

THE DECLINE OF PARTNERSHIPS AND THE RISE OF CLUB GOOD STRUCTURES IN INVESTMENT BANKING

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All mistakes are my own and mine alone.

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

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THE DECLINE OF PARTNERSHIPS AND RISE OF CLUB GOOD STRUCTURES IN INVESTMENT BANKING

Although little-appreciated, banking has long consisted of club goods and club good market structures. 19th-century merchant banks were clubs consisting of a small number of partners and apprentices crafting trade finance and helping to finance wars. This paper chronologically follows the transformation of merchant banking into investment banks, then into the SIFIs of today [Systemically Important Financial Institutions], through the prism of two areas of technological change: new ICTs [information and communication technologies], and “internal” technologies of an organizational or product-development nature. Over the course of this two-century transformation, reputational capital plummeted in importance as needs for financial and informational capital skyrocketed. Informational capital, once internally-developed, became externally-acquired as firms bid for talent rather than growing it through mentoring. Organizational flexibility, intense competition, and the time-critical nature of banking encouraged rapid adoption of new technologies. Using emergent technologies, investment banks engineered club good market structures to alleviate or transfer financial risk while enhancing profits through hierarchical ownership within the club. Market and social governance implications are profound, as this risk transfer occurs partly through pushing risk out of the club and into economy and society.

Keywords: Club goods, banking history, self-designing organizations, forms of bank capital, technology, reputation.

INTRODUCTION

[Bankers] love leveraging the sovereign's safety nets with minimal prudential regulation. This does not make them immoral, merely astute interpreters of the circumstances they face. (McCulley, 2009)¹

This paper examines how technological changes transformed banking from small, club-like partnerships into globe-spanning SIFIs [systemically important financial institutions], but with a twist. I argue herein that the club nature of those banking partnerships migrated out of their organizational structure, and into financial products and cross-firm structures. Banks themselves acted as agents of this change by employing two sorts of technology: advances in information and communications technologies [ICTs], and “internal” technologies, which include adopting new organizational forms and financially-engineering² new products with unique property rights. The resultant transformation of banking has profound economic, political and social effects.

The oft-heard cry for free and open financial markets implicitly assumes that all financial products are private goods, because open markets are defined as those in which atomistic buyers and sellers meet openly to directly exchange such goods (Buchanan, 1965; Ostrom, 2010; Samuelson, 1954). This assumption of free and open financial markets explicitly ignores the presence of club goods or common-pool structures in finance and downplays the role of financial engineering to create club good forms of property-rights structures.

Finance is subject to constantly changing circumstances that drive financial engineers and bankers to create new products and to optimize organizational structures in order to compete. Although we are accustomed to viewing investment products such as shares and bonds as private goods, and viewing organizational structures in investment finance such as venture capital funds

¹ McCulley is Managing Director of PIMCO, a large fixed-income investment management house.

² Financial engineering creates new financial products and structures using advanced financial techniques.

and investment banking partnerships as unitized corporate structures, these views are incorrect. Selmier (2014) proposed a proliferation of club good structures in modern investment finance occurred because investment banks create club goods and club good structures in order to lower a bank's risks³ and increase financial return.⁴ A two-by-two typology matrix borrowed from the public choice literature (McNutt, 1999; Ostrom & Ostrom, 1977) was used to examine financial products and organizational structures. The result is Figure 1, which divides goods into four archetypal categories by plotting two attributes of property rights, rivalrous consumption and excludability. Moving along the axes in Figure 1 from the southeast toward the northwest corner, *rivalry* increases as consumption removes that good from the remaining pool, and *excludability* increases as the provider's capacity to impose conditions and requirements restricts ownership of, or access to, that good.

Insert Figure 1 here

Cerny (2014) and Selmier (2014) argues that financial products may actually appear in any of these four categories—private, club, common-pool resource, and public goods—based on the embedded property rights designed into the product or structure. But typically financial products are designed as club goods. Profits may be enhanced for senior classes of club members (“club management”) through a hierarchical ownership structure engineered into the club. Risk may be better controlled through the unique ways in which clubs lower uncertainty, distribute losses, provide discipline over club members, and possibly push risk outside the club walls. Selmier, Penikas and Vasilyeva (2014) extended these ideas to look at socializing of systemic financial risk. They proposed that, as financial risk grows to a systemic level, it becomes a kind

³ Siquiera (2001) illustrates resultant risk-transfer from agent to principals in an asymmetric club good structure.

⁴ Scotchmer (1985) provides a model of price-setting firms maintaining profits in a competitive club good game.

of common-pool from which market participants were explicitly not excluded *even if they wished to be excluded*. That is, all were forced to bear risk through the actions of some.

This paper historically traces how and why the inherent club goods nature of finance led to a present day industrial structure dominated by SIFIs. I argue that technological changes served to push club good structures out of banking partnerships and into the broader industry, then onto entire political economies, with those very banks acting as agents of this change. While similar to Rajan's (2006) argument about how technological and organizational change creates potential systemic risk, I differ by introducing the property rights of financial club goods into this construct and by suggesting that risk is simply put onto other actors, not systemically lessened.

Organizational flexibility, intense competition and the time-critical nature of banking encouraged rapid adoption of new technologies to capture emerging business opportunities, increased the return/risk profile of products, and fended off competition (Eccles & Crane, 1988: ch. 6; Hayes, 1979; Morrison & Wilhelm, 2004, 2008). Table 1 sketches the arc of this paper over a two-century period, during which ICTs and "internal" technologies of an organizational or product-development nature transformed some merchanting partnerships into merchant banks, then into investment banks, and finally into enormous multiline financial firms. The largest of these became SIFIs. As these surviving banks embraced new technologies, they self-designed new organizational forms at firm and industry level. Over the course of this transformation, the relative importance of three forms of bank capital dramatically changed: *financial* capital needs skyrocketed while *reputational* capital plummeted in importance; *informational* capital shifted from internally-taught tacit knowledge to an externally-acquired resource through hiring and movement of labor, as firms bid for talent rather than growing it internally through mentoring.

Throughout the paper, I highlight club good structures in finance during each phase of this development.

Five sections span roughly a half-century each. The first section looks at the birth of merchant banking as Anglo-American merchant firms worked to develop trade contract law for the Cross-Atlantic trade. The second looks at establishment of telegraph networks and the rise of large joint-stock banks. I use the French financial revolution establishing *Crédit Mobilier* as a vehicle to show the resultant changes in capital demand. The third examines the decline of the City, London's financial district, as American political and financial power waxed; the fourth looks at investment banks' transformation into very large, technology-intensive broker-dealers *cum* investment banks through computing and IT investment. Lastly, I look at how banks have expanded their present-day technological advantages and the concurrent, unplanned, decline of reputational capital.

