Capitalism and Financial Development: The Case of Mortgage Markets in France, 1807–1899

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Social Science History, Volume 38, Numbers 1&2, Spring/Summer 2014, pp. 13-41 (Article)

Published by Cambridge University Press

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Historical research can contribute to greater understanding of economic growth, but only if it proceeds without theoretical blinders and assumptions imposed by past definitions of capitalism. We will make this case, by taking one particular historical example—mortgage markets in nineteenth-century France—and analyzing the financial development that accompanied the rise of capitalism there. The French example demonstrates that there is an immense amount that historians and social scientists still do not know about economic growth or capitalism. One common assumption is that little financing takes place before big banks and other modern financial institutions arrive on the scene. No one, however, has ever tested this implicit assumption by estimating how much lending or other financial dealing occurred before the arrival of the banks and modern financial institutions in developed economies. Although scholars have studied financial dealings back into the Middle Ages or before, no one knows whether the sums involved were big or small. We do so and discover that the sums involved were enormous. That so much borrowing went on outside modern financial institutions raises serious doubts about the argument that connects financial development and economic growth. Our research also makes it clear that context was critical when entrepreneurs raised money in the early stages of economic growth or when young businesses or firms in new industries sought funds.

Our brutal financial crisis has revived historians' interest in capitalism. The subject, after having faded from historical research years ago, has suddenly returned with renewed vigor. Historians are now writing about capitalism and studying it in archives and libraries, even if they do not agree on what it is.[1] For some, it might be Marx's capitalism, with masses of workers toiling in great factories and enslaved by machines, as capital replaces labor. For others, it might be Schumpeter's capitalism, with its constant renewal and innovation, through the process of creative destruction, or Polanyi's wrenching process of cultural change as markets upturn society. For most historians, though, there is no precise definition—just exciting research—although most would agree that whatever capitalism is, financial markets must loom large in its workings.

Meanwhile, many other social scientists (though not all of them) have moved on, and instead of talking about capitalism, they focus on economic growth. One might worry that such a shift is risky, because economic growth has too many positive

1. See, e.g., Jennifer Schuessler, "In History Departments, It's Up with Capitalism," *New York Times* (April 6, 2013), available at http://www.nytimes.com/2013/04/07/education/in-history-departments-its-up-with-capitalism.html?pagewanted=all&_r=0 (accessed June 25, 2013), and the 287 comments the article had attracted as of that date.

Social Science History 38, Spring 2014, pp. 13–41

doi:10.1017/ssh.2015.4

connotations. It is true that the narrative of progress implicit in growth can make short shrift of the conflicts imbedded in any definition of capitalism, whether they pit workers against factory owners, innovators against incumbents, or financiers against the middle class. Nonetheless, economic growth does include everything bound up in the older definitions of capitalism. When economies grow, society is turned upside down, as people abandon the countryside and agricultural employment to live in cities and work in factories. Nineteenth-century economic growth did involve capital replacing labor, and modern economic growth does depend either on innovation in Schumpeter's sense or on substituting human capital (essentially knowledge, training, and productive personal traits) for unskilled labor. Markets do typically expand as economies grow, and big markets do in fact increase the incentives for innovation and growth. One might also worry that economic growth is too narrow a concept and focuses too much on macroeconomic aggregates like per capita income or debt to gross domestic product (GDP). Yet that criticism fails to recognize that economic growth encompasses what historians have typically associated with capitalism, and more too, including what is implicit in much of the recent historical research: the greater efficiency of businesses under capitalism, the rising precariousness and inequality, the greater scale of markets and firms, and the enormous expansion of the financial sector, with its large banks, big stock markets, and gigantic financial dealings.

In our view, the revival of interest in capitalism offers an opportunity for fruitful historical research that would be of considerable interest in the social sciences. Most social scientists recognize that prosperity and economic growth are long-term processes and that cross-country comparisons are perilous and problematic. They are perilous because leveling the playing field in comparing the performance of two geographic units is extremely difficult, and they are problematic because the lessons gained from the success in one location may have little or no value in helping another location improve its economic outcome. Here historical research can contribute to a better understanding of economic performance, but only if it proceeds without the theoretical blinders imposed by definitions of capitalism from prior centuries.

Those older definitions are dangerously misleading because they drive historians to focus on a narrow range of phenomena and an equally narrow range of connections among workers, firms, and finance that would most miss the true process of economic change, which cannot be reduced to the rise of a Krupp, Standard Oil, or Crédit Mobilier in each country. In reality, the process involves a very broad variety of actors and organizations whose interaction are context dependent. It is this last fact that gives relevance—one might say primacy—to historical research.

We will make this case, by taking one particular historical example—credit markets in nineteenth-century France—and analyzing the financial development that accompanied the rise of capitalism there. The French example demonstrates that there is an immense amount that historians and social scientists still do not know about economic growth or capitalism. Our ignorance is greatest in areas where historians could in fact cast more light than anyone else: on the detailed social, cultural, and political context of economic growth—how, for instance, new firms or entrepreneurs in new industries got their initial financing, or how lenders learned whether borrowers were

credit worthy. Those topics have been neglected by social scientists, and studying them would not mean that historians have to limit themselves to economic history. Rather, they could do social, cultural, political, or business history, or a mix of each of these genres. There are, in short, great opportunities for novel historical research on capitalism and economic growth in general, not just on France or on financial development—a topic that we shall return to in the conclusion.

Focusing on financial development is straightforward because if there is one thing that virtually everyone associates with capitalism, it is the large banks, big stock markets, and gigantic financial dealings. Economists who study economic growth agree on giving pride of place to finance. Recent research in fact shows that financial development (in other words, the expansion of financial markets and the spread of modern financial institutions such as banks) does accompany economic growth, and statistical evidence implies that the relationship is causal: if financial development is retarded, then economic growth suffers and incomes remain low.[2] Research in economic history tells the same story.[3]

Yet despite all this research, much about the relationship between economic growth and financial development remains murky or completely unknown. Financial development should be essential for economic growth, for obvious reasons. Entrepreneurs have to raise equity funding and borrow from banks and investors to put innovations into production. Businessmen have to take out loans to start businesses, build factories, pay for their inventory, and meet their payroll before sales revenues start pouring in. And someone has to finance the housing and infrastructure that all the new urban workers will dwell in. Although private developers may build the apartments and even the roads, they too have to raise money, typically from modern financial institutions, such as banks or insurance companies. Without the banks and other modern financial institutions, none of this (so it seems) would happen. Economic growth would grind to a halt, because no one could raise much money.

The critical but implicit assumption here is that little financing takes place before the banks and other modern financial institutions arrive on the scene. Only when they step on the stage are entrepreneurs, businessmen, and real estate developers able to work their magic, for without the banks and modern institutions they cannot raise any money to get started. No one, however, has ever tested this implicit assumption. No one has even estimated how much lending or other financial dealing occurred before the arrival of the banks and modern financial institutions in developed economies. Although scholars have studied financial dealings back into the Middle Ages or before, no one knows whether the sums involved were big or small.

Testing that assumption would, of course, mean setting aside older definitions of capitalism, because they would dismiss such questions as unimportant. It would also mean voyaging into uncharted territories of scholarship. But the rewards for such a journey would be great, and the research that needs to be done (so our conclusions

2. Burgess and Pande 2005; Demetriades and Luintel 1996; Demirguc-Kunt and Levine 2004; King and Levine 1993; Levine 1997; Rajan and Zingales 2004.

3. Davis and Gallman 1978; Gerschenkron 1962; Neal 1994; Postan 1935; Rousseau 1999; Rousseau and Sylla 2003, 2005, 2006; Sylla 1999; Temin and Voth 2006, 2013.

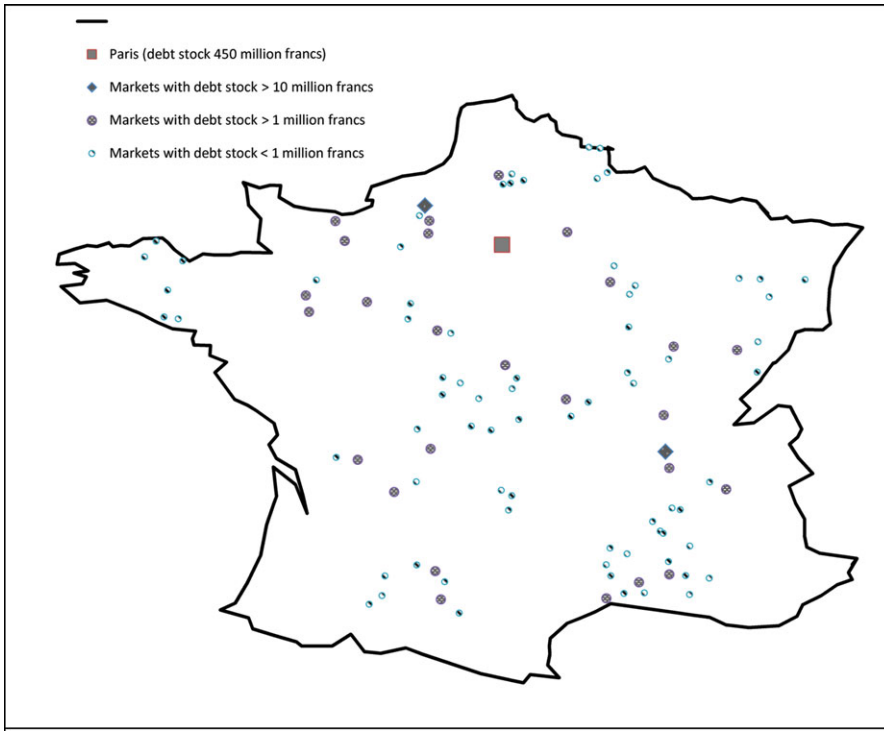

FIGURE 1. *(Colour online) Markets in our sample with their stock of outstanding debt in 1807. The stock of outstanding debt is estimated by multiplying the volume of new loans in each market in 1807 times average durations for each type of loan.*

suggest) is just what historians can do best, because it demands careful attention to the social, political, cultural, and economic context. If historians take up this challenge and pursue these questions, their work will have the enormous virtue of correcting what many other social scientists think they know about the ties between financial development and economic growth, and it will map out, in vivid detail, what actually happened with financial markets as capitalism grew. We take the first steps of this journey here by looking at mortgage markets in France.

