

Why "Club" Goods have Proliferated in Investment Finance

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This paper is dedicated to Lin and Vincent Ostrom, who inspired the ideas, heard earlier versions, and encouraged pursuit of clarity herein and everywhere.

All mistakes are my own and mine alone.

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ABSTRACT

Why are there many club goods, and club good market structures, in investment finance? Why has there been such a proliferation of these types of goods and transaction structures in modern finance? The answers lie in the motivations and methods of financial firms to segment, package and offset risk and to increase profit potential.

This paper presents a theoretical argument to explain why, and how, financial products may migrate toward a club good nature. I employ a goods typology matrix developed by the Ostroms and refined by McNutt. I introduce the concept of *transmutation* in which investment banks employ technology and developments in theoretical finance to package financial goods into new financial products whose resultant property rights shift their good type in the typology matrix. Financial firms are active agents in this process through innovation, commonly called financial engineering.

After examining listed shares through this lens of goods typology, I track the concurrent development, over the last half-century, of mortgage-backed securities and of financial “engineering”—the application of advanced mathematical techniques to develop new financial products. Financial firms are self-designing organizations whose organizational fluidity and capacity to financially engineer not only permits, but encourages and rewards, the design and redesign of financial goods. Property rights structures may change as a result, shifting along either or both dimensions of the financial goods typology. Understanding the club good nature of financial goods, and this dynamic process of transmutation, is of critical importance to good governance.

Why Do Club Goods exist in Finance?

That financial markets are made up of private goods is a passionately-held, near universal belief. At best, this belief is incomplete; at worst, it is wrong and dangerous. This paper presents an inductive argument explaining the proliferation of club goods in modern investment finance. I argue this proliferation has occurred because investment banks create club goods and clubs good market structures to lower risk¹ and increase financial return.² However, governance of financial markets assumes all financial products are private goods and does not take into account the presence of club goods. In order to retain dynamism in financial markets while lowering systemic risks, we must grasp the club goods nature of many financial products.

To frame this argument we must define club goods and examine what a financial product is. A club good encompasses the benefits enjoyed through a package of property rights from which other parties may be excluded, but which are enjoyed in common by the owners who are “members” of the club. Sandler and Tschirhart (1997: 335) define a club 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.” Within the “walls” of the club there may be a tiering of benefits available to those members. Because this paper focuses on products rather than firms or market structures, my discussion is mostly with the exclusionary category, in that I discuss how club walls can be created in the structuring of financial products. I will also touch upon the first two categories of clubs as well by proposing future research into the financial industry structures.

Defining what club goods are requires understanding what they are not. To aid in drawing this distinction, I adopt and adapt Ostrom and Ostrom’s (1977) two-by-two typology matrix to a new usage to analyze financial goods (McNutt, 1999; Weimer and Vining, 2005). As can be seen in Figure 1 at right, the Ostroms divided goods into private, club, common pool resources and public goods and offered examples of those goods. This archetypal framework provided by Ostroms maps generic goods and services along two dimensions- rivalry and excludability.

●●●● <i>Matrix of Goods and Services</i>			
Rivalrous Consumption			
Alternative Use			
Joint Use			
Excludability	Feasible	<i>Private Goods</i>	<i>Club Goods</i>
	Infeasible	<i>Common-Pool Resources</i>	<i>Public Goods</i>

Figure 1: adopted from Ostrom and Ostrom, 1977.

¹ Siquiera (2001) illustrates resultant risk-transfer from agent to principals in an asymmetric club goods structure.

² Scotchmer (1985) provides a model of price-setting firms maintaining profits in a competitive clubs good game.

There are four reasons to employ this specific typology matrix: a more robust typology than Buchanan's continuum (1965), in which he showed club goods as an intermediate state between private and public goods, is required; increasing occurrence of global externalities; modern finance includes products or market structures which belong to each of the four categories;³ and a process I term "transmutation" may be used to package financial goods into new financial products, resulting in a different set of property rights thereby effecting a shift along the matrix axes.

To gain analytical traction I define "financial good" and "financial product" thus: a "financial good" is an indivisible unit consisting of a contractual agreement to participate in ownership of a cash flow while accepting the inherent risk and uncertainty of that good. This definition is meant to be archetypal and so lends itself to the goods typology matrix above. A "financial product" consists of one or more financial goods created and packaged for transaction in a financial market. So in these definitions, financial goods are the building blocks of financial products. The Ostrom two-by-two and this definitional divide are required to explain how, and why, financial goods may be packaged into various financial products, some of which are club goods.