Insert Table 1 here

MERCHANT PRINCES [FIRST HALF OF THE 19TH CENTURY]

The Anglo-American merchant-bankers achieved monetary gain by lending the prestige of their name without lending any money whatsoever in most cases. (Hidy, 1941: 58)

While banking activity began millennia ago, what became modern merchant and investment banking was intricately linked to cross-Atlantic trading between the New World and Europe, especially to the cotton trade. This trade led some merchants to move into trade financing, and from there into industrial and government finance over the course of the nineteenth century (Chapman, 1984; Hidy, 1941; Morrison and Wilhelm, 2008). Foundation trenches of these merchant banks were dug during the eighteenth century, and the Napoleonic Wars set the foundation stones for the banking houses to come. Economic historians note the wars may have catalyzed the linkages between the financial economy and real economy in the United Kingdom and beyond. Prosecuting the war required significant capital-raising, which brought about the first efforts at syndication. Indirectly, linkages involving increased demand for timber and food, revived flagging animal spirits in general economic activity, and resulted in complete mobilization of national economies (Buchinsky and Polak, 1993; Kennedy, 1987: 76–84; Rasler and Thompson, 2000; C. Tilly, 1992: 109–17). The “two-way system of raising and simultaneously spending vast sums of money acted like a bellows, fanning the development of western capitalism and of the nation-state itself” Kennedy (1987: 77).

The structure of these emerging merchant banks reflected the long-term, closely knit nature of merchanting: small partnerships employing clerks who learned their skills on the job to become, after a long apprenticeship, partners in their own right. Partnership shares in merchanting firms were illiquid, thereby tying partners, and those clerks who wished to stay and were deemed to be of sufficient skill, into these firms for life. Similarly a senior banker would

mentor a small number of underlings and train them, over decades, to succeed him.⁵ Hence ownership of merchanting partnerships and of merchant banking partnerships was a kind of club good. Entrance was predicated on years of work, yet “consumption” of the good was nonrivalrous. In fact, rivalrous consumption among partners could and sometimes did destroy banking franchises. The preeminent banking partnership was that of the Rothschilds’, which linked both the family and employee family members into a multigenerational, multinational network lasting until the present day (Ferguson, 1999; also see Chapman, 1984; Hidy, 1941).

Merchanting partnerships existed around the world but few trading networks developed merchants into bankers. Although the Asia trades were massive undertakings during the nineteenth century, banks generally developed later in the century and remained separate from merchants (Checkland, 1953; Jones, 2000: 227–33; also see Pomeranz, 2000: 174–81). Larger merchants opted, instead, to directly finance deals with junior partner-firms, to provide financial assurance to the less-connected, and to enter into more direct participation in businesses as these avenues were more profitable than banking (Chapman, 1984: 114; Jones, 2000: 29–34, 153–4). In effect, these larger merchanting partnerships established another type of club good organizational structure that still managed to share business risk while enabling them to capture greater profits through tiering of property rights to the profits those structures earned (Connell, 2004). Smaller merchants were in Asia solely for trade. Some were there to establish “other business in which to employ our funds when we do not think it advisable to do anything with the United States,” as William Rathbone Jr. advised his brother in their plans for a China trade business in 1842 (quoted in Checkland, 1953: 160).

⁵ As an example, Ferguson (1999: prologue) notes that the Rothschilds accepted only male family members into the network of partnerships, and NM Rothschild established unusual practices (separate dining, separate working quarters) for women employed even until the 1960s (p. 458).

Indeed, cross-Atlantic finance was fraught with risk. A banking crisis in 1825 caused some partnerships to collapse and pushed surviving ones to specialize in areas of trade financing, thereby narrowing margins in the cotton trade; the 1836–7 crisis furthered this trend. Shrinking margins and increasing counterparty risk pushed planters and merchants further toward using the emerging merchant banking services. Nascent development of trade law caused three important shifts: standardized contracts lowered explicit and implicit transaction costs because they were simpler, being easier to structure and to finance; relatedly, standardized contracts increased the number of transactions; and the rise of fractional ship ownership contracts spread risks among partnerships (Chapman, 1984; Hidy, 1941; Killick, 1974). Fractional ship ownership was another early type of long-term, club good structure in merchant banking which was *between*, rather than within, partnerships.

Cross-Atlantic trade businesses' shift toward an institutionalized nature did not remove the deep family ties and cross-Atlantic interpersonal links, however. Trading disputes remained difficult to resolve in courts for some decades 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 stepped in to fill this void with their reputational capital. Even after a number of states' bond defaults and the resulting trans-Atlantic banking crisis of 1836–7, Dorfman, writing of the 1837–41 period, observed that:

The Anglo-American world had an organic unity that made for the fluid movement of ideas, methods, and men across the Atlantic in both directions. There was room in that world for ever-shifting, interlocking relationships, especially in that most mobile of enterprises, finance. (Dorfman, 1951: 147)

As Atlantic ports' commercial trade law grew more sophisticated, traders began to rely more on legal contracts and less on direct relational ties. But reputation—of the firm and of its partners—remained the key form of capital for these firms. Reputation spanned generations.

Partners could not sell their shares unless their fellow partners agreed, and so the need to sustain the firm was deeply ingrained in partners' minds. Boot, Greenbaum & Thakor (1993) argue this organizational structure created two forms of capital in a banking partnership: (1) financial capital in the firm and (2) reputational capital which was liquefied through accessing the partners' networks of contacts. This enabled a well-regarded firm to leverage its financial capital in structuring financing deals as well as lowering counterparty risks.

Morrison and Wilhelm (2004) propose a broader view: human capital is best seen as divided into two different components of capital: the reputational asset, plus the tacit knowledge of the partnership which was literally passed down through generations. Reputation's natural building blocks were the informational networks within which firms operated as well as the tacit knowledge which partners passed on to skilled clerks so that they might succeed them and carry on the firm (Boot, 2000; Boot, Greenbaum & Thakor, 1993; Ferguson, 1999). The Rothchild family neatly linked the networks and tacit knowledge through "private couriers to-ing and fro-ing with copies of letters . . . [by the 1830s, a service becoming] used by the leading statesmen of the continent as an express postal service" (Ferguson, 1999: xxvii). For fifty years until 1905, Kleinwort founder Alexander Kleinwort famously kept "information books" in which he recorded details on each client and each counterparty bank (Chapman, 1984: 72-5; also 43-5).

