ISSN 0964-9328 - CSME WORKING PAPERS
Details of papers in this series may be requested from the
Publications Secretary, CSME

WORKING PAPER No. 51
October 1997

THE INCIDENCE OF LOAN COLLATERALISATION IN SMALL BUSINESS LENDING CONTRACTS

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The Incidence of Loan Collateralisation in Small Business Lending Contracts:
Evidence from the UK.

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Warwick Business School, Coventry CV4 7AL, UK.

The results indicate that age of firm and closeness of the small firm - bank
relationship tend to reduce the incidence of loan collateralisation, which implies that
relationship banking can yield tangible benefits to small businesses.

I. Introduction

The aim of this paper is to provide the UK counterpart to evidence presented by Leeth
and Scott (1989) for the US, which focused on the incidence of loan collateralisation
in the small business community. This is particularly important in the light of US
findings that nearly 70% of all commercial and industrial loans are made on a secured
basis (Berger and Udell, 1990) and similar evidence for the UK (Binks, Ennew, Reed,

On loan collateralisation, Leeth and Scott put forward three explanations as to why
companies might borrow on a secured basis; that loan securitisation lowers net
borrowing costs by reducing agency costs; that it gives the lender priority over the
assets of the firm in the event of default, and; collateral acts to reduce information
asymmetries between the firm and bank. For potential borrowers however, the
requirement on the banks part for collateral might have severe implications vis a vis
their ability to raise debt finance on these terms. This is most acute for potential
entrepreneurs with little wealth or collateralisable assets, but may also be an important
concern for existing businesses looking to expand. In fact when asked the question, in
our survey, as to your most significant concern with existing bank practices, 22% of
small business owners indicated that loan security topped their list of concerns. A
further 13.5% cited availability of credit which is closely linked to this issue.
With these issues in mind, it is our intention in this paper to explore in detail the effects of a wide set of potential explanatory variables associated with the characteristics of the loan itself, firm specific characteristics and the nature of information flows in the banking relationship in terms of their effects on the incidence of loan collateralisation.

The empirical evidence was generated from a survey of UK small firms in 1991 which dealt with small firm - bank relationships in a wider sense than simply the nature of loan contracting.

II. Sample, Variables and Model

To consider the incidence of loan collateralisation on small firm loans we use evidence from a random sample of small businesses collected from an Association of British Chambers of Commerce survey. In total data on 272 firms is analysed (see Middleton et al, 1992, for further details). The characteristics of the sample are as follows;

*Employment* - the sample mean is 29 employees, and ranges from 1 to 197. *Sectoral Distribution* - some 29.8% of firms are in manufacturing, 7.8% in construction and the remaining 62.4% spread across the service sectors. *Age* - the mean age of firms is 25 years, although the range is from start-ups to very old, established firms. *Debt Finance* - in 1991, 42.7% of firms sought a bank loan. A further 31.8% did so in 1990. Aside from the tiny proportion that had never sought a bank loan, 1.2%, the remainder had done so prior to 1990. For the most part firms sought either a new overdraft facility (revolving line of credit in the US), 22.4%, or an extension to an existing facility, 46.6%. The remaining 30.9% had sought fixed term loans. In line with the high incidence of overdraft facilities, the majority of lines of credit were of no fixed payback, 58.3%. Of the rest, 15.5% were for less than five years, 19.0% for 5-10 years, and 7.1% for 11-20 years duration.
Security - On the issue of security explicitly, in 21% of cases no security was required, in 40.3% of cases business security was required, in 16.7% personal security required and in a further 22% of cases a combination of business and personal security required. For those firms that did provide security only 6% had a ratio (defined as the value of security expressed as a percentage of the loan value) of less than 1. Typically the ration was between 2:1 and 3:1. Thus for the most part these loans were fully secured.

The empirical model used to examine the determinants of loan collateralisation can be expressed thus;

\[ LC = \alpha + \Sigma R + \Sigma L + e \]

where, \( LC \) is defined as 1 if the loan was collateralised and 0 if otherwise: \( \Sigma R \) is a vector of firm specific risk characteristics, and \( \Sigma L \) is a vector of loan conditions and bank-firm relationship variables. The variables are summarised in the Appendix. *A priori*, we assume that risk is positively associated with loan collateralisation. However, even this rather intuitive assumption has been challenged on theoretical grounds (see for example, Chan and Thakor, 1987).

In line with Berger and Udell, we expect firm size (EMPLOY) to be negatively correlated with risk and thus loan collateralisation, as failure probability declines with size. We also anticipate that our service sector dummy (SECTOR) might be negative, given the typically lower asset base of such firms compared to construction and manufacturing firms. Other important firm specific variables include age (AGE) and legal status (LEGAL). On age, we anticipate that older firms are less likely to collateralise a given loan (Leeth and Scott, 1989) due to an increased probability of survival and hence reduced level of risk. On legal status, Storey (1994) argues that limited liability yields a small firm credibility which from the banks point of view can offer benefits if it reflects the seriousness of the business.
Other loan specific factors which we might expect to influence loan collateralisation are the size of the lending bank (BANK), denoted 1 if bank is one of the big-4 UK clearing, whether the loan decision was made at a local branch or regional head office (DEC), the duration of the loan (DUR) and loan size captured as a series of dummies (base ≤£8,000). Further we also consider the purpose of the loan captured as a dummy (FA) if the loan was used to finance investment in fixed assets, and a dummy (INFO) to capture the nature and the closeness of the firm and bank relationship. This was coded 1 if the firm’s owner perceives the bank to have good or very good knowledge and understanding of the firm and its owner. This is intended to capture relational effects as hypothesised by Petersen and Rajan (1994). Thus we anticipate that a closer relationship between bank and borrower will, holding all other factors constant, result in a lower incidence of loan collateralisation. In order to allow for the effects of macroeconomic circumstance (Blinder, 1987) we incorporate time-dummies to allow for shifts in the incidence of loan collateralisation generated through changes in the levels of banks desired lending. Here we anticipate that as economies enter recession, as indeed the UK economy did in 1990, then firms and consumers face credit squeezes which can only be alleviated by collateralising loans.

Table 1. Descriptive Statistics

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>S.D.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>25.49</td>
<td>34.10</td>
<td>1</td>
<td>224</td>
</tr>
<tr>
<td>Employ</td>
<td>29.30</td>
<td>35.78</td>
<td>1</td>
<td>197</td>
</tr>
</tbody>
</table>

Number of cases = 272

III. Empirical Results

In line with Leeth and Scott (1989) we find clear evidence that age of firm exerts a significant and negative effect upon the incidence of loan collateralisation. Our findings are also consistent with their US results on loan size and loan duration, both of which exerted positive effects on the probability of loan collateralisation. Further
our results are comparable in that we also find no evidence that firm size *per se*, or sector have significant effects.

Table 2  Regression Results  Dependent Variable = Loan Collateralised

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>S.E.</th>
<th>Wald Stat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-0.019</td>
<td>0.074</td>
<td>6.706</td>
</tr>
<tr>
<td>Bank</td>
<td>-0.421</td>
<td>0.403</td>
<td>1.092</td>
</tr>
<tr>
<td>Dec</td>
<td>1.062</td>
<td>0.588</td>
<td>3.250</td>
</tr>
<tr>
<td>Dur</td>
<td>0.635</td>
<td>0.353</td>
<td>3.222</td>
</tr>
<tr>
<td>FA</td>
<td>0.513</td>
<td>0.477</td>
<td>1.158</td>
</tr>
<tr>
<td>Legal</td>
<td>0.035</td>
<td>0.571</td>
<td>0.004</td>
</tr>
<tr>
<td>Sector</td>
<td>-0.686</td>
<td>0.531</td>
<td>1.669</td>
</tr>
<tr>
<td>Employ</td>
<td>0.013</td>
<td>0.012</td>
<td>1.186</td>
</tr>
<tr>
<td>Info</td>
<td>-1.218</td>
<td>0.686</td>
<td>3.157</td>
</tr>
<tr>
<td>LS1</td>
<td>1.073</td>
<td>0.973</td>
<td>1.216</td>
</tr>
<tr>
<td>LS2</td>
<td>0.727</td>
<td>0.839</td>
<td>0.750</td>
</tr>
<tr>
<td>LS3</td>
<td>1.679</td>
<td>0.810</td>
<td>4.293</td>
</tr>
<tr>
<td>LS4</td>
<td>3.912</td>
<td>1.380</td>
<td>8.047</td>
</tr>
<tr>
<td>LS5</td>
<td>1.397</td>
<td>0.906</td>
<td>2.376</td>
</tr>
<tr>
<td>T90</td>
<td>0.828</td>
<td>0.690</td>
<td>1.441</td>
</tr>
<tr>
<td>T91</td>
<td>1.678</td>
<td>0.654</td>
<td>6.581</td>
</tr>
<tr>
<td>Constant</td>
<td>-0.569</td>
<td>1.970</td>
<td>0.084</td>
</tr>
</tbody>
</table>

N=272
-2 Log Likelihood = 118.971
\( \chi^2 \) significance = .0007

We also find evidence which is consistent with banks becoming increasingly unwilling to make unsecured loans in periods of prolonged economic recession. This effect is captured by the insignificance of T90 our time dummy for 1990, and the largely significant, and positive, effect from out T91 dummy, which was in hindsight the nadir of the early 1990s recession.

Other significant effects were recorded on the level at which the banks final loan decision was made. Here we find that if the loan was made at a local branch bank level, there was an increased probability that the loan would be collateralised. This might be interpreted as evidence that less senior bank staff are more cautious about
making unsecured loans, in part due to the relative smallness of their total lending portfolios, but also as a bad loan (or series of bad loans) may seriously impair future promotion prospects.

Finally, we find that in cases where the firm's owner perceived that the bank had good information concerning the firm and its owner, the incidence of loan collateralisation was significantly reduced. This is consistent with the case put forward by Petersen and Rajan (1994) who go to great lengths to point out the positive benefits for small firms in developing long-term relationships with providers of finance.

IV. Conclusion

The intention of this paper was to build upon the US work of Leeth and Scott regarding the fundamental determinants of loan collateralisation. The key finding was that the closeness of the bank-firm relationship did influence the probability of loan collateralisation. This was found to be the case in addition to age of firm, the most widely used measure of risk and the banking relationship. In general, we find a remarkable degree of consistency with Leeth and Scott across the board.

In a similar vein, our results broadly support the argument that small businesses can help alleviate many of the problems they appear to be faced with in credit markets by developing the kind of long-term, mutually beneficial relationships proposed by Petersen and Rajan. Certainly the evidence tends to support the notion that some collateral constrained firms can help overcome problems with accessing bank finance by doing so.

REFERENCES


**APPENDIX: VARIABLES**

*Dependent variable*

**LC** If loan secured on assets=1, otherwise=0.

*Independent variables*

**ln(Age)** Log of firm age.

**Bank** If customer borrowed from big-4 bank=1, otherwise=0.

**Dec** If final loan decision was made at a local branch=1, otherwise=0.

**Dur** If loan was of fixed duration=1, otherwise=0.

**FA** If loan was for investment in fixed assets=1, otherwise=0.

**Legal** If firm had limited liability status=1, otherwise=0.

**Sector** If firm was in a service sector=1, otherwise=0.

**ln(Employ)** Log of employment size.

**Info** If firm owner perceived its bank to have good or very good information regarding the firm and its owner=1, otherwise=0.

**LS1-LS5** Dummy variables representing loan size band

(reference category=<£8,000).

**T90-T91** Dummy variables used to reflect the year in which the loan was issued.

(reference year=1989).