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Small Business in Focus:
Finance

A Compendium of Research by the Small Business Administration's Office of Advocacy

July 2009

Created by Congress in 1976, the Office of Advocacy of the U.S. Small Business Administration (SBA) is an independent voice for small business within the federal government. Appointed by the President and confirmed by the U.S. Senate, the Chief Counsel for Advocacy directs the office. The Chief Counsel advances the views, concerns, and interests of small business before Congress, the White House, federal agencies, federal courts, and state policy makers. Economic research, policy analyses, and small business outreach help identify issues of concern. Regional Advocates and an office in Washington, DC, support the Chief Counsel's efforts.

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Special Recognition

How do you capture a lifelong career in a few short words?

A fruitful working relationship was born with the beginning of the Office of Advocacy. In 1976, Public Law 94-305, which authorized the the office's creation, laid out as its first function a mandate to "examine the role of small business in the American economy and the contribution which small business can make in improving competition." When Advocacy opened its doors officially in 1978, a small cadre of economists was already hard at work in the SBA's Office of Research and Statistics, analyzing aspects of the economic environment for small business startup and growth.

Among those economists was Dr. Charles C. F. Ou, a young professor and son of a small business owner from Taiwan, with a keen interest in small business finance. Charles got to work right away analyzing the Federal Reserve Board's study of small business finance, and began seeking to expand the limited data resources on the topic.

When the Small Business Economic Policy Act of 1980 required the President to transmit to Congress an annual report on small business and competition, Charles lent his expertise to the project, providing information on small business financing for the very first edition, published as *The State of Small Business: A Report of the President,* in March 1982. Every edition of *The State of Small Business* (and later, of *The Small Business Economy),* featured a section on small business financing authored or coauthored by Dr. Charles Ou.

In the 1990s, Advocacy drew on emerging sets of Call Report and Community Reinvestment Act (CRA) data to prepare a report on financial institutions and their small business and micro business lending. Again, Dr. Ou was instrumental not only in bringing these annual reports into being, but in ensuring that they reflected the most accurate data available, as well.

From time to time, Advocacy would sponsor a conference to look at the availability of financing to small firms, not only in the banking system, but in all the financial markets available to small firms, including venture capital and angel financing. Dr. Ou was the

lead economist through it all, and he was instrumental in pushing for a key data resource, the Survey of Small Business Finances, conducted by the Federal Reserve Board in 1993, 1998, and 2003 to provide data on all aspects of small business financing.

There is so much more that could be said about Dr. Ou: serving as lead financial economist under chief counsels in six presidential administrations; overseeing countless studies of small business financing as a contracting officer's technical representative; acting as mentor to younger colleagues both within and outside the Office of Advocacy; and being at the ready for any question about small business finance, whether from academia, the press, or the wider public.

Charles Ou retires this month after 32 years with the Office of Advocacy, leaving a hole that will be difficult to fill. We will miss him. At the same time, it is my deeply felt pleasure and privilege to congratulate him on a lifetime of outstanding service to the United States, his adopted country. To Charles, we wish you the very best in your new ventures!

Shawne Carter McGibbon
Acting Chief Counsel for Advocacy
July 9, 2009

Table of Contents

Acknowledgments

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Foreword

In these challenging economic times, we are often reminded of the importance of entrepreneurship as a means of re-energizing our nation's economy. One of the top issues for small business owners in the current economic downturn is access to credit. Recent surveys show that small business lending standards have grown more stringent and loan demand has fallen. In general, small businesses have been squeezed on a number of fronts, making it even more important for them to control costs, (re)focus on their core strategies, and manage their cash flow.

The Office of Advocacy has long recognized the importance of financial issues to the small business owner. To highlight the office's recent research on small business financing, we have combined four papers into this new compendium, *Small Business in Focus: Finance.* Future publications in this series will focus on other issues of relevance to small business owners, policymakers, and researchers.

This volume contains four papers. First is a working paper that my colleague Victoria Williams and I originally presented at the Academy of Entrepreneurial Finance meetings in September 2008. The other three were written by experts under contract with the Office of Advocacy. Two are by the team of George W. Haynes of Montana State University at Bozeman and and James R. Brown of Iowa State University, and one is by Rebel Cole of Krähenbühl Global Consulting.

Lending to Small Businesses by Financial Institutions in the United States. This working paper discusses developments in small business lending by financial institutions in the United States during the past decade. The paper includes an overview of U.S. small businesses as borrowers in the financial markets; a look at the credit and capital markets that serve small businesses; a look at the importance of loans from depository institutions; and the borrowing patterns of small firms—what they borrowed and from which suppliers. The paper concludes with a discussion of the emerging national market for small business credit cards.

An Examination of Financial Patterns Using the Survey of Small Business Finances. This paper by Haynes and Brown examines changes in financing patterns between the 1993 and 2003 editions of the Federal Reserve Board's Survey of Small Busi-

ness Finances (SSBF). The authors find that the percentage of small businesses using any kind of credit increased from 79 percent in 1993 to 89 percent in 2003. The largest increase occurred in the use of nontraditional loans, namely credit card loans. They also found that commercial banks remained the most important suppliers of loans to small firms, with more than 46 percent of small business borrowers acquiring 50 percent or more of the value of their loans from commercial banks; however, the percentage of small businesses borrowing from commercial banks declined while the percentage using finance companies increased significantly between 1993 and 2003. This research is supplemented by an online statistical addendum of 234 tables generated from the SSBF which detail lending to small firms.

How Strong is the Link between Internal Finance and Small Firm Growth? Evidence from Survey of Small Business Finances. The second paper by Haynes and Brown discusses financial characteristics of growth firms in the United States using the SSBF. The paper concludes that "while outside capital is often needed, internal capital is critically important for small business growth." Internal funds were found to be particularly important to the growth of very small firms and women-owned firms.

Who Needs Credit and Who Gets Credit? Evidence from the Survey of Small Business Finances. Cole's study assesses the credit availability of four categories of borrowers: successful borrowers, non-borrowers, discouraged borrowers, and denied borrowers. His detailed comparison of discouraged versus denied borrowers shows that while the discouraged borrowers resemble denied borrowers in many respects, the two groups are significantly different along a number of dimensions. This finding calls into question previous studies which have lumped both the denied and the discouraged borrowers into a single group in analyzing credit allocation.

Overall, these research studies highlight two things: the important role that financial institutions play in lending to small business owners, and the value of quality data sets in ascertaining financing issues faced by small businesses and their owners. It is important to note that the Survey of Small Business Finances will no longer be sponsored by the Federal Reserve Board. In its place, the Federal Reserve Board will use the 2010 Survey of Consumer Finances to collect information on the finances of business-owning households. We hope this new data option will allow us to better understand future developments in small business financing.

Charles Ou, Ph.D.
Senior Economist
Office of Advocacy
July 2009

Lending to Small Businesses by Financial Institutions in the United States

Charles Ou[1]
Senior Economist, Office of Advocacy

Victoria Williams
Economist, Office of Advocacy

The funding markets for small firms in the United States consist of multitudes of markets of varying sizes, scattered in widely dispersed geographic areas with various numbers of borrowers and fund suppliers in each market.[2] Banking markets for small firms are no exception—millions of small business owners participate in the business credit card market and smaller numbers of lenders and borrowers participate in each of the thousands of small local financial markets.

Access to credit is vital for small business startup, expansion, and survival, and financial institutions play an important role in providing capital to small firms (those with fewer than 500 employees) since these firms are not in a position to access funds from equity capital or publicly traded markets. Because financial information and public information on small firms is almost nonexistent, their creditworthiness is difficult to ascertain (Peek, 2007; Read 2000). Hence, small firms rely heavily on financial depository institutions for external funds. Existing research shows that the affiliation between lending

[1] The statements, findings, conclusions, and recommendations are those of the authors and do not necessarily reflect the views of the Office of Advocacy, the U.S. Small Business Administration, or the U.S. government.

[2] Most small business loan markets are localized markets—participated in by local borrowers and by local fund suppliers—local lenders or branches of interstate financial institutions. The distances across which these local markets are linked, with funds supplied by regional or national credit pools, vary by the degree of competition in each local market. See the calculation of hedge fund ratios by the Federal Reserve on the discussion of market competition in the banking industry.

institutions and small firms is important to both parties: access to capital enables small firms to bring dynamic ideas, innovative services, and new products to the market.

This paper will provide an overview of developments in the small business lending markets of U.S. financial institutions. Although financial regulatory institutions collect some information, statistics on small business lending remain incomplete. Data from three major sources, the Survey of Small Business Finances (SSBF), Reports of Condition and Income or Call Reports, and data provided in compliance with the Community Reinvestment Act (CRA) are used to provide a more cohesive profile of the small business loan markets in the United States.[3]

The first three of five sections offer an overview of (1) U.S. small businesses—the borrowers in the financial markets; (2) the credit and capital markets that serve small business borrowers in the United States; and (3) the borrowing patterns of U.S. small businesses—what small firms borrowed and from which fund suppliers, based on the 2003 SSBF. The fourth section takes a detailed look at the growth of small business lending by banks and other depository institutions such as savings banks and thrift institutions since mid-1990 when data on small business lending became available. The final section examines the emergence of a national market for small business credit cards.

1. The U.S. Small Business Population—The Borrowers

The small business population in the United States consists of some 6 million employer firms and 20 million nonemployer firms—26 million firms in 2005.[4] Most small businesses are very small; the majority of employer firms (3.7 million in 2005) have fewer than five employees.

The sheer number of very small businesses is massive. Of some 20 million nonemployer firms, about 65 percent were home-based, providing small incomes for mostly part-time owners;[5] among the 21.5 million sole proprietorships filing schedule C tax returns, some 11 million generated less than $10,000 in annual receipts in 2005—not consistent with a business endeavor providing full-time self-employment income.[6] In addition, while most households owning businesses were found to have higher income and net worth than non-business-owning households, income and net worth for many busi-

[3] Other data sources include the Bureau of the Census, Survey of Business Owners (SBO) see http://www.census.gov/csd/sbo/cbsummaryoffindings.htm and Federal Reserve Board, Survey of Consumer Finances (SCF) at http://www.federalreserve.gov/econresdata/releases/surveysreports.htm.

[4] Employer firms are firms with employees required to participate in payroll tax withholding programs. Nonemployer firms do not participate in payroll tax programs, but report business income in their business tax returns. The most recent data for employer firms by firm size is for 2005.

[5] See Survey of Business Owners, Characteristics of Businesses: 2002.

[6] In 2005, 11 million of 21.5 million sole proprietorship returns reported receipts of less than $10,000. Also, 6.6 million had $10,000 to $50,000 in receipts.

ness-owning households remained very low (Haynes, 2007). Small business borrowers are certainly a heterogeneous group, and the self-employed reflect widely different financial wealth, financial sophistication, and types of profitable and unprofitable business activities. Consequently, financial decisions made by small firms will be different.

2. Credit and Capital Markets Serving Small Businesses

The United States has one of the most developed markets for credit and capital in the world. Nevertheless, markets of varying sizes and different efficiencies coexist to serve different groups of small business borrowers across the continent.

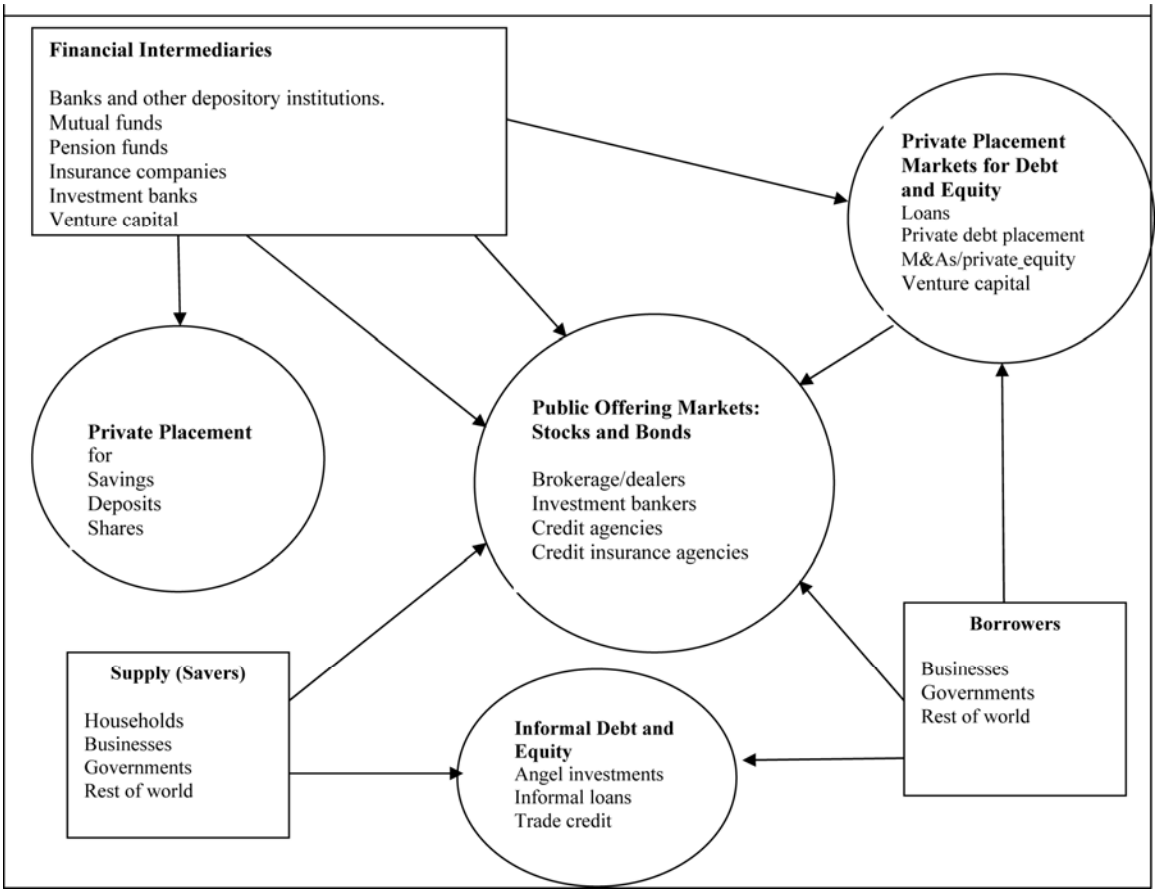
Chart 1 provides a simplified profile of the financial markets that serve small firms in the United States. While small firms participate in all three forms of markets for external sources of financing, private placement markets for loans extended by financial institutions to small business borrowers are the most important sources of external financing for most small firms.[7]

The U.S. banking system, which includes commercial banks and other depository institutions such as savings banks and thrifts, continues to evolve and grow. It remains the most important supplier of credit to small businesses in the United States. While the total number of depository institutions has been declining, the number of banking offices, including offices and branches, continues to increase.[8] In June 2007, 7,485 depository institutions (independent institutions and bank and financial services holding companies) with approximately 97,300 branches operated in the United States (Table 1). According to estimates from the 2003 SSBF, total debt owed by small firms (in the survey) to commercial banks amounted to $718 billion and accounted for 58 percent of total debt owed by these small firms to external lenders (Tables 4 and 5).

[7] The informal financing markets—direct lending/investment by individual and business lenders to businesses—are very important, but information is difficult to obtain. Their importance increases in inverse proportion to the size of a business—that is, the smaller the business, the more important the informal financing markets.

[8] FDIC Statistics, Summary of Deposits, Time Series June 2007; www4.fdic.gov/sod/SODSumReport.asp.

Chart 1. Credit and Capital Markets



3. Commercial Bank Lending: Findings from the SSBF[9]

Different types of credit are available from different suppliers to small firms in the United States. The Federal Reserve Board's Survey of Small Business Finances is the most comprehensive database that provides information on fund suppliers and the uses of credit by small businesses in the United States.[10]

[9] Because of the lack of information about the intermingling of personal and business finances so common to most very small firms, the discussion in the following sections will be limited to more established small firms, those with enough revenue to generate adequate income for the owners.

[10] The database covers 6 million "established" small firms from the Dun & Bradstreet business profile file. The SSBF was conducted in 1987, 1993, 1998, and 2003 by the Federal Reserve Board. The survey in-

In 2003, almost 90 percent of small businesses used some form of credit, compared with just over 80 percent in 1998.[11] Moreover, 80 percent of small firms used nontraditional sources such as owners' loans and personal and business credit cards, while 60 percent used six traditional types of loans, such as credit lines, mortgage loans, and others. Next to personal and business credit cards—which may or may not result in the actual use of a card's available credit—lines of credit were used most frequently by small firms: 34 percent of small firms have a credit line and 26 percent had vehicle loans in 2003 (Table 2).

