Credit Markets in Southeastern France

_1650-1788_

By

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Abstract

The paper analyzes a data set taken from a sample of long-term loan contracts, *rentes*. First, I examine the legal constraints on credit in Old-Regime France. Second, I describe how the market for credit functioned given high enforcement costs and difficult information transmission. The paper seeks to suggest that the market was able to overcome institutional difficulties and functioned quite efficiently. Borrowing seems to have occurred increasingly between individuals in different occupations and social classes. By the end of the period, artisans and farmers received 98% of their loans from individuals in occupations other than their own, and 85% from elite groups. Moreover the data suggests that there were dramatic changes in the local economy in the last three decades of the Old Regime. Nobles and other elites loaned large sums of money to artisans presumably to finance the expansion of the textile industry and agriculture.

In 1767 [Arthur Young] leased Sampford Hall,...He planned to stock it with his wife's money and a loan from a relative. The relative's loan was not forthcoming and he was forced to give up the farm and would have been bankrupt had not John Yeldham, the landlord, released him of his obligations...At present we simply do not have enough information about rural credit markets to know how typical Young's experience was. [Allen, 1986, p.6]

1)Introduction

The development of centralized credit markets in eighteenth- and nineteenth-century Europe has received considerable attention in the recent economic history literature.[1] While such markets may have contributed to the fiscal stability of political bodies, they seem to have played a secondary role in the early phases of development and industrialization. While it has long been recognized that the development of private capital markets is crucial for economic growth, they have gone comparatively unstudied.[2] Save for a few very visible and very large enterprises, most firms appear to have raised outside capital through bilateral or multilateral agreements such as partnerships and long-term loans. Despite the high visibility of these large enterprises a significant share of early economic development seems to have been caused by the proliferation of small crafts and artisanal firms.[3] Where evidence is available it suggests that productivity increased significantly in these small firms. Even in focal industries such as British textiles, firm size was not large until well into the nineteenth century.[4] Thus the issue of how small firms raised capital is central to our understanding of economic development.

Small firms could not rely on central anonymous credit market to raise capital, instead they had to raise long-term capital from a local network of lenders.[5] France has an archival source that is uniquely suited

to the study of such local, bilateral credit markets--notarial records which hold the bulk of long-term loan contracts. Using a sample of contracts taken from a town in southeastern France from 1650 to 1788 this paper attempts to understand how such a local network functioned and its contribution to economic growth.

Another goal of this paper is to test some of the assumptions and predictions of the findings of the game-theoretic literature. A crucial part of credit markets is how lenders acquire information about borrowers. If verifying the information is very difficult or expensive, lenders may only lend to those people whom they know, that is to those individuals who have good reputations. Some recent papers have argued that markets where reputation matters can be quite efficient.[6] This paper suggests that in Old-Regime credit markets, information flowed freely and that entrepreneurs received a significant share of the funds being loaned. Yet Old-Regime credit markets may have been less efficient than modern, centralized markets because they had to rely on collateral and reputation.

2) The Market for Credit in Eighteenth-Century France

A. The Market and the State

One possible source of data on the time path of interest rates is government borrowing. Because of perpetual deficits, the crown and most other public institutions had frequent recourse to credit. Lending to the crown and to some public institutions was a highly risky but often profitable affair.[7] Until the last three decades of the Old Regime, the crown relied on financiers as intermediaries to raise money through their networks of acquaintances, relatives, and business correspondents. Later a variety of market schemes were used.[8] Because lending to the crown was risky, variations in the terms

2

that the crown paid for money therefore could have had two causes: the first was changes in the supply and demand conditions of capital markets, and the second was changes in the borrowers' beliefs of the risk of default.[9] Unless we can untangle these two causes we cannot use government data to infer the price of money. More generally, in order to understand how credit market conditions evolved before and during the period of development and industrialization we need another source of interest rates than government borrowing.

Another tempting place to search for interest rate data in France is banks, yet banks were heavily involved in government finance and in short-term lending. One source that holds non-government credit information are notarial archives. Throughout the Old Regime, Frenchmen registered their private contracts with semi-public officials called *notaires*--henceforth notaries. By law, notaries were required to keep a of copy each contract they witnessed. Most notaries bound the copies of the acts they had received in chronological order into yearly volumes. These volumes have, for the most part, survived to this day. It has been argued tat notaries were far more than simple recorders they acted as intermediaries in a market constrained by severe transaction costs. For example, networks of notaries were well organized to collect information about would-be borrowers because they registered not only loans but contracts dealing with marriage, inheritance, land sales, rentals, and apprenticeships. In addition notaries acted as the agents of certain groups. Thus most notaries dealt either with merchants, burghers, religious institutions, or nobles. Their specialization had much to do with their role as financial intermediaries.[10] In fact notaries acted like brokers by putting lenders (depositors) in contact with borrowers and collecting the information necessary to assess the profitability of the

transaction. However, notaries were not banks, they did not hold deposits or issue paper money on the basis of deposits so there was no multiplication of savings. Nor did they provide lenders with insurance by pooling all deposits and loans.

While notaries witnessed many types of contracts, this paper examines only one kind: *rente perpetuelle* or *pension perpetuelle*.[11] I have chosen to ignore other kinds of credit agreements such as life pensions and *obligations* (short-term debt). I overlook life pensions because there were only five life pensions in the 1,341 acts I sampled. The relative paucity of life pensions may be regional. Further research may uncover significant variation in the use of instruments of credit within France. While *obligations* represented a significant part of the market, they were mostly debt for less than six months, not quite the kind of credit on which one could finance capital expansion or long-term investment.[12]

A second set of factors guided my decision to focus only on perpetual debt. In eighteenth-century France, the market for credit was legally constrained in two ways. First, charging interest was prohibited. In order to avoid this prohibition *obligations* simply did not mention the interest rate, nor did they give information on the sum received by the borrower, all that was noted were the sums to be repaid.[13] As a result, *obligations* give no information on interest rates. Second, while payments of perpetual pensions were not defined as interest they were capped by law.[14] Perpetual pensions thus explicitly mention interest rates. Moreover it is clear that save for a few public institutions, no one took the state's prescriptions on interest rates seriously. Indeed it appears that laws on interest were simply not enforced. Thus, the market seems to have functioned relatively unfettered by the state.

4

B. The Data

The data assembled for this paper come from a sample of 1336 acts concerning *rente* contracts negotiated in the town of L'Isle sur Sorgues in southeastern France between 1720 and 1788.[15] I picked L'Isle sur Sorgues because it is a rather small town,[16] implying that its notarial archives could be sampled in a reasonable amount of time. Based on qualitative evidence, local historians have argued that urban textile production increased rapidly in the second half of the eighteenth century.[17] I was curious to see if one could find a relationship between the rise in artisanal production and the development of the capital market.

The data set consists of a complete sample of the acts registered with notaries (whose records have survived) for four years, namely, 1720, 1750, 1770, and 1788. These acts fall into six basic categories: creation of new pensions, sales of old debt, reductions of payments, reaffirmation of debt, inventories after death, and extinctions.[18] For comparative purposes, I also collected a complete sample of *obligations* in the years 1770 and 1720.[19]

The data represent both a cross-sectional and a time series sample. In a first subset the data include, for each of the sample years, information on all new debt contracted in the city. Because these are complete samples of the notarial contracts of L'Isle sur Sorgues, the distribution of interest rates do not suffer from censoring for the sample years. The rest of the sample has a more dynamic aspect. The reaffirmations, inventories after death, sales of debts, and extinctions all involve debts that were contracted before the sample year. These acts give us valuable but perhaps biased information on the demography of perpetual debt.

