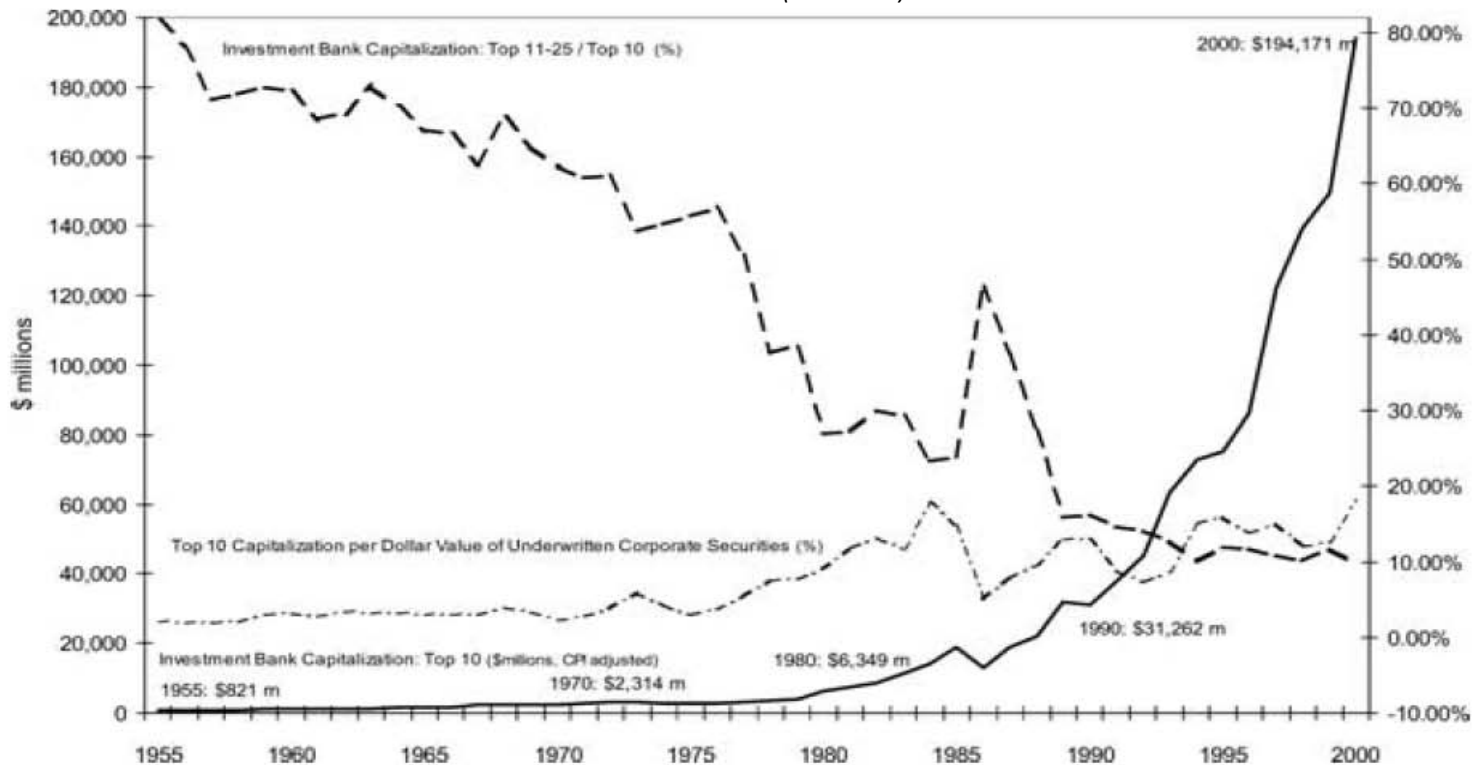
But changes which began in the late 1950's altered this balance.³³ First, computer technology became available. This first affected investment houses with significant retail operations, as data-processing initially empowered the early-adopting firms and, by the late 1960's, forced the late-adopters to substitute this new processing power for clerks in the back-office. The delicate partner-apprentice balance was disturbed in two ways: firms had to drive more transactions through the expensive data-processing assets in order to pay for them, and these capital demands drove up the need for more partners.

