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Introduction

Literature pertaining to the "liability of newness" contends that newer firms face particular difficulties and a greater risk of failure. This article seeks to determine if "newness" is also a disadvantage in the acquisition of debt capital. Results indicate that newer firms were significantly less likely to have lines of credit and were also significantly more likely to have been turned down for their most recent loan. Even when we control for length of relationship with the primary financial services provider, personal guarantees, and collateral, younger firms were still more likely to be turned down for loans.

Small firms are an essential part of the United States economy. According to the U.S. Small Business Administration (SBA), there were 22.9 million small firms, defined as firms having 500 or fewer employees, in the United States in 2002 (Small Business by the Numbers, 2002). In fact, small firms represent 99 percent of all firms in this country. They provide approximately half of Gross Domestic Product as well as the majority of new jobs. Small firms are also an important source of innovation in the development of new products, services, and technologies.

Given the role played by small firms, it is in our interest to identify factors that contribute to their likely success. In keeping with that, studies of small firm survival and failure have repeatedly identified difficulties with financial management and an inability to secure adequate sources of capital as major contributors to dissolution (Gaskill et al., 1993), Lussier, 1996; Watson et al., 1998).

Many small firms are launched with inadequate financial resources. To compound this problem, small firms, unlike larger, publicly-held firms, are unable to raise capital in the public debt and equity markets (Ang, 1991). Alternatively, they are restricted to sources of capital that include the owner's savings, loans from family and friends, trade credit, and loans from banks and other financial service providers (Berger & Udell, 1998; Bitler et al., 2001). Even in the case of bank loans, however, small firms are more likely to be denied than larger, more established firms. As noted above, the inability to secure external sources of capital raises the risk of firm failure. On a slightly less dire note, inadequate capital may also restrict the firm's

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ability to grow, to hire employees, or to introduce new products and services thus impairing profitability and growth in the long term.

I. The "liability of newness"

Prior research has noted that young or "new" firms face particular difficulties and greater risk of failure. The term "liability of newness" was first introduced by Stinchcombe in 1965. According to Stinchcombe, new organizations are more likely to fail for because:

1) new organizations involve new roles that have to be learned;
2) new organizations do not yet have standard routines to solve problems;
3) new organizations rely on social relations with strangers; they do not have relationships of trust;
4) new organizations do not have stable ties with those who use their services.

A number of studies on firm failure have confirmed the principle of a liability of newness. Carroll (1983) conducted an exhaustive study using 52 different data sets to find that organizational death rates decline with firm age. Phillips and Kirchoff (1989) found that three out of five new firms fail within their first six years. In a study of over 5,000 Australian businesses, Watson and Everett (1996) found that a higher percentage of failed firms were younger businesses. Using data on U.S. firms, Nucci (1999) also found that business dissolution declined with age regardless of industry, size grouping, or region.

Freeman et al. (1983) noted that new organizations are more likely to fail because they depend upon the cooperation of strangers and have low levels of legitimacy. As time passes, organizational structures stabilize as do ties with external sources of support. Hannan and Freeman (1984) observed that new organizations have weak claims to sources of support. Thus they are highly vulnerable to environmental shocks (Hannan & Freeman, 1989) In contrast, older organizations have developed "dense webs of exchange".

Although the "liability of newness" theory has been around for some time now, to date no one has really examined its relationship to access to capital. Prior research on the liability of newness has centered primarily on its impact on organizational survival. In fact, however, the liability of newness has a lot in common with the problem in finance known as "asymmetric information". According to the liability of newness, new organizations lack "relationships of trust" with individuals and organizations. Similarly, asymmetric information refers to the incomplete flows of information between potential borrowers and lenders (Ang, 1992; Berger & Udell, 1998). This is a particularly pressing problem for small firms that do not have readily available audited financial statements. When faced with incomplete information, the typical response of lenders is to deny credit or to make it available only at higher rates of interest (Pettit & Singer, 1985; Stiglitz & Weiss, 1981; Weinberg, 1994).

This article will use data from the 1998 Survey of Small Business Finances (SSBF) to test the liability of newness theory within the context of access to debt capital for small, privately held firms located in the United States. It will seek to determine if newer firms do, in fact, experience greater difficulty in securing sources of debt capital. Further, it will examine whether or not banking relationships, personal guarantees, or collateral can partially overcome the liability of newness.

II. Description of the Data

Data for this study are drawn from the 1998 Survey of Small Business Finances (SSBF) conducted every five years by the Federal Reserve. The 1998 Survey is the most recent for

which data are publicly available and includes balance sheet and income statement data on 3,561 small firms (500 or fewer employees) in the United States. The Survey also includes information on financial products used by the firms as well as their financial service providers. The SSBF is the largest and most comprehensive data set of its type representing a national sample of firms stratified by geographic region, industry sector, gender, and race. Minority-owned firms are deliberately over-sampled to ensure adequate representation. In light of that, sample weights are provided to correct for over-sampling and to allow for population estimates. Those weights have been used in this analysis.

For purposes of this article, the SSBF has been divided into two groups of firms. "New" firms are defined as firms that are five years old or younger. "Mature" firms are firms older than five years. Table 1 and 2 provide summary statistics for these two groups of firms. Table 1 reveals that new firms were significantly smaller than mature firms in terms of total assets, total sales, and total number of employees. The mean level of assets for new firms was $248,735 compared to $479,069 for mature firms. Similarly, mean sales for new firms were $551,806 compared to $1,153,372 for mature firms. New firms had an average of 5.72 employees versus 9.69 employees for mature firms. These size distinctions are important, because lenders may view size as a measure of stability. Thus, they may be more willing to lend to larger firms. The year to year growth rate in sales for new firms was significantly higher than that of mature firms as one might expect (121.92% vs. 32.72%).

Table 1 also indicates that the owners of new firms were significantly younger than the owners of mature firms and had fewer years of experience. The average age for the owners of new firms was 44.96 years compared to 52.13 years for the owners of mature firms. New firm owners had an average of 10.72 years of experience versus 21.09 years of experience for the owners of mature firms. Experience is a measure of human capital which may contribute to a greater likelihood of firm survival and success. Given that, lenders may view owners with greater amounts of experience more favorably.

Table 2 reveals that 42.86 percent of new firms and 45.8 percent of mature firms were organized as corporations and limited liability entities. The educational levels of the two groups of firm owners were similar; over 50 percent of both had attended college. In terms of industry classifications, younger firms were significantly more likely to be in the transportation or retail industries, while mature firms were more likely to be in the fields of insurance, real estate, or construction and mining.

In terms of creditworthiness, a significantly higher percentage of new firms were rated as having "significant" or "high" risk by Dun & Bradstreet (38.10% vs. 25.37%). In spite of that, however, new firm owners were no more likely to have had judgments against them, personal delinquencies, or bankruptcies than mature firms. New firms were actually significantly less likely to have had a business delinquency than mature firms (11.00% vs. 14.42%), possibly because their businesses are so new.

Table 2 also provides data on small firms' use of alternative sources of short term credit, credit cards and trade credit. It reveals that a high percentage of both new and mature firms used credit cards as a source of credit for their businesses (66.84% and 68.51%). Similarly, a high percentage of both new and mature firms used trade credit (54.81% and 64.64%). New firms were significantly less likely to use trade credit, however, and they were significantly more likely to have been turned down for trade credit (7.18% vs. 4.67%). Like lenders, suppliers are in a position to gather "insider information" on the creditworthiness of small firms. Their unwillingness to extend trade credit may signal their concern regarding the firm's ability to pay (Coleman, 2003).

Table 3 provides data on the borrowing experience of new and mature firms. The SSBF tracks use of six different loan types; lines of credit, financial leases, commercial mortgages, equipment loans, vehicle loans, and other types of loans. Table 3 indicates that new firms were significantly less likely to have one of these types of loans than mature firms. Although 56.88 percent of mature firms had some type of loan (Haveloan), only 50.35 percent of new firms had a loan. One of the six types of loans tracked by the SSBF is a line of credit (LOC). Lines of credit are very flexible types of loans in that they are typically unsecured and can be used for a variety of business purposes. Table 3 indicates that new firms were significantly less likely to have lines of credit than mature firms (19.83% vs. 30.79%). In terms of recent loan experience, new firms were also at a disadvantage. Although a significantly higher percentage of new firms had applied for a loan within the previous three years (25.74% vs. 22.39%), a significantly lower percentage of new firms were approved for those loans (63.84% vs. 74.79%). Further, a significantly higher percentage of new firms didn't even bother applying, because they assumed they would be turned down (30.73% vs. 20.42%).

III. Multivariate Analysis

The univariate results presented in Table 3 suggest that new firms experience greater difficulties in securing debt capital than mature firms. The shortcoming of univariate analysis, however, is that it examines the effect of only one variable, i.e. "newness", on the dependent variable. Multivariate analysis corrects for this shortcoming by examining the simultaneous effect of several independent variables, including firm age, on a dependent variable. To further test the relationship between firm age and use of debt capital, a multivariate model was constructed using Haveloan as the dependent variable. In this instance, a logistic regression model was used since the dependent variable was dichotomous rather than continuous (Aldrich & Nelson, 1984; Cramer, 1991; Demaris, 1992). The model took the following form:

Model 1:

$$\text{Haveloan} = a + b_1\text{New} + b_2\text{Logsales} + b_3\text{Growth} + b_4\text{ROE} + b_5\text{Org} + b_6\text{Judge} + b_7\text{Delinqp} + b_8\text{Delinqb} + b_9\text{Bankrupt} + b_{10}\text{CredCard} + b_{11}\text{TradeCred} + b_{12}\text{DenyTrade} + e$$

As noted above, Haveloan is a dichotomous variable indicating whether or not the firm had one of the six types of loans tracked by the SSBF. The independent variables represent firm characteristics that might be expected to affect the firm's use of debt capital. Both dependent and independent variables are defined in Appendix A.

New is a dichotomous variable separating the sample into firms that are five years old or younger from those that are more than five years old. Prior research suggests that younger firms have a greater demand for external debt capital, but also that they are less likely to be able to secure it (Berger & Udell, 1998; Coleman & Cohn, 2000). Logsales is a measure of firm size. Past studies reveal that smaller firms are less likely to use external sources of debt, possibly because their financing requirements are relatively modest (Bitler et al., 2001; Cole & Wolken, 1995; Scherr et al., 1993). The logged form of the sales variable was used since Table 1 suggests that sales are highly skewed. Growth represents the year to year growth in sales. It stands to reason that rapidly growing firms would be in greater need of external capital. Similarly, those firms might be more attractive to lenders because of their growth potential.

Firm profitability is indicated by the continuous variable ROE or return of equity. One would anticipate that more profitable firms would be more attractive to lenders (Binks & Ennew, 1996). Simultaneously, however, profitable firms may be more likely to self finance with retained earnings as opposed to using external debt (Berger & Udell, 1998). Org is a dichotomous variable indicating whether or not the firm was organized as a corporation or some other type of limited liability entity. Firms that have limited liability protection may be willing to use more debt (Brigham, 1992; Osteryoung, Newman, & Davies, 1997).

Judge, Delinqp, Delinqb, and Bankrupt are all dichotomous variables indicating whether the firm or the firm owner has some history of credit difficulties. The variable Judge identifies those firm owners who have had judgments rendered against them within the previous three years. Delinqp and Delinqb identify firm owners or firms that have had personal or business delinquencies. Finally, Bankrupt identifies firm owners or firms that have experienced either personal or business bankruptcies within the previous seven years. Firms with a history of credit difficulties are obviously users of external debt. They may, however, be less attractive to lenders given their poor track record for payment (Coleman, 2002).

CredCard is a dichotomous variable indicating whether or not the firm used credit cards for business purposes. Similarly TradeCred indicates whether or not the firms used trade credit. Both credit cards and trade credit are important sources of financing for small firms (Bitler et al., 2001). It may be that firms substitute credit cards and trade credit for other forms of borrowing (Danielson & Scott, 2000; Petersen & Rajan, 1997). Alternatively, firms that use credit cards and trade credit may be more likely to borrow from other sources as well. The variable DenyTrade indicates whether or not the firm has been turned down for trade credit. As noted above, suppliers are in a position to gather "insider information" on customer firms. Thus, their unwillingness to extend credit may provide an important signal to potential lenders (Coleman, 2003).

The results of Model 1 are presented in Table 4 which reveals that larger firms and firms with a history of personal or business delinquencies were significantly more likely to have some type of loan. Larger firms may have a greater demand for external credit, and they may be more attractive to lenders. It also makes sense that firms with a history of credit difficulties are more likely to be users of external debt. Alternatively, however, firms with a history of bankruptcy were significantly less likely to have a loan. This suggests that lenders may view bankruptcies as a much more serious problem than delinquencies. Table 4 also reveals that firms that used credit cards or trade credit were significantly more likely to have some type of loan. This suggests that

external loans supplement rather than substitute for other types of short term debt. Thus, firm owners who are borrowers, use short term debt from a variety of sources. Finally, Table 4 indicates that there were no differences between firms classified as "new" and those classified as "mature" in terms of their overall use of loans.

A second model was developed using lines of credit (LOC) as the dependent variable together with the same independent variables used in Model 1. Since lines of credit are typically unsecured, they may not be as readily accessible to newer firms. The model took the following form:

Model 2:

$$LOC=a + b_1New + b_2Logsales + b_3Growth + b_4ROE + b_5Org + b_6Judge + b_7Delinqp + b_8Delinqb + b_9Bankrupt + b_{10}CredCard + b_{11}TradeCred + b_{12}DenyTrade + e$$

Results of this model are also provided in Table 4. In this model, firm age did have an impact. Table 4 indicates that new firms were significantly less likely to have lines of credit. Thus, in instances where specific collateral is not associated with a loan, newer firms appear to be at a disadvantage. As in the case of Model 1, larger firms were significantly more likely to have lines of credit than smaller firms. Less profitable firms were also significantly more likely to have lines of credit, possibly because they are not in a position to self finance with retained earnings. In terms of credit quality, firms that had a history of personal delinquency or bankruptcy were less likely to have lines of credit. These firms may be less attractive to lenders due to a greater perceived risk to repayment. Interestingly enough, firms with a history of business delinquencies were significantly more likely to have a line of credit. As noted above, firms that are borrowers are more likely to have delinquencies. Further, lenders may not be as concerned about delinquencies as they are about bankruptcies. As in the previous model, firms that used credit cards and trade credit as sources of financing were significantly more likely to have lines of credit.

The SSBF also includes information on each firm's borrowing experience with its most recent loan defined as loans applied for and received in the past three years. Additional logistic regression models were developed to determine if firm age had an impact on the likelihood of applying for or receiving a loan within the previous three years. These models took the following form:

Models 3, 4, and 5:

$$Mrlapp\ (or\ Mrlget\ or\ Noapply)=a + b_1New + b_2Logsales + b_3Growth + b_4ROE + b_5Org + b_6Judge + b_7Delinqp + b_8Delinqb + b_9Bankrupt + b_{10}CredCard + b_{11}TradeCred + b_{12}DenyTrade + e$$

Mrlapp is a dichotomous variable indicating whether or not the firm applied for a loan within the previous three years. Mrlget indicates whether or not firms that applied for loans were granted them. Finally, Noapply identifies firms that chose not to apply because they assumed they would be turned down. The results of these additional models are provided in Table 5.

Table 5 reveals that new firms were significantly more likely to have applied for a loan within the previous three years (Mrlapp), but they were also significantly more likely to be turned down for a loan (Mrlget). Further, new firms were significantly less likely to apply because they assumed they would be turned down (Noapply). Thus, as in the case of lines of credit, it appears that new firms were at a relative disadvantage in terms of recent loan applications.

As in the previous models, larger firms (Logsales) were significantly more likely to apply for loans. Alternatively, smaller firms were significantly more likely to say that they did not apply because they assumed they would be turned down. Table 5 reveals that firms organized as corporations (Org) and more profitable firms (ROE) were more likely to be approved for loans. As anticipated, firms with a history of credit difficulties were significantly more likely to have applied for loans and were significantly more likely to be turned down. Firms with a history of credit difficulties also indicated that they were significantly less likely to apply because they assumed they would be turned down.

Finally, firms that used credit cards for business purposes (CredCard) were significantly more likely to have applied for a loan, again suggesting that external loans supplement rather than substitute for other types of debt. Firms that had been denied trade credit (DenyTrade) were also more likely to have applied for a loan, but they were more likely to have been turned down. Similarly, firms that had been denied trade credit were significantly more likely to say that they did not apply because they assumed they would be turned down. This finding suggests that suppliers, like lenders, gather "insider information" on customer firms and that they use this information to make lending decisions. Thus, a firm that is denied trade credit is also likely to be turned down for a loan.

IV. Further Analysis

As noted above, asymmetric information refers to incomplete flows of information between a potential borrower and lender which may result in denial of credit. As in the case of the "liability of newness", asymmetric information is characterized by the lack of "relationships of trust". This is a particularly serious problem for younger firms. Several studies have been devoted to examining ways in which banks and borrowers can overcome the problem of incomplete information. One way for them to do so is to develop longer term relationships with lenders. This enables the lender to gather information concerning the firm over time and thus to establish a relationship of trust. Using data from the 1987 National Survey of Small Business Finances, Petersen and Rajan (1994) found that firms with longer banking relationships experienced greater availability of credit. Similarly, in a study of small firms, Ennew and Binks (1995) found that good banking relationships improved the quality and quantity of information flows. This, in turn, led to higher levels of trust and confidence.

A second way to overcome informational asymmetries and lack of trust is by pledging collateral and personal guarantees. A lender may feel a higher level of trust if the borrower stands to lose something in the event of non-payment. In a study of small firms, Leeth and Scott (1989) found that loans to newer businesses showed a higher probability of being secured than loans to older firms. Using data from several of the National Surveys of Small Business

Finances, Avery et al. (1998) also found that firm age was the main factor in explaining variations of collateral with younger firms being more likely to have secured loans.

Table 6 reveals that a very high percentage of small firms, both new and mature, provided personal guarantees or collateral for lines of credit or for their most recent loan. For lines of credit, 58.44 percent of new firms provided personal guarantees while 40.41 percent provided collateral. In comparison, 61.12 percent of mature firms provided personal guarantees and 45.04 percent provided collateral. A similar picture emerges for the most recent loan; 49.38 percent of new firms and 55.01 percent of mature firms provided personal guarantees while 53.94 percent of new firms and 58.69 percent of mature firms provided collateral. There were no significant differences between new firms and mature firms in the use of personal guarantees or collateral for either lines of credit or their most recent loan. Although lines of credit are typically unsecured, these results suggest that lenders feel that smaller firms are more risky in general. Thus, they may require guarantees or collateral from a high percentage of their small business customers. Alternatively, small firms that are equipped to do so may offer guarantees or collateral as a way to secure lower interest rates on loans.

Not surprisingly Table 6 also indicates that mature firms had significantly longer relationships on average with their primary financial service provider. Mature firms had average relationships of 114.63 months (approximately 10 years), while new firms had average relationships of 48.48 months (4 years). Since new firms are, by definition, five years old or younger, it stands to reason that they would have shorter relationships.

As a further step in this analysis, an attempt was made to determine the effect of banking relationships, personal guarantees, and collateral on loan approvals. It is possible that newer firms can overcome their relative disadvantage in borrowing by developing and sustaining banking relationships over time or by offering collateral or personal guarantees. To test this hypothesis, two additional logistic regression models were developed:

Model 6:

$$LOC=a + b_1New + b_2Logsales + b_3Growth + b_4ROE + b_5Org + b_6Judge + b_7Delinqp + b_8Delinqb + b_9Bankrupt + b_{10}CredCard + b_{11}TradeCred + b_{12}Relation + b_{13}Guar + b_{14}Collat + e$$

and

Model 7:

$$Mrlget=a + b_1New + b_2Logsales + b_3Growth + b_4ROE + b_5Org + b_6Judge + b_7Delinqp + b_8Delinqb + b_9Bankrupt + b_{10}CredCard + b_{11}TradeCred + b_{12}Relation + b_{13}Mrlguar + b_{14}Mrlcollat + e$$

The dependent variable LOC is a dichotomous variable indicating whether or not the firm had a line of credit. Similarly, Mrlget is a dichotomous variable indicating whether or not the firm was approved for its most recent loan. Results reported in Tables 4 and 5 indicated that new firms were significantly less likely to have lines of credit, a very flexible credit tool, and also, that they were significantly less likely to have been approved for their most recent loan.

Several additional independent variables have been added to these models. Relation refers to the length of the most important banking relationship in number of months. In theory a longer banking relationships should create a "relationship of trust" and thus increase the likelihood of loan approvals. The variables Guar and Collat are dichotomous variables indicating whether or not the firm provided either personal guarantees or collateral for its lines of credit. Correspondingly, the variables Mrlguar and Mrlcoll indicate whether or not the firm provided personal guarantees or collateral for its most recent loan. Both guarantees and collateral reduce the risk of the loan to the lender, and should therefore increase willingness to lend.

The results of these two additional models are provided in Table 7. Table 7 reveals that younger firms (New) were still significantly less likely to have lines of credit (LOC) and that they were also significantly less likely to be approved for their most recent loan (Mrlget). Thus, in this analysis, neither length of banking relationship nor guarantees and collateral were sufficient to overcome the disadvantage of being a newer firm.

Table 7 also indicates that larger firms (Logsales) and less profitable firms (ROE) were more likely to have lines of credit. As noted earlier, larger firms are more likely to require additional sources of external capital, while less profitable firms are less likely to be able to self finance with retained earnings. Firms organized as corporations (Org) were less likely to have lines of credit. It is possible that sole proprietorships and partnerships tend to be firms that do not have a lot of fixed assets. Thus, they may be less likely to have loans secured by specific collateral and more likely to have lines of credit which are not tied to specific collateral. In this model, firms that use credit cards to finance their businesses (CredCard) and firms that use trade credit (TradeCred) were both more likely to have lines of credit.

In the expanded Mrlget model, firms that had declared bankruptcy (Bankrupt) were significantly less likely to have been approved for their most recent loan indicating that lenders are concerned with credit quality and the likelihood of repayment for the loan. Firms that used credit cards for business purposes (CredCard) were also less likely to have been approved, possibly because lenders may be concerned with high credit card balances. In this model, firms with longer banking relationships (Relation) were significantly more likely to have been approved for their most recent loan suggesting that familiarity with a lender increases the likelihood of loan approval. Since the variable New was still significant and negative in this model, however, the beneficial effects of a longer relationship were not sufficient to overcome the problem of the liability of newness.

V. Summary and Conclusions

It appears from these results that new firms do suffer from a "liability of newness" in their attempts to secure debt capital. These findings indicate that new firms are significantly less likely to have lines of credit. This is a particular problem for small firms because a line of credit is a very flexible type of loan that can be used for a variety of business purposes. Further, although new firms were significantly more likely to have applied for a loan within the previous three years, they were significantly more likely to be turned down. Finally, new firms were significantly less likely to apply for a loan at all, because they assumed they would be turned down. All of this suggests capital constraints for newer firms that are not present for more mature firms.

The "liability of newness" literature suggests that problems associated with the liability of newness can be overcome by developing "relationships of trust". Within the context of a lender/borrower relationship, this could be done by cultivating a relationship with the lender over time or by providing personal guarantees or collateral that will reduce the lender's risk. These results indicate that those measures do not solve the problem for newer firms. When we control for length of relationship, personal guarantees, and collateral, younger firms were still significantly less likely to have lines of credit and significantly more likely to be turned down for their most recent loan.

These results suggest that providers of debt capital are highly risk averse, and that they associate newness with a greater risk of firm failure and non-payment. Thus, they are less willing to lend to younger firms until they have been around for a while and have proven their staying power. If this is the case, it has implications for small firm owners as well as for state and local governments seeking to promote the growth of small firms. If providers of debt capital are reluctant to lend to new firms, other sources of capital need to be cultivated. These include loan programs that guarantee loans such as the SBA's 7(a) program as well as alternative lending programs. Under the 7(a) program, loan losses are partially underwritten by the federal government. Thus, lenders are more willing to lend to smaller and riskier firms. Similarly, a number of alternative lending programs channel funds toward businesses meeting specific criteria such as geographic location or the race, ethnicity, and gender of the business owner. Many alternative lenders are non-profit organizations and thus do not operate under the same profit and stock price constraints that for-profit lenders have to contend with.

Alternatively, more effort at the state and local level could be put into developing and expanding angel networks. Business angels are an important source of financing for newer firms, yet the "market" for business angels is highly fragmented, and most small firm owners do not know how to get in touch with angels who might have an interest in their business or industry. Suffice to say, if small firms are to continue to be an engine for economic growth and a source for new jobs, additional measures need to be taken to help firm owners get their businesses from the "new" stage to the "mature" stage. Some of these measures involve identifying and developing sources of capital that will sustain new firms through their early years.

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Table I
Characteristics of Firms included in the 1998 SSBF

Variables	New Firms	Mature Firms	t value	Pr>t
N	920	2641		
Totassts**				
Mean	$248,735	$479,069	-4.25	0.0001
Median	$32,784	$66,000		
Totsales**				
Mean	$551,806	$1,153,372	-3.97	0.0001
Median	$96,288	$181,132		
Growth**				
Mean	121.92%	32.72%	1.06	0.0001
Median	8.06%	3.92%		
Totemp**				
Mean	5.72	9.69	-7.34	0.0001
Media	3.00	4.00		
Ownage**				
Mean (years)	44.96	52.13	-19.31	0.0001
Media	44.00	52.00		
Exp**				
Mean (years)	10.72	21.09	-26.93	0.0001
Median	7.00	20.00		

**differences are significant at the .01 level

Table II
Characteristics of Firms included in the 1998 SSBF

Variables	New Firms	Mature Firms	Chi-Square	Pr>ChiSq
N	920	2641		
Org	42.86[1]	45.80	2.5188	0.1125
Ed	55.96	53.20	2.1897	0.1389
Serv	43.47	43.23	0.0175	0.8946
Manuf	8.78	8.17	0.3604	0.5483
Transp*	5.26	3.12	9.0512	0.0026
InsRe*	5.10	6.92	3.9611	0.0466
Retail*	28.54	25.14	4.3106	0.0379
ConsMin**	8.59	13.16	14.1721	0.0002
HighRisk**	38.10	25.37	56.0142	0.0001
Judge	4.04	3.73	0.0918	0.6307
Delinqp	12.52	12.31	0.0197	0.8612
Delinqb**	11.00	14.42	-0.3098	0.0074
Bankrupt	3.13	2.22	0.2256	0.1170
Credcard	66.84	68.51	-0.0762	0.3379
Tradecred**	54.81	64.64	-0.4103	0.0001
Denytrade**	7.18	4.67	0.4556	0.0031

[1]values are percentage of the total
*differences are significant at the .05 level
**differences are significant at the .01 level

Table III
Borrowing Experience of Firms included in the 1998 SSBF

Variables	New Firms	Mature Firms	Chi-Square	Pr>ChiSq
N	920	2641		
Haveloan**	50.35[1]	56.88	12.3870	0.0004
LOC**	19.83	30.79	42.5203	0.0001
Mrlapp*	25.74	22.39	4.5124	0.0337
Mrlget**	63.84	74.79	11.9882	0.0005
Mrldeny**	36.16	25.21	11.9882	0.0005
Noapply**	30.73	20.42	42.1626	0.0001

[1]values are percentages of the total
*differences significant at the .05 level
**differences significant at the .01 level

Table IV
Results of Logistic Regression Analyses
(Values reported are Parameter Estimates

Variable	Haveloan	LOC
Intercept	-4.1086**	-6.0864**
New	0.0471	-0.3015**
Logsales	0.3201**	0.3763**
Growth	-0.0053	-0.0018
ROE	-0.0562	-0.2433*
Org	0.0909	0.1318
Judge	-0.0601	0.1797
Delinqp	0.2811*	-0.3365*
Delinqb	0.4200**	0.3424**
Bankrupt	-0.2799	-1.4720**
CredCard	0.4423**	0.5544**
TradeCred	0.3442**	0.4141**
DenyTrade	0.2839	0.2017

*results significant at the .05 level
**results significant at the .01 level

Table V
Results of Logistic Regression Analyses
(Values reported are Parameter Estimates

Variable	Mrlapp	Mrlget	Noapply
Intercept	-4.0971**	0.4981	-1.4881**
New	0.3842**	-0.3851*	0.5880**
Logsales	0.1999**	0.0301	-0.0593**
Growth	0.0087	0.0007	0.0009
ROE	-0.1659	0.5283**	0.1266
Org	-0.0473	0.3655*	0.0592
Judge	0.4589*	-1.0466**	0.5380**
Delinqp	0.4043**	-0.8306**	1.4027**
Delinqb	0.5122**	-1.0075**	0.9881**
Bankrupt	-0.1234	-4.2431**	1.9076**
CredCard	0.3492**	0.2060	0.1601
TradeCred	0.1125	0.3129	0.0335
DenyTrade	0.5109**	-0.7652**	1.2557**

*results significant at the .05 level
**results significant at the .01 level

Table VI
Prevalence of Personal Guarantees and Collateral in Small Firms

Variable	New	Mature	Chi-Square	Pr>ChiSq
Persguar	58.44%	61.12%	0.6206	0.4308
Collat	40.41%	45.04%	1.7957	0.1801
Mrlguar	49.38%	55.01%	2.0729	0.1499
Mrlcoll	53.94%	58.69%	1.5005	0.2206
			t value	Pr>t
Relation (months)	48.48	114.63	-17.08	0.0001

Table VII
Results of Logistic Regression Analyses
(Values Reported are Parameter Estimates)

Variable	LOC	Mrlget
Intercept	-4.9456**	3.4984**
New	-0.3707*	-0.5884*
Logsales	0.1959**	-0.0683
Growth	0.0018	0.0060
ROE	-0.4797**	0.5439
Org	-0.3747*	0.3117
Judge	0.0053	0.2686
Delinqp	-0.1767	-0.4855
Delinqb	0.3530	-0.8230*
Bankrupt	-2.2783	-3.6097**
CredCard	0.5239**	-0.7160*
TradeCred	0.5589**	0.4445
DenyTrade	-0.1181	-0.9251
Relation	0.0008	0.0004*
Guar	20.3262	-0.1056
Collat	20.8759	-0.1731

*results significant at the.05 level
**results significant at the .01 level

Appendix A
Definition of Variables

New: Dichotomous variable representing firm age. Firms that had been in existence for 5 or fewer years were coded as a "1". Firms that were older than 5 years (Mature firms) were coded as a "0".

Totassts: Total assets for 1998.

Totsales: Total sales for 1998.

Growth: Total sales for 1998 minus total sales for 1997, divided by total sales for 1997. The growth rate was set at 0 for firms having a negative growth rate.

Totemp: Total full-time equivalent employees.

ROE: Return on equity. Net income for 1998 divided by total equity for 1998. The return on equity was set at 0 for firms having a negative net income.

Ownage: Age of the firm owner in years.

Exp: Owner's years of business experience.

Org: Organizational form. Dichotomous variable coded as a "1" if the firm was organized as a limited liability corporation or partnership, or if it was an S-corporation or a C-corporation.

Ed: Dichotomous variable coded as a "1" if the firm owner had attended college.

Serv: Dichotomous variable coded as a "1" if the firm was in a service industry.

Manuf: Dichotomous variable coded as a "1" if the firm was a manufacturer.

Transp: Dichotomous variable coded as a "1" if the firm was in transportation.

InsRE: Dichotomous variable coded as a "1" if the firm was in insurance or real estate.

Retail: Dichotomous variable coded as a "1" if the firm was in retail or wholesale trade.

ConsMin: Dichotomous variable coded as a "1" if the firm was in construction or mining.

HighRisk: Dichotomous variable coded as a "1" if the firm was rated as having "significant risk" or "high risk" by Dun & Bradstreet.

Judge: Dichotomous variable coded as a "1" if the firm owner had a judgment rendered against him/her within the past 3 years.

Delinqp: Dichotomous variable coded as a "1" if the principal owner was delinquent on personal obligations within the past 3 years.

Delinqb: Dichotomous variable coded as a "1' if the firm was delinquent on business obligations within the past 2 years.

Bankrupt: Dichotomous variable coded as a "1" if the firm or its principal owner declared bankruptcy within the last 7 years.

Credcard: Dichotomous variable coded as a "1" if the firm uses personal or business credit cards to finance the business.

Tradecred: Dichotomous variable coded as a "1" if the firm uses trade credit as a source of financing.

Denytrade: Dichotomous variable coded as a "1" if the firm has been turned down for trade credit.

Haveloan: Dichotomous variable coded as a "1" if the firm had one of the six types of loans tracked by the SSBF (line of credit, financial lease, commercial mortgage, equipment loan, vehicle loan, or other loan).

Mrlapp: Dichotomous variable coded as a "1" if the firm applied for a loan within the previous 3 years.

Mrlget: Dichotomous variable coded as a "1" if the loan applied for was approved.

Mrldeny: Dichotomous variable coded as a "1" if the loan applied for was denied.

Noapply: Dichotomous variable coded as a "1" if the firm did not apply for a loan within the previous 3 years because the owner assumed the loan would be denied.

Firmage: Continuous variable; age of the firm in years.

Relation: Continuous variable; length of the relationship with the firm's primary financial service provider in months.

Guar: Dichotomous variable indicating whether or not the firm provided personal guarantees for its lines of credit.

Collat: Dichotomous variable indicating whether or not the firm provided collateral for its lines of credit.

Mrlguar: Dichotomous variable indicating whether or not the firm owner provided personal guarantees for its most recent loan.

Mrlcollat: Dichotomous variable indicating whether or not the firm provided collateral for its most recent loan.