The most frequently used institutional suppliers were commercial banks and finance companies, used by 48 percent and 22 percent, respectively, of small firms in 2003 (Table 3).[12] Moreover, 41 percent of firm owners indicated they used business credit cards, supplied largely by banks.[13] Table 3 also shows the significance of commercial banks in the manufacturing, wholesale, and transportation industries compared with other sectors. Both the SSBF and the Survey of Business Owners (SBO) support the notion that small firms in the transportation sector obtain startup capital from commercial banks, while manufacturing firms obtain expansion funds from this source.[14] The two surveys differed in findings about other industries.[15]

Like the SSBF, the SBO data confirm that small firms are more likely to obtain financing from a depository institution and to use nontraditional credit for their financing needs than to use nonfinancial and nondepository institutions.[16] For example, 11.4 percent of small firms obtained financing from a depository institution (bank) while more than 60 percent used nontraditional self-financing to start a business in 2002.

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cludes characteristics of firms and owners, the firms' use of financial services and financial service suppliers, and income and balance sheet items. No future surveys are contemplated by the Federal Reserve Board.

[11] Credit extended by a supplier is debt to the borrower, so when credit is used by a small business, it will show up as debt in the firm's books.

[12] Most credit cards are issued by banks and by the finance company affiliates of major bank and financial services holding companies.

[13] The Survey of Consumer Finances, 2003, supports the SSBF data because it shows that households obtained most of their credit from commercial banks (depository institutions) rather than other sources.

[14] The top three industries that used commercial banks for credit according to the SSBF were: wholesale trade, manufacturing, and transportation. In the SBO, the transportation industry is among the top three industries using banking institutions to obtain startup capital, and manufacturing is one of the top three industries using bank credit funds for business expansion.

[15] One possible reason for this is that the two surveys used different industry code classifications. For example, the SSBF uses the Standard Industrial Classification (SIC) codes, while the SBO uses the North American Industry Classification System (NAICS) codes. Also, data in the SSBF do not distinguish startup financing from capital expansion.

[16] The Survey of Business Owners is conducted every five years, and is the only survey that collects information on small business startup and expansion capital. The major sources of capital used by small businesses for expansion purposes were personal savings, credit cards (personal and business), and banks. These data do not distinguish between startup and expansion capital.

Share of Credit Supplied in Loans to Small Firms

The importance of commercial banks and other financial institutions as major suppliers of loans to small business borrowers becomes even more pronounced when the amount of credit used or debt owed by small businesses to lenders is taken into consideration (Tables 4 and 5). Six traditional loan types accounted for 90 percent of total debt outstanding for these small firms in 2003. Mortgage loans and lines of credit were the two largest credit types used by small businesses, accounting for 36 percent and 29 percent, respectively, of the total debt outstanding owed by small firms in 2003 (Table 4). Commercial banks are the dominant lenders in the two most important loan types—credit lines and mortgages—accounting for 80 percent and 53 percent, respectively.[17]

4. Small Business Lending by U.S. Banks Since 1994

With annual data on small business loans extended to include all depository institutions reporting through Call and CRA reports, it is now possible to track developments in small business lending by depository institutions. Proxy data on small business lending by financial institutions became available in 1994 when banks were required to report in their June Call Reports their business lending by loan size (in three subsizes for loans up to $1 million—less than $100,000, less than $250,000, and less than $1 million). The Call Report data on small business loans are proxies representing the size of the loans rather than the borrowing firms. Small business loans are defined as business loans of less than $1 million. This analysis looks at the various sizes of small business loans under $1 million: under $100,000 (i.e., micro loans), between $100,000 and $250,000, between $250,000 and $1 million, between $100,000 and $1 million, and under $1 million (Table 6).

As of June 2007, there were 24.5 million small business loans outstanding (under $1 million) valued at $684 billion. Table 6 provides a profile of the number and dollar amounts outstanding of small business loans extended by lenders of different asset sizes in the United States.

Lending to small businesses increased steadily in both value and number from 1995 to 2007 except for the number of the smallest loans, which increased extremely rapidly. Nevertheless, the small business loan share of banks' loan and asset portfolios has declined steadily, especially in the smallest loan size category (Table 7).[18] The huge increase in the number of the smallest loans under $100,000, a 300 percent increase from

[17] The total credit supplied by commercial banks to these small businesses amounted to $718 billion in 2003, including $315 billion in credit line balances and $259 billion in mortgage loans

[18] Shares for loans of $100,000 to $1 million showed small declines, but only from 2003 to 2007. The declines could be cyclical, rather than reflecting longer term trends.

1995 through 2007, can be attributed to the promotion of business credit cards by large lenders.

The banking industry has experienced significant structural changes over the past two decades, especially in the past 10 years, as merger and acquisition (M&A) activity in the banking and financial services industries exploded. From 1994 to 2003, some 3,517 M&As were completed among commercial banks and thrift institutions (savings banks, savings and loan associations, and industrial banks) (Pilloff, 2004).[19] These consolidations affected the relative importance of lending institutions of different sizes in the small business loan market. The largest lending institutions, those with domestic assets in excess of $10 billion, accounted for 76 percent of total assets and 65 percent of total business loans in June 2007 (Table 8).

Small Business Lending by Large and Small Lenders

The changing shares of lenders of varying sizes in the small business loan markets reflect the impacts of interstate banking and different loan strategies adopted by large and small lenders. The industry experienced substantial consolidation partly because of eased barriers associated with interstate mergers and interstate banking (Peek and Rosengren, 1998), as well as new products developed to take advantage of financial innovation. The depository lending institutions are grouped into five categories based on the domestic asset size of the lender: less than $100 million, $100 million to $500 million, $500 million to $1 billion, $1 billion to $10 billion, and over $10 billion.

Tables 9 and 10 summarize the changing large and small lender shares of different loan size markets and changes in the importance of different loans in the portfolios of large and small banks over the 1996-2007 period. Significant changes in the market shares of lenders of varying sizes have been observed over the past decade—including dramatic declines in small banks' shares of small loan markets, especially the smallest loan market, and the increasing importance of huge lenders in the smallest loan market.

Changes in lenders' shares of small loan markets may be the results of the following developments: (1) changes in the relative importance of large and small banks in the industry caused by banking consolidation; (2) changes caused by shifts from small loans to larger loans as average loan sizes increase over time; 3) changes in lenders' loan portfolios resulting from bank restructuring or the acquisition of specialty lenders—such as credit card issuers like MBNA—by large lenders; and (4) changes resulting from strategic decisions by lenders to enter or exit certain loan markets. Except for loans under $100,000 (the smallest loans), which include a large number of business credit card loans,

[19] See Pilloff, FRB Staff studies No. 176, http://www.federalreserve.gov/pubs/staffstudies/2000-present/ss176.pdf. The number of lenders continued to decrease. For example, the number of lending institutions (financial services holding companies and independent institutions) declined from 7,737 in June 2004 to 7,465 in June 2007; most of the decline was in small lenders with assets of $500 million or less, which were down by 468 (Table 7).

it is difficult to investigate the impact of specific strategic decisions to enter new markets on changes in the small and large lender share of different loan-size markets.

Observers have noted an overall shift from the smallest loans toward larger loans in all bank sizes except in the largest lenders, whose share has increased because of the promotion of business credit cards by several major lenders. One explanation of the shift is a statistical phenomenon, the so-called "fixed-value size category"—the impact of inflation on, for example, the smallest loan size category defined by a fixed value. As the average loan size increases in nominal value over time, the smallest loan category's share of the bank's total loan portfolio should decline gradually.

Small Lenders' Share of the Smallest Loan Markets

Small lenders' (total assets under $500 million) changing share of the smallest loan markets (loans under $100,000)) is most interesting. The share of the smallest loans that is held by the smallest lenders (assets under $100 million) fell to 7.1 percent in 2007 from roughly 25 percent in 1996. Small lenders with assets of $100 million to $500 million saw their share of these smallest loans drop from 30 percent in 1996 to 17 percent in 2007. The declines can be partly explained by these lenders' declining shares of banking industry assets, from 7.7 percent to 1.5 percent for banks with assets under $100 million and from 13.3 percent to 6.7 percent for banks with assets of $100 million to $500 million (Table 9). These lenders have also embraced larger loan markets, as indicated by the declining share of the smallest loans in their total loan portfolios; the ratios of the smallest loans to total business loans declined from 54 percent to 29 percent for banks with assets under $100 million and from 27.6 percent to 12 percent for banks with assets between $100 million and $500 million.

Beyond the fixed- size effect, observers have raised questions about the impact of the entry of large lenders into business credit card markets on the use of credit lines offered by small local banks. Because only the largest lenders experienced large increases—from 4.4 percent to 6.1 percent—in the ratio of the smallest loans to total business loans, and because their market share rose from 17.6 percent to 55.6 percent, it is tempting to conjecture that large lenders' entry into the business credit card market had an impact on the demand for lines of credit by small businesses from small local community lenders. Moreover, with small business owners using both personal and business credit cards for business purposes, large lenders' entry into the credit line markets in local communities became even more significant. A more extensive investigation of this issue is certainly warranted (Tables 10 and 11).

The Largest Lenders' Share of the Smallest Loan Markets

The increasing share of the smallest loans held by the largest lenders reflected a strategic decision by these lenders to promote business credit cards; their share rose to

55.6 percent in 2007 from 18 percent in 1996. As their share of banking industry assets rises along with their emphasis on credit card lending, large lenders' dominance of the smallest loan markets cannot be challenged.

Large lenders' participation in other small business loan markets—in larger loans of $100,000 to $1 million and in nonresidential mortgage markets—is harder to assess. Observers noted a declining trend in these markets until 2007, when both the market share and the ratios of these loans to total assets increased significantly.

5. A National Market for Business Credit Cards

One major development in small business loan markets is the emergence of a "national" market for small business credit cards. No statistics are available about the number and account balances of business credit cards used by small businesses. This section will use some relevant data from Call and CRA reports, and the SSBF. A number of observations can be made about the emerging business credit card market:

I. A large number of the smallest loans under $100,000 (also called SSBL) identified in the Call and CRA reports are business credit card accounts.

- As of June 2007, of the 21.6 million smallest loans under $100,000, 20.9 million were commercial and industrial (C&I) loans (also called SSCNI), compared with only 708,000 nonresidential mortgage loans under $100,000. Of the 2.9 million larger small business loans of $100,000 to $1 million (also called LSBL(2)), 1.13 million were C&I loans. The overwhelming number of small C&I loans in the small business loan markets can be attributed to the large number of business credit card accounts (Table 11a).[20]
- Multi-billion-dollar lenders dominated the C&I and mortgage loan markets of the smallest lenders in both dollar and number, which can be seen in their shares held in 2007—62.0 percent and 65.8 percent, respectively (Table 11b).
- Over the decade after the data became available, the number of SSBL have increased dramatically—by some 15 million between 1995 and 2007 (Table 7). Moreover, most are in the smallest C&I loans (SSCNI): from 2003 to 2007, the number of these smallest C&I loans increased from 16.4 million to 20.9 million (Table 11a).[21] The increases far outpaced the increase in the number of other small business loans (larger loans and loans for non-C&I purposes.)

[20] See also U.S. Small Business Administration, Office of Advocacy, *Small Business and Micro Business Lending in the United States*, various issues, available at http://www.sba.gov/advo/research/lending.html.
[21] See U.S. Small Business Administration, Office of Advocacy, *Small Business and Micro Business Lending in the United States* various years. Data for C&I loans were generated in June 2003. The study expanded the coverage to territories and to include savings banks and savings and loans.

- Moreover, large increases in the numbers of SSBL and SSCNI loans were not accompanied by comparable increases in the value of these loans outstanding—the average SSBL loan size declined, another indication of the increasing importance of credit card loans, which are characterized by much smaller account balances.[22]
- Information from the 1998 and 2003 SSBF also confirmed large increases in the percentage of small firms using business credit cards, from 29 percent to 50 percent of small firms with one to four employees (Table 3).

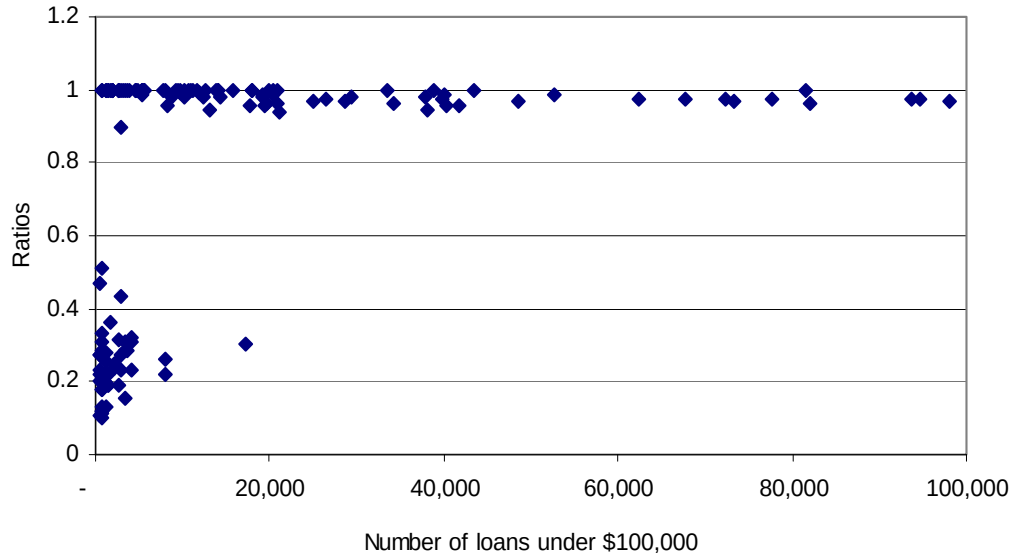
II. A small number of large lenders participates in the business credit card market.

- A few large/giant lenders are active in the business credit card markets. Data from the June 2007 Call Reports show that the 20 largest lenders of SSCNI loans (those with very large numbers of SSCNI and high concentrations of lending activities in the smallest loans, as indicated by high ratios of SSCNI to total small C&I loans) accounted for 75 percent of the total number of the smallest C&I loans (Table 12).
- These large credit card lenders had limited participation in other small loan markets; they accounted for a mere 3.1 percent of the number and 3.5 percent of the amount of the market for larger small loans ($100,000 to $1 million). Their share of total business loans and total assets in the industry were 10 percent and 21 percent, respectively (Charts 2 and 3).
- The average loan sizes for these lenders were much smaller than those for non-credit-card lenders—$3,200 compared with $20,000 for the other lenders in the banking sector (Table 12).
- Data from CRA reports supports the same finding. As indicated below, some 12 of the most active smallest loan lenders (lenders with large numbers of loans in almost all states and territories) accounted for 85 percent of the new loans in the smallest category that were made in the United States in 2006.[23] Again, the average loan sizes in the accounts for these lenders were much smaller than the average loans made by other lenders: $7,200 compared with $29,000, respectively (Table 13).

[22] Indicating the increasing share of credit card loans in this loan category (SSBL). The difficulty of estimating the number and the amount of loans outstanding for credit card balances arises from the reporting practices of many large banks, which include both credit card loans and other traditional small business loans in the same loan category.

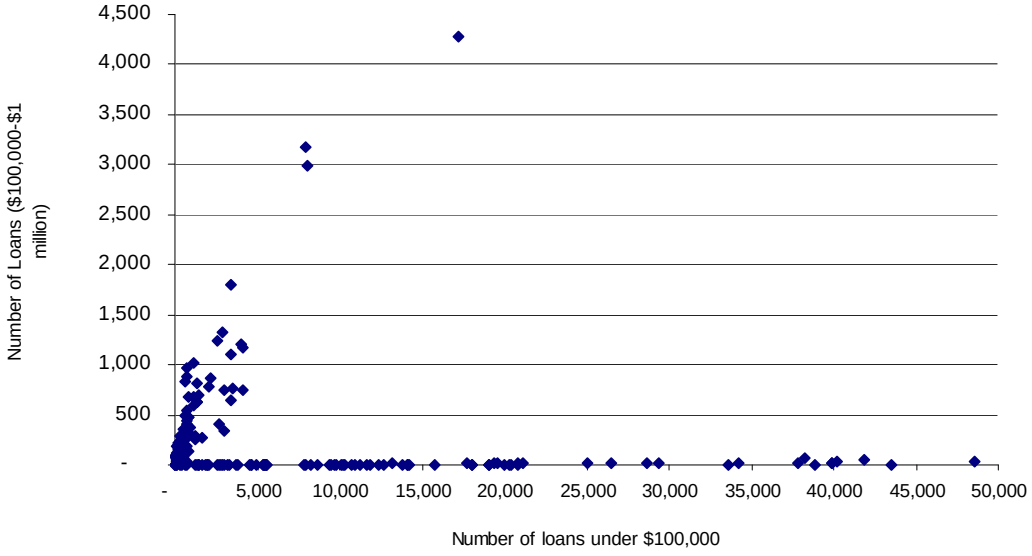
[23] John Tozzi, in "Credit Cards Replace Small Business Loans," businessweek.com, stated, "In 2005, the top 10 U.S. banks controlled 83 percent of the small business credit-card market, according to a report by the research firm TowerGroup, which is owned by MasterCard." See http://www.businessweek.com/smallbiz/content/aug2008/sb20080820_288348.htm.