Variation in financial products arises through innovation; financial product innovation is due in large part to the motivations and methods of financial firms to segment and offset risk and to increase profit potential. Risk is defined as the composition of measurable factors which are theoretically diversifiable, as opposed to Knightian uncertainty, which cannot be measured (Knight, 1921: Chp 7; Watkins, 1924: 683-6). New product creation allows for unique profit possibilities according to property rights inherent in ownership structure of those creations. It is essential to realize that goods can be repackaged into a product with property rights, and the new product then maps to another quadrant in the typology matrix. I term this *dynamic* process of product design and engineering *transmutation*, and illustrate transmutation of financial products through examining stock shares and mortgage-backed securities.

This process of transmutation may occur in any industry through a number of catalysts: discoveries, new technologies, crises, shifts in business strategies or governance, and institutional change in government. Sometimes institutions purposefully change a product's type; at other times the change comes about without design. The actual process is complex and often difficult to unpack. But

³ In other papers I discuss common pools in finance such as national or global risk pools. Rivalrous consumption of this good is sporadic and subject to liquidity contraction events which cause congestion. Because congestion may be a temporal factor in many financial markets, I argue that the Ostrom matrix is a better fit for financial markets.

transmutation of financial goods is easier to track than that of generic goods as financial firms innovate as the agents of this change. Financial firms apply theoretical developments in finance, respond to crises, and react to regulatory and market changes to create new financial products or to reengineer existing products. In these transmutations, adoption or adaptation of new technologies is involved.

Investment banks and other financial firms are self-designing organizations⁴ whose organizational fluidity not only permits, but encourages and rewards, the design and redesign of financial products. A flexibility to restructure financial firms around emerging business opportunities has existed from the earlier days of partnerships through to the present period of large, globe-spanning financial services corporations (Chapman, 1984; Hidy, 1941; Morrison and Wilhelm, 2007, 2008; Hayes and Hubbard, 1990: 15- 26). Modern organizational fluidity encourages use of financial engineering to increase the return/risk profile of products through design and redesign (Morrison and Wilhelm, 2004, 2008; Eccles and Crane, Chp 6; Palmer, 2012). Design of a new product or redesign of an existing one may change the property rights structures from that of the underlying financial goods, which would be reflected in a shift along either or both dimensions of the financial goods typology. Club good structures not only provide a vehicle for risk transferral; the tiering of property rights may enhance the profit potential of one class of owners if a new financial club comes with a hierarchical ownership structure.⁵

Complications arise throughout the entire vertical chain of a political economy when the club goods nature of modern finance is not understood. We can group these complications into four levels: 1, Risk/Pricing of product; 2, added risks in firms' structure; 3, financial market issues; 4, social costs. First, a financial product's property rights must be known in order to differentiate between uncertainty and risk. Pricing risk requires measurement, assignment of probability distribution(s) adequately modeling those risk(s) in question, then packaging into risk tranches. Uncertainty- which consists of known unknowns, of which the financial engineer may be aware but cannot assign a probability, and factors which are simply unknown- remains embedded in the financial product's structure after financial engineering. Inability to correctly type financial products may lead to mispricing of risk.

⁴ Eccles & Crane (1988:3) note: "...management practices of investment banks have developed to manage flexible and continuously changing networks of external and internal ties... Because of the complexity of the business and the speed with which it changes, strategy is formulated largely below the most senior level through a grass-roots or bottoms-up strategy. The organizational structure is also largely defined by people below top management."

⁵ Scotchmer (1985) and Helsey and Strange (1991) examine provision of club goods under competition and support this contention that economic profits may result.

Second, in the “olden” days of partnerships, partners had their worth and their reputation at stake (Chapman, 1982; Killick, 1974; Morrison and Wilhelm, 2007, 2008; Ferguson, 1999). But partnerships have declined significantly in most countries’ financial services industries over the last fifty years. The space formerly occupied by partnerships has been filled by large financial services corporations (Alessandri and Haldane, 2009; Jaffee, et al, 2009; Morrison and Wilhelm, 2007; Woolley, 2010) Managers of large financial services firms may regard externalities differently than those in partnerships,⁶ as these managers have less “skin in the game” that did partners. To comprehend who is taking on the risk requires understanding the property rights embedded in financial products.

Third, we hear the oft-expressed desire for unfettered, free, financial markets. The term “financial markets” does not encompass the variety of mechanisms and structures used to transact and exchange financial products, nor does it adequately account for the typology of financial products. Understanding the financial goods typology and the process of transmutation would help in designing regulatory regimes targeted to achieve effective governance while not choking off the innovation so crucial to money and capital markets, thereby allowing more accurate, efficacious risk segmentation and pricing.