Financial Intermediaries and Mortgage Lending in Nineteenth-Century France

To see how traditional markets evolved in France as a whole and to investigate how they operated locally, we gathered data on more than 200,000 mortgage loans drawn from a sample of 105 credit markets scattered through France (see figure 1 for a

map). The 105 markets were chosen to yield a stratified sample of towns and cities that would reflect the French economy as a whole. The markets include Paris; other big cities such as Lyon; medium-sized urban centers with 10,000 to 70,000 habitants, such as Grenoble; and smaller towns with populations as low as 500 people. Mortgage loans were subject to a tax, and our data come from archives of the tax offices, which covered lending in the municipality where the office was located and in surrounding towns and villages. The information we collected includes the number and size of new loans and loan durations; it allowed us to estimate the volume of new loans and stock of outstanding debt in each market for six years: 1740, 1780 1807, 1840, 1865, and 1899. The dates of these estimates were chosen to be roughly a generation apart. The first date, 1740, was set by the availability of the earliest usable tax records (before the French Revolution, the Contrôle des actes). The last date was set by the requirement that the tax records and associated notarial documents be sealed for a century.[4] Here we will focus heavily on the nineteenth century, the period when France industrialized, and look at a major segment of the financial system: mortgages—or more precisely, lending secured by real assets, using a systematic sample of mortgage loans (described in the following text) that yields the first estimates of how much lending was done before banks and modern financial institutions proliferated.

The market for mortgages in France turns out to have been huge, even before the country was fully industrialized. In 1840, for instance, outstanding mortgage debt in France amounted to 28 percent of GDP, or about the same level relative to the size of the economy as in the United States in the 1950s.[5] The big surprise is that very little of this debt—only 0.3 percent—was funded by the modern financial intermediaries—banks—that were just beginning to spread across France. Nor were the mortgages made by other modern financial intermediaries, for the country's first successful mortgage bank (the Crédit Foncier) would not be founded until 1852, and other modern intermediaries were not doing mortgage loans either. And 1840 is not at all exceptional. Even in 1899, when banks had multiplied throughout France and industrialization had long been underway, large numbers of mortgages still originated outside the modern financial system. Indeed, in that year, outstanding mortgages that passed through the Crédit Foncier or other banks totaled only 6 percent of GDP. The rest—18 percent of GDP—had been arranged in some other way, by the borrowers or lenders (which turns out not to be the case) or by some unknown traditional financial intermediaries.[6]

Traditional intermediaries were in fact putting the loans together in nineteenth-century France, and we have uncovered who they were. They turn out to have been the

4. The purview of the 105 tax offices used in our sample did change somewhat over time. To allow for proper comparison across years, we limited each market to loans drawn up by notaries who resided in the canton where the tax office was located. A canton is the French administrative division just above the municipality and usually consists of a town or city and several nearby villages.

5. The stock of US mortgage debt was 11 percent of GDP in 1944 and averaged 30 percent in the 1950s, according to Federal Reserve Bank data at http://www.federalreserve.gov/releases/z1/Current/data.htm (accessed August 29, 2013).

6. Like the estimate of total mortgage debt for France in 1840, the estimate for 1899 also comes from our sample, which we describe in the following text.

country's notaries, semiprivate court officers who preserved records and also provided legal and financial advice. They were raising huge amounts of savings for mortgage lending, and they were efficient at doing it, for as we show in the following text, they were not driven out of business when the chief modern financial intermediaries in France—banks—spread throughout the country. That raises serious questions about the causal link between modern financial development and economic growth, because the statistical evidence supporting this link ignores traditional lending such as the mortgages brokered by notaries. Taking that traditional lending into account will force us to rethink the connection between modern financial development and economic growth—in other words, between modern financial development and capitalism, for it was likely weaker than most of us thought, at least in the case of France. As we shall see, the loans arranged by the traditional intermediaries played a much bigger role in economic growth than anyone expected. Growth cannot simply be attributed to the appearance of banks and other modern financial intermediaries, for traditional intermediaries did not suddenly vanish but were still doing much of the financing needed for growth. At the very least, loans they brokered funded the construction of housing and infrastructure that accompany economic growth. Without their loans, construction would have screeched to a halt and growth would have come to a near stop too. And their role went beyond housing and infrastructure, for evidence from four case studies we will analyze suggests that they may have also provided initial funding for new firms in capital-intensive industries.

Again, our evidence does only come from one country, but the French example was not unusual. In 1900, mortgage markets were large in Britain, Germany, and the United States too, and although the three economies all had highly developed financial systems, between 32 and 65 percent of mortgage lending still being done by various sorts of traditional financial intermediaries, outside the circle of banks and the modern financial sector.[7] We still do not know who these traditional intermediaries were in Britain, Germany, and the United States. And we do not know either how these intermediaries operated, how much business they did, or how they determined what investments to fund.[8]

So how did the French mortgage market and its intermediaries—the notaries—work? In nineteenth-century France, mortgage loan contracts were drawn up by the notaries, who drafted other legal documents as well, from leases and land sales to wills, probate inventories, estate divisions, and marriage contracts. The notaries had to preserve authentic copies of everything they drew up, and they also arranged property sales. In the course of their business, they learned who had money to lend, who was a good credit risk, and how much land pledged as collateral was worth. They also

7. The estimates for Britain are derived from Sheppard 1971 and Offer 1981; for details, see Hoffman et al. 2010. Those for the United States come from Goldsmith 1969. For Germany, they are based on information in Hoffmann 1965; Koch 1911; and Preussische Statistik 1905–1906: 91; details about the German estimates are available from the authors. For the importance of mortgages in the United States later on, during the Great Depression, see Wigmore 2010.

8. We do know that attorneys and scriveners arranged mortgages in Britain; see Anderson 1969; Habakkuk 1994; Miles 1981; and Neal 1994.

knew whether collateral had already been mortgaged, either through the business of arranging loans or the government's lien registry, whose intricacies they knew well. They were thus ideally placed to solve the informational problems that confronted borrowers and lenders in the mortgage market: namely, will the borrower repay the loan, and if not, will the borrower's collateral compensate the lender?

Because they knew who the potential lenders were—people with money to lend—and who the creditworthy borrowers were—those with valuable collateral and a record of repayment—it is not a surprise that they went beyond simply drafting mortgage loan contracts and actually brokered the loans. They could do a much better job of it than the borrowers and lenders, who would have to rely on personal ties of family, neighborhood, and profession to find lenders or trustworthy borrowers and so would have much less information than the notaries. When originating loans, the notaries did not take money on deposit and then use it to fund mortgages; rather, they simply matched up borrowers and lenders, in much the same way that a real estate agent today might match up buyers and sellers. In Britain attorneys had almost the same informational advantage, and they played a similar role in putting mortgage lenders and borrowers together.[9]

Banks—particularly commercial banks—were the chief major modern financial intermediary in nineteenth-century France. Although securities markets for stocks and bonds were important, banks have long been considered to be the financial intermediaries who were critical for economic growth. Nineteenth-century France had three types of banks: local commercial banks (an ever-increasingly dense network that spread across the urban hierarchy); what we will call investment banks (mostly in Paris and often known as the Haute Banque), which engaged in commercial banking but also underwrote the issue of new securities, though they did not usually hold on to the securities in their own account; and by the 1860 a few banks with branches and corporate charters, which by the eve of World War I were starting to drive the local commercial banks out of markets. These so-called universal banks, which could make short-term commercial loans to businesses and fund long-term ventures such as the building of a factory, have received a great deal of attention, but during the nineteenth century in France, the closest bank in most places was a local commercial bank.

In general, the commercial banks secured short-term funds from depositors and then used it and their owners' equity to fund short-term commercial loans. Occasionally, the commercial banks and the Haute Banque would make the sort of longer-term investments that made nineteenth-century industrialization possible. But relying on either sort of bank for longer-term funding was risky. If a bank rolled over short-term loans to fund the construction of a factory (as happened in the United States), then the borrower faced the risk that the loans would be cancelled in the middle of

9. For the role that notaries played, see Hoffman et al. 2000 on the case of Paris, where notaries began matching large numbers of borrowers and lenders in the eighteenth century, after the Law affair; for the rest of France, see our forthcoming book on mortgage markets in France. For the British case, see Anderson 1969; Miles 1981; and Neal 1994.

construction, before the factory had begun producing goods.[10] And if the bank made a long-term commitment (say by making a long-term loan), then it bore enormous risks, particularly if it was hit by a bank run or the sort of liquidity crises that were common in the nineteenth century. The bank would then have likely failed, just as Lehman Brothers did at the outset of our own recent mortgage debacle.

Banks did still have certain advantages. By holding a portfolio of loans, they could reduce the risks they faced and also give bank owners a diversified portfolio of investments. They could offer depositors accounts that could pay interest and yet be easily turned into cash by withdrawing funds, unlike an illiquid long-term loan brokered by a notary. As the century wore on, the universal banks in France reduced the risk of bank runs by opening branches and diversifying the source of their deposits geographically. In addition, the investment banks and some commercial banks were deeply involved in providing short-term financing for French industry and trade in the nineteenth century, and one could easily imagine that they would develop expertise in industrial or commercial lending that no notary could ever acquire.[11] One might therefore expect that banks in general would be the efficient low-cost lenders, and because nothing stopped banks either from entering markets (there were no capital requirements or regulations that limited entry) or from making mortgage loans, one might expect them to compete with the traditional intermediaries—the notaries—and eventually drive them out of the mortgage market.[12]

If banks were so much more efficient, then it would be tempting to single out certain key changes in their operations or in the legislation governing business as critical moments in the rise of financial capitalism in France: the founding of the bank of France in 1797; the Code de Commerce in 1806; the first universal bank, the Crédit Mobilier in 1852; or the general incorporation law in 1867, which paved the way for corporate banks. Those changes are certainly important, but focusing on them distorts the historical record, both for French banks and for the notaries, as the workings of the mortgage market will show. While social scientists recognize the importance of informal or traditional credit markets in a variety of settings (e.g., in development economics), few of them are willing to go into the archives to figure out who these intermediaries were and how they arranged credit. The responsibility of recovering the history of financial transactions throughout the world therefore lies

10. For examples of how short-term loans were rolled over to fund long-term investments in the United States, see Davis 1972: 349; Lamoreaux 1994.

