

Financial Systems and Economic Development in Historical Perspective

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Abstract:

This paper elucidates the key debates surrounding the optimal design of financial systems and institutions: bank-based versus market-based; universal versus specialized banking; relationship versus arms-length banking. The paper also examines the historical pattern of financial system development—explaining the economic, legal, and political factors that influenced the shape of these systems as well as the long-run growth outcomes observed among the group of economies that underwent industrialization prior to World War I. Based on the extensive evidence and analysis surveyed, the paper argues that financial systems historically took on a wide and complex range of forms that are difficult to categorize narrowly, yet provided similar functions; thus arguing for a functional, rather than institutional, approach to financial system design and regulation. Moreover, the research to date strongly supports the idea of persistence and path dependency in financial system design, that economic conditions at the time of industrialization help set the initial conditions that shape financial system and banking institution design, and historical political conditions, such as centralization of power, plays an ancillary role via the extent of regulation on banks and the development of free capital markets. In other words, history matters.

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A financial system is the set of institutions and markets that gathers excess funds from savers—whether households or businesses--and allocates financial capital to those with entrepreneurs and others in need of credit. In the process, the financial system produces information and distributes risk throughout the economy and among its participants. Merton (1993) summarizes even more succinctly the primary function of any financial system: “to facilitate the allocation and deployment of economic resources, both spatially and temporally, in an uncertain environment.”

Well-functioning financial systems must provide several core functions (Merton, 1993; Crane et al 1995):

- Clearing and settling payments
- Pooling or mobilizing resources
- Transferring economic resources, inter-temporally or geographically
- Managing risk
- Pricing information
- Dealing with information and incentive problems

Financial systems may provide these services via a wide range of institutions and markets. Financial Institutions include, among others, commercial banks, savings institutions and thrifts, credit cooperatives, investment banks, insurance companies, trust companies, pension funds, mutual funds, hedge funds, and private equity. Institutions come in a wide range of sizes and ownership structures—from private partnerships to enormous multinational conglomerates to government owned enterprises. Financial markets offer centralized, liquid trading in essentially any financial claim, from debt to equities, commodities to foreign exchange, and a wide array of derivatives.

The core components of modern financial systems grew out of small, rudimentary and entrepreneurial initiatives at the earliest stages of economic activity: the merchants of the medieval era, the goldsmiths of 17th century London, and the fairs and early commodity markets that dotted Europe throughout the medieval and modern periods.¹ In their own ways, each of these organizations participated in payments clearing and settling, capital pooling and mobilization, risk management, information aggregation, asset pricing, incentive matching, and agent supervision.

¹ On the London goldsmith bankers and the British financial revolution, see Temin and Voth (2013).

Financial systems grew and diversified as industrialization took hold in England and then the European continent. New forms of financial contracting, institutions, and markets evolved to handle more extensive and complex needs of funding the larger-scale and scope of industrial enterprises. Thus, financial and industrial revolutions progressed largely in parallel, with entrepreneurial financiers innovating to serve the incipient demands from all sectors of the economy—industry, agriculture, transportation, and trade. Political boundaries and legal institutions also continued to shift repeatedly throughout this early stage of financial and industrial development, and monetary systems developed and changed as well. Some countries with stronger central government control instituted central banks and fiat currency, though the degree varied among countries and over a wide timespan.

The greatest leap toward modernized financial systems came in rapidly industrializing areas of the early to mid-nineteenth centuries and spread with industrialization to most of the rest of the world over the remainder of that century. Significant shifts and re-designs of financial systems came with the crisis of the Great Depression, the post-World War II reconstruction, the wave of liberalization of the 1980s-1990s, and most recently in response to the global financial crisis of 2008 and the ensuing 'great recession.' For the most part, these episodes caused some reshaping of institutions and markets and their regulation by government, but they did not set off fundamental change in the functions of the financial system or the existence of institutions and markets that provide these functions.

Academic study of financial systems dates back to the beginning of financial systems and continues unabated. The literature covers a wide array of topics, some of which provoke significant debates. The changing regulation and organization of financial institutions and markets in the late 1980s through the 1990s, along with several areas of transformation in political and economic systems, set off an active academic literature on financial system design that became particularly active in the late 1990s and early 2000s but that continues today.

Three of the key areas of research and debate revolve around the following three topics:

1. The design of financial institutions and systems: Functional versus institutional approaches
2. Why do financial systems differ across countries: legal origins versus political and economic explanations
3. Does financial system design affect an economy's long-run economic growth rates?

The next three sections take up these topics in turn, providing a survey of the current thinking and remaining issues for further research. The discussion focuses on corporate finance systems and related areas of corporate governance.²

II. Designing financial systems: functions versus institutions

Financing modern industry hinges on a system that allows those with surplus resources to convert their excess into financial capital and channel those funds into productive investment opportunities. This process often means connecting entrepreneurs with capital owners outside the entrepreneurs' circles of friends and families, creating a need for contracting and enforcement devices as well as means for coping with asymmetric information and incentive problems. Virtually all developed economies employ limited liability, joint stock corporations to facilitate external financing. Most of these countries formalized, standardized, and liberalized incorporation and legal liability systems during the 19th century—many during the wave of heavy industrialization of the 1850s to 1870s. Within a decade or two thereafter, businesses and entrepreneurs in these countries turned to corporations in order to grow and diversify, financing an unprecedented scale of operations. The acceleration of incorporation in most places during the last years of the nineteenth century and into the twentieth, spurred rapid advancement in the corporate financial sector and of the securities markets. Despite their considerable differences in culture, society, legal systems, and political processes, the world's most advanced economies all created well-functioning systems for corporate finance by the late nineteenth century.³

For businesses in this period, banks often served as one of the most important sources of outside capital, whether for short-term trade credit or longer-term investment finance. Thus, industrial development usually proceeded hand in hand with the growth of commercial banking. As economies industrialized, financial intermediaries changed, and industrial organization of banking changed as well. The largest banks grew larger, and densely-networked, nationwide banks emerged nearly world-wide.⁴ Commercial banks took on a varying array of functions;

² Given space and time constraints, the chapter leaves out monetary systems and central banking.

³ Fohlin (2012) and Allen et al (2011) provide detailed historical comparisons of the corporate finance systems of the UK, US, Germany, Japan and (in Fohlin, 2012) Italy. Fohlin (2012) also compares more schematically the financial systems of a larger set of industrialized economies of the pre-war period. Morck (2005) covers corporate governance history for a wide range of countries.

⁴ Regulatory restrictions prevented the natural progression of banking in the US. Even there, a few banks grew very large, and banks developed a correspondent system to replicate national branching.

sometimes quite narrowly focused on short-term credit, other times offering investment banking, brokerage, and even strategic advising.

Commercial banks also differed in their responses to changing needs in industrial finance and their engagement in corporate governance. The corporate firms that emerged over the last half of the nineteenth century began to loosen the ties between families and the firms they started. As corporate management began to separate from ownership, investors required new modes of corporate governance. Trading corporate securities on secondary markets often dispersed the ownership of firms and demanded oversight mechanisms to protect smaller shareholders. Thus, industrialized economies developed corporate governance institutions, and banks played varying roles in those arrangements as well.

All of these dimensions of the financial system—the organization of banks, the extent of securities markets, the relationship among banks and markets and corporate governance—differ to some extent over time and across countries. Thus, financial systems can be characterized along these various dimensions, most notably by the functions they serve or the organizational forms they take.

Post-World War II economic historians took up this topic most actively with the publication of Gerschenkron's *Economic Backwardness in Historical Perspective* and Goldsmith's *Financial Structure and Development*, among others. Gerschenkron, in particular, influenced a generation of financial historians to differentiate among the types or organizational forms that financial institutions could take, positing a relationship between the level of economic development of a country and the type of banking institutions they created. By the 1980s, when Germany and Japan were growing rapidly and the US saw itself lagging, attention turned to the design of financial systems to explain why. Those cross-country comparisons led to the deregulation of US banking and the Big Bang in the UK—among other efforts to stimulate the development of German-style universal banking and relationship banking that seemingly helped produce the post-war economic miracle. These events led to resurgence in interest in ultimately to a re-evaluation of Gerschenkron's and Goldsmith's ideas on financial institution and system types and their importance for economic growth.

A. The standard paradigm of financial system “types”

The study of financial systems types subsumes a number of issues: the organizational design of institutions and markets, the activities and functions of different institutions, and the relative use of financial institutions versus markets. The literature on financial systems focuses on the distinction between bank-based and market-based financial systems; between universal and specialized organizational forms of banking; and between relational versus arms-length approaches to banking.

These distinctions, however, fit empirical observation only in a rough manner: most financial systems are better characterized using a functional approach that can mix the individual components of one or the other system ‘type.’ Still, the notion of type animates a long line of research on both historical and contemporary financial systems, and some kernel of truth remains in the notion of types of systems and of institutions. In this literature, systems and their respective institutions are divided along three chief dichotomies: universal versus specialized banking; relationship versus arms-length banking; and more generally bank-based versus market-based systems. The following considers the three issues in turn. The subsequent section examines what we know about historical cases.⁵

Universal versus Specialized Banking

Banking institutions provide a range of functions, from very short-term credits to longer-term debt to underwriting of securities. The combination of services that an institution provides dictates how it is categorized. Institutions are commonly divided into two main types: universal or specialized, with the former offering a broad scope of services, and the latter, naturally providing a more limited range. A true universal bank is allowed to provide almost any financial product or service, however, the fundamental distinguishing feature of universal banking historically is the combination of commercial banking functions (short-term credit, deposit taking, payments clearing, bill discounting) with investment banking services (underwriting and trading in securities). Modern universal banks also sell insurance, mortgages and investment funds and also create and trade more complex financial products, usually through affiliates. The counterpoint to universal banking—so-called ‘specialized’ banking—separates investment and commercial banking into separate sets of institutions.

Relationship versus Arms-Length Banking

The constructs of ‘relationship’ and ‘arms-length’ banking classify institutions by their involvement in corporate governance. Compared to universality, there is less agreement over what precisely constitutes ‘relationship banking’ in a formal, measureable sense. The term is sometimes used loosely to refer to banks that work closely with customers, but most research considers some combination of the following three types of more formal relationships: proxy voting of deposited equity shares taken by banks, equity shares held directly by banks, and corporate board positions filled by bank directors.⁶

The three methods of engaging in relationships bring different levels of ownership and control rights. The strongest relationship, direct ownership of equity, gives banks both ownership (cash flow) rights and control (voting power) rights. Equity stakes theoretically align banks’ incentives with those of other firm shareholders and promote efficient provision of financing. In some cases, the banks employed an indirect method of gaining control rights over

⁵ This section is based on Fohlin (2012).

⁶ See Fohlin (2012, Chapter 3) and Fohlin (2005, 2007).

corporations: proxy voting rights signed over by shareholders. In the proxy voting system shareholders grant the bank power of attorney over their shares, resulting in additional voting power for the banks. Before the subsequent unravelling of the system, in 1990, German banks held on average approximately 24.3 percent of effective voting rights due to direct equity holdings and 29.5 percent on average, due to proxy voting rights at general meetings of their current clients.⁷ From this example, it is clear that the proxy voting system can provide banks with significant power over firm management even without ownership rights.

Using their voting power, whether direct or indirect, banks can help elect their chosen representatives to a company's board of directors and can vote or appoint their representatives into various positions within the corporate boards and can influence the selection of management and other key corporate decisions.

Relationship banking may prove even more important among firms that are organized without publicly-traded equity. In these cases, relationship banking takes necessarily informal shape. While these relationships consist of weaker legal connections, they may actually prove stronger, if firms have limited access to capital market alternatives. Presumably, relationship banking ought to also imply that banks provide helpful advice to young firms, but that sort of criterion is difficult to formalize or measure.

In the dichotomy of financial systems, the natural opposite of relationship banking is 'arms-length' banking. In arms-length systems, banks simply provide financing, perhaps in a one-shot deal, and take no enduring corporate governance role in nonfinancial firms. In 'arms-length' systems, profit motive theoretically drives information gathering that supersedes the need for closer monitoring by bankers. No system would fit this extreme characterization, and few even match a weaker form of it.

Market-Based versus Bank-Based Financial Systems

The third financial system dichotomy distinguishes between market-based and bank-based systems. Systems supporting large, active securities markets, and in which corporate firms use market-based financing, are often referred to as 'market oriented.' Systems in which banks provide the majority of corporate finance are known as 'bank based.'

Connections among the Three System Dichotomies

The literature usually associates bank-based financial systems with universal banking and market-oriented systems with specialized banking. Bank dominance has become nearly

⁷ 1990 data taken from a survey of 144 large German firms' general meeting minutes, quoted in Elsas and Krahn [2003](#).

synonymous with universality while market orientation has become linked to specialization.⁸ The past literature also typically assumes that relationship banking is part and parcel of universal banking, perhaps because of Gerschenkron's focus on the German financial system of the late nineteenth century and similar systems. Putting it all together, we arrive at the three-part financial system paradigm that aligns universal banking, relationship banking, and bank-oriented financing on the one hand, and specialized banking, arms-length lending, and market orientation on the other.⁹

There is some justification for the view: banks and markets may compete in both the initial placement and the ongoing trading of securities. If universal banks internalize market functions, they may impinge on liquidity of stock exchanges, implying a lower level of market development.¹⁰ For example, universal banks that provided brokerage services may have traded securities among their customers and taken only the net transaction to the market. In contrast, market based systems by definition support large, liquid equities markets. While such internalization could be plausible in a rudimentary financial system, or in thinly traded securities, universal banking generally works with not against active securities markets. A bank cannot become "universal" without investment banking operations—underwriting and brokerage services—to perform. And investment banking requires the use and intermediation of securitized financial instruments. The existence of markets in which to trade securities facilitates the use of these instruments and therefore promotes the investment side of the universal banking business.

Setting up banks and markets as opposites misses the fundamental complementarities between them and ignores their complexity and heterogeneity. The banks versus markets dichotomy therefore provides a false sense of clarity in comparing national financial systems, as an examination of historical financial systems demonstrates.

B. Classifying historical systems

The idea of financial system types arose mainly from observation of a relatively small range of countries and time period. Thus, to understand how well the typology fit the historical evidence more broadly, Fohlin (2012) went about classifying historical financial systems based on examination of 26 national financial systems starting in the mid-19th century and extending to the late 20th century.¹¹ The study included all countries for which reliable information was

⁸ See Levine and Zervos (1998) on the 1990s and Fohlin (2012) for historical and long-term patterns.

⁹ The stylized view is most succinctly laid by Dietl (1998).

¹⁰ See Bhide (1993) and Levine (2002).

¹¹ For most of the countries listed, the determination of banking characteristics stemmed from exhaustive searches of secondary literature as well as discussions with several scholars who

available, including a sampling from Europe (for example, France, Germany, U.K, Denmark), North America (U.S., Canada and Mexico), South America (Argentina and Brazil), and East Asia (India, Japan). The classification scheme included the three primary dichotomies of financial system structure and also examined the extent of bank branching:

- Universality versus specialization (whether commercial banks also perform investment services or not)
- Relationship versus arms-length banking (equity stakes, proxy voting, or interlocking directorates between banks and non-financial firms or not)
- Bank-based versus market-oriented system (heavy use of bank funding versus securities markets)

In addition to the broad-based survey evidence, the study included in-depth analysis of five classic cases: Germany, Italy, and Japan in the ‘universal-relationship-bank’ category; and the US and UK in the ‘specialized-arms length-market’ category. After pulling together a large array of qualitative and quantitative evidence, Fohlin (2012) argues that financial systems have not fit within clear, unchanging categories, however certain financial system characteristics do allow a rough classification.¹²

Table 1: Here

Universality versus specialization

The necessity for investment banking services naturally grew with the onset of free incorporation and securitized debt, as investment bankers provide the intermediation between investors and issuers. The spread of publicly traded stocks and bonds propelled the development of secondary markets on which to trade these securities, especially toward the end of the nineteenth century. Thus, banks that provided underwriting and brokerage services evolved in a variety of functional and legal forms over the course of the 19th century, with the most rapid development in many countries in the mid- to late 19th century—typically in conjunction with related developments in corporate and securities laws and institutions.

have studied these systems. Gaps remain where information is too sparse to support a certain categorization. Further studies have appeared since, including Musacchio’s (2009) extensive study of Brazil and Colvin, de Jong, and Fliers’ (2014) analysis of a large sample of Dutch banks in the 1920s crisis there.

¹² One may also consider national laws and regulations regarding banking scope, corporate governance relationships, bank branching and operations of securities markets. Because regulations constraining banking operations vary in their intensity and enforcement, and as well, systems have historically differed even in the absence of regulatory restraints, the ‘de facto’ approach may better capture actual rather than hypothetical differences among systems.

Germany, with its dozen or more large-scale universal banks, offers the classic example of universal banking (Fohlin, 2007), but most of continental Europe followed a similar pattern. Universal banks had emerged in Belgium even earlier and in France almost simultaneously. Universal banking spread to several other European countries in the 1890s: Finland, Italy, Spain, Sweden, Ireland and Switzerland. In Italy, the financial system remained compartmentalized until the early 1890s, when it suffered a severe crisis and the failure of many banks. The crisis prompted the establishment of a central banking system and the importation of German-style universal banking.

Universal type banks spread over many parts of the industrialized world in the nineteenth century. Even where universal banking institutions grew up and dominated the corporate banking scene, other types of institutions often thrived. For example, in Belgium, a small number of large-scale, typically limited-liability universal banks operated along with smaller, specialized banks focusing on a narrower range of services. To varying degrees, this mixture of institutions emerged in all parts of continental Europe (Denmark, France, Germany, Greece, Italy, the Netherlands, Spain, Sweden, and Switzerland), parts of Latin America (Argentina, Brazil, and Mexico, for example) and, in a limited way, even in Australia, New Zealand, and the United States.

Specialized banking grew out of the more advanced economic context of England and its long history of commercial and merchant operations around the globe. The investment banks and merchant banking houses evolved separately from the commercial banks in part as a natural consequence of the extent of the markets for those services, and the fact that the early investment banking services revolved heavily around government finance with little possibility to gain from economies of scope between investment and commercial banking.¹³ Commercial and investment banking remained mostly separated in the British financial system throughout the 19th and much of the 20th centuries. Most countries with similar financial systems imported their legal and financial structures through colonization or other close ties with England.¹⁴ American banks retained significant legal and organizational separation even while combining functions in some institutions and creating close operational ties between investment and commercial banks. Thus, Fohlin (2012) refers to the US banking system as quasi-universal in the pre-World War I era.

Some countries, such as Australia, France, Netherlands, Belgium, Italy, Russia and the U.S., developed universal banking practices in the nineteenth century, but then restricted or abandoned it at various points later on.¹⁵ Notably, the United States began the 20th century

¹³ See Collins and Baker (2004) on commercial banking in England and Wales from 1860 to World War I.

¹⁴ See Fohlin (2012) for a list of countries and further discussion.

¹⁵ See Giordano

with (quasi-) universal banking but sharply restricted it with the passage of the Glass-Steagall Act in 1933 and the Bank Holding Company Act in 1956, both as responses to the Depression Era bank failures. Even into the 1990s the United States did not develop unrestricted universal banking. The Glass-Steagall Act persisted until its repeal in 1998, after much debate and as financial and political reality overtook the antiquated law.¹⁶ Yet another group of countries developed mixed or partially restricted systems: Argentina, Belgium, Brazil, Canada, Greece, India, Mexico, New Zealand, Norway, and Russia.

Germany, Austria-Hungary and Portugal were the only countries to maintain universal banking institutions continuously from the late 19th century into the late 20th century. Germany is the archetype of the universal system, having developed joint-stock universal banks in the mid-19th century and used these institutions to mobilize extensive capital to finance a growing population of corporations and large private enterprises.

Relationship versus arms-length banking

The historical evidence on prevalence of relationship banking remains incomplete, and there is no precise way of determining whether a particular set of banking institutions constitutes a relationship banking system. Recent efforts toward categorization have turned up new evidence and have established some classification parameters regarding bank engagement in some mixture of the three primary attributes: bank representatives on firm boards, direct equity shares held by banks, and proxy voting. The crucial point is that banks' activities gain them significant formal control over the management decisions of nonfinancial firms; ownership, or rights to the companies' cash flows, takes a lesser priority.

Prior to World War I, formalized banking relationships developed gradually and unevenly in different places. Until the 1860s and 1870s, when many countries liberalized incorporation laws and instituted corporate governance requirements, such as boards of directors, the opportunities for formal bank connections remained constrained. Few studies have attempted to quantify the extent of these practices, but the qualitative descriptions available suggest that most banks played a small role in non-financial corporate governance for most of the nineteenth century.

The first industrial banks of the 1850s in Germany, Belgium, France, Netherlands, and elsewhere often took over the capital of a few firms for which the banks were managing a new issue. The downturn in the markets of the mid- to late-1850s left the banks holding major stakes in a few firms, and a significant number of banks failed. The losses taught the surviving banks and newcomers to avoid such costly mistakes in the future (prominent examples include

¹⁶ The merger between Travelers Insurance Group and Citibank in early 1998 was a direct challenge to the early 20th century banking acts.

the French Credit Mobilier and the German Discontogesellschaft and Darmstädter Bank). Equity participations were largely accidental, in this case a result of the market declines, and were not pursued as a means of corporate control. In fact, historical studies highlight the dismay of bank shareholders when bank funds became tied up in long-term equity holdings.¹⁷

Fohlin (2007) argues that interlocking directorates arose in Germany most extensively toward the end of the 19th century, and from the viewpoint of the early decades of the 20th century, Germany not only had one of the largest and most complete universal banking systems but had also developed relationship banking practices of various sorts. The banks could vote their representatives onto corporate boards using proxy voting rights gained by taking equity shares placed on deposit by customers. The larger the bank, and the more widely held the corporation, the more likely the bank would receive proxy votes with which to vote its representatives onto the company board. Banks in a number of countries took to relationship practices much more actively around the turn of the twentieth century, but relationship banking practices varied quite a bit in their origins and importance. In some systems, what looked like equity stakes in fact arose out of underwriting activities of the investment banking arms of universal banks. Most banks, as in Germany, engaged via proxy voting and board positions, rather than long-term, direct equity stakes. Moreover, banks took board positions in a minority of firms.

Fohlin (2012) also evaluated relationship banking practices in the sample of 26 countries; demonstrating that not all universal banks perform the complete range of relationship banking functions, and not all financial institutions that provide some of these functions are universal banks. The study showed that the strength and prevalence of relationship banking practices varies across countries and across time periods. In the late 19th century, Austria-Hungary was the only country (for which there is data) that engaged in the full range of relationship banking activities in a wide-spread fashion: seats on company boards, equity share holdings, and proxy voting.

Proxy voting is difficult to collect data on, so we cannot say for sure how widespread the practice was. In Italy, the Netherlands, Russia, Spain and the U.S. banks in the late 19th century also took seats on company boards and held equity share holdings. In all of these cases, there is no comprehensive data on proxy voting, but anecdotal evidence from well-known bankers—such as J. P. Morgan—suggests that some version of proxy voting did provide bankers with a measure of corporate control rights. Certainly German, Austrian, Belgian, and Italian universal banks took positions on a significant number of firms' boards, but they did so primarily in the largest firms with publicly-traded equity.¹⁸ Most of the large banks geared toward industrial

¹⁷ See Paulet (2002) on the Credit Mobilier and Fohlin (2007) on the German case.

¹⁸ See Fohlin (1997b, 1999b, 2007) on Germany and Italy. See Van Overfelt et al (2009) on Belgium.

finance held board positions and possibly proxy votes, but few held long-term equity stakes. Thus, we can surmise that most industrializing economies practiced a relatively high degree of relationship banking by the early 20th century.

Notably, Fohlin (2012) finds that universal banking existed without widespread and comprehensive relationship banking (at least nine of the 26 historical cases of universal banking examined), suggesting that universal banks do not require formal banking relationships to remain viable. This institutional independence is important, because some have hypothesized that formal institutions help enforce repeated interaction between individual firms and a single bank—the German ‘house banking’ idea—that in turn yields informational economies of scope.¹⁹ In many cases, firms developed relationships with multiple banks, particularly if the firm was large enough to require substantial securities issues, and therefore underwriting or lending from a consortium of banks. Thus, historical evidence also suggests that firms do not always engage in exclusive, long-term banking relationships.

Moreover, banks in ‘specialized’ systems also formalize and maintain relationships through some combination of equity stakes, proxy voting, or sitting on the board of the client firm. Of the primarily specialized systems identified in Fohlin (2012) bankers took up board positions in Canada, Finland, Greece, Japan, the U.S., and also in financial systems that had become specialized (Belgium, France, and Italy) during the regulatory initiatives of the inter-war years. England was home to apparently the least engaged bankers, however, even there, a new study estimates half of members of Parliament held seats in corporate boards.²⁰

Among the hybrid banking systems (neither truly universal nor specialized), the US stands out. J. P. Morgan and George F. Baker (respectively, the preeminent investment banker and the chairman of the board of First National Bank of New York) and other investment and commercial bankers played such a high-profile role in US industrial firms in the pre-World War I era that Congress undertook an investigation into the so-called Money Trust through extensive hearings in 1912 and 1913 and passed the Clayton Antitrust Act in 1914.²¹ For the majority of the twentieth century, legal restrictions, such as stipulations on equity stake holding or board memberships, have hindered but not eliminated US banks’ development of close and formal relationships to their clients. In a study of more recent times, US bankers sat on the boards of one third of large firms.²²

¹⁹ See Calomiris (1995) for a review of these and related arguments.

²⁰ Braggion and Moore (2013).

²¹ See ABA (1984) on the Clayton Act provisions regarding interlocking directorates.

²² Kroszner and Strahan (1999). G. William Domhoff, a sociologist at UC Santa Cruz maintains a website that provides extensive information on interlocking directorates in the US: http://www2.ucsc.edu/whorulesamerica/power/corporate_community.html

It is also worth noting that the U.S. pioneered the development of intensive 'relationship banking' for new firms in the form of post-World War II venture capital organizations. Venture capitalists fund predominantly untested projects for which the market has yet to enter the picture and therefore asymmetric information problems may stand in the way of financing externally. Indeed, venture capital financing is most viable for firms with a high chance of ultimately going public and accessing market-based finance. In other words, financing needs vary by stages of individual firm development and may necessitate varying levels of relationship banking over time.

Bank versus market orientation

While it is exceedingly difficult to gather accurate and comprehensive historical measures of securities market activity, the data that is available for a few countries along with qualitative evidence from historical studies indicate that virtually all industrializing economies supported thriving secondary markets for securities before World War I. Later developing countries supported markets as well: stock markets appeared in Istanbul, Madrid, Belgrade, Athens, and elsewhere. Even some of the poorest economies, such as India, Russia, and Brazil, had one or more relatively active financial markets.²³ Only a few countries—Finland, New Zealand, Norway, for example—lacked significant capital markets. Thus, the evidence so far available indicates that financial markets emerged regardless of banking design. The list of true bank-based systems might dwindle down to nothing. Even Japan is not viewed as an entirely bank based system but a hybrid of bank and market based systems plus the addition of the *zaibatsu* (before World War II) as an extra complexity.²⁴

In some cases, governments intervened in markets, usually in response to crises. In the archetypal universal banking system, Germany, government intervened in financial markets and institutions, including requirements on stock market listing, levying of taxes on issues and trades, and imposition and removal of a ban on futures trading on nearly all industrial shares. The government also created among the most advanced accounting, reporting, and corporate governance standards. One tax law did seem to temporarily shift trading activity from markets to large banks: a tax loophole that failed to impose trading taxes on all orders, even those executed through banks, allowed Berlin-based universal banks to offer savings to their

²³ On Brazil, see Mussachio (2009). For a general examination of stock market development see Michie (2006). See Battilossi and Morys (2011) for a brief survey of markets in Madrid, Vienna, Belgrade, Bukarest, Sofia, Athens, and Istanbul.

²⁴ Dietl (1998) and Hoshi and Kashyap (2003). See Morck and Nakamura (2005) for an exhaustive treatment; they explain the (substantial) differences between the modern (post-WWII) keiretsu and the pre-war zaibatsu.

customers who traded through them instead of through smaller intermediaries or brokers. The more trades the banks could gather and net out within their own client networks, the further the eventual net trading fees were spread. This loophole was closed by 1900, but even before that, it did not prevent the expansion of the Berlin exchange. This example, however, may say more about the idiosyncratic influences of government than the innate substitutability of financial markets and universal banks.²⁵

The German experience suggests that universal banking became useful and successful because financial markets existed in which to trade securities. Germany was home to several active securities markets, with thousands of share companies listed.²⁶ In 1905, approximately 30 percent of the 5,500 German *Aktiengesellschaften* (joint-stock companies) maintained listings on one or more German exchange—with the majority of these listings in Berlin. Listings grew rapidly after World War I into the 1920s.

It is worth noting the element of path dependency and idiosyncratic development in market development. The first countries to develop liquid securities markets could draw foreign firms to list securities with them, reducing the role of national securities markets in other European or North American countries. Countries that led the pre-war international monetary system, such as Great Britain, France, the U.S. and Germany, also took the leading role in international financial markets of the late nineteenth and early twentieth centuries. So, London, Paris, New York, and Berlin topped the list of financial markets around the turn of the twentieth century, regardless of differences among their banking organizations.

Bank Branching versus unit banking

One additional characteristic of banking systems that falls somewhat outside of the three dichotomies of financial system design is the question of bank branching and whether it relates to the size and structure of banks. The survey of banking systems conducted in Fohlin (2012) indicates that extensive, national branch networks emerged in most industrialized economies around the world by the early twentieth century. Only Portugal, Denmark, Norway, and the United States failed to develop widespread branching before World War I. The study also finds that the reasons for lack of branching are not entirely clear: while the U.S. imposed a variety of restrictions on branching, even in states with no anti-branching law (notably, California), branching developed gradually over the 1910s and after. Likewise, Portugal, Denmark, and Norway did not prohibit branching. Their lack of branching might be attributed to lack of economic development, except that many far poorer countries, such as India, Brazil, Mexico, and Japan, did maintain branch networks.²⁷ Moreover, although these three non-branching countries

²⁵ See Fohlin (2000).

²⁶ Fohlin (2007a and 2007b).

²⁷ Apparently, Brazil imposed restrictions on inter-state branching by domestic banks but permitted branching within states. Foreign banks could branch as they pleased

were on the European periphery, so were several branching countries: Spain, Russia, Finland, and Sweden, for example. Finally, even though these three countries were small and had small industrial sectors, so were New Zealand, Finland, Ireland, and Greece. In any case, by the early post-World War II years, only the U.S. perpetuated the unit banking system in many parts of the country—but even then branching within states was taking hold in several states, to the degree it was permitted.²⁸

In other words, the available literature indicates that branching appears in all types of financial systems and is neither necessary nor sufficient for universal banking to arise. As the previous discussion explains, universality arose in most places in the middle of the nineteenth century, and branching followed in most places decades later, when the level of development encouraged larger scale banking. Fohlin (2012) points to two cases that illustrate the point: on the one hand, Germany developed joint-stock universal banking by 1848 but, like most other countries, created widespread branch networks only in the 1890s; England, on the other hand, maintained specialized deposit and investment banking even throughout most of the twentieth century, but developed an extensive nationwide branching system even earlier than the universal-banking countries. Thus, the literature suggests that, despite some modern theoretical arguments, universality of banking services required a very modest minimum scale of operations. Thus, while bank branching surely affects market structure in banking, and may impinge on the stability of the commercial banking sector, it does not link intimately with overall financial system design—such as the activity of financial markets or the structure of banking institutions.

Financial System Evolution over the Twentieth Century

The tendency to identify universal style banking with bank domination and specialized banking with market domination stems from the focus on the post-World War II era, as well as from the narrow range of cases examined. The typology is usually based on comparisons of the United States, Great Britain, Germany, and sometimes Japan in the 1950s through 1980s. The first two countries, having hosted the most important international financial markets for much of the twentieth century and having eschewed both universal banking and formalized bank relationships for most of that time (particularly in the U.S. post-war), head up the market-based, specialized, arms-length group. Germany and Japan, with their enormous banks and widely discussed networks of clients and house-bank relationships, lead the bank-dominated, universal, relational group.

²⁸ See Calomiris (2000) for a collection of his previous articles dealing largely with branching and relevant political and regulatory debates. See Kroszner and Strahan (2014) for a study of US banking regulation mostly since the 1930s.

After World War II, Austria, Germany, Greece (to some extent – there is no data for proxy voting), Japan (also no data on proxy voting), Netherlands, Portugal, Spain, and Switzerland all maintained some degree of relationship banking practices. In the late 20th century, Italy, France and Finland also developed relationship banking. At the same time, these practices became restricted in Japan. Most countries whose banks held seats on company boards allowed them to have equity share holdings in non-financial firms. On the whole, these two characteristics of relationship banking did appear to go together, but the extent of long-term stakeholding varied a great deal. When equity stakes coincided with board representation, the motivation was simple to understand: through board seats and equity stakes, banks could provide corporate oversight and simultaneously manage their investments.

The data on proxy voting is sufficiently patchy to make observations of broad patterns virtually impossible. In Germany, however, the data and qualitative evidence on proxy voting (testimony from contemporary observers) suggests that throughout most of the 20th century, banks held significant control over corporate governance via proxy voting. It is worth noting that U.S. regulation prevented banks from holding equity in companies to which they provided financing – an arms-length relationship, as discussed earlier.

Even these cases, however, defy rigid classification, since closer scrutiny has revealed a number of contrary facts: for example, a lack of widespread, exclusive house-bank relations in Germany; the unravelling of interlocking directorates and unwinding of equity stakes in Germany at the end of the 20th century; the frequent appearance of bankers on American boards of directors (approximately one third of large U.S. firms have at least one bank representative on their boards); the lack of universality in post-WWII Japan; and the large size and high level of activity of the securities market in Japan.

Moreover, many systems underwent significant upheaval in the aftermath of the two world wars, so that some systems changed significantly during the inter-war and early post-war years. Banking institutions in a number of countries suffered both political and economic consequences of war and depression. Many countries enacted legislation in response to political pressure in the 1920s and 1930s, and countries such as Belgium, Greece, Italy, Japan, and the United States went so far as to legally prohibit full-scale universal banking. At the same time, economic and political crises hit financial markets, particularly in the early 1930s and during and after World War II. Rajan and Zingales (1999) suggest that governments, because they could exert less control over markets than over firms, and because of the growing discontent of their constituents, found ways to effectively hinder or even shut down markets of all sorts. These authors argue further that the extent of the anti-market backlash varied most significantly with

the legal-political system, civil law countries being more susceptible to centralizing command and control than common law countries.²⁹

Germany presents, again, one of the most striking examples. The fallout after World War II included the cession of vast portions of eastern German industry and resources, along with the very site of the primary stock exchange (and important provincial exchanges), and the near obliteration of the vibrant Berlin market of the pre- and early post-World War I era. The weight of foreign occupying powers, the urgent bailouts of industrial firms by financial institutions, the strengthening of the social-welfare state, the imposition of hefty capital gains taxes on sales of shares, and other exigencies of post-war reconstruction conspired to produce a financial system in which banks were extremely large, industry partly subordinated its ownership and governance to financial institutions and the government, and markets failed to flourish. Yet, given the country's unique position in the events of the 1930s and 1940s, Germany's path differs from the experiences in most other countries—even those with universal banks. Germany's experience therefore does not work as a paradigm case of a universal banking system. Particularly salient is the observation of a re-unified Germany at the start of the 21st century that has moved away from the archetypal house-banking form, demonstrating that its existence stemmed from the particular needs of post-war Germany.

Elsewhere, the move away from universality varied in its implementation and lasted only a few decades even where it was enforced. By the 1990s, most systems had deregulated and reverted to something resembling their pre-World War I state (see Table 2). Using the traditional meaning of universal banking—the combination of investment and commercial banking by one institution—banking structure since the 1990s became highly correlated with structure in 1913. For those countries that had begun to industrialize by the mid-nineteenth century, the correlation persists back to at least 1850. Of the 26 cases surveyed, no system clearly and permanently switched from one category to the other over this period of 100 to 150 years. This evidence of path dependency is all the more impressive in light of government interventions specifically intending to alter institutional design.

Despite much continuity, of course, bank structures, activities, and instruments have evolved over time. Most banking systems, whether universal or 'specialized' in the pre-war era, underwent a conglomeration movement starting in the 1970s. This development created quasi-universal banking in nearly all industrialized countries, in the sense that financial institutions of several types began operating under the umbrella of bank holding companies. Thus, even the steadfastly specialized system of England is home to financial services conglomerates. Likewise, the traditionally universal systems of Germany, Belgium, and many other continental European countries have outgrown the centralized universal banking form, so that the commercial and underwriting arms of banks are less closely integrated.

²⁹ Sylla (2006) offers a critical appraisal of the Rajan and Zingales 'great reversals' thesis.

From the research to date, it is clear that attempting to fit particular countries into a few narrowly-defined, overarching categories of financial system – for example, Germany as a universal banking system – can be misleading. Most financial systems have a mixture of characteristics and do not fit neatly into narrow classifications. Many economies undergoing industrialization in the mid to late 19th century supported a small number of large-scale universal banks but simultaneously maintained many more specialized banks. Nationwide branching appeared in most countries between the 1890s and World War I; only the U.S. persisted with widespread unit banking after World War II, and this is related to regulatory factors. Relationship banking was more common in universal systems but the two institutional features also existed separately from each other. In addition, there has been no link between branching and the design of financial institutions.

The distant history of banking systems reveals that the relationship between universal banking and limited securities markets, to the extent that it exists, is a post World War II phenomenon. The loss of highly active securities markets is much more persistent than changes in banking design. Among the countries surveyed, no system permanently switched from universal to specialized; banking structure exhibits path dependency, or path reversion, over the past 100 to 150 years. At the same time, financial conglomerates with fairly distinct functional units have emerged in most industrialized countries. This relatively recent phenomenon appears to be driving the partial convergence of financial system design: formerly ‘specialized’ banks are becoming more universal, while traditional universal banks have become more compartmentalized. Over the past 150 years, banking systems in industrialized countries have become remarkably similar, regardless of their initial development, and many systems have evolved back to their pre-regulation configuration. Almost all countries today have extensive branch networks. And in most economically advanced countries there are at least some universal banks and some of the attributes typically associated with relationship or house-banking, even in systems that would not typically be associated with either institutional form.

III. What Causes Financial System Differences Historically?

The question of national financial systems origins has stimulated much research and debate over the past decade or so. The literature is dense enough to have spawned extended literature reviews of its own. Thus, this section serves to provide a cursory overview and point interested readers to sources for further study.³⁰

A. Theories: Economics, Law, and Politics

³⁰ For much more detail see Fohlin (2012), Chapter 7, on which this section is based.

Gerschenkron (1962) offered probably the best-known general hypothesis about the genesis of financial institutions, at least concerning industrial banking on the European continent in the 19th century.³¹ In essence, he argued that banks played a more important role in industrialization for 'moderately backward' economies than they had played for the earliest industrializer, Great Britain. Follower economies needed institutions capable of mobilizing a high volume of capital from disparate sources and also that were able to compensate for a shortage of entrepreneurship. In Gerschenkron's view, the German universal banks were just such an institution

In situations of extreme underdevelopment, as in Russia, however, financial institutions were insufficient to support the transition to modernized industrial activity; such cases demanded centralized institutional intervention, mostly from government.

In the past several years, financial system research has turned its attention to legal and regulatory factors. postulates that the observed variation in financial system structure may result from peculiarities of financial system regulation. Government intervention may hamper all development or might promote certain institutions at the cost of others.

Regulation of non-bank institutions—such as securities markets, corporate chartering, limited liability, and bankruptcy—may have further altered the shape of financial systems. For example, laws that protect investors, contracts, and property rights might be argued to encourage the development of all kinds of financial institutions, and particularly atomistic market arrangements.³²

Certain legal systems produce more enabling legislation than do others. Some have argued for the importance of legal traditions in determining the development of financial markets.³³ The modern evidence suggests that countries adhering to a French civil law system have both the weakest investor protection, through both legal rules and law enforcement, and the least developed capital markets. Common Law countries fall at the other end of the spectrum, so that

³¹ Gerschenkron (1962, 1968, 1970). Sylla (1991) reviews Gerschenkron's theories and related work. Knick Harley (1991) addresses Gerschenkron's idea of 'substitution for prerequisites' of industrialization.

³² On Germany, see the edited volume by Horn and Kocka (1979) especially those by Horn, Friedrich, and Reich.

³³ See the series of papers, LaPorta, et al (1997, 1998, 1999). In Besley and Persson's (2009) model, if the cost of protecting property rights is lower under common law than under civil law, then common law would allow for more credit as a share of GDP. Pagano and Volpin (2005) make related arguments, discussed subsequently under 'Political Factors.' Of course, by now, many others have used a similar legal tradition indicator to help explain a number of financial and economic phenomena.

American and British economies or societies have led to market-oriented financial systems. Similarly, Dietl (1998) lays out the poles, admittedly highly stylized, of neoclassical versus relational regulation. These extremes map directly to common law and civil law legal systems, respectively.

La Porta et al (1998) conclude that countries that provide weak laws for creditor or shareholder protection or weak enforcement of those laws develop substitute mechanisms, such as concentration of ownership, to safeguard owners' rights. Acemoglu and Johnson (2005) argue similarly that individuals adapt their financial intermediation approaches to fit the constraints placed by contracting institutions.

Rajan and Zingales (2003) propose a related theory for the determinants of overall financial system development and specifically contrast legal and political influences. Directed primarily at the LaPorta, et al series (1997, 1998), Rajan and Zingales point out that, except for the outlier, Britain, the most developed countries in 1913 maintained similar levels of financial development, regardless of legal system.³⁴ These authors argue that not legal systems, but political contexts—the support of financial institution growth by government and interest groups—determine the course of development.

Verdier (1997 and 2002) hits on similar themes, but lays out a political-economic view of the development of financial systems. In doing so, he takes direct aim at Gerschenkron's hypothesis about the relationship between the extent of economic backwardness and the role of financial institutions. In this view, political structure, not relative backwardness, determines the shape of financial systems. In particular, universal banking arose in the coincident presence of two conditions: first, a segmented deposit market, dominated by non-profit and provincial banks and, second, a reliable lender of last resort facility insuring liquidity in the banking system. Furthermore, Verdier argues, these two preconditions for universality emerged simultaneously only when state centralization was sufficient to provide a strong central bank (with credible lender-of-last-resort status) but limited enough to permit coexistence of provincial and, in his parlance, 'center' banks. The issue of legal system does not appear in Verdier's analysis, but the other work reviewed here suggests a possible connection. As Verdier concedes, however, political centralization was neither solitary nor decisive in determining financial structure in most cases. Thus, whether or not Verdier correctly characterizes the relationship between political and financial development, he does not clearly subvert Gerschenkron's hypothesis.

Neither political nor legal structure is clearly independent of economic development, and the three factors may be mutually enhancing, rather than mutually exclusive. For example, Pagano

³⁴ On the advanced level of financial development in Britain, Schultz and Weingast (2003) argue that the emergence of liberal democratic political institutions in the 17th century prompted a financial revolution that expanded credit availability (government debt at that stage).

and Volpin (2005) find that proportional voting systems yield less shareholder protection (and greater worker protection) than majoritarian systems, and vice versa. These arguments resonate with those in Besley and Persson (2009), who relate similar financial development with legal origins.

Thus, the existing literature leaves room for all three types of factors – economic, political, and legal – in determining the shape of financial development. The formal theoretical models have yet to rationalize endogenous development of distinct financial system designs. Given the variety of theories proposed, assembling a wider range of evidence may shed more light on the issue.

B. Empirical evidence

While Gerschenkron's view of financial system development prevailed for several decades, it was rarely put to a rigorous, general test. The first such attempt, by David Good (1973), who set out to test that 1. the level of banking development at the end of the so-called great spurt of industrialization or 2. the growth rate of the banking sector during the 'great spurt' relates positively to the extent of backwardness at the time of initiation of industrialization. Good's effort underscored the difficulty of clearly specifying Gerschenkron's theory in a testable manner, but he succeeded in raising questions about its generality.

Fohlin (2012) took up the empirical challenge, evaluating economic, legal, and political origins of financial development. Fohlin finds that the economic factors show the greatest power in explaining financial system types and size. In particular, the stage of economic development helps predicts the type of banking system that subsequently developed among the pre-World War I industrial nations and also factors into the strength of financial system development. The analysis starts by posing the following test of Gerschenkron: For Europe around 1880, the most and least developed economies should have the lowest rates of financial system growth, while the moderately advanced economies should have the highest rates. Based on the theoretical framework, the level of financial development may be high in the most industrialized economies, but it should certainly be high in the moderately-advanced economies and low in the least advanced. Rates of economic growth, in contrast to levels, should yield an essentially linear relationship between economic and financial development: the fastest growing economies should have the most rapid financial development. In the traditional view, slow growers include both those that have passed their earliest phases of industrialization and those that have so far failed to industrialize. Notably, these tests get at financial development generally, as opposed to financial system type.

For the analysis of economic factors Fohlin (2012) computes GDP per capita growth rates for various sub-periods and also constructs a ratio of industrial to agricultural employment and

its percentage growth rate from 1880 to 1913. Lastly, Fohlin measures industrial development as the product of GDP per capita and the industrial/agricultural employment ratio, in order to capture the combined effects of wealth and industrial development. The results confirm the hypothesized inverted U-shaped relationship between GDP per capita in 1880 and the level of financial system assets in both 1880 and 1900 (using a robust estimator to mitigate outlier bias). The results for financial development circa 1900 prove much more statistically significant than those for 1880. At the same time, the growth rate of financial assets relates negatively with the level of GDP per capita in 1880, both from 1880 to 1900 and from 1900 to 1913. The level of GDP per capita in 1900 is also negatively related to financial system asset growth over the succeeding 13 years. Notably, the rate of growth of GDP per capita from 1880 to 1900 relates very strongly and positively to subsequent growth of financial system assets (1900 to 1913). The reverse relationship—from financial system asset growth to GDP per capita growth—does not appear.

Fohlin also tests the hypothesis that financial structure (both market orientation and universal banking) is related to the level of development and finds that a U-shaped relationship emerges between the structure index reported in Levine (2000) and GDP per capita in both 1880 and 1900. For the most part, in these early industrial economies, market orientation is increasing in the level of development. Similarly, the ratio of industrial to agricultural employment also relates positively to market orientation. At the same time, universal banking was more likely in countries with lower levels of GDP per capita in 1880 and with higher rates of growth of GDP per capita between 1880 and 1900.

On the issue of political factors and financial system type, Fohlin's test analyzes the link between political centralization (a fiscal measure) and both the extent of universal banking at the time of development as well as the market orientation index from the late 20th century. As predicted, state centralization as of 1880 relates negatively and very significantly to market orientation—even 100 years later. In contrast, state centralization cannot be linked statistically to the extent of universal banking. In a related, but distinct vein, Fohlin also tests the legal origins theory that the growth (and, implicitly, the design) of financial systems are correlated with legal tradition. In general, markets supersede banks in common law countries. The evidence indicates only weakly that pre-WWI financial development preceded faster in common law countries, though as expected, full-fledged universal banking only appeared in civil law countries. As Fohlin (2012) points out, the historical pattern may stem from the fact that common law countries are virtually all related to England and adopted English institutions and norms in banking and finance.

IV. Financial Systems and Economic Growth

The principle reason that economists study financial system design is to understand whether the shape of institutions or systems influences the real economy and the welfare of the population.

Most studies have focused on the role of finance generally in promoting economic growth, while a smaller literature centers on the varying effects of different systems.

A. Literature on the finance-growth nexus

Empirical studies on the relationship between long run growth and financial intermediation show that increased intermediation, or financial development more broadly, significantly increases growth. Intermediaries presumably lower costs of investment by diversifying idiosyncratic risk and by exploiting economies of scale in information processing and monitoring; they also provide insurance for entrepreneurs, who cannot diversify their risk on their own.³⁵ Large fixed initial investment costs, R&D, for example, can force entrepreneurs to seek external financing; without financial intermediaries, agency problems could make the cost of finance too high, discouraging innovation (and therefore growth). Joseph Schumpeter argued in 1912 that financial intermediaries promote innovative activities, decrease transaction costs and improve allocative efficiency; in this manner the financial sector becomes the “engine of growth.” Without intermediaries, the cost of R&D projects would be prohibitively high. Financial intermediation also lowers the required rate of return on innovation by lowering fixed costs, thereby spurring growth through investment in R&D. The financial crisis of 2008 prompted a new look at the connection between financial development and growth, as in Beck (2012), and a greater concern for the impact of financial fragility—episodic crises—on economic activity.

In a range of cross-country empirical studies of the post-war era, financial development appears to help predict growth rates.³⁶ Historical studies, though a bit sparse, show a strong positive effect of financial intermediation in the pre-depression period as well.³⁷ In one such study, however, finance loses much of its explanatory power for growth when legal origin

³⁵ These propositions surely seem almost preposterous in light of the crisis of 1907–09 (and the financial crisis of 2007–9). The severe drop in economic growth following the loss of liquidity and the general malfunctioning in the financial sector actually underscores the key part that a properly functioning financial system plays in permitting economic growth. Gaytan and Ranciere (2006) develop an overlapping generations model that incorporates liquidity crises and demonstrates a variable relationship between financial development and growth.

³⁶ King and Levine (1993) and Levine and Zervos (1998), for example. The cross-country growth literature does struggle with identification and other econometric problems. See Manning (2003) for some discussion.

³⁷ Rousseau and Sylla (2003) do a similar exercise as King and Levine for 17 countries from 1850 to 1997.

appears in the regression.³⁸ Yet none of the legal-origin factors is statistically significant, suggesting that if legal origin matters for growth, it does so through financial development. Moreover, political variables (proportional representation election systems, frequent elections, infrequent revolutions) correlate with larger financial sectors and higher conditional rates of economic growth. Caveats do apply: for example, small countries may import capital, so that for them, domestic financial intermediation sectors may not serve the same purpose as it does in large, diverse countries. Moreover, the link between finance and growth seems to differ depending on a country's level of development, appearing most significant in modern periods for countries at earlier stages in economic development. Countries that had already attained moderately high levels of GDP per capita in 1900 – but not necessarily the richest ones – grew fastest in the years leading up to World War I.³⁹ The wealthiest countries in 1880 produced among the slowest growth of financial institution assets between 1900 and 1913, relative to GNP, arguably because they were already well along the path to industrialization by that time.

Time series analyses offer an alternative approach to evaluating the growth impact of financial development. While these methods improve the causal inference possible, the range of studies so far provides mixed answers to the question. Again, the differences among countries stand out, and for contemporary developing economies, Demirgüç-Kunt (2012) emphasizes the key role of government policy.⁴⁰

B. Financial system 'types' and long-run growth patterns

Economists and other observers have hypothesized that the distinction between bank-based and market-based financial systems relates systematically to patterns of national economic growth.

For most of the post-World War II era, economists studying financial system design generally argued that financial systems based on banks engaged in relationship banking promoted effective corporate control, long-run perspectives on investment, and sustained economic growth.⁴¹ This assumption stems from the view that banks play a positive role as intermediaries in collecting and disseminating information, in managing risks of various dimensions, and in mobilizing large amounts of capital quickly. By playing this regulatory and information sorting role, banks arguably enhance investment efficiency and thereby economic growth (Allen and

³⁸ Bordo and Rousseau (2006).

³⁹ Fohlin (2012).

⁴⁰ Beck (2013) also surveys the literature on financial development and growth, with a focus on government policy.

⁴¹ See Levine (2002) for a summary.

Gale 1999), improve capital allocation and corporate governance (Diamond, 1984, Gerschenkron 1962), and mitigate the effects of moral hazard (Boot and Thakor 1997). In this view, the long-run relationships that banks form with their clients enable them to smooth the flow of investments and reduce transaction costs and asymmetric information distortions. More recent work, based on the US deregulation experience, attributes firm-level efficiency gains to universal banking (Neuhann and Saidi, 2014).

Still, analyses of long-run patterns of development have argued that markets may also enhance growth because they increase incentives to acquire and profit from information about firm performance; under market based systems, managerial compensation may be more easily tied to firm performance and markets may reduce inefficiencies associated with bank control.⁴² In general, the relative strength of banks versus capital markets, however, seems not to affect the overall availability of external finance, though it does relate to the composition of financing between short and long maturities. In less economically advanced countries, it appears that bank finance is particularly important for economic growth.

Historical analysis indicates that neither financial system types—bank-based versus market-based, branching versus unit, universal versus specialized—nor legal traditions in themselves can explain the different experiences across countries over the last 100 years or more (Fohlin, 2012). That study, encompassing all countries with pre-WWI data available, shows that the wealthier countries among those that began industrialization before World War I tended to deepen their financial base more than the less well off. In other words, financial and real development went hand in hand in that period of rapid industrial growth. Overall, the set of relatively developed economies at the end of the 19th century experienced remarkably similar long run growth rates, even though they displayed different financial system types, rates of financial development, and legal orientation for most of the 20th century. The wide range of historical evidence leads to the conclusion that the specific type of financial system or institutions that develop is far less important for economic growth than the development of *some* well-functioning financial system.

V. Conclusion

The literature on financial system design and development, particularly historical studies of financial institutions and systems provides a vast array of evidence on how and why institutions take shape and what impact they have on the real economy. The body of research shows the complexity of financial systems among the industrialized economies of the nineteenth and early twentieth century, and the range of institutions and markets available to individuals, businesses, and governments. These studies also demonstrate the variety of organization and design of

⁴² See Levine (2002).

these systems, all focused on similar functions and ultimately on mobilizing enormous amounts of capital toward productive ends.

The research has also shown that the strict dichotomy between market-based and bank-dominated systems does not capture historical or contemporary reality. History offers interesting insights into the multiplicity of financial system designs and the lack of tight links among various banking characteristics, suggesting that going forward, researchers should consider financial systems as an amalgamation of a set of functions rather than as a fixed typology of institutions. The split between universal and specialized banking is most relevant and pronounced in the historical period, before the conglomeration movement of recent years.

Moreover, the research to date strongly supports the idea of persistence and path dependency in financial system design, that economic conditions at the time of industrialization help set the initial conditions that shape financial system and banking institution design, and historical political conditions, such as centralization of power, plays an ancillary role via the extent of regulation on banks and the development of free capital markets. In other words, history matters.

Table 1: Banking System Characteristics, Nineteenth and Twentieth Centuries

Country	Time period	Universal	Bank seats on company boards	Equity share- holdings by banks	Proxy voting by banks ^a	Extensive branch networks ^b
Argentina	esp. after 1890	mixed	some	few	?	1
	1990s	restricted	restricted	restricted	restricted	1
Australia	before 1890s	1	?	some	?	1
	1895–1950s	0	?	few	?	1
	1990s	unrestricted	some	some	some	1
Austria-Hungary	pre-WWII	1	1	1	1	1
	1990s (Austria)	1	1	1	1	1
Belgium	1830s–1934	mixed	?	1	?	1
	1934–1970s ^e	0	?	0	?	1
	1990s	mixed	restricted	restricted	restricted	1
Brazil	1850–1900	mixed	0	some	?	1
	post-1900	1	some	0	0	1
	1990s	mixed	restricted	restricted	restricted	1
Canada	1900–13	mixed	some	some	?	1
	esp. after WWI	0	some	few	?	1
	1990s	mixed	restricted	restricted	restricted	1
Denmark	1870–1913	mixed	some	some	?	0
	1990s	unrestricted	unrestricted	unrestricted	unrestricted	1
England	esp. after	0	few	few	?	1
	1990s (UK)	unrestricted	unrestricted	unrestricted	unrestricted	1
Finland	pre-WWI	0	some	few	1	1
	1920s–1980s	1	1	some	1	1
	1990s	1	some	some	some	1
France	1800–1880	1	few	few	?	0
	1880–1913	mixed ^d	1	some	1	1
	1941–1984	0	?		?	1
	1990s	mixed	1	1	1	1
Germany	pre-1880	1	few	few	?	0
	esp. after	1	1	some	1	1
	1990s	1	1	1	1	1
Greece	pre-WWI	mixed	some	some	?	1
	1928–1962	0	1	1	?	1
	1990s	mixed	unrestricted	unrestricted	unrestricted	1
India	esp. after	0	?	few	?	1
	1990s	mixed	restricted	restricted	restricted	1
Ireland	esp. after	0	?	few	?	1
	1990s	unrestricted	unrestricted	unrestricted	unrestricted	1
Italy	1890's–1920's	1	Top banks	1	?	1
	1930's–1980's	0	?	0	?	1
	1990s	1	1	1	1	1

Country	Time period	Universal	Bank seats on company boards	Equity share- holdings by banks	Proxy voting by banks ^a	Extensive branch networks ^b
Japan	pre-WWII	1 ^h	few	few	?	1
	post-WWII	0	1	1	?	1
	1990s	restricted	restricted	restricted	restricted	1
Mexico	1897–1913	few	some	some	?	1
	1990s	mixed	0	0	0	1
Netherlands	1860–1920s ^g	mixed	1	1	?	1
	1990s	1	1	1	1	1
New Zealand	1870–1895	mixed	?	some	?	1
	1895–	0	?	few	?	1
	1990s	mixed	unrestricted	unrestricted	unrestricted	1
Norway	pre-WWII	0	0	0	?	0
	1990s	mixed	some	some	some	1
Portugal	1890s-WWII	1	1	some	?	few
	post-WWII	1	1	1	?	1
	1990s	1	some	some	some	1
Russia	1890s-WWII	1	1	1	?	1
	1990s	mixed				
Spain	esp. after	mixed	1	1	?	1
	1990s	1	1	1	1	1
Sweden	esp. after	mixed	1	some ^f	some	1
	1990s	1	restricted	restricted	restricted	1
Switzerland	esp. post-	mixed	1	some	?	1
	1990s	1	1	1	1	1
United States	before 1914	1 ⁱ	1	1	?	0
	1914–1933	1	some	few	?	some
	after 1933	0	some	0	?	some
	1990s	restricted	restricted	restricted	restricted	some

Source: Fohlin (2012, Table 6.1).

Notes: a In many cases the extent of proxy voting by banks is difficult to measure accurately. b In most cases, branching proceeded slowly until after the second half of the nineteenth century or even later. c Or since World War I. d Some universal banks, some specialized. French universal banks moved more toward straight deposit banking after 1880. e After 1934, mixed banks were required to split into deposit banks and holding companies and the banks could not hold shares. f Intentional acquisition of shares was illegal until 1909. Shareholdings could result from collateral held on bad loans. g Some universal, some primarily commercial. (Jonker argues that Dutch banks were universal only between 1910 and 1920. After about 1924, through WWII, the Dutch banks reverted to primarily commercial banking, with some low-risk company flotations.) h Japanese banks combined commercial and investment banking but underwrote little corporate equity; they were prohibited from acting as dealers in secondary markets. i Bank structure varied considerably. Services were combined through commercial bank subsidiaries of investment banks. Compliance to (or interpretation of) the new laws also varied.

Table 2: Persistence of Banking System Characteristics over the Twentieth Century

Country	Universal in 1913? 0–2 (subjective)	Universal in 1990s? 0–2 (subjective)	Universal in 1913? 0–1 (subjective)	Universal in 1990s? 0–1 (subjective)	Bank-based in 1990s? 1=yes	Structure index for 1990s	Development of equity markets in 1913? 0–2 (subjective)
Argentina	1	0	0	0	1	-0.18	1
Australia	0	2	0	1	0	0.80	1
Austria-Hungary	2	2	1	1	1	-1.27	1
Belgium	1	1	1	1	1	-0.17	1
Brazil	2	1	1	1	0	1.01	1
Canada	1	1	0	0	0	0.82	1
Denmark	1	2	1	1	0	0.17	1
England	0	1	0	0	0	1.24	2
Finland	1	1	1	1	1	-0.76	0
France	1	1	1	1	1	-0.17	2
Germany	2	2	1	1	0	0.17	2
Greece	1	1	1	1	1	-0.66	.
India	1	1	0	0	1	0.14	1
Ireland	0	2	0	1	0	0.33	.
Italy	2	2	1	1	1	-0.55	1
Japan	1	0	1	0	0	0.86	1
Mexico	1	1	0	0	0	0.90	1
Netherlands	1	1	1	1	0	0.33	1
New Zealand	0	1	0	1	0	0.49	0
Norway	1	0	0	0	1	-0.23	0
Portugal	2	1	1	1	1	-1.43	1
Russia	2		1			.	1
Spain	2	2	1	1	1	-0.31	1
Sweden	1	2	1	1	0	0.80	1
Switzerland	1	2	1	1	0	1.58	1
United States	1	0	0	0	0	1.34	2

Sources: Fohlin (2012, Table 6.2). The structure index for the 1990s comes from Levine and Zervos (1998).

Table 3. International Comparisons of Financial System Structure, circa 1990

Country	Securities	Insurance	Real estate	Nonfinancial firms	Stock market cap	Structure index	Market
Argentina	3	2	2	3	0.05	-0.15	0
Australia	1	2	3	2	0.43	0.09	1
Austria	1	2	1	1	0.07	-0.23	0
Belgium	2	2	3	3	0.26	-0.13	0
Brazil	2	2	3	3	0.12	0.03	1
Canada	2	2	2	3	0.46	0.12	1
Switzerland	1	2	1	1	0.71	0.12	1
Germany	1	3	2	1	0.19	-0.14	0
Denmark	1	2	2	2	0.22	-0.08	0
Spain	1	2	3	1	0.18	-0.17	0
Finland	1	3	2	1	0.18	-0.16	0
France	1	2	2	1	0.20	-0.17	0
United Kingdom	1	2	1	1	0.76	0.21	1
Greece	2	3	3	1	0.08	-0.18	0
India	2	4	3	3	0.13	-0.07	0
Ireland	1	4	1	1	0.27	0.15	1
Italy	1	2	3	3	0.12	-0.19	0
Japan	3	4	3	3	0.73	0.06	1
Mexico	2	2	3	4	0.15	0.13	1
Netherlands	1	2	2	1	0.41	-0.04	0
Norway	2	2	2	2	0.15	-0.15	0
New Zealand	2	2	2	1	0.40	0.07	1
Portugal	1	2	3	2	0.08	-0.23	0
Sweden	1	2	3	3	0.38	0.07	1
United States	3	3	3	3	0.58	0.17	1

Source: Levine and Zervos (1998).

Note: The variables securities, insurance, real estate, and nonfinancial firms may take values 1–4 as follows:

- 1- Unrestricted; banks can engage in the full range of the activity directly in the bank
- 2- Permitted : The full range of those activities can be conducted, but all or some of the activity must be conducted in subsidiaries
- 3- Restricted: Banks can engage in less than full range of those activities, either in the bank or subsidiaries
- 4- Prohibited: The activity may not be conducted by the bank or subsidiaries

Stock market capitalization is given as a share of GDP. Market equals one if the structure index is positive and zero otherwise. All variables come from Levine and Zervos (1998).

References

- Acemoglu, D. and S. Johnson (2005) "Unbundling Institutions" *Journal of Political Economy*, Vol. 113, No. 5: 949–995.
- Allen, Franklin and Douglas Gale (1999) *Comparing Financial Systems*. Cambridge, MA: MIT Press.
- Allen, Franklin and Capie, Forrest and Fohlin, Caroline and Miyajima, Hideaki and Sylla, Richard and Yafeh, Yishay and Wood, Geoffrey, How Important Historically Were Financial Systems for Growth in the U.K., U.S., Germany, and Japan? (October 25, 2010). Available at SSRN: <http://ssrn.com/abstract=1701274>
- American Bar Association Antitrust Section Monograph 10, 1984, "Interlocking Directorates Under Section 8 of the Clayton Act," Volume 15, Issue 5
- Battilossi Stefano and Matthias Morys, "Emerging Stock Markets in Historical Perspective: A Research Agenda," CHERRY Discussion Paper Series CHERRY DP 11/03.
- Beck, Thorsten (2012) "The Role of Finance in Economic Development: Benefits, Risks, and Politics," in Mueller, Dennis C. (Ed.) *The Oxford Handbook of Capitalism*. New York: Oxford.
- Beck, Thorsten (2013) "Finance, growth and fragility: the role of government," *International Journal of Banking, Accounting and Finance* Volume 5, issue 1, pp. 49-77.
- Besley, T. and T. Persson (2009) "Repression or Civil War?" *American Economic Review*, Vol. 99, No. 2: 292–97.
- Bhide, A. (1993) "The Hidden Costs of Stock Market Liquidity," *Journal of Financial Economics*, V 34, 1993: pp. 31–51.
- Boot, A.W.A. and A.V. Thakor. (1997) "Financial System Architecture." *The Review of Financial Studies*, Vol. 10, No. 3: 693–733.
- Bordo, M. and P. Rousseau (2006). "Legal-Political Factors and the Historical Evolution of the Finance-Growth Link" *European Review of Economic History*, Vol. 10, No. 3: 421–444.
- Braggion, Fabio and Lyndon Moore (2013) The Economic Benefits of Political Connections in Late Victorian Britain *Journal of Economic History* 73: 1, pp 142-176.

- Calomiris, C. (1995) "The Costs of Rejecting Universal Banking: American Finance in the German Mirror, 1870–1914." In *Coordination and Information*, edited by N. Lamoreaux and D. Ra. Chicago: University of Chicago Press.
- Calomiris, Charles. (2000) *U.S. Bank Deregulation in Historical Perspective*. New York: Cambridge University Press.
- Collins Michael and Mae Baker Commercial Banks and Industrial Finance in England and Wales, 1860-1913
- Colvin, Christopher L., Abe de Jong, Philip T. Fliers (2014) "Predicting the Past: Understanding the Causes of Bank Distress in the Netherlands in the 1920s," Working Paper.
- Good, David. (1973) "Backwardness and the Role of Banking in Nineteenth-Century European Industrialization," *The Journal of Economic History* 33, 845–850.
- Demirgüç -Kunt, Asli (2012), Finance and Economic Development: The Role of Government, in (Berger, Allen N., Philip Molyneux, and John O. S. Wilson) *The Oxford Handbook of Banking*. New York: Oxford Press.
- Dietl, Helmut. (1998) *Capital Markets and Corporate Governance in Japan, Germany and the United States: Organizational Response to Market Inefficiencies*. New York: Routledge.
- Diamond, D. (1984) "Financial Intermediation and Delegated Monitoring." *Review of Economic Studies* 51, No. 3: 393–414.
- Fohlin, C. (1997b) "Universal Banking Networks in Pre-War Germany: New Evidence from Company Financial Data." *Research in Economics* 51, No. 3: 201–225.
- Fohlin, Caroline. (1999b) "The Rise of Interlocking Directorates in Imperial Germany," *Economic History Review*, LII (1999), 2:307–333.
- Fohlin, Caroline. (2000) "Economic, Political, and Legal Factors in Financial System Development: International Patterns in Historical Perspective." Social Science Working Paper No. 1089, California Institute of Technology.
- Fohlin, Caroline. (2007a) *Finance Capitalism and Germany's Rise to Industrial Power*, New York: Cambridge University Press.

- Fohlin, Caroline. (2007b) "Does Civil Law Tradition (or Universal Banking) Crowd out Securities Markets? Pre-World War I Germany as Counter-Example," *Enterprise & Society*, 8(2007), 602–641.
- Fohlin, C. (2012) *Mobilizing Money: How the World's Richest Nations Financed Industrial Growth*, New York: Cambridge University Press.
- Gaytan, A. and Ranciere, R. (2006). Banks, Liquidity and Economic Growth. Working Paper.
- Gerschenkron, Alexander (1962), *Economic Backwardness in Historical Perspective*. Cambridge, MA: Harvard University Press.
- Gerschenkron, Alexander (1968), "The Modernisation of Entrepreneurship." In: *Continuity in History and Other Essays*. Cambridge: Belknap Press of Harvard University Press.
- Harley, C. Knick. (1991) "Substitution for prerequisites: endogenous institutions and comparative economic history," in Richard Sylla and Gianni Toniolo (eds.), *Patterns of European Industrialization*, 29–44. London and New York: Routledge.
- Hoshi and Kashyap (2004) "Japan's Financial Crisis and Economic Stagnation." *The Journal of Economic Perspectives* 18, 3–26.
- King, R.G. and R. Levine. (1993) "Finance and Growth: Schumpeter Might be Right." *The Quarterly Journal of Economics* 108, 717–737.
- Kroszner, R. and Strahan (1999) "Bankers on Boards: Monitoring, Conflicts of Interest, and Lender Liability." NBER Working Paper.
- Kroszner, Randall S. and Philip E. Strahan (2013) "Regulation and Deregulation of the U.S. Banking Industry: Causes, Consequences and Implications for the Future" (p. 485 - 543)
- La Porta, R., Lopez-De-Silanes, F., Shleifer, A. and Vishny R. W. (1997) "Legal Determinants of External Finance." *The Journal of Finance* 52, 1131–1150.
- La Porta, R., Lopez-De-Silanes, F., Shleifer, A. and Vishny R. W. (1998) "Law and Finance." *Journal of Political Economy* 106, 1113–1155.
- La Porta, R., Lopez-De-Silanes, F., and Shleifer, A. (1999) "Corporate Ownership Around the World." *The Journal of Finance* 54, 471–517.

- Levine, R. (2002) "Bank-Based or Market-Based Financial Systems: Which is Better?" *Journal of Financial Intermediation* 11, 398–428.
- Levine, Ross, and Sara Zervos. (1998) "Stock Markets, Banks, and Economic Growth." *The American Economic Review* 88: 537–558.
- Manning. (2003) "Finance Causes Growth: Can we be so Sure?" *Contributions to Macroeconomics* 3(1).
- Merton, Robert C. and Zvi Bodie (1995) "A Conceptual Framework for Analyzing the Financial Environment" in *The global financial system: A functional perspective*. (Eds: Dwight Crane, et. al.). Harvard Business School Press.
- Michie Ranald (2006) *The Global Securities Market: A History*, New York: Oxford University Press.
- Morck, Randall and Masao Nakamura (2005) "A Frog in a Well Knows Nothing of the Ocean: A History of Corporate Ownership in Japan," forthcoming in R. Morck (Ed.) *A History of Corporate Governance around the World: Family Business Groups to Professional Managers*, NBER series, University of Chicago Press, p. 367–459.
- Musacchio, Aldo (2009) *Experiments in Financial Democracy: Corporate Governance and Financial Development in Brazil, 1882-1950*. New York: Cambridge University Press.
- Neuhann, Daniel and Saidi, Farzad, (2014) "The Firm-Level Real Effects of Bank-Scope Deregulation: Evidence from the Rise of Universal Banking". Available at SSRN: <http://ssrn.com/abstract=2468269> or <http://dx.doi.org/10.2139/ssrn.2468269>
- Pagano, M. and P. Volpin (2005) "The Political Economy of Corporate Governance," *American Economic Review*.
- Paulet, E. (2002) *The Role of Banks in Monitoring Firms: The Case of the Credit Mobilier*, New York: Routledge.
- Rajan, R.G. and L. Zingales. (1999) *The Politics of Financial Development*. Working paper, University of Chicago and NBER.
- Rajan, R.G. and L. Zingales. (2003) The Great Reversals: The politics of Financial Development in the Twentieth Century. *Journal of Financial Economics* 69, pp 5–50.
- Schultz and B. Weingast (2003) "The Democratic Advantage: Institutional Foundations..." *International Organization*

- Sylla, R. E. (1991) "The Role of Banks," in Richard Sylla and Gianni Toniolo (Eds.), *Patterns of European Industrialization*, 45–63. London and New York: Routledge.
- Sylla, Richard (2006) "Schumpeter Redux: A Review of Raghuram G. Rajan and Luigi Zingales's *Saving Capitalism from the Capitalists*" *Journal of Economic Literature* Vol. XLIV (June), pp. 391–404.
- Temin, Peter and Hans-Joachim Voth, (2013) *Prometheus Shackled: Goldsmith Banks and England's Financial Revolution After 1700*. New York: Oxford University Press.
- Van Overfelt, W., J. Annaert, M. De Ceuster, M. Deloof (2009), "Do universal banks create value? Universal bank affiliation and company performance in Belgium, 1905-1909", *Explorations in Economic History*, vol. 46 no. 2, pp. 253-265.
- Verdier, T. (1997) "The Political Origins of Banking Structures." *Policy History Newsletter* 2.
- Verdier, Daniel (2002). "Explaining Cross-National Variations in Universal Banking in 19th-Century Europe, North America and Australasia." Douglas Forsyth and Daniel Verdier (eds.). *The Origins of National Financial Systems: Alexander Gerschenkron Reconsidered*. London: Routledge, pp. 23–42.