

Contents



<i>Acknowledgments</i>	vii
Introduction	1
Chapter 1. 1740 and the Rules of the Game	10
Chapter 2. Spatial Variety versus Centralization: Change in Eighteenth-Century Credit Markets	48
Chapter 3. The Revolution: Collapse, Reform, and Modeling the Space of Debt	74
Chapter 4. Networks of Knowledge	95
Chapter 5. The Brief but Significant Life of an Institutional Innovation	122
Chapter 6. The Diffusion of Banks: Peer-to-Peer Credit Markets as Substitutes for Banks	149
Chapter 7. Banks and Notaries	176
Chapter 8. Prices Return	195
Chapter 9. Conclusion	218
<i>Appendices</i>	239
<i>Notes</i>	265
<i>Bibliography</i>	285
<i>Index</i>	299

Introduction



Anemic financial markets mire countries in poverty. There are other reasons why countries remain poor, but a feeble financial system blocks economic growth; or so both modern econometric evidence and historical studies seem to show. Banks and credit markets are particularly important—even essential.¹ Without banks, incomes languish, but when they open their doors, lending surges, and economic growth takes off.

This argument has become a commonplace. Yet it is hard to reconcile with an inconvenient fact: that somehow much of Europe managed to grow rich long before banks became widespread in the nineteenth century.² If the usual argument is correct, the wealthy parts of Europe should have been penniless too, for, without banks, they—like the rest of Europe—ought to have been condemned to poverty. But they were prosperous by the standards of the day, not poor.

Could it be that credit abounded in Europe even before banks spread across the continent? That was the question we set out to answer, using data for France. Since France (unlike Italy, England, or the Low Countries) has long been considered a laggard in developing banks, it was an ideal test case, because as early as the eighteenth century, much of the country was clearly well off by world standards.³ How, then, could it have grown wealthy in the eighteenth century, and even richer in the nineteenth, without having a large number of banks? Could the French tap other, hidden sources of credit and do so on a large scale? If so, then borrowers in other leading countries could likely do the same.

As this book shows, there were ways to borrow in France before banks opened their doors, and the mountain of debt this shadow credit system raised was big, even by modern standards. As early as 1740, the system allowed nearly a third of French families to borrow; if measured relative to GDP, then by 1840 it was mobilizing as much credit for mortgages as the United States' banking system did in the 1950s.⁴ Moreover, much of this capital was raised for agriculture and urban real estate, sectors critical in a developing economy that banks often shun because of the risks of farming and the long loan maturities of real estate lending.

Until now, virtually no one has noticed this big debt, despite its size. In a way, it is like the dark matter that makes up some eighty-five percent of the universe but cannot be directly observed. And while astronomers and physicists can infer the existence of dark matter from its effects, economists, historians, and other social scientists are not that lucky. Worse yet, they have simply assumed that what cannot easily be observed—private

2 • Introduction

credit in the past or in poor countries today—was insignificant or simply not there at all.⁵

That assumption is mistaken, as is the argument that banks are an essential first step toward mobilizing large amounts of financial capital and building a thriving debt market for private borrowers. And that is not all that is wrong either. France, we found out, eventually got more banks than anyone imagined. If these banks were a more efficient source of credit, as the claim about their importance supposes, then their proliferation should have made the shadow lending disappear. But it did not vanish. Indeed, it persisted in France, and elsewhere too, up to World War I, and was only killed off by government intervention that tipped the scales in favor of banks. The reason was that banking and the shadow lending system were not competing sources of credit. Rather, they complemented one another, so that both thrived together.

We know all this because we actually measured the dark matter of private credit before 1900, rather than just supposing it was trivial (see table 1). We also counted the number of banks using new historical evidence. Private credit, we learned, was big and pervasive, and not at all challenged by the diffusion of banks in the nineteenth century. If anything, our measurements are likely underestimates, because they omit lending that we did not count even though it might be substantial.⁶

We reached these conclusions for France thanks to unique fiscal records that survive for the period 1740–1931. These records let us gather the necessary data at relatively low cost. We thought it would be worth exploiting them because of the large amount of lending we had already uncovered in Paris using a different source of evidence.⁷ It was not at all clear, however, that the example of Paris would generalize, for two reasons. First, Paris had an unusually large number of wealthy investors who could fund loans. Furthermore, the city's lenders, borrowers, and potential financial intermediaries dwelled near one another and might interact repeatedly, which would make it easier to arrange loans. Conditions would not be the same elsewhere, particularly where credit markets were thin and where lenders, borrowers, and intermediaries lived too far apart even to find one another. The question was whether Paris was atypical, and the fiscal records gave us the answer.

Those records are peculiar to France, but the evidence they yield can be compared with data from Germany, Great Britain, and the United States. The comparison shows that France is not at all unusual. The shadow credit system flourished in the past in these other wealthy countries too, and it may loom large in many developing economies as well, if researchers take the time to measure it.

Our discovery of all the debt financed by the shadow credit system not only overturns the standard argument about banks and economic growth;

Table 1. Estimates of notarized lending in France

	Year					
	1740	1780	1807	1840	1865	1899
Number of loans in year (thousands)	437	368	362	556	395	265
Number of outstanding loans (thousands)	1,696	1,477	856	1,419	1,328	1,645
Value of loans (million livres/francs)	161	336	329	772	914	1180
Stock of outstanding debt (million livres/francs)	1426	2398	1120	3650	4150	7690
Maturity (years, unweighted)	5.8	4.3	2.4	2.6	3.4	6.2
Maturity (years weighted by loan value)	8.9	7.1	3.4	4.7	4.5	6.5
Per capita stock of debt (livres/francs)	58.0	86.9	37.7	104.6	109.0	191.5
Stock of debt to GDP (percent)	15.8	22.8	9.6	27.2	19.9	23.6

Source: Estimates from our sample. For details, see chapter 1.

Note: For GDP estimates for France after 1800, we relied on Toutain (1987). Because there are no GDP estimates for France before 1800, we simply assumed total income was growing at 0.4 percent per year from 1740 to 1780, and again from 1780 to 1807. Netting out population growth leads per capita income to grow at 0.1 percent per year before 1780, and 0.125 percent from 1780 to 1807. Monetary amounts in 1740 and 1780 are in livres, the money of account before the French Revolution; for 1807–99, they are in francs, the currency created during the French Revolution. For the years of our cross sections, they both had the same value in silver.

it raises other important questions. To begin with, how was credit allocated before banks? The big debt, it turns out, consisted of thousands of bilateral loans, loans that matched up a borrower and a lender, as in modern peer-to-peer lending. These loans were sizable, had maturities that were frequently two years or more (see table 1), and often involved people who did not know each other. For such loans, lenders cannot simply assume borrowers will repay, and charging a higher interest rate to offset the risk may attract nothing but deadbeats who have no intention of paying off their debts. Securing the loans with collateral may not solve the problem, either. How does a lender tell what a pledged property is worth and how that value will

evolve, particularly in an economic downturn like that which struck the US mortgage market after 2006? Borrowers usually have a good sense both of their creditworthiness and of the value of their collateral, but lenders' information is typically much skimpier. In the language of economics, lenders' and borrowers' information is asymmetric.

Unlike some peer-to-peer lending on the web today, the bilateral loans in the past were arranged by a network of brokers. The brokers not only brought the borrowers and the lenders together, but overcame the problems of asymmetric information, which afflict all credit markets. That was true not just in Paris, where the brokers interacted with one another repeatedly in a way that could easily spread information about creditworthiness; it was also true in small towns, where their dealings would be much rarer. Even there our brokers certified borrowers and their collateral, and gave lenders better information. That proved essential to building a large stock of debt to GDP.

The brokers, both in Paris and the rest of France, were notaries, government sanctioned keepers of legal records in countries influenced by Roman law, who combined the preservation of records with the roles of lawyer, financial adviser, and real estate broker. Their network arose because the records they kept revealed what collateral was worth and who was a good credit risk. The information they could cull from their records allowed the notaries to match up lenders with creditworthy borrowers and so solve debt markets' vexing informational problems.

The solution therefore grew out of a peculiar feature of Roman law. That itself is a surprise, for Roman law, and its modern offspring—the civil law that holds sway in continental Europe and Latin America—are thought to hobble financial development.⁸ Yet in France, as we shall see, this infrastructure of Roman law nurtured a thriving financial structure. The structure did evolve in a different direction from its British counterpart, which may in fact have been biased toward banks. Both financial systems, however, did fund economic growth, and by 1900, Paris was, like London, an international financial center. The two financial systems had started apart and followed dissimilar paths as they developed, but by 1913 they both had large thriving equity and debt markets.⁹

That is not all we uncovered. We also analyze how lending in the shadow credit system was shaped by geography and the growth of cities. Since cities had more savers with large sums to lend, borrowing in a city might be appealing, but the cost of travel ruled out long trips to find a loan. We work out how the network of notaries dealt with travel costs and urban savings, and we chart how their dealings changed over time.