11. For banks' financing of industry and trade in nineteenth-century France, see Cameron 1961; Gille 1959; Lescure Plessis 1999, which also covers the growth of branch banking after 1870; and Lévy-Leboyer 1964.

12. Anyone could open a bank or act as a banker, although only the Banque de France could issue bank notes. Banks did face one constraint if they entered the mortgage business: they could not sell mortgages to the Banque de France, which only accepted high-grade commercial paper for rediscount. But the same constraint would apply to their financing long-term investment in industry. Most banks were partnerships or sole proprietorships until the 1850s, when corporate banks appeared; they had the ability to open branches. It was once thought that nineteenth-century France lacked banks (Cameron 1967: 110–11, 127) and that the small number of banks retarded French industrialization. That claim has been overturned by Lescure and Plessis 1999; Lévy-Leboyer 1964; Lévy-Leboyer and Bourguignon 1985; O'Brien and Kayder 1978; and Roehl 1976.

TABLE 1. *Mortgage lending in the sample and France, 1807–99*

Year	*1807*	*1840*	*1865*	*1899*
	Number of mortgage loans in sample			
All	23,739	40,046	30,557	19,325
Notarial	23,738	39,887	29,762	18,268
Notarial/All	1.00	1.00	0.97	0.95
	Volume of new loans in sample (million francs)			
All	52	115	148	148
Notarial	52	110	107	114
Notarial/All	1.00	0.96	0.72	0.77
	Estimated volume of new mortgage loans for France as whole (million francs)			
All	470	840	1,161	1,159
Notarial	470	817	952	957
Notarial/All	1.00	0.97	0.82	0.83
	Estimated stock of outstanding mortgage debt for France as a whole (billion francs)			
All	1.79	3.69	4.75	7.93
Notarial	1.79	3.68	4.07	5.90
GDP	11.7	13.4	20.9	32.6
All/GDP	0.15	0.28	0.23	0.24
Notarial/GDP	0.15	0.27	0.19	0.18

Source: See text. The GDP figures come from Toutain 1987; for 1807, GDP is assumed to grow at 0.4 percent per year between 1807 and Toutain's earliest GDP estimate (1815).
Note: Notarial lending includes all mortgages in which the lender was not a bank. GDP per capita is calculated using the census closest to the dates of our cross-sections (1806, 1841, 1866, 1896).

with historians. The importance of this responsibility cannot be understated. To take but one example, with a better historical understanding could Ben Bernanke have ever uttered the words "We've never had a decline in housing prices on a nationwide basis (July 29, 2005)"? To be sure, there had been no such decline since World War II, but that is a short history that leaves out the Great Depression and earlier crises. History, in short, may not prevent financial crises, but it remains our sole source of experience by which we judge the present.

Banks, Notaries, and Mortgages

Although the mortgages could be arranged by anyone, most were brokered by notaries. The lenders in the loans they arranged were individuals (sometimes several of them), whom the notary had matched up with the borrower. The vast majority of the mortgages—95 percent or more in the years of our sample—fell into this category, which we will call notarial debt and consider to be traditional lending (table 1). The remaining mortgage loans were made by banks. These bank mortgages included mortgage-backed credit lines, and the loans made by the Crédit Foncier, which funded its lending by selling mortgage-backed securities. (It alone could issue such debt, and as with Fannie Mae and Freddie Mac today, its debt carried a de facto government guarantee.) But even with the bank mortgages, the notaries were still involved, for they continued to draw up the loan contracts and check the lien registers, and they

could have even provided some of the advice that led borrowers to seek a loan from a bank or led the bank to grant the loan. Our figures for traditional lending may therefore be underestimates, for some of the bank debt may actually have been arranged (at least in part) by notaries too.

But even if we ignore that possibility, it is abundantly clear that traditional mortgage lending was large. If we use population data to extrapolate from our sample to France as a whole, then there were likely to have been more than 1 million notarial mortgages outstanding at any time in the nineteenth century. The value of the outstanding notarial debt ranged between a low of 15 percent of GDP right after the Revolution (in 1807) to a high of 27 percent (in 1840), which, as we have seen, was on a par with the level of outstanding mortgage debt in the United States in the 1950s. And notaries, not banks, did the bulk of mortgage lending too: never less than 82 percent of the funds raised in the years of our sample (table 1).

Clearly, notarial lending was large in nineteenth-century France, much bigger than traditional lending is usually assumed to be. But perhaps the modern financial intermediaries—the banks—were more efficient and were actually driving the notaries out of the mortgage business, by making loans at lower cost. The number of banks was in fact growing in our sample (there were less than four banks per market in our sample in 1807 but more than 12 per market in 1899) as in the rest of France. The mortgage lending the banks did was growing as well (table 1). Were these banks pushing notaries out of the mortgage lending?

The evidence from our sample says no. If the banks had been driving the notaries out of the mortgage business, then notarial lending should have dropped when banks opened in our markets, and data from our sample shows that was not the case. Nor were banks targeting markets where notaries would be vulnerable to competition: markets with only a few notaries where they had been arranging a large number of loans.[13] Instead of competing for the mortgage business, the banks (apart from the Crédit Foncier) stuck to the usual business of making short-term commercial loans, which financed inventories or trade. Only rarely did they get involved in mortgages, and the notaries therefore operated in a completely different credit market. The reason why is clear. Banks simply lacked the information needed to succeed in the mortgage markets. They did not know the value of the real property that served as collateral, and they lacked the notaries' long experience with mortgage lenders and borrowers. Although they could learn about collateral and past lending by investigating the government's lien registry, the notaries had an enormous head start. A banker would be better off hiring a notary (as the Crédit Foncier did) or simply staying out of the mortgage market and specializing instead in short-term commercial lending, where the notaries had no experience. With the exception of the Crédit Foncier, which had government backing, the notaries and the banks therefore operated in different financial markets. The two sets of intermediaries—one traditional, the other modern—in fact complemented one another, with more banks seeming to spur on notarial lending and likely vice versa too.

13. Hoffman et al. 2013.

The implication is that financial development had less effect than anyone thought, at least in the case of nineteenth-century France. If financial development is defined as the arrival of banks and other modern financial institutions, then its impact was muffled because traditional financial intermediaries—in the French case notaries—were already doing an immense amount of lending. The key modern financial intermediary in nineteenth-century France—banks—did not drive notaries out of the mortgage market or even do much mortgage lending, even though there were no legal or regulatory obstacles that kept them from competing with notaries. Instead, the bankers by and large stuck to short-term commercial loans and did some longer-term industrial investment.

Did Notarial Lending Contribute to Economic Growth?

Notaries were arranging large numbers of mortgage loans in nineteenth-century France and mobilizing large sums of financial capital for the mortgage market. And they were not at all outmoded or inefficient; otherwise they would have been driven out of business by banks. But did all the mortgage loans they arranged contribute to economic growth?

Answering that question is tricky. To begin, French entrepreneurs seeking capital were not faced with a stark choice—mortgages, banks, or nothing—for there were other sources of financing as well. Even small firms could also raise capital by privately selling equity to investors—so-called private placements. That was easier in France than in many other places, because the Code de Commerce allowed partnerships to take on a wide variety of forms that allocated income, authority, and risk on a partner by partner basis. Evidence for Paris suggests that this was an important avenue for securing funds.[14] Larger firms had even more choice, even before general incorporation in 1867, because the Code de Commerce allowed individuals to form limited partnerships with tradable shares. These large firms could issue publically traded equity or bonds. Initial or secondary offerings were handled by the investment banks, and there were secondary markets in Paris and a half dozen other cities each with an official list and an over-the-counter (*coulisse*) market. So if notaries had ceased to arrange mortgages, industrial finance would not have dried up.

Ideally, we could determine whether notaries contributed to economic growth by analyzing what their mortgage loans funded, but the tax records that provided our evidence do not usually reveal the purpose of the loans. Although the original notarial contracts sometimes state what the mortgages were to be used for, most of them are silent about the purpose too, and even if they were not, it would take gigantic budget or decades of research to read even a sample of the contracts for our 105 markets.

But there is indirect evidence that the notarial lending played an important role in the mobilization of capital and hence in economic growth. To begin with, structures—houses, apartments, and buildings for government and industry—formed the bulk of

14. Lamoreaux and Rosenthal 2005.

capital in France: between 59 and 66 percent of the capital stock (or more precisely the stock of tangible and reproducible nonhuman assets) between 1815 and 1900.[15] The same was true of eighteenth- and nineteenth-century Britain and the United States between 1850 and 1958. In both cases, the percentage of capital constituted by structures is nearly the same as in France.[16] But structures were typically financed through a mortgage on the building and the underlying land. The structure might be a family's house, an apartment or factory building, or a plant to process crops, such as a distillery.[17] Or it might be new real estate development, as in 1899, when the mason Urbain Dupuis and the retired notary Louis Lux borrowed 211,000 francs in the mortgage market to fund a development in Lyon.[18] Without the mortgages, nearly all of which were arranged by notaries, the supply of funds to finance either construction or purchases of existing structures would be severely restricted, because investors would hesitate to take on the risk of making unsecured long-term loans. To compensate them, interest rates would have risen, and so therefore would the cost of buying or renting a structure, whether it was a house, an apartment, or a factory. Economic growth would inevitably suffer as well, and suffer considerably because structures constituted such a large portion of the capital stock.

At the very least then, the notaries clearly helped make possible the housing and construction that accompany economic growth. Without them, workers would not have found housing, peasants would not have migrated to cities, and, with a stunted urban population, economic growth would have slowed. But did the notaries contribute to economic growth—and hence to capitalism—in any other way? In particular, did any of their loans fund industrialization directly?

That question is harder to answer, because we do not know the purpose of most of the mortgages. But the borrowers' occupations shed some light on what the loans were being used for. Inferring the purpose of a loan from borrowers' occupations is, of course, hardly a perfect indicator, for several reasons. To begin with, occupational labels are sometimes vague, particularly for catchall terms such as "person of independent means" (*rentier*), or "property owner" (*propriétaire*), which could be stretched to cover anyone from a farmer with some land to a small business owner with a bit of real estate. And even though many nineteenth-century occupational names are quite precise, a loan could still involve, say, an industrial entrepreneur borrowing to purchase real estate, or (as we will see) a lawyer taking out a mortgage to finance the creation of a large electrical utility. The borrower's occupation would mislead us in both cases.[19] Still, there should be at least a rough correlation between borrowers'

15. Lévy-Leboyer 1977: 396. See also Grantham 1993.
16. Field 1985.
17. For financing distilleries using mortgages, see Postel-Vinay 1998: 272–73.
18. Archives départementales du Rhône, 49Q 304 (February 27, 1899), 49Q 305 (May 5, 1899), 49Q305bis (June 27, 1899).
19. One could easily imagine other instances where occupational labels would be misleading. A textile worker who takes out a loan would be classified as an industrial borrower by his occupation, and he may in fact intend to set up a business making cloth. But it is also conceivable that he inherited some property and is using that property as collateral to repay debts.

occupations and the purpose of the loans, because both borrowers and lenders had an interest in funding businesses related to the borrowers' skills and human capital.

Let us then analyze borrowers' occupations in 4 of the 105 markets where we have gathered data on mortgage lending (figures 2 through 5). We can classify the occupations by the sector of the economy where the borrower was employed and see how many work in industry. Such borrowers would include industrial workers, craftsmen, managers, manufacturers, and owners of industrial firms. Our sectors of the economy would also include multiowner firms as borrowers, because it is difficult what sector of the economy they are in, and a separate category for property owners and rentiers.

One of the four markets where we have carried out this analysis is Paris, the biggest city in France, with a population of 935,000 in 1841. Besides being the capital, it was an international hub for industry, commerce, and finance. The other three markets—Amiens, Lyon, and Troyes—were all industrial centers. In 1841 Amiens, with 47,000 inhabitants, was a locus of textile manufacturing in northern France. Troyes, some 160 kilometers to the east of Paris, was slightly smaller (its population was 25,000 in 1841) and had attracted makers of hosiery and cotton textiles. Finally, Lyon, with 156,000 inhabitants in 1841, was a major silk manufacturer in the southeast. It and its hinterland also had a great deal of metal working, and by the beginning of the twentieth century, Lyon had developed a chemical industry and was manufacturing industrial equipment and early motor vehicles.[20]

In Amiens, borrowers in industry (chiefly in textile manufacturing) constituted 28 percent of those who took out loans in 1840, and the money they borrowed amounted to 25 percent of the new mortgages that were arranged that year (figure 2). The fraction of industrial borrowers had risen sharply since 1807, as manufacturing in Amiens expanded, and so had the value of their loans. But after 1840, loans of this sort grew rarer (11 percent of borrowers were industrialists in 1865 and 1899) and dropped even more in value (they were 5 percent of mortgage debt in 1865, and 9 percent in 1899), even though the population and industry continued to grow.[21] The decline may reflect the migration of large firms from the local capital market to those of Lille or Paris, and thus from notaries to banks.

Alternatively, the growth of investment banking in France after the middle of the century may have provided an alternative source of long-term financing that would have replaced mortgage-backed credit in Amiens. An investment bank could find investors who could contribute new equity through a private placement, or it could raise money to sell publicly traded shares or debt. All three funding vehicles would be alternative sources of long-term funds that would complement the short-term loans that banks had long made.

The story in Troyes was similar to that in Amiens, with what we shall henceforth call *industrialists* (even though our use of the term would include some industrial

20. The description of the cities comes from Almanach du commerce 1842 (1829–45): 549–50, 901–22, 942–43, 1011; and Garrier 1975: 396–99. The population figures (rounded to the nearest thousand) are from the 1841 census, as published in Lepetit 1988. They omit what were in some cases burgeoning suburbs.
21. Annuaire-Almanach du commerce 1875, 2: 3170.

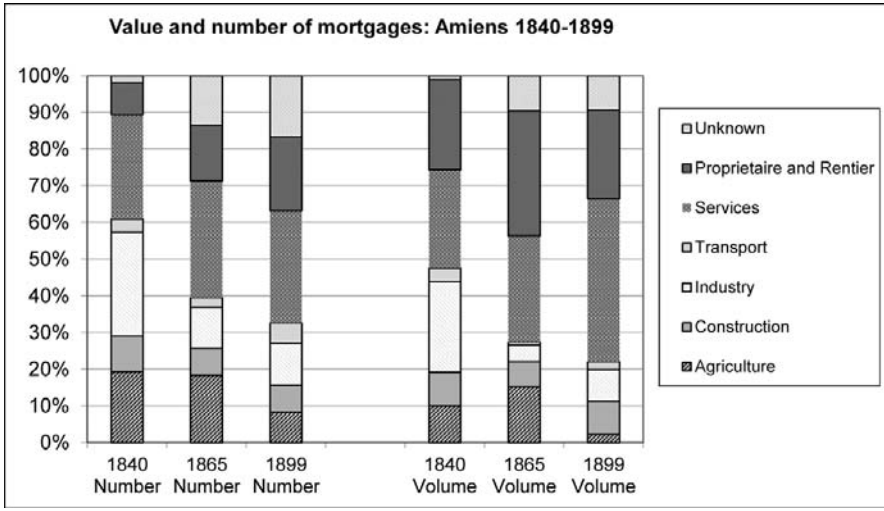

FIGURE 2. *Number and value of mortgages in Amiens by borrower occupation, 1840–99.*
Source: See text.

workers) taking on 17 percent of the mortgage loans and 25 percent of the mortgage debt in 1840. Again, many of them are from the textile industry. Thereafter their share of loans and mortgage debt declined, only to rebound in 1899 when they were involved in 14 percent of the loans and 20 percent of the mortgage debt (figure 3).

In Lyon, the fraction of borrowers in industry was smaller—10 percent of the borrowers in 1840, and 8 percent in 1865—but their share of the mortgage market remained stable up to 1899, when they appeared in 11 percent of the mortgages. As a share of the funds lent, their portion was somewhat bigger (13 percent in 1840, 17 percent in 1899), because they took out larger-than-average-sized loans, but it too remained relatively stable (figure 4). In Lyon, some of the borrowers classified with services may in fact have been engaged in manufacturing, particularly early in the century, for services included silk merchants (*négociants*), whose activities ranged from providing financing and wholesale trade to organizing silk manufacture. But even if we ignore the silk merchants, there was still an appreciable fraction of mortgage debt that was taken on by borrowers who were clearly industrialists. And that fraction showed no signs of shrinking despite the development of investment banking—even in Lyon, which had long had an elaborate network of financial intermediaries, including its own securities exchange.

In all three of these markets, industrialists therefore formed a small, but significant fraction of borrowers in the mortgage market, and they took out a considerable portion of the mortgage debt, nearly all of which was arranged by the traditional intermediaries, the notaries. It is true that borrowers from the services usually were

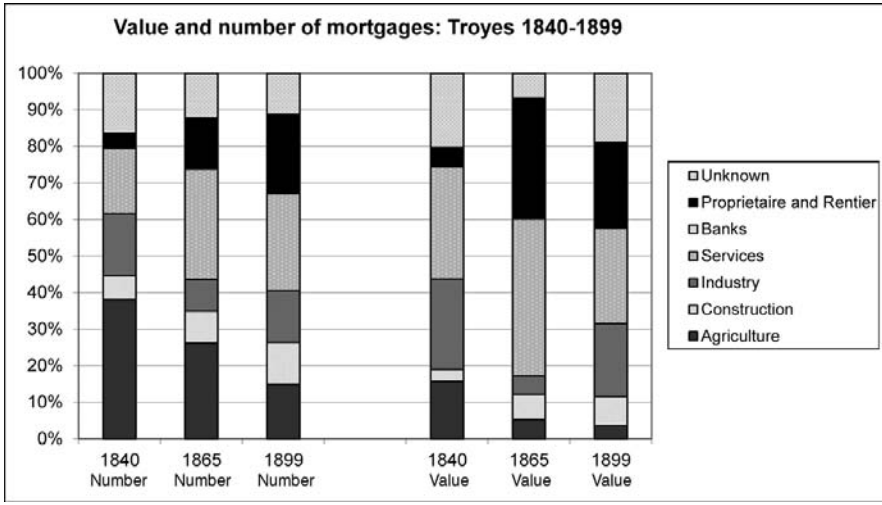

FIGURE 3. *Number and value of mortgages in Troyes by borrower occupation, 1840–99.*
Source: See text.

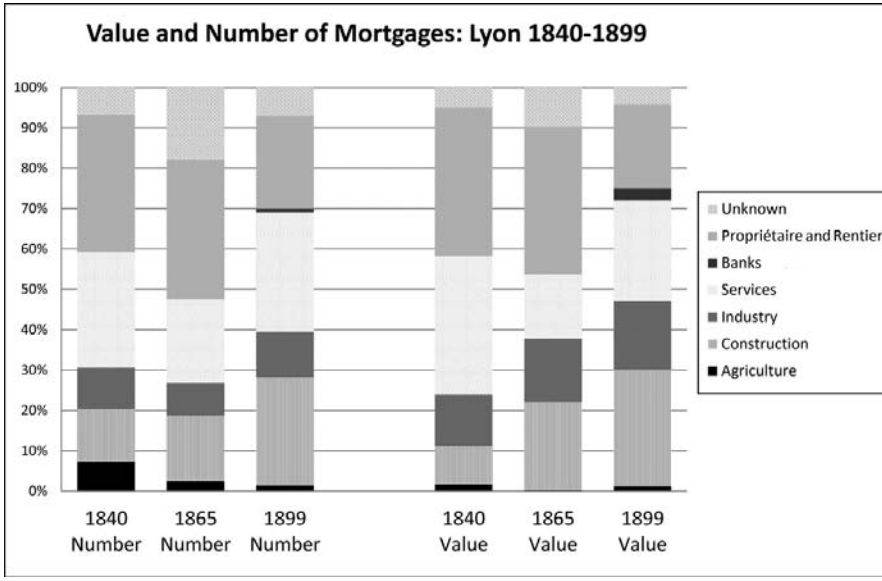

FIGURE 4. *Number and value of mortgages in Lyon by borrower occupation, 1840–99.*
Source: See text.

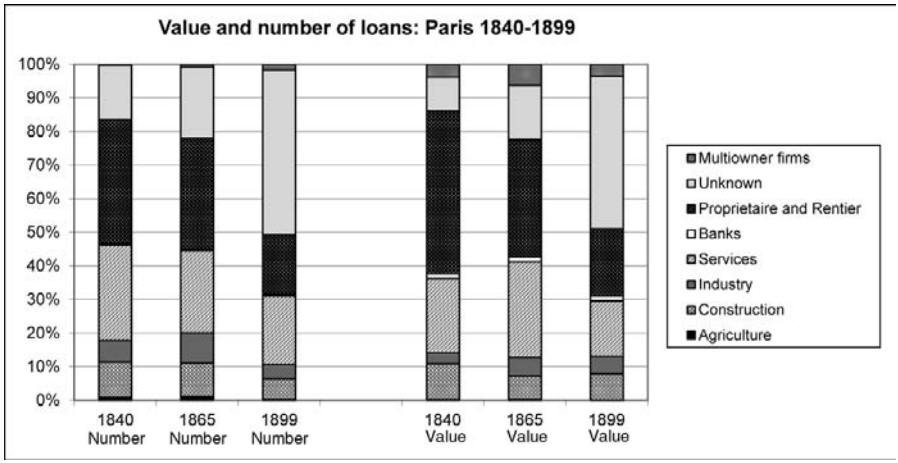

FIGURE 5. *Number and value of mortgages in Paris by borrower occupation, 1840–99.*
Source: See text.

more numerous and took on more of the mortgage debt. So did property owners and persons of independent means, and in Lyon there was considerable spending on construction (figures 2 through 4). Conceivably, some of those loans could have gone to industry (if, e.g., a contractor built a factory, or a property owner set up a textile business), but the uncertainties of using borrowers' occupations to deduce the purpose of the loans could just as well weigh in the opposite direction. Still, borrowers from industry were important in all three cities, even in 1899, and notaries were arranging their loans.

Paris was quite different. There a smaller fraction of the mortgage loans—and a smaller portion of mortgage debt—were funneled to industry, except in 1865 (figures 4 and 5). Without an occupational distribution of the Paris population (we are currently gathering data to estimate occupational distributions for it and the other cities), we cannot tell how severely underrepresented industrial borrowers were, but there should have been more of them.[22]

Why was Paris unlike the three other cities? The development of investment banking cannot be the whole story, for in that case, we would presumably have seen more industrial borrowers in 1840, before investment banks had developed. One possibility is that the distribution of wealth in Paris left many potential borrowers without the

22. In 1865, 9 percent of the mortgages went to industrial borrowers in Paris; in 1899, 4.3 percent. A comparison of the 1860 industrial census and the 1866 population census suggests that 11 percent of the population was employed in industry in Paris circa 1865, which is only a bit larger than 9 percent for the mortgage borrowers, but the 11 percent figure is likely an underestimate, because the two censuses leave out the industrial suburbs of Paris. A similar comparison using the 1896 census implies that 21 percent of the Paris population worked in industry, a figure much larger than the percentage of mortgage borrowers in industry. The suburbs around Amiens, Lyon, and Troyes pose similar problems.

collateral needed to take out a mortgage loan. Ownership of a home or of real property was much less common in Paris than in other parts of France, and the distribution of wealth of all sorts was much more unequal than in other French cities. Furthermore, the assets that Parisian entrepreneurs had were typically things that could not be used to secure a mortgage, such as receivables or goods that were in the process of being manufactured. Without any property that could be pledged as collateral, a would-be industrial entrepreneur could not take out a mortgage, unless the industrial property he planned to purchase or build could secure the loan.

In addition, industrial entrepreneurs in Paris had an easier time looking on their own for investors who would buy equity privately or make a long-term loan. Locating such partners was much easier in a large city like Paris. The typical partner, particularly if the borrower had no collateral, often came from the same line of business. He might be an older entrepreneur who had manufactured the same goods but wanted to exit active management and live off earnings from a business he was familiar with. Or he might be a supplier or a major customer. He would in any case know the borrower well and be able to judge his reputation and assess the value of his human capital. He could also intervene in the business if the borrower began to fail. The information he had could make lending possible even if borrowers lacked collateral, but it would be harder to find similar partners in smaller cities. There might simply not be an older manufacturer in the same line of business, or a supplier or customer with funds to lend.

To judge from the borrowers' occupations—despite all the uncertainties that entails—mortgages did seem to be funding industrialization, over and above the role they played in financing the construction and the growth of services that accompanied the expansion of manufacturing. They may have raised more money for industry early on, before investment banking developed, but industrial borrowers were still turning to the mortgage market in 1899, when the financial system was highly sophisticated. The firms that were doing so were likely smaller firms that could not afford the fixed fees involved in turning to an investment bank. The mortgage market was particularly important outside of Paris, because in Paris ownership of collateral was rarer and partnerships easier to find. But even in Paris its role was not insignificant.

To get a sense of how important the mortgage debt was, consider that in our four markets between 5 and 20 percent of the new mortgage debt in 1899 went to industrial borrowers. If the percentage of industrial debt was similar in other French cities in 1899—between the 5 percent in Paris and the 20 percent in Troyes—then the mortgage market would have raised between 29 and 127 million francs for industrialists in 1899. By one standard this is a small amount, certainly when compared to 824 million in capital raised by new multiowner firms in 1900 (table 2).[23] Many of these new multiowner firms would, of course, not have been industrial; they would have been in

23. The evidence here comes from the 1900 *Archives commerciales de la France* 27 (1874–1955: 1900: 104), which published descriptions of all new multiowner firms, including the capital they were authorized to raise. The coverage included very small firms and it ranged over all forms of organization, from partnerships to corporations. Not all of the authorized capital mentioned in the descriptions would have been paid immediately, but because older firms would have been calling the capital they were authorized to raise, the 824 million figure might be a reasonable rough estimate for new equity mobilized by all firms in 1899.

TABLE 2. *New capital raised by multiowner firms and new mortgage debt taken on by industrial borrowers, 1899–1900*

	All French cities with population over 10,000		*All such cities except Paris*	
Percent of debt taken on by borrowers in industry in 1899	*Minimum observed in Amiens, Lyons, Paris, Troyes (Paris) 5 percent*	*Maximum observed in Amiens, Lyons, Paris, Troyes (Troyes) 20 percent*	*Minimum observed in Amiens, Lyons, Troyes (Amiens) 9 percent*	*Maximum observed in Amiens, Lyons, Troyes (Troyes) 20 percent*
Estimated volume new mortgage debt in the cities in 1899 (million francs)	634	634	454	454
Mortgage debt going to industry in the cities (million francs)	29	127	40	91
Capital raised by new multiowner firms in 1900 (million francs)	824	824	287	287
Mortgage debt going to industry/capital raised by new multiowner firms	0.04	0.15	0.14	0.32

Source: For the mortgage debt in 1899, our samples from Amiens, Lyons, Paris, and Troyes, and our panel data for 105 mortgage markets for estimates for France as a whole. For the capital raised by new multiowner firms in 1900, our source was 1900 *Archives commerciales de la France* 27 (104).

Note: The multiowner firms include businesses outside of industry—in the services, e.g. Very little capital was mobilized by multiowner firms outside cities. Our totals for the capital raised by such firms are therefore either the total for France as a whole in 1900 (824 million francs) or the total outside of Paris (287 million francs).

The capital raised by new multiowner firms is the total authorized. One-quarter of this had to be paid immediately, but the rest might be paid in subsequent years. We used the total authorized to account (at least approximately) for capital calls by existing firms.

the services, for example, or construction. Yet this is the wrong standard because the bulk (64 percent in Paris) of the equity finance went to the 5 percent of the firms that were the largest. These big firms, one might suspect did not rely on notaries at all, because their needs were satisfied by investment bankers. Yet even that is far from assured because nearly a quarter of the big firms were partnerships, and many of the others issued too few shares for a market to be made in them. Clearly then, modern capital markets were not a panacea. Their rise did not coincide with the disappearance of small firms.

Outside Paris, the mortgage market may have been even more important as a source of financing. Because two-thirds of the equity raised by new firms went to ones in Paris, much less was available in provincial cities. There, with partners harder to find, the mortgage market would have taken on greater importance as a source of money, particular for small businesses. Furthermore, the ownership of real assets was more common in the provinces, making it easier for provincial entrepreneurs to

raise money in the mortgage market. We estimate that the mortgage debt taken on by industrial borrowers in cities outside Paris amounted to somewhere between 14 and 32 percent of the all new capital raised by multiowners firms in the provinces in 1900 (table 2). Again, because many of the multiowner firms would not have been industrial businesses, and if so, then the mortgage debt would have been an even larger fraction of the capital raised by new industrial firms in the provinces.

Mortgage markets are often overlooked, despite their role in the 2008 crisis. In France, they clearly played a significant role in economic growth. How important they turn out to be in other economies depends on the context. Where other forms of credit (such as credit cooperatives) are highly developed, mortgages may play less of a role than in France; where property is more widely distributed than in Paris, they may play more of a role. Because alternative sources of credit vary both across polities and within polities, understanding these interconnections and how they evolve over time demands an attention to detail that privileges the craft of the historian. The details are relevant even if one focuses on key moments in the history of financial capitalism. The history of credit in a town with a dominant employer, for example, is likely to be quite different from a town where many different enterprises compete. Even though the national legislation that enables corporate banks will apply to both communities, it will have quite different effects. In the company town, the legislation may be irrelevant because the town's major employer has financial links with the country's financial capital and therefore does little banking in the town. As a result, banks may not find they have enough business locally to warrant opening branches. By contrast, in towns with many businesses, network banks may be discouraged from opening up branches because traditional intermediaries have the competitive advantage of all the information they have gathered. One cannot tell which of these two stories applies without knowing local histories, as we shall see by examining several case studies.

Four Case Studies

There are thus clear signs that industrial borrowers were raising money in mortgage markets, and plausible reasons why they would do so, particularly if they were in the provinces, or their businesses were small, or investment banking had not yet developed. That meant they were turning to notaries, the traditional financial intermediaries in mortgage markets.

Evidence from four detailed case studies points toward the same conclusion. The case studies, which range from one of the largest iron works in France to smaller-scale manufacturers and a major early electrical utility, derive from information we came across as we were constructing our sample of mortgage loans. Each one involved a mortgage loan where there was enough detail in the records of the tax on financial transactions (and enough information elsewhere on the borrowers) to reveal what the loans had been used for. They are therefore unusual and certainly not a random sample. Nonetheless, they do shed considerable light on the role mortgage lending played in industrialization in France and on the reasons why entrepreneurs turned to

the mortgage market to finance their projects. And they all suggest that context was critical when entrepreneurs sought funding for their firms.

The first case study involves a major iron works, the *Société des forges de Châtillon et Commentry*, which took out a large mortgage loan in 1853. Along with cotton textiles, iron making had, of course, epitomized the Industrial Revolution. Beginning in eighteenth-century Britain, the industry was transformed by technological advances, as coke replaced charcoal in smelting, blast furnaces grew in size and efficiency, and large puddling furnaces and rolling mills replaced small forges. The supply of the wrought iron that was essential for industrial machinery swelled and its price fell.[24] In the nineteenth century, the new technology spread to continental Europe, forcing the French iron industry to remake itself. As the efficient scale of manufacturing increased, small firms merged, and new, larger iron works sprang into existence. Capital in turn had to be raised to pay for new plants and equipment, and family firms had to seek out external financing.[25]

The consolidation gave birth to the *Société des forges de Châtillon et Commentry.* It was formed in 1845, when 34 iron makers in east central France joined their dispersed operations to create the *Société* as a limited partnership with tradable shares (*société en commandite par actions*). The partners who merged their businesses included the third- and fourth-largest iron makers in France, and in terms of sales the new firm was the biggest iron maker in France, with 37 blast furnaces, 60 forges (including four using the British technology), and capital worth between 8 and 20 million francs. To cut its costs, *Châtillon et Commentry* leased out inefficient iron works and plants that were too distant from the rest of its operations. It also took on debt to finance changes in its business and in all likelihood update its technology.[26] The firm went on to operate independently until 1979 when it merged with Usinor. At the end of the Second Empire it was, at least by capitalization, the biggest iron maker in the country.[27]

The mortgage market was a major source of funds for *Châtillon et Commentry*. In 1853, the partnership had the Parisian notaries Daguin and Delapalme undertake a private placement of 6 million francs of mortgage debt that complemented the equity raised from its partners. The notaries rounded up 18 lenders who would advance the 6 million in return for 12,000 500-franc bearer bonds issued by the firm and secured by mortgages on assets that included its iron works and real estate in Paris and the provinces. The bearer bonds—each numbered and easily transferred—would be re-

24. Mokyr 1990: 92–96.
25. Gille 1968: 158–71.
26. Ibid., 150–68. The act creating the partnership estimated the capital to be worth 20 million francs, including 6 million of working capital. Initially, the capital had been evaluated at 8 million francs, but after disagreements over the value of particular iron works, the figure was raised to 20 million, which Gille considers exaggerated. The evidence that the firm wanted to update its technology is indirect. To begin with, the small number of forges using British technology suggests that much of the new firm's technology was old fashioned. So does the fact that the partners to the merger had not appeared on the list of the technologically advanced iron works allowed to submit bids in 1842 for the initial construction of railroads.
27. Ibid., 189.

deemed for 625 francs each by annual random drawings over a 25-year period and pay 4 percent interest until redeemed. If we ignore the risk of default or early repayment, the lenders could expect a return of 8.2 percent, at a time when ordinary mortgages paid 5 percent. The 18 lenders—only one of whom had any obvious connection to *Châtillon et Commentry*—thus earned a relatively high return on bonds that were potentially easy to sell. Although they assumed considerable risk, they gained a great deal of protection from the loan covenants. Dividends could not be paid if the bond interest or capital reimbursement was in arrears, and the random drawings of the redemption plan discouraged the firm from trying to pit lenders against one another. Furthermore, even if there was a default, there were assets to seize, including real estate whose value was not tied to the iron industry, and thanks to the registration of mortgages with the government's lien registry, the lenders knew that their claims would be senior to any subsequent debt that the firm took on.[28]

For firm with real assets like *Châtillon et Commentry*, the mortgage market made long-term borrowing possible at a time when commercial banks offered only short-term loans and France's embryonic investment bankers were not yet ready to fund huge numbers of big industrial projects. Mortgages like *Châtillon et Commentry*'s gave creditors making long-term loans a variety of protections, and it should thus come as no surprise that other iron makers besides *Châtillon et Commentry* also raised money in the mortgage market at mid-century.[29] At the time, iron makers typically possessed large amounts of real property that could secure mortgage loans. *Châtillon et Commentry*, for example, had not just its iron works and Paris real estate, but woods (for fuel), farm land, water mills, and coal and iron mines. Other firms in the iron industry were similar, apart from the Paris real estate.[30] They too could borrow on the mortgage market, and when used as collateral, their real property would reduce the cost of their loans. They too would have an incentive to turn to notaries and seek funding in the mortgage market, and the same would be true of other industries where firms typically owned real estate. Although relying on the mortgage market to issue bearer bonds may therefore seem unusual, it made eminent sense in the mid-nineteenth-century, at least for firms with real assets.

One might think that this loan of *Châtillon et Commentry*'s was unprecedented in its scale and only possible with capitalism and economic growth. But loans that were even larger were floated under the Old Regime—for instance, the 1780 refinancing of the bonds of the *fermiers généraux*, who collected France's indirect taxes under the Old Regime. The 40 *fermiers généraux* advanced a year's revenue (60 million livres), a total that amounted to 10 times what *Châtillon et Commentry* raised. Each tax farmer

28. Archives nationales, Minutier Central Etude CXVII 1228 (March 13, 1853). Although the lenders had contracted to lend 6 million francs and thus to buy all 12,000 bonds, it is not clear that they did so, because the contract does not cover the entire process of paying the money in. It does demonstrate that at least 1.8 million francs was raised. In addition to the mortgage on the firm's real property, the lenders could also go after the firm's current managers.

29. In 1851, the sixth biggest iron maker in the 1840s, *Schneider et Compagnie*, used a mortgage to guarantee a 9 million franc loan from the *Banque de France* to its coal mining affiliate: Archives nationales, Minutier Central, Etude XCIII 641 (August 18, 1851).

30. Archives nationales, Minutier Central Etude CXVII 1228 (March 13, 1853); Gille 1968.

was responsible for 1.5 million livres and many turned to notaries to finance part of their quota. The lenders who furnished the funds provided on average 58,000 livres, or the equivalent of 116 of *Châtillon et Commentry*'s bearer bonds.[31] We will leave it up to the reader to decide which of these was more capitalistic; one thing is clear: neither the *fermiers généraux* nor *Châtillon et Commentry* relied on modern financial intermediaries, but they still raised substantial amounts of money.

If the contrast between *Châtillon et Commentry* and the *fermiers généraux* raises questions for the chronology of capitalism, the firm's decision to rely upon Parisian notaries raises questions about the spatial dimensions of the French credit market. *Châtillon et Commentry* decided to do its borrowing in Paris. It did not turn to notaries in Dijon, Moulins, or any other local credit markets near where its iron-making operations were located. The same was true for Schneider Freres and the Forges de Montbard, the other major iron makers. The French iron and steel industry was dispersed throughout the country, but it only had one capital market: Paris.

Underdeveloped investment banking may have pushed *Châtillon et Commentry* to take out a mortgage loan in 1853, but by 1899 France had all the investment banks it needed, along with a large and active market for stocks and bonds, so that firms seeking to fund long-term investments could presumably issue tradable equity or sell bonds.[32] The trouble, though, was that there was a fixed cost involved in hiring an investment bank to sell the debt or equity; there was also a fixed cost involved in listing the shares or debt on a securities exchange. Those fixed costs might well be prohibitive for start-ups or small firms. Start-ups would face yet another obstacle: they would have no track record to convince investors that their debt or equity was worth buying. And they might face similar problems when they sought bank loans, unless they paid a high interest rate or surrendered control of their young firm. Older definitions of capitalism (in particular, identifying capitalism with large enterprises and gigantic markets) would dismiss all this lending as irrelevant. But a new firm that takes out a mortgage loan might become an industry leader, and the small firms might well form the nucleus of a new and burgeoning industry that generates rapid economic growth.

To see what the advantages of mortgage lending were for a small firm, consider the mortgage loan taken out in 1899 by *Bonnet, Spazin et Compagnie*, a Lyon boilermaker and manufacturer of industrial equipment. It turned to the mortgage market in 1899 to borrow 12,000 francs. The sum was much less than the 6 million *Châtillon et Commentry* sought, but it was typical of many mortgages in Lyon, where the median mortgage was 10,000 francs that year. And although *Bonnet, Spazin et Compagnie* was small, it was not at all marginal. It was in fact a well-known supplier of boilers

31. Our 20 percent sample of for Paris in 1780 turned up 86 loans to the *fermiers généraux*, for a total of 5.5 million livres. The estimated total for Paris as a whole in 1780 was therefore 27.5 million livres, or almost half the 60 million the fermiers were expected to pony up. The estimate is actually a lower bound. The loans made to *fermiers généraux* may have been less liquid than *Châtillon et Commentry*'s bearer bonds.

32. Rajan and Zingales 2003: 5–50.

and mechanical equipment for tramways, chemical factories, and power plants, and it remained in business until the 1930s.[33]

To make the loan, *Bonnet, Spazin et Compagnie*'s notary matched the firm up with the Baron de Jerphanion, a *rentier* living in Veauchette, some 70 kilometers away. The baron earned 3.75 percent interest over the six-year course of the loan, a relatively low interest rate in 1899, even for mortgages. Perhaps the rate was low because of the protection that the loan covenants gave the baron. He got liens on the firm's workshops, equipment, and land (on which existing mortgages had been paid off); guarantees that the workshops would be insured against fire, which was a risk in the firm's operations; the right to have a new administration named or to have the firm liquidated in case there was no management; and, last but not least, a boost in the interest rate if his revenues from loan were subject to any new tax.[34]

Such loans to tiny companies were not peculiar to Lyon.[35] Again, the advantage that the mortgage market offered was that the fixed cost of consulting a notary was likely lower than that involved in hiring an investment bank and listing securities. The higher fixed cost would then deter small firms. The cost of funds was likely lower too, at least for firms with real assets that could be pledged as collateral for a mortgage, for even firms that did have shares traded on local exchanges sought funds in the mortgage market. In 1899, for example, the *Compagnie Lyonnaise de construction de voitures et jouets d'enfants*, a toy and vehicle maker in Lyon, took out a 40-year 120,000 franc mortgage made by the mortgage bank, *Crédit Foncier de France.*[36] (A notary may therefore have played little or no role in arranging the loan.) The borrower was certainly miniscule, and it was also young because it had only been founded in 1895. Yet despite its size and recent origin, its shares (with a nominal value of 800,000 francs) were traded on the Lyon stock exchange and its earnings were reported in the financial press. The market for the shares was undoubtedly thin—it was described as a local company, with no investors from outside the area—but it had at least managed to get its shares listed. And doing so must not have been impossible for other small or new firms, for Lyon exchange had added listings for 308 securities between 1889

33. Archives départementales du Rhône, 49 Q 304bis (February 22, 1899), and 3E notary Berloty (February 21, 1899); *The Electrical World* 32 (27) (December 31, 1898): 722–23; *The Electrical Review* 35 (868) (July 13, 1894): 28; *The Electrical Review* 35 (869) (July 20, 1894): 60; and the entry for *Bonnet-Spazin* at *Région Rhône-Alpes Service régional de l'Inventaire du Patrimoine Culturel*'s web site for *Patrimoine architectural et mobilier en Rhône-Alpes*, at http://sdx.rhonealpes.fr/sdx/sribzh/main.xsp (accessed September 22, 2010). The data on median and average loan size in Lyon in 1899 come from our sample.

34. Archives départementales du Rhône, 49 Q 304bis (February 22, 1899), and 3E notary Berloty (February 21, 1899).

35. For another example, in 1899, a small, year-old Swiss baking company from Vevey (a town already known for chocolate making and as the headquarters of Nestlé) borrowed 12,000 francs to buy land and build a factory in Pontarlier, a French market some 86 kilometers away. The baking company, the *Société Anonyme de Biscuits Lactés Bussy*, had a French notary arrange the loan with a property owner and industrialist from Pontarlier, Felix Junod. The loan had been authorized by the company's shareholders, and in return the lender received a lien on the firm's land and factory, plus 4 percent interest over the nine-year term of the loan. Archives départementales du Doubs, 70 Q 398 (February 3, 1899); Albert Pfiffner, archivist of Nestlé (pers. comm., July 21, 2010).

36. Archives départementales du Rhône, 49 Q 304 (April 24, 1899), 49 Q 305 (May 12, 1899).

and 1900, including companies whose shares were worth as little as 150,000 francs.[37] But even though it had access to a local securities market, the toy maker nonetheless chose to raise money using a mortgage loan. The mortgage market must have had an appeal for small or new companies, even when they could sell stock, and the likely reason is that the cost of raising money was lower.

This and the other examples in fact suggest that the mortgage market and notaries possessed several enduring advantages for industrial firms, so long as they had real assets that could secure their loan. First of all, by giving lenders real collateral, the firms could borrow at lower interest rates and for terms long enough to undertake major investments. Second, even after investment banking was able to provide long-term funding, small firms or start-ups might still find the mortgage market appealing, because of their size or because they had yet to build up a reputation for creditworthiness or profitability. And mortgages could remain attractive even after firms got their shares or debt listed on local markets. In a sense then, the mortgage market might have functioned as a source of venture capital, but without surrendering the owner's control. The liens would protect lenders and substitute for the lack of control. And if the mortgage debt was not traded on an exchange, then it might even be possible to borrow without getting the shareholders' approval.[38]

One final example illustrates how the mortgage market could feed venture capital to small start-up firms. In 1899, the industrialist and property owner Pierre Marie Durand borrowed 200,000 francs from 14 lenders in Lyon. He paid 4 percent for the 10-year loan, which had been arranged by his notary, Lavirotte.[39] Although Durand had begun his career as a lawyer (or more precisely, an *avoué*), he was on his way to building the second-largest electrical utility in France. He and family members assembled the utility by buying up regional producers and then cutting their costs by taking advantage of economies of scale in administration and in the reserve capacity needed for production. They retained a tight administrative hold over the utility as it was growing, and to maintain control, they refrained from issuing stock outside the family and they also avoided borrowing from banks that would want an inside role.

Ultimately, they did manage to raise funds from other banks and from private placements, but the notarial loan in 1899 seems to have been one of the first steps on the way to creating the utility. That same year Durand and his brother Barthélemy got the concession to generate and distribute electricity in Saint Symphorien sur Coise,

37. Comité départemental du Rhône 1900: 643–50; *Journal financier, politique et agricole,* 42 (2103) (February 9, 1908): 125. On average, the recently listed local firms on the Lyon stock exchange had shares worth 2.1 million francs, making our toy maker smaller than the mean.

38. A law of 1867 required shareholder approval for tradable debt. If the firm's own by-laws did not require shareholder approval of mortgage debt, it would be possible to borrow on the mortgage market without getting the owners' okay. If the mortgage market did provide capital to small firms in 1899, then the industrial borrowers we find in Lyon and other cities should be smaller than the average firm. We may be able to test that hypothesis, and the process of identifying borrowers as industrial will only bias the results against finding that it is true, because the borrowers we identify are likely bigger than normal.

39. Unfortunately, the loan contract was unavailable, because the successors to the notary Lavirotte have not yet turned their archives over to the departmental archives in Lyon. Our sole source of information about the loan was the records of the tax on financial transactions, AD Rhône 46 Q 334 (November 25, 1899).

a small town 50 kilometers from Lyon, where they financed the necessary capital expenses. We cannot be certain that the 200,000 franc loan was used to begin their operation in Saint Symphorien sur Coise, but it was the earliest part of the Durand utility empire, and the 200,000 francs was on the same scale as the Saint Symphorien Company's ownership equity of 150,000 francs.[40] The mortgage loan may well have been critical for creating a future industrial behemoth.

Our research design did not aim to recover information about how notarial markets might have helped small- and medium-size enterprises. We wanted to quantify the scale of these markets and understand the evolution of the institutions that enabled lenders and borrowers to match and how these evolved with the arrival of banks. Along the way we discovered a world of credit that was more complicated than we had anticipated—one where the boundaries between modern and capitalistic, on the one hand, and traditional, on the other, were at best blurred. Yet much of the work that allows us to understand how the plethora of small firms financed themselves remains to be done. Unlike the large firms that have often left archives, or whose large financial issues can be tracked on secondary markets, the reconstruction of the credit dealings of smaller entities requires more patience. The value of such work goes far beyond capitalism. To be sure, it would enhance our understanding of the process of economic development, but it would also bring about a reconsideration of the interconnections between society and economy. The credit and financial relations of a locality are likely to be reflected in and to further its social structures. Moreover, there are important connections with culture, for successful entrepreneurs are likely to establish their social position with a variety of cultural expenses that can either conform or challenge established practices. Similarly, failure, decline, or bankruptcy has important cultural implications, which a simple focus on capitalism will miss.

Conclusion

The data from our sample yield the first estimates of how much business traditional financial intermediaries in any economy were doing. It turns out to have been an enormous amount. The traditional intermediaries in our example—French notaries—were raising as much money (relative to the size of the economy) as banks and savings and loans did in the United States in the 1950s. That so much borrowing went on outside modern financial institutions raises serious doubts about the argument that connects financial development and economic growth. At the very least, the causal links from financial development to economic growth could well have been weaker than is usually supposed.

40. Vuillermot 2001. For the Saint Symphorien sur Coise and the origins of the company, see pp. 39–40. The lack of the notarial documents is not the only reason it is difficult to tell precisely what the 1899 loan was used for. The origins of Durand's company are also murky: Vuillermot, who wrote a detailed company history, was unable to get access to Durand's family archives, and the company records, which found their way into EDF's records when Durand's firm was nationalized in 1945, have little on Durand's early days.

More important, the notaries' financial dealings make it clear that context was critical when entrepreneurs raised money in the early stages of economic growth or when young businesses or firms in new industries sought funds. Investment bankers were not yet on scene, and even after they appeared, the young businesses and new industries may have had trouble finding long-term funding because they had yet to establish a reputation and there was little information about their creditworthiness or profitability. That left an opening for loans secured by mortgages, which the notaries could arrange. If they had real assets to secure a loan, entrepreneurs could borrow at low cost and benefit from the information that notaries had built up about creditworthiness, the value of collateral, and who had money to lend. But they did not necessarily do this everywhere: they did in Lyon, but not in Dijon or Moulins, at least for nearby iron makers, who instead sought out notaries in Paris.

Would the same be true in other economies as they experienced economic growth? No one knows, and only historians can tell us. In another economy, the sort of individuals who possessed the information French notaries had could turn out to be quite different. During the "Second Industrial Revolution" at the turn of the twentieth century, for example, manufacturers in Cleveland got start-up money from informal networks of financiers.[41] In general, the answer would depend on the context, and historians are the ones who can find out. They could take a particular place or industry and investigate who funded young firms or new industries. They could also try to determine, for another economy, how much financing went on before modern financial intermediaries appeared. Both types of research would reveal much that is new about capitalism and economic growth.

They could also explore the spatial arrangement of financial markets. Our discussion of *Châtillon et Commentry* might suggest that a national capital market was in place in France by the 1850s, because large firms everywhere could solicit funding in Paris. But smaller firms (the vast majority of business enterprises) and individuals did business in much narrower financial confines. For some, therefore, financial integration had occurred early on; for others it would come much later. At any time, many credit markets coexisted. Sticking to older definitions of financial capitalism would risk privileging the large modern one at the expense of the others, even though they were sizeable and important.

When one rethinks financial capitalism beyond the confines of "modern" intermediaries like banks and stock markets, a different, and likely more important, history emerges. It is not a history that selects winners and losers simply because they do or do not conform to type, but a history that places change in its proper context. For financial development that means starting long before the arrival of universal banks and continuing on past their rise. And it means looking at more than a handful of major financial centers.

41. Lamoreaux et al. 2006, 2007.

References

Almanach du commerce de Paris, des départements de la France et des principales villes du monde by Jean (1829–45) de la Tynna. Paris: Bottin.

Anderson, B. L. (1969) "The attorney and the early capital market in Lancashire," in R. R. Harris (ed.) Liverpool and Merseyside: Essays in the Economic and Social History of the Port and Its Hinterland. London: 50–77. (Reprinted in [1972] F. Crouzet [ed.] Capital Formation in the Industrial Revolution. London: Methuen).

Annuaire-Almanach du commerce et de l'industrie ou Almanach des 500000 adresses (1862–98) Paris: Bottin.

Annuaire général du commerce, de l'industrie, de la magistrature et de l'administration ou Almanach des 500000 adresses (1851 and 1855) Paris: Bottin.

Annuaire Statistique de la ville de Paris (1880–1900) Vols. 1–21. Paris: Masson et cie.

Archives commerciales de la France: Journal hebdomadaire (1874–1955). Paris: J. Pitay.

Burgess, Robin, and Rohini Pande (2005) "Do rural banks matter? Evidence from the Indian social banking experiment." The American Economic Review 95 (3): 780–95.

Cameron, Rondo (1961) France and the Economic Development of Europe, 1800–1914: Conquests of Peace and Seeds of War. Princeton, NJ: Princeton University Press.

——— (1967) Banking in the Early Stages of Industrialization. New York: Oxford University Press.

Comité départemental du Rhône (1900) L'économie sociale et l'histoire du travail à Lyon. Lyon: A. Rey.

Davis, Lance (1972) "Banks and their economic effects," in L. Davis, R. Easterlin, and W. Parker (eds.) American Economic Growth: An Economist's History of the United States. New York: Harper and Row: 340–65.

Davis, Lance, and Robert Gallman (1978) "Capital formation in the United States during the nineteenth century," in P. Mathias and M. M. Postan (eds.) The Cambridge Economic History of Europe, Vol. 7, Part 2. Cambridge: Cambridge University Press: 1–69, 496–503, 557–61.

Demetriades, P. O., and K. B. Luintel (1996) "Financial development, economic growth and banker sector controls: Evidence from India." Economic Journal 106 (435): 359–74.

Demirguc-Kunt, Asli, and Ross Levine, eds. (2004) Financial Structure and Economic Growth: A Cross-Country Comparison of Banks, Markets, and Development. Cambridge, MA: MIT Press.

The Electrical Review. Periodical. London.

The Electrical World. Periodical. New York.

Federal Reserve Bank, Flow of Funds Accounts of the United States (June 5, 2013), http://www.federalreserve.gov/releases/z1/Current/data.htm (accessed August 29, 2013).

Field, Alexander James (1985) "On the unimportance of machinery." Explorations in Economic History 22 (3): 378–401.

Garrier, Gilbert (1975) "L'avènement d'une métropole industrielle," in André Latreille (ed.) Histoire de Lyon et du Lyonnais. Toulouse: Privat: 389–408.

Gerschenkron, Alexander (1962) Economic Backwardness in Historical Perspective: A Book of Essays. Cambridge, MA: Harvard University Press.

Gille, Bertrand (1959) La banque et le crédit en France de 1815 à 1848. Paris: Presses universitaires de France.

——— (1968) La sidérurgie française au XIXe siècle. Geneva: Droz.

Goldsmith, Raymond William (1969) A Study of Saving in the United States. 3 vols. New York: Greenwood Press.

Grantham, George (1993) "The French agricultural capital stock and the growth of total factor productivity in agriculture 1789–1914." Working paper 3–93, Department of Economics, McGill University, Montreal.

Habakkuk, John (1994) Marriage, Debt, and the Estates System: English Ownership. 1650–1950. Oxford: Oxford University Press.

Hoffman, Philip T., Gilles Postel-Vinay, and Jean-Laurent Rosenthal (2000) Priceless Markets: The Political Economy of Credit in Paris, 1662–1869. Chicago: University of Chicago Press.

——— (2010) "French lessons: Mortgage markets 1740–1899." Manuscript, California Institute of Technology.

——— (2013) "Entry, information, and financial development: A century of competition between French banks and notaries." Manuscript, California Institute of Technology.

Hoffmann, Walther G. (1965) Das Wachstum der deutschen Wirtschaft seit der Mitte des 19. Jahnrhunderts. Berlin: Springer.

Journal financier, politique et agricole (1908) Periodical. Paris.

King, Robert G., and Ross Levine (1993) "Finance and growth: Schumpeter might be right." Quarterly Journal of Economics 108 (3): 717–37.

Koch, R., ed. (1911) Articles on German Banking and German Banking Laws. Publications of the National Monetary Commission, Vol. 11. Washington, DC: The National Monetary Commission.

Lamoreaux, Naomi (1994) Insider Lending; Banks, Personal Connections, and Economic Development in Industrial New England. Cambridge: Cambridge University Press.

Lamoreaux, Naomi R., and Jean-Laurent Rosenthal (2005) "Legal regime and business's organizational choice: A comparison of France and the United States during the mid-nineteenth century." American Law and Economic Review 7 (1): 28–61.

Lamoreaux, Naomi R., Margaret Levenstein, and Kenneth L. Sokoloff (2006) "Mobilizing venture capital during the second Industrial Revolution: Cleveland, Ohio, 1870–1920." Capitalism and Society 1 (3), http://www.bepress.com/cas/vol1/iss3/art5/.

——— (2007) "Financing invention during the second Industrial Revolution: Cleveland, Ohio, 1870–1920," in Naomi Lamoreaux and Kenneth Sokoloff (eds.) Financing of Innovation in the United States, 1870 to the Present, Cambridge, MA: MIT Press: 39–84.

Lepetit, Bernard (1988) Les villes dans la France moderne: 1740–1840. Paris: Albin Michel.

Lescure, Michel, and Alain Plessis (1999) Banques locales et banques régionales en France au XIXe siècle. Paris: Albin Michel.

Levine, Ross (1997) "Financial development and economic growth: Views and agenda." Journal of Economic Literature 35 (2): 688–726.

Lévy-Leboyer, Maurice (1964) Les Banques européenes et l'industrialisation internationale dans la première moitié du XIXe Siècle. Paris: Presses universitaires de France.

——— (1977) "L'étude du capital et l'histoire des recensements fonciers en France au XIXe siècle," in J. Mairesse (ed.) Pour une histoire de la statistique, Vol. 1. Paris: INSEE Economica.

Lévy-Leboyer, Maurice, and François Bourguignon (1985) L'Economie Française au XIXe siècle analyse macroeconomique. Paris: Economica.

Miles, M. (1981) "The money market in the early Industrial Revolution: The evidence from West Riding attorneys." Business History 23 (2): 127–46.

Mokyr, Joel (1990) The Lever of Riches: Technological Creativity and Economic Progress. Oxford: Oxford University Press.

Neal, Larry (1994) "The finance of business during the Industrial Revolution," in Roderick Floud and Donald [Deirdre] McCloskey (eds.) The Economic History of Britain since 1700, 2nd ed., 2 vols. Cambridge: Cambridge University Press: 1: 151–81.

O'Brien, Patrick, and Caglar Keyder (1978) Economic Growth in Britain and France, 1780–1914: Two Paths to the Twentieth Century. London and Boston: G. Allen & Unwin.

Offer, Avner (1981) Property and Politics 1870–1914. Cambridge: Cambridge University Press.

Postan, M. M. (1935) "Recent trends in the accumulation of capital." Economic History Review 6 (1): 1–12.

Postel-Vinay, Gilles (1998) La terre et l'argent. Paris: Albin Michel.

Preussische Statistik [königlich Preussischen Statistischen Landesamt in Berlin] (1905–1906) "Die ländliche Verschuldung in Preußen." Vol. 191, part 1 (1905) in 2 halves, part 2 (1906).

Rajan, R. G., and L. Zingales (2003) "The great reversals: The politics of financial development in the twentieth century." Journal of Financial Economics 69 (1): 5–50.

——— (2004) Saving Capitalism from the Capitalists: Unleashing the Power of Finance to Create Wealth and Spread Opportunity. Princeton, NJ: Princeton University Press.

Roehl, Richard (1976) "French industrialization: A reconsideration." Explorations in Economic History 13 (3): 233–81.

Rousseau, Peter L. (1999) "Finance, investment, and growth in Meiji-era Japan." Japan and the World Economy 11 (2): 185–98.

Rousseau, Peter L. and Richard Sylla (2003) "Financial systems, economic growth, and globalization," in M. D. Bordo, A. M. Taylor, and J. G. Williamson (eds.) Globalization in Historical Perspective. Chicago: University of Chicago Press: 373–415.

——— (2005) "Emerging financial markets and early US growth." Explorations in Economic History 42 (1): 1–26.

——— (2006) "Financial revolutions and economic growth: Introducing this EEH symposium." Explorations in Economic History 43 (1): 1–12.

Sheppard, David K. (1971) The Growth and the Role of the U.K. Financial Institutions, 1880–1962. London: Routledge.

Sylla, R. (1999) "Emerging markets in history: The United States, Japan, and Argentina," in R. Sato, R. Ramachandran, and K. Mino (eds.) Global Competition and Integration. Boston: Springer.

Temin, Peter, and Hans-Joachim Voth (2006) "Banking as an emerging technology: Hoare's Bank, 1702–1742." Financial History Review 13 (2): 149–78.

——— (2013) Prometheus Shackled: Goldsmith Banks and England's Financial Revolution after 1700. New Haven, CT: Yale University Press.

Toutain, J.-C. (1987) Le produit interieur brut de la France de 1789 à 1982. Grenoble: Presses universitaires de Grenoble.

Vuillermot, Catherine (2001) Pierre-Marie Durand et l'énergie industrielle: l'histoire d'un groupe électrique, 1906–1945. Paris: CNRS.

Wigmore, Barrie A. (2010) "A comparison of federal financial remediation in the Great Depression and 2008–2009." Research in Economic History 27: 255–303.