The interest data contained in the time series sample could be

biased in a number of ways. For instance, repayments or reaffirmation may have had on average lower or higher interest rates depending on whether the loans were recently taken out or were several decades old. Theory provides no indication of what kind of bias, if any is present. The data, in this early stage of the research are insufficient to answer such questions fully. Yet the distribution of characteristics for loans from a sample year seems similar to the distribution of characteristics for loans that appear as extinctions or reaffirmations in near years.

While the cross-sectional data cover only four in the last seventy years of the Old Regime, the time series data cover a much longer span. While a few acts refer to debt created in the first half of the sixteenth century, starting in the 1650s each decade is represented by at least 30 contracts. The sample suggests that perpetual debt could be very short-lived, with less than a year elapsing between creation and extinction, or almost eternal. One act in 1770 reaffirms a debt taken out in 1530, a full 240 years before.

Some of the most crucial pieces of evidence collected for this market were the declared occupations of borrowers and lenders. There were 59 different occupations in the sample. These have been sorted into three broad groups. The first group is the elites, with two subcategories (religious organizations and priests, and nobles). The elites owned about 50% of the land in L'Isle sur Sorgues at the end of the Old Regime.[20] The second group, entrepreneurs, contains all individual who reported a crafts or agricultural profession. Entrepreneurs have been subdivided into merchants, crafts, and agriculture categories. Crafts are composed of textile workers and artisans. Agriculture includes *menagers* (self-employed farmers) and low ag. (wine growers and laborers). The final group, urban, contains all non-entrepreneurs or non-elite individuals. This group has been divided into four

subcategories--public institutions, liberal professions, bourgeois, and unknown urban residents.

Because the data were collected one contract at a time, the sample size is small relative to the statistical questions at hand. Each cross-section sample contains data on about 100 acts, while the time series of reaffirmed and extinguished debt has from five to ten observations per year. Therefore I have restricted my analysis to simple statistical techniques to try to uncover the broad patterns, leaving econometric sophistication for a future, larger, data set.

3) *Interest Rates In L'Isle sur Sorgues*

For most entrepreneurs in L'Isle sur Sorgues the *rente* market may have been the only source of long-term capital. Moreover, for owners of wealth (would-be lenders), the *rente* market was the principal credit market. Alternative investments to *rentes*, like government debt were only available in second half of the eighteenth century. Thus whatever the inefficiencies of the capital market in L'Isle sur Sorgues, it holds key information about changes in the cost of capital over time.

Specifically, the data allow us to attempt to construct an interest rate for France from 1650 to 1788. Weir and Velde (1989) give an interest rate series based on the price of a specific French government perpetual bond after 1752. Yet until now no systematic attempt has been made to construct an interest rate for the whole eighteenth century. As noted earlier, relying on government loans, when they are available, is problematic because we know that the government was a risky borrower, with highly variable risks at that. Thus we should use private data to construct French interest rates. One problem with private data is that borrowers are heterogeneous.[21] A first step in

dealing with this problem is to compute weighted averages by reported
occupation. Although the data set is small, decennial weighted averages of
interest rates for both elites and entrepreneurs can be constructed starting
in 1650. Figure 1 and Table 1 display the L'Isle sur Sorgues data along with
the government interest rate from Weir and Velde, the yield on British
consols, and a rate for a *rentes* market in Belgian Flanders.[22]

[Table 1 about here]

Overall the elites paid the least for money, but not a great deal
less than anyone else. Entrepreneurs consistently paid more, which is not
surprising since, unlike the elites, they could not choose among several local
markets when they wanted to borrow. Entrepreneurs faced small markets because
their business acumen, an important issue when considering a loan, was only
known locally. The time trends are also quite interesting. The difference
between the rates charged to elites and entrepreneurs is frequently more than
one-half of one percent in the early part of the century. Yet, that
differential disappears at the end of the century. Moreover, the interest
rate charged to the elites--the most secure group--declined from above 5% in
1650 to 3.6% by 1720. After 1720, interest rates rose rapidly for both groups
to about 4.8% for the rest of the century.

Comparing the average interest rate on *rentes* to government rates
suggests that changes in the price paid for money by the government were
overwhelmingly due to changes in risk. In the decade before 1760, the French
government's rate is bracketed by the rates in L'Isle sur Sorgues, suggesting
that the government seemed less likely to default than the average
entrepreneur but more so than the average elite. Starting in 1760, however,
French budgetary decisions made the probability of default sufficiently great
that even French entrepreneurs always paid less for money than the state. One

should also note that interest rates patterns in L'Isle sur Sorgues were quite different from those in Flanders. Neither the 1720 low nor the subsequent rise of the rates in L'Isle sur Sorgues are present in the ever-declining Flemish rates. One hypothesis requiring further study is that Flanders was part of the Dutch rather than the French capital market. Another important and puzzling question is whether interest rates available to British private investors were close to the interest paid by the Bank of England. If they were, then French entrepreneurs clearly faced higher capital costs than British industrialists.

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4) The Market for Credit in L'Isle sur Sorgues

A. Capital flows

Not only did entrepreneurs pay more for capital than did elites in eighteenth-century L'Isle sur Sorgues, they also received far fewer loans. The elite and urban groups, received 76% of the loans by value while entrepreneurs received the other 24%. The fact that an enormous share of loans went to urban and elites illustrates the dual nature of the credit market: some borrowers used it to smooth consumption while other used it to raise capital. As Table 2 shows, credit flowed mostly among the elites. The preeminence of the elites is not surprising given that they owned most of the wealth. Still, despite their vast wealth, elite and urban individuals required significant amounts of capital because of inter-family transfers associated with weddings, inheritances, and accessions to the priesthood. Elites and urban individuals borrowed to effect these inter-family transfers without breaking the family estate apart.[23]

[Table 2 about here]

The most important group among the elites in this market was the

9

nobility: nobles lent 75% of the capital and borrowed more than 60% of the funds. Nobles were extremely important in this market because they made far more use of it than did the Church. The first reason for the large presence of the nobility was that it was disproportionately wealthier than the Church. The second is that for more important noble families, who did not live in L'Isle sur Sorgues, perpetual debt may have been easier to manage than real estate.[24] The Church, while a sizable participant, always lent much more than it borrowed. It is striking, however, that monasteries and the Cathedral chapter did all the lending while charitable institutions and priests did almost all of the borrowing in the eighteenth century. Finally, nobles and the Church were about as important sources of capital to entrepreneurial groups.

Another important feature of the capital market is the small but growing flow of capital from the entrepreneurial group to the elites and across members of the entrepreneurial group. This flow amounted to 17% of the value of all the loans and was increasing overtime. The appearance of entrepreneurs as lenders suggests that the market for perpetual debt provided them with some means of insurance. During the second half of the eighteenth century, the period of growth in the textile industry, entrepreneurs in L'Isle sur Sorgues were diversifying their portfolios.