Fourth, this fundamental difference in institutional adaptive capacity between financial firms and regulatory agencies leads to wider social challenges. Regulatory regimes, usually established or reformed after crises, are more rigid and institutional change more difficult to effect than in self-designing financial firms. Because financial firms’ possible failures may threaten financial systems’ solvency, governments establish policies to protect the financial system by protecting financial firms, particularly very large banks (Alessandri and Haldane, 2009; Brewer and Jagtiani, 2007; Hughes and Mester, 1993; Mester, 2005). Barth, Caprio and Levine (2005: 26) noted “banking crises are the train wrecks of finance”, and so governments must take into account financial club goods to design regulatory structures which decrease, rather than increase, the possibility of train wrecks.⁷

My argument focuses on financial products and proceeds in three sections. The first section develops the goods typology by applying it to several products, including stock shares. The second examines the process of transmutation through tracing investment banks’ transformation very large, technology-

⁶ Principal-agent problems arise as professional managers’ own reputations and personal worth are less at risk, and as their personal incentives may be less closely aligned with corporate incentives.

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.”

intensive firms and the concurrent development of mortgage-backed securities over the last fifty years. Lastly, I comment from a social costs perspective and suggest new avenues of research.

Property Rights, Shares, and Crafting a Financial Goods Typology

Buchanan (1965) conceptualized a continuum of rivalrous consumption between an archetypal private good, defined as having only one consumer, and public goods, from which potential consumers could not be excluded. Between the poles of this continuum he placed club goods—consumed by more than one, but subject to crowding or congestion conditions which limited consumption. But a problem arose—where to place common pools, which are rivalrous yet non-excludable?

McNutt (1999) provided a “Law and Economics” typology in which he expands our view of how these goods would be viewed from the perspective of externalities. This elegantly encompasses most

●●● <i>Four Types Matrix of Goods and Services</i> McNutt’s Law & Economics Typology		
	Rival	Non-Rival
Excludable	<i>Private Goods</i>	<i>Club Goods</i> McNutt suggests <i>Economics</i> may view this as a “local public good”
Non-Excludable	<i>Private Externality</i> McNutt suggests <i>Economics</i> may view this as a “public good”	<i>Public Externality:</i> McNutt suggests <i>Economics</i> may view this as a “pure public good”

Figure 2: adopted from McNutt (1999: 930, Tables 1 and 2)

common pools, as shown in Figure 2. *Rivalry* would increase as the acquisition or consumption of a good removes that good from the remaining pool of goods. *Excludability* delineates the degree to which ownership of a good is restricted through conditions and requirements imposed by the provider. McNutt notes that pure public goods are difficult to define; one might argue this typing may be becoming a purely archetypal category.

The emergence of global common pool resource issues provides an additional complication in that externalities may not be solely private. So I return to the names used in Ostrom and Ostrom’s (1977) goods typology to allow a more flexible range of possible externalities.⁸ Aligning products and services along the two axes of *Exclusivity* and *Rivalry* results in four archetypal goods. As Adams and McCormick (1987), Weimar and Vining (2005) and others have noted, this matrix might be profitably expanded to add additional goods types. For parsimony I retain the Ostrom two-by-two matrix, and incorporate McNutt’s externality mapping.

⁸ McNutt’s discussion of externalities’ boundaries dovetails with how financial products have developed.

In an archetypal private goods market, property rights are owned by a single, defined entity; the buyer enjoys nonrivalrous consumption of that good, and is able to exclude others from using that good once purchased.⁹ Many market actors and observers argue that financial products are private goods. But through examining property rights as mapped by the two-by-two matrix, we can see that

		Rivalry	
		Alternative Use	Joint Use
Excludability	Feasible	Private Goods: Cars Houses Shoes	Toll Goods/ Club Goods: Toll Roads Cable Television Theater Performance
	Infeasible	Common-Pool Resources: Bandwidth Information Groundwater	Public Goods: Roads National Defense Public Education

Figure 3: adopted from Ostrom & Ostrom, 1977; goods listed by Ostroms

some financial products do not map into the private goods quadrant. Consider how a simple example in the financial markets, that of a listed share, might fit into this description of a private good. The share 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 subtracted from the pool of goods available for use by others. So far, this sounds like an archetypal private good.

But this simple share example contains five complicating factors: once purchased, the share may be resold without any diminution in value due to previous usage and resulting wear (unlike, for instance, the case of a tangible durable good); two, new shares may be issued by the company which rank *pari passu* with previously issued shares and are completely indistinguishable from those preexisting shares;¹⁰ three, the property rights attached to the share may be altered, either through market structure, corporate action, bankruptcy, or governmental intervention; four, the “benefits” from ownership in terms of dividends, potential price appreciation, voting rights and so on are jointly available to shareholders as a group, although; five, the number and/or class of shares held sometimes influences the holders’ de facto, and occasionally de jure, property rights.

It is clear that shares would fall in the north half of the Ostrom 2x2: purchase is required, and owners exclusively enjoy the dividends, influence over management, and stock appreciation. Barring

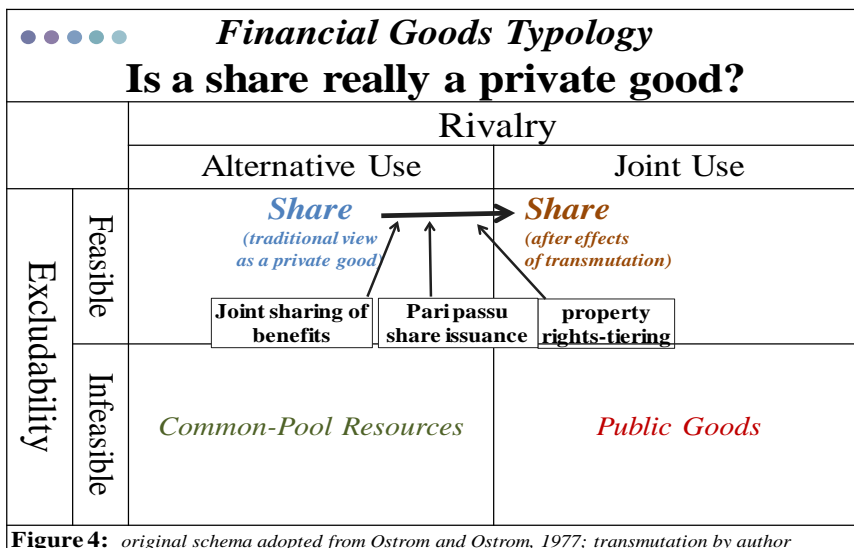
⁹ Weimer and Vining (2005)

¹⁰ *Pari passu* here means ranking equally with previously-issued shares. Literally, “of equal step”. Note that issuance of additional shares sometimes may or may not change the value of the company, as in the case of employee Stock Ownership Plans or rights granted to management.

bankruptcy, nationalization or some corporate action, shares are arguably a kind of durable good in that they can be resold rather than simply consumed once, but do not diminish in value through “usage”.

But shares are not entirely subtractable. Additional shares may be issued through public stock offerings or directly to employees through Employee Share Option Plans (ESOP), or created through granting options to purchase, conversion of convertible bonds, warrant exercise and so on. The benefits are available to shareholders generally as a group; in most countries it is illegal to exclude one set of owners of the same class of share from those benefits. Shares are closer to the club good quadrant than we might first think. But it is also important to remember that club goods structures do not necessarily confer the same rights on all owners, a fact Buchanan (1965: 4) recognized in his seminal article.¹¹ For instance, creation of multiple classes of shares may concentrate voting rights in one class of shares.

In fact, Figure 4 plots a path through the goods typology matrix which our view of shares’ good type would follow if we took on board all the ideas described above. The effects of joint sharing of share ownership benefits, widespread ESOP introduction and increased issuance of shares *pari passu* push shares toward the clubs good quadrant.

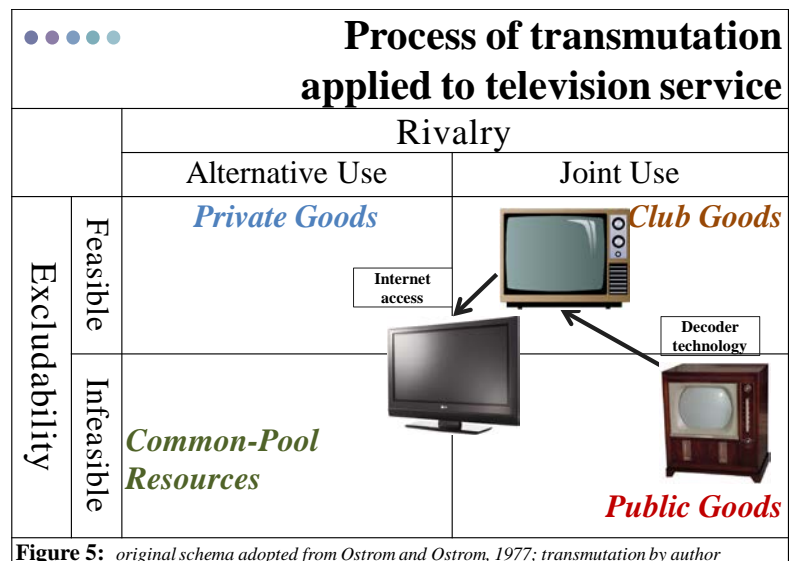


Returning to our idea of financial goods defined as indivisible units, and financial products as amalgamations of one or more financial goods, consider that a share could be divided into component parts. For instance, the dividend stream, voting rights and fractional company ownership are separate components, combined to form the financial product which is a share. Note that each component, or financial good, may be stripped out of a share and sold.

¹¹ See also discussions of exclusion in Helsley and Strange (1991, 1994); Sandler and Tschirhart (1997) survey of club theory; Schlager and Ostrom (1992) applicable discussion of tiered rights in common pool goods.

Contrast this analysis of a share with the branding and sale of water as a product. Before widespread distribution of bottled water, water had traditionally been considered a common pool resource. Commercial bottling of water began at local springs, and then grew into a global market as demand for this private good expanded. This enabled marketing of a lucrative new type of “product” of which the constituent units include the water, packaging, distribution and the branding. The taste is inherent in the product as it is unique to each water source. This is water’s path of *transmutation*, as firms figuratively and literally packaged the property rights around a set quantity of this indivisible good, water.

We see in the water example that, through repackaging of an underlying good or set of goods, the original set of property rights around the product may change thereby causing a shift in good type. *Transmutation* of a good is often catalyzed through some technological innovation. To illustrate, consider the transmutation path of television service over the past 50 years. First freely broadcast (with commercials to pay for costs), television programs came to be provided as a public good, then 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). Delivery of content over the internet and cable has caused a new permutation of television content, leading to the hybridized private/clubs good structure of pay-per-view products with public goods-aspects of the internet.



Minasian (1964) famously asked of Samuelson, in their published-paper debate about television, the question any economist would ask: “who pays?”¹² This question hinges on who expends to obtain the property rights to a product. Probing the transfer and ownership of goods and products, Demsetz (1967) noted that transactions involve the exchange of property rights. He wrote:

¹² Minasian (1964) famously asked this of Samuelson in their published-paper debate about television.

“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, italics added)

Demsetz’ property rights view of transactions encapsulates how financial product complexity arises, in that rights develop to internalize externalities. Perhaps the critical “externality” in banking operations arises from the question of who ends up with the uncertainty associated with a financial product. Financial institutions seek to identify where uncertainty exists, then quantify the measurable portion of that uncertainty probabilistically, then take the result—termed risk—and mitigate that risk. In those attempts, financial institutions innovate to create and package new financial products. How the risk is apportioned and the uncertainty distributed is then dependent, in part, on the type of good.

Financial Innovation, Technology and the Transmutation of Financial Goods

For purely private goods—where complete property rights pass from seller to buyer, the goods are easily quantified, and the good may be immediately consumed—market structures lend themselves most readily to classic Smithian invisible hand transactions. Transaction prices, input and delivery costs, and production figures are easily enumerated so that supply and demand dynamically balance. In the case of shares, precise, real-time transaction details do exist, but shares do not neatly conform to archetypal private good characteristics as shown above. This complication in “typing” shares arises through the amalgamation of a share’s component parts—each “financial good”- and the associated property rights of each component part.

The amalgamation of financial goods into a financial product is a key part of the innovation of new financial products (Eccles and Crane, Chp 6; Palmer, 2012). Sometimes financial innovation involves transmutation of a financial product—a package of financial goods- into a new financial product with a different set of property rights. This process of transmutation comes about through financial engineering, and the self-designing aspects of modern investment banks’ organizational structure. In short, transmutation of financial products is a dynamic process whereby banks reengineer configurations of existing financial goods into new packages with a different set of property rights.

Innovation and transmutation have accelerated over the last fifty years as financial firms’ investment in computer technology and financial engineers exploded (Hayes, 1979; Morrison and Wilhelm, 2008:

Palmer, 2012). The global financial services industry invested an estimated \$500 billion in information technology in 2009, the largest commitment of any institutional group, including all governments worldwide (Economist, 2009). While the pace of financial innovation has accelerated over the last fifty years, innovation has long been a part of finance, as banking has always involved the transfer and intermediation of property rights and the distribution of those property rights' associated risks.

Tracing coincident changes in the nature of investment banks and the development of mortgage-backed securities (MBS) over the last fifty years provides three lessons. The first lesson is how computer technology drove the organizational shift of investment banks from partnership to large, self-designing organizations. Tracing the path also illustrates the transmutation of mortgage products into MBS and the role of technology. And lastly, origins of the financial crisis beginning in 2007 illustrate the dangers of governments, investment banks and the public not understanding the nature of financial club goods.

The roots of investment banks' self-designing organizational structure began in the mid-19th century, when the Atlantic trade between the United States and Europe shifted toward a more contractual law-based model and away from the principal-based model. Anglo-American merchant banks, which had assumed substantial risk as principals intermediating between agricultural producers in the U.S. and buyers across the Atlantic, gravitated toward more investment banking business in response to these legal changes and emergent opportunities (Morrison and Wilhelm, 2004, 2007; Hidy, 1941: 63-5; Hayes and Hubbard, 1990; Killick, 1974).¹³

The structure of those banks retained the long-term, closely-knit nature of the industry.¹⁴ These small merchant banking partnerships employed clerks who learned their skills on the job to become, after a long apprenticeship, partners in their own right (Chapman, 1984: 61-2, 131-41). Partnership shares were illiquid, tying partners, and those clerks who wished to stay and were sufficiently skilled, into firms for life. Reputation—of the firm and its partners—was a key form of capital for these firms (Boot, Greenbaum & Thakor, 1993; Chapman, 1984: 59-63, Chp 5; Ferguson, 1999). Banks were hierarchical in structure, with the “seniors” instructing the “juniors” for decades, even after retirement.¹⁵

¹³ A similar process of change occurred with merchant banks concerned mostly outside the Atlantic trade.

¹⁴ Supple (1957: 163-6) provides an excellent overview of intermarriage and linkages among German-Jewish investment banking partnerships, and also in Lee, Higginson & Co. example, p. 169.

¹⁵ Even after death: Baron Anselm Rothschild instructed his London cousins in the mid-19th century: “*Your mother tells me that Herries told your good father (then deceased) in her presence to mind and not trust the Bank [of England] without guarantee... as the Bank being involved in difficulties may stop suddenly...*” Chapman, 165.

Boot, Greenbaum and Thakor (1993), Hidy (1941: 58) and others have argued there were two forms of capital in a banking partnership: one, the monetary capital in the firm, and two, the reputational capital which was liquefied through establishing a sterling reputation. Reputational capital enabled a well-regarded firm to leverage its monetary capital to structure financing deals. Morrison and Wilhelm (2004) expand on this argument to describe a second form of human capital in addition to this reputational asset: the tacit knowledge, embedded in partners' experience, was passed down through generations. With both types of human capital, partners' reach was limited: they could only train and monitor a limited number of apprentices. The 19th century merchant banks' business model, one of intermediation in property rights through the financing of trade and investment deals, survived in this hierarchical partnership structure for next century even as the banks adapted to new technologies. These technologies included very rapid sea transportation through clipper ships, the development of telegraph and telephone, and creation of new organizational forms such as joint-stock banks and syndication (Chapman, 1984; Ferguson, 1999; Hidy, 1941).

But, beginning in the late 1950s, the spread of computer technology disrupted the balance between these different forms of capital (Morrison and Wilhelm, 2004, 2007, 2008; Hayes, 1979). Investment houses with significant retail operations were the first to be affected by the introduction of data-processing capacity. Merrill Lynch was the early investor in mainframes in the United States, and American investment banks led the world in adopting computing capacity. By the late 1960's, late-adopters were forced to substitute this new processing power for clerks in the back-office.

Concurrently, the development of MBS in the U.S. market over the last 40-odd years was, in fact, driven by banking's developing technology prowess. The underlying financial good, mortgages, provide an interesting twist on the archetype of a private financial good. Mortgages have been structured as either a private good between a bank and a borrower, or, in the case of a mutual savings & loan, a kind of local club good between the borrowing mutual owner and the rest of the mutual owners. Mortgages were usually held locally by the bank and serviced over the life of the mortgage loan by the bank's officers (Bartlett, 1989: Chp 1). The relationship between the borrower and the banker sometimes extended to other products, and sometimes extended through multigenerational ties.

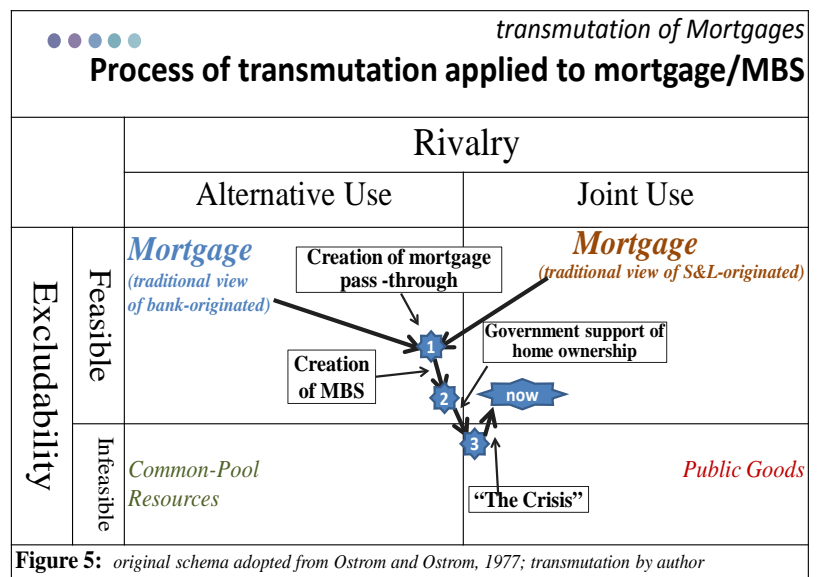
Technology empowered financial firms to "pool" thousands of mortgages into mortgage pass-through securities in 1968. Each mortgage was still considered as a separate entity even though remote servicing of each mortgage replaced the local banker's local touch. Creation of MBS a few years after

1968 allowed amalgamation of mortgages into a new type of debt security which comingled all the debt payments so that a stream of dividend payments could be sold. An MBS structure took the underlying mortgages, whether they were club goods or private goods, and separated the ownership and the servicing of those underlying mortgages, thereby creating a new, easily-traded private financial product (Bartlett, 1989; Hayre, Mohebbi and Zimmerman, 1995). Conceptually, mortgages were packaging into a new financial product to be traded through a market structure. The owner of a MBS had exclusive rights to consumption of the associated cash flows in common with other purchasers of that same product. We can track the transmutation path of MBS in Figure 5 below, as the development of

“mortgage-pass-throughs” is coded as  and the creation of MBS coded as path to .

But the same technology investment which enabled investment banks to create MBS also pushed the banks away from the hierarchical partner-driven model toward a self-designing, transaction-driven organizational structure (Hayes, 1979; Hayes and Hubbard, 1990; Morrison and Wilhelm, 2007, 2008). The delicate partner-apprentice balance was altered by technology in two ways: firms had to drive more transactions through expensive data-processing assets in order to pay for the computer investments. The resultant capital demands for technology investment drove the demand for more partners to generate revenue in order to cover costs of the investment. Both the number of apprentices per partner grew and the number of partners grew, causing the mentoring function to falter at both a group level and a firm level. To compensate for this decline in training though mentorship, formal in-house training programs grew and the hiring of technically-trained MBAs also increased. Technical skills of younger staff and some younger partners liquefied the labor market as firms bid for the skills needed for new products; job stability and long-term employment patterns went into decline (Morrison and Wilhelm, 2008: 338).¹⁶ Transaction banking waxed as relationship banking waned.

In other words, both the capacity and the motivation to innovate increased. The rise



¹⁶ See Hayes (1979) for hiring practices (160-1) for capital demands and organizational shifts (168)

of transaction banking heralded a deal-making, deal-centric culture, resulting in a decline of that long-term commitment which had underpinned relationship banking. Technological demands and the pace of financial innovation concurrently accelerated in the 1980s for financial firms. Fred Joseph, CEO of now-defunct Drexel Burnham Lambert, said in the late 1980s, “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” (Eccles and Crane, 1988: 123). Financial engineering, closely related to development of the Black-Scholes options pricing model in 1973 and resulting boom in risk management, proved to be a second major technology shift.

Note the tight correlation between an expanding technological base and the capacity to “financially-engineer.” New hot products not only drove banking profits; hot products enabled the bank to survive. But hot products also drove the need for more technology investment. To fund these investments, banks had to structure larger, more profitable deals, hiring those with financial engineering capability to execute those deals. Financial engineering enabled rapid growth of the asset-backed securities market; in addition to MBS, financial products to securitize car loans (“CARS”), student loans, credit card receivables, commercial real estate and so on were created and issued (Bhidé, 2009: 234-5). This process of repackaging of existing financial goods into new financial products continued with the development and expansion of CMOs and CDOs.¹⁷ Self-designed around new products, investment banks were confronted with increased positive incentives to innovate for profit, and negative incentives to innovate in order to survive.


Over this period the growth of government-sponsored enterprises like Fannie Mae and Freddie Mac increased the availability of the underlying financial good, mortgages. Fannie Mae was converted into a publicly-traded company in 1968, and then Freddie Mac was created in 1970. While the debt of Fannie Mae was removed from the U.S. Government’s guarantee, a quasi-guarantee still seemed to exist (Congleton, 2009; Jaffee et al, 2010: 121). This implicit guarantee and the enormous increase in mortgages underwritten by “Fannie” and “Freddie” subtly lowered the risk profile of mortgages.

In addition to direct involvement in the mortgage market through government-sponsored enterprises, U.S. government policies led to increasingly active support of home ownership throughout the 1990’s

¹⁷ Creation of collateralized mortgage obligations, or CMOs, were another advance in financial engineering which further separated the underlying financial instruments from the final product. Holders of differing tranches in a CMO give each differing rights to the interest and principle payment. CMOs are a form of CDOs (collateralized mortgage obligations), some of whose issues played a major role in the financial crises which began in 2007.


(Congleton, 2009). As policy reflected the generally held view that home ownership was a cornerstone in the foundation of a good democracy,¹⁸ mortgage issuance grew rapidly (Congleton, 2009; Jaffee et al, 2010; Reinhart and Rogoff, 2009: 211-3). Proliferation of mortgages expanded further as debate over whether home ownership was a kind of citizen “right” grew in intensity. Banks recognized that mortgages were beginning to gravitate toward a non-excludable nature as owning a house became public policy: extensive promotion of home ownership made mortgages more non-exclusive as barriers to obtaining a mortgage became porous due to lax banking oversight and due diligence. Also, capacity to expand mortgage-lending almost at will translated into an expansive supply, thereby lowering rivalrous consumption. As banks moved toward the “originate and distribute” model of mortgage-writing and MBS issuance, the transmutation of mortgages into MBS led to a flood of dubious MBS issues. The Economist (2008) summed up the situation:

Old-fashioned mortgage lending is like a marriage: both the bank and the borrower have an incentive to make things work. Securitization, at least in this market, was more orgiastic, involving lots of participants in fleeting relationships.”

As a consequence, mortgages became an overconsumed good as originators (the banks) and many consumers ignored the negative externalities. Banks eagerly took advantage of Fannie and Freddie’s willingness to underwrite MBS issues and of investors’ willingness to buy those issues. This proved a dangerous cocktail of implicit and explicit governmental support, the ease of obtaining mortgages and aggressive lending. Government policies pushed MBS—a club good—toward the public goods due, in part, to a lack of understanding the nature of club goods. And the “managers” of the clubs ignored fiduciary responsibilities to capture greater market share and profits. This is coded as the path to .

In effect, risk became untethered from the underlying financial product as the question of “who pays” became so difficult to answer. Through packaging of mortgages into MBS, the process of transmutation had shifted the associated risk. Were MBS a purely private good, the risk would have been borne by the owner. But with government support through Fannie Mae and Freddie Mac and an implicit policy to promote home ownership, a willing public and bankers seeking transactions at the expensive of fiduciary responsibility, the result was a financial catastrophe.

¹⁸ An early citation of this in Willmann’s (1986) *LA Times* article became repeated often in the 1990s.

Now that access to mortgages has become much more exclusive, and mortgage issuance significantly lower, the financial crisis has caused MBS to move closer toward a club good status. This impact of the present financial crisis is coded as the path to  .

Final Thoughts and Ideas for a Research Program

As I noted above, complications arise throughout the entire vertical chain of a political economy when the club goods nature of modern finance is not understood. To differentiate between Knightian uncertainty and risk, a financial product's property rights must be known. Very large financial services firms are quite different animals in comparison to the merchant banking partnerships of old. Regulatory and governance structures must understand both the typology of financial products and the process of transmutation. Because regulatory and governance structures are more rigid and institutional change more difficult to effect than in self-designing financial firms, society would benefit from designing regulatory regimes to obtain effective governance while still retaining the benefits of financial innovation.

Typing goods enables us to discuss financial market governance issues from a different perspective. Banks exist to provide capital and to intermediate in property rights transfers. In these functions, banks seek to ameliorate risk while increasing profits. Engineering financial products and services using club goods structures advances these goals. While transmutation of financial goods complicates financial market regulation, it also makes financial markets dynamic. But complications arise with non-private goods due to the complex property rights aspects. Club goods may lend themselves more easily to side payments, where admittance to the club may be negotiated outside standard market negotiations. Natural monopolies and oligopolies form with club and toll goods due to large capital expenditures or the natural structure of resource markets or, both, as in financial services. The structure of the financial services industry may lend itself to oligopolistic competition because of the network benefits of expansion, and the regulatory capture benefits of a small group of very large institutions.

Mishkin's (2006) turn of phrase—"too politically important to fail"—nicely describes the far-reaching consequences for global financial system stability. Reinhart and Rogoff (2009) have noted there have been many more banking crises globally since 1970 but that these crises last only half as long as pre-1970 crises. They argue this reflects government bailouts of large banks. As the governments have provided more of the underpinnings for financial markets and the banks, larger banks recognize this, run higher risk profiles as described above, 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 regulatory arbitrage,

political lobbying and shifts in strategy which sometimes lead to financial crises. Understanding the nature and transmutation of financial goods is a step to addressing global financial system fragility.

Resulting negative externalities have led to ineffective, sometimes counterproductive, government responses, including expansion of too-big-to-fail (TBTF) policies. Enormous social risks and uncertainty have resulted, as large financial institutions have been able to privatize financial gains, while socializing the losses.

Such questions of financial products' classification and transmutation are important because the world has become so dependent on financial engineering and the broader foundations of finance. As Alessandri and Haldane (2009) nicely summed up banking system risk:

“...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.”¹⁹

¹⁹ Alessandri and Haldane, 2009

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