Merrill Lynch led the technology investment, and the firm's stunning growth spoke for the industry. The graph on the following page shows the incredible increase in capitalization of the top ten investment banks, and tracks the next fifteen in size as a percentage of the top ten's capitalization, over the period 1955- 2000. These smaller investment banks, while still large in business terms, shrank considerable in relative terms. The third line shows that large banks grew their assets in line with corporate security underwriting. In other words, to underwrite the increasingly larger deals which came to market over this period, investment banks needed to significantly grow their asset base. And growing their capital base meant more and more partners and more junior employees working for each partner.

³³ This section draws from Morrison and Wilhelm (2008).

U.S. Investment Banking Industry Trends, 1955- 2000

From Morrison and Wilhelm (2008: 325)



But, as the number of apprentices grew per partner, and the number of partners grew, the mentoring function first faltered, then died off. Training programs, in-house and through MBA programs, increased. As the skills of some of the partners and younger staff became apparent, the job stability and lifetime employment patterns went into decline.³⁴

In effect, this changed the employment contract from a kind of club good to a private goods market. As bankers began to move from one firm to another, the long-term nature of relationship building between firm and client declined. To some extent, the relationship now became one between a more mobile investment banker and client. In addition, relationship banking became less important as transactions-based banking grew in importance. Financial innovation came more quickly, as Fred Joseph, CEO of now defunct Drexel Burnham Lambert, said in the late 1980's, "one of the paranoias you work with is knowing that everything is cyclical. Today's hot product won't be in three to four years."³⁵ Financial engineering, closely related to the development of the Black-Scholes options pricing model in 1973 and the resulting boom in risk management, proved to be the second major technology shift.

³⁴ Morrison and Wilhelm, 2008: 338

³⁵ Eccles and Crane (1988), p. 123.

As the partnership, and all the long-term, relationship-oriented, reputational culture that went with it, went into terminal decline, the horizons of those in the investment banking business, and banking in general, began to shrink. Higher returns were required by both firms and individuals. The self-designing nature of these firms emphasized product development and deemphasized firm loyalty, as informal teams formed to drive new products:

“McKinsey’s [top consulting firm] techniques of strategy don’t work. Things move too fast. We have three different key products in four years, so what is the strategy? You simply get great people and back them. And even they can’t tell you what they’ll be doing next year.”³⁶

Some new products may have directly, or indirectly, resulted in transmutation as goods shifted from one type to another. In some cases merely repackaging these goods, like repackaging water, may transmutate the nature of the good.

Consider the transmutation of mortgages in the U.S. market over the last thirty years. Until the creation of mortgage-backed securities (MBS), mortgages were a private good between a bank and a borrower or, in the case of a mutual savings and loan association, a kind of club good between the borrowing mutual owner and the rest of the mutual owners. Mortgages were held locally by the bank and serviced over the life of the mortgage loan. The pooling and sale of mortgages allowed remote servicing of each mortgage, but each mortgage was still considered separately. Creation of MBS in 1970 allowed amalgamation of mortgages into a new debt security which comingled all the debt payments so that a stream of dividend payments could be sold. MBS were private goods, and the market rapidly developed. Other asset-backed securities were created to securitize car loans [“CARS”], student loans, credit card receivables, commercial real estate and so on.

But the growth of government-sponsored enterprises began to change the nature of the good. Fannie Mae was converted into a publicly-traded company in 1968, then Freddie Mac was created in 1970. While the debt of Fannie Mae was removed from the government guarantee, a quasi-guarantee seemed to exist. So the influence of “Fannie” and “Freddie” in the MBS market gradually changed the nature of mortgages. The proliferation of mortgages began to take on a quasi-public good nature with some congestion as owning a house became public policy (non-exclusive, nearly nonrivalrous, overconsumed). One might argue the mortgage crisis has made mortgages return to club good status with congestion (now excludable, still somewhat nonrivalrous, with more efficient peak-load pricing).

³⁶ Phil Purcell, CEO of Dean Witter and a *former McKinsey & Co. partner*, as quoted in Eccles and Crane (1988), p. 123. For excellent similar quotes read pp. 120- 125.