Chart 2. Number of Loans under $100,000 (SSBL) Made by Lenders in the States and Territories, and Ratios of the Amounts of SSBL Dollars to Total Small Business Loan Dollars in Each State/Territory



Source: U.S. Small Business Administration, Office of Advocacy, based on 2006 CRA data.

Chart 3. Number of Loans under $100,000 (SSBL) and $100,000 to $1 million (LSBL(2)) Made by Individual Lenders in Each State (for Lenders with at Least 1,000 loans but Less than 50,000 in SSBL a Given State)



Source: U.S. Small Business Administration, Office of Advocacy, based on 2006 CRA data

III. The large credit card lenders issued business credit cards nationwide.

- CRA data also showed that these "national" lenders are very active across the continent—issuing large numbers of credit card accounts in every state (and the District of Columbia). In 2006, 11 lenders each made at least 10,000 of the smallest loans per state in at least 30 states in the United States.

IV. These credit card lenders made no or few other small business loans.

- Chart 2 is a scatter diagram of the number of the smallest loans (SSBL) made by major lenders versus the smallest loan share of total small business lending by these lenders in individual states in the United States (from 2006 CRA data). Clearly, these lenders made only credit card loans in these states.
- Chart 3 is a scatter diagram of the number of the smallest loans made by major lenders, compared with the number of other small business loans (larger small business loans) in individual states. Again, these major lenders made only the smallest loans in these states.

It is fair to conclude that a nationwide market for small business credit cards has emerged, with a dozen national lenders promoting business credit cards to small firms through extensive mail solicitation. To what extent the promotion of business credit cards has complemented or replaced the availability of working capital in the form of credit lines to very small firms in local markets requires further study.

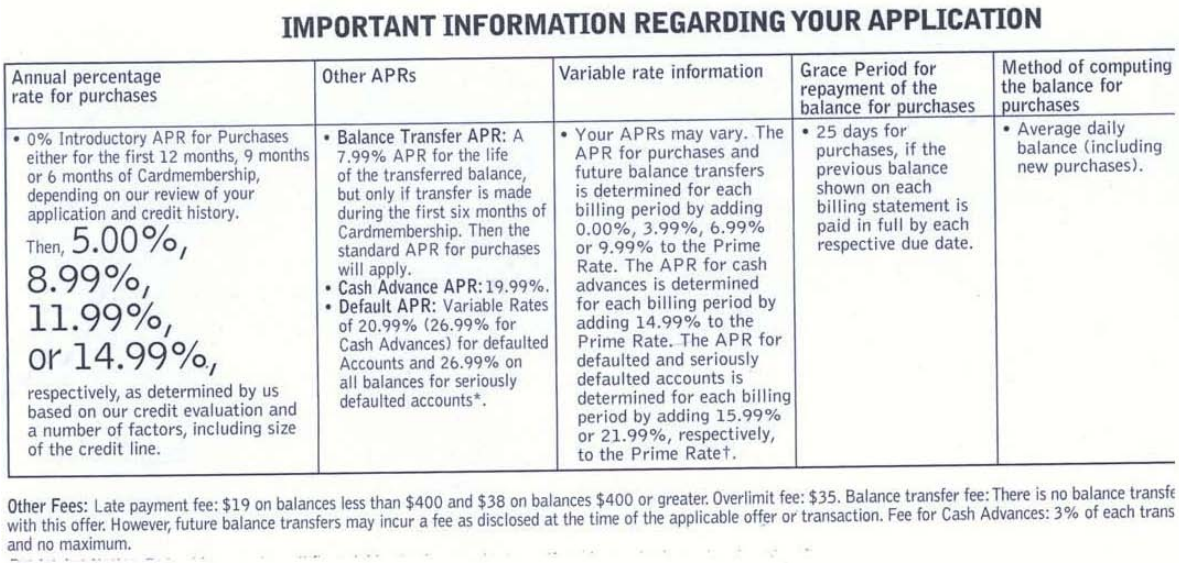
Interest Rates Charged to Small Business Credit Card Users

With a small number of large lenders or issuers dominating the market, product differentiation, which includes offering a mixture of differentiated products/services and monetary benefits, has been the dominant form of market competition.[24] Aside from offering teaser rates, most card issuers do not compete by offering competitive rates.[25] However, the rates small business borrowers actually pay for using credit card facilities are difficult to ascertain because of the complexity of rates offered by card issuers. See the sample copy of the terms (interest and fees charged) in the promotional materials for a credit card application.

[24] Promotional materials from a leading card issuer highlight the following "values"—5 percent cash discount (on office supplies purchase), 3 percent cash back on the gap, 0 percent introductory rate on purchases for up to 12 months, no annual fees, etc.

[25] However, a competitive rate, 0 percent plus the prime rate after the introductory rate period, has been increasingly used by the promoters.

Sample Terms of Credit Card Interest and Fees (for a card application)



IMPORTANT INFORMATION REGARDING YOUR APPLICATION

Annual percentage rate for purchases	Other APRs	Variable rate information	Grace Period for repayment of the balance for purchases	Method of computing the balance for purchases
• 0% Introductory APR for Purchases either for the first 12 months, 9 months or 6 months of Cardmembership, depending on our review of your application and credit history. Then, 5.00%, 8.99%, 11.99%, or 14.99%, respectively, as determined by us based on our credit evaluation and a number of factors, including size of the credit line.	• **Balance Transfer APR:** A 7.99% APR for the life of the transferred balance, but only if transfer is made during the first six months of Cardmembership. Then the standard APR for purchases will apply. • **Cash Advance APR:** 19.99%. • **Default APR:** Variable Rates of 20.99% (26.99% for Cash Advances) for defaulted Accounts and 26.99% on all balances for seriously defaulted accounts*.	• Your APRs may vary. The APR for purchases and future balance transfers is determined for each billing period by adding 0.00%, 3.99%, 6.99% or 9.99% to the Prime Rate. The APR for cash advances is determined for each billing period by adding 14.99% to the Prime Rate. The APR for defaulted and seriously defaulted accounts is determined for each billing period by adding 15.99% or 21.99%, respectively, to the Prime Rate†.	• 25 days for purchases, if the previous balance shown on each billing statement is paid in full by each respective due date.	• Average daily balance (including new purchases).

Other Fees: Late payment fee: $19 on balances less than $400 and $38 on balances $400 or greater. Overlimit fee: $35. Balance transfer fee: There is no balance transfe with this offer. However, future balance transfers may incur a fee as disclosed at the time of the applicable offer or transaction. Fee for Cash Advances: 3% of each trans and no maximum.

The Federal Reserve's Statistical Release E.2 is the only comprehensive source of current information on the interest rates charged to small businesses by commercial banks for loans of different sizes—under $100,000, $100,000 to $500,000, etc.[26] Because a large percentage of loans under $100,000 are credit-card-related, it would seem reasonable to use the interest rates charged for this loan size as a proxy for rates paid by credit card users.[27] Unfortunately, the rates reported in the E.2 Statistical Release have not been very revealing.[28] In fact, the rates seem to be the average of a mixture of the teaser and after-teaser rates for credit card loans and the rates for non-credit-card-related loans. (See the chart of rates for C&I loans provided in the E.2 release.) Charts 4 and 5 provide support for this assertion.[29]

Chart 4 shows the rate spread (over an index) for the smallest loans made by the largest domestic banks, as defined in the E.2 release for both weighted and unweighted rates. The declining trend in the rate spread is unmistakable, with the unweighted rates

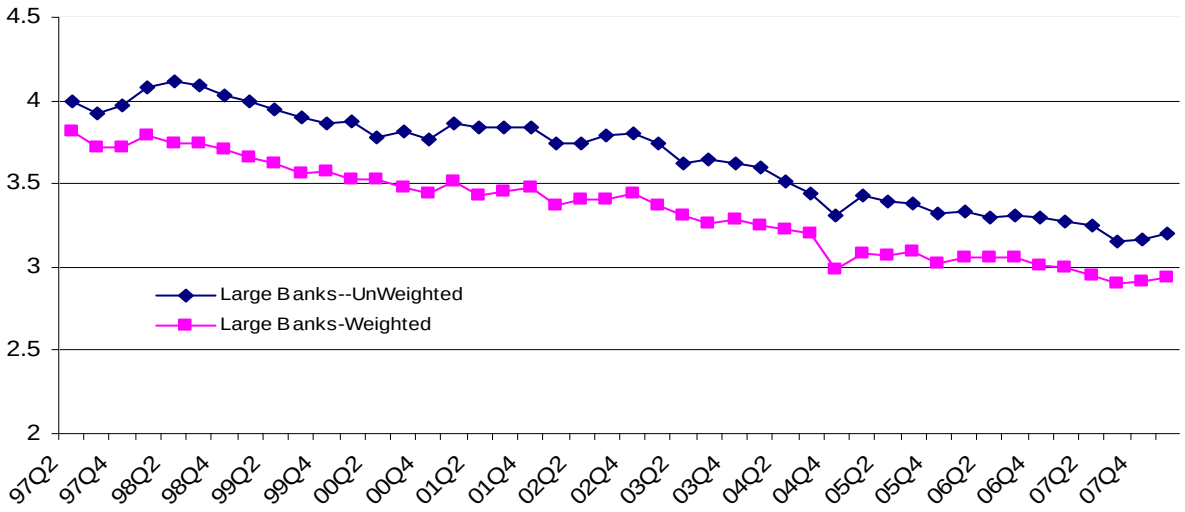
[26] Federal Reserved Board, Statistical Release E.2, *Survey of Terms of Bank Lending*, for the months of February, May, September, and November of the year.
[27] In fact, the amounts of 60 percent of the loans in the loan category under $100,000 in the May 2007 survey were under $7,500.
[28] See Statistical Release E.2, any issue. See especially charts for rate spreads on commercial and industrial loans at domestic banks, for loans of less than $100,000.
[29] Unweighted data are provided by the Federal Reserve Board. See also Statistical Release E.2.

some 50 basis points higher than the weighted rates because of the large number of small loans in the sample.

Chart 5 compares the rate spreads for the smallest loans made by large and other (smaller) banks. The differences in the levels and movements in the rate spreads charged by large banks compared with small banks are significant. The downward trend observed in the rate spreads for large banks over this period was not observed at all in the rate spread for other banks.

Information collected in the 2003 SSBF on rates paid by small firms using business credit cards should shed additional light on the rates charged by lenders for the use of credit card facilities (Table 14).[30] The average rates charged by large banks for the smallest loans were around 9 percent in 2003, based on the E.2 release.

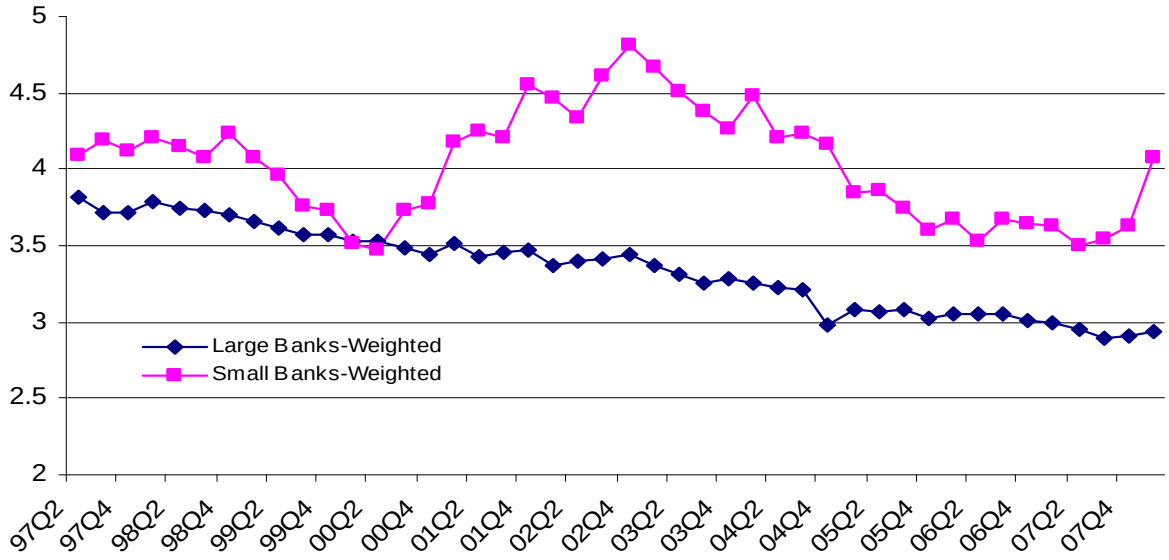
Chart 4. Rate Spreads Charged by Large Banks for the Smallest Loans (Second Quarter 1997 to First Quarter 2008) Weighted versus Unweighted Rates



Source: U.S. Small Business Administration, Office of Advocacy. Based on E.2 Release data from the Federal Reserve Board.

[30] Thanks to Dr. John Wolken of the Federal Reserve Board for generating these estimates from the 2003 SSBF.

Chart 5. Rate Spreads for the Smallest Loans (under $100,000) by Large and Other (Small) Banks, Second Quarter 1997 to First Quarter 2008



Source: U.S. Small Business Administration, Office of Advocacy. Based on E.2 Release data from the Federal Reserve Board.

6. Conclusion

This paper provides an overview of small business loan markets in the United States. Much information has become available for a better understanding of developments in the markets over the past 10 to 15 years. However, as is always the case, with an ever-changing banking industry in a globalizing financial market characterized by rapidly changing technology and financial modeling, much of the information collected in the Call and CRA reports by financial regulatory agencies is inadequate. This is especially true for information on business credit cards used by small businesses. A better understanding of the working of these markets can only be attained through the collection of better information by the financial regulatory agencies.

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8. Tables

Appendix A: U.S. Small Business Population, 2003 and 2005

Small and medium-sized enterprise measures	2003	2005
Employer firms (nonfarm)	5.7e	6.0
Nonemployer firms	18.0	20.4
Total	23.7	26.4
Number of nonfarm business tax returns	27.0	29.5
Number of Sole Proprietorships (IRS)	18.9	21.5
Self-employment		15.8
Self-employment, nonincorporated	10.3	10.5
Self-employment, incorporated	5.0	5.3

e= estimated
Sources: U.S. small Business Adminstration, Office of Advocacy, from data provided by the U.S. Department of Commerce, Bureau of the Census; U.S. Department of the Treasury, Internal Revenue Service, SOI Bulletin; and the U.S. Department of Labor.

Table 1. Changes in the Number of Lending Institutions by Asset Size in the United States, June 2004-June 2008

	More than $50 Billion	*$10 Billion to $50 Billion*	***More than $10 Billion***	*$1 Billion to $10 Billion*	*$500 Million to $1 Billion*	*Less than $500 Million*	All Banks/ BHCs
June 30, 2008	34	66	**100**	529	657	6,094	7,380
June 30, 2007	32	74	**106**	498	617	6,244	7,465
June 30, 2006	34	74	**108**	473	591	6,391	7,563
June 30, 2005	31	70	**101**	449	541	6,533	7,624
June 30, 2004	26	78	**104**	430	491	6,712	7,737

* For all depository institutions except credit unions. For U.S. depository institutions including independent institutions and bank and financial services holding companies. See Ou and Williams (2008).
Source: U.S. Small Business Administration, Office of Advocacy, Small Business and Micro Business Lending in the United States, various editions.