Entrepreneurs made loans because they were risk averse. The same risk aversion also required that loans be as safe as possible, hence loans were collateralized. Because debt was perpetual it had to be collateralized with something that does not depreciate--land. The requirement that borrowers use real estate to back their loans must have limited the ability of many artisans and farmers to borrow. Fully 81% of new loans in the sample were collateralized on a specific piece of land. These loans were in fact

10

mortgages.[25] While the proportion of mortgage loans remained steady over time, Table 3 shows that entrepreneurs were more likely to collateralize than elites. To raise capital in L'Isle sur Sorgues borrowers had to have more wealth than debt, probably a good deal more. Any individual with positive net wealth could have avoid borrowing by selling assets. Therefore if such an individual borrowed it was either for insurance purposes, or because of inefficiencies in the asset market.

[Table 3 about here]

What is most striking about the collateral used by entrepreneurial groups, is that it did not involve their firms' assets, but their real estate (except in agriculture where the two were the same). There are no contracts where a textile worker secured a medium- or long-term loan on the basis of his plant and equipment.[26] Firms therefore were built up from retained earnings and from the owner's wealth. The growth of such firms, whether agricultural or manufacturing, could only be slow because each entrepreneur needed to diversify his assets. Since the economy was highly uncertain, part of each firm's earnings must have gone to purchasing other assets such as land or perpetual debt for insurance purposes. Thus although the men and women of L'Isle sur Sorgues maintained an active capital market that overcame institutional obstacles, this market remained one where the wealthy traded capital.

B. Information flows

Although most loans were collateralized, there was sufficient variation in the interest rate charged in any given year that it seems likely that loans remained risky. Loans were still risky because enterprises could fail and collecting on the collateral was very costly. In addition because debtors could depreciate the value of the collateral, especially if it was

11

highly improved land or buildings. Given that loans were risky the market's ability to redistribute capital depended strongly on the flow of information between lenders and borrowers. A rough measure of information flows is the quantity of capital supplied by non-local lenders. The presence of non-local lenders depends on the ease with which information is transmitted and the cost of monitoring and enforcement. The market becomes more integrated as more potential lenders receive access to information about borrowers. Historically it seems that information about borrowers in L'Isle sur Sorgues may have been as difficult to communicate to lenders in Avignon and Cavaillon, two towns each less than 15 miles away, as it was to lenders in faraway Paris. Late in the eighteenth century, however, notaries seems to have increased their ability to collect information because we find a few borrowers from Cavaillon and lenders from Avignon in the later samples.[27]

Increased information flows also threatened the market for loans in l'Isle sur Sorgues. As information useful to borrowers in case of default became more readily available, lenders were forced to be more discriminating. Theoretically, if an adverse shock increases the burden of debt sufficiently, borrowers will decide to default on their loans. As information moves more freely borrowers will be better informed of the opportunity cost of honoring their debts. More information about where defaulters should relocate reduces the risk of defaults and increases the opportunity cost of honoring one's debts.[28] Such an increase in the moral hazard problem would reduce the willingness of lenders to offer credit to highly indebted borrowers. Highly indebted borrowers should pay the highest interest rates. Thus other things being equal greater information flows would lead to a fall in the observed maximum rate of interest.

In l'Isle sur Sorgues overall market integration also led to an

increase in craft production, thus to a greater demand for capital. If the demand for capital grew significantly faster than the supply of capital then the risk free rate of interest should have risen. One can examine the effect of increased information flows by looking at the interest rates paid by individuals in the tails of the interest rate distribution by decade. Table 4 displays the interest rate of loans that were in the 5% tails of the interest rate distribution.[29] The lower tail should reflect changes in market conditions while the upper tail should be most sensitive to changes in moral hazard problem.

[Table 4 about here]

Table 4 suggests that the maximum and the minimum rate converged to a significant extent in the eighteenth century. The fall in the observed maximum interest rate suggests that enforcement problems remained severe throughout the eighteenth century. Most of the reduction in the interest cap seems to have occurred in the last three decades of the Old Regime, that is consistent with the notion that high risk borrowers were shutout of the market because of the costliness of debt recovery. Moreover there was little, if any reform of judicial institutions to mitigate that problem. In short, contracts had to be self-enforcing.

C. The Five Percent Rule

The pervasive use of collateral also suggests why such an enormous proportion of loans (50% between 1650 and 1700; 42% from 1700 to 1730; 57% from 1731 to 1760; and 78% after 1760) had interest rates exactly at 5%. Because of the collateral requirement, most individuals borrowed at the market rate plus a premium for fixed costs and some uninsurable uncertainty.[30] Borrowers may have paid risk premia because of the likelihood of irregular payments rather than the probability of default. Moreover because debt was

13

long-term, the basic interest rate responded only to long-run expectations about supply and demand conditions in the credit market and the overall price level. Despite considerable variations from year to year in the price level there was little decadal inflation or deflation.[31] Thus the conditions of the economy at the time loans were made had little impact on the terms of contracts. Of course it is possible that the decreased variance of the loan distribution was due to increased rationing. Yet there is no evidence of legal enforcement of interest rate ceilings and there are good reasons to believe that the decline in the variance of the loans was endogenous.

5 Status and Occupation

Despite the prevalence of the 5% rule there are patterns in the interest charged, and the quantity of money, loaned to different groups that bear further investigation. The importance of information in the *rente* market suggests that individuals who knew particular borrowers should have been more likely to lend to these borrowers. Relatives, and individuals who were in similar occupations should have had privileged credit relations. Alternatively it is possible that credit networks formed based on notaries; it is even likely that different groups participated in the credit market in different ways. A simple way to test these propositions is to assume that credit transactions are each the result of an equilibrium in a market where demand depends on borrower characteristics and supply on lender characteristics. More precisely:

$$Q_d = a_1 + \Sigma\, b_1^i\, B^i + d_1 t + f_1 t^2 + g_1 \text{int} + \upsilon$$
$$Q_s = a_2 + \Sigma\, b_2^i\, L^i + d_2 t + f_2 t^2 + g_2 \text{int} + \upsilon'$$

Were Q_d, the demand for loans depends on borrower characteristics (B^i), and price (int) as well as some function of time and time squared.

14

Q_s, the supply of capital depends on lender characteristics (L^i) price and time and time squared. B^i_j is a dummy variable which is one if the borrower of loan j reported an occupation in subcategory i (e.g. crafts or noble) and zero otherwise. L^i_j is defined similarly for the lender of loan j.

To proxy for occupational networks a dummy variable, Own1, was included in the regressions. Own1 takes on the value one for loans between two entrepreneurs who reported the same occupation (e.g. a loan from a carpenter to a carpenter); Own1 is zero otherwise. A second variable, Own2, performs the same purpose for elites.

In this model I assume that price and quantity are determined in equilibrium. One nice feature of this model is that it leads to reduced form equations that allow the identification of structural parameters. The reduced forms equations were estimated in a number of settings. First they were estimated on all the data for loans taken out after 1650. Second, they were estimated separately for four subperiods (1650-1699, 1700-1730, 1731-1760, and 1761-1788). Third the regressions were run on the loans taken in each of the sample years (1720, 1750, 1770, and 1788). The reduced form parameters of the occupational variables do not depend significantly on the time period of the estimation. So I only present the regression results for the entire data set (1650-1788) in Table 5.