Some tacit knowledge required timely, recorded communication to be effective as informational capital, or it became stale or lost. So the Rothschild's private letter network and others may be viewed as an early form of ICT. Over the 19th century this form of ICT developed into the report and the memo (Yates, 1989), an *efficient, value-laden, archival, standardized* communication form. These four ICT attributes in combination would not be matched, or

surpassed, until the advent of digitized alphanumeric information used in computers in the latter 20th century.

We can track the trajectory of these three forms of bank capital over two centuries, observing how the introduction of new technologies changes their relationships and relative ranking. In the first half of the nineteenth century, *financial* capital was least important; *reputational* capital was most important, as Hidy noted above; *informational* capital was essential for risk control, to develop a banker's sense of the trade, and to augment *reputational* capital.

Over the next century, some merchant banks, relying on their networks and reputations to fund the expanding international trade and growing industrial firms, gravitated into investment banking business by raising capital for these industrial firms. Reputation was, and remains today, a critical part of investment banking specifically and of banking in general. But technology gradually shifted the club goods-nature of finance out of the old merchant banking partnerships into other financial products and financial industry structures. The transformation of club goods in finance would shake the tenets of reputation in banking, and would weaken the disciplining stick that reputation wielded when partnerships lived and died on their reputation.

THE ONSET OF LIMITED LIABILITY [SECOND HALF OF THE 19TH CENTURY]

The great English financial houses . . . [are] no longer distinguished by the old prudence and caution. . . . These are superseded by Continental methods. Upon the Continent syndicates, groups and combinations of bankers have long been common. . . . Men have ceased to feel individual responsibility, each is but one of a set. . . .
(Chapman, 157, quoting *The Statist*, 1888)⁶

Three technological developments in the second half of the nineteenth century proved especially transformational for merchant banking: construction of railroad (RR) networks, the rise of joint-stock banks, and establishment of telegraphic services (Baskin, 1988; Chapman, 1984; Kindleberger, 1983). The first two caused a dramatic increase in financial capital demands, a demand to which banking partnerships as an organizational structure never adequately responded. The third shrank response times on investment and banking deals from days to minutes, raising a challenge to which partnerships had to quickly meet in order to survive.

Syndicates had indeed long been common, as these structures had been used to fund massive projects for which one or a few banks could not supply sufficient capital. These projects included early RR projects and the Napoleonic Wars (Chapman, 1984: ch. 1; Ferguson, 1999: xxiii, 84; R. Tilly, 1989). *The Statist's* problem, simply stated, was not syndication per se but that the “groups and combinations of bankers” had become formalized into joint-stock banks with large concentrations of capital under the terms of limited liability that are enjoyed by shareholders, but may not be enjoyed by partners in a private partnership.

The seminal event in joint-stock banking was the founding of *Crédit Mobilier* [*CM*] by the Péreire brothers in 1852. *CM* changed the landscape for partnerships, as it quickly challenged other established banks in the funding business (Chapman, 1984: 132–35; Ferguson, 1999: 56–

⁶ Chapman (1984) notes that capital demands grew upon the remaining partnerships over the next thirty-odd years, forcing many of them into either larger partnership amalgamations, into joint-stock ownership, into hybrid structures with joint-stock banks, or into early forms of private equity-like partnerships (pp. 150–68).

61; Landes, 1956: 213–16). Joint-stock banks had existed previously,⁷ but *CM* greatly increased capital concentration as it organized under a new structure which passed some club good benefits onto members while pushing part of the risk outside the structure through limiting liability of those members. That is to say, shareholders in joint-stock banks were able to share ownership benefits without the risks of unlimited liability and possible reputational losses which partners in a private partnership might suffer.⁸

Merchant banks reacted in four ways to the challenges raised by *CM*: the Rothschild family of partners was not happy but first ignored then successfully challenged *CM*, given the family's tremendous capital base. By 1855–56, as *CM* moved beyond a focus on just French financing into European RR financing, the Rothschilds felt they had to respond. James de Rothschild organized a loose confederation of financiers into the Réunion Financière, in part to counter *CM* ambitions in European RR deals, in part to lay groundwork for a new joint-stock bank (Chapman, 1984: 160–61; Ferguson, 1999: 84–87; Landes, 1956: 206).

British bankers were also opposed to the *CM* structure, but Barings was willing to work with *CM* in some capital-raising efforts (Chapman, 1984: 134–35). Lacking the capital base of the Rothschild family or the Barings, some merchant banks formed joint-stock consortia in order to compete in capital-raising. Others simply remained in financing businesses that required less capital.

CM was not the only source of pressure on partnerships in the City, that square mile where the London financial sector was situated. American merchant banks' presence was dramatically felt during the latter third of the nineteenth century in larger government bond

⁷ Baskin (1988: 222) notes of joint-stock firms generally: "Prior to 1920 there were no large-scale markets in common stock. Previously, ordinary shares were viewed as akin to interests in partnerships and were simply conveniences for trading among business associates rather than instruments for public issues."

⁸ See Ciepley (2013: 144–5) for a summary of corporate structure benefits compared with partnership; Selmier (2014: 7–9) for analysis of shares as a composite structure composed of club and private goods.

issuances in Americas and Europe, and in financing massive RR networks then being constructed in the Americas (Chapman, 1984: 88–97). Capital needs of railroad construction had skyrocketed; joining the established firms, Goldman, Sachs and Lehman began to deal in RR bonds in the 1880s (Supple, 1957: 156). By the end of the century, a clear ranking had emerged in which highly-capitalized firms dominated. In North America, Barings and J. S. Morgan financed half the RR deals between 1865–90 by value; Bischoffsheim & Goldschmidt led in Europe, with the Rothschilds also quite active (Chapman, 1984: 88–97; Ferguson, 1999: 84–89; see Feis' [1930] superb history for worldwide RR financing over this period). But consortia became the accepted structure given enormous capital risks (to which Barings nearly succumbed in 1890). And, while *CM*'s success was short-lived, it provided an organizational model that led to joint-stock bank establishment across Europe with an especially strong impact on German banking (Chapman, 1984: 132–5; Landes, 1956; Ferguson, 1999: 95).⁹

The telegraph became another transformative technology, forcing partnerships and joint-stock banks to either adjust or fail. Telegraph networks, constructed along RR right-of-ways, proved enormously efficient in capital investment terms compared with RR networks (Field, 1992: 402, 408–12) and equally revolutionary for the banking industry. Montagus, the first merchant banking house to extensively use the telegraph, situated their offices so as to trade based on telegraphed information (Chapman, 1984: 47). Other large banks moved toward networked-office organizational structures (Chapman, 1984: 67–70, 137–40; Odlyzko, 2000: 39–41). City Bank of New York (predecessor name of Citibank) was actively involved in both financing and in using telegraphic communication in the United States and internationally (van Cleveland & Huertas, 1985: 20–23). The effect on capital markets and commodities trading was