Finally, beyond simply assessing how the shadow credit system was affected by the diffusion of banks, we also determine whether any obstacles slowed bank entry—an important topic since France has been held up as a

poster child for the economic damage caused by barriers to the development of a banking system. Economic historians have long believed that a delayed spread of banks in France retarded the country's industrialization and slowed economic growth. Economists have pushed the argument further, blaming the French legal system for hindering financial development, not just in France itself, but in all the countries around the world that inherited its particular brand of civil law. Those two claims turn out to be wrong too. Nothing blocked bank entry in France, and that is why we found that the country in fact had far more banks than economic historians thought. French civil law did not hamper financial innovation either. More generally, while France may not have been the leading economy in Europe, its performance was good enough to provide resources for three centuries of military competition, first with the vast and rich Hapsburg empires and later with England.

Our discoveries have significant implications for the world today. To begin with, they cast doubt on the evidence backing the claim that anemic conventional financial markets have impeded economic growth in poor countries. The claim is supported by cross-country regressions, but the regressions assume that private lending outside of banks and other modern financial intermediaries is measured accurately. If this sort of private lending is not measured accurately, then the true relationship between financial development and economic growth—so our French evidence suggests—may well be far weaker than everyone assumes.¹⁰

Successfully measuring private credit has other significant implications. In particular, it corrects the standard story of how credit markets develop. That story begins in a world of no lending and then traces a small set of innovations (such as stock and bond exchanges or big universal banks with branches and a variety of services). It focuses on these innovations because they spread internationally, as people learned how to imitate the financial innovators and how to copy their institutions and organizations.¹¹ Yet change in credit markets has never followed this sort of unique path, and neither has financial development more generally, either in the past or in poor countries today. Financial development, it turns out, can take many different routes to abundant credit and easy mobilization of financial capital, and the road selected depends on politics, on inequality, on economic shocks and legal institutions, and on the spatial development of cities and the economy. No one has analyzed this long-run process of change until now. We do in this book, which reaches back over two centuries and continues through industrialization and across enormous political and social upheavals, ranging from the French Revolution and the Napoleonic Empire to the rise of democracy and World War I.

Along the way, we learn how private credit markets in France functioned in the past and how they changed as the economy grew, partly as

a result of shifts in demand, and partly as a result of shifts in supply, driven by institutional innovations and political and legal innovations. We see how borrowers and lenders devised new loan contracts, created ingenious ways of securing loans, and made the transition from ancient ways of lending (annuities and medium-term loans with a balloon payment) to the modern mortgage. We also find out how financial capital was mobilized across space in the era before railroads, when transportation was rudimentary. And, above all else, we discover how our brokers solved the daunting problems of asymmetric information in credit markets, and did so on a large scale, long before the arrival of modern banks and stock exchanges and the creation of government lien registries and private credit ratings. Our conclusions are derived from the French data, but they are likely to apply to credit in other economies as well, because in most parts of Western Europe borrowers and lenders could avail themselves of very similar sets of contracts and information systems.

Figuring out how these credit markets worked required more than measurement alone. We also had to model how borrowers, lenders, and brokers acted. The economic models, which are explained in plain language for readers unfamiliar with economics, proved essential. They made our arguments precise, let us test our claims, and revealed what was happening when the historical sources fell silent. Without them, we would still be trying to make sense of all the dark matter of private credit.

The story we tell about the evolution of private credit will interest not just readers in economics, but in history, law, and in all the social sciences. Historians, for instance, will gain a new perspective on the social and economic history of lending. The large historiography devoted to the subject of credit has invoked debt to explain both peasant immiseration and the expansion of markets, and assumes personal ties between debtors and creditors to characterize a noncapitalist economy. Much of this literature, though, is limited to a particular locality, using local account books, family papers, or loan contracts that have survived in one particular place. Much of it is confined to traditional periods of historical study as well—in France, the Old Regime, or the French Revolution and the Napoleonic Empire, or the century from 1815 to 1914. In this book we broke free of these restrictions, because we want to chart the evolution of credit across nearly two centuries of massive legal and organizational change, including the coming of banks. And we wanted to measure lending for the whole economy, not one particular locality, and see how it changed over time and how different credit markets were related.

By using our evidence as a benchmark, historians who undertake new local studies of credit can now ask how lending in their locality was connected with other markets. Historians will also be able to assess, for the first time, the lasting impact that the French Revolution had on private

borrowing—an impact that was negative in the short run but overwhelmingly positive over the long run.¹² These enduring economic consequences of the French Revolution have long been neglected, particularly the long-run positive ones, which had echoes outside of France.

Outside of history, sociologists will benefit from the questions we raise about the common method of analyzing networks that are limited to similar individuals. So will economists who work on networks. Similarly, legal scholars and political scientists will profit from the doubt we cast on the widespread argument that civil law condemns an economy to economic stagnation. The same goes for political scientists who believe that political institutions shape economic development.

To make all these discoveries, we had to proceed differently from economists or historians who study credit markets. Unlike economists who have focused heavily on the recent experience of developing countries, we reach back and study credit in a diverse set of localities over nearly two centuries. And, unlike historians, we have not done a local study. Instead, we gathered extensive quantitative data and estimated medium and long-term private indebtedness for the economy as a whole. We needed all this data to analyze the network of brokers and to gauge the impact of banks as more and more of them opened their doors. The data had to extend back in time well before the Industrial Revolution and stretch forward through the nineteenth century as banks proliferated and the economy developed. And it had to continue into the twentieth century to see what finally killed off the shadow credit system.

We begin our book by describing the data that revealed how much private credit there was and how loans were arranged. The bulk of this evidence concerns 239,269 individual loans and the variables that affected lending in a sample of ninety-nine French credit markets. The markets ranged from Paris to small villages, and for each market, we gathered the data for six years (1740, 1780, 1807, 1840, 1865, and 1899). For a subset of these years, we also gathered evidence from seventy-three additional markets. Beyond these two large samples, we collected much smaller samples in 1912, 1927, and 1931 to chart the demise of peer-to-peer lending.

So that readers can understand how we measured private debt, we explain the construction of our samples and the legal and political institutions that governed the credit market. We then estimate the size of the market in 1740 and explore who was involved in it (chapter 1). The next issue is determining what boosted the volume of private lending between 1740 and 1780 (chapter 2). Prominent among the explanations were innovative loan contracts and better ways of protecting lenders against default. The background in these first two chapters is essential for another reason as well: it lays out the problems private credit markets faced and how these peer-to-peer lending systems operated.

Grasping how private credit markets function also requires assessing the impact the French Revolution had on lending institutions. The private credit market was laid low by hyperinflation during the French Revolution, but in the long run it benefited from the revolution's institutional reforms, such as the creation of lien registries, which helped protect lenders. Although these reforms took decades to diffuse, they helped the credit market recover completely from the damage done by the revolutionary inflation. After assessing the effect of the inflation (in chapter 3), we explore these new institutions and then analyze how notaries matched up lenders with creditworthy borrowers. When a notary could not find a match among his own clients, he referred the prospective borrower or lender to other nearby notaries, whom he cooperated with in what would become a local lending network. The resulting networks linked markets throughout France and overcame local imbalances of supply and demand.

How all this happened only became clear when we built our economic models in chapters 3 and 4. In the process, we analyzed how the notaries made referrals and what that implied for the spatial distribution of borrower-lender matches. It was impossible to test the models against evidence from the notaries' business records, which do not survive. But we could test them against data from the fiscal records. Remarkably, the fiscal data support our models and reject a very different interpretation of the notaries' behavior.

We also investigated how the notaries interacted with other financial intermediaries, such as banks—the subject of chapters 5 through 7. The notaries were innovative, and in the nineteenth century they devised a new type of loan contract that involved dealing with bankers and merchants, as we show in chapter 5. This new contract and earlier innovations by notaries both run counter to the claim that countries such as France would be slow to develop financially, because they were governed by the supposedly rigid Napoleonic civil law. In reality, civil law was far more flexible than many scholars believe, and it certainly did not keep notaries from discovering new ways of doing things.

To measure the interaction between banks and notarial credit, we gathered new data on the number of banks in France in the nineteenth and early twentieth centuries. Chapter 6 analyzes the spread of banks in France and compares their diffusion with similar data for the United Kingdom. France had more banks than anyone imagined, and it erected no barriers to bank entry. If France did end up with proportionally fewer banks than England, it was because of demand and—surprisingly—because of the relative weakness of the British peer-to-peer credit system.

Chapter 7 then asks whether banks were so much more efficient that they drove notaries out of the business of arranging peer-to-peer loans as they spread across France. As we discovered, nothing was further from

the truth. A notary, it turns out, had nothing to fear from bankers, who dared not compete with the notary in his own specialty of mortgage lending (unless, of course, they had government backing and a government monopoly, like the *Crédit Foncier*). The bankers and notaries in fact focused on different corners of the credit market, and their businesses were complementary: they reinforced one another.

Surprisingly, the huge number of loans that we discovered in the dark matter credit market were almost all made at one interest rate: one price. This outcome—a priceless equilibrium in the language of economics—derived from usury legislation and from the incentives created by the asymmetric information in the private credit markets. Prices only began to matter again (they had played a role in French private credit markets in the seventeenth century) in the late nineteenth and early twentieth century, when the government began to intervene in the market on a large scale. As we show in chapter 8, the government first provided financial backing to a large mortgage loan bank, the *Crédit Foncier*, and gave it a monopoly on the issuance of mortgage-backed securities. Then the government started subsidizing loans to private borrowers.

This first history of dark matter credit markets carries important lessons for financial markets and governments today, as we suggest in the conclusion (chapter 9). One lesson is that there is no single path to financial development. Another is that existing traditional financial institutions may be far more important than anyone supposes. Replacing them may therefore be a mistake and may leave new market entrants (such as modern banks) vulnerable to problems of adverse selection when they get stuck with all the bad credit risks. Finally, a third lesson is that banks are not likely to enter mortgage markets unless they have government backing. Otherwise, even the largest banks run the risk of falling victim to defaulting borrowers, as happened in the 2008 financial crisis. All three lessons should not be forgotten.

CHAPTER 1



1740 and the Rules of the Game

The big debt we discovered consisted of peer-to-peer loans, long before that term emerged on the web. In France there were millions of them, even centuries ago. What were they like? Here is one example: in 1740 Jean Pajot traveled eleven kilometers from his home to the town of Bellac in central France (see figure 1.1) to borrow forty *livres* (about two or three months pay for a rural laborer) from Guillaume Reymond.¹ Pajot was not alone, even in Bellac. Other borrowers from the town and its environs had local notaries draw up over one hundred loan contracts that year, totaling twenty thousand *livres*.

Since Bellac and the nearby villages in this remote part of France counted only some 8,500 inhabitants in 1740, it might seem, at least at first glance, that relatively few people were taking out peer-to-peer loans. But if we consider households rather than individuals, the participation rate was far from trivial. If each household averaged four persons, then seven percent of local households took out loans in 1740. And since loans typically had to be paid back in two years, some fourteen percent of households would owe money in this market at any time. The number of lenders would be smaller, because many lenders made multiple loans, but it still seems likely that at least twenty percent of the households in Bellac were involved in notarial credit in 1740, either as borrowers or lenders. That is a significant fraction.

And Bellac is only one example, for borrowers were taking out similar numbers of loans across France. If we take all of the ninety-nine markets in our sample together and extrapolate to France as a whole, then at least 430,000 loans were made in 1740, for a total of 160 million *livres*, and some 1.7 million debt contracts were outstanding, worth 1.4 billion *livres* (table I.1).

These numbers are large. The stock of notarial debt, even though it excluded nearly all commercial and consumer credit, amounted to sixteen percent of GDP in 1740 (table 1). Although that may at first glance seem paltry, especially when compared to the level of mortgage debt accumulated in some economies on the eve of the 2008 crisis, it is more than what mortgage markets achieve in many developing economies today. And while it totaled somewhat less than what the government owed its creditors (some two billion *livres* in 1740), it was still huge. The volume of lending coursing through the notarial credit market every year in fact dwarfed one

Index



- American Revolution, 48
annuities, 20; collateral in, 21–23; impact of reforms to, 78–79
Arcis-sur-Aube, 27, 58–59, 85–86, 209–12
aristocracy, residences of the, 68
Assignats, 74, 75
asymmetric information, 102–7, 199
Aube, 27, 58, 85–86, 209
- banks: competing against notaries for lenders, 185–88; as competitors with notaries in the mortgage market, 177–81; delayed diffusion of, in France, 4–5, 49–50, 152–58; diffusion prior to 1852 in Britain and France, 158–67, 173–74; effects on notaries, 176–77; growth of branch, 167–73, 174–75; key functions of, 33; in the mortgage market (*see* mortgage markets); necessity of, 1; and notaries as complements, 188–91; notarized letters of exchange and access to, 133–35; peer-to-peer credit markets as substitutes for, 149–52; shadow credit system and, 1–4; short-term credit and payment services provided by, 157–58; slow industrialization of France and, 152, 173
Banque de France, 169, 172–73, 173, 226
Banque Populaire de l’Aube, 212
Bar–Sur-Seine, 27, 58–59, 85–86, 209–12
bilateral loans, 3–4
billet à ordre, 135
billet de caisse, 50–51
borrowers: asymmetric information effects on, 102–7, 199; as clients of notaries, 34–40; collateral provided by, 21–23, 55–62; economics of information and demand by, 70–73; farmers as, 50–51; geography of, 248–50; illiterate, 52–53; loan size and literacy of, 55–62; occupations of, 35, 37–40; referrals of, 54–55, 107–11, 200–201, 202; sex of lenders and, 36, 37; social capital of, 105–6; travel by, 87, 90–94, 106–7
Bouault family, 103–5, 126
boundaries of credit markets, 34
branch banking, 167–73, 174–75
brevets, 16, 57
Britain: common law in, 227; diffusion of banks in, 150, 152, 158–67, 173–74; industrialization of, 150; lending in France compared to, 41–44; letters of exchange in, 125; long-run financial development and, 232; mortgage lending in, 222; notaries and urban hierarchy in, 42; at the turn of the 20th century, 195
business practices hypothesis, 201–4
- Cadaastre, 76
Caisse des Dépôts, 54, 93
Cameron, Rondo, 151–52, 153, 156–57, 167
cantons, 28–30, 45, 46, 115–19
cash crops, 146–47
centralization of credit markets, 1740–1780, 48–50; credit markets variations across space and over time and, 52–55; economics of information and, 70–73; literacy and collateral affecting loan size and, 55–62; markets big and small under the Old Regime and, 50–52; rise of the obligation and, 62–66; urban hierarchy explaining, 66–70
CFF. *See* Crédit Foncier (CFF)
Charles X, 157
civil law, 4–5, 7–8, 85, 123–32, 144, 148, 225–28
Civil Code, 125–27, 227. *See also* civil law
collateral: after the Revolution, 84–88; annuity and obligation, 21–23; held by urban residents, 41; loan size and, 60–62; percent of notarial contracts specifying, 64; real property as, 21–23, 54
Commercial Code, 1807, 125–27, 227. *See also* civil law
commercial credit, 32, 103–4; banks and notaries as complements in, 188–91. *See also* notarized letters of exchange (NLE)
common law, English, 227
Comptoir d’Escompte de Paris, 172, 173, 187

- Contrôle des actes, 15–18; demographic information on borrowers and lenders, 35–40; on purpose of loans, 35; reforms to, 76–77; registers of, 24–25, 34–35
- Coquet, Antoinette, 103
- correspondents, notary, 108–20, 135–44
- Crédit Foncier (CFF), 101, 168, 173, 176, 188, 197; disappearance of, 218; government support of, 228, 229; interest rates and, 206, 208–9, 212; mortgage loans by, 181–85, 221
- credit history, borrower, 22
- Crédit Lyonnais, 172, 173, 186, 187
- credit markets: in 1740 (*see* notarial debt, 1740); in 1780 (*see* notarial debt, 1780); in 1807 (*see* notarial debt, 1807); in 1840 (*see* notarial debt, 1840); boundaries of, 34; centralization in the 18th century (*see* centralization of credit markets); commercial, 32; credit rationing and pooling equilibrium (CRPE), 197–204; decline of 1807, 81–82; in different cantons, 45, 46; in France compared to other countries, 40–44, 225–28; functioning of, 30–34; geography of, 25–30, 67, 108–10, 119, 141–43, 248–50; growth from 1740 to 1780, 48; impact of Revolutionary reforms on, 77–84; information and interest rates in 1899, 204–9; institutional reforms to, 75–76; lag in Paris, after 1840, 101–2; long-run financial development and, 229–35; modeling of thin, 88–90; mortgage, 31–33, 45, 177–81; mortgage-backed credit lines in, 181–85; notarized letters of exchange in (*see* notarized letters of exchange (NLE)); notary network and correspondents in, 108–20, 135–44; oral contracts in, 16, 52–53; post-Revolution era recovery of (*see* recovery, post-Revolution era); potential of, related to size, 45; proportions of households engaged in, 36; Ricardian rent seeking and, 44; single isolated market model, 243–45; specialization in, 44, 212, 220; travel to, 87, 90–94; two or more markets model, 245–47; urban hierarchy and centralization of, 25–26, 66–70
- Crédit Mobilier, 153, 168
- credit rationing and pooling equilibrium (CRPE), 197–99; self-sustaining capability of, 199–201; unraveling of, 201–4
- Dalvinard, Octavien Saucher, 63, 64–65
- David, Victor Felix, 103–4, 126, 158
- de Joncy, Jacques Cottin, 72
- de la Tynna, Jean, 153
- default 7, 21–22, 85, 108, 185
- delinquency/default, credit, 71
- derivative securities, 235
- Diderot, Denis, 48
- Dumigron, Jean, 122, 124, 138–39
- Dumont, Louis, 158
- Duthil, Jacques, 122, 138–39
- economics of information, 70–73
- England. *See* Britain
- Enlightenment, 48
- Enregistrement des actes civils publics*, 18, 213
- escrow accounts, 54
- France: bilateral loans in, 3–4; cantons of, 28–30, 115–19; credit markets in, compared to other countries, 40–44, 225–28; credit markets of, 25–30; delayed diffusion of banks in, 4–5, 49–50, 152–58; diffusion of banks prior to 1852 in, 158–67, 173–74; growth of banking network in, 167–73; industrialization of, 150, 152; infrastructure of Roman law in, 4, 71; interest rates and information in 1899, 204–9; lending records from, 1740–1931, 2, 3; study of private lending in, 1–9; at the turn of the 20th century, 195; urban hierarchy of, 26, 30, 40–43
- French Revolution, 5, 6, 225–26; Commercial Code, 1807, and, 125–27; data on notarial debt before and after, 24; eruption of, 48, 74; impact of reforms and inflation with, 77–84; institutional reforms of, 75–77; limits to notarial debt after, 19–20; literacy and collateral after, 84–88; modeling thin markets after, 88–90; Napoleonic Codes and, 227–28
- Gard, 78–80
- gender of lenders and borrowers, 36, 37
- general (tax) farmers, credit use by, 50–51.

- geography of credit markets, 25–30, 67, 108–10, 119, 141–43, 248–50
- Germany, 2, 41; diffusion of banks in, 150; industrialization of, 150; long-run financial development and, 233; mortgage lending in, 222; at the turn of the 20th century, 195; urban structure of, 43
- Gerschenkron, Alexander, 153, 167–68
- Gille, Bertrand, 153
- Glorious Revolution, 159
- Great Depression, 210, 212, 236
- Guerin, Hugues, 185, 189
- hexagon model, 250–55
- Hypothèques, 76, 104–5, 107, 207–9
- Iberia, 41; long-run financial development and, 232; notaries and urban hierarchy in, 42; urban structure of, 43
- illiteracy. *See* literacy
- industrialization, 150, 152, 154–55
- inflation, 95, 151–52, 210, 212, 225–26; after the French Revolution, 24, 70, 77–85; during the French Revolution, 8, 74–75, 95
- information: asymmetric, 102–7, 199; economics of, 70–73; and interest rates in 1899, 204–9; notaries' network for, 107–11
- institutional reforms of the Revolution, 75–77; impact of, 77–84
- interest rates, 20, 195–97, 216–17; after 1899, 209–13; credit rationing and pooling equilibrium (CRPE) and, 197–201; in February, 1931, 213–16; and information in 1899, 204–9; removal of caps on, 77
- Italy, 41; long-run financial development and, 233; notaries and urban hierarchy in, 42; urban structure of, 43
- Latin America, 4, 228, 234–35
- Lavoisier, Antoine, 50, 51
- Law, John, 151, 221
- Lefauchaux, Jean Ignace, 63
- lenders: asymmetric information effects on, 102–7; economics of information and supply by, 70–73; occupations of, 38–40; rights of, 227; sex of, 36, 37; travel by, 90–94; universal banks and notaries competing for, 185–88
- limited partnerships with tradable shares (LPTS), 168
- literacy, 52–53; after the Revolution, 84–88; loan size and, 55–60; notarized letters of exchange and, 135; oral contracts and, 16, 52–53
- litigation, 54, 123, 227
- loan durations and maturities, 1, 43, 63–64, 82–84, 95–98, 106–7, 183, 211–14, 224; after 1840, 98
- loan size: collateral and, 60–62; credit rationing and pooling equilibrium (CRPE) and, 197–99; distribution of, 55–56; growth, 1740–1780, 62–66; growth after 1780, 98–101; institutional reforms and caps on, 77; literacy and, 55–60; rural notaries and, 57–58
- loan to value (LTV) ratios, 198–99
- loan volume after 1840, 97–98
- London, 4, 31, 41, 43–44, 49, 159–60, 166–67, 233
- long-run financial development and peer-to-peer lending, 229–35
- Louis XIV, 17, 68
- Low Countries, 41; long-run financial development and, 232; urban structure of, 43
- Lyon, 27–28, 35–36, 66, 72, 101
- Mirande, 51–52; borrowers' dependence on notaries in, 53; familiarity between borrowers and lenders in, 54
- moral hazard, 15
- mortgage-backed credit lines, 181–85
- mortgage bank, 32–33. *See also* Crédit Foncier (CFF)
- mortgage markets, 31–34, 45, 191–94, 220–23; banks and notaries as complements in, 188–91; big debt and lasting significance of, 235–37; Crédit Foncier in, 181–85; notaries and banks as competitors in, 177–81
- Murphy, Antoin, 151–52
- Napoleon, 24, 70, 74, 95, 150–53, 157, 167, 225–27
- Napoleonic Codes, 226–28. *See also* civil law
- Napoleonic Empire, 5, 6, 74, 225; civil law under, 8; inflation during, 70; interest rate ceilings under, 8

- Neal, Larry, 151, 174
- Netherlands, 230, 233
- networks of knowledge, 95–96
- notarial debt, 1740, 52; annuities and obligations as, 20–23; average loan size and durations of, 25–26; building a data set on, 23–27; collateral in, 21–23; credit markets and, 30–34; defining, 19–20; in different cantons, 45, 46; estimating the total number of loans and totals for, 27–30; records of, 15–18; statistics on, 10–15, 241–42
- notarial debt, 1780, 51–52; declines in, 79–80; variations from 1740 debt, 52–55
- notarial debt, 1807, 77–84
- notarial debt, 1840, 96–97
- notaries, 15–18; after the Revolution, 84–88; appointment of, 16; archives of, 16; and banks as complements, 188–91; clients of, 34–40; competing against universal banks for lenders, 185–88; as competitors with banks in the mortgage market, 177–81; demand for, 56–57, 84–85, 158; economics of information and, 71–72; effects of growth of banks on, 176–77; hexagon model of, 250–55; information network of, post-Revolution, 107–11; and institutional reforms after the Revolution, 76–77; in the mortgage market (*see* mortgage markets); notarized letters of exchange (NLE) and, 135–44; peer-to-peer lender similarities with, 224–25; random referrals, 111–12; reciprocal relationships 111–12; recording of oral contracts by, 16, 52–53; referrals by, 54–55, 107–19, 200–201, 202; role in securing annuities and obligations, 21–23; rural versus urban, 57–58; as substitute for banks, 149; success in post-Revolution recovery era, 119–21; tax revenue and, 17
- notarized letters of exchange (NLE), 122–24, 226–27; advent of, 124–29; codes and jurisprudence regulating, 129–33; decline of, 144–48; lack of access to banks and use of, 133–35; network of notaries and their correspondents and, 135–44
- obligations, 20; collateral in, 21–23; of farmers, 50; impact of reforms to, 79, 83–84; rise of, after 1740, 62–66; share of credit, 1740–1780, 63
- occupations of borrowers and lenders, 35, 37–40
- Old Regime France, 11; disorganized institutional structure of, 75; lack of census of notaries for, 18; limits to notarial debt in, 19–20; markets big and small under, 50–52; obligations in, 62
- oral contracts, 16, 52–53
- Pajot, Jean, 10, 14, 18
- Paris: banks in, 214; banks outside, 157; borrower travel to, 90–92; business practices hypothesis and, 206; credit market difficulties after 1789 in, 78–80; credit market growth outside of, 95; dominance of CFF in, 221–22; as financial center, 233
- Paris International Exposition, 1900, 195; Paris Stock Exchange, 14, 31, 95, 151, 171; peer-to-peer lending, 4, 10; archival evidence on, 14; historical evidence and modern, 223–25; lessons of, 218–20; and local and integrated with other markets, 94; long-run financial development and, 229–35; oral contracts in, 16, 52–53; rationing of, 31–32; recuperation after the Revolution, 95; spatial problems in, 74–75; as substitutes for banks, 149–52
- prices. *See* interest rates
- railroads, 195
- rationing, 31–32, 196–97
- real property: as collateral, 21–23, 54; Hypotheques registry of, 76; price crashes in, 237. *See also* mortgage markets
- recovery, post-Revolution era, 95–96, 119–21; increase in loan size and stock of debt in, 96–101; notaries' information network in, 107–11; Paris' lag in, 101–2; problem of asymmetric information in, 102–7; theory and evidence of, 111–19
- referrals, loan, 8, 54–55, 96, 107–11, 135–36, 139, 143–44, 179, 207, 225, 232, 248–54; credit rationing and pooling equilibrium (CRPE) and, 200–201, 202; evidence of, 111–21
- Reymond, Guillaume, 10, 14, 18

- Ricardian economics, 44
Roman law, 4, 71. *See also* civil law
Rousseau, Jean-Jacques, 48
rural notaries, 57–58
- sample of loans, 7, 10–14, 17–18, 24–34, 58, 85, 256–59; denser sample, 112–13
Savings and Loans, 220
single isolated market model, 243–45
Smithian economics, 44
social capital, 105–6
Société Générale, 169, 172, 173, 186, 187
specialization in credit markets, 44, 212, 220
stock of debt, per capita, 69–70
subprime mortgage crisis, 2008, 31
- tax revenue, 17, 150
thin markets, modeling of, 88–90
transaction costs of economic activity, 67–68
travel and travel costs, 4, 87, 90–94; asymmetric information effects on, 106–7
- Troyes, 27, 35, 58–59, 85–87, 209–12
two or more markets model, 245–47
- United Kingdom. *See* Britain
United States, 2, 220
universal banks in competition with notaries, 185–88
unsecured debt, 21
urban hierarchy, 26, 30, 40–43; explaining centralization, 66–70. *See also* centralization of credit markets
usury legislation, 20
- Valreas, 127–9
Vaucluse, 127–9, 137–40, 144
venality, 75–78, 102. *See also* general (tax) farmers
venture capital, 235
Voltaire, 48
- Wales. *See* Britain
World War I, 144, 213, 218, 221, 236
World War II, 221, 236