[Table 5 about here]

The occupational dummies behave as expected: the most secure borrowers (church, nobility, and public institutions) were able to borrow the most and at the least cost. In contrast, interest rates charged to entrepreneurial groups were only slightly lower than those charged to unknown urban residents. Entrepreneurs received slightly less money, however, than unknown urban residents. It is also important to note that the sign of Own1,

15

the dummy variable for within-occupation transactions, is negative in the interest regression and insignificant in the quantity regression. Thus non-elite groups paid interest premia if they borrowed outside of their own group. This reinforces the notion that outsiders faced significant informational asymmetries when lending to non-elite groups. Yet for elite groups borrowing from one's peers led to a slightly higher interest rate than if one borrowed outside one's group. For the elites, information must have been sufficiently widespread that they could borrow from anyone. The elites, thus, may have borrowed from their own group only when they were in difficult situations.

While the coefficients on borrower occupations seem to reveal that different groups faced different markets, the coefficients of lender occupations suggest that there was also specialization by groups of important lenders. As noted earlier, nobles made loans mostly to other nobles, consequently their loans were large and their rates were low. Religious institutions seem to have chosen an alternative path. They made significantly smaller loans at somewhat higher rates of interest than nobles. Over the whole sample, nobles made 47% of their contracts with entrepreneurs for 17% of the money they loaned, while the Church made 53% of their contracts with entrepreneurs for 29% of the money they loaned. If religious institutions made high interest loans it must have been because they had good access to information about risky borrowers. One wonders to what extent the service of God gave them an advantage in collecting information. More surprising, in light of the Old-Regime debates on the evil nature of interest, is that religious institutions found charging interest and risk premia morally tolerable. In 1750, the Cathedral chapter went so far as to borrow 150 livres at 3% from a priest and then lend the same 150 livres on the

16

same day at 6% to a *menager*.

The behavior of occupational variables in the regressions strongly suggests that risk played a crucial role in determining the size and interest rate for loans in this market. The importance of risk in setting the interest rate can be underscored in two ways. First, one can use the reduced form estimates to look at the parameters of the structural model that underlies it. Although the reduced form equations are over-identified and lead to many estimates of the structural parameters, one important parameter is estimated consistently. In both demand and supply equations, the coefficient on the interest rate implied by the reduced form estimation is negative. To simplify the discussion I estimated a similar regression with only one lender and one borrower dummy for the four sub-periods. These estimates are displayed in Table 6.

[Table 6 about here]

Although these regression lack predictive power, they make one strong point. The coefficient on price in the supply equation, g_2, can be obtained as the ratio of the borrower dummy coefficients in the price and quantity equations, $\dfrac{b_1}{b_2}$. The value of g_2 ranges between -.30 and -.37 when it is significant.[32] larger loans also had lower than average interest rates if g_2 is estimated from regressions where all the dummy variables are included with a range of (-.20, -1). That the estimated supply curve for credit slopes downward may appear problematic. Yet one can interpret the sign of g_2 as an indication that the occupational variables only capture part of the riskiness of borrowers that was known to lenders in L'Isle sur Sorgues. Lenders were risk averse and thus they were willing to make larger loans to safer borrowers at lower interest rates. An alternative way to test for incomplete capture of risk is to include the residual of the quantity equation in the price

17

equation. While none of the coefficients in the other variables are changed significantly, the coefficient on the residual is both significant and negative. Thus, borrowers, who in equilibrium received less than their occupation's average size loan paid a higher than average interest rate. It appears that in L'Isle sur Sorgues, lenders required premium for risky loans and they also diversified their risks by lending only small amounts to high-risk borrowers. Thus, while in the aggregate supply may slope upwards, the fact that the data only capture part of the information available to the lender suggests that individuals paid less when they borrowed more.

Finally the regression analysis suggests that this market experienced dramatic change in the eighteenth century. Until 1760, the occupational dummies capture a good deal of the variance in the price and the quantity equations. Later in the century, however, the same variables loose much of their predictive power. Indeed it is safe to say that in the period from 1761 to 1788 the regression of occupational variables on interest rates explains none of the variance in the interest rates. Foregoing the possibility that the state intervened in the market, two explanations are possible. First, loans may have been plagued by increasing adverse selection so that only very safe loans were made. Second, increased commercialization may have raised the demand for capital and lowered the risk of lending so that interest rates converged. Let us use more detailed information about borrowers and lenders to differentiate between the adverse selection and increased transaction costs hypotheses and the effects of increased commercialization.

6) *The Distribution of Borrowers and Lenders*

A. Diversity

One clear consequence of the growth of craft production was that

entrepreneurs slowly but surely increased their presence in the market for credit. Table 7 and 8 display each category's share of the market for four periods between 1650 and 1788. These tables suggest that there was significant change in the credit market during the eighteenth century. For example, the elites' share of the market fell dramatically, even if one ignores the seventeenth-century data. Their decline in market share is confirmed by the cross-sectional samples in which the elites fall from borrowing 57% of the money in the market in 1720, to 45% in 1788. Surprisingly, they appeared as borrowers more frequently towards the end of the century than at the beginning. They were borrowers in 15% of the contracts in 1720 and in 25% in 1788. Moreover, as the elites' share of the market declined they the size of loans they received fell from more than 2,400 *livres* to less than 1,600 *livres*[33]. In a market with high transaction costs, like credit in L'Isle sur Sorgues, dramatic declines in size of transactions can be interpreted as a rise in efficiency. After 1760 borrowers and lenders were less constrained by transaction costs or by information than before, so they agreed to smaller loans to diversify risk.

[Table 7 about here]

The increased efficiency was not limited to elite borrowing, and the market for loans responded to increased capital demand by farmers and artisans. The entrepreneurial groups received about 10% of the loans at the beginning of the eighteenth century, but by the last three decades of the Old Regime their share had risen to 28.2%. The cross section show a similar trend. In 1788, entrepreneurs appeared as borrowers in 56 % contracts, down from 60% in 1720, and they received 40% of the funds, up 20% in 1720. Thus we can argue that the market did help entrepreneurs somewhat. Entrepreneurs could diversify their assets into real estate and *rentes* without sacrificing

19

the capital of their firms because they could borrow on the land they bought and they could sell their *rentes* if necessary.

[Table 8 about here]

Similarly, there appears to have been a lot of change in the participation of each occupational group when they acted as lenders. Over the course of the eighteenth century, the elites lent less and the entrepreneurial classes more. The nobles declined the most--their share of the market was halved during the eighteenth century. In absolute terms both the church and all entrepreneurial groups seem to have increased their participation. The entrepreneurial groups all seem to double their share of the market, while the Church's increase is more modest.

In L'Isle sur Sorgues, as suggested earlier, information transmission played a crucial role in determining who traded with whom. Information transmission could have depended on specialized agents, or on occupational proximity, or finally on families. If notaries played the role of specialized agents then there is no necessity for borrowers and lenders to be close in terms of kinship, occupation or even class. In the absence of specialized agents, however, I expect to see individuals who had easier access to information about a given borrower to have lent to that borrower. The occupational data makes it possible to examine the contribution of notarial networks to information transmission. Table 9 displays the percentage of loans that were made within an occupational class (e.g. baker to baker, noble to noble) and the percentage of loans that were made within the elites or within the entrepreneurial group.

[Table 9 about here]

As Table 9 makes clear, as early as 1730, few groups had closed credit relations. Except for the elites, where most of the borrowers were

20

nobles, credit networks cut through occupational and status lines. Such distant credit relations were possible because the information necessary to evaluate loans was readily available to lenders. One should also note the decline of within group borrowing both for the elites (after 1730) and for entrepreneurs (after 1760). The fact that entrepreneurs relied less on loans from individuals in the same occupation over time could have had at least three causes. First, a decline in contracting costs could have made it easier for lenders to diversify their loans and increased their willingness to lend to entrepreneurs. Second, the notary network could have improved its access to information which would have reduced the problems associated with asymmetric information. Third, the expected returns to commercial activity could have increased thereby decreasing the riskiness of lending money to entrepreneurs. The increased distance between borrower and lender strongly suggests that the second and third factors may have been at work late in the eighteenth century.