MBSs became a prime instrument of leverage, and provide an interesting example of how technology and institutional change enable the financial engineering of mortgage-backed securities.³⁷

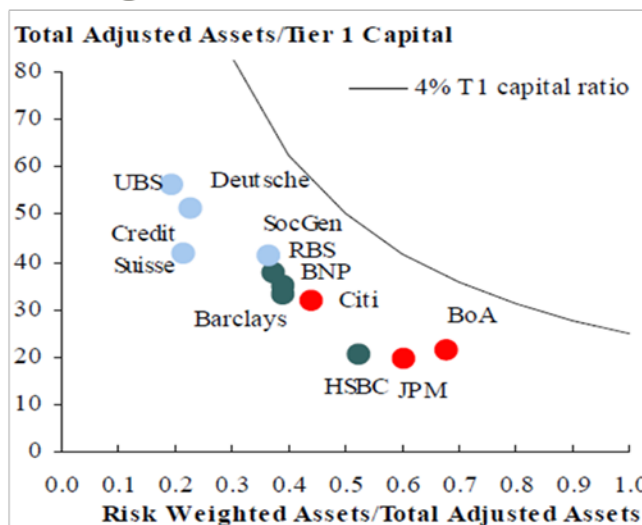
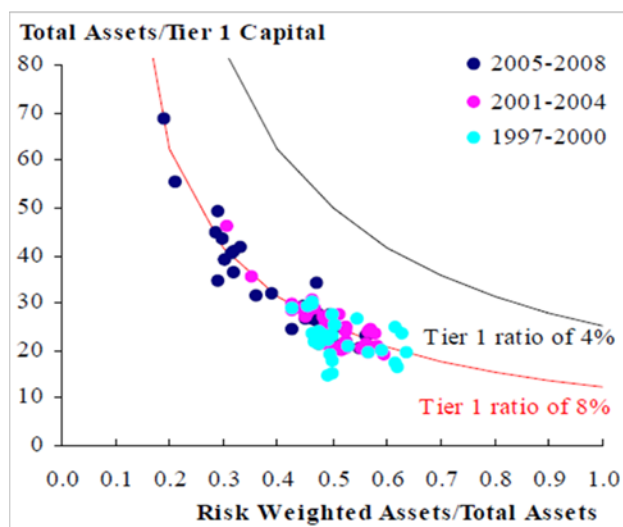
The growth and sophistication of central banking also changed the landscape for banks and led to changes in both firm structure and goods transmutation. Central banking allowed the formation of a fractional banking system³⁸ and, as Polski (2003: 9) notes:

“From a systemic perspective, modern banking functions more like a **club good** than a private good: because banking is based upon a fractional reserve system, banks create money when they lend, hence consumption is neither strictly rivalrous nor perfectly excludable.”

Unfortunately this, too, has led to unintended circumstances. Banks have been empowered to significant lever up their assets to reserves. Alessandri and Haldane (2009) argue that the financial sector has become completely underpinned by government over the last 100 years, and that this process has accelerated dramatically since 1970. We can see the process, in its latter stages, by looking at measures of bank leverage below. On the left, U.K. banks have dramatically increased their total assets as a ratio of their tier 1 capital; on the right, banks in their respective markets have moved toward the leveraged state which their regulatory bodies will permit, engaging in a kind of regulatory arbitrage.

Left: UK Banks migrate up the leverage curve

Right: all banks migrate toward leveraged state



Source: Alessandri & Haldane, BANKING ON THE STATE, Bank of England, 2009

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³⁷ I merely touch upon MBS. For additional details see Cowan (2003); Comptroller of the Currency (1997).

³⁸ A fractional banking system allows participating banks to retain a fraction of deposits in reserve and lend out the rest, thereby increasing the amount of cash in the economy.

The question is why? Why would banks and bank managers take on so much risk by leveraging their balance sheets so much? The answer lies, in part, as banks became too-big-to-fail (TBTF). The near-collapse of Continental Illinois National Bank in 1984, and subsequent testimony regarding the use of FDIC funds to assist the bank, indicated the presence of a TBTF policy in the eyes of U.S. regulators.³⁹ Through this process TBTF became a club good. Smaller banks were excluded but it was nonrivalrous for those inside the club. But what, exactly, constituted membership in the club outside of enormous banks. How big did a bank need to grow? And what, exactly, were the benefits available for joint use?

After the Continental Illinois case, a frenzied debate began about possible moral hazard engendered by TBTF; it has been argued that subsequent attempts to fix this policy problem through the 1991 passage of the Federal Deposit Insurance Corporation Improvement Act have not completely addressed the problem.⁴⁰ Both direct and indirect incentives exist which may drive banks, particularly U.S. banks, not only to acquire domestically but, in some circumstances, may encourage cross-border acquisitions.

Banks might not only incur additional risk-taking given an implicit TBTF guarantee. Becoming TBTF may lower cost of funds, particularly on uninsured deposits, as noted by Mester (2005) and Hughes and Mester (1993).⁴¹ Additional, indirect benefits may be even more important still: Mishkin (2006) notes that TBTF may not be entirely accurate. Rather, “too politically important to fail” may be more accurate. Mishkin argued: “this is certainly true for emerging market countries, where bankers are particularly powerful, leading governments to bail out almost all banks.”⁴² Whether banks can grow to become TBTF, or to be “too politically important to fail”, this adds up to banks’ possible willingness to pay more for such benefits. In a creative paper, Brewer and Jagtiani (2007) argue just that. Analyzing U.S. bank acquisitions between 1991-2004, they found those deals in which the combined bank “became TBTF” by growing assets to at least \$100 billion included, on average, \$14 billion in added size premiums. They interpreted this to be the average amount paid to achieve TBTF status. In fact, Mishkin (2006) argues “too politically important to fail”, rather than TBTF, was the reason for the American S&L crisis of the 1980’s.

³⁹ Brewer and Jagtiani (2007); Mishkin (2006) attempts to address the moral hazard issues created by an implicit TBTF through the 1991 passage of the Federal Deposit Insurance Corporation Improvement Act.

⁴⁰ Mishkin (2006) provides a survey.

⁴¹ Interestingly this result is actually consistent with Stigler’s seminal AER article (1950), in which he argues that acquisitions leading to both monopolistic and oligopolistic may delay of entry by new firms, thereby allowing the larger firms to price at marginal cost and increases profits.

⁴² Mishkin (2006) debates whether any bank is really TBTF, suggesting politics determines if bank failures are allowed or not. This is an interesting argument from someone with extensive government experience.

III. Perverse incentives and suggested governance policies to counteract them

As Reinhardt and Rogoff (2009) argue, we have many more banking crises since 1970 but they last only half as long, because the government bails out the banks. As the governments have provided more of the underpinnings for financial markets and the banks, the banks recognize this, run higher and higher risk profiles, and expect governments to make them whole when they fail. Financial firms' structures as self-designing organizations have created firms which are not only adept at new financial product incubation, creation and transmutation, but also arbitrage regulation, political lobbying and rapid shifts in strategy which may sometimes lead to financial crises.

My argument is a simple, but controversial one: the recent banking system bailout through TARP is the capstone of TBTF becoming a club good.⁴³ Governments outside the United States' have also stepped in to make whole the banking industry at such great cost. Hence the capital discount these firms get when they become too big to fail (TBTF), in fact the whole idea of TBTF, reflects the "club-goods-ification" of banks' balance sheets. Or perhaps more accurately put, the gains are allowed to remain private goods, or club goods, but the losses are socialized. The failures become part of the public goods sector of the economy, but the gains have been privatized, literally.

Governments' growth over the last century has lead to the gradual "publification" of many goods. Governments have become vital actors in economies, and so have moved from providing defense to transportation, then management of the financial sector through central banking, then education, social welfare, healthcare... all these goods use to be private. My argument here is not a normative one; I agree many of these goods are logically public goods. Rather, my argument is to suggest rational governance structures to fit the present banking system. Ostrom, Tiebout and Warren (1961) noted:

[Three views of the] conditions which give rise to public rather than private provision of certain goods and services ... can usefully be distinguished: (1) public goods arising from efforts to control indirect consequences, externalities or spillover effects; (2) public goods provided because some goods and services cannot be packaged; and (3) public goods consisting of the maintenance of preferred states of community affairs.

TBTF and other banking system policies fall into the first category—an attempt to control indirect consequences and externalities—but the policy has taken on a life of its own by providing perverse

⁴³ *Economist*, "The growth of the state: Leviathan stirs again," 2010; McCulley, 2009; Saunders, Smith & Walter, 2009.

incentives. This growth of banks has been paralleled by growth of government as well. I offer several policy ideas for consideration:

1. Volcker's plan for narrow banking makes sense: banks have become larger in part to pursue TBTF status and to build empires. Doing away with TBTF is unlikely at best, but impossible with very large banks. However, this is but a start, as John Kay points out:

“Within every diversified retail bank, there is evidence of the fundamental tension between the cultures of trading and deal-making – buccaneering, entrepreneurial, grasping – and the conservative bureaucratic approach appropriate for retail banking. It is a conflict in which the investment bankers and traders generally came out on top. These institutional conflicts are, perhaps, the heart of the matter.”⁴⁴

2. Because TBTF cannot be completely eliminated, charge for the advantages of systemic insurance (as the tax on banks' assets which the Obama administration has proposed a tax which would do). A charge, through taxation or required contribution to a special fund, would fund future bailouts.
3. Do not move toward a U.K.-style FSA regulatory structure, but rather allow multiple regulators to overlap and monitor. In the United States, as an example, consider the advantages of state-level regulation to enable regulators to be close to the market (that is, follow the concept of subsidiarity). This would benefit federal systems where effective state/provincial governments exist. Internationally, empower effective banking requirements promulgated by international financial organizations like the Bank for International Settlements (BIS), the OECD and other multilateral institutions which have been granted the required clout and have the necessary expertise.
4. Banks, and investors, must be part of the governance structure: it is naïve to think that regulators can solve the governance issues. Moving banks offshore removes some regulatory oversight which can only be replaced through private monitoring. Basel Two is built on this concept; private monitoring recognized many of the excesses of this recent crisis, but management, regulators and other economic actors did not pay heed. Use of industry participants would hew to a polycentric model.
5. Regulatory bodies and regulators must become more dynamic, more anticipatory, in new financial instruments. Rather than build extensive regulatory bodies, engineer more flexibility

⁴⁴ Kay (2010, p. 218).

into the structure. Polycentric approaches help in this regard, as regulatory capture is more difficult with multiple centers of monitoring.

6. Consider the incentives behind partnerships and attempt to revive them: longer-term views, reputational capital and tacit knowledge made for less short-term trading oriented financing. Encouraging partnerships, or partnership-like conditions, can be recreated through tax incentives and compensation plans. Structuring taxable incentives for individuals to think longer-term, will ameliorate some of the shorter-term, get-it-while-I-am-here attitudes which are partly responsible for causing financial crises.
7. Resist the temptation to think we have attained “a permanently-high plateau”, as the brilliant economist Irving Fisher famously said in 1930. Professor Fisher proved to be a naïve investor and lost most of his fortune in the following few years. The idea that financial crises can be eliminated in the future is equally naïve, and closely related to new paradigm fantasies.

We are in what Herbert Simon (2000) called an “organization economy”. He recognized that the economy is made up of organizations and individuals. Individuals in large financial sector economic units are still very much in a market for their skills. Their shorter-term horizons for employment lead to higher discount rates, which inculcates a trading mentality rather than an investing mentality. When one perceives one’s time horizon is shortened, profit maximization rules rather than sustainable practices. And this permeates the corporate person, changing the outlook in that corporation to a shorter term as well.

IV. Final notes and Ideas for a Research Program

Different goods call for different governance regimes. Typing goods allows us to discuss market governance issues, but goods change, or transmutate, over time. These shifts, often catalyzed by a technological shift, an institutional change or a crisis, complicate financial markets as well as make financial markets dynamic and lead to new product innovation. As self-designing organizations, financial institutions are naturally dynamic. This leads to innovation, but also may lead to instability. To craft an effective governance regime for financial markets, financial institutions' growth strategies, the shifting nature of financial goods, the centrality of banking in politics and perverse incentive structures must all be considered. Here I have argued that regulatory capture, pursuit of too-big-to-fail status, and design of financial products actually fueled the resulting crisis.

Technology and institutional shifts changed financial firms over the last fifty years, as an increasingly capital intensity shifted firms' structure and design. This also shrank firms', and employees' payback time, thereby increasing discount rates. Not only did this lead to too-big-to-fail policies (TBTF), but it made TBTF a much more desirable good for firms to pursue because TBTF came with the benefits and guarantees a club good might bring. Among those benefits were the privatization of gains and socialization of losses, as well as lower costs of funding. Hence a public "bad" also resulted.

As noted on the previous page, a better governance structure must include: the banks—self monitoring and mutual monitoring; bank system insurance (tax on assets as Obama administration has proposed); overlapping financial regulatory jurisdiction; limits bank size; an understanding of financial goods types.

The purpose of this paper is to suggest a new research program, and I offer the following ideas and questions for future papers:

- How to reintroduce proper incentives for individuals and partnerships?
- What exactly should be the structure of narrow banking firms?
- Do banks and financial product innovation naturally lead to creation of club goods regimes?
- How can private monitors actually be incented to provide public guidance?
- What additional lessons from environmental policy can be brought into banking system governance?

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