Financing Long-Distance Trade without Banks: The Joint Liability Rule and Bills of Exchange in 18th-century France*

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Abstract

By the close of the seventeenth century international trade had expanded beyond the reach of the personal networks on which it had previously depended. How was long-distance trade among strangers financed without banks or international enforcement? I argue that a particular seventeenth century legal innovation, the joint liability rule, enabled the medieval bill of exchange to become the dominant means of payment and credit in the early modern period, thus supporting an unparalleled expansion of trade. The joint liability rule specified that every party who used a bill of exchange to pay for goods or settle a debt was liable for the face value of the bill if it was not paid at maturity. This paper examines the role that joint liability played in ameliorating three fundamental problems in long-distance trade finance: moral hazard between issuers and payers, adverse selection in the market for bills, and imperfect enforcement of international contracts. To this end, I have compiled a new dataset spanning the period from 1780 to 1790 that includes thousands of original bills of exchange, notices of defaulted bills, court records, and business letters of Maison Roux, a large French merchant house. I show that the joint liability rule put in place a formal mechanism that linked otherwise distinct personal networks so that trade could expand beyond the limits any single network could support. Despite evidence of ongoing problems of adverse selection and moral hazard, my findings demonstrate that bills of exchange worked to broaden trade in the sense that agents used them across business networks.

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1 Introduction

By the close of the seventeenth century international trade had expanded in volume, in variety, and in geographic scope. Faced with growing business opportunities in distant and unconnected areas, merchants could no longer solely rely on the limited reach of their personal networks. This development raises an important question: How was long-distance trade financed among strangers at a time when modern deposit banks did not exist and international enforcement was weak? Contemporaries unfailingly noted the central role that Bills of Exchange played in the transformation of trade. Echoing their views, in the first half of the twentieth century historians spilled a lot of ink to reconstruct the modus operandi of Bills of Exchange, considering them to be the foundation and the distinctive feature of modern capitalism [De Roover, 1953; Sayous, 1933; Postan, 1928; Lane, 1944]. In contrast, today's economic historians have displayed little interest in Bills of Exchange, implicitly assuming that Bills of Exchange *per se* were sufficient to sustain the expansion of trade in the early modern period. This paper challenges this assumption by considering the legal institution that allowed Bills of Exchange to circulate across ever greater social and geographic distances, triumphing in an environment dominated by private information, spatial separation and limited communication.

The term Bill of Exchange (BofE) refers to a financial instrument whereby a merchant (the issuer) ordered his agent abroad (the payer) to make a payment in a different currency on his behalf to another merchant (the beneficiary), often in a third location, at a set date in the future.[1] The beneficiary could further transfer his claim to another party, an endorser, in exchange for currency, debt or merchandise. This set-up raises three important questions: 1) Given the spatial separation between issuers and payers, how could issuers be sure that the agents responsible for payment (the payers) would honor their bills? 2) In the presence of asymmetric information about the issuer's solvency and the payer's reliability, how could endorsers further pass on bills as a means of payment, remittance, and credit? Asymmetric information between buyers and sellers implies that bills will only circulate within environments where information is common knowledge. 3) In the absence of courts with international jurisdiction, how could holders rely on foreign courts to enforce a debt? If courts cannot enforce the terms of bills issued elsewhere, bills will only circulate within a given jurisdiction.

Although the existing literature claims that the BofE *per se* underpinned long-distance trade,

[1] In the literature, one finds several terms describing each of these parties. An issuer may also be called a "principal" and a payer may also be called an "agent."

agency problems could prevent bills from being issued, adverse selection could hinder their circulation, and imperfect international enforcement could preclude bills from being enforced. Some further component must be added to the BofE before it can account for the financing of long-distance trade. My research shows that a seventeenth century legal innovation, the Joint Liability Rule (JLR), enabled the medieval BofE to develop into the dominant means of payment and credit in the early modern period. The JLR specified that in case of default, all endorsers, in addition to the issuer and payer, could be held legally liable for reimbursement. Through the endorsement on the back of the bill, each successive endorser not only surrendered his financial claim to the bill but also acknowledged his full liability for reimbursement in the event of default.

This paper shows that the powerful mechanism of Joint Liability permitted merchants to conduct a larger volume of trade through BofE than would have been possible otherwise. I examine the role that joint liability played in ameliorating three fundamental problems in long-distance trade that had prevented the medieval BofE from becoming an effective financial instrument: moral hazard between issuers and payers, adverse selection in the market for bills, and imperfect enforcement of international contracts. To this end, I assembled a new dataset compiled from original historical documents of Maison Roux, a large French merchant house in Marseille. This dataset, spanning the period between 1780 and 1790, includes over 1700 original BofE, 350 notices of defaulted bills (protests), in addition to evidence from court records, and Maison Roux's 80,000 business letters. This is the first study that empirically documents how BofE were traded across jurisdictions and personal networks. By focusing on an ordinary merchant house located in a city that lacked access to banks and stock or public debt markets, this study illuminates the economic realities faced by the understudied majority of businesses which had to resort to private finance in order to thrive.

My findings uncover a far-reaching and anonymous market for bills that provided Maison Roux with liquidity and credit. Bills originated and were settled in a geographic area that extended all over Europe, north of Africa, Ottoman Empire up to Syria, and the Caribbean Islands. Despite evidence of ongoing problems of adverse selection and moral hazard, I show that bills worked to broaden trade in the sense that agents used them across business networks. I identify groups of merchants who were in regular business relationships with Maison Roux. I show how in many instances the issuer, the payer, and most of the endorsers of the bills did not belong to Maison Roux's business network. The main features of BofE suggest that they more closely resembled credit instruments than money. Transactions supported by BofE were of large denominations, they were impersonal, they were carried out across great distances and they could support long-term credit. Yet, this institution was not perfect: bills did not circulate to their entire capacity, and

payment was not always timely or certain.

This paper exposes the limits of two literatures' explanatory power and it expands the scope that these theories encompass. In the standard tale of development, less developed societies rely on private-order, personal-based modes of interaction [Greif, 1989; Weingast, 1994], but with time economies expand, establish impartial courts, and construct formal institutions mediating credit such as banks and currency [North, 1991; Dixit, 2004]. This shift is obviously not instantaneous; in fact, the transition path accounts for the bulk of history and merits extended consideration. The joint liability rule put in place a formal mechanism that linked otherwise distinct personal networks so that trade could expand beyond the limits any single network could support. By examining the virtues and limitations of the joint liability rule, this paper casts new focus on the role of law in shaping the development of financial markets and highlights an important step in the transition from reputation, personal-based exchanges to formal, law-based institutions.

2 Legal Historical Background: the BofE and the JLR

A BofE was a letter from a merchant (the issuer) to his agent abroad (the payer), commanding him to make a payment to another merchant (the beneficiary), often in a third location. A merchant might issue a bill to settle a debt, to pay for merchandise, or to obtain funds in local currency; in any case the beneficiary provided the issuer with credit. The beneficiary could transfer the claim to a new party anytime before the due date of the bill. BofE functioned therefore as a means of payment or as a mode of short-term credit in a time when transport of gold was expensive and risky, coins were subject to debasement and globalized stock markets and modern deposits bank did not exist. With the exception of certain trading areas, including those beyond Europe, such as the Levant and the East Indies, merchants minimized hard currency flows by multilateral payments through BofE. At the turn of the seventeenth century, transport of gold and bullion from England to the rest of the world covered only 5% of England's total deficit to the rest of the world excluding the East Indies [Sperling, 1962]. Besides supplying an effective means of payment, BofE also mobilized credit across long distances. Often, the time elapsed between the issuance and redemption of a BofE (maturity) could be much longer than the time necessary to travel from the place of origin to the place where it had to be redeemed.

The hybrid nature of the BofE illuminates the inherent agency relationship built into the bill. Merchants would send goods to their agents abroad, who were responsible for paying bills drawn against the proceeds of the sale of goods. Bills, then, were not primarily drawn to serve as a coun-

terpart in a sales contract; instead they formalized an agreement between a principal and his agent, who was responsible to repay the principal's loan with the proceeds of the sale of merchandise. The agency model was the typical business organization employed to conduct international trade because uncertainty, long delays in shipping times, and imperfect information about market conditions precluded arm's length transactions. In this environment, negotiation costs were too high for geographically separated merchants to reach an agreement on the terms of a sale contract, especially about prices. My findings broadly corroborate this story: only 2% of Maison Roux's bills between 1780-1790 originated in the context of a sales contract, and most bill defaults were motivated by agency conflicts.[2] In spite of both this empirical evidence and the constraints surrounding early long-distance trade, traditional accounts have overemphasized the BofE as a means of payment in a sales contract.[3] By ignoring the complex environment in which the BofE functioned, and as a result the business organization required to conduct trade abroad, previous studies have obscured the inherent principal agent problem built into the BofE, and crystallized a heretofore unchallenged assumption that the BofE worked simply because it existed. I argue that the JLR mitigated the agency conflict that could have undermined the workings of the BofE.

The JLR specified that all endorsers, in addition to the issuer and payer, could be held liable for the full amount on the bill if the debt were not paid. Through the endorsement on the back of the bill, each successive endorser not only surrendered his financial claim to the bill but also acknowledged his full liability for reimbursement in the event of default. In practice, once a payer refused to pay, a notary verified the default and the reason claimed for default which were recorded in a legal act called the protest. With the protest, the holder could either demand immediate payment from any of the signatories of the bill by drawing a re-exchange bill on one of them, or he could sue any combination of endorsers and the issuer. The endorser faced with a re-exchange bill or a lawsuit had the right to pursue previous endorsers. An important consequence of the payer's insolvency was that the aggrieved holder was under legal obligation to distribute copies of the protest to previous endorsers and the issuer.

The principles underlying the JLR were first established in the Antwerp Estate Ordinances of 1541 and the Antwerp Costumyn of 1608 [de Longe, 1874, p.380, art.14]. This change in legislation arose from the pressure of merchants, who preferred the legal treatment of transfers as assignment,

[2]If the underlying "cause" of bills was a sale of merchandise, one would expect that buyers would often refuse to pay bills on the grounds of goods' poor quality. "It is not surprising that we do not see disputes about breach of warranty and other sales defenses that the traditional legal history leads us to expect" [Rogers, 1990, p.291].

[3]Hypothetical examples in textbooks and 20th century legal manuals emphasize the use of the BofE as a substitute for money [H.H Humble, 1939, pp. 4-5; Ogden, 1922, pp. 9-10].

under which transfer is not final, rather than cession, under which transfer extinguishes any underlying obligation [Van der Wee, 1977, p. 326]. In France, the JLR dates back to the Ordonnance de Commerce of 1673, whose rules were reproduced almost without any changes in the Code de Commerce of 1807. By the eighteenth century, the JLR was a fully developed and enforced legal construct across most of continental Europe. In England, the case of William v. Field (1694) established in a common law court that the last endorsee could sue any of the previous endorsers, as well as the issuer. The territorial range of application of the JLR expanded to all boundaries of trade, and affected all merchants throughout Europe and beyond. Through foreign consulates, merchants in distant areas, such as in the Ottoman empire, were subjected to the commercial laws of Continental Europe [Eldem, 1999]. Therefore, merchants could not explore differences in the applicability of the law to their advantage. A summary of the most relevant BofE legal provisions in France and in England can be found in Appendix II.

3 Archival Sources

The empirical analysis in this paper relies on a new dataset I created from the business records of Maison Roux, a large French merchant house in Marseille. The sources fall into four categories: bills, protests, business letters, and court records. This dataset, spanning the period between 1780 and 1790, includes more than 1700 original BofE and 350 notices of defaulted bills (protests), as well as evidence compiled from the court records, and Maison Roux's voluminous business letters collection. The survival of various types of records from this merchant house is rare among such eighteenth-century collections, and it affords us the opportunity to reconstruct the inner workings of trade across jurisdictions and personal networks.

Founded in 1728 as the successor of the Maison Bruny, Maison Roux maintained its importance as one of the leading merchant houses of Marseille until the mid-nineteenth century. Maison Roux initially specialized in the shipping and commission business, amassing a commercial network that reached more than 216 cities in France and 11 countries in various areas, including Europe, the Levant, North Africa, French Caribbean, and South America. Like other merchant houses, Maison Roux took advantage of its business contacts to profitably provide banking services to its clients [Price, 1980, pp.142-143]. According to several descriptive accounts of European merchant houses and a two-volume monograph about Marseille merchants in the eighteenth century, Maison Roux was a typical, albeit large, merchant house, and it was listed in contemporaneous general merchants' publications among the most important merchant houses in Marseille [Gournay, 1788].

The estimated lower bound for Maison Roux's yearly volume of trade with BofE corresponds to 5% in value of all imports to Marseille. Marseille represents over 35% of all French imports in the 1780's [Daudin, 2005].

Although Marseille was the most important port city in the Mediterranean, and one of the largest commercial centers in eighteenth-century France, its banking institutions, as in many other major cities, were only beginning to take shape and the scarcity of money was a particularly serious issue.[4] The BofE had long been used as the primary means of payment, remittance and short-term finance in this region [Rambert, 1949]. By focusing on an ordinary merchant house, located at the periphery of the small but sophisticated credit and money market facilities in the great hubs of Northern Europe, this essay portrays the economic realities of the vast majority of businesses which had to resort to private finance in order to thrive.

Bills

The data on the bills for this paper are extracted from the *Fonds Roux*, preserved in the *Archives de la Chambre de Commerce et Industrie Marseille Provence* (CCIMP). The collection comprises more than 10,000 BofE from 1728 to 1797. For this study I collected and transcribed 1750 BofE during the period 1780-1790. The following variables were assembled for each bill: name and location of issuer, payer and endorsers, dates of endorsements, face value, maturity (days between the date of issue and date of redemption), motive (the stated purpose of the transaction such as exchange of merchandise, value in cash, or credit in account). For a picture of an original BofE and its transcription see Figure A1.

This collection contains only paid bills. The defaulted bills were collected from notary sources, discussed below. Maison Roux could occupy potentially four positions: final holder, endorser, issuer, and payer. I observed the complete cycle only when Maison Roux was the final holder or the payer. If Maison Roux endorsed the bill, it traveled beyond the house to points unknown. But the house preserved a copy of the bill, making it possible to observe when, where and to whom it

[4][Rambert, 1949, vol. IV, pp.458-464]. "The European payments system based on deposit banks and bills of exchange worked well for those people with means and reputation, but many people were lacking in either means or reputation" [Quinn, 2004, p.154]. "Other places responded by outlawing deposit banking until the mid-17th century (Munro 2000). In Antwerp, banking was outlawed beginning in 1489. Without deposit banks, people relied solely on personal promises in the form of written notes or entries in merchant ledgers (Kerridge 1988). Unlike bank transfer, payments using these methods were limited to circles of personal familiarity and were not final until the promises were settled" [Quinn, 2004, p.153]. "Modern economic historians find it rather trying to have to think about credit without banks. And so accounts of credit frequently start with the foundation of banks. Yet the key institutions of pre-corporate credit were at work in Britain before anything called a "bank" appeared on the scene: mortgage, bond, note, bill of exchange, discount and ordinary commercial credit, short and long-term. When banks appeared they made more efficient a system whose key elements were already in place and working" [Price, 1989, p.278].

was endorsed. Bills issued by Maison Roux also stand outside of the sample. Table 1 breaks down the sample into sub-samples according to Maison Roux's position and the payer's location. This last characteristic is important because default information was collected only for bills payable in Marseille. Sub-samples I and II comprise over a third of the full sample. They refer to a subset of bills that completed the entire cycle, that is, Maison Roux was the final holder of the bill, and the payer was located in Marseille, making it possible to collect information on default from notary sources. The remaining data includes bills payable outside of Marseille, endorsed bills, and bills in which Roux acted as the payer. For the period 1780-1788, 100% of the paid bills were transcribed. I randomly sampled 30% of the paid bills in 1789 and 1790 since in these two years the quantity of paid bills was four times larger than the average between 1780-1788. Maison Roux's business seemed particularly prosperous in these two years. Several studies and Maison Roux business letters demonstrate that the break-out of the French Revolution in 1789 spread some uncertainty but it did not disrupt French commercial flows; the real rupture came with the Napoleonic Wars in 1793 [Marzagalli, 2008; Carriere, 1973, vol. I. p. 152].

Because the quantity of paid bills by year fluctuates between 3 bills in 1786 and 650 bills in 1789, one may be concerned that this change resulted from selective attrition rather than a transformation in the nature of Maison Roux's business. Some of this variation could be explained by market conditions that led Maison Roux to act more as an issuer (if Maison Roux had credit abroad) rather than as a payer or final holder. This would naturally underestimate the number of bills kept, since, as mentioned, bills issued by Maison Roux did not leave a trace. To establish whether my sample is representative of Maison Roux's portfolio, I compare the sample data on BofE with Maison Roux's accounting information. Unfortunately, Maison Roux's accounting books themselves were not preserved. However, every time the partnership agreement was changed a *compte de bilan* (balance sheet) was drafted. This happened three times, in 1735, 1743 and 1791. The *compte de bilan* for 1791 was carried out on the 30th of June 1791, and it reveals a portfolio of 168 bills. The portfolio features bills drawn between April and June in the nominal amount of 719 415.9 livres. Besides the total number of bills and total value by payment location, the *compte de bilan* did not provide any bills' individual characteristics such as whether the bills were paid. Assuming that the flow of bills during the year remained constant, that all these bills were kept for 6 months, and that the *compte de bilan* of 3 months is representative of the entire year, I am left with an estimate of approximately 672 bills of exchange per year totaling 3 million livres per year in nominal value in BofE transacted by Maison Roux.[5] The silver content of the French currency

[5]The amount traded in BofE is a conservative estimate for the scale of operation of merchant houses. It does not

was quite stable around 4.45 g until 1789, then it decreased to 4.14 g in 1790 and to 3.79 g in 1791. Once this devaluation is taken into account, the estimated total value of BofE per year is of 2.55 million livres in terms of 1789 value. Table 3 depicts the total number of BofE in the sample and their total value by year. Taking the 1791 estimate from the accounting sources as the reference, only in 1789 and 1790 does the sample have a comparable total amount and total value in bills. If 1789 and 1790 bills are assumed to be representative of the population of BofE, and attrition was random, bills characteristics should not be statistically different over the years. It is reassuring that t-tests for means, as displayed in table 3 do not reject the hypothesis that the characteristics of 1789 and 1790 bills including value, maturity and number of endorsements do not differ from the same characteristics of bills in most of the years between 1780-1788.

Protests

The data on protests are extracted from the *Fonds des Notaires*, kept at the *Archives Départementales des Bouches-Du-Rhône* (ADBdR). In case of default the final holder would file a note (the "protest") with the notary, verifying the payer's refusal to pay.[6] The protest contained the entire content of the protested BofE, from which I collected the same variables as in the paid bills sample, in addition to the reason given by the payer for defaulting. For a picture of an original protest and its transcription see Figure A2.

The catalogue of the ADBdR reports the existence of 27 *études notariales* (notary offices) in Marseille. I examine all that are available, 25 *études notariales*, in search of the protest records filed by Maison Roux.[7] This time-consuming procedure was rendered necessary by the fact that, as I show in Figure 1, Maison Roux switched notaries over the years, and sometimes the house dealt with more than one notary during the same year. It has been suggested that due to the peculiar organization of notaries in France and the scarcity of banks, notaries acted as information machines, collecting and passing along information about their clients to those inheriting their offices or to their apprentices buying offices [Hoffmann et al., 1992]. This would imply that it is optimal for borrowers to deal with the fewest possible number of notaries since information revelation is costly.

include, for instance, *billets* and protested BofE in places elsewhere than Marseille because those are to be found in local notarial archives. A merchant not in the top-tier in Marseille traded 5 million livres in commercial paper during 1787 [Carriere, 1973].

[6]Notaries in the civil law tradition are vested as public officers with the authentication power of the State. They are authorized not only to record legal contracts between private parties but also to provide legal advice and to draft instruments with legal effects.

[7]Although the total of 27 *études* survived, two are not available for public consultation to their state of deterioration.

I found no evidence of notary specialization and it does not seem that any compelling reason encouraged repeated business with a notary.

Attrition in the protested bills sample is unlikely to be a concern. Holders had an incentive to protest, and notaries were obliged to keep copies of these documents. The aggrieved holder was required to strictly observe the numerous protest rules in order to enjoy the rights inherent in the JLR. Failure to follow these formalities could discharge previous endorsers of their responsibilities as warrantors [Ordonnance de Commerce, Titre V, XV]. Therefore the protest was virtually unavoidable if the holder expected to enforce his right to payment through the usual channels of the legal system. Furthermore, protest fees were minor compared to the value of the bills: the average value of a bill was equivalent to 10 years of wages for an unskilled worker in France while the protest fees were equivalent to half a day of wages for the same.[8] At the same time, resort to the notary seemed to be widespread, especially in the south of France, a region of strong civil law influence [Rambert, 1949, p.185]. Notaries were obliged to keep a copy of their protests and could be severely punished otherwise [Ordonnance de Commerce, Titre V, art IX. Code de Commerce, Art. 176].

Business Correspondence

The archival collection of the Maison Roux's papers (*Fond Roux*) contains roughly 80,000 business letters exchanged by the Maison with its clients from 1728-1840. Based on Maison Roux's incoming letters, I identify the names of over 2500 merchants who were in a business relationship with Maison Roux. From the letters I can construct Maison Roux's business network. By comparing the names in this "address book" with the signatures of issuers, payers and endorsers on the bills, I am able to observe whether Maison Roux was taking or passing bills to parties in previous contact with the house.

Court Records

Sometimes the effectiveness of an institution is best measured by how little it was used. The few copies of court cases preserved in the *Fonds Roux* and the minutes of the local merchant court, *Jurisdiction Consulaire*, reveal that Maison Roux rarely resorted to the merchant courts to solve disputes over bills. Figure A3 (Rubrique Jurisdiction Consulaire) depicts Maison Roux's

[8]Costs of protest for Bordeaux: 1s.6d. (Tarif de 1706), 1 livre (1716), 3 livres (1785), in Marseille 12s. 9 deniers (1784) [Gaston, 1991, p. 204, Appendix]. Note that the silver content of the French currency in grams has changed over years. For instance, the value was 6.813 in 1706, 5.545 in 1716 and 4.454 in 1785 [Hoffman et al.,1992].

involvement in court proceedings by the date of the hearing and the name of the defendant. With very few exceptions, I could not match the names of defendants to the set of defaulters in the bills for the period 1780-90.[9] These hearings could refer to cases involving BofE which were protested outside of Marseille, and such protests may be found in the archives of other cities.

4 Basic Features of the BofE

In this section I explore some key features of the Maison Roux dataset to provide a broad picture of the transactions supported by the BofE. Such transactions were of large amounts, they were made between people who did not know each other, they were carried out across long distances, and they could support long-term credit. However, this instrument had its limitations: bills did not circulate up to their capacity and payment was not always timely and certain.

The most important characteristics of BofE in the sample are displayed in Table 4. The average value of a BofE was equivalent to the average yearly income of nobles and members of the clergy, or almost 10 years of wages for an unskilled worker in France.[10] These values are substantial even compared to data on notary loans, which were long-term loans reflecting life-cycle motives. The BofE average value represented almost one-fifth of the average Parisian notary loan in 1780 (15,941 livres), or three-quarters of the average notary loan in other big cities in France (3,819 livres) [Hoffman et al., 1992]. Unlike notary loans, the participation of the nobility, identified in less than 1% of Maison Roux's bills, was lower than their involvement in notary loans, in which the nobility represented about 64% of all borrowers and 40% of lenders. Women rarely appeared in Maison Roux's bills; only 6% of the BofE involved a woman. The protest records reveal that the majority of the payers belonged to the mercantile class. Supplemental information from merchants' directories suggests that issuers and endorsers came from a similar background [Gournay, 1788]. In Section 6 I match the identities of those in the bills with information on business letters to show that transactions were impersonal.

The geographic distribution of issuers and payers, mapped in Figures 5 and 6, demonstrates that the BofE could support long-distance transactions. The bills in the Maison Roux dataset originated in 128 different cities, they passed through 136 different cities in Europe, and they were settled in

[9] I examined two sources for court cases: *Chambre de Commerce et de Industrie de Marseille, LIX-1006: Contentieux and Archives Départementales des Bouches-Du-Rhône, Series 13B 267-273.* A more careful analysis requires the very time-consuming task of scrutinizing every single case file, which I plan to undertake in the future.

[10] Nobility and clergy earned on average 3,670 livres per year and the bourgeois class earned around 1,800 livres per year in 1788 in France [Morrisson and Snyder, 2000]. An unskilled laborer in Provence would not earn more than 290 livres a year in 1785 [Rosenthal, 1990].

56 different destination cities. Bills originated and were settled in a wide geographic area and not predominantly in the two major financial centers at the time, London and Amsterdam [Chapman, 2006; Neal, 2001]. Only three places accounted for 6%-15% of bills' origination: Marseille, Livorno, Izmir. Almost half of the bills that passed through the hands of Maison Roux were payable in Marseille. Madrid, Livorno and Paris each accounted for less than 7%. The issuer and the payer were, on average, over a thousand kilometers apart, with the exception of bills originated in the Caribbean Islands and redeemable in Europe. Endorsers were slightly closer to each other. The mean distance between endorsers was five hundred kilometers, but again, they could be up to a few thousand kilometers apart.

Bills had an average maturity of 4 months, which suggests that they were mostly used for short-term finance. However, over 20% of the bills had a maturity of a year or more, showing that bills could also support long-term finance. The purpose of each bill's issue and of every transaction that followed was recorded on the bill itself. The bill could have been exchanged for merchandise, for value in currency (or gold), or for credit in account (to settle a debt). Exchanges for merchandise accounted for less than 2% of all transactions. Over half of the bills issued solved a liquidity need, and such needs were the dominant original purpose of bills that acquired a long list of endorsements through wide circulation. Subsequent endorsements could be made for a variety of reasons and therefore did not conform to a particular pattern. However, the last endorsement was usually made to settle a debt. In such cases, the parties presumably were in a business relationship.

The BofE suffered from two problems. First, bills did not circulate up to their capacity; they bore on average only two endorsements. Figure 4 demonstrates that maturity did not bind circulation: a substantial fraction of bills reached the places where they had to be redeemed with a considerable number of days remaining before the due date. The bills with the highest number of endorsements originated not in the most important financial centers in the continent, but in centers of local importance: Bayonne, Palermo, Toulouse, Ancona and Naples. Section 6 discusses the factors that influenced a bill's circulation. Neither a bill's point of origination nor its distance from its place of redemption correlates strongly with the number of times that bill was endorsed. Bills issued in the Levant circulated fewer times than bills issued in France. Apart from the Levant, I cannot reject that the number of endorsements of bills issued in France equaled the number of endorsements issued outside of France. Conditional on the country of issue, endorsement and distance between issuers and payers were weakly correlated. Issuers and payers would need to be 1000 kilometers away to induce an additional endorsement.[11] If endorsements functioned as "bridges" to

[11]These results use the sample of bills which completed the entire cycle, and for comparative reasons bills payable

connect distant agents, this preliminary result suggests that geography alone does not capture this notion of separation. Even the bills payable by Maison Roux rarely had more than 8 endorsements, as Figure 2 reveals.

The empirical results of this study depart from the heterogeneous portrayal of BofE that emerges from the prevailing literature. The average of two endorsements per bill found in this sample, for instance, is low compared to some accounts in the literature [Van der Wee, 1963, p.342; Ashton, 1945, p.26; Quinn and Roberds, 2007; Kindleberger, 1978; McCulloch, 1828]. It is possible that the view propagated by this literature may have been based on a few unrepresentative bills or that these bills had a much longer maturity than the typical bill in this sample.[12] Although the empirical evidence in this study suggests that merchants used BofE mainly as a form of credit, previous accounts emphasizing the use of bills as money are not necessarily inaccurate. It has been claimed, for instance, that differences in civil and common law legal attitudes caused BofE to serve as a close substitute for money in a variety of transactions in England while this use was blocked by French legal anachronisms [Anderson, 1970, p.90; Chalmers, 1903, p.61].

BofE also suffered from the problem of uncertain payment. A striking feature of the data is that an estimated 44% of the bills payable in Marseille were protested.[13] In Marseille alone, Figure 3 reveals that protested bills could represent up to 181,596 livres, which was a non-trivial amount compared to 3 million livres, the estimated yearly value traded in commercial paper by Maison Roux [See Section 3]. Even in absolute terms, the total value of protested bills represented a sizable 2/3 fraction of the merchant house's capital, evaluated in 250 000 livres.[14] In contrast, the scattered remarks in the literature claim that the JLR increased the financial security of bill endorsers.[15] Why then do we observe so many defaults? Were protests a prelude to eventual default

in Marseille.

[12]The two main studies of BofE employ empirical evidence from three pass-books of merchant bankers, wills, and inventories in Lancashire [Anderson, 1970; Ashton, 1945].

[13]As discussed in the previous section, attrition in the paid bills sample is likely high for some years, while there is no similar concern with the protest sample. I established that attrition in the paid bills sample is probably lowest in 1789 and 1790, so these years are realistic comparisons to the protest samples in those years. I randomly selected 30% of bills in these years. From the randomly selected sample, I estimated that there were 173 bills payable in Marseille in 1789. Protested bills represent 20% of the estimated total bills in this year. In 1790, protested bills are estimated to represent 44% of the total bills payable in Marseille

[14]Starting in 1728, the Maison Roux had its partnership contract renewed a few times due to partners' deaths and the entry of new partners. It started in 1728 with a capital of 516 501 livres. In 1743 a new partnership agreement was drafted with a capital of 600 000 livres. The last partnership contract in 1796 shows a capital of 250 000 livres.

[15]"Now BofE became not only more easily transferable, but also negotiable; in other words, the bearer had a greater financial security than the previous bearer, who remained jointly responsible for payment" [Van der Wee, 1977]. "And, since each successive holder endorsed it, the more it circulated the greater the number of guarantors of its ultimate payment in cash. Even if some of the parties to it should be men of doubtful credit it might still circulate, for it was unlikely that they would go down simultaneously" [Ashton, 1945]. "While every expansion of simple credit is necessarily bound up with increasing risk, the security of a bill as a commercial instrument increases with the

or merely episodes of friction? I will address these questions in Section 6. The key features of bills traded by Maison Roux suggest that the JLR was successful in overcoming deficits of information that prevented the medieval BofE from supporting long-distance, impersonal exchanges. In the next section I explore from a theoretical standpoint how the JLR could solve three problems of information asymmetry in long-distance trade.

5 Asymmetric Information and the JLR

5.1 Adverse Selection

The simple view of the BofE as a substitute for money raises the following question: under which conditions can the BofE circulate? According to the conventional wisdom in the monetary literature, circulation of private debt can only expand outside closely-knit networks if those issuing and paying bills are perfectly monitored and can credibly commit to payment [Kiyotaki and Moore, 2003; Gorton, 1996]. Such a model aptly describes nineteenth-century England which counted with a centralized market for BofE in London, and large acceptance banking houses. By contrast, France over a century earlier, possessed two features that limited commitment and observability of past actions from being created. First, French law imposed limitations on the size of partnerships until [...]discouraging the formation of private banks[16], so those issuing BofE would not be large players: a promise to pay was not credible if there was no reputation to lose, and knowledge of past actions was imperfect. Second, there was no centralized market for BofE, meaning that trade would take place on a long-distance and bilateral setting. More importantly, the slow communication technology limited the ability of market participants to negotiate detailed contracts. The business letters of Maison Roux shed light on an essential detail of the trading procedure. Buyers "placed" their orders with Maison Roux based on a few dimensions: value, duration, and place of payment. This means that many characteristics, such as the number of endorsements and the identities of the signatories, may have been observed by buyers only post-trade. However, BofE were not homogenous commodities, that is, the default risk of a BofE depended on its signatories. If potential buyers of a BofE could not observe *ex ante* issuers', payers' and endorsers' identities, and their past trading history were not known to all *ex post*, the threat of adverse selection could arise.

To see how adverse selection may have hindered the transfer of bills before the introduction

number of the endorsements it carries and consequently with the number of money payments that it has provided the means of obviating" [Wicksell, 1936]."In common experience every body knows that the more indorsements a bill has, the greater credit it bears" [Lord Mansfield, Heylyn v. Adamson, 1759].

[16]Since the Law affair in 1715, French legislation was hostile to private banks..

of the JLR, think of a market for lemons story. When quality is not verifiable, parties have an incentive to pass on the notes of riskier debtors. Therefore, in equilibrium only low quality claims will be transacted, or on average bad bills will circulate more than the good ones. The number of times a bill changes hands provides a signal of its quality. In addition, due to the trading procedure, undesirable characteristics may be revealed *ex post*. A buyer who observes that the quality is less than expected will tend to sell it more quickly than a buyer who gets a positive "surprise," so ownership spells for "lemons" should be shorter than average. Furthermore, subsequent buyers take previous ownership spells as a signal of the bill's quality, generating a positive correlation among ownership spells for low quality claims, a "hot potato effect" [Thornton, 2002, pp. 179-80]. As a partial solution to the adverse selection problem, buyers may only deal with sellers over whom they can inflict punishment if the claim turns out to be of low quality. Yet this reduces the liquidity of the market by forcing buyers and sellers to interact within small networks. If adverse selection is so severe that a market for bills does not exist, bills will circulate locally or only within closely bounded networks.

The situation is different under the JLR. In this case, those selling bills commit contractually to reimburse the face value of a defaulted bill in addition to legal and transaction costs. As a consequence, sellers cannot make gains from trading on private information. Consider a merchant in need of funds to export goods (A) and a merchant with spare funds to lend (B). A offers to B a BofE payable by A's agent in exchange for the local currency that would allow A to export the goods. Normally B would need to check A's and his agent's creditworthiness, whether A ships the goods, etc. However, if B thinks he will be able to resell the claim he may not exert the optimal screening effort. Aware of this risk, potential buyers would not be willing to buy the BofE despite B's claims that A or his agent are trustworthy. Under the JLR, B continues to be responsible for the bill, even though it was sold. Because B faces the full costs of lenient screening, he has an incentive to avoid lousy borrowers. The JLR makes B's claims that he sells a "good" bill credible to potential buyers. Even if the initial screening effort was optimal, the BofE may have a long maturity date, creating the possibility of changes in A's and his agent's creditworthiness. If this information is private knowledge to those selling bills, then the circulation of BofE could be threatened by adverse selection. Again, sellers cannot profit on private information under the JLR because they are liable for the face value of the bill, in addition to legal and transaction costs.

Apart from obviating the need to ship hard currency, the fact that a single bill can circulate and perform multiple transactions across different people has an important advantage for the patterns of trade. When trade is bilateral, as long as the balance of trade is equilibrated between two

countries, debts and credits can be canceled out. Multilateral trade requires an additional step; it implies that credit and debts may not be in the same place, and that the credit in one place can be used toward paying the debt in some other place. Therefore, if bills cannot circulate, merchants paying others abroad would need to have trade balances and an agent (the payer) in that same location abroad. Such an arrangement would be infeasible as the number of trading partners increases. Alternatively, merchants could coordinate to settle balances in a clearing center, such as Amsterdam in the seventeenth century or London in the nineteenth century. However, small merchants may not have the means to keep agents in Amsterdam, and large merchants may be reluctant to concentrate their business within a single agent.

What did the JLR accomplish that market solutions could not provide for? An alternative to the JLR would be to draft a side personal guarantee agreement every time the bill was transacted. While possible, this option implies high transaction costs to draft, register and enforce the contract, especially among parties who were far away or mostly in different jurisdictions. Furthermore, pairwise personal guarantee agreements are not as advantageous as the JLR pooling risk because insurance is provided only by the immediate previous endorser. Along the same lines, collateral may suffer from moral hazard problems and repossession costs.

5.2 Moral Hazard in Agency

The commission agent model of conducting business abroad arose as a response to the high transaction costs of engaging in arm length deals given the slow communication and transportation technology in the early modern period. Agency, however, does not come free. Issuers have to deal with clearing risks, that is, payers refusing to pay their bills. Payers, in turn, have to deal with the risk of "over-issuance," meaning that issuers may misrepresent to potential lenders the amount payers owe them. To illustrate, assume that an Issuer ships some goods to the Payer and chooses to issue a BofE of a high value $\overline{V}$ or a low value $\underline{V}$ over the Payer. The Issuer then discounts the bill and receives the face value minus a discount rate d. The Payer sells the Issuer's goods for X, and chooses whether to default on the bill and embezzle the proceeds, or to pay the bill and keep the difference between the value issued by the Issuer and the value collected from the merchandise sale. If the Payer decides to default, the Issuer is obliged to reimburse the face value in addition to transaction costs TC.

In a one-shot interaction, it is clear that the Issuer and the Payer will not be able to cooperate:

Issuer chooses V $\in \{\overline{V}, \underline{V}\}$ V = value issued,d= discount rate,TC= transaction costs

Payer collects $X \in \mathbb{R}^+$, chooses $default = 0, 1$

Stage Game:

		Payer	
		0	1
Issuer	$\underline{V}$	$(\underline{V}-\mathrm{d}, X-\underline{V})$	$(-\mathrm{d}-TC, X)$
	$\overline{V}$	$(\overline{V}-\mathrm{d}, X-\overline{V})$	$(-\mathrm{d}-TC, X)^*$

In the Nash equilibrium in this one-time interaction setup, represented by $*$, the Issuer will always choose to overissue and the payer will always choose to default.

In this paper, I focus on the commitment problem of payers. Credible commitment can be achieved through repeated interactions, but it requires rents and frequent interactions. Given the large amounts at stake on these bills, the surplus from the relationship (continuation value) between issuers and payers has to be sufficiently large, and payers must be extremely patient, to ensure cooperation. Assume merchants interact every k periods and play grim trigger strategies (deviation implies a reversion to non-trade indefinitely). By extending the one-shot stage game to an infinitely repeated game, it is possible to find a discount factor such that cooperation can be sustained as a subgame perfect equilibrium using trigger strategies. The following condition has to hold to ensure honest behavior:

$$\frac{\underbrace{\frac{\delta^k}{1-\delta^k}(X-V)}}{\textbf{Payer's Continuation Value with Issuer}} > \frac{\underbrace{(1-\phi)X}}{\textbf{One Shot Deviation}}$$

ϕ : probability that court verifies default, κ : frequency of trade, δ : discount factor

Even if these conditions were met, issuers and payers would have to "communicate" this commitment to future lenders and endorsers of BofE. In medieval times, well-known moneychangers solved this problem by cementing their relationships with payers in their branches abroad through family and religious ties. If payers and issuers were not linked in any obvious way, such as through a legal partnership or family or religious ties, how could the external world infer that the issuer was in fact entitled to draw on the payer? Another alternative is to have as a payer a large institution such as a bank with a perfectly observable trading history.

The story so far implies that issuers always strictly prefer that payers honor the bills they issue, which is not always true. Imagine a pre-JLR world in which a bill passes several hands and ends up with a holder who belongs neither to the payer's nor to the issuer's network. What would prevent

the payer and the issuer from colluding and cheating on a "distant" holder? In equilibrium, bills should circulate within the limited confines of the payer's and issuer's network, where the threat of social sanction curbs the temptation to collude.

My argument that Joint Liability created a commitment mechanism for payers and issuers relies on two channels. First, the JLR may have induced endorsers to monitor the payer. Payers' incentives to cheat were mitigated if the probability of being caught cheating increased due to monitoring. Second, the JLR created reputation concerns for the payer that otherwise would not exist. Endorsers cared and were informed about the payer's default through the protest. In other words, the JLR introduced a second term in the right-hand side of the equation, $V^{C}_{otherissuers}$: "Reputation" or continuation value with other issuers, that made the incentive compatibility constraint easier to be met.

The possibility of being held liable may have encouraged endorsers to monitor the payer (agent). Monitoring in this context meant that some of the payers' actions were more observable to endorsers than to issuers (principals), who were in general far away. Assuming that monitoring reduced the private benefit that the agent enjoyed from misbehaving [Holmstrom and Tirole, 1997], an increase in the number of endorsers would increase monitoring and thereby reduce the chance of a default. However, monitoring delivered a public good, inducing free-riding. The cost of monitoring is assumed to be convex, which implies diseconomies of scale in monitoring. Even if agents could have cooperated they may not have found it optimal to delegate the monitoring task to the most efficient among them. While the multiple monitoring benefited from diseconomies of scale in monitoring, it suffered from duplication of effort and sharing of monitoring benefits. As chains of endorsements lengthened, each endorser's marginal contribution to monitoring as well as total monitoring could decline. Obviously, the relevance of monitoring depended on the information environment.

The information asymmetries that plagued the transfer of private debt were not an exclusive feature of early modern markets. Sales of debt claims by banks are a common feature of intermediaries today. What contractual solutions do current markets adopt so that private debt sales are incentive compatible? Implicit repurchase agreements between banks and buyers could realign banks' incentives to monitor the performance of loans, since banks will have to repurchase loans that deteriorate in value [Gorton and Pennacchi, 1989]. Another implicit contract feature that would make loan sales incentive-compatible for banks is the retention of a fraction of the loans [Benveriiste and Berger, 1987]. Because these are implicit mechanisms, these solutions assume that markets rather than courts can enforce such implicit contract features. Neither of these options was available for eighteenth-century merchants: bills were not a homogenous commodity and were

indivisible, and repurchase would be complicated if the buyer subsequently sold it. Furthermore, there are no reasons to believe markets in the eighteenth century were more efficient than courts.

An additional mechanism created by the JLR that may have prevented payers from cheating involved reputation. Before the JLR, issuers' and payers' trading histories were somewhat private information. If the payer defaulted after the bill circulated a couple of times, the last holder was on his own to recover the money and to "punish" the payer. An important feature of the JLR was that copies of the protest were distributed to endorsers and to the issuer. Because endorsers were liable for the BofE, they had an interest in preventing the payer from defaulting, and they had the information necessary to punish the payer in subsequent interactions. Payers dealing with other principals abroad would care about default events that involved them being circulated abroad. Therefore the higher the number of endorsers and the variety of locations they were in, the greater the potential damage to the payer's reputation. The protest potentially resolved the ambiguity about whom to blame since the payer had to declare the party responsible for a default. The payer's declaration had no payoff implications, but it may have worked as a device to coordinate the equilibrium in subsequent interactions. The bottom line is that the JLR introduces a relationship between the number of endorsers and the probability of default, which will be empirically verified.

My discussion so far contemplates the problem of providing payers with incentives to cooperate. Scattered examples in Maison Roux's business letters suggest that the JLR was used to enhance cooperation from intermediaries. If merchants belonging to distinct networks are not able to contract directly trade can be implemented through chains of bilateral contracts. However, these contracts may be inferior compared to contracts backed by the JLR due to a party's inability, under chains of bilateral contracts, to influence directly others whose actions affect his payoffs.[17]

[17]Consider the following situation to illustrate how the JLR may elicit the cooperation of intermediaries. A knows B who knows C. A is a consumer, B is a seller, and C is a producer. A would like to contract directly with C, but due to market imperfections they have to deal through an intermediary. One alternative to finance trade includes the following steps: 1) A ships gold to B, 2) B ships gold to C, 3) C ships the merchandise to B, 4) B ships merchandise to A. In each of these steps, B and C have an incentive to cheat; B can simply run away with the money and C can send low quality merchandise or none at all (or one can assume that courts can only imperfectly verify merchandise quality). The same deal can be financed by having A issue a bill payable to B in some date after the good is delivered. B would then use the bill to pay C for the merchandise, and so on. The delay in payment mitigates C's incentives to cheat (assuming he did not pass the bill further), but at the expenses of creating the temptation for A to renege on the debt since A may not be concerned about his reputation with respect to C. Under this arrangement B has no better incentives to cooperate: he can simply use the bill for a different purpose or he can embezzle the merchandise received from C. However, under Joint Liability, the fact that B is liable for the bill aligns the interests of all three parties. C will not cheat because he will be paid later on, B will make sure A receives the merchandise in good state because A's default triggers B's liability. In turn, A is less likely to renege on the debt because this imposes a loss on B, a party in A's network.

5.3 Imperfect Enforcement of International Contracts

A recent trade literature draws attention to the institutions in which exchanges are embedded. Nunn [2000] finds empirical support for contract enforcement as an important type of comparative advantage, and Rodrik [2000] models inefficient institutions as trade barriers. The lack of a widespread credit and payments system in the early modern period posed an obstacle to the expansion of trade. Due to imperfect enforcement of international contracts, merchants in the early modern period may have been unwilling to take bills from issuers or payers who did not belong to their jurisdiction. As a result, gains from trade had to be forgone, and bills would circulate only within a given jurisdiction. The JLR offered merchants a "menu" of jurisdictions to pick from ("forum shopping"). Merchants did not have to rely on the payer's foreign court to enforce a debt; they could resort to a previous endorser's domestic jurisdiction or exploit the informal leverage bill holders possessed over some of the previous endorsers due to business relations. Merchants' expectation that their claims would be enforced gave them confidence to make the leap to global trade.

6 Empirical Evidence of Information Problems

The data for this project are drawn from 1780-90, more than a century after the JLR was legally ratified in France. Because sufficient data on BofE before the introduction of the JLR does not exist, it is not possible to directly compare BofE before and after the JLR. However, the importance of the JLR suggests that, due to the three aforementioned problems in international trade, BofE were not crafted to support the expansion of trade before the JLR. As a consequence, one expects that not many bills would be used for international trade before the JLR, or they would have been used in a different way. To the best of my knowledge there is no substantial collection of BofE in France that survives from the period before the JLR. However, a modest collection of 150 BofE traded by Maison Perin et Chabert from the period just before the JLR was introduced in France (1669-1674) reveals a marked difference in the bills' characteristics and their use [Archives Départementales de l'Isère, II E 626-628]. These BofE were mostly to be paid at sight and in small amounts, they circulated within a limited geographical area, and they bore no endorsements. Maison Roux's BofE by contrast, ascended to a new importance (Section 4). In the remainder of this section, I present empirical evidence showing the extent to which the JLR mitigated adverse selection in the market for bills and moral hazard between issuers and payers.

6.1 Adverse Selection

From the discussion in the previous section three main predictions are consistent with the presence of adverse selection. First, if adverse selection is severe bills will circulate locally or in closely bounded networks where information is common knowledge. Second, low quality claims are expected to be traded more often. Third, ownership spells of low quality claims should be shorter than those of high quality claims, the so-called "hot potato" effect.

Based on the geographic spread of origination and settlement locations for BofE, as mapped in Figures 5 and 6, I reject the hypothesis that adverse selection was so severe that a market for bills did not exist. This result corroborates anecdotal evidence suggesting that the introduction of the JLR and the rise of a market for discounting coincided.[18] Although Maison Roux's network was vast, they would never have been able to transact in such a scale if it depended exclusively on its network of correspondents.

Maison Roux's records suggest that the market for bills was not only of global dimensions but it was also anonymous. From the business letters collection I identify almost 3000 names which were matched with the signatures on the bills. I assume that the existence of a letter between Maison Roux and an individual indicates that they were in a business relationship. Table 14 demonstrates that Maison Roux rarely knew the payers, issuers or endorsers further up in the chain. But it was almost always in contact with the previous endorser (the one who sold the BofE), and the ones to whom it passed bills. For instance, when Maison Roux was the fourth buyer or endorser, in 77% of the bills there is no evidence of a business letter between the issuer or the payer. Maison Roux was in contact with the beneficiary in 13% of the bills , with the second endorser in 31% of the bills, and with the third endorser in 92% of the bills. Analogously, in over 85% of the bills sold by Maison Roux, the buyer and Maison Roux were in a business relationship. Neither the issuer nor the payer was in contact with Maison Roux in over 60% of the bills bought by Maison Roux.

The pattern of business correspondence in the set of bills in which Maison Roux was the payer, displayed in Table 15, confirms that the majority of buyers of these bills were not in a regular business relationship with Maison Roux but were probably relying on the previous endorser in case of default. Mostly striking, Table 16 reveals that in a non-negligible fraction of the bills, Maison Roux was in regular business relations with only one person or none. This pattern confirms

[18] "At first the bank insisted in scrutinizing almost every bill and the volume of discounting was relatively small. In the next few years, with favorable legal decisions on transferability and with more experience, the bank moved toward a policy of almost automatic discounting for regular customers. The volume of discounting rose steadily through the 18th century, particularly after the Seven Years' War" [Price, 1997]. "Modern discount banking had thus become a fact of economic life" [Van der Wee, 1977]. [De Roover, 1953; Carriere, 1973].

that under the JLR the expected risk of buying a bill depended on the buyer's knowledge of the solvency of anyone on the endorsement chain and not necessarily on knowledge about the probability of default of the issuer or the payer, who could be unknown and far away. Before the JLR, in contrast, only the issuer was liable, so buyers would only take bills from issuers they knew. The conventional wisdom in the financial history literature is that the extent of circulation of a bill depended on the issuers' reputation or, in the case of less prestigious issuers, bills circulated within restricted networks of kin and close associates [Quinn, 2004]. This conventional view seems too simple when set against the detailed evidence of ordinary merchants who were able to mobilize capital over vast distances. The JLR allowed Maison Roux to hold a diversified portfolio since payers and issuers were drawn from a large pool outside of Maison Roux's network and therefore their default risks were not strongly correlated. At the same time, Maison Roux dealt with a low "legal risk" since the previous endorser, from whom the debt would be recovered in case of default, would come from a small and concentrated pool.

The previous results establish that adverse selection did not prevent a large and anonymous market from taking shape. But did the JLR eliminate entirely the threat of adverse selection? The standard approach in the literature for adverse selection in durable goods tests for differences in unobserved quality between traded and continuously held goods given the same observable characteristics. Following Bond [1992], I test whether low quality claims were traded more often with the following regression model:

$$\mathbb{P}(Default_i) = F(\alpha + \sum_{s=1}^{6} \beta_s * N_{i,s} + \sum_{j=1}^{k} \gamma_j * x_{i,j})$$

$N_{i,s}$ is a dummy variable equal to 1 if number of endorsements of bill is equal to s and zero otherwise; $x_{i,j}$ are k controls for the bill's characteristics. $F(.)$ is assumed to be the standard normal cdf in the probit model.

The adverse selection argument predicts that $\beta_s > 0$ and increasing in s. The dependent variable $default_i$ is binary, and I use protest as a proxy for default. I allow for non-linear effects of number of endorsements by including dummy variables for the number of endorsements. The omitted category is zero endorsements; those bills were not endorsed and therefore JLR did not apply. $x_{i,j}$ includes the following: $Value$[19]; $Maturity$ indicates the length in days between issuance and redemption of the bill; $International$ is a dummy for whether the issuer and the payer were

[19][Wailly, 1857]. Corrected for the changing value of the currency in silver. I used exchange rates provided by Giraudeau [1793].

located in different countries; *Distance* is the distance in kilometers between the issuer and the payer; $CorrespondencewithIssuer$ is a dummy for existence of a business letter between Maison Roux and the issuer; $CorrespondencewithPayer$ is a dummy for existence of a business letter between Maison Roux and the payer; $\sum EndorsersinCorrespondence|TotalNumberofEndorsers$ is the sum of previous endorsers in correspondence with Maison Roux, normalized by the total number of endorsements. Year and place of origination fixed effects were included to account for common year shocks and shocks in the issuers' location. The variable *payableatsight* indicates that the holder could decide to present the bill for payment at any time. The longest maturity legally allowed varied from 6 months to 1 year depending on where the bill was issued. [Code de Commerce art.160].

The OLS and probit results in Table 5 suggest a typical adverse selection story: low quality claims circulated more on average. Bills of greater value, as well as, demandable debt were associated with a lower probability of not being paid. Also, if issuers and payers were in different countries the payer's willingness to default was lower. The existence of a business letter between Maison Roux and others in the bill is negatively correlated with the probability of default but the coefficient is not significant. It is possible that the existence of a business letter and default were correlated, so a correspondence between two merchants existed not because they were in a business relationship but because there were troubles collecting the debt. I included a dummy for whether a business letter was found after the default or before, and the estimates remained the same. While suggestive, these results cannot be interpreted as causal because bills' characteristics are endogenous.

How could it then be an equilibrium that "bad" bills circulated more? First, the expected value of a bill with a unit face value depends on

$$\mathbb{E}[payment] = (1 - d_{payer}) + d_{payer} * (1 - d_{issuer} * b^N)$$

where d_{payer}: payer's default probability, d_{issuer}: issuer's default probability, b: endorsers' default probability, N: number of endorsements. Thus, a "bad" bill, in the sense that d_{payer} was high, could still be "good" if it had circulated enough, that is, N was high. Shocks that increase issuers' or payers' probability of default should affect the number of endorsements. Table [..] shows that bills payable in France during the French Revolution had a greater number of endorsements. Such risk pooling among endorsers ensured that in equilibrium the expected payment was the same for all bills. Second, BofE obviated the need to ship bullion and specie, saving substantial transaction

costs. This "intrinsic" motivation to pass bills implies that even though the JLR would discourage the passing of bad bills, bad bills would still circulate due to their transaction costs saving property. Third, it is possible that the assumption of perfect enforcement was not valid. If endorsers expected to get away passing bad bills because courts could not fully enforce a debt against them or, equivalently, the costs of suing were too high, then adverse selection against good bills would emerge.

Since the buyer of a BofE was in a business relationship almost exclusively with the bill's previous endorser (seller), the buyer knew little about the issuer, the payer, and even earlier endorsers. However, a buyer could infer information about them through their behavior. As previously explained, the typical trading procedure implied that some of the bill's characteristics were only observed *ex post*. A buyer who observed *ex post* that previous endorsers got rid of the bill quickly would update his beliefs about the bill's quality and would tend to pass it along as soon as possible. Therefore, bills which eventually fell into default should display a "hot potato" pattern. Furthermore, if the ownership spells of the bill functioned as a signal of the bill's quality when little was known about its signatories, one would expect these ownership spells to be positively correlated. Once the bill's true quality is accounted for, this correlation should vanish. In sum, this leads to the following predictions with respect to $T_{i,j}$, the observed length of the jth spell in observation i :

1. Shorter ownership spells for lemons, conditional on all bill's characteristics:

$$T_{i,j}^{lemon} < T_{i,j}^{non-lemon}$$

2. Endorsers observed ownership spells *ex post* , and interpreted them as a signal for "quality":

$$Correl(T_{i,j+1}, T_{i,j}) > 0$$

3. Correlation of ownership spells among endorsers should decrease once quality is accounted for:

$$Correl(T_{i,j+1}, T_{i,j} | \text{“}quality_i\text{”}) \cong 0$$

Table 6 presents the OLS results for the relationship between *ex post* quality of the bill and ownership spells, controlling for the buyer's and the seller's locations, the distance between the seller and the payer, and the bill's various characteristics, including its value, its remaining maturity, and whether its claim was demandable at sight. Bills that fell into default *ex post* remained in the hands

of traders 11 to 17 days less, on average, than bills that were paid when due. Table 8 indicates that consecutive ownership spells were positively correlated. However, this correlation does not disappear once the *ex post* quality of the bill is included. As the expected payment expression suggests, the "true" quality of the bill cannot be fully captured by the protest; it depended not only on the payer's default probability, but also on the probability of recovery, meaning the issuer's and previous endorsers' probability of default.

6.2 Moral Hazard

The results in the previous section suggest that there is a positive relationship between the number of endorsements and the probability of default. In contrast, the moral hazard hypothesis implies that more endorsers decreases the payer's incentives to default. Meanwhile, the existing literature has suggested, without laying out the mechanism, that a BofE with more endorsements was safer (Section 4). The basic challenge is that the number of endorsements is endogenous, and possibly related to an omitted variable: the bill's quality. In order to isolate the effect of the initial quality of the bill on the payer's decision to default, I include issuer fixed effects ζ_z in the following regression:

$$\mathbb{D}efault_i = \alpha + \sum_{s=1}^{6} \beta_s * N_{i,s} + \sum_{j=1}^{k} \gamma_j * x_{i,j} + \zeta_z + \mu_i$$

where i: bill, z:issuer; $N_{i,s}$ is a dummy variable equal to 1 if number of endorsements of bill is equal to s and zero otherwise; $x_{i,j}$ are k controls for the bill's characteristics.

I estimate this regression using ordinary least squares (OLS) with dummy variables. Since the number of observations per issuer is very small, fixed effects estimators of probit can be biased due to the incidental parameters problem [Heckman, 1987]. The alternative unbiased estimation, conditional logit, is not feasible either, due little variation in the dependent variable. The results in Table 9 show that the inclusion of issuers' individual fixed effects switches the sign of the endorsement dummies: one endorsement decreases the probability of default, but the coefficients are significant up to three endorsements. Given two bills issued by the same issuer, payers tended to default on the bills that circulated less, controlling for all other bills' characteristics. The basic assumption is that once the issuer is accounted for, the number of times a bill circulated is exogenous.

It is possible that issuers' quality changed over years. Due to small sample size, I cannot include year*issuer fixed effects, but at least whenever the partnership changed I considered different issuers,

for instance, Rolland aine fils and Rolland frères were considered different issuers. Since introducing issuers fixed effects decreases the sample size I present a baseline regression without the fixed effects for this selected sample. The coefficients are positive and similar to the ones obtained in the previous section.

This result is consistent with two mechanisms that are implausible without the existence of Joint Liability: monitoring and reputation. The intuition behind monitoring is that, once the quality of the bill is held constant, payers who are less monitored by their principals and endorsers may be more tempted to embezzle their principals' money. Furthermore, payers prefer to pay the bills (of the same issuer) bearing more endorsements since these bills, if defaulted upon, injure the payer's reputation more seriously than bills with fewer endorsements. I investigate below whether these two channels are plausible.

Table 10 includes, for comparison purposes, results with payer fixed effects, and with both payer and issuer fixed effects. The inclusion of payer fixed effects does not cause the coefficients on endorsements to change substantially compared to the baseline, as does the inclusion of issuer fixed effects. In fact, a Hausman test comparing the baseline regression with the payer fixed effects regression does not reject that the difference in coefficients is not systematic ($Prob>chi2 = 0.0608$). This result suggests that payers' types, if any, were not correlated with the number of times a bill circulated. Such finding supports my argument that the payers' problem should be considered in a moral hazard framework, and it is consistent with my adverse selection story on the basis of issuers' types.

Investigating Monitoring

Court decisions, business letters, and scholarly legal doctrine expressed through commentaries on legal codes recommended monitoring, though they did not require it. Several letters exchanged between Maison Roux and its commercial partners show the commercial house's fears that certain payers were on the verge of defaulting and therefore the issuer should be advised to provide the payment by himself or through a third party.

Monitoring is not observable, but distances between endorsers and payers may be capturing endorsers' ability to monitor the payer. Figure 8 depicts the distance between each endorser and the payer of the bill by whether the bill was paid or protested. The distances between these two groups are jointly statistically different only at a p-value of 0.146, using the Bonferroni correction. However, some of the distances individually are statistically different in the two groups. If monitoring is the channel through which endorsers influenced payer behavior, then the physical distances are not

capturing it. It could be the case that the endorsers of non-protested bills were disproportionately in cities that had greater information flow with Marseille.

The variable *payable*"*atsight*" means that the holder could decide to present the bill for payment at any time. The longest maturity legally allowed varied from 6 months to 1 year depending on where the bill was issued. As it was shown in Table 9, the variable *payable*"*atsight*" is negative and significant. Demandable debt may have limited payers' risk-taking behavior because bill holders could request payment at any time [Calomiris and Kahn, 1991]. Combined with monitoring, demandable debt may have prevented payers from absconding with issuers' money, or it may have allowed holders to avoid a default by anticipating the deterioration of a payer's economic situation.

Once a default occurred, a third party unrelated to the BofE could intervene, after the payer's refusal to pay, and pay the protested BofE to the honor of the issuer or any of the endorsers [Ordonnance (1673), Section X, art.158]. In my sample, 17% of the total protested BofE were paid to the honor and bill holders recovered the debt immediately. There is no apparent pattern among those who paid to the honor. They were not a homogenous group in size or in business relations with Maison Roux, and they were not agents specialized in collection. In over one-third of the cases the intervener was the payer himself, and the remaining two-thirds of interveners were local merchants. Interveners could have numerous motivations for paying a debt to another's honor: they could be simply following a request of one of the parties involved in the bill, or they may have profited from the re-exchange mechanism by collecting the debt from obviously creditworthy endorsers or issuers, since anyone paying to the honor put himself in the place of the final holder. Apart from reputation concerns, payments to honor were perhaps aimed at saving transaction costs associated with the re-exchange process. In only 33% of the cases did the person whose honor was "saved" possess a business relationship with Maison Roux, so the payments to honor were not motivated by the desire to preserve a business relationship with Maison Roux. In any case, the bottom line that the institution of payment to honor was only effective and useful if the issuer and endorsers, or those in their networks, were able to gather information about the payer and predict that he would default. Table 11 shows that protested bills were not always paid to the honor of the issuer, confirming the notion that a default affected not only the "reputation" of the issuer of the bill but the reputation of all the endorsers. Also, there is some variation on who gets to have his "honor saved," suggesting that interveners would not necessarily pay to the honor of the last endorser.

Investigating Reputation

Once there was a default, a "pre-trial" procedure took place, producing an official document, called

a protest. The protest verified the payer's refusal to pay and stated his reason for non-payment. The most common reasons associated with issuers' fault were lack of funds or "avis," and with payers' fault were absence, lack of liquidity or bankruptcy.[20] The temptation to cheat is greater in the presence of strong information asymmetries that make it difficult for the issuer to differentiate between an accidental default (the payer is insolvent due to bad luck or incompetence) and a strategic default (the payer is solvent but unwilling to pay because the gain from defaulting is greater than the perceived cost of the sanctions). Payers of Maison Roux bills were located in Marseille, which experienced economic crises in 1783, 1789 and 1790. It does not seem that reasons associated with payers' default appeared more often in these periods. Table 13 shows that payers did not always blame issuers for default. On the contrary, almost 60% of the payers confessed their own fault.

I have no direct individual evidence of what fraction of those protested bills were eventually paid or renegotiated. However, by looking at whether Maison Roux dealt with a protested payer in a subsequent transaction, I can estimate bounds for the fraction of protests that represented eventual defaults and the fraction that represented only temporary frictions. To the extent that a default represents a breach of contract, holders of defaulted bills were supposed to punish defaulters by refusing them business in the future. Did defaulters reappear on the sample after a default? Were all the involved parties in the bill punished for the default or only the "responsible" parties as claimed in the protest?

A simple strategy to tackle these questions would be to implement a difference-in-differences technique: compare the difference in the frequency of appearance before and after for those who defaulted in year T, with the difference in the frequency of appearance before and after for those who did not defaulted in year T. Unfortunately, this empirical strategy is not viable because the sample size drops drastically when I consider year-by-year changes. Table 14and Figure 9 suggest, in the aggregate and year-by-year, respectively, that the probability of dealing repeatedly with Maison Roux after a "paid" event is statistically different than after a "default" event. On average, the issuer's probability of dealing with Maison Roux in the future falls by over a half if his payer defaults. Assuming that if the protest resulted in a real default Maison Roux would not deal with a defaulter again, then at least half of the protested bills eventually fell into default. Evidence of payers' and endorsers' punishment presented in Figure 9 and Table 12 is less conclusive.

[20]The avis was a letter sent by the issuer to the payer authorizing him to pay the bill. As the issuer's agent, the payer was required to follow strictly the instructions detailed in the avis; any discrepancy between the bill and the avis could be a sign of fraud.

The results in Table 13 suggest that the payer's alleged reason for default affected both issuers' and payers' probability of dealing in the future with Maison Roux. Issuers who were blamed by their payers had a lower probability of dealing with Maison Roux. As in Table 13, payers who blamed issuers appeared with the same probability as payers who paid. This supports my claim that endorsers, as well as Maison Roux, inferred the issuer's quality through the protest.

7 Conclusion

This paper investigated a crucial legal innovation that set a foundation for the unparalleled expansion of trade during the early modern period. The joint liability rule put in place a formal mechanism that linked otherwise distinct personal networks so that trade could expand beyond the limits any single network could support. I examined, both theoretically and empirically, how this institution ameliorated three problems of information asymmetry that plagued early financial markets: moral hazard between issuers and payers, adverse selection in the market for bills, and imperfect enforcement of international contracts.

To explore these hypotheses I created an unique dataset, spanning the decade between 1780 and 1790, from the original historical documents of the Maison Roux, a large French merchant house. I showed how bills of exchange worked using this new dataset that includes thousands of original bills of exchange, notices of defaulted bills, information on court records, and Maison Roux's voluminous business correspondence. To frame the empirical analysis, I drew on a simple principal-agent model to illustrate the effects of joint liability on agents incentives to honor the bills issued by their principals. The endorsers were informed about the payer's refusal to pay and his alleged reason through an official document, the protest. Because all endorsers were liable for the bill of exchange, they had an interest in preventing the payer from defaulting, and they had the information necessary to punish the payer in subsequent interactions. The intuition for how joint liability mitigated adverse selection is straightforward: endorsers who strategically transferred low quality claims were obliged to reimburse the face value of the bill, in addition to all legal and transaction costs. The joint liability rule alleviated imperfect international enforcement by allowing holders of defaulted bills to substitute the payer's foreign court with one of the previous endorsers' domestic jurisdiction.

My findings uncovered an European-wide and anonymous market for bills of exchange that provided liquidity and credit to a local merchant house. Bills originated and were settled in a geographic area that extended all over Europe, north of Africa, Ottoman Empire up to Syria, and

the Caribbean Islands. Despite evidence of ongoing problems of adverse selection and moral hazard, I showed that bills worked to broaden trade in the sense that agents used them across business networks. I identified groups of merchants who were in regular business relationships with Maison Roux. In many instances the issuer, the payer, and most of the endorsers of the bills did not belong to Maison Roux's business network.

This paper has broad implications for our understanding of the process of growth in which economies mature. By examining the virtues and limitations of the joint liability rule, this paper casts new focus on the role of law in shaping the development of financial markets and highlights an important step in the transition from reputation, personal-based exchanges to formal, law-based institutions.

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Table 1: Breakdown of the Sample (1780-1790)

		Maison Roux's Position		
		Final Holder	Endorser	Payer
Payer's location	Marseille	paid (I), N=425 default (II), N=350	N=14	N=361
	Elsewhere	N=405	N=532	N=11

Notes: N represents sample size. The Table includes all bills involving Maison Roux. For 1789 and 1790, 30% of the bills were sampled.
Maison Roux's position designates whether Maison Roux acted as final holder, endorser or payer on the bill. Payer's location splits the sample in the bills payable in Marseille and elsewhere. Information on protests was collected only on the bills payable in Marseille.

Sources: Archives de la Chambre de Commerce et Industrie Marseille Provence. Archives départementales des Bouches-du-Rhône.

Table 2: Total Number and Value of Bills of Exchange

	Total No. of BofE	Total Value of BofE (livres)
1780	187	411,599
1781	253	648,588
1782	105	335,101
1783	25	60,224
1784	113	317,726
1785	219	667,977
1786	37	84,473
1787	375	1,251,922
1788	343	872,580
1789	702	2,011,627
1790	614	2,052,920

Notes: Full sample used. 1789 and 1790 values were obtained by extrapolating from a random sample of 30% of bills in these years.

Sources: Archives de la Chambre de Commerce et Industrie Marseille Provence. Archives départementales des Bouches-du-Rhône.

Table 3: Non-Protested Bills of Exchange Characteristics (Means)

	Value (livres tournois)	Duration (days)	No. of Endorsements (km)	Issuer-Payer Distance	N
1780	2239.78	139.06	1.71	1267.88	178
1781	2691.26	115.48	1.79	1232.37	222
1782	3291.15	145.51	1.74	1398.90	86
1783	3592.82	101.83	1.67	653.33	6
1784	3003.02	114.81	2.02	1246.24	92
1785	3154.98	103.81	1.43	1158.53	197
1786	2666.67	56.67	1.00	580.00	3
1787	3377.61	149.43	1.41	1284.28	340
1788	2731.14	120.97	2.08	1008.45	288
1789	2833.82	117.95	1.53	1152.65	204
1790	3549.72	118.40	1.59	1478.17	185

Notes: The Table includes only the non-protested bills. According to supplementary information provided by Maison Roux's accounting records, 1789 and 1790 are reference years; in these years, attrition was minimal. With the exception of 1783 and 1786, t-tests for mean comparisons cannot reject that 1789 and 1790 characteristics are equal to the characteristics in the previous years. Regression estimates always include year dummies in any case. For 1789 and 1790, 30% of the bills were sampled.

Sources: Archives de la Chambre de Commerce et Industrie Marseille Provence.

Table 4: Bill of Exchange Characteristics

	Mean	Standard Deviation
Value (livres tournois)	2783.34	(2857.10)
Median Value (livres tournois)	2204	
Distance Issuer-Payer (km)	1169.78	(986.27)
Distance consecutive Endorsers (km)	516.23	(699.12)
Duration (days)	123.68	(122.31)
Median Duration (days)	75	
Number of Endorsements	1.76	(1.37)
Median Number of Endorsements	2	
Motive "value in currency"	64.37%	
Foreign Bill	77.86%	
BE originated in FR	38.05%	
BE originated in IT	32.90%	
BE originated in TUR	15.51%	
N	2081	

Notes: Full Sample used. Motive "value in currency" refers to the proportion of bills issued with the purpose of obtaining liquidity, that is, the beneficiary gave cash to the issuer in exchange for the bill. Foreign Bill is the proportion of bills whose issuer and payer were located in different countries. Bills were classified by country of origin in four groups: France (FR), Italy (IT), Levant (TUR), other.

Sources: Archives de la Chambre de Commerce et Industrie Marseille Provence. Archives départementales des Bouches-du-Rhône.

Table 5: Adverse Selection: "Bad" bills traded more often

Dependent Variable: Protest=1	OLS	$Probit(marginal effects)$
Number of Endorsements=1	0.084	0.168
	(0.074)	(0.124)
Number of Endorsements=2	0.217***	0.398***
	(0.067)	(0.100)
Number of Endorsements=3	0.306***	0.486***
	(0.068)	(0.087)
Number of Endorsements=4	0.413***	0.566***
	(0.081)	(0.068)
Number of Endorsements=5	0.365***	0.481***
	(0.122)	(0.132)
Number of Endorsements=6	0.648***	
	(0.190)	
Duration (days) $\times 10^{-3}$	0.442	−0.128
	(0.296)	(0.874)
Value (livres) $\times 10^{-6}$	−9.32**	−0.195***
	(4.33)	(0.072)
Payable "at sight" $\times 10^{-3}$	−119.0**	0.575
	(53.2)	(0.577)
Correspondence with Payer $\times 10^{-3}$	−5.38	−20.3
	(7.9)	(66.8)
Correspondence with Issuer	−0.049	−0.088
	(0.035)	(0.058)
$\frac{\sum \text{Endorsers in Correspondence}}{\text{\# Endorsers}}$	−0.091	−0.169*
	(0.060)	(0.097)
International	−0.312***	−0.511***
	(0.042)	(0.059)
Distance Issuer-Payer $\times 10^{-5}$ (km)	3.25*	3.94
	(1.93)	(3.34)
Constant	0.342***	
	(0.099)	
Observations	676	661
R-squared	0.484	
Year FE	Y	Y

Notes: Paid bills in Marseille and protests samples used for analysis. Standard errors, in parentheses. * significant with 90% confidence, ** 95%, *** 99%.

Duration refers to the total number of days between issue and redemption. The variable payable "at sight" indicates that the holder could decide to present the bill for payment at any time within a year. Correspondence with Issuer is a dummy for existence of a business letter between Maison Roux and the issuer; Correspondence with Payer is a dummy for existence of a business letter between Maison Roux and the payer. $\frac{\sum \text{Endorsers in Correspondence}}{\text{\# Endorsers}}$ is the sum of previous endorsers in correspondence with Maison Roux, normalized by the total number of endorsements. International is a dummy for whether the issuer and the payer were located in different countries. Distance is the distance in km between the issuer and the payer. Year fixed effects were included.

Table 6: Adverse Selection: "Bad" Bills Had Shorter Ownership Spells

Dependent Variable:	**Third Spell** (*I*)	**Second Spell** (*II*)	**First Spell** (*III*)
VARIABLES			
Protest	−17.30**	−11.75***	−14.35**
	(8.261)	(3.838)	(6.975)
Value (livres) $\times 10^{-3}$	−1.20	−0.537	0.636
	(1.84)	(0.941)	(0.635)
Days to Maturity Left	0.185***	0.239***	0.596***
	(0.063)	(0.043)	(0.078)
Payable at Sight	−45.89*	−76.97***	−12.01
	(25.12)	(14.01)	(24.77)
Distance En_Payer (km)	−0.152	−0.0671	0.155
	(0.139)	(0.137)	(0.279)
Constant	25.17	23.10	16.68
	(21.14)	(50.00)	(62.92)
Observations	101	312	539
R-squared	0.833	0.602	0.849

Notes: Paid bills in Marseille and protests samples used for analysis. Standard errors, in parentheses. * significant with 90% confidence, ** 95%, *** 99%.

The nth spell refers to the number of days a bill remained in the hands of the nth holder before being redeemed or endorsed. Days to maturity indicates the number of days until the redemption date. The variable payable "at sight" indicates that the holder could decide to present the bill for payment at any time within a year. DistanceEn_Payer is the distance in km between the nth holder and the payer. The sample size varies because bills did not circulate the same number of times.

Table 7: Adverse Selection: Relationship between Ownership Spells

Dependent Variable:	**Second Spell**	**Third Spell**
	(I)	(II)
VARIABLES		
First Spell	0.517**	0.224
	(0.210)	(0.154)
Second Spell		0.491***
		(0.074)
Value (livres) $\times 10^{-6}$	−99.6	−27.7
	(76.3)	(13.9)
Days to Maturity Left	0.651***	0.125
	(0.098)	(0.077)
Payable at Sight	−214.4***	−21.16
	(36.60)	(28.51)
Distance En_Payer (km)	−0.014	0.004
	(0.010)	(0.007)
Distance En-1_En (km)	0.034**	0.006
	(0.016)	(0.011)
Constant	169.0*	−126.3***
	(91.56)	(42.22)
Location E1, E2, E3 Year FE	Y	Y
Observations	91	91
R-squared	0.897	0.939

Notes: Paid bills in Marseille and protests samples used for analysis. Standard errors, in parentheses. * significant with 90% confidence, ** 95%, *** 99%.

The nth spell refers to the number of days a bill remained in the hands of the nth holder before being redeemed or endorsed. Days to maturity indicates the number of days until the redemption date. The variable payable "at sight" indicates that the holder could decide to present the bill for payment at any time within a year. DistanceEn_Payer is the distance in km between the nth holder and the payer. DistanceEn-1_En is the distance in km between the n-1th holder and the nth holder. Location are dummies for first endorser location (E1), second endorser location(E2), and third endorser location (E3), where applicable. The results do not change substantially if these dummies are not included. The sample size varies because bills did not circulate the same number of times. In the full sample, there are 185 bills that circulated at least three times. However, only in 91 of these bill, the endorsers specify all the endorsement dates.

Table 8: Adverse Selection: Relationship between Ownership Spells and Bill's *ex post* Quality

Dependent Variable:	**First Spell** (*I*)	**Second Spell** (*II*)	**Third Spell** (*III*)
VARIABLES			
Protest=1	−8.891	−11.83***	−11.14*
	(5.673)	(3.636)	(5.933)
First Spell		0.274**	−0.241
		(0.124)	(0.264)
Second Spell			0.643***
			(0.0755)
Value (livres) $\times 10^{-6}$	−24.2	33.1	−25.8*
	(135)	(92.0)	(13.4)
Days to Maturity Left	0.209***	0.923***	0.241**
	(0.052)	(0.058)	(0.094)
Payable at Sight	−26.37*	−320.7***	−31.06
	(13.71)	(22.31)	(31.08)
Distance En_Payer (km)	−0.218*	−0.832***	−0.191
	(0.126)	(0.086)	(0.171)
Distance En-1_En (km)		−0.624***	0.0102
		(0.068)	(0.011)
Constant	61.58**	−98.65***	333.0
	(30.48)	(27.34)	(344.9)
Observations	91	91	91
R-squared	0.643	0.920	0.981

Notes: Paid bills in Marseille and protests samples used for analysis. Standard errors, in parentheses. * significant with 90% confidence, ** 95%, *** 99%.

The nth spell refers to the number of days a bill remained in the hands of the nth holder before being redeemed or endorsed. Days to maturity indicates the number of days until the redemption date. The variable payable "at sight" indicates that the holder could decide to present the bill for payment at any time within a year. DistanceEn_Payer is the distance in km between the nth holder and the payer. DistanceEn-1_En is the distance in km between the n-1th holder and the nth holder. The sample size varies because bills did not circulate the same number of times. In the full sample, there are 185 bills that circulated at least three times. However, only in 91 of these bill, the endorsers specify all the endorsement dates.

Table 9: Moral Hazard: OLS vs. Issuer FE

Dependent Variable:Protest=1	**OLS Baseline**	**LSDV: Issuer FE**
	(I)	(II)
VARIABLES		
Number of Endorsements=1	0.133*	−0.182***
	(0.079)	(0.066)
Number of Endorsements=2	0.307***	−0.204***
	(0.068)	(0.065)
Number of Endorsements=3	0.452***	−0.166**
	(0.071)	(0.069)
Number of Endorsements=4	0.560***	−0.098
	(0.086)	(0.092)
Number of Endorsements=5	0.542***	−0.052
	(0.133)	(0.119)
Number of Endorsements=6	0.789***	−0.077
	(0.208)	(0.186)
Duration (days) $\times 10^{-3}$	0.767**	−0.958
	(0.332)	(0.882)
Value (livres) $\times 10^{-6}$	−6.84	−0.562
	(4.74)	(4.14)
Payable "at Sight"	−0.132**	−0.245***
	(0.055)	(0.063)
$\frac{\sum \text{Endorsers in Correspondence}}{\text{\# Endorsers}}$	−0.127	−0.074
	(0.066)	(0.104)
Constant	0.585***	0.944**
	(0.076)	(0.068)
Observations	497	497
R-squared	0.345	0.925
Number of Groups		131
Year FE	Y	Y

Notes: Paid bills in Marseille and protests samples used for analysis. Standard errors, in parentheses. * significant with 90% confidence, ** 95%, *** 99%.

The least squares dummy variable regression does not account for issuers who issued only one bill. For comparison, I present the OLS Baseline results without issuer dummies to demonstrate that the switch of sign is not a product of using a smaller sample.
Duration refers to the total number of days between issue and redemption. The variable payable "at sight" indicates that the holder could decide to present the bill for payment at any time within a year. $\frac{\sum \text{Endorsers in Correspondence}}{\text{\# Endorsers}}$ is the sum of previous endorsers in correspondence with Maison Roux, normalized by the total number of endorsements. Once issuer dummies are included any characteristic that does not vary within issuer is dropped. Therefore correspondence with issuer and distance measures between issuer and payer were not included. Year fixed effects were included. Number of groups refers to the number of unique issuers who issued at least two bills in the sample.
In the Issuer FE specification, I reject at $Prob > F = 0.11$ that the coefficients on Number of Endorsements=1, Number of Endorsements=2 and Number of Endorsements=3 are jointly equal to zero. I do not reject at $Prob > F = 0.44$ that these coefficients are equal to each other. I do not reject that the remaining coefficient on the dummy variables for endorsements are all equal to zero $Prob > F = 0.7829$.

Table 10: Moral Hazard: Fixed Effects Regressions

Dependent Variable: Protest=1	*OLS*	*LSDV*	*OLS*	*LSDV*	*LSDV*
	Baseline	*IssuerFE*	*Baseline*	*PayerFE*	*Issuer + PayerFE*
Number of Endorsements=1	0.133*	−0.182***	0.202**	0.0515	−0.124*
	(0.0793)	(0.0668)	(0.0808)	(0.0880)	(0.0716)
Number of Endorsements=2	0.307***	−0.204***	0.400***	0.229***	−0.140*
	(0.0686)	(0.0654)	(0.0675)	(0.0703)	(0.0762)
Number of Endorsements=3	0.452***	−0.166**	0.445***	0.301***	−0.0728
	(0.0710)	(0.0696)	(0.0703)	(0.0783)	(0.0760)
Number of Endorsements=4	0.560***	−0.0983	0.500***	0.412***	−0.108
	(0.0863)	(0.092)	(0.0831)	(0.0981)	(0.0976)
Number of Endorsements=5	0.542***	−0.0529	0.394***	0.116	−0.162
	(0.133)	(0.119)	(0.137)	(0.130)	(0.121)
Number of Endorsements=6	0.789***	−0.0778	0.678***	0.438**	−0.0922
	(0.208)	(0.186)	(0.176)	(0.216)	(0.170)
Observations	497	497	595	595	
Adjusted R-squared	0.345	0.853	0.463	0.694	0.904
Number of Groups		131		149	
Controls	*Y*	*Y*	*Y*	*Y*	*Y*
Year FE	*Y*	*Y*	*Y*	*Y*	*Y*

Notes: Paid bills in Marseille and protests samples used for analysis. Standard errors, in parentheses. * significant with 90% confidence, ** 95%, *** 99%.

The least squares dummy variable regression does not account for issuers who issued only one bill, or analogously for payers who appeared in only one bill. For comparison, I present the OLS Baseline results without issuer dummies to demonstrate that the switch of sign is not a product of using a smaller sample. Controls included: Duration refers to the total number of days between issue and redemption; payable "at sight" indicates that the holder could decide to present the bill for payment at any time within a year; $\frac{\sum \text{Endorsers in Correspondence}}{\#\text{ Endorsers}}$ is the sum of previous endorsers in correspondence with Maison Roux, normalized by the total number of endorsements. Year fixed effects were included. Number of groups refers to the number of unique issuers or payers whose names appeared, as issuers or payers, in at least two bills in the sample.

Table 11: Payment to Honor

No. Endorsements	% Paid to Honor	No. of Protests
0	7%	15
1	5%	77
2	24%	91
3	10%	89
4	41%	39
5	11%	9
6	20%	5

Notes: Protest sample used for analysis.

% Paid to honor represents the % of total protests whose debt recovery was immediate because a third person paid to the honor of one of the signatories of the bill.

Honor of whom	%	N
Endorsers	72%	39
Issuer	28%	15

Notes: Protest sample used for analysis.

The vast majority of the paid to honor protests were paid on behalf of one of the endorsers.

Table 12: Protest and Repeated Interactions

Protest and Repeated Interactions with Issuers

	Issuer dealt with Maison Roux after event?	
Event:	Yes (Ratio)	Observations
Paid	0.25	136
	(.037)	
Default	0.115	182
	(.023)	

Notes: Protest and paid bills sample used.

Two groups of issuers were identified: those whose payers defaulted on at least one bill that year, and those whose payers paid at least one bill that year. The table depicts the proportion of issuers who later dealt with Maison Roux after a "paid" or "default" events.

Standard Errors in parentheses. A two-sample t-test rejects at p-value=0.000 that the proportion of reappearance for issuers whose payers defaulted is the same than the proportion for issuers whose payers paid their bills.

Protest and Repeated Interactions with Endorsers

	Endorser dealt with Maison Roux after event?	
Event:	Yes (Ratio)	Observations
Paid	0.562	16
	(.124)	
Default	0.380	71
	(.057)	

Notes: Protest and paid bills sample used.

Two groups of endorsers who sold directly bills to Maison Roux were identified: those whose sold bills that were protested, and those who sold bills that were paid. The table depicts the proportion of endorsers who later dealt with Maison Roux after a "paid" and "default" events.

Standard Errors in parentheses. The Fisher's Exact = 0.261 statistic for small sample does not reject that endorsers who sold bad bills dealt with Maison Roux later with the same probability than those who sold good bills.

Table 13: Default Reasons and Repeated Interactions

Payers' Reasons for Default

% of Payers who Blamed Default on	Issuer	Payer	Observations
	41.4%	58.6%	169

Notes: Protest sample used for analysis.

N is the total number of unique payers who defaulted on at least one bill. The most common reasons for default related to issuers were lack of funds or "avis". The most common reasons for default related to payers were absence, lack of liquidity or bankruptcy. Payers, who defaulted in multiple bills, rarely alleged multiple excuses related to both issuer's and payer's fault. In these rare cases, I classified them according to the most prevalent excuse. The breakdown of reasons in terms of number of bills yields similar results.

Default Reasons and Repeated Interactions with the Issuer

	Issuer Appeared after Default?	
Payer Blamed Default on:	Yes (Ratio)	N
Issuer	0.07(.027)	85
Payer	0.154 (.036)	97
Paid	0.257(.037)	136

Default Reasons and Repeated Interactions with the Payer

	Payer Appeared after Default?	
Payer Blamed Default on:	Yes (%)	N
Issuer	0.385(.058)	70
Payer	0.191(.039)	99
Paid	0.398(.043)	128

Notes: Protest and paid bills sample used.

Three groups of payers (issuers) were identified: those who paid bills, those who defaulted and blamed the issuer for default, those who defaulted and blamed themselves for default. The table depicts the proportion of payers who later dealt with Maison Roux after a "paid," "default and blamed the issuer," and "default and blamed the payer" events.
Standard Errors in parentheses. For the top table: Pearson chi2(2) = 12.2807 with Pr = 0.002, Likelihood-Ratio chi2(2) = 12.9568 with Pr = 0.002, and Fisher's Exact = 0.002 reject that these three proportions are statistically equal to each other. For the bottom table: Pearson chi2(2) = 13.0184 with Pr = 0.001, Likelihood-ratio chi2(2) = 13.9720 with Pr = 0.001, and Fisher's exact = 0.001 reject that these three proportions are statistically equal to each other.

Table 14: Maison Roux's Relationship with Endorsers, Payers, and Issuers

	Maison Roux' Position in the Chain				
Business Letter with:	Beneficiary	2^{nd} Endorser	3^{rd} Endorser	4^{th} Endorser	5^{th} Endorser
Issuer	47.7%	26.8%	18.0%	12.2%	17.1%
Payer	35.5%	18.6%	17.1%	18.3%	14.3%
Beneficiary		71.1%	26.7%	12.4%	14.9%
2^{nd} Endorser			83.0%	30.2%	10.0%
3^{rd} Endorser				92.0%	37.1%
4^{th} Endorser					90.1%
N	344	575	334	180	70

Notes: Except for bills in which Maison Roux acted as the payer, full Sample used for analysis.

The table depicts in the columns the position occupied by Maison Roux. N refers to the total number of bills falling into each category. The rows list the signatories of the bill. For each position occupied by Maison Roux the table displays the percentage of cases for every signatory in which a business letter between the signatory and Maison Roux was found. For instance, Maison Roux was in the 5th position in 70 bills; of those Maison Roux exchanged business letters with 90% of the 4th signatories, but only in 37% of the bills a business letter between Maison Roux and the third signatory existed.

Table 15: Endorsers' and Issuers' Relationship with the Payer (Maison Roux)

Maison Roux Acted as Payer		
Business Letters with:	(%)	N
Beneficiary	20.2%	376
2^{nd} Endorser	18.1%	282
3^{rd} Endorser	18.2%	170
4^{th} Endorser	26.6%	109
5^{th} Endorser	25.8%	71
6^{th} Endorser	18.6%	43
7^{th} Endorser	24.3%	22

Notes: Only bills in which Maison Roux acted as the payer used.

N is the total number of bills in which a certain signatory was present. The table displays by signatories the percentage out of total bills containing that signatory in which a business letter between Maison Roux and that signatory was found.

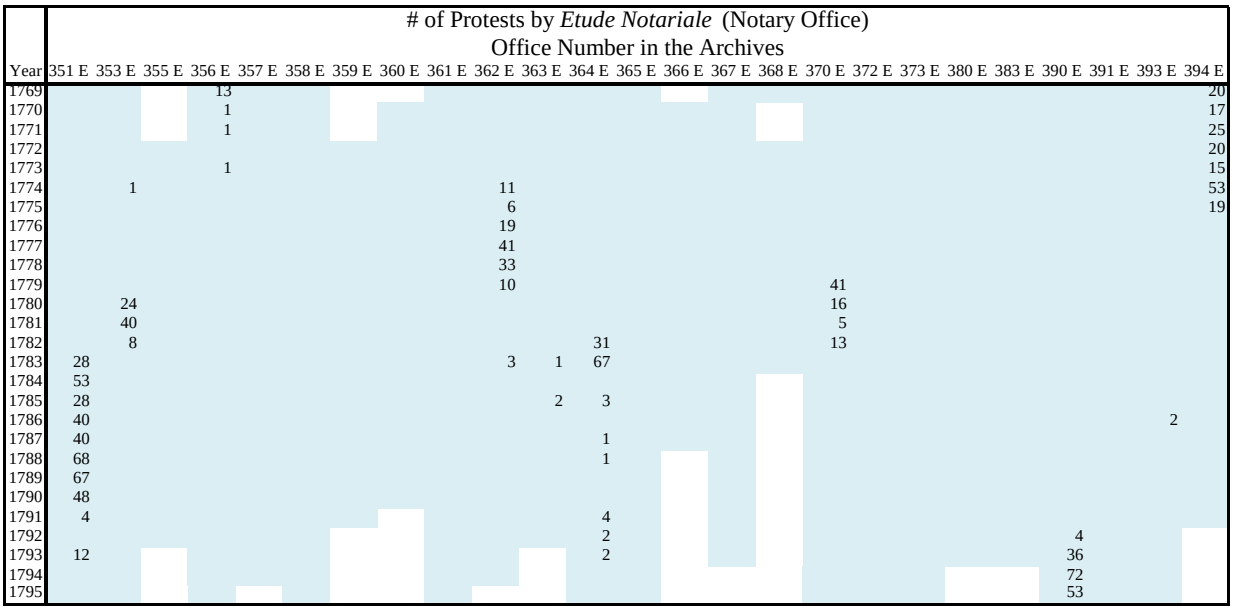
Table 16: Total Number of Signatories in correspondence with Maison Roux

Total No. of Previous People	No. of Endorsements				
in Business Correspondence with	0	1	2	3	4
0	30.23%	12.50%	18.33%	5.73%	4.84%
1	40.00%	50.27%	44.17%	54.14%	53.23%
2	29.77%	30.59%	23.33%	23.57%	24.19%
3		6.65%	10.00%	10.19%	9.68%
4			4.17%	5.73%	1.61%
5				0.64%	6.45%
N	215	376	240	157	62

Notes: Only bills in which Maison Roux acted as the final holder used.

The table displays by number of endorsements the total number of signatories in business relationship with Maison Roux. A signatory is any party of the bill: issuer, payer and endorsers. The basic assumption is that a business letter between Maison Roux and a signatory indicates that a business relationship existed between them. The patterns for the endorsed bills are similar.

Figure 1: Distribution of Protests in the Notary Archives

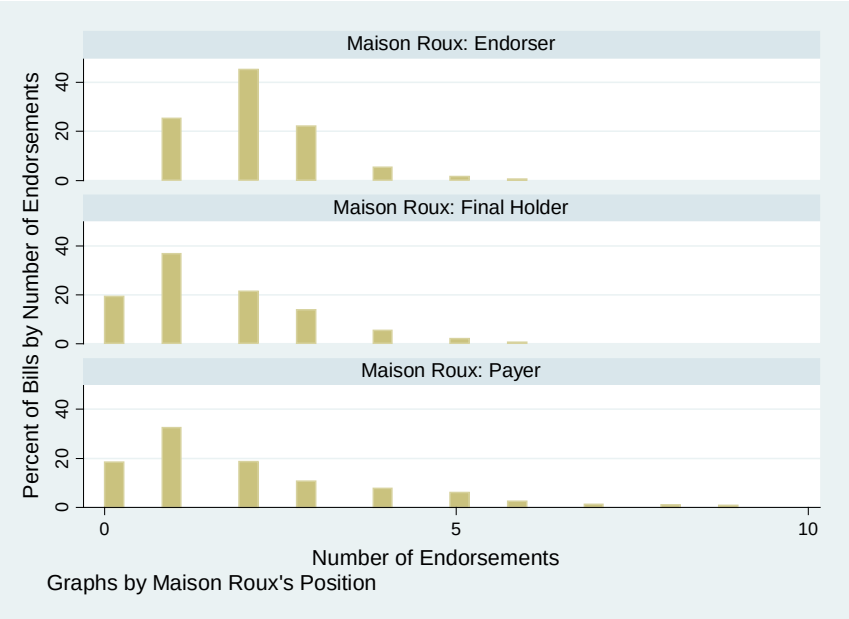


Year	# of Protests by *Etude Notariale* (Notary Office) — Office Number in the Archives																										
	351 E	353 E	355 E	356 E	357 E	358 E	359 E	360 E	361 E	362 E	363 E	364 E	365 E	366 E	367 E	368 E	370 E	372 E	373 E	380 E	383 E	390 E	391 E	393 E	394 E
1769				13																					20
1770				1																					17
1771				1																					25
1772																									20
1773				1																					15
1774		1								11															53
1775										6															19
1776										19															
1777										41															
1778										33															
1779										10							41								
1780		24															16								
1781		40															5								
1782		8										31					13								
1783	28									3	1	67													
1784	53																								
1785	28										2	3													
1786	40																							2	
1787	40											1													
1788	68											1													
1789	67																								
1790	48																								
1791	4											4													
1792												2										4			
1793	12											2										36			
1794																						72			
1795																						53			

Notes: The table shows the distribution of the number of protests by *étude* (notary office). The blank cells meant that the book for that year was either missing or could not be consulted due to its conservation state. The empty gray cells correspond to zero protests found. The filled cells refer to the number of protests found in a given year and notary.

Sources: Archives de la Chambre de Commerce et Industrie Marseille Provence. Archives départementales des Bouches-du-Rhône.

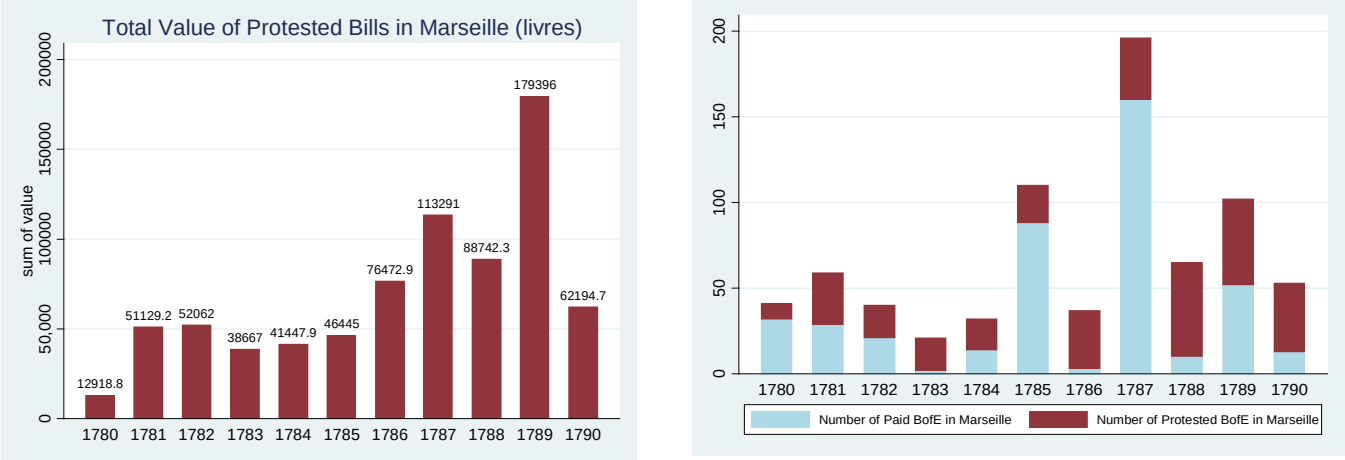
Figure 2: Distribution of the Number of Endorsements by Maison Roux's Position



Notes: Full sample used. Maison Roux could have potentially acted as issuer, payer, endorser or final holder. When Maison Roux is an endorser, I observed to whom, when, where Maison endorsed, but there was no way to check what the final number of endorsements was. Almost no bills issued by Maison Roux could be found. The entire history of endorsements is observable when Maison Roux acted as the payer or it was the final holder.

Sources: Archives de la Chambre de Commerce et Industrie Marseille Provence. Archives départementales des Bouches-du-Rhône.

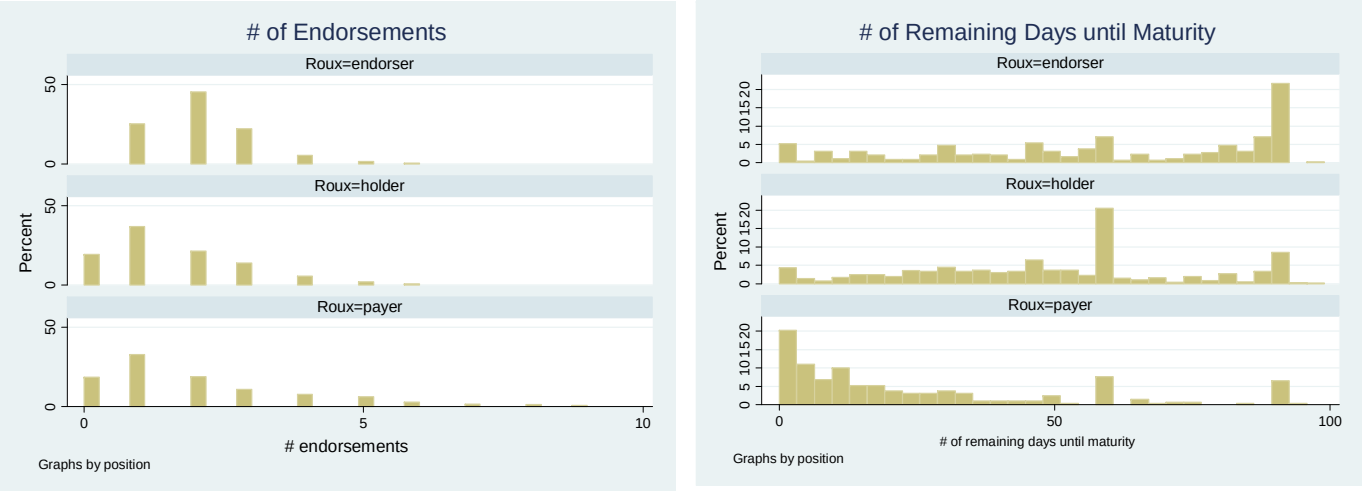
Figure 3: Total Value and Number of Protested Bills of Exchange



Notes: The left figure depicts the total value (livres) for protested bills in Marseille. In 1789 it represented 2/3 of Maison Roux's own capital, evaluated in 250 000 livres.
The right figure graphs the number of paid bills payable in Marseille, and the number of protested bills payable in Marseille. For 1789 and 1790, I randomly selected 30 % of the paid bills. As discussed, attrition on the paid bills sample was probably high during 1780-1788. In contrast, 1789 and 1790 total number and value of paid bills matched closely accounting information for 1791. Overall paid bills' characteristics did not seem to vary systematically over years. Attrition in the protested sample was probably minimal for reasons discussed previously.

Sources: Archives de la Chambre de Commerce et Industrie Marseille Provence. Archives départementales des Bouches-du-Rhône.

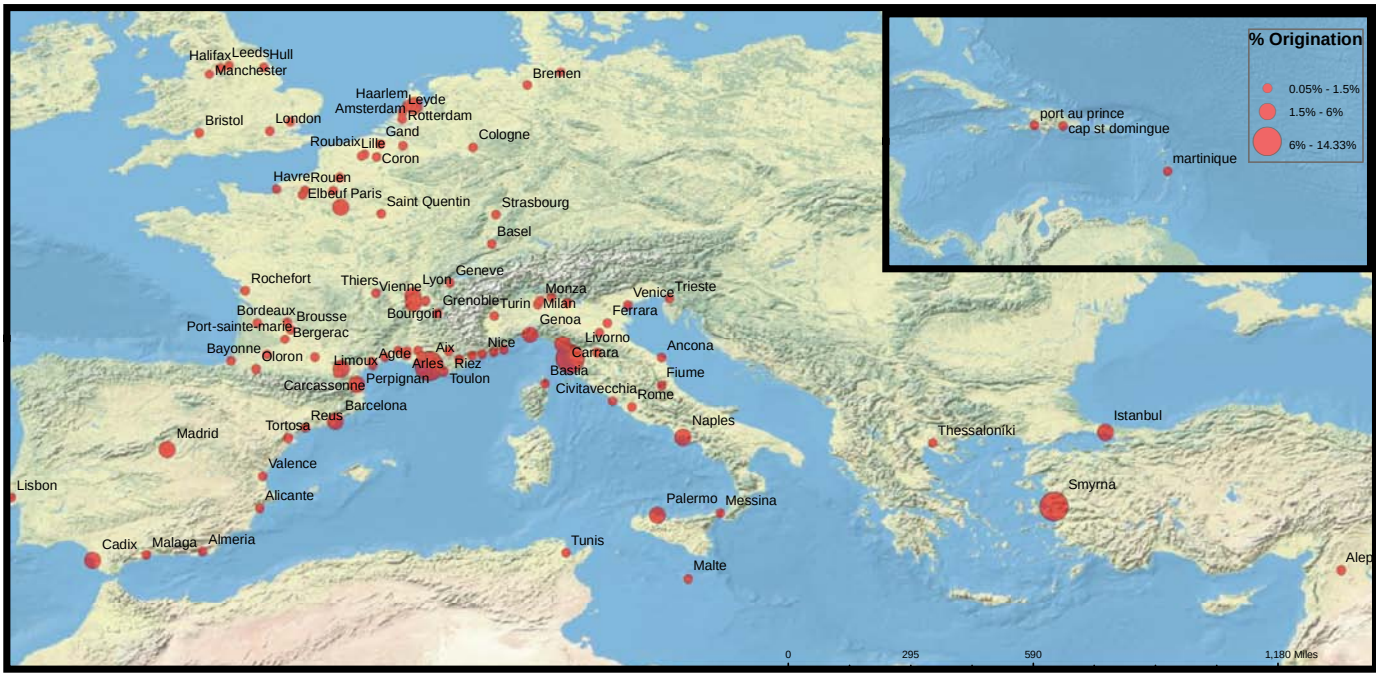
Figure 4: Bills did not circulate to their entire capacity



Notes: Full sample used. Maison Roux could have potentially acted as issuer (drawer), payer (drawee), endorser or final holder. When Maison Roux is an endorser, I observed to whom, when, where Maison endorsed, but there was no way to check what the final number of endorsements was. The entire history of endorsements is observable when Maison Roux acted as the payer or was the final holder.

Sources: Archives de la Chambre de Commerce et Industrie Marseille Provence. Archives départementales des Bouches-du-Rhône.

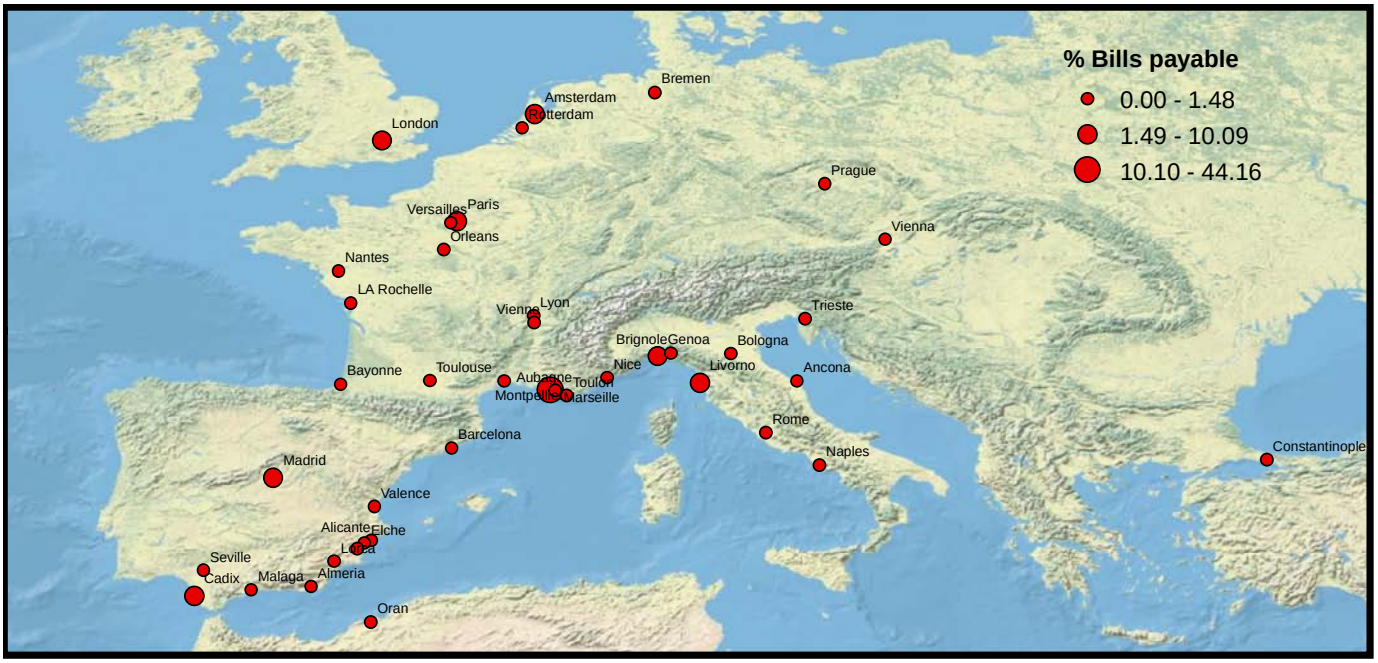
Figure 5: Proportion of Bills Originating in Various Places (1780-1790)



Notes: Full sample used. The circles represent the percentage of bills originated in a city.

Sources: Archives de la Chambre de Commerce et Industrie Marseille Provence. Archives départementales des Bouches-du-Rhône.

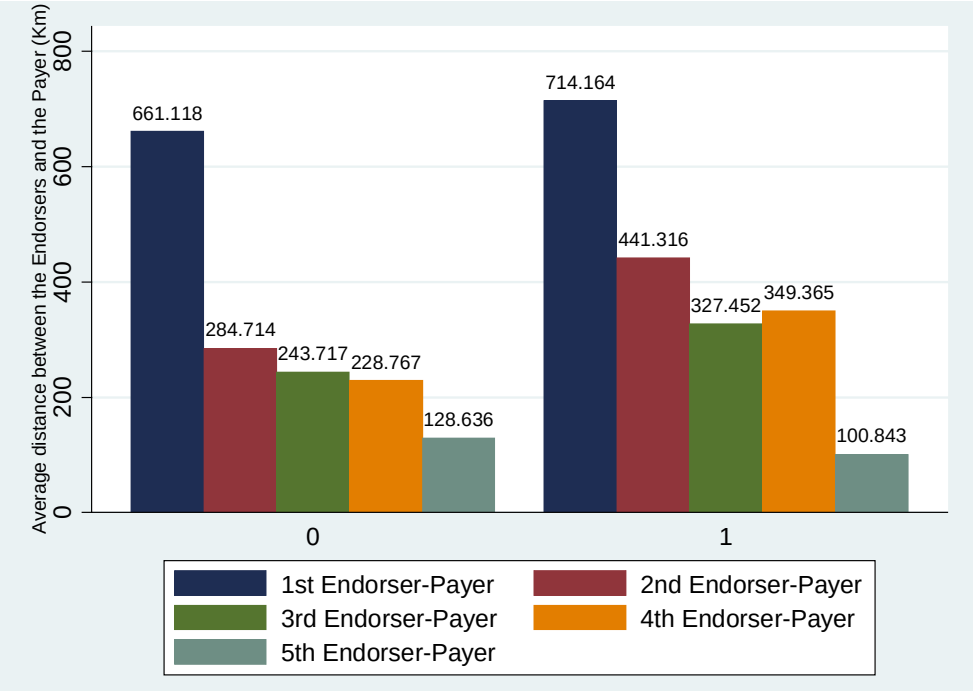
Figure 6: Proportion of Bills Settled in Various Places (1780-1790)



Notes: Full sample used. The circles represent the percentage of bills which were settled in a city.

Sources: Archives de la Chambre de Commerce et Industrie Marseille Provence. Archives départementales des Bouches-du-Rhône.

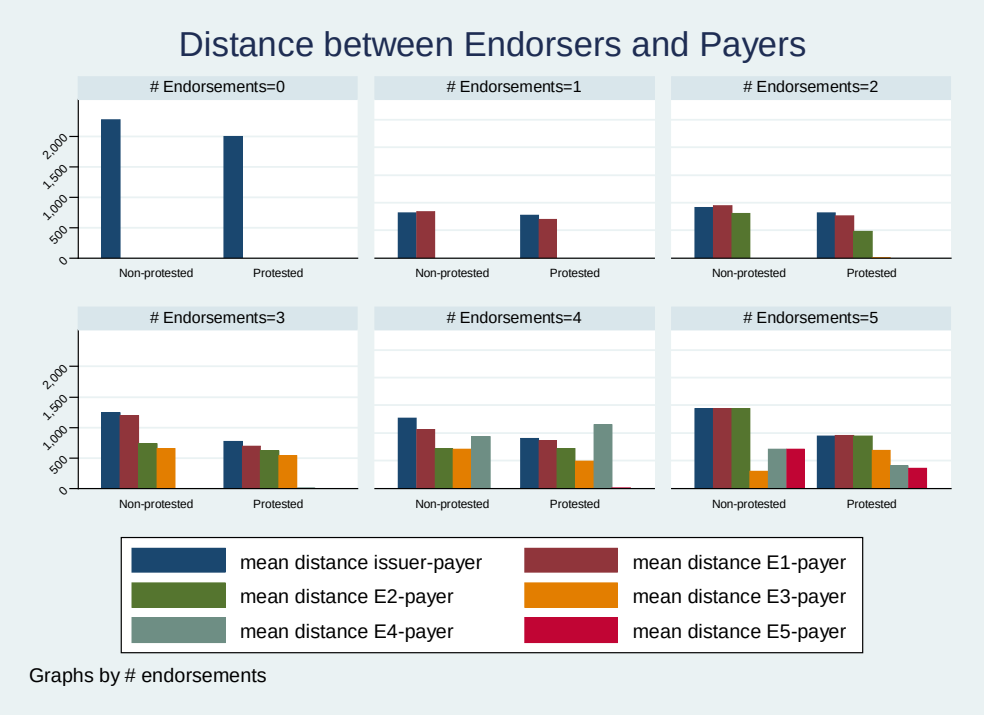
Figure 7: Distance between the Endorsers and the Payer



Notes: Protest and paid bills sample used. *DistEn_payer* represents the average distance of the *nth* Endorser to the payer. The distances between the endorsers and the payer in the non-protested and protested bills are jointly statistically different only at p-value=0.146, using the Bonferroni correction. Individually, some of the distances are statistically different in the two groups. P-values for two sample t test with equal variances: p=0.3621 (distance from first endorser to payer); p=0.0003 (distance from second endorser to payer); p=0.0506 (distance from third endorser to payer); p=0.3546 (distance from fourth endorser to payer); p=0.756 (distance from fifth endorser to payer).

Sources: Archives de la Chambre de Commerce et Industrie Marseille Provence. Archives départementales des Bouches-du-Rhône.

Figure 8: Distance between the Endorsers and the Payer

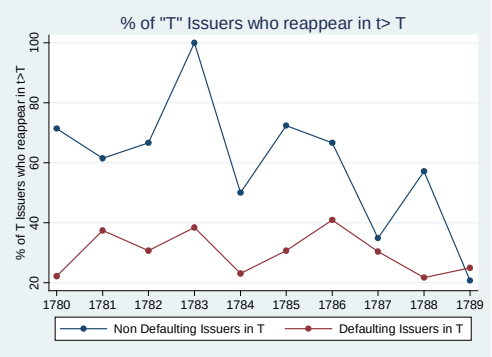


Notes: Protest and paid bills sample used. For bills with a given number of endorsements, *DistEn_payer* represents the average distance of the *nth* Endorser to the payer. The distances between the endorsers and the payer in the non-protested and protested bills are jointly statistically different only at p-value=0.146, using the Bonferroni correction.

Sources: Archives de la Chambre de Commerce et Industrie Marseille Provence. Archives départementales des Bouches-du-Rhône.

Figure 9: Repeated Interactions

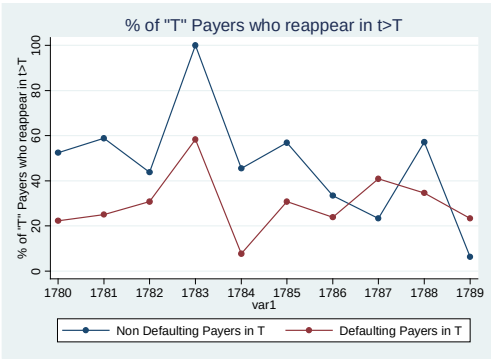
Repeated Interactions with Issuers



*Notes:*Protest and paid bills sample used. For any given year, two groups of issuers were identified: those whose payers defaulted on at least one bill that year, and those whose payers paid at least one bill that year. The figure depicts for a given year the percentage of issuers who later dealt with Maison Roux among those whose bills issued were paid and defaulted.

Sources: Archives de la Chambre de Commerce et Industrie Marseille Provence. Archives départementales des Bouches-du-Rhône.

Repeated Interactions with Payers



Notes: Protest and paid bills sample used. For any given year, two groups of payers were identified: those who defaulted on at least one bill that year, and those who paid at least one bill that year. The figure depicts for a given year the percentage of payers who later dealt with Maison Roux among those who paid and defaulted.

Sources: Archives de la Chambre de Commerce et Industrie Marseille Provence. Archives départementales des Bouches-du-Rhône.

Appendix I

Transcription of a Bill of Exchange:

A Marseille le 12. Janvier 1787 pour 2122.4.6
A soixante quinze jours de datte payez par celle troisième de change, la première et seconde ne l'étant a notre ordre deux mille cent vingt deux livre, quatre sols six deniers valeur en nous-mêmes.
Que passerez suivant l'avis di Issuer Signature
A messieurs Tassin & fils
A Paris
Au dos :
Paye à l'ordre de M. Vieusseus valeur en compte Marseille le 13 Janvier 1787

Transcription of a Protest:

Protêt Roux Frères Martel

Aujourd'hui Sept Avril mil Sept Cent huitante quatre après midi. Nous Notaire Royal a Marseille au requis de monsieur Roux frère négociant a cette ville, avons interpelle monsieur L'abbé Martel, en son domicile situe prés les allées de Meilhan, de leur payer la lettre de change sur lui tirée de Riez le vingt neuf mars dernier payable six du courant, la teneur de laquelle lettre des endossements suit.

A Riez le 29 mars 1784. Bon pour 300. Monsieur au six du mois d'avril prochain il vous plaira payer par cette premier de change a Monsieur Ricoux ou a son ordre la somme de trois cent livres valeur reu dudit que vous passerez sans autre avis de votre tres humble serviteur. Signe Martin. A Monsieur L'abbé Martel a Marseille. Au dos : Payez à l'ordre de Monsieur Pin et Cie valeur en compte. Riez le 29 mars 1784. Signe Ricoux. Payez l'ordre de Monsieur Roux frères valeur en compte. Aix. Le 3e avril 1784. Signe Pin et Cie

En ce parlant en domicile du S. Martel, lequel a dit qu'il ne connaissait pas le tireur, et qu'il n'avait aucune affaire à Riez. Sur laquelle réponse et faute de payement de la dite lettre n'avons bien et dûement protesté et de tous ce que de droit. Acte fait présents M. Joseph Pierre Doujon et Antoine Jean Baptiste Sacton de cette ville ? requérant et signé avec nous notaire le requérant refuse de signer ainsi que le dit S. Martel et qui aussi refus de prendre copie disant n'être nécessaire de ce requis ? ayant le dite requérante retiré la lettre, ainsi que nous Notaires? le certifions.

Examples of Comptes de remise de lettre de change (re-exchange bills):

Example 1 A BofE was drawn by "Garnier?" in Marseille le 26th November 1789 for 648.8 at 6 usances (roughly 6 months) to be paid by Chauvin de Montauban. It was accepted and then passed to S.B. Ferrari, Saranque, Roux, Joulia frères Authier and Rachou Lavrier? who protested for lack of payment. Roux is the 4th endorser, Joulia is the before the last endorser. (Probably Rachou Lavrier? reimbursed himself by drawing on Joulia). In turn, Joulia draw a re-exchange BofE on Roux at Toulousse the 9th June 1790 for 661.10, which represents an increase of only 2% of the original debt. This 2% comprised the protest expense (1.16 livres), the perte a la retraite 1%, courtage 2%, port de lettre (probably the cost to transport and send it), the provision 0.5%. This Bof was supposed to be paid roughly in 26 of May and already the 9th of June a (possibly second) re-exchange took place.

Example 2 In 1/16/1767 Castan from Toulouse draws on De Sant Clement e Diverhagen a bill to be paid in 15 days to the order of Fraissiner, who endorses it to Roux, who endorses it to Josef Leon. It was protested for non-acceptance and non-payment. Josef Leon (Livorno-in contact with Roux) reimburses himself by drawing a bill on Roux on the 2/6/1767. Original value: 438.1.1 , re-exchange value: 441.3.8 (pezze da 8 reali)

Figure A1: Bill of Exchange

Figure A2: Protest

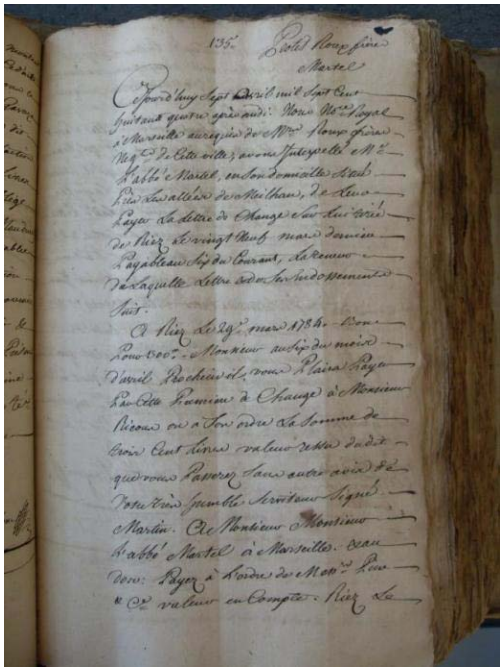


Figure A3: Merchant Court Hearings Records

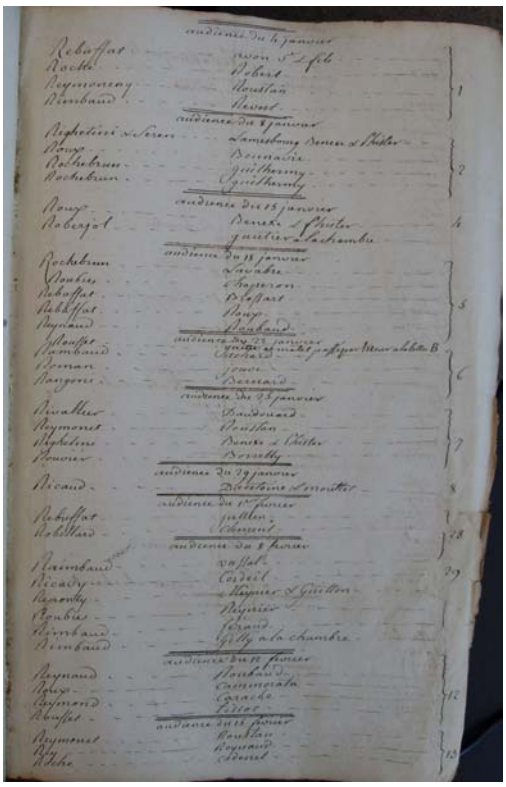


Figure A4: Re-exchange Bill

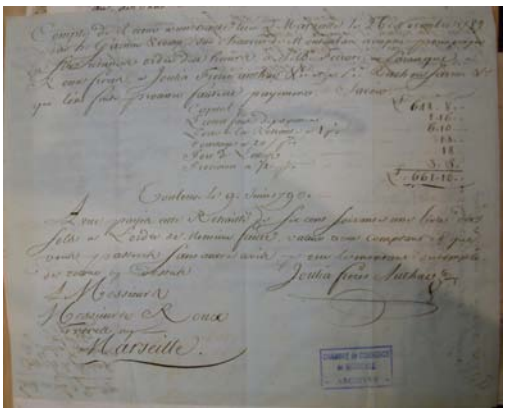
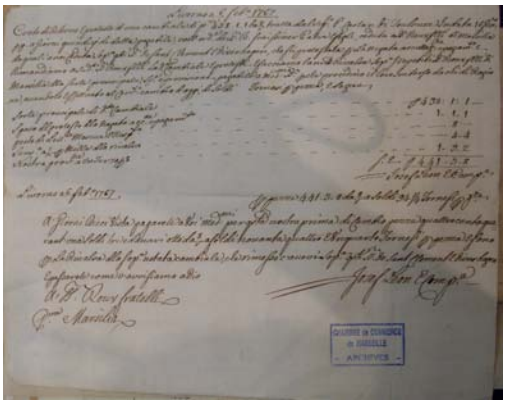


Figure A5: Re-exchange Bill



Appendix II: Comparative Legal Rules

	France	England
Legal source	1673 Ordonnance de Commerce (OC). 1807 Code de Commerce (CC)	BofE Act 1681 + case-law/ precedents
Rules to create a BE	Real transaction, minimum distancia loci, mention of date obligatory. Art.1 (OC), Art.110 (CC)	no distancia loci: Hussy v. Jacob (1697).
Endorsement rules	Name, date, place, value received. Art. 137 (CC)	Blank endorsement allowed.
"Authenticity burden"- implicit obligation to verify the authenticity of the endorsements.		X
Joint Liability Rule	Holder could pursue either individually, the issuer and any endorser, or collectively the issuer and multiple endorsers. The endorser who reimbursed was surrogate in the rights of the holder against the preceding endorsers and the issuer. Art. 13, 33 (OC), Art.140,164 (CC)	Williams v. Field (1694): the last endorsee could sue any of the previous endorsers, as well as the issuer. Bomley v. Frazier (1722): each endorser could be made primarily liable on the bill, and not merely liable only in the event of the issuer failing to pay.
Protest	Art. 4 (10 days, OC), Art.162 (following day, CC) Deadlines vary with distance. Art.173,174,175 (CC)	Verbal notification was enough, shorter deadlines, but had to inform all the parties.
Preemptive seizure of assets	Under judge's authorization. Art. 12 (OC), Art.172 (CC). Right to caution. art.120 (CC)	
Right to pay to the honor	Art. 3 (OC), Art.159 (CC)	
Rights of the endorser who paid	Seniority rule. Art.164 (CC)	
"Rechange"- Holder could immediately obtain funds by selling the claim to a bank.	Art. 5 (OC), Art.177-181(CC)	
Bearer's independent right of action	1673 Ordonnance de Commerce	Burton v. Davy (1437) ?? ; Grant v. Vaughan (1764); Peacock v. Rhodes (1781)
Prescription Rules	Art.21 (OC), Art.160 (payment or acceptance-6 months to 2 years), 166 (initiate lawsuits- 15 days up to 2 years from protest date), 189 (action- 5 years) (CC)	
Regulation of discounting/ Interest rate	TIT. V Art.1 (total prohibition? OC) 1601-8% ; 1655-5%	1571-10%; ~ 1603-8%;1660-6%; 1714- 5%; 1833--
Contrainte par corps	TIT VII Art. 1 (OC), Abolition in 1793, reestablishment and final abolition in 1867. Art. 782-800 Code de procédure, art.1265-1270 Code Civil[1].	

[1] From 1861 to 1866, for example, 5,450 individuals were incarcerated for total debts of 17,338,639 francs. Vause (2004)