Not only were entrepreneurial borrowers able to rely more on distant sources of credit but they were also able to increase the size of the loans that they took out. As Table 10 suggests, the average size of loans doubled for most entrepreneurial classes. For other groups while average loan size increased, the change was less pronounced. The same trends are also found in median loans in Table 11. This suggests that either the demand for credit by entrepreneurial increased late in the century or that informational problems were solved and they were increasingly able to borrow on the *rente* market.

[Table 10 about here]

[Table 11 about here]

B. Inflation

As noted earlier average and median loans size changed rapidly

21

during the eighteenth century. One cause of the increase in loan size is of course, inflation. Prices rose significantly in the eighteenth century and that alone could have caused some of the increase in loan size. Instead of constructing an arbitrary price index to compare to the inflation in the size of loans, I have chosen to use the available information on prices in southeastern France during the eighteenth century directly. Table 12 display these data as well as sample averages of loan sizes.

[Table 12 about here]

The price level information might lead us to believe that a good deal of the rise of loans is driven by inflation. Yet it puzzling that the overall sample averages and medians show no trend. In contrast, for all the entrepreneurial groups the size of loans grew more rapidly than the most of the price indexes. At present it is only possible to conclude that inflation had no clear cut impact on the size of loans negotiated in L'Isle sur Sorgues.

One may wish to argue that the ties of this market to land, which was the primary source of collateral, made the size of loans a function of the acreage of the piece of land used to back them. As field size remained more or less constant throughout the period, the size of loans should have followed the price of land. Yet if field size dictated loan size then nobles should also have seen their loans grow. Although land appreciation certainly increased the loan a borrower could obtain using any given piece of real estate, the size of parcels was irrelevant for most loans. Frequently, borrowers used many different parcels of land as collateral, or only part of a field. Many contracts specified how much of the acreage of any given piece of land was to be used as collateral, suggesting that some fields were used to support many loans. This hypothesis is confirmed by land-sale acts, where not

22

infrequently the seller used the proceeds of the sale to reimburse a number of
different loans, that he had accumulated on the field he was selling.[34]

An alternative cause of the rapid rise of the size of loans given
out to the entrepreneurial classes may have been economic development. In the
early eighteenth century, the high degree of economic variability forced
lenders to diversify their loan portfolios as much as possible.[35] Thus they
lent only small sums to risky lenders, and they distributed their loans across
many borrowers. As economic variability decreased, the need to diversify fell
and lenders were more willing to increase the size of loans they made to any
one individual. Tables 13 and 14 give mean and median loan size by lender
groups.

[Table 13 about here]

[Table 14 about here]

7) Conclusion

My research on credit markets has just begun. The small size of
the data set prevents a thorough investigation of the development of the
credit market over time. The absence of precise collateral data makes looking
at the market's role in economic development difficult. Nonetheless, the
analysis shows both the limits of small markets and the ability of this credit
market to respond to increased economic activity. On the one hand because the
market was so unregulated it was primarily a market where the wealthy lent to
the wealthy. On the other hand, as the economy developed notaries seem to
have been able to collect enough information to allow for dramatic increases
in the participation of entrepreneurial groups.

In this market if there were credit networks, they were neither
based on occupation or family. Indeed the credit flows cut across status and

23

occupational lines. And over time borrowers were less and less likely to borrow with an occupational group or even within their social class. This suggests that the role of notaries in L'Isle sur Sorgues may have been changing over time from recorder to intermediary.

The paper is the beginning of larger research project that should extend beyond both 1650 and 1788 in time, and beyond L'Isle sur Sorgues in scope. I intend to investigate the impact of the French Revolution on credit markets and how banks and other credit institutions came to replace bilateral agreements. It will also be important to gain an understanding of how these markets operated in the sixteenth and seventeenth centuries when transaction costs were even higher than in the eighteenth. Finally it would be very valuable to see how these markets operated in a variety of French regions that experienced different paths to development.

Bibliography

Allen, R., "The Capital Intensive Farmer and the English Agricultural Revolution: A Reassessment," U.B.C. Discussion paper, 1987.

Baehrel, R., Une Croissance: La Basse Provence Rurale. 1660-1789. Paris, 1962.

Blaugh, "The Productivity of Capital in the Lancashire Cotton Industry During the Nineteenth Century." E.H.R. ser. II, Vol 13, 1981, pp 358-81.

Caron, F., An Economic History of Modern France. New-York, 1979.

Carriere, C. et Al., Banque et capitalisme commercial: La lettre de change au XVIII^{eme}siecle. Marseille, 1974.

Clark, G., "The Cost of Capital and Medieval Agricultural Technique." E.E.H. 25, 1988, pp. 265-294.

Courdurié, M., La Dette des collectivités publiques à Marseille au XVIIIeme siecle. Marseille, 1974.

Davis, L., "The Investment Market, 1879-1914: The Evolution of a National Market," J.E.H. vol 25, Sept. 1965, pp 355-93.

Davis, L. and R. Gallman, "Capital Formation in the United States during the Nineteenth Century," In P. Mathias and M.M. Postan The Cambridge Economic History of Europe. vol 7. part 2, Cambridge, 1978.

Dion, R. Histoire de la Vigne et du Vin en France. Paris, 1959.

Desert, G., Argent. Pouvoir et Societé au Grand Siecle. Paris, 1984.

Gatrell, V.A., "Labor, Power and the size of Firms in the Lancashire Cotton Industry in the Second Quarter of the Nineteenth Century." E.H.R. ser. II, vol. 30, 1977 pp 95-129.

Greif, A., "Non-Market Economic Institutions in Medieval Trade: Evidence from the Geniza Documents. J.E.H. vol. 49, Dec. 1989, pp 857-82.

Guigue, J., "la Propriete Rurale a L'Isle sur Sorgues en 1787 et 1937" in Memoires de l' Académie de Vaucluse. 1956, pp 159-78.

Homer, S., A History of Interest Rates. New Brunswick, 1977.

Lamoreaux, N., "Banks, Kinship, and Economic Development: The New England

Case." <u>J.E.H.</u> vol 46, Sept. 86 pp. 647-67.

Neal, L., "The Integration and Efficiency of the London and Amsterdam Stock Markets in the Eighteenth Century. <u>J.E.H.</u>. vol 47, March 1987, pp. 97-115.

Nye, J., "Firm Size and Economic Backwardness: A New Look at the French Industrialization Debate." <u>J.E.H.</u> vol 47, Sept 1987 pp. 649-69.

Moulinas, R., <u>Les Juifs du Pape en France</u>. Toulouse, 1980.

Poisson, J-P., <u>Notaires Et Société</u>. Paris, 1985.

Rosenthal, J-L., "The Fruits of Revolution, Property Rights, Litigation and French Agriculture, 1700-1860." Unpublished Ph.D, Dissertation. Caltech, 1988.

Rothenberg, W., " The Emergence of a Capital Market in Rural Massachussetts, 1730-1838. <u>J.E.H.</u> vol. 45, Dec. 1985, pp. 781-808.

Servais, P., <u>La Rente constituée dans le Ban de Herve au XVIII^esiecle</u>. Brussels, 1982.

Shnapper, B., <u>Les Rentes au XVI^{eme}siecle, histoire d'un instrument de credit</u>. Paris, 1957.

Shubert, E., "Innovations, Debts, and Bubbles: International Integration of Financial Markets in Western Europe, 1688-1720. <u>J.E.H.</u> vol. 48, June 1988. pp 299-306.

Sokoloff, K., "Was the Transition From the Artisanal shop to the Non-mechanized Factory Associated with Gains in Efficiency?" <u>E.E.H.</u> vol 21, October, 1984 pp 813-50.

Vovele, M., <u>De La Cave Au Grenier.</u> Quebec, 1980.

Weiller, K. and P. Mirowski, "Rates of Interest in 18th Century England." <u>E.E.H.</u> vol. 27, 1990, pp 1-28.

Weir, D., "Tontines, Public Finance, and Revolution in France and England, 1688-1789. <u>J.E.H.</u> vol. 49, March 1989, pp. 95-124

Weir, D. and F. Velde., "The Financial Market and Government Debt in France, 1750-1793". Paper Presented at the Second World Congress of Cliometrics, Santander 1989.

White, E., "Was There a Solution to the Ancien Regime's Financial Dilemma?" <u>J.E.H.</u> vol. 49, Sept. 1989, pp 545-568.

Notes

[1] See for instance Weir (1989), Weir and Velde (1989), and White (1989) for France. Shubert (1988) and Neal (1987) offer a European perspective.

[2] One important exception is Clark (1988). Clark's interest lies in the fall of interest rates from the medieval to the modern period. Thus he pays little attention to the question of interest rate movement within any period. For the United States see Davis (1964), Davis and Gallman (1978), Lamoreaux (1986), and Rothenberg (1985).

[3] See Sokoloff (1984) for the United States. The data are unfortunately scarcer for Europe. In the case of Britain little is available save for the textile industry--which is a leading sector and one of the most susceptible to economies of scale. In France the smallness of firms seems to have associated with specialization in crafts and artisanal production. As late as 1906 fully 48% of French non-agricultural labor worked in firms with less ten workers; 71% of all firms employed only one worker. See Nye (1987) and Caron (1974, chap. 8). The data available for earlier periods give only average firm size.

[4] Blaugh (1961) suggests that firm employment averaged 142 to 200 in the 1830s and 150 to 270 in the 1860s. Gatrell (1977) provides greater detail for the 1840s when fully 40% of the firms employed fewer than 50 workers. Note that the employment statistics come from after, rather than during the development of the British textile industry. By then firms were well established and raising capital must have been comparatively easy.

27

[5]Of course, firms could grow through retained earnings in the absence of exterior capital. Yet the decision to grow on retained earnings will only be taken if the terms of the credit market are sufficiently unfavorable. Rather than have all their assets locked into their firm, entrepreneurs will diversify their wealth into other assets such as land or possibly government debt. Thus the requirement that capital grow through retained earnings would slow the pace of economic development relative to a market allocation of capital.

[6]See Greif (1989) for example. Reputational arrangements are inherently second best and they may involve transactions costs that are related to the number of participants. Within these constrains, reputational arrangement may solve problems related to information asymmetries.

[7]Desert, (1984, chap. 15), is an illuminating investigation of the relationship between financiers and elites. See also Courdurié (1974) for defaults of public institutions in Marseille.

[8]See Weir (1989, pp 95-97) and Weir and Velde (1989).

[9] Most important in changing assessments of risk were the fortunes of war and the cost of conflict. In periods of peace the crown could borrow without difficulty. In period of war, and especially if the war was long the crown's incentive to default increased.

[10] See Poisson, (1985, pp. 283-96).

[11]*Rentes* were perpetual debt obligations. Borrowers could repay at will, but lenders could not call in their loans. The debts could be inherited and sold. A prevalent clause of the contracts forbids the borrowers from selling his debt with out the authorization of the lender.

[12]One could assume that short loans were used for long term investment because they were rolled over easily. Yet in my sample of *obligations*, the vast majority of acts concerned credit for the purchase of very specific goods and the only profession that may have used obligation as working capital are the livestock traders and perhaps merchants. Another problem is that these entrepreneurs appears as frequently as lenders as they do as borrowers. See Poisson (1985, p. 339). See also note 18, below.

[13]The debate on the morality of interest payments seems to have been intense in the seventeenth and eighteenth centuries. It was revived as debate modern scholars. Some argued that interest was foreign to the pre-industrial economy. The data, however, are remarkably consistent in refuting that position. Discounting (charging interest) was the rule in commerce, and in those areas where it was legal interest rates are explicitly mentioned. Thus the absence of interest rates in obligation contracts is only testimony of the general ability of individuals to evade the law. See Carriere et al. (1976) pp.21-48, and Courdurié (1974) pp. 35-77.

[14]The interest cap was 5% from 1765 to March 1720; then it changed to 2% until June 1724, when it rose to 3.3%, it rose again in June 1725, to 5%. The Crown lowered the interest cap to 4% in 1766 and returned for the rest of the Old Regime to 5% in February of 1770. See Courdurié, (1974) p. 64.

[15]During the period under study the area belonged to the Pope and was technically independent from France even though it was completely surrounded by French provinces (Languedoc, Provence and Dauphiné). This Papal enclave had very similar institutions to those of France regarding credit markets. The large players in the market had dual residences in France (in the case of nobles) or very significant economic interests on both sides of the border (in the case of religious institutions), which was for all intents and purposes an open border. All the qualitative evidence I have examined suggest that papal ownership of L'Isle sur Sorgues did not differentiate its credit market from those of nearby French towns. For further details see Moulinas (1981, pp. 315-358), and Vovelle (1980).

[16]Less than 5,000 inhabitants at the time of the French revolution, about 30,000 today. The down served as the trading center for an area about eight kilometers to each side. The reason for choosing a small town has to with the collection problem. Notaries bound all their acts chronologically, in order to recover loans contracts one must wade through a large number of other, irrelevant contracts, such as marriage contracts, wills and sales of church benches.

[17]See Moulinas, (1980, pp. 271-314), BM Cecano ms 2433-2435. For an argument that agriculture was also growing during the eighteenth century see Baehrel (1962, pp 211-229).

[18]Lenders could have their debt reaffirmed every nine years or whenever inheritance, or any other reason led to a change in the identity of the borrower or of the lender. In fact the primary cause of reaffirmation seems to have been inter-generational transfers.

30

[19] In L'Isle sur Sorgues, in 1770 obligations represented 44% of the market in new debt issued in value but more than 75% of the contracts. Many obligations noted the purpose of the loan, these concerned primarily livestock--a capital good in agriculture--or cloth and other merchandise. Thus a good deal of the obligations were in fact credit sales and unspecified loans were not a large share of the total, except when Jews were involved. Indeed Jews were allowed to lend money at interest for short periods and a good deal of their business consisted of loans for unspecified purposes.

[20] Guigue, (1956, pp 162-83).

[21] Urban rates were not computed because the population of that group is highly diverse.

[22] British interest rates are from Homer (1977) pp. 156-157. Weiller and Mirowski (1990) have similar rates. For L'Isle sur Sorgues, the computed interest rates rely on at least four contracts, and after 1700 on at least 20. exactly which professions are included in the entrepreneurial groups has little effect on the reported interest rate. Almost all the elite borrowers were noble. The weighted average of the Urban group falls in between the rate paid by elites and that paid by entrepreneurs.

[23] One noble borrowed 23,000 *livres* in 1788 for his sister's dowry. This noble's borrowing amounted to 8.700 *livres* in L'Isle sur Sorgues or nearly 20% or all new loans in that year.

[24] perpetual debt may have been easier to monitor, especially if the borrowers were quite wealthy.

Vovelle (1980) shows that in Southeastern France small urban centers were the stronghold of elite property and that Southeastern France had far less religious property than other regions in France. See also Guigue (1956).

31

[25] Note this should not lead to the conclusion that 19% of the loans were unsecured. I only coded as mortgages loans where I read a specific collateral mention, any error on the scribe's part will lead to a down bias in the percentage of loans that were mortgages. More importantly, it could well be that these unsecured loans were made between individuals who knew each other very well. If these were reputational loans then they were not a very significant part of the market, especially for entrepreneurs.

[26] The problem of collateral was heightened by the fact that these were perpetual debt. Because the debt could last forever it had to be secured by a non-depreciating asset, only real-estate does not depreciate rapidly. The question remains as to what prevented these borrowers and lenders from making medium term contracts through notaries.

[27] the borrowers are public institutions, which we expect to have regional reputations and which could not easily default on their loans. Foreign lenders frequently seem to have had a prior acquaintance with the borrower

[28] Clearly greater movements of information should make it easier for lenders to catch defaulters. Yet under the Old-Regime judicial system is that was very unlikely that lenders could catch up with defaulters and enforce debt contracts if defaulters moved to another jurisdiction. See Moulinas (1981, pp 346-50).

[29] More accurately for each decade the table displays both the highest interest rate paid among the loans in the bottom 5% tail of the interest rate distribution, and the lowest interest rate paid among the loans in the top 5% tail of the interest rate distribution.

[30]A thorough test of this hypothesis requires information both on size the loan and the collateral offered--both of which can be collected. For this short study I did not collect precise estimates of the value of collateral.

[31]Over the entire eighteenth century inflation appears to have been less than 1% per year cf Table 12.

[32]g_2 is estimated as significant and negative for all periods except 1760-1788, and for all occupations except crafts and agriculture.

[33]as Table 10 suggest most of the decline in the size of elite loans comes from the decline in the size of loans received by nobles.

[34]Note the reimbursement of mortgages was required by law but difficult to enforce unless one watched the land market attentively.

[35]Significant shocks to the system seem to have occurred in the early eighteenth century. Most importantly for this agrarian economy the weather was dismal between 1700 and 1720 to the extent that all the major rivers were frozen solid. There was a general improvement in climatic conditions after 1717-18. See Baehrel (1962)

Table 1:

Interest Rates Decennial Averages

Decade	Rentes L'Isle/Sorgues Entrep.	Rentes L'Isle/Sorgues Elites	Rentes Herve All	Bonds British Gov.	Bonds French Gov.
1650-59	5.33	4.89	.	.	.
1660-69	5.70	5.00	.	.	.
1670-79	5.03	4.98	.	.	.
1680-89	4.97	4.13	.	.	.
1690-99	5.06	5.09	.	.	.
1700-09	4.90	4.56	5.32	.	.
1710-19	4.83	4.26	5.10	6.08	.
1720-29	4.66	3.50	4.89	3.86	.
1730-39	4.74	4.13	4.71	3.06	.
1740-49	4.96	4.97	4.49	3.22	.
1750-59	5.50	4.58	4.21	3.13	5.14
1760-69	5.09	4.87	4.21	3.58	6.46
1770-79	4.97	4.99	4.32	3.75	7.18
1780-88	5.06	5.00	4.14	4.64	5.89

Sources: The interest rate for L'Isle sur Sorgues are decenial averages of the interest rates on *rentes* weighted by quantity. The data for Herve are from Paul Servais, La Rente Constitue dans le Ban de Herve au XVIIIe Siecle. (Brussels, 1982). The rate for Herve is also a weighted average by quantity. The French bond rates are from David Weir and Francois Velde, "The Financial Market and Government Debt in France, 1750-1893." (Paper presented at the Second World Congress of the Cliometric Society, Santander, 1989). The British bond rate comes from Sidney Homer, A History of Interest Rates. (New Brusnwick, 1977).

Note: All rates are given in percent per year.

Lenders and Borrowers at the Aggregate

Borrower -- Lender		Urban	Elites		Entrepreneurs				
			Church	Nobles	Mer-chants	Crafts		Agriculture	
						Artisan	Textile	Menager	Low Ag.
Urban	N	103	15	22	16	33	16	34	25
	V	30900	8175	23980	7504	8283	5744	10540	6700
Church	N	66	19	69	15	28	15	71	41
	V	30822	14212	104466	10395	12152	5040	23643	8651
Nobles	N	79	25	125	26	42	17	63	53
	V	51666	39475	278250	10712	17766	8874	26964	10706
Mer-chants	N	14	1	6	8	11	5	10	2
	V	4998	2400	1830	2800	6523	2640	3180	300
Artisan	N	11	1	4	3	8	4	8	6
	V	2838	150	4748	1749	1992	1648	2696	1518
Textile	N	24	6	17	3	5	4	6	1
	V	19272	5496	20026	870	1350	1032	1722	300
Menager	N	18	3	6	3	5	10	18	8
	V	6786	2730	1722	234	1990	850	4734	800
Low-Ag	N	1	0	0	0	1	0	0	3
	V	900	0	0	0	300	0	0	720

Sources: See text.

Note: N is the number of contracts and V is the value in *livres*. Both the number of contracts and the value of loans were calculated on the entire sample of 1336 loans.

Table 3:

Percent of Loans that Were Mortgages

Borrower % Mortgage	Urban	Church	Nobles	Merchant	Artisan	Textile	Menager	Low-ag.
Mortgage	84.3	50.0	66.7	84.2	81.8	90.0	86.0	91.7

Source: See text.

Note: The entries are the percentages of loans that were collateralized in the 1720, 1750 and 1788 samples. One of the sample years, 1770, was omitted because I did not collect any collateral data for that year.

Table 4:

5% Tails of the Interest Rate Distribution

Decade	Low	High
1680-89	4.0	7.0
1690-99	3.94	6.22
1700-09	3.66	6.0
1710-19	4.0	6.16
1720-29	3.50	6.0
1730-39	4.0	6.04
1740-49	4.0	6.
1750-59	4.0	6.85
1760-69	4.0	6.
1770-79	4.5	6.
1780-88	5.	6.

Source: See text.

Note: All figures in percent per year

Table 5: Reduced Form Estimates

for A Supply and Demand Model of the Credit Market

1650-1788

Dependent Variable: Interest   Ln(Quantity)

Independent Variable	Estimated Coefficient	t Statistic	Estimated Coefficient	t- Statistic
Constant	8.039	(12.35)*	3.587	(4.07)*
time	-0.027	(-4.22)*	0.007	(0.84)
$(time)^2$	0.006	(4.34)*	0.0002	(0.09)
Own1	-0.325	(-4.15)*	0.020	(-0.19)
Own2	0.175	(1.64)+	0.143	(1.04)
Borrowers				
Public	-0.563	(-4.37)*	1.265	(7.26)*
Noble	-0.516	(-6.68)*	1.256	(12.07)*
Church	-0.480	(-3.44)*	0.474	(2.51)*
Merchant	-0.338	(-3.74)*	0.209	(1.71)+
Liberal prof.	-0.258	(-2.55)*	0.417	(3.04)*
Urban	-0.224	(-2.91)*	0.228	(2.19)+
Crafts	-0.114	(-2.21)+	-0.024	(-0.28)
Agriculture	-0.043	(-0.76)	-0.197	(-2.55)*
Lenders				
Noble	-0.372	(-4.64)*	0.612	(5.65)*
Church	-0.042	(-0.48)	0.379	(3.24)*
Merchant	-0.340	(-3.05)*	0.363	(2.41)*
Liberal prof	-0.266	(-2.44)*	0.284	(1.92)+
Urban	-0.246	(-3.07)*	0.415	(4.08)*
Crafts	0.020	(0.26)	0.107	(2.87)+
Agriculture	-0.054	(-0.56)	-0.022	(-0.16)

N	1257		N	1257
R^2	0.127		R^2	0.331
$\overline{R}^2$	0.113		$\overline{R}^2$	0.320
S.S.R.	529		S.S.R.	973
S.E.	0.655		S.E.	0.887
Mean of Interest	5.057		Mean of ln(Quantity)	5.78

Source: See text.

Note: * denotes significant at the 1% level; + denotes significant at the 5% level.

Table 6:

Just Identified Regressions

| | 1650-1699 | | 1700-1730 | | 1731-1760 | | 1761-1788 | |
	Interest	Lnq	Interest	Lnq	Interest	Lnq	Interest	Lnq
Constant	4.99 (56)	5.70 (43)	4.70 (80)	6.07 (83)	5.08 (102)	5.98 (85)	5.03 (156)	6.43 (83)
Borrower Occupation	0.29 (2)	-0.78 (-4)	0.27 (3)	-0.69 (-6)	0.13 (1.9)	-0.42 (-4)	-0.08 (1.9)	-0.64 (-6)
Lender Occupation	-0.07 (-0.2)	-0.14 (-0.4)	0.30 (2)	-0.56 (-4)	0.27 (3)	-0.057 (-0.5)	-0.06 (1.14)	-0.26 (-1.9)

Source: See text.

Note: t-Statistics are in parentheses. The occupation variables are coded 1 if the borrower (lender) is an entrepreneur and zero otherwise.

Table 7:

Loans Received by Occupation

| | | Elites | | Entrepreneurs | | | | |
	Urban	Church	Noble	Merchant	Artisan	Textile	*Menager*	Low-Ag
1600-1699	10.7	2.5	75.9	2.1	2.0	0.9	4.2	1.3
1700-1730	7.0	7.2	65.9	3.3	3.4	1.14	6.6	3.8
1731-1760	23.3	11.4	24.1	4.2	10.2	4.9	10.1	3.9
1761-1788	25.2	9.8	35.4	4.5	5.5	4.1	11.0	3.1

Sources: See text.

Note: Figures are in percent of total value by period.

Table 8: Loans Offered by Occupation

		Elites		Entrepreneurs				
	Urban	Church	Noble	Merchant	Artisan	Textile	*Menager*	Low-Ag
1600-1699	0.9	33.4	63.2	1.2	0.0	0.5	0.7	0.0
1700-1730	3.6	22.1	62.6	6.3	1.0	1.9	2.1	0.4
1731-1760	25.1	15.9	31.9	2.6	4.2	16.3	3.4	0.2
1761-1788	15.7	23.6	39.8	4.3	2.1	11.5	2.7	0.5

Sources: See text

Note: Figures are in percent of total value by period.

Table 9:

Loans Made within Groups

	Elites				Entrepreneurs			
	Group		Occupation		Group		Occupation	
	Contracts	Value	Contracts	Value	Contracts	Value	Contracts	Value
1650-1699	50	67	47.5	66.0	18.5	19.3	7.4	6.2
1700-1730	43	69	39.4	67.0	22.3	17.0	5.0	6.5
1731-1760	39	41	29.1	36.0	26.0	21.4	7.0	5.6
1761-1788	51	56	37.1	36.2	24.0	20.7	2.6	1.3

Source: See text.

Note: Figures for groups are the percent of loans (by number of contract or value) received by a group that were made by that group (i.e from elite to elite or entrepreneurs to entrepreneurs). For occupation the figures are the percent of loans received by entrepreneurs from entrepreneurs of the same occupation (e.g baker to baker).

Table 10:

Mean Loan Received by Occupation

		Elites		Entrepreneurs				
	Urban	Church	Noble	Merchant	Artisan	Textile	*Menager*	Low-Ag
	347	718	2091	238	247	181	200	105
1700-1730	289	984	2185	408	275	265	288	220
1731-1760	435	1076	1038	470	411	442	394	227
1761-1788	726	1163	1689	746	475	485	473	241

Sources: See text.

Note: Figures are in *livres* by period.

Table 11: Median Loan Received by Occupation

		Elites		Entrepreneurs				
	Urban	Church	Noble	Merchant	Artisan	Textile	*Menager*	Low-Ag
1600-1699	180	500	1500	240	225	150	150	75
1700-1730	180	500	750	300	176	180	180	150
1731-1760	300	1000	600	300	300	300	300	150
1761-1788	360	1000	1200	550	300	300	200	250

Sources: See text.

Note: Figures are in percent of total value by period.

Table 12:

Sample Means, Medians and Price Indexes

	Loans		Land		Labor		Wheat
	Mean	Median	Dry	Irrigated	Skilled	Unskilled	
1600-1699	105	172	N.D.	N.D.	87	87	64
1700-1730	100	100	100	100	100	100	100
1731-1760	70	100	173	106	107	113	130
1761-1788	104.	100	215	154	135	133	175

Sources: For loans see text. The prices for land and labor come from J.-L. Rosenthal, The Fruits of Revolution. (Unpublished PhD dissertation, Caltech 1988). Wheat price data are from Rene Baehrel, Une Croissance: La Basse Provence Rurale (Paris, 1962, p 554). Baehrel also has wine prices and meat prices for towns much further away. All commodity prices display the same pattern.

Note: N.D. signifies no data. Land prices are for Cavaillon, a town 7 miles away and similar to L'Isle sur Sorgues in many respects. Wage data are for unfed labor, for the town of Avignon 15 miles away. All figures are given with the period 1700-1730=100.

Table 13:

Mean Loan Offered by Occupation

		Elites		Entrepreneurs				
	Urban	Church	Noble	Merchant	Artisan	Textile	*Menager*	Low-Ag
1600-1699	113	957	896	189	0	143	126	0
1700-1730	279	496	1291	1010	314	244	207	600
1731-1760	444	534	673	520	498	461	519	210
1761-1788	428	800	1218	764	350	1100	339	300

Sources: See text.

Note: Figures are in *livres* by period.

Table 14:

Median Loan Offered by Occupation

		Elites		Entrepreneurs				
	Urban	Church	Noble	Merchant	Artisan	Textile	*Menager*	Low-Ag
1600-1699	100	300	191	100	0	150	150	0
1700-1730	150	300	300	200	150	180	150	300
1731-1760	300	400	300	300	300	300	300	120
1761-1788	300	400	700	600	300	600	200	300

Sources: See text.

Note: Figures are in *livres* by period.