Table 2. Share of All Small Firms Using Credit by Credit Type, Firm Size, and Industry, 1998 and 2003

(percent except as noted)

Loan type	Any firm	Firms by employment size						Firms by industry classification						
		0	1-4	5-9	10-19	20-99	100-499	Mining & Const.	Manufacturing.	Transporta-tion.	Whole-sale	Retail	FIRE	Serv.
2003														
Any credit	89.0	80.9	89.9	94.3	96.5	97.2	97.7	88.5	94.1	94.4	90.6	87.3	87.1	88.6
Loan type														
Any traditional loan	60.4	42.5	59.1	74.7	77.1	84.1	93.8	70.7	70.0	79.1	62.6	58.9	59.2	55.3
Line of credit	34.3	17.9	32.5	45.3	49.5	60.2	82.5	44.6	47.8	36.5	49.4	32.8	28.8	28.8
Mortgage	13.3	6.8	14.8	15.4	19.0	20.9	28.1	13.6	18.0	9.5	13.1	14.7	23.1	10.7
Vehicle loan	25.5	17.2	24.5	31.7	35.9	36.3	35.7	43.9	27.3	42.9	30.1	19.7	21.1	21.5
Equipment loan	10.3	4.1	6.2	14.9	20.2	26.6	32.4	16.5	17.5	16.0	7.1	9.2	4.0	8.9
Lease	8.7	4.4	7.2	12.3	12.5	17.7	28.0	6.3	10.9	9.3	7.8	7.3	5.3	10.1
Other	10.1	7.2	7.5	14.1	15.3	16.0	18.7	7.5	10.5	20.0	9.6	14.0	5.4	9.2
Any nontraditional loan	80.0	70.9	82.2	85.3	89.6	85.3	87.1	79.1	86.2	75.4	85.7	79.4	75.7	79.9
Owner loan	16.8	4.7	17.0	25.6	27.4	32.8	27.8	15.5	28.0	16.4	26.2	21.5	10.6	13.2
Personal credit card	46.7	49.6	47.6	47.1	44.8	34.3	32.1	44.6	47.3	41.4	46.7	47.9	47.4	47.0
Business credit card	48.1	33.3	50.1	59.3	58.4	62.6	71.7	52.2	54.8	51.8	54.4	45.0	43.0	47.0
1998														
Any credit	82.5	70.2	80.3	89.6	94.1	95.0	99.6	84.9	86.8	85.4	88.4	78.3	84.3	81.4
Loan type														
Any traditional loan	55.0	32.8	49.0	70.1	76.0	84.2	92.1	66.8	58.5	62.1	64.3	54.1	59.8	48.8
Line of credit	27.7	12.8	21.0	34.8	49.2	59.9	74.9	32.0	34.2	29.7	47.3	25.2	26.9	23.1
Mortgage	13.2	6.5	12.5	15.5	19.5	21.1	18.8	11.6	7.6	10.9	12.1	17.4	24.8	11.5
Vehicle loan	20.5	12.3	17.9	25.1	31.3	32.9	29.8	38.0	18.1	28.8	27.8	17.8	16.6	16.0
Equipment loan	9.9	3.9	7.8	14.6	12.9	22.1	25.0	11.1	16.5	12.5	9.8	7.7	11.5	8.8
Lease	10.6	3.2	7.5	14.6	22.3	23.3	28.3	8.3	16.7	14.9	10.5	6.4	10.0	11.6
Other	9.8	5.8	8.9	9.3	15.0	19.3	22.7	10.5	17.2	12.6	10.5	10.1	8.9	7.9
Any nontraditional loan	70.7	59.4	68.2	75.7	84.3	85.6	84.5	67.6	76.7	76.8	82.9	62.3	40.0	71.6
Owner loan	14.2	0.2	12.0	19.3	29.1	32.9	27.6	13.1	24.7	18.1	21.6	14.0	14.2	11.1
Personal credit card	46.0	48.2	46.7	43.2	52.2	38.8	23.7	40.8	48.7	44.1	45.8	41.0	41.5	49.9
Business credit card	34.1	17.4	29.3	44.1	51.8	57.9	62.5	33.4	39.3	45.5	46.3	29.9	36.3	31.7

Note: Owner loans are included for partnerships and corporations only. FIRE = Finance, Insurance and Real Estate
Source: U.S. Small Business Administration, Office of Advocacy, from Federal Reserve Board SSBF, 1998 and 2003.

Table 3. Share of Small Firms Using Credit by Credit Supplier, Firm Size, and Industry, 1998 and 2003

(percent)

Lender	Any firm	Firms by employment size						Firms by industry classification						
		0	1-4	5-9	10-19	20-99	100-499	Mining & Const.	Mfg.	Transportation.	Wholesale	Retail	FIRE	Services
2003														
Any credit	89.0	80.9	89.9	94.3	96.5	97.2	97.7	88.5	94.1	94.4	90.6	87.3	87.1	88.6
Depository institutions														
Any traditional loan	60.4	42.5	59.1	74.7	77.1	84.1	93.8	70.7	70.0	79.1	62.6	58.9	59.2	55.3
Any depository institution	46.4	26.0	44.0	61.1	68.1	75.5	89.9	56.5	59.8	54.8	55.2	47.9	45.1	39.4
Credit union	3.9	4.3	3.2	4.5	3.3	3.8	2.2	5.6	4.2	8.5	4.4	2.5	3.4	3.5
Thrift	5.5	2.9	6.0	5.9	8.7	8.9	8.2	7.0	5.4	6.7	3.5	5.8	10.2	4.3
Commercial bank	41.0	20.8	39.4	55.6	61.1	69.4	85.7	49.5	54.7	49.8	53.4	43.2	38.5	34.0
Nondepository institutions														
Any nondepository institution	25.8	16.5	23.2	34.6	35.9	40.4	49.5	37.3	26.7	42.3	29.2	20.2	21.1	24.0
Finance company	22.1	14.2	20.0	29.0	30.1	36.2	40.6	32.5	21.8	36.4	26.5	16.8	16.5	20.8
Brokerage	0.7	0.3	0.4	1.5	1.0	1.5	2.8	—	0.9	0.1	1.0	0.7	1.1	0.9
Leasing	4.2	1.7	3.8	5.5	7.8	8.1	14.1	4.8	6.1	6.2	3.2	4.2	2.4	4.1
Other nondepository	1.1	0.9	0.8	2.2	0.7	0.7	0.7	2.4	0	1.1	1.8	1.0	2.4	0.6
Nonfinancial institutions														
Any nonfinancial institution	10.4	8.1	7.9	14.7	15.1	13.3	18.4	8.6	17.2	15.2	8.5	11.5	5.2	10.1
Family and friends	6.2	4.4	5.3	8.2	10.0	6.7	10.6	3.4	10.5	12.0	4.7	7.4	2.3	6.0
Other businesses	2.6	2.4	1.6	3.7	4.0	3.0	4.3	2.8	3.6	1.5	1.6	2.2	0.9	3.0
Government	1.3	0.9	0.5	1.8	2.4	3.1	5.7	2.3	2.5	2.0	1.3	1.9	0	0.8
Other	0.4	0.5	0.2	0.7	0	0.7	0.2	0	0.4	0.1	—	0.4	1.4	0.4
Other														
Unknown	0.4	0.1	0.5	0.5	0.6	0.2	0.3	0.1	0.6	1.0	1.1	0.2	0.6	0.3
Any nontraditional credit	80.0	70.9	82.2	85.3	89.6	85.3	87.1	79.1	86.2	75.4	85.7	79.4	75.7	79.9
Owner loans	16.8	4.7	17.0	25.6	27.4	32.8	27.8	15.5	28.0	16.4	26.2	21.5	10.6	13.2
Personal credit cards	46.7	49.6	47.6	47.1	44.8	34.3	32.1	44.6	47.3	41.4	46.7	47.9	47.4	47.0
1998														
Any credit	82.5	70.2	80.3	89.6	94.1	95.0	99.6	84.9	86.8	85.4	88.4	78.3	84.3	81.4
Depository institutions														
Any traditional loan	55.0	32.8	49.0	70.1	76.0	84.2	92.1	66.8	58.5	62.1	64.3	54.1	59.8	48.8
Any depository institution	42.0	21.6	35.5	55.9	62.5	73.5	77.9	55.4	46.0	44.2	51.2	42.7	46.9	34.9
Credit union	2.3	3.0	2.2	2.3	3.3	1.0	0.1	3.7	1.9	4.7	3.4	0.8	3.1	2.2
Thrift	3.3	2.9	3.3	2.8	3.9	5.0	3.4	3.0	2.7	2.5	4.3	3.3	5.9	3.0
Commercial bank	38.2	17.3	31.3	53.2	59.0	70.2	77.2	50.3	42.2	39.3	46.1	40.3	41.6	31.4
Nondepository institutions														
Any nondepository institution	19.8	10.8	16.7	23.2	33.2	34.9	45.4	22.5	21.0	27.5	25.0	15.0	16.3	19.9
Finance company	13.3	7.1	11.5	15.8	19.7	24.3	27.5	18.5	12.6	19.5	14.6	10.5	10.8	12.8
Brokerage	0.4	0.5	0.3	0.3	0.7	0.8	2.2	0.7	0.6	0.3	0.7	0.1	0.0	0.5
Leasing	6.8	2.5	4.8	9.6	14.5	12.4	22.7	3.4	9.7	8.9	9.6	3.8	6.7	7.9
Other nondepository	1.5	1.5	1.5	1.5	1.2	1.9	1.8	1.2	0.8	2.1	1.7	1.8	2.9	1.3
Nonfinancial institutions														
Any nonfinancial institution	9.6	6.7	8.7	9.5	13.8	17.7	12.4	6.4	15.3	9.5	10.4	9.5	11.3	9.1
Family and friends	6.0	3.6	5.7	5.6	9.4	10.5	6.5	3.3	9.1	6.2	6.9	5.4	8.3	5.8
Other businesses	3.0	2.6	2.4	3.4	3.4	5.6	4.3	2.7	5.3	2.8	2.0	3.0	2.9	2.8
Government	1.0	0.5	0.7	0.9	1.6	3.2	2.6	0.9	1.5	0.0	1.7	1.7	0.0	0.7
Any nontraditional credit	70.7	59.4	68.2	75.7	84.3	85.6	84.5	67.6	76.7	76.8	82.9	62.3	70.0	71.6
Other														
Owner loans	14.2	0.2	12.0	19.3	29.1	32.9	27.6	13.1	24.7	18.1	21.6	14.0	14.2	11.1
Personal credit cards	46.0	48.2	46.7	43.2	52.2	38.8	23.7	40.8	48.7	44.7	45.8	41.0	41.5	49.9
Business credit cards	34.1	17.4	29.3	44.1	51.8	57.9	62.5	33.4	39.3	45.5	46.3	29.9	36.3	31.7

Note: Owner loans are included for partnerships and corporations only. FIRE = Finance, Insurance and Real Estate

Source: U.S. Small Business Administration, Office of Advocacy, from Federal Reserve Board Survey of Small Business Finances, 1998 and 2003.

Table 4. Share of Total Debt Outstanding for All Small Firms by Credit Type, Firm Size, and Industry, 1998 and 2003

(percent except as noted)

Loan type	Any firm		Firms by employment size					
	Amount in dollars	Percent	0	1-4	5-9	10-19	20-99	100-499
2003								
Any credit	1,360,996	100	100	100	100	100	100	100
Loan type								
Any traditional loan	1,247,963	91.7	97.5	92.4	87.8	89.4	91.6	93.8
Line of credit	395,267	29.0	14.1	18.7	37.8	18.8	33.1	36.1
Mortgage	487,708	35.8	61.7	56.6	25.9	45.7	30.2	20.2
Vehicle loan	63,476	4.7	7.6	5.1	5.6	4.8	4.0	3.2
Equipment loan	90,045	6.6	1.7	5.7	4.0	5.5	6.4	12.5
Lease	40,142	2.9	0.7	1.1	0.7	1.3	7.6	1.2
Other	171,325	12.6	11.5	5.1	13.6	13.3	10.2	20.6
Any nontraditional loan	113,032	8.3	2.5	7.6	12.2	10.6	8.4	6.2
Owner loan	103,055	7.6	0.9	6.3	10.6	9.7	8.2	6.2
Any credit card	9,978	0.7	1.5	1.4	1.6	0.9	0.1	10.0
1998								
Any credit	700,026	100	100	100	100	100	100	100
Loan type								
Any traditional loan	608,730	87.0	97.8	81.3	86.0	89.0	83.7	93.3
Line of credit	207,383	29.6	4.1	21.4	23.5	29.5	28.6	44.0
Mortgage	213,534	30.5	80.3	37.4	39.1	28.4	26.7	20.5
Vehicle loan	33,654	4.8	6.3	7.7	5.9	6.0	3.5	3.1
Equipment loan	58,545	8.4	2.0	3.5	5.6	8.8	10.5	10.8
Lease	35,521	5.1	1.9	3.3	3.9	8.8	5.8	3.9
Other	60,093	8.6	3.3	8.0	8.0	7.4	8.6	10.9
Any nontraditional loan	91,296	13.0	2.2	18.7	14.0	11.0	16.3	6.7
Owner loan	86,525	12.4	0.2	16.2	13.2	10.5	16.2	6.7
Any credit card	4,771	0.7	2.0	2.6	0.8	0.6	0.1	0.0

Source: U.S. Small Business Administration, Office of Advocay, from Federal Reserve Board Survey of Small Business Finances, 1998 and 2003.

Table 5. Share of Aggregate Value of Traditional Debt Held by Small Firms, by Source and Supplier of Credit, 2003, 1998

Supplier	Line of credit	Lease	Mortgage	Vehicle	Equipment	Other	Total
			2003				
Credit union	0.1	0	0.32	4.9	0.33	0.82	0.54
Savings and loan	3.49	0.82	11.78	2.93	4.27	0.95	6.32
Commercial bank	79.81	6.72	53.07	40.45	47.62	41.94	57.49
Finance company	13.36	22.58	11.1	49.36	28.87	14.87	15.93
Brokerage	1.04	0.11	1.09	0.06	0.84	1.29	1
Leasing	0.39	65.93	0	0.67	11.46	0.25	3.14
Other nondepository	0.31	0.04	16.03	0.08	0.31	6.14	7.24
Family	0.07	0.2	1.71	0.26	2.34	15.61	3.02
Other business	0.27	2.83	0.16	1.06	3.08	6.56	1.41
Government	1.14	0.02	4.23	0.04	0.59	10.83	3.54
Other individual	0	0.39	0.26	0.01	0.1	0.68	0.22
Not classified	0.01	0.37	0.24	0.18	0.2	0.06	0.14
All	100	100	100	100	100	100	100
			1998				
Credit union	0.15	0.28	0.72	3.39	0.22	0.37	0.57
Savings and loan	1	0.59	7.69	1.23	0.11	1.7	3.32
Commercial bank	86.6	27.06	57.36	49.83	59.05	51.09	64.68
Finance company	9.74	18.15	8.46	39.65	26.44	2.49	12.32
Brokerage	0.31	0.94	0.09	0.03	0.07	0.75	0.27
Leasing	0.05	39.3	0.03	2.08	3.65	0.08	2.79
Other nondepository	0.16	0.07	17.06	0.11	0.04	0.65	6.11
Family	0	0.99	3.86	0.85	0.39	31.27	4.58
Other business	0.15	10.32	0.3	0.31	1.62	7.16	1.64
Government	0.2	0.06	1.24	0	1.59	3.47	1
Other individual	0.05	0.06	0.75	0.11	0	0.26	0.32
Not classified	1.6	2.18	2.45	2.42	6.82	0.71	2.39
All	100	100	100	100	100	100	100

Source: U.S. Small Business Administration, Office of Advocacy, From Federal Reserve Board Survey of Small Business Finances, 1998 and 2003.

Table 6. Number and Amount of Small Business Loans, June 2007
(amounts in billions of dollars)

			Institution asset size				
Loan size		**Grand Total**	**<$100M**	**$100M-500M**	**$500M-$1B**	**$1B-$10B**	**>$10B**
Under $100,000	Dollars	159.71	11.35	27.30	9.75	22.50	88.81
	Number	21,604,027	425,279	1,114,602	1,691,349	4,474,068	13,898,729
$100,000-$250 million	Dollars	125.70	6.43	30.69	13.04	26.77	48.78
	Number	1,726,542	54,372	854,854	110,378	298,341	408,597
$250,000-$1 million	Dollars	398.19	15.44	87.00	42.25	88.54	164.96
	Number	1,158,257	42,050	247,941	111,273	324,196	432,797
$100,000-<$1 million	Dollars	523.89	21.87	117.69	55.29	115.30	213.74
	Number	2,884,799	96,422	1,102,795	221,651	622,537	841,394
Under $1 million	Dollars	683.60	33.21	144.99	65.04	137.80	302.55
	Number	24,488,826	521,701	2,217,397	1,913,000	5,096,605	14,740,123
Total business loans		2,023.94	39.59	225.91	129.25	377.90	1,251.29

Source: U.S. Small Business Administration, Office of Advocacy, from Call Report data.