⁹ Baskin (1988: 223) notes: “The principle of limited liability, which was essential for the formation of public markets, met decades of resistance before gaining official sanction in Britain in the Corporation Act of 1856.”

astounding. As an example, price differentials between London and New York Stock Exchanges on listed shares corrected in ten days before the advent of the telegraph, as prices had to be transmitted by ship; with the installation of the Atlantic Cable in 1867, price differentials lasted “zero days” (Hoag, 2006). A decade later, Chicago-traded commodity prices reacted to Indian climate disasters within hours by the transmission of the news through several intercontinental cables (Odlyzko, 2000: 96–97). Early signs of investment trading stress caused by introduction of “real-time” ICT were registered by Isaac Seligman in 1872 due to “sending and receiving telegrams every few minutes” (Chapman, 1984: 108). But while speed increased dramatically, the tremendous cost of telegraphed messages limited the information included in transmissions. Also, messages were neither archival or value-laden, nor necessarily standardized (Field, 1992: 405; Hoag, 2006; Odlyzko, 2000: 97-105),¹⁰ as was the case with written communication forms (Yates, 1989).

Newer club good structures that spanned *between* banks were developed to address growing capital needs and to remain in the game: underwriting syndicates grew to prominence in the latter half of the 19th century to share risk and reward through the issuance of shares. The foremost “financial engineer” of his time in this structure, H.O. O’Hagan, explained in 1888:

Why should insurance not be extended to the guaranteeing of the subscription of issues of shares and debentures. . . ? I began by approaching some of the larger trust and investment companies . . . persuad[ing] them to risk having to take three or four times the amount they were contemplating if the capital were not fully subscribed, I paying them a commission for so doing. . . (quoted in Chapman, 1984: 88)

Clearly the clubby, club-filled world of merchant and investment banking partnerships was under pressure. Adaptation to emergent technologies and the interlinkages through ethnic,

¹⁰ By value-laden I mean that significant information might be embedded into messages. Telegraphic messages were extremely expensive, so telegraphic codebooks were developed in order to shorten messages and so save on transmission costs. However, these were used for short periods of time and so a true standard was not developed.

religious, class and political interests helped a few to sustain enterprising partnerships into the mid-twentieth century, and a very few beyond that point (Cassis, 1985; Ferguson, 1999: 250, 257–8, 344; Supple, 1957). Still, technological changes in the latter nineteenth century forced many organizations into either industry-spanning banks, or club good-embedded linkages between banks.

Partnerships’ subsumption into the organizational designs of the twentieth century, or their slow fade into history, was foretold by the fin-de-siècle establishment of the new public (joint-stock) bank, Barclays:

The foundation of Barclays Bank in 1896 [occurred] at the very moment when the private deposit bank was receiving its last blow... formed by the simultaneous amalgamation of twenty private banks, the partners in which were all linked by strong family ties. (Cassis, 1985: 218)

Telegraphs, joint-stock banks owned through limited liability shareholding, and the capital needs of RRs (and their transportation efficiency) forever changed banking. Although vestiges of partnership structures have lasted until the present day in banking, all but a handful of investment banking and private banking partnerships have disappeared through collapse, closure, acquisition, or by “going public” (Bhidé, 2009: 225; Hayes, 1979; Morrison & Wilhelm, 2004, 2008).

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Just as war had altered merchant banking in the first half of the nineteenth century by providing the catalyst to develop this industry, so would war alter merchant and investment banking in the first half of the twentieth. Just as ICT and organizational technologies had fundamentally transformed banking in the second half of the nineteenth century by providing the capacities to scale up financial institutions, so would technology do in the second half of the twentieth.

**CLUBS WITHIN A CLUB:  
“THE CITY” AND HER DECLINE [FIRST HALF OF THE 20<sup>TH</sup> CENTURY]**

It is only a slight exaggeration to say that the world in which the Rothschilds had thrived came to an end in 1914. . . . (Ferguson, 1999: 454)

World War I was a calamity for European banking and investment, and a disaster for the banking partnerships headquartered in the City. Because smaller firms had not been able to compete in increasingly capital-intensive deals of the late nineteenth century, many had stuck to financing businesses that required a lower capital base such as the money market and trade finance rather than move into industrial and longer-term investments (Cassis, 1985). WWI strangled trade for four years, asphyxiating some smaller partnerships.

Even for the better-capitalized partnerships, capital was a complex problem. Something as simple as the timing of partners’ retirements greatly affected capital levels. When Brown, Shipley’s managing partners in London and New York both wished to retire in 1914, the firm convinced the London partner, Sir Alexander Hargreaves Brown, to stay under the argument that, if both retired the same year, the firm would be crippled (Chapman, 1984: 154). Sir Alexander remained in harness throughout the war.

Capital losses from WWI might be covered through additional stock issuance by the joint-stock banks, but rarely by partners’ private capital. Governments on the continent would support state-oriented banks, but *laisser-faire* England insisted that its banks practice self-help (Feis, 1930: 83–85; R. Tilly, 1989). Also, the shift of financial power toward the United States, in which “JP Morgan [had eclipsed] NM Rothschild as linchpin of war finance,” was irrevocable (quoted in Ferguson, 1999: 455; also see Einzig, 1935: 102, 129- 35; Frieden, 1988: 68–72). European banking came under increasing pressure from American. In addition, City partnerships were more vulnerable to technological advances of an organizational nature because the very same flexible structure and reliance on reputational capital, which had worked in the nineteenth

century, proved brittle in the twentieth. The superior capital concentration and network capacity of banking conglomerates gave their management not only greater breadth but also more depth. Over the first half of the twentieth century, larger banks were able to better link their offices through telephone technologies; the telephone was initially quite expensive and required point-to-point wiring, as the technology did not initially function as a network (Odlyzko, 2000: 106–107; van Cleveland & Huertas, 1985: 46, 138).

In the latter decades of the nineteenth century, Germany had presented a new organizational bank form which combined the capital concentration of a joint-stock bank with government backing (implicit and sometimes explicit), and a mandate to engage in foreign business. Germany required a different banking model as its economy was a step behind both the United Kingdom and United States. Lagging German industrial development necessitated, in part, the creation of huge banking conglomerates which then came to dominate German finance and the economy. Financial risk of these large German banks was not completely assumed through either the club nature of partnerships, or through industry-spanning clubs such as syndicates and consortia, or in joint-stock structures wherein shareholders jointly assume risk. No, part of their financial risk was directly assumed into the political system (Landes, 1999: 264-5; R. Tilly, 1989). Deutschebank (2012: 2) highlights its 1870 founding by noting its “direct aim . . . to challenge the hegemony of British banks, which continued to dominate the financing of German foreign trade.” R. Tilly noted the nearly concurrent founding of Deutschebank with the Reichsbank and its implementation of a pan-German currency was not coincidental:

In subsequent years the powerful support mixed banks gave German industry and trade rested in part on the payments network and liquidity guarantee it (a national bank with a gold-backed national currency) provided. (R. Tilly, 1989: 195–96)

The German political economy model birthed a new financial organization technology, the prototype of what became the universal bank. Counteracting this emergent organizational technology—the huge capital of the German banks—again caused changes in the club nature of finance: NM Rothschild & Sons created the Consortium Rothschild by bringing a dozen firms together to wield a greater capital base (Chapman, 1984: 160–61). Other top financiers, including Saemy Japhet, Ernest Cassel and Baron Maurice de Hirsch, moved out on their own and invested only in those deals which held their particular interest, leaving swathes of the wider field open to other competitors, especially the well-capitalized public banks (Chapman, 1984: 67–70; Feis, 1930: 85–87; Ferguson, 1999: 316, 367, 391). Many smaller partnerships eschewed the higher-capital-requiring deals and kept their business centered on lower-capital requirement businesses, as mentioned above.

Still, the City remained a club of clubs in finance terms until after WWII. A career in interwar NM Rothschild was described as being a member of “. . . the best club in London. We really ought to be paying a subscription instead of receiving a salary,” by Tite, an experienced clerk (quoted in Ferguson, 1999: 455). Feis (1930: 87) went further in describing the embedded club discipline in the City before WWI wherein “the concentration in the same circle of those possessing influence or prestige, the responsiveness to group opinion which ruled, the personal honesty and discretion of English officialdom [engendered] acceptance by the financial world of a high standard of honor.” Linkages between banking and aristocratic families were deep, extensive, intermarried, and reputation-based (Cassis, 1985; some American banks had similar interlinkages, but not as intense or extensive; see Supple, 1957; van Cleveland and Huertas, 1985: 32- 48). Outside pressure actually increased the sense of clubbiness within partnerships (Chapman, 1984: 158). Guy de Rothschild described interwar Rothschild Frères as “more of a

family secretariat than a working bank . . . gently prolonging the nineteenth century” (quoted in Ferguson, 1999: 458).

The ultimate City financial club to join was to become a member of England’s central bank, which Feis (1930: 86) described as “a useful medium between the banks and the government.” R. Tilly (1989: 197) depicted a club arrangement that would be questioned under conflict-of-interest grounds by a modern reader:

Bank of England . . . remained (until 1944) a private, profit-making institution over which the government had no official controls. Increasingly, through most of the 19th century, it did a private business for the expressed benefit of its shareholders, whose annual dividends in the years from 1860 to 1913 have been estimated at 9.6%! . . . One may note that the directors were recruited by cooptation, not by government appointment, that they represented largely City financial interests. . . .

But while banking partnerships tried to retain their club-like nature, WW II would further destroy much of European banking and boost American banking efforts even more. These American efforts were led by large, listed banking firms which had long-departed from the leisurely ways of the City, as Sir Clinton Dawkins of Morgans wrote of his early twentieth-century visit to New York headquarters (quoted in Chapman, 1984: 169–70):

But it is very interesting to find oneself in the very heart of the Wall Street excitement and combinations and to note the prodigious amount of nervous excitement and energy the Americans throw into work. . . . Few of them live through it to advanced years. . . .

This “prodigious amount of nervous excitement” drove financiers like James Stillman and his protégé, Frank Vanderlip, to grow the National City Bank of New York from a president with a few clerks in the early 1890s to 500 employees by 1914 working at one location on Wall Street, then to 2200 employees by 1917 with 600 employees stationed overseas (van Cleveland and Huertas, 1985: 32, 89-91). The growth of American banks was explosive and National City, already the largest American bank, led the way. This American expansionist view of banking,

expressed by President Wilson in 1916 as "... those who finance the world must understand it and rule it with their spirits and with their minds," was not a universally-welcomed idea (quoted in Frieden, 1988: 71). Some decades after Wilson spoke, Einzig wrote (1935: 129):

Before the war competition between the principal lending centres, London, Paris and Berlin, was restricted. Each had its clientèle and, generally speaking, no efforts were made to poach upon each other's preserves. With the advent of New York as a rival centre, the situation underwent a complete change. In the absence of any previous experience and traditions, the New York banking houses plunged with reckless enthusiasm into international lending.

The United States of the 1920's was a robust economic environment with a rapidly growing middle class which banks wished to serve. While partnership structures and personal relationships had mattered when Stillman assumed control of National City in the early 1890s, the bank had been a business bank oriented toward investment banking and corporate restructuring. By the 1920s the bank "became a financial department store," and had spread into consumer loans (garnering great praise for its role in undermining loan sharks), retail broking, foreign exchange and international banking, trust administration and extensive direct investments (van Cleveland & Huertas, 1985: 119-57, quote, 124). National City achieved all this growth in less than three decades.

Other American banks followed National City's lead, in part due to the recognition the bank was receiving. Reputational capital still existed before the Great Depression. Soon-to-be bank president Mitchell lectured to a class in 1919, "The time will never come, certainly so long as I am connected with The National City Company, when, pressed with the need for securities for our great selling organization, we will let down our exacting requirements" (quoted in van Cleveland & Huertas, 1985: 139). A Saturday Evening Post editorial of December, 1928, lauded bankers for being:

the stewards of our whole intricate credit system...[T]heir sense of obligation and their feelings of responsibility for the maintenance of that system in a high state of adequacy and efficiency are as lofty as the motives of other professional men.

In this frenzy of activity which Sir Dawkins described, universal bank structures had grown to dominate interwar American finance and wrest control from London and lesser European financial centers. The American model took the French technology embodied in *CM* and further developed into a universal bank along German lines, but made it uniquely American. Financial capital had grown in importance, but reputational capital was still very important. Writings about bankers before the Depression showed them to be in very high regard.

But this praise of bankers as “stewards” with a strong sense of propriety was swept away in the Depression. A sequence of legislative bills passed which postponed the universal banking model in the US. These bills placed stricter limits on the entire range of financial industry activities, separating banking functions and mandating strict laws and regulations governing investments (van Cleveland & Huertas, 1985: chs. 7, 10). Of particular impact was the Banking Act of 1933 (popularly known as Glass-Steagall) which, among other restrictions, forced the separation of investment and commercial banking (Bhidé, 2009: 227; Kindleberger, 1983: 590-1; van Cleveland and Huertas, 1985: 192-8). Universal banks in America would not rise again for another half-century.

## **COMPUTERS AND THE GREAT EXPANSION [SECOND HALF OF THE 20<sup>TH</sup> CENTURY]**

McKinsey's 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. (Phil Purcell, CEO of Dean Witter [late 1980s])<sup>11</sup>

While NM Rothschilds was attempting to slow the passage of time, American banks wanted to hasten it. Development of calculating machines had accelerated during WWII (Nordhaus, 2001), and American financial firms led the world in early attempts to implement this emergent technology, initially to lower their back-office operating costs. Citibank's joint attempt with IT&T to develop an automated check processing machine sank in more ways than one, as the resulting machine was obsolete before completion and its rump placed on a barge and submerged in the Atlantic in the mid-1950s (van Cleveland & Huertas, 1985: 291–3).

The post-WWII financial industry in the United States was comprised of large public banks as well as investment banking and brokerage firms, and tens of thousands smaller financial institutions. Larger New York-headquartered firms were better-placed to actively implement computing technology for many reasons, among them: New York had become the global financial center; the post-war American economy was humming while other industrialized nations has not recovered from the war; American financial firms had capacity to spread investment costs over a wider revenue base as the United States accounted for half of the post-war global economy; the earlier adopters were public firms with access to the large amounts of capital required; non-institutional investment business in the United States was growing rapidly so technology was thought to be of immediate benefit; labor shortages incentivized financial

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<sup>11</sup> Quoted in Eccles and Crane (1988: 123). Purcell should know about the value of consulting; he was a McKinsey & Co. partner before joining Dean Witter. For similar quotes read pp. 120–25.

firms to save money; and American firms such as IBM, Burroughs and Honeywell were computer technology leaders.

Among the earlier adopters were investment houses with significant retail operations, the so-called “wire houses” whose networks of offices brokered investment transactions locally then funneled orders to New York through the wire-based technology of the day: first telegraph, then by telephone, and soon by computer. Merrill Lynch led the charge in this technology investment in the United States by buying the industry’s first mainframe in the late 1950s (Morrison & Wilhelm, 2004, 2008). Data-processing initially empowered early-adopting firms and, by the late 1960s, late-adopters were forced to substitute this new processing power for clerks in the back-office.

While technology investment initially increased back-office efficiency, by the late 1960s computing power to the front-office for financial product design and asset management. This set off a cycle in which technology investment created its own demands, a cycle which continues today. To compete in new products and investment strategies, investment and commercial banks were pushed to invest in technology; to invest in technology, financial firms needed to capture profits to fund that investment; to capture higher levels of profits, they had to grow their business; to grow their business, and they needed to increase employment through hiring or acquisition. Creation of mortgage-backed securities and development of accurate derivatives pricing models in the 1970s led to asset-backed bonds and portfolio insurance in the 1980s. The cycle of financial engineering accelerated.<sup>12</sup> But financial engineers, and a larger workforce, required a

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<sup>12</sup> Not all new financial products involved higher math, but still had the same effect on club goods. The creation of money market funds in the 1970s pulled deposits out of banks and into new club structures with a future of explosive growth-mutual funds. Bhidé (2009: 220–22, 225, 231) illustrates well this club nature of financial products without explicitly using the term “club good.”

more robust and powerful technology base in order to compete, and so the cycle continued (Brewer and Jagtiani, 2007; Hayes, 1979; Morrison and Wilhelm, 2004, 2008).

For partnerships, the end was nigh. Driving more transactions through expensive data-processing assets in order to pay for those assets required more partners, and more associates working for each partner. Partners' ties to increasingly-larger firms weakened; associates ties to firm and to their managing partner weakened as well. Mentoring faltered at first, and then died off. In-house financial engineering training grew somewhat, while MBA hiring exploded as these graduates had the technical skills to immediately engage in financial engineering. Financial industry labor markets liquefied as firms bid for talent and labor mobility increased. Job stability and lifetime employment trends, weakening for decades, went into steep decline (Morrison and Wilhelm, 2008: 338). Reputational capital became even less important as transactions-based banking grew in importance, driving up the need for knowledge and financial capital.

Financial engineering, closely related to the development of the Black-Scholes options pricing model in 1973 and the resulting boom in risk management, sped up the pace of financial innovation. Fred Joseph, former 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" (quoted in Eccles and Crane, 1988: 123). Engineering the next financial product, then introducing and selling it ahead of competition, led to a new design rule for investment and commercial banks. While in the nineteenth century partners' views determined the strategic direction of the merchant bank, in the late twentieth century:

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. (Eccles and Crane, 1988: 3)

This design rule is a revenue-based one, with a component of risk control in that only certain products are approved for further development, but no hint of cost control. Successful introduction of financial products led to reverse-engineering by other firms, and “poaching” of talented teams from the leading-edge banks in a particular product.

The incredible increase in capitalization of the Top Ten investment banks, shown as the solid line in Figure 2, is the result. The market capitalization of the Top Ten hit an explosive growth spurt as the above-described cycle took off in the late 1970s (left axis). Note the dashed line tracking the next fifteen largest investment banks in size as a percentage of the Top Ten’s capitalization, over the period 1955–2000 (right axis). These smaller investment banks, while still quite large in business terms, shrank considerable in relative terms. This trend demonstrates the larger firms are quite literally becoming SIFIs over this period.

*Insert Figure 2 here*

Lastly, the dot-dash line shows that, although market capitalization of Top Ten investment banks grew tremendously, the ratio of their capitalization/dollar-of-corporate-security-underwriting was flat (left axis). In other words, the size of financing deals grew nearly as fast as the Top Ten’s capitalization, so to underwrite the increasingly larger deals which came to market over this period, investment banks had been forced to significantly grow their capital asset base (Hayes, 1979). An indirect outcome of banks growing their capital base was that more managers and more junior employees could work and did work for each manager.

Given the shift toward self-designing around new products and strategies, it is not surprising that firms grew rapidly. A “hot new product” could expand that investment bank’s “product group” from a handful to a dozen to hundreds to perhaps thousands in half a decade. Michael Lewis (2009: 100) details the applicable case of A.I.G.’s Financial Products, the group

charged with bringing A.I.G. down by engineering and selling “trillions of dollars of credit-default swaps.” As the focus of banks’ employees shifted outside the firm to where the product market was, rather than inside the firm, loyalty to the firm and concern about its reputation has weakened (Eccles and Crane, 1988: 126–28). And the investment banking labor market became completely liquid; to rapidly build a product group required hiring outside for technical talent, not promoting within due to loyalty. Reputation had now become portable, tied to individual reputation and, in certain cases, to that of a product group. In short, computer technology revolutionized communication, transformed a key self-designing organization rule, and completely altered the dynamics of creating new financial products and structures.

Looked at through the lens of three forms of bank capital, computers finished the process of upending the hierarchy of the early nineteenth century: *financial* capital was now most important; *reputational* capital was perhaps least important on a firm basis, in that financial engineering and product knowledge had become vital to a firm’s survival and so supplanted reputation; that financial engineering and product knowledge that made up *informational* capital had become a completely liquid market, in which skills tied to individuals and, in rare occasions, very close-knit smaller groups, were bid for. *Reputational* capital associated with these skills had become partially portable as well.

## **PRESENT DAY**

If, for instance, a major bank is “too complex to depict” and pure information-type models are insufficient, should we consider it is also “too complex to exist”? (Hu, 2012: 1603)

Those financial institutions that survived the previous two centuries did so by embracing emergent ICT and organizational/financial engineering technologies, then self-designing their institution around those technologies. But they survived in name only: is the City Bank of 1860s or NM Rothschild of the 1930s the same as the Citibank or Rothschilds of today? Obviously not. In this transformative process, partnerships disappeared; the club goods-like nature of finance shifted outward from partnerships into financial products and multifirm financial structures. Some financial risk was also pushed outside partnerships. Part of that risk was socialized into the broader political economy. The last six years of financial crisis show the danger of national and global financial systemic risk. Comprehending club good structures in finance will lead to better understanding of financial risks, and stronger capacity to address systemic risk.

Introduction of new ICTs has improved financial firms’ capacity to engineer better return-for-risk profiles into club-good structures to the benefit of managers of the clubs. Increasing speed and bandwidth of each new technology increased firm capacity to capture more profit, while offloading some risk. And this capacity has widened as financial firms’ informational advantages have increased.

As previously noted, private letter networks, such as the Rothschilds’, evidenced a state-of-the-art ICT in the 1830s; these networks were partially supplanted by the speedier telegraph in the second half of the nineteenth century. James de Rothschild complained mightily about the introduction of the telegraph in his letters (Ferguson, 1999: 64–65), but the telegraph did not completely displace letters because it was not archival, transmitted low bandwidth messages and

so could not carry as value-laden a form of communication (Odlyzko, 2000: 96–97). Turn-of-twentieth-century telephony provided value-laden, timely communication. But it was expensive and limited, as telephones were linked point-to-point rather than in a network. Plus it was a difficult technology for legal and archival records, unlike the voluminous letters of the Rothschilds and Alexander Kleinwort’s character books. The development of the memo in the latter 19<sup>th</sup> century had improved letters’ attributes as an *efficient, value-laden, archival, standardized* communication form (Yates, 1989). Hence it was not until the introduction of computers, which brought numeric communication and processing while providing archival records for future use, that the game truly changed.

The marriage of computers and digital telecommunication delivered the promise of near-instantaneous, wide-bandwidth communication and processing capacity toward the end of the twentieth century, igniting an IT “arms-race” among financial institutions. As shown in Figure 3, financial institutions now spend more on IT than any other institutional base, including governments, worldwide. Financial firms have achieved an enormous competitive advantage vis-à-vis other groups who may be interested in financial data, somewhat analogous to the Rothschild’s advantage some two centuries ago. But back then finance was a small portion of the global economy. Finance is now an enormous industry.

*Insert Figure 3 here*

Then, as now, banks self-designed around business opportunities. Financial engineering processes which enable such organizational reengineering was as natural to merchant banks 200 years ago as they are to investment banks today, although certainly not as mathematically complex. The drivers of organizational reengineering shifted from top to mid- and lower-level management as financial engineering took off, empowering the younger, more recently-trained

and technically advanced traders and investment bankers (the new “design rule” noted above). The informational asymmetry between financial firms and the rest of the economic actors was mirrored by a technological asymmetry within the financial firms. Those who were technically-advanced, because they generated significant revenue, requested computing power and got it.

As partnerships and private banks, and the long-term, relationship-oriented, reputational culture that went with them, went into terminal decline, the horizons of those in the investment banking business, and banking in general, began to shrink. Higher returns were demanded by both banks and individuals. The self-designing nature of banks emphasized product development and deemphasized firm loyalty, as informal teams formed to drive new products. Finance is still a world of clubs, but nearly none of those clubs are in partnership form or in single-firm form.

Clubs are often efficient at managing risk, improving returns and engineering new financial instruments through designing property-rights tailored to the financing task at hand. But, as Selmier (2014) argued, crafting better financial governance requires understanding the property-rights effects of financial products. Table 2 shows these effects occur at each of the four rungs of a political economy’s “ladder”: in financial products, at the firm level, in financial markets, and through broader societal effects.

*Insert Table 2 here*

This paper has integrating public goods literature, environmental economics and banking history to address aspects of firm and market level. As business scholars, we have more to learn about club goods in finance.

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| <i>Figure 1. Four archetypes of goods by property rights.</i> |                                                                                        |                                                                                    |
|---------------------------------------------------------------|----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| <i>Consumption</i>                                            | <b>Rival</b>                                                                           | <b>Non-Rival</b>                                                                   |
| <b>Excludability</b>                                          | Private Goods                                                                          | Club Goods                                                                         |
| <b>Non-Excludability</b>                                      | Common-Pool Resources:<br><i>McNutt notes this creates a<br/>“Private Externality”</i> | [Pure] Public Good:<br><i>McNutt notes this creates a<br/>“Public Externality”</i> |

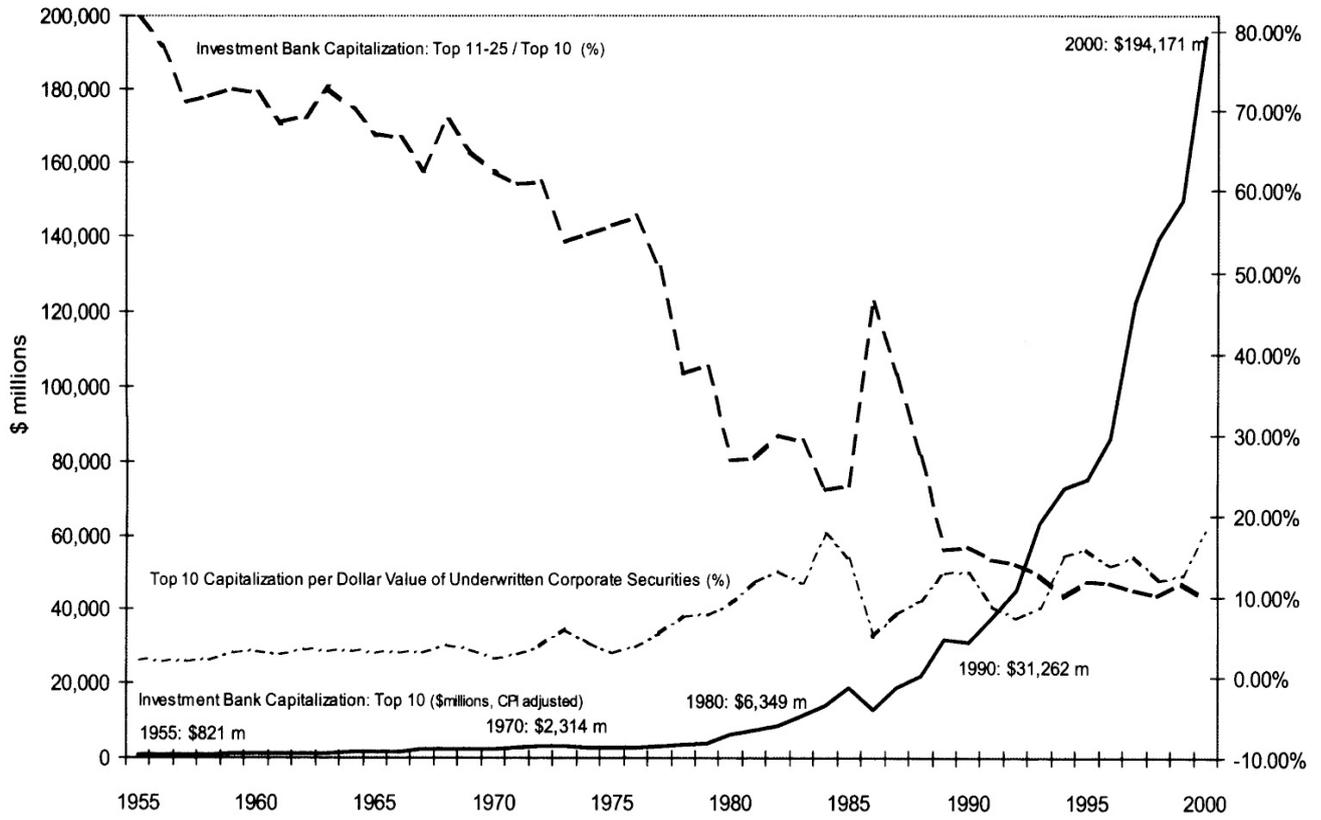
*Sources: Adopted and adapted from McNutt (1999: 930, tables 1 and 2) and Penikas, Selmier, & Vasilyeva (2013).*

*Table 1: Chronology of club goods transformation in investment banking.*

| Phase and rough time period                |                                                               | I: First half of the 19 <sup>th</sup> century | II: Second half of the 19 <sup>th</sup> century          | III: First half of the 20 <sup>th</sup> century                 | IV: Second half of the 20 <sup>th</sup> century                      | V: Present                                                                                              |
|--------------------------------------------|---------------------------------------------------------------|-----------------------------------------------|----------------------------------------------------------|-----------------------------------------------------------------|----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| <b>Organizational forms</b>                |                                                               | Partnership                                   | Joint stock, partnership                                 | Larger bank, partnership                                        | Networked investment bank/broker-dealer                              | Systemically important financial institution [SIFI]                                                     |
| <b>TECHNOLOGIES</b>                        | <b>Information and communication [“ICT”]</b>                  | Clipper and private letter network via horse  | Telegraph                                                | Telephone                                                       | Computer-enhanced telecommunications                                 | Digital high-speed private networks                                                                     |
|                                            | <b>Inside (property rights and financial product-related)</b> | Trade contract law                            | Syndication and crédit mobilier                          | Large public banks with multiple offices                        | Wirehouse linkages; financial engineering                            | Multiline; huge proprietary operations                                                                  |
| <b>Financial capital structure</b>         |                                                               | Small, family                                 | Public entrance                                          | Growing; partnerships constrained                               | Huge                                                                 | Enormous, multinational                                                                                 |
| <b>Club good structures embedded in...</b> |                                                               | Within partnership                            | Partnership, syndicate, joint-stock bank (“public bank”) | Partnership, syndicate, consortia, public bank investment funds | Syndicate, public banks, public investment bank, investment products | Listed financial firms, syndicates investment funds, financial products, PE, VC, LIBOR-setting, TBTF... |

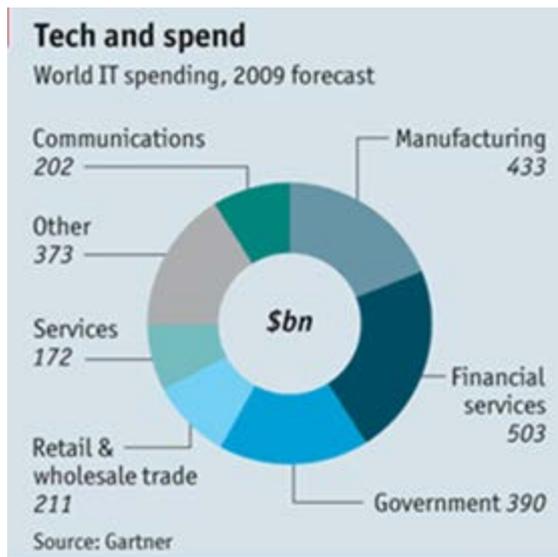
*Sources:* Buchinsky & Polak (1993), Chapman (1984), Hidy (1941), Killick (1974), Kindleberger (1983), Morrison & Wilhelm (2004, 2008), Rasler & Thompson (2000), Selmier (2014), C. Tilly (1992).

**Figure 2: United States investment bank growth trends, 1955–2000.**



Source: Morrison and Wilhelm (2008: 325).

**Figure 3: Global IT spending by institutional group.**



Source: Economist (2009).

**Table 2: Complications arise in the vertical chain of a political economy.**

|                                                                                                                                        |                                     |                                                                                                                    |
|----------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| <p style="writing-mode: vertical-rl; transform: rotate(180deg);">                 ← Higher level in political economy             </p> | Product                             | A financial product’s property rights must be known in order to differentiate between uncertainty and risk.        |
|                                                                                                                                        | <b>Firm</b>                         | <b>Managers of large financial services firms may regard externalities differently than those in partnerships.</b> |
|                                                                                                                                        | Market                              | Understanding would help us achieve effective governance while not choking off financial innovation.               |
|                                                                                                                                        | Society, National and International | Wider social challenges of socialized risk, banking crises.                                                        |

*Source: Selmier (2014).*