Table 7. Total Assets, Business Loans Outstanding by Size, and Loan-to-Asset Ratios for All Reporting Institutions, June 1995-June 2007

(amounts in millions of dollars)

		2007*	2006*	2005*	2004*	2003*	2002	2001	2000	1999	1998	1997	1996	1995
Loans underr $100,000**	Dollars	159.71	146.03	138.44	135.88	136.57	128.89	126.78	121.44	113.85	111.11	108.21	105.19	100.37
	Number	21,604,027	19,020,849	19,019,222	15,242,063	17,137,715	15,651,289	10,794,555	9,802,330	7,726,928	7,018,226	6,725,646	5,313,182	4,885,066
Loans under $1 million	Dollars	683.60	633.97	600.77	577.15	548.09	483.99	460.42	436.98	398.45	370.46	348.71	333.04	315.91
	Number	24,488,826	21,257,144	21,001,994	17,130,251	18,908,327	17,241,556	12,250,124	11,169,911	8,997,645	8,212,466	7,901,185	6,396,477	5,900,371
Loans $100,000-<$1 million	Dollars	523.89	487.94	462.33	441.27	411.52	355.10	333.65	315.54	284.60	259.34	240.51	227.86	215.54
	Number	2,884,799	2,236,295	1,982,772	1,888,188	1,770,612	1,590,267	1,455,569	1,367,581	1,270,717	1,194,240	1,175,539	1,083,295	1,015,305
Total business loans	Dollars	2,023.94	1,848.44	1,680.79	1,512.62	1,446.03	1,306.95	1,324.52	1,300.27	1,142.33	1,019.19	923.24	848.10	805.99
Total Assets		10,808.21	10,293.28	9,494.47	8,772.90	8,106.69	5,912.04	5,548.33	5,229.59	4,736.23	4,419.40	4,046.39	3,766.85	3,556.66
Large business loans >$ 1 million		1,340.34	1,214.48	1,080.01	935.47	897.94	822.97	864.10	863.28	743.88	648.73	574.52	515.06	490.08
Loan Ratios:														
SSBL$/TBL		0.079	0.079	0.082	0.090	0.094	0.099	0.096	0.093	0.100	0.109	0.117	0.124	0.125
LSBL$(2)/TBL		0.259	0.264	0.275	0.292	0.285	0.272	0.252	0.243	0.249	0.254	0.261	0.269	0.267
LSBL$/TBL		0.338	0.343	0.357	0.382	0.379	0.370	0.348	0.336	0.349	0.363	0.378	0.393	0.392
SSBL$/TA		0.015	0.014	0.015	0.015	0.017	0.022	0.023	0.023	0.024	0.025	0.027	0.028	0.028
LSBL$(2)/TA		0.048	0.047	0.049	0.050	0.051	0.060	0.060	0.060	0.060	0.059	0.059	0.060	0.061
LSBL$/TA		0.063	0.062	0.063	0.066	0.068	0.082	0.083	0.084	0.084	0.084	0.086	0.088	0.089
Number of reporting banks		8,633	8,709	8,799	9,008	9,197	7,949	8,158	8,459	8659	8,966	9,293	9,670	10,149

*Since 2003, data include all depository institutions excluding credit unions. See *Small and Micro Business Lending in the United States, 2003-2004,* for discussion on expanded coverage.

Notes: SSBL = business loans under $100,000; LSBL(2) = business loans of $100,000 to under $1 million; LSBL = business loans under $1 million; TBL = total business loans; TA = total assets.

Source: U.S. Small Business Administration, Office of Advocacy, Small Business and Micro Business Lending in the United States, various editions.

Table 8. Share of Total Assets and Business Loans by Size of All U.S. Depository Institutions, (for Independent and Holding Companies), June 2004–June 2008
(percent, except figures for number of institutions)*****

Number of lending institutions /w Loan Sizes	*Amount / Number*	*More than $50 Billion*	*$10 Billion to $50 Billion*	***More than $10 Billion***	*$1 Billion to $10 Billion*	*$500 Million to $1 Billion*	*Less than $500 Million*	All Bks/BHCs
June 30, 2007								
Number of Banks/BHCs		32	74	**106**	498	617	6,244	7,465
Under $100,000	*Amount*	41.51	16.67	**58.18**	14.00	6.02	21.81	100
	Number	49.00	17.40	**66.39**	19.85	7.62	6.14	100
$100,000 to $1 Million	*Amount*	32.48	12.17	**44.65**	22.27	9.98	23.11	100
	Number	23.57	8.75	**32.32**	21.71	7.24	38.74	100
Total Small Business Loans (under $1 Million)	*Amount*	34.59	13.22	**47.81**	20.33	9.05	22.80	100
	Number	46.00	16.38	**62.38**	20.07	7.57	10.00	100
Total Business Loans	*Amount*	51.31	13.90	**65.21**	17.57	5.90	11.32	100
Total Domestic Assets	*Amount*	61.31	14.27	**75.58**	12.29	3.99	8.13	100
June 30, 2006								
Number of Banks/BHCs		34	74	**108**	473	591	6,391	7,563
Under $100,000	*Amount*	38.98	13.67	**52.65**	14.55	7.07	25.63	100
	Number	53.11	17.74	**70.85**	12.44	9.47	7.23	100
$100,000 to $1 Million	*Amount*	30.29	11.99	**42.28**	22.46	10.17	25.00	100
	Number	27.48	10.36	**37.84**	20.37	8.79	33.00	100
Total Small Business Loans (under $1 Million)	*Amount*	32.30	12.37	**44.67**	20.66	9.45	25.22	100
	Number	50.42	16.96	**67.38**	13.28	9.40	9.94	100
Total Business Loans	*Amount*	50.68	13.33	**64.02**	17.56	6.12	12.31	100
Total Domestic Assets	*Amount*	60.88	14.35	**75.23**	12.25	3.96	8.56	100
June 30, 2005								
Number of Banks/BHCs		31	70	**101**	449	541	6,533	7,624
Under $100,000	*Amount*	36.49	13.33	**49.82**	15.05	6.62	28.51	100
	Number	52.00	17.98	**69.98**	13.86	8.83	7.33	100
$100,000 to $1 Million	*Amount*	30.23	11.76	**41.99**	21.96	9.95	26.10	100
	Number	30.72	11.33	**42.05**	21.25	9.35	27.36	100
Total Small Business Loans (under $1 Million)	*Amount*	31.67	12.13	**43.80**	20.37	9.18	26.65	100
	Number	49.99	17.35	**67.34**	14.55	8.88	9.22	100
Total Business Loans	*Amount*	48.99	13.39	**62.37**	18.18	6.11	13.33	100
Total Domestic Assets	*Amount*	58.77	15.00	**73.77**	13.06	3.92	9.25	100
June 30, 2004								
Number of Banks/BHCs		26	78	**104**	430	491	6,712	7,737
Under $100,000	*Amount*	32.22	17.03	**49.25**	13.85	6.43	30.46	100
	Number	47.93	21.53	**69.47**	13.92	6.32	10.29	100
$100,000 to $1 Million	*Amount*	26.93	16.41	**43.33**	20.92	9.12	26.63	100
	Number	26.50	16.02	**42.52**	20.46	10.49	26.53	100
Total Small Business Loans (under $1 Million)	*Amount*	28.17	16.56	**44.73**	19.26	8.49	27.53	100
	Number	45.57	20.93	**66.5**	14.64	6.78	12.08	100
Total Business Loans	*Amount*	44.03	17.49	**61.52**	18.10	5.95	14.43	100
Total Domestic Assets	*Amount*	53.93	18.87	**72.80**	13.33	3.85	10.02	100

*For all depository institutions except credit unions. Source: See Table 7.

Table 9. Lenders' Share of the Loan Markets by Asset Size

Asset Siz	Under $100k	$100k-$250k	$250k – $1million	Under $1million	Over $1M	Total Business Loans	Total Assets
Under $100M							
1996	26.96	12.31	8.16	14.94	0.52	6.18	7.69
1997	24.54	10.79	7.33	13.39	0.50	5.46	6.91
1998	22.85	9.84	6.94	12.32	0.46	4.77	5.86
1999	20.46	9.49	6.67	11.19	0.46	4.20	5.21
2000	19.31	8.98	6.50	10.45	0.40	3.75	4.63
2001	16.27	8.58	6.44	9.57	3.60	0.42	4.10
2002	14.45	8.31	6.37	8.91	0.52	3.62	3.71
2003	13.12	7.64	5.87	8.06	3.35	0.51	3.12
2004	11.66	7.21	5.51	7.32	3.16	0.60	2.78
2003*	12.55	7.28	5.53	7.63	0.51	3.21	2.83
2004	11.11	6.91	5.21	6.93	0.59	3.01	2.51
2005	10.02	6.31	4.75	6.26	0.52	2.57	2.17
2006	8.70	7.44	5.89	4.42	0.49	2.27	1.91
2007	7.10	5.11	3.88	4.86	0.48	1.96	1.48
$100M-500M							
1996	30.00	27.93	24.48	26.92	4.77	13.47	13.25
1997	29.38	27.59	24.39	26.59	4.67	13.10	12.85
1998	29.52	27.47	23.96	26.36	4.17	12.24	11.84
1999	28.90	27.15	23.81	25.94	4.18	11.77	11.30
2000	28.89	27.45	24.34	26.19	4.18	11.53	10.82
2001	26.07	26.61	23.74	24.95	11.72	4.66	10.26
2002	24.28	26.28	24.00	24.53	5.74	12.70	9.99
2003	23.95	27.19	25.27	25.31	13.45	6.32	9.49
2004	23.72	27.65	24.97	25.20	14.13	7.34	9.28
2003*	23.70	27.14	25.07	25.14	6.35	13.47	9.55
2004	23.35	27.44	24.63	24.88	7.21	13.95	9.06
2005	21.87	26.86	24.47	24.33	6.67	12.98	8.43
2006	19.68	22.52	25.99	23.57	6.19	12.00	7.85
2007	17.09	24.41	21.85	21.21	6.04	11.16	6.66
$500M-$1B							
1996	6.27	7.70	7.76	7.28	2.90	4.62	4.67
1997	6.97	8.52	8.64	8.10	3.13	5.04	5.02
1998	6.91	8.82	8.87	8.27	3.15	5.01	4.73
1999	5.95	7.98	8.16	7.49	2.80	4.43	4.21
2000	6.22	8.02	8.01	7.53	2.93	4.46	4.08
2001	6.68	8.41	8.33	7.89	4.76	3.09	3.92
2002	6.70	9.08	9.20	8.51	3.91	5.61	4.05
2003	6.72	9.24	9.22	8.59	6.07	4.55	4.05
2004	6.35	8.68	8.71	8.14	6.04	4.76	3.74
2003*	7.11	9.75	9.79	9.12	4.86	6.47	4.55
2004	6.66	9.42	9.60	8.87	5.13	6.56	4.18
2005	7.02	10.13	10.35	9.54	4.93	6.58	4.18
2006	7.65	9.02	10.68	10.99	4.96	6.74	4.36
2007	6.10	10.38	10.61	9.51	4.79	6.39	3.99
$1B-$10B							
1996	19.20	27.30	29.73	25.92	26.66	26.37	26.39
1997	15.93	22.78	25.31	21.88	22.89	22.50	22.56
1998	16.78	22.46	24.37	21.69	19.22	20.12	20.87
1999	14.99	20.92	22.68	20.12	16.40	17.70	17.99
2000	15.64	19.62	20.99	19.27	14.68	16.21	16.43
2001	15.14	19.27	20.77	18.92	17.02	16.01	15.70
2002	16.47	18.65	19.85	18.71	16.24	17.16	15.02
2003	16.18	18.42	19.07	18.21	16.79	15.94	13.84
2004	15.50	18.59	19.86	18.57	17.81	17.35	12.73
2003*	16.79	20.02	20.79	19.64	18.00	18.62	16.00
2004	16.20	19.89	21.26	19.80	19.00	19.30	14.78
2005	17.52	20.33	22.08	20.69	18.71	19.42	14.29
2006	18.18	19.68	21.50	22.80	18.35	19.43	13.87
2007	14.09	21.29	22.23	20.16	17.91	18.67	12.29
Over $10B							
1996	17.57	24.76	29.86	24.95	65.14	49.36	47.99
1997	23.18	30.32	34.32	30.04	68.82	53.91	52.66
1998	23.79	31.32	35.78	31.26	73.00	57.82	56.68
1999	29.59	34.41	38.65	35.20	76.16	61.87	61.26
2000	29.95	35.92	40.17	36.56	77.82	64.05	64.04
2001	35.85	37.12	40.73	38.67	62.90	75.81	66.02
2002	38.10	37.67	40.58	39.34	73.59	60.91	67.23
2003	40.04	37.52	40.57	39.83	60.34	72.67	69.51
2004	42.76	37.87	40.95	40.77	58.86	69.95	71.47
2003*	39.84	35.81	38.81	38.47	70.28	58.22	67.07
2004	42.67	36.34	39.31	39.52	68.06	57.17	69.47
2005	43.58	36.37	38.35	39.17	69.17	58.45	70.92
2006	45.79	41.35	35.93	38.22	70.01	59.56	72.00
2007	55.61	38.81	41.43	44.26	70.78	61.82	75.58

*Start of new banking data, which includes federal banks and S&L

Source: U.S. Small Business Administration, Office of Advocacy, Call Reports 1996-2007.

Table 10. Lenders' Ratios of Small Business Loans to Total Business Loans by Size of Lender and of Loan, 1996-2007

Asset size	Under $100,000	$100k-$250k	$250k-$1million	Over $1 million	Total Business Loans	TBL/TA
Lenders with Assets under $100 million						
1996	0.541	0.158	0.250	0.051	1.000	0.181
1997	0.538	0.155	0.251	0.057	1.000	0.184
1998	0.524	0.154	0.261	0.061	1.000	0.188
1999	0.485	0.160	0.283	0.072	1.000	0.195
2000	0.461	0.163	0.305	0.071	1.000	0.204
2001	0.432	0.165	0.327	0.077	1.000	0.210
2002	0.393	0.169	0.348	0.090	1.000	0.216
2003	0.373	0.170	0.361	0.096	1.000	0.214
2004	0.337	0.171	0.374	0.117	1.000	0.220
2003*	0.370	0.171	0.361	0.099	1.000	0.202
2004	0.332	0.173	0.374	0.122	1.000	0.207
2005	0.320	0.170	0.379	0.130	1.000	0.210
2006	0.303	0.168	0.387	0.142	1.000	0.213
2007	0.287	0.162	0.390	0.161	1.000	0.248
% changes(93-07)						
Lenders with Assets $100-$500 million						
1996	0.276	0.164	0.344	0.215	1.000	0.229
1997	0.268	0.165	0.347	0.219	1.000	0.237
1998	0.264	0.168	0.351	0.217	1.000	0.239
1999	0.245	0.164	0.360	0.231	1.000	0.251
2000	0.224	0.162	0.372	0.242	1.000	0.269
2001	0.213	0.157	0.370	0.260	1.000	0.273
2002	0.189	0.152	0.375	0.285	1.000	0.281
2003	0.170	0.151	0.386	0.293	1.000	0.283
2004	0.153	0.147	0.378	0.322	1.000	0.295
2003*	0.166	0.152	0.390	0.293	1.000	0.252
2004	0.150	0.148	0.382	0.320	1.000	0.266
2005	0.139	0.144	0.388	0.330	1.000	0.272
2006	0.130	0.140	0.391	0.339	1.000	0.274
2007	0.121	0.136	0.385	0.358	1.000	0.314
% changes(93-07)						
Lenders with Assets $500M -$1 Billion						
1996	0.168	0.132	0.318	0.382	1.000	0.223
1997	0.166	0.132	0.320	0.382	1.000	0.233
1998	0.151	0.132	0.318	0.400	1.000	0.245
1999	0.134	0.128	0.328	0.411	1.000	0.254
2000	0.125	0.122	0.316	0.437	1.000	0.276
2001	0.134	0.122	0.320	0.424	1.000	0.290
2002	0.118	0.119	0.325	0.439	1.000	0.307
2003	0.105	0.114	0.312	0.469	1.000	0.299
2004	0.096	0.108	0.308	0.488	1.000	0.313
2003*	0.104	0.113	0.317	0.466	1.000	0.254
2004	0.091	0.108	0.317	0.484	1.000	0.270
2005	0.088	0.107	0.324	0.481	0.020	0.278
2006	0.090	0.103	0.325	0.483	1.000	0.278
2007	0.075	0.101	0.327	0.497	1.000	0.299
% changes(93-07)						

Asset size	Under $100,000	$100k-$250k	$250k-$1million	Over $1 million	Total Business Loans	TBL/TA
Lenders with Assets $1-10 Billion						
1996	0.090	0.082	0.214	0.614	1.000	0.223
1997	0.085	0.079	0.210	0.626	1.000	0.232
1998	0.091	0.084	0.217	0.608	1.000	0.223
1999	0.084	0.084	0.228	0.603	1.000	0.237
2000	0.086	0.082	0.228	0.603	1.000	0.249
2001	0.085	0.078	0.223	0.614	1.000	0.259
2002	0.095	0.080	0.229	0.596	1.000	0.252
2003	0.092	0.082	0.234	0.593	1.000	0.242
2004	0.079	0.078	0.239	0.604	1.000	0.271
2003*	0.085	0.081	0.234	0.600	1.000	0.208
2004	0.075	0.078	0.238	0.609	1.000	0.225
2005	0.074	0.073	0.234	0.619	1.000	0.241
2006	0.074	0.072	0.234	0.621	1.000	0.251
2007	0.060	0.071	0.234	0.635	1.000	0.284
% changes(93-07)						
Lenders with Assets over $10 Billion						
1996	0.044	0.040	0.115	0.802	1.000	0.232
1997	0.051	0.044	0.119	0.786	1.000	0.238
1998	0.045	0.041	0.111	0.803	1.000	0.235
1999	0.048	0.040	0.111	0.801	1.000	0.244
2000	0.042	0.038	0.110	0.810	1.000	0.252
2001	0.055	0.041	0.118	0.041	1.000	0.227
2002	0.062	0.045	0.132	0.761	1.000	0.200
2003	0.063	0.046	0.138	0.752	1.000	0.173
2004	0.066	0.048	0.149	0.737	1.000	0.159
2003*	0.065	0.046	0.140	0.750	1.000	0.155
2004	0.067	0.048	0.149	0.736	1.000	0.142
2005	0.061	0.043	0.135	0.760	1.000	0.146
2006	0.061	0.039	0.128	0.772	1.000	0.149
2007	0.061	0.039	0.128	0.772	1.000	0.153
% changes(93-07)						
Total small Business Loans						
1996	0.124	0.079	0.190	0.607	1.000	0.225
1997	0.120	0.078	0.187	0.615	1.000	0.233
1998	0.109	0.075	0.179	0.636	1.000	0.241
1999	0.100	0.071	0.178	0.651	1.000	0.241
2000	0.090	0.068	0.176	0.666	1.000	0.252
2001	0.096	0.069	0.183	0.652	1.000	0.239
2002	0.099	0.074	0.198	0.630	1.000	0.221
2003	0.095	0.075	0.206	0.624	1.000	0.199
2004	0.091	0.075	0.214	0.620	1.000	0.194
2003*	0.094	0.075	0.209	0.621	1.000	0.178
2004	0.090	0.075	0.216	0.618	1.000	0.172
2005	0.082	0.069	0.206	0.643	1.000	0.177
2006	0.079	0.065	0.199	0.657	1.000	0.180
2007	0.079	0.062	0.197	0.662	1.000	0.187
% changes(93-07)						

*Start of new banking data, which includes federal banks and savings and loans.

Source: U.S. Small Business Administration, Office of Advocacy, June Call Reports 1996-2007.

Table 11. Ratio of Small Business Loans to Total Assets by Loan Type and Bank Size, 2003-2007

	Institution Asset Size					
Category	>$10B	$1B-$10B	$500M-$1B	$100M-500M	<$100M	Grand Total
Large small business lending ($100k-$1M) LSBL$(2)						
2003	2.88	6.53	10.91	13.62	10.74	5.08
2004	2.79	7.11	11.48	14.08	11.33	5.03
2005	2.6	7.37	11.99	14.47	11.55	4.87
2006	2.46	7.52	11.7	14.47	11.72	4.68
2007	2.95	8.58	12.29	14.68	11.87	5.22
Large small commercial mortgage ($100k-$1M) LSCM (2) $						
2003	1.56	3.92	7.2	9.12	6.65	3.06
2004	1.55	4.34	7.66	9.47	7.06	3.07
2005	1.44	4.53	8.12	9.84	7.26	3
2006	1.43	4.68	7.97	9.81	7.33	2.94
2007	1.78	5.36	8.31	9.84	7.38	3.29
Larger small commercial and industrial loan(<$1M) LSCNI $						
2003	2.2	4.06	5.58	7.1	8.71	3.3
2004	2.08	4.15	5.57	7.11	8.47	3.15
2005	1.97	4.26	5.67	7.01	8.37	3.01
2006	1.86	4.46	5.61	6.9	8.4	2.91
2007	2.29	4.59	5.59	7.01	8.32	3.24
Large small commercial and industrial loan LSCNI$(2)						
2003	1.32	2.61	3.72	4.5	4.09	2.02
2004	1.24	2.78	3.82	4.61	4.27	1.96
2005	1.16	2.84	3.87	4.63	4.29	1.87
2006	1.03	2.84	3.74	4.65	4.39	1.74
2007	1.17	3.22	3.98	4.84	4.48	1.92
Small commercial and industrial loan SSCNI $						
2003	0.88	1.45	1.87	2.6	4.62	1.29
2004	0.84	1.37	1.75	2.5	4.2	1.19
2005	0.81	1.42	1.8	2.38	4.09	1.14
2006	0.83	1.56	1.8	2.21	3.97	1.14
2007	1.12	1.36	1.62	2.17	3.84	1.31
Small business lending (<$100k) SSBL$						
2003	1	1.77	2.63	4.18	7.46	1.68
2004	0.95	1.7	2.47	3.99	6.87	1.55
2005	0.9	1.79	2.45	3.78	6.74	1.46
2006	0.9	1.86	2.49	3.55	6.45	1.42
2007	1.23	1.68	2.18	3.42	6.21	1.59
Small business commercial mortgage (<$100k) SSCM$						
2003	0.12	0.31	0.77	1.58	2.84	0.4
2004	0.11	0.32	0.72	1.49	2.67	0.35
2005	0.09	0.36	0.65	1.4	2.65	0.32
2006	0.08	0.3	0.68	1.34	2.48	0.28
2007	0.1	0.31	0.57	1.25	2.37	0.28
Total business lending TBL						
2003	15.49	20.75	25.39	25.17	20.19	17.84
2004	14.19	22.52	27.02	26.57	20.72	17.24
2005	14.59	24.05	27.83	27.25	21.03	17.7
2006	14.85	25.15	27.76	27.44	21.32	17.96
2007	17.17	27.73	28.75	28.11	21.48	20.05

Source: U.S. Small Business Administration, Office of Advocacy, June Call Reports 2003-2007.

Table 11a. Smallest Small Business Loans, Small Business Loans, Small C&I Loans, etc., for Lenders, June 2003-2007*

Loan type & size / denomination		2003**	2003	2004	2005	2006	2007	Changes (03-06)	Changes (03-07)
								(%)	(%)
Loans under $100,000	Dollars	125.67	136.57	135.88	138.44	146.03	159.70	6.93	16.94
	Number	14.09	17.138	15.242	19.019	19.021	21.604	10.99	26.06
	Average Dollars	8.919	7.969	8.915	7.279	7.677	7.392		
Loans $100,000-$1 million	Dollars	369.44	411.52	441.27	462.33	481.93	522.75	17.11	27.03
	Number	1.58	1.77	1.89	1.98	2.21	2.88	25.01	62.79
	Average Dollars	233.97	232.42	233.70	233.17	217.73	181.36	-6.32	
C&I loans under $100,000	Dollars	96.2	104.21	104.76	108.32	117.30	131.22	12.56	25.92
	Number		16.397	14.560	18.344	18.381	20.896	12.10	27.43
	Average Dollars		6.356	7.195	5.905	6.382	6.280	0.41	
CM loans under $100,000	Dollars		32.35	31.12	30.12	28.73	28.48	-11.20	-11.96
	Number		0.740	0.682	0.675	0.640	0.708	-13.57	-4.35
	Average Dollars		43.69	45.62	44.61	44.89	40.22	2.74	
C&I $100,000-$1 million	Dollars		163.48	171.61	177.88	179.56	192.79	9.84	17.93
	Number		0.851	0.897	0.947	0.932	1.134	9.49	33.30
	Average Dollars		192.09	191.41	187.89	192.70	169.94	0.31	
CM $100,000-$1 million	Dollars		248.04	269.67	284.45	302.37	329.96	21.90	33.02
	Number		0.920	0.992	1.036	1.282	1.748	39.37	90.09
	Average Dollars		269.737	271.940	274.557	235.928	188.765	-12.53	
C&I loans under $1 million	Dollars		267.69	276.36	286.20	299.02	324.01	11.70	21.04
	Number		17.248	15.457	19.291	19.323	22.030	12.03	27.72
CM loans under $1 million	Dollars		280.40	300.78	314.58	331.10	358.44	18.08	27.83
	Number		1.66	1.67	1.71	1.92	2.46	15.76	47.96
Total business loans		1318.1	1,446.03	1,512.62	1,680.79	1,848.44	2,008.34	27.83	38.89
Total C&I loans			794.59	795.70	899.90	990.57	1,072.70	24.66	35.00
Total assets		6,607.4	8,106.69	8,772.90	9,494.47	10,293.28	10,015.58	26.97	23.55

* Loans and assets in billions of dollars; number of loans in million; average loans in thousands of dollars.
** For commercial banks only.
Notes: C&I = commercial and industrial loans; CM = commercial mortgage loans
Source: U.S. Small Business Administration, Office of Advocacy, June Call Reports.

Table 11b. Multi-billion-dollar Lenders' Share of C&I and Mortgage Loan Markets, 2003-2007

Loan type & size / denomination		2007	2006	2005	2004	2003
C&I loans under $100,000	Dollars	**62.02**	**52.21**	**50.25**	**49.09**	45.82
	Number	**65.83**	**53.43**	**51.58**	**48.71**	41.27
CM loans under $100,000	Dollars	26.07	19.58	19.59	21.09	20.58
	Number	20.19	21.43	21.45	21.80	19.89
C&I $100,000-$1 million	Dollars	44.02	42.30	50.25	44.04	43.88
	Number	35.87	40.42	51.58	103.99	42.30
CM $100,000-$1 million	Dollars	39.05	35.07	40.20	35.05	34.16
	Number	24.85	28.50	50.25	33.46	32.44
Total business loans		61.93	59.56	58.45	57.17	58.22
Total C&I loans		73.87	71.78	70.77	68.94	69.72
Total assets		72.34	72.00	70.92	69.47	67.07

Notes: C&I = commercial and industrial loans; CM = commercial mortgage loans.
Source: U.S. Small Business Administration, Office of Advocacy, June Call Reports.

Table 12. Smallest Loan Lending: Comparison of 20 "Credit Card" Lenders" with Noncard Lenders, June 2007

(amounts in thousands)

Loan type & size / denomination		20 CD Lenders	All Lenders	Percent of All.	All lenders minus 20 CD
Loans under $100,000	Dollars	52,972,964	159,704,607	33.2	106,731,643
	Number	16,275,174	21,604,023	75.3	5,328,849
Average	Dollars	3.255	7.392		20.029
Loans $100,000-$1 million	Dollars	18,231,057	522,745,922	3.5	504,514,865
	Number	90,700	2,882,413	3.1	2,791,713
Average	Dollars	201.004	181.357		180.719
Loans under $1 million	Dollars	71,204,021	682,450,529	10.4	611,246,508
	Number	16,365,874	24,486,436	66.8	8,120,562
Average	Dollars	4.351	27.871		75.271
C&I loans under $100,000	Dollars	52,762,518	131,220,311	40.2	78,457,793
	Number	16,269,899	20,895,782	77.9	4,625,883
Average	Dollars	3.243	6.280		16.961
C&I $100,000-$1 million	Dollars	10,454,088	192,789,953	5.4	182,335,865
	Number	66,141	1,134,437	5.8	1,068,296
Average	Dollars	158.058	169.943		170.679
C&I under $1 million	Dollars	63,216,606	324,010,264	19.5	260,793,658
	Number	16,336,040	22,030,219	74.2	5,694,179
Average	Dollars	3.870	14.708		45.800
Total business loans		206,226,324	2,008,338,039	10.3	
Total C&I loans		166,221,135	1,072,697,749	15.5	
Total assets		2,116,825,717	10,015,584,846	21.1	

Notes: C&I = commercial and industrial loans; CM = commercial mortgage loans.
Source: U.S. Small business Administration, Office of Advocacy, June Call Reports.

Table 13. Smallest Loan Lending: Comparison of 11 CRA Credit Card Lenders with Noncard Lenders, June 2006
(dollar totals in billions; average dollars in thousands)

Loan size / denomination		Eleven largest credit card lenders	All CRA lenders	Ratio of credit card lenders to all lenders
Loans under $100,000	Dollars	68.2	116.2	0.587
	Number	9,468,050	11,115,437	0.852
	Average Dollars	7.200	10.500	
Loans $100,000 - $1 million	Dollars	78.5	173.6	0.059
	Number	33,879	487,505	0.069
Loans under $1 million	Dollars	78.5	289.8	0.271
	Number	7,276,405	11,602,942	0.627

Source: U.S. Small Business Administration, Office of Advocacy, based on 2006 CRA data.

Table 14. Rates Paid by Small Firms Using Business Credit Cards, 2003
(percent)

	Personal credit card for business purposes		Business credit cards		Ranges of rates for all users --with and without teaser:	
	Rates for users with teaser rate	Rates after teaser rate expires	Rates for users with teaser rate	Rates after teaser rate expires		
	47.0		48.0			
Percent with teaser	4.0		1.8			
Average rate	3.9	14.7	1.8	12.3		
Ranges of rates for all users--with and without teaser:					75	16.2
					50	12.0
					25	9.0
					5	4.9

Source: Federal Reserve Board, 2003 SSBF.

An Examination of Financial Patterns Using the Survey of Small Business Finances

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The substantial growth in the number of small businesses over the past decade has increased the demand for debt and equity capital by small business owners. These businesses account for about 50 percent of private-sector output and employ more than half of private-sector workers over the past decade. Given small businesses' significant role in innovation and economic growth, an understanding of trends in the types and sources of financing they use is important for policymaking, primarily because small businesses typically finance their businesses differently than larger businesses. In a comparison of the earlier Surveys of Small Business Finances (SSBF) conducted by the Federal Reserve with the latest SSBF (2003), Mach and Wolken (2006) suggest that non-depository institutions have become more important to small business owners:

> The incidence of credit lines and vehicle loans has increased, whereas the incidence of capital leases declined somewhat. Since the 1987 survey, small businesses have increasingly used non-depository institutions to obtain some of their financial services. However, despite the growth in the use of non-depository sources—from 25 percent of firms in 1987 to

[1] Research performed under contract number SBAHQ-07-M-0381. The statements, findings, conclusions, and recommendations are those of the authors and do not necessarily reflect the views of the Office of Advocacy, the U.S. Small Business Administration, or the U.S. government.

> 54 percent in 2003—commercial banks remained the dominant supplier of most financial services. (Page 187)

This study will describe financing patterns of small businesses in 2003 and examine the changes in financing patterns of small business borrowers over the past decade (1993–2003). In addition, the analysis of changes in financing patterns will examine the impact (if any) that the rise of non-traditional, non-commercial lending has had on the importance of internal finance for small firm growth.

1. Literature Review

While an extensive body of literature exists on the financing of large businesses, more limited literature exists on the financing of small businesses. Rich literature exists on capital structure in the business literature (Modigliani and Miller, 1958; Modigliani and Miller, 1963; Myers, 1984; Jensen and Meckling, 1976; and Myers and Majluf, 1984). According to Modigliani and Miller (1958), a firm's capital structure does not matter in a perfect capital market environment because firm value is not affected. Modigliani and Miller (1963) suggested that, in the absence of capital market imperfections, the amount of debt in a firm's capital structure would not affect firm value. Myers (1984) extended this analysis by presenting a static trade-off theory. This theory states that a firm will use debt in its capital structure up to the point where the tax benefit from an extra dollar of debt is equal to the cost that comes from the increased probability of financial distress.

Using agency theory, Jensen and Meckling (1976) argue that the probability distribution of cash flows provided by a firm is not independent of its ownership structure and that this fact may be used to explain optimal leverage. The agency costs associated with both debt and equity will dictate the choice of an optimum capital structure that minimizes total agency costs. Myers and Majluf (1984) use this theory to suggest that a pecking order will exist in a firm's design of its capital structure: internally generated capital will be employed first, followed by outside debt and finally external equity. Most of the original focus was on large publicly traded firms and the theories assume value- and profit-maximization as the only goals.

Although researchers have extended investigations of determinants of financial structure to small and privately held firms, little attention has been given to small businesses. Aronson (1991) examined men- and women-owned businesses using the 1982 Census and found that women were more likely to rely on self-financing, including individual and family financing, than borrowing from others. A study by Chaganti, DeCarolis and Deeds (1996) supported this result by suggesting that women entrepreneurs were more likely than men entrepreneurs to seek equity financing from family and friends. Bates (1991) examined white- and black-owned businesses using the Census of Business

Owners and found that internal equity capital was especially important to black-owned businesses. Ang (1992) extended the use of agency theory to the small business literature. This research suggests that studies of financial structure should distinguish between small privately held firms and larger publicly traded firms. Although small privately held firms have more severe standard problems such as higher costs of agency conflicts and asymmetric information, they have many different complexities. These complexities include, but are not limited to, shorter expected life, presence of estate taxes, intergenerational transfer problems, and the prevalence of implicit contracts.

The aforementioned literature has provided the basis for describing and examining the role of finance companies and the financial structure of small businesses using the 1993 and 1998 SSBF (Haynes, 2005; Haynes and Ou, 2003; Haynes, 2002). More recent work has examined the relationship between financial resources held by the family and business (Haynes, Onochie and Muske, 2007) and the importance of equity (external capital) and debt capital to small business borrowers (Ou and Haynes, 2006).

The literature discusses several reasons why small firms might face a high cost of external capital. Asymmetric information problems may be especially severe for smaller, younger firms, which can lead to both adverse selection and moral hazard, and potentially even to credit rationing (Stiglitz and Weiss, 1981). In addition, younger, smaller ventures often have difficulty obtaining debt because their returns are uncertain and highly volatile, and creditors do not share in firms' returns (Stiglitz, 1985). Smaller firms also may possess limited collateral which is often necessary for obtaining debt finance, particularly for risky firms (Berger and Udell, 1990). Finally, external equity finance is likely even more expensive than debt for almost all small firms, due to both high floatation costs associated with public issues (Lee, Lockhead, Ritter and Zhao, 1996) and the "lemons premium" that any potential equity supplier may demand due to asymmetric information problems (Myers and Majluf, 1984). This literature is employed to generate the hypotheses for this study.

2. Hypotheses

This study is largely descriptive, where financing patterns are described using the 2003 SSBF. In addition, this descriptive study will examine changes in financing patterns over the past 10 years using the 1993, 1998 and 2003 SSBF. Utilizing the earlier work by Mach and Wolken (2006), the following hypotheses will be explored:

1. Commercial banks have become less important lenders for small business borrowers from 1993 to 2003;

2. Non-depository lenders, especially finance companies, have become more important lenders for small business borrowers from 1993 to 2003; and

3. Commercial banks and finance companies (and other non-depository lenders) are more likely to have a complementary relationship vis-a-vis small business borrowers in 2003 than 1993.

3. Empirical Considerations

Data

This study utilizes the 1993, 1998 and 2003 SSBF. The SSBF is the national survey conducted by the Federal Reserve Board of Governors for information on small businesses' use of different financing sources.[2] This study employs extensive information on each type of loan held by the small business, including the type of institution holding the loan, interest rate charged, loan amount and collateral and guarantee requirements. In addition, the SSBF has critical information on the financial and non-financial characteristics of the firm, including extensive balance sheet and income statement information. The 1993 survey has 4,637 observations representing nearly 5 million small businesses; the 1998 survey has 3,561 observations representing over 5.3 million small businesses; and the 2003 survey has 4,240 observations representing 6.3 million small businesses. All analyses in this study utilize the population weights provided in the data set. All loan amounts were adjusted for inflation from 1993 to 2003 using the producer price index as reported by the U.S. Department of Labor (Bureau of Labor Statistics, 2008).

Models

This study describes the financing patterns for small businesses using the SSBF. This study parallels a set of summary tables created for the Small Business Administration Office of Advocacy using the 1993 and 1998 SSBFs. The types of small businesses considered in this study include all firms, traditional borrowers, minority-owned businesses (including specific tables on black- and Hispanic-owned businesses), women-owned business, growth firms (sales increased from the previous year), younger firms (less than four years old) and firms with more than one owner organized as S corporations. (See Appendix A for details).

[2] See Mach and Wolken, "Financial Services Used by Small Businesses: Evidence from 2003 Survey" (*Federal Reserve Bulletin,* 2006).

In addition, this study will examine the importance of commercial banks and non-depository lenders (especially finance companies) from 1993 to 2003 using concatenated SSBF datasets for 1993 through 2003. The first hypothesis examines the importance of commercial banks from 1993 to 2003 and will employ the following linear regression specification:

$$CB = \alpha_0 + \alpha_1 (year\_1993) + \alpha_2 (year\_1998) + \alpha_3 (firm\ characteristics) + \alpha_4 (owner\ characteristics) + \alpha_5 (loan\ types) + \varepsilon_i$$

where

CB = share of loans held by a commercial bank;

year_1993 = dummy variable for 1993 (reference year is 2003);

year_1998 = dummy variable for 1998 (reference year is 2003);

firm characteristics = bankruptcy filings by the owner, natural log of number of employees (size), natural log of age, industrial classification, rural/urban location, legal organization;

owner characteristics = natural log of age, natural log of experience, gender and race of the majority owner; and,

loan types = dummy variables are included for line of credit, mortgage, vehicle, equipment, capital leases and other traditional loans. The dummy variable indicates that the firm holds a loan with a positive balance.

The second hypothesis examines the importance of finance companies from 1993 to 2003 and will employ the following linear regression specification:

$$FC = \alpha_0 + \alpha_1 (year\_1993) + \alpha_2 (year\_1998) + \alpha_3 (firm\ characteristics) + \alpha_4 (owner\ characteristics) + \alpha_5 (loan\ types) + \varepsilon_i$$

where

FC = share of loans held by a finance company; and

other variables are the same as above.

The third hypothesis examines the relationship between commercial banks and finance companies from 1993 to 2003 and from 1998 to 2003. Two regression analyses are completed using the 1993 and 2003 data for the first run and 1998 and 2003 data for a second run. This linear regression specification is specified as follows:

$$\log CB\ loans = \alpha_0 + \alpha_1(\log FC\ loans) + \alpha_2 (year\_2003) + \alpha_3 (\log FC\ loans \times year\_2003) + \alpha_4(firm\ characteristics) + \alpha_5 (owner\ characteristics) + \alpha_6 (loan\ types) + \varepsilon_i$$

where

log CB loans = log of commercial bank loans;

log FC loans = log of finance company loans;

year_2003 = dummy variable for 2003; and

other variables are the same as above.

4. Results

This study utilizes the SSBF for three years (1993, 1998, and 2003) to examine who uses each type of loan and source of credit. This section examines the probability of holding a loan in 1993, 1998 and 2003, number of loans held, and the aggregate value of loans.

Table A reports the sample characteristics for the entire sample in columns 2 through 4 and for borrowers only in columns 5 through 7. The three installments of the SSBF utilized similar sampling frames, but the characteristics of the small businesses differed substantially (Table A–columns 2 and 4) from 1993 to 2003 and from 1998 to 2003. Utilizing the population weights, the 2003 SSBF small businesses surveyed were somewhat larger; more likely to be very young (less than four years old) or older (20 years or more) firms; more likely to be firms engaged in transportation and service industries and less likely to be engaged in mining/construction, wholesale trade or retail trade industries; more likely to be subchapter S corporations and less likely to be C corporations than the 1993 SSBF businesses surveyed. In addition, the owners of these firms are somewhat older, more experienced, and more likely to be woman- or minority-owned in 2003 than 1993. When considering only borrowers (Table A–columns 5 and 7), the same differences across the two samples exist when comparing 1993 and 2003.

When comparing the 1998 and 2003 weighted samples (Table A–columns 3 and 4) the 2003 SSBF small businesses were slightly larger and older; more likely to be firms engaged in services and less likely to be firms engaged in manufacturing or wholesale trade; and less likely to be sole proprietorships or regular corporations and more likely to be partnerships or subchapter S corporations than the 1998 SSBF businesses surveyed. In addition, the owners of these firms were somewhat older and more experienced in 2003 than 1993. When comparing only borrowers (Table A–columns 6 and 7), the firms sampled in 2003 were somewhat older; more likely to engaged in the service industry and less likely to engaged in wholesale trade; more likely to be subchapter S corporations and less likely to be C corporations; and the owners were somewhat older, had more experience and were more likely to owned by men than firms sampled in 1998 (Table A).

Table A Characteristics of the sample for 1993, 1998 and 2003

	All Firms			Borrowers Only		
Characteristic	1993	1998	2003	1993	1998	2003
Owner filed for bankruptcy in last 3 years						
no	97.32	97.52	97.58	97.20 *	97.60	98.20
yes	2.68	2.48	2.42	2.80	2.40	1.80
Number of employees						
0	38.75 *	35.95 *	33.38	29.51 *	23.75	23.22
1 - 4	28.38	29.71	29.93	28.30	29.41	29.31
5 - 9	16.65	17.62	18.00	19.62 *	22.54	22.10
10 - 19	8.12 *	8.50 *	10.10	10.72 *	11.65	13.24
20 - 99	7.08	7.04	7.61	10.35	10.79	10.63
99 - 499	1.01	1.17	0.99	1.50	1.85	1.50
Age of the firm						
Less than 4 years	8.96 *	16.30	14.89	10.05 *	14.78	15.91
4 - 9	34.25 *	28.89	27.77	35.28 *	30.20	27.85
10 - 19	33.56 *	32.00 *	28.55	33.65 *	33.14 *	28.90
20 or more	23.23 *	22.81 *	28.79	21.02 *	21.87 *	27.34
Industrial classification						
Mining and construction	14.18 *	11.87	11.80	15.50 *	14.27	13.17
Manufacturing	8.06	8.34 *	7.12	9.31	9.00	8.39
Transportation	2.77 *	3.72	3.76	3.50 *	4.32	5.12
Wholesale trade	8.46 *	7.15 *	5.88	8.82 *	7.71 *	5.88
Retail trade	21.70 *	18.95	18.42	22.61 *	18.78	18.19
Finance, insurance, real estate	7.09	6.48	7.20	7.09	6.88	7.10
Services	37.74 *	43.49 *	45.81	33.17 *	39.03 *	42.14
Rural location						
no	21.13	20.11	20.63	22.56	21.60	20.61
yes	78.87	79.89	79.37	77.44	78.40	79.39
Legal organization						
Sole proprietorship	43.21	49.35 *	44.54	36.61	40.68	38.55
Partnership	8.01	6.95 *	8.70	8.06	7.96	8.46
Corporation, subchapter s	20.33 *	23.87 *	31.02	23.14 *	28.21 *	36.16
Corporation, regular	28.44 *	19.83 *	15.75	32.18 *	23.14 *	16.84
Owner age						
Less than 25	0.16 *	0.24 *	1.03	0.08 *	0.21 *	0.94
25 - 34	7.71 *	6.38	5.78	8.93 *	6.14	5.89
35 - 44	28.73 *	26.72 *	20.67	30.73 *	29.53 *	23.66
45 - 54	31.75 *	32.82	34.00	33.10	34.32	35.23
55 - 64	20.74 *	22.96 *	25.55	19.47 *	22.49	23.82
65 and older	10.90 *	10.89 *	12.96	7.69 *	7.32 *	10.46

Table A Characteristics of the sample for 1993, 1998 and 2003 (continued)

	All Firms			Borrowers Only		
Characteristic	1993	1998	2003	1993	1998	2003
Owner experience						
Less than 4 years	3.13 *	6.98	6.26	2.80 *	5.30	6.62
4 - 9	16.33	17.26 *	15.28	16.50 *	16.30 *	13.34
10 - 19	36.00 *	32.16 *	28.15	37.80 *	33.06 *	29.25
20 or more	44.54 *	43.59 *	50.30	42.90 *	45.33 *	50.79
Owner gender						
Man	79.39 *	72.01	73.74	80.56 *	75.16 *	77.93
Woman	20.61 *	27.99	26.26	19.44 *	24.84 *	22.07
Owner race						
White	92.52 *	90.49	90.05	93.42 *	91.32	90.72
Non-white	7.48	9.51	9.95	6.58 *	8.68	9.28
Commercial bank share						
0	62.76 *	67.31	65.30	33.98 *	34.77	37.55
1% - 24%	4.56	3.33	3.89	8.13	6.64	7.29
25% - 49%	5.44	3.29 *	4.64	10.37 *	6.79 *	8.49
50% or more	27.24	26.07	26.17	47.52	51.79 *	46.68
Finance company share						
0	87.63 *	86.80 *	78.09	78.08 *	73.66 *	60.56
1% - 24%	3.94 *	4.52 *	8.71	7.02 *	9.01 *	15.95
25% - 49%	1.87 *	1.80 *	3.25	3.70 *	3.70 *	5.75
50% or more	6.55 *	6.89 *	9.95	11.20 *	13.63 *	17.75
Commercial bank loan amount						
0	62.76 *	67.31	65.30	33.98 *	34.77	37.55
$0 - $9,999	8.93 *	6.05 *	4.89	15.84 *	12.07 *	8.80
$10,000 - $99,999	18.52	16.78	17.83	32.83	33.48	32.08
$100,000 or more	9.79 *	9.86 *	11.98	17.35 *	19.68	21.56
Finance company loan amount						
0	87.63 *	86.80 *	78.09	78.08 *	73.66 *	60.56
$0 - $9,999	4.70	3.51 *	5.57	8.32 *	7.00 *	10.03
$10,000 - $99,999	6.25 *	8.09 *	14.18	11.08 *	16.14 *	25.51
$100,000 or more	1.42 *	1.61	2.17	2.52 *	3.20	3.90
Number of observations	4,637	3,561	4,240	2,969	2,017	2,651

Note: * = alpha less or equal to 0.05; columns after 1993 compare 1993 and 2003; columns after 1998 compare 1998 and 2003.

While the percentage of small businesses utilizing commercial banks has declined, the percentage of small businesses utilizing finance companies has increased (Table A). A similar trend exists for borrowers, where small business borrowers utilizing commercial banks declined from 66 percent to 62.5 percent while the percentage of small business borrowers utilizing finance companies increased from 22 percent to 39 percent. Commercial banks were still the most important source of loans with over 46 percent of small business borrowers acquiring 50 percent or more of the value of their loans from commercial banks in 2003. Less than 18 percent of small business borrowers acquired 50 percent or more of the value of their loans from finance companies. In 2003, over 21 percent of all small business borrowers had a loan of $100,000 or more with a commercial bank while nearly 4 percent of all small business borrowers had a loan of $100,000 or more with a finance company.

As mentioned in the models section, this study is largely descriptive. While the analytical section of this paper focuses on commercial banks and finance companies, the descriptive section examines the proportion of small businesses using each type of loan and lender, number of loans, and aggregate value of loans held by each type of loan and lender. Tables B through G include the details of loans held by small firms for 1993, 1998, and 2003.

The percentage of small firms using any credit has increased from 79.1 percent in 1993 to 89.0 percent in 2003 (Table B). The use of traditional loans has remained nearly constant (59.1 percent in 1993 and 60.4 percent in 2003), however use of non-traditional loans has increased by one-third from 60.2 percent in 1993 to 80.0 percent in 2003.

Table B Percentage of all small firms using credit, by sources of credit, 1993 through 2003

Source of Credit	1993	1998	2003
Any credit	79.1 *	82.5 *	89.0
Any traditional loan	59.1 *	55.0 *	60.4
Line of credit	25.7 *	27.7 *	34.3
Mortgage	7.8 *	13.2 *	13.3
Vehicle	25.3 *	20.5 *	25.5
Equipment	14.8 *	9.9 *	10.3
Lease	10.2 *	10.6 *	8.7
Other	12.7 *	9.8 *	10.1
Any non-traditional loan	60.2 *	70.7 *	80.0
Owner loan	17.5 *	14.2 *	16.8
Personal credit card	40.7 *	46.0 *	46.7
Business credit card	28.8 *	34.1 *	48.1
Number of observations	4,637	3,561	4,240

Note: *=alpha less than or equal to 0.05.

The percentage of firms using traditional loans has increased for mortgages (6.5 percent in 1993 to 13.3 percent in 2003), but decreased or remained nearly the same for all other traditional loans. The percentage of firms using non-traditional loans has realized a large increase in business credit card use (28.8 percent in 1993 to 48.1 percent in 2003) with smaller increases realized in owner loans and personal credit cards.[3]

Table C shows the use of credit by depository and non-depository institutions and non-traditional credit suppliers. The use of depository institutions increased by just over 3 percent (from 44.9 percent in 1993 to 46.4 percent in 2003), while the use of non-depository institutions increased by 28 percent (from 20.7 percent in 1993 to 26.5 percent in 2003), and the use of non-traditional credit increased by nearly 33 percent (from 60.2 percent in 1993 to 80 percent in 2003). The use of commercial banks remained relatively constant at just over 40 percent, while the use of finance companies rose substantially, from 12.4 percent in 1993 to over 22 percent in 2003.

Table C Percentage of all small firms using credit, by suppliers of credit, 1993 through 2003

Suppliers	1993	1998	2003
Any Credit	79.1 *	82.5 *	89.0
Any Traditional Loan	59.1 *	55.0 *	60.4
Any Depository Institution	44.9 *	42.0 *	46.4
Credit Union	2.3 *	2.3 *	3.9
Thrift	4.2 *	3.3 *	5.5
Commercial Bank	40.6 *	38.2 *	41.0
Any Non-Depository Institution	20.7 *	19.8 *	26.5
Finance Company	12.4 *	13.3 *	22.1
Brokerage	0.4 *	0.4 *	0.7
Leasing	8.3 *	6.8 *	4.2
Other Non-depository	1.0 *	1.5 *	2.3
Any Non-Financial Institution	13.8 *	9.6 *	10.4
Family & Friends	8.6 *	6.0 *	6.2
Other Businesses	5.0 *	3.0 *	2.6
Government	0.6 *	1.0 *	1.3
Other	0.3 *	0.2 *	0.4
Unknown	0.0	0.2 *	0.4
Any Non-Traditional Credit	60.2 *	70.7 *	80.0
Owner Loans	17.5 *	14.2 *	16.8
Personal Credit Cards	40.7 *	46.0 *	46.7
Business Credit Cards	28.8 *	34.1 *	48.1
Number of observations	4,637	3,561	4,240

Note: *=alpha less than or equal to 0.05.

[3] More information is included for other subsamples in Appendix A. For further analysis of the likelihood of holding each type of loan from 1993 to 2003 please see Appendix B.

Table D reports the number of firms using from zero to more than three loans. While the proportion of firms with no loans has remained constant at around 40 percent, the proportion of firms with more than 3 loans has declined substantially, from over 12.5 percent in 1993 to less than 7.7 percent in 2003.

Table D Number of all small firms using credit, 1993 through 2003

Number of Loans	1993	1998	2003
		(number of firms)	
None	2,041,263	2,502,274	2,492,470
1	1,243,286	1,303,333	1,763,756
2	697,395	679,942	1,027,015
3	377,726	311,682	532,666
More than 3	634,487	494,015	482,181
Number of observations	5,356	3,561	4,240

Table E examines the changes in aggregate value of each type of loan from 1993 through 2003 in constant 2003 dollars. In real terms, the amount of credit outstanding in traditional and non-traditional loans has increased by over 62 percent (from $869.1 billion in 1993 to $1.4 tillion in 2003). The most important change has occurred with line of credit and mortgage loans. In 1993, line of credit loans comprised 37 percent of all credit, while mortgages comprised 22 percent of all credit. In 2003, line of credit loans comprised just 28 percent, and mortgages comprised 34.6 percent of all credit. The use of personal and business credit cards has been discussed widely in the popular press, however these credit cards comprise less than 1 percent of all credit outstanding.

Table F shows the changes in aggregate value of loans held by each type of supplier from 1993 through 2003 in constant 2003 dollars. Small firms have a higher probability of using a depository institution, and they held an 11.2 percent larger share of their total loans with depository institutions in 2003 than in1993 (51.3 percent in 1993 and 57.0 percent in 2003). The share of total loans held by depository institutions increased, led by commercial banks whose share increased by 6.7 percent. Non-depository institutions' share of loans rose nearly 11 percent, with finance companies increasing their share by over 23 percent (11.5 percent in 1993 to 14.1 percent in 2003). The gains by depository and non-depository institutions were offset by a decrease of nearly 25 percent in the share of loans held by non-financial institutions. Loans from family and friends and other businesses decreased substantially, while the share of loans held by government programs increased substantially, from less than 1 percent to over 3 percent.

Table E Aggregate value and shares of all small firm debt, by sources of credit, 1993 through 2003

Source of Credit	1993	1998	2003
	(x $1 million - constant 2003 dollars)		
Any credit	869,056	767,508	1,408,819
Any traditional loan	767,782	667,411	1,247,963
Line of credit	321,850	227,375	395,267
Mortgage	190,543	234,119	487,708
Vehicle	34,117	36,898	63,476
Equipment	63,006	64,189	90,045
Lease	34,239	38,945	40,142
Other	124,027	65,886	171,325
Any non-traditional loan	101,275	100,097	160,856
Owner loan	98,442	94,866	148,323
Credit cards (personal and business)	2,833	5,231	12,532

Shares of aggregate loan amounts

Source of Credit	1993	1998	2003
		(percentages)	
Any credit	100.0	100.0	100.0
Any traditional loan	88.3	87.0	88.6
Line of credit	37.0	29.6	28.1
Mortgage	21.9	30.5	34.6
Vehicle	3.9	4.8	4.5
Equipment	7.2	8.4	6.4
Lease	3.9	5.1	2.8
Other	14.3	8.6	12.2
Any non-traditional loan	11.7	13.0	11.4
Owner loan	11.3	12.4	10.5
Credit cards (personal and business)	0.3	0.7	0.9
Number of observations	4,637	3,561	4,240

Table F Aggregate value of all small firm debt, by suppliers of credit, 1993 through 2003

Suppliers	1993	1998	2003
	(x $1 million - constant 2003 dollars)		
Any Credit	869,056	767,508	1,408,819
Any Traditional Loan	767,782	667,411	1,247,963
Any Depository Institution	445,535	457,602	803,095
Credit Union	3,142	3,771	6,771
Thrift	27,528	22,138	78,901
Commercial Bank	414,865	431,693	717,423
Any Non-Depository Institution	189,867	143,535	340,805
Finance Company	99,511	82,258	198,819
Brokerage	14,004	1,828	12,497
Leasing	21,784	18,642	39,179
Other Non-depository	54,568	40,806	90,310
Any Non-Financial Institution	85,813	50,326	104,063
Family & Friends	38,373	30,599	37,729
Other Businesses	33,710	11,001	17,653
Government	7,785	6,673	44,223
Other	5,945	2,052	2,696
Unknown	46,566	15,948	1,762
Any Non-Traditional Credit	101,275	100,097	160,856
Owner Loans	98,442	94,866	148,323
Credit cards (personal and business)	2,833	5,231	12,532

Shares of aggregate loan amounts

Suppliers	1993	1998	2003
		(percentages)	
Any Credit	100.0	100.0	100.0
Any Traditional Loan	88.3	87.0	88.6
Any Depository Institution	51.3	59.6	57.0
Credit Union	0.4	0.5	0.5
Thrift	3.2	2.9	5.6
Commercial Bank	47.7	56.2	50.9
Any Non-Depository Institution	21.8	18.7	24.2
Finance Company	11.5	10.7	14.1
Brokerage	1.6	0.2	0.9
Leasing	2.5	2.4	2.8
Other Non-depository	6.3	5.3	6.4
Any Non-Financial Institution	9.9	6.6	7.4
Family & Friends	4.4	4.0	2.7
Other Businesses	3.9	1.4	1.3
Government	0.9	0.9	3.1
Other	0.7	0.3	0.2
Unknown	5.4	2.1	0.1
Any Non-Traditional Credit	11.7	13.0	11.4
Owner Loans	11.3	12.4	10.5
Credit cards (personal and business)	0.3	0.7	0.9
Number of observations	4,637	3,561	4,240

Table G shows the share of traditional debt held by small firms from 1993 through 2003 by loan source and supplier. Commercial banks remain the dominant source of line of credit loans, with percentage credit lines held by commercial banks increasing from just over 70 percent in 1993 to nearly 80 percent in 2003. The share of credit lines held by finance companies has remained relatively constant (around 13 percent to 14 percent) since 1993. All other lenders hold less than 2 percent of total line of credit loans, except thrifts. Thrifts realized an increase in their share of line of credit loans, from just over 1 percent in 1993 to nearly 3.5 percent in 2003. Appendix A contains additional information on loan shares by source and supplier for each category of legal organization (Tables 1.7a through 1.7e.)

Leasing companies compete with commercial banks and finance companies for capital leases. Commercial banks saw their share of capital leases decline from nearly 30 percent in 1993 to under 7 percent in 2003. Finance companies saw their share of capital leases increase from nearly 19 percent in 1993 to over 22 percent in 2003. The most substantial gain was realized by leasing companies, which saw their share increase from just over 36 percent in 1993 to nearly 66 percent in 2003.

Commercial banks, thrifts and finance companies have been the major players in the business mortgage market. Commercial banks have been the dominant player in the market, with over 50 percent of all business mortgages held by them since 1998, although commercial banks saw their share of business mortgages decline slightly over the past five years. Thrifts and finance companies realized a substantial gain in market share, with thrift shares increasing from 9.3 percent in 1993 to nearly 12 percent in 2003 and finance company shares increasing from 8 percent in 1993 to over 11 percent in 2003. Other lenders classified as “other non-depository institutions” played a major, yet declining, role in the business mortgage market, with their share declining from nearly 25 percent in 1993 to 16 percent in 2003.

Commercial banks and finance companies are dominant lenders in the vehicle loan market with shares exceeding 40 percent in 2003. Commercial banks held over 40 percent of the shares of vehicle loans since 1993. Their share was been relatively constant while finance companies saw their share increase from nearly 44 percent in 1993 to over 49 percent in 2003. Credit unions and thrifts were the only other institutions holding more than 2 percent of the market. Credit unions realized a twofold increase, from 2.4 percent in 1993 to 4.9 percent in 2003. Thrifts realized a nearly threefold increase, from 1.1 percent in 1993 to nearly 3 percent in 2003.

Table G_93 Share of aggregate value of traditional debt held by small firms, by source and supplier of credit, 1993

Source	Line of credit	Lease	Mortgage	Vehicle	Equipment	Other loans	All
Credit union	0.09	1.97	0.52	2.43	0.09	0.24	0.41
Savings and loan	1.30	0.96	9.29	1.12	1.18	3.38	3.59
Commercial bank	70.25	29.85	44.59	43.45	58.26	33.91	54.03
Finance company	14.51	18.87	8.03	43.74	21.05	2.31	12.96
Brokerage	1.78	0.14	3.43	0.14	0.02	1.32	1.82
Leasing	0.81	36.48	0.07	5.42	5.37	1.06	2.84
Other non-depository	0.58	0.22	24.86	0.05	0.08	4.18	7.11
Family	0.86	3.01	2.97	1.16	2.14	21.93	5.00
Other business	0.42	5.04	3.12	1.75	6.33	16.21	4.39
Government	0.08	0.05	1.10	0.13	1.75	3.44	1.01
Other individual	0.10	0.01	0.02	0.04	0.05	4.47	0.77
Not classified	9.23	3.40	2.00	0.58	3.68	7.55	6.07
All	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Number of Observations		4,637					

Table G_98 Share of aggregate value of traditional debt held by small firms, by source and supplier of credit, 1998

Source	Line of credit	Lease	Mortgage	Vehicle	Equipment	Other loans	All
Credit union	0.15	0.28	0.72	3.39	0.22	0.37	0.57
Savings and loan	1.00	0.59	7.69	1.23	0.11	1.70	3.32
Commercial bank	86.60	27.06	57.36	49.83	59.05	51.09	64.68
Finance company	9.74	18.15	8.46	39.65	26.44	2.49	12.32
Brokerage	0.31	0.94	0.09	0.03	0.07	0.75	0.27
Leasing	0.05	39.30	0.03	2.08	3.65	0.08	2.79
Other non-depository	0.16	0.07	17.06	0.11	0.04	0.65	6.11
Family	0.00	0.99	3.86	0.85	0.39	31.27	4.58
Other business	0.15	10.32	0.30	0.31	1.62	7.16	1.64
Government	0.20	0.06	1.24	0.00	1.59	3.47	1.00
Other individual	0.05	0.06	0.75	0.11	0.00	0.26	0.32
Not classified	1.60	2.18	2.45	2.42	6.82	0.71	2.39
All	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Number of Observations		3,561					

Table G_03 Share of aggregate value of traditional debt held by small firms, by source and supplier of credit, 2003

				Source			
Supplier	Line of credit	Lease	Mortgage	Vehicle	Equipment	Other	Total
Credit union	0.10	0.00	0.32	4.90	0.33	0.82	0.54
Savings and loan	3.49	0.82	11.78	2.93	4.27	0.95	6.32
Commercial bank	79.81	6.72	53.07	40.45	47.62	41.94	57.49
Finance company	13.36	22.58	11.10	49.36	28.87	14.87	15.93
Brokerage	1.04	0.11	1.09	0.06	0.84	1.29	1.00
Leasing	0.39	65.93	0.00	0.67	11.46	0.25	3.14
Other non-depository	0.31	0.04	16.03	0.08	0.31	6.14	7.24
Family	0.07	0.20	1.71	0.26	2.34	15.61	3.02
Other business	0.27	2.83	0.16	1.06	3.08	6.56	1.41
Government	1.14	0.02	4.23	0.04	0.59	10.83	3.54
Other individual	0.00	0.39	0.26	0.01	0.10	0.68	0.22
Not classified	0.01	0.37	0.24	0.18	0.20	0.06	0.14
All	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Number of Observations		4,240					

Prior to 2003, nearly 80 percent of the equipment loan market was held by commercial banks and finance companies, with commercial banks holding nearly 60 percent of the market and finance companies holding 20 to 25 percent of the market. Since 1998, the share of equipment loans has declined by nearly 20 percent for commercial banks (59.1 percent in 1998 and 47.6 percent in 2003) and increased threefold for leasing companies (3.7 percent in 1998 and 11.5 percent in 2003).

The other traditional loan category was dominated by commercial banks, finance companies, family, other businesses and government in 2003. Since 1993 the share of other traditional loans held by commercial banks, families/friends, and other businesses has fallen, while the share held by finance companies and government has increased.

Additional tables are available on the Office of Advocacy's website (see Appendix A for details.) These show the probability of borrowing by loan source and supplier by selected firm characteristics (number of employees, gross sales, industrial classification and legal organization). They also highlight: all firms, traditional borrowers, minority-owned, black-owned, Hispanic-owned, woman-owned, fast growth (10 percent annual growth or more), young (less than four years old) and corporate (more than one owner).

The descriptive statistics discussed above have examined all types of loans for depository, non-depository and non-financial lenders. The largest share of small business lending over the last decade has been held by commercial banks and finance companies. The remaining analysis in this study examines changes in the shares of commercial bank and finance company lending from 1993 to 2003, and examines the relationship between commercial banks and finance companies by assessing whether they are complements or substitutes. This part of the study considers the actions of borrowers only.

For the average firm, the share of all loans held by commercial banks has decreased by nearly 11 percent (42 percent in 1993 to 38 percent in 2003) since 1993, while the share of all loans held by finance companies has increased by 45 percent (11 percent in 1993 to 16 percent in 2003). The shares lost by the commercial banks appear to have been captured by finance companies.

Table H shows the changes in the shares of all loans held by commercial banks and finance companies from 1993 to 2003 and from 1998 to 2003 for several firm and owner characteristics. Those borrowers filing for bankruptcy in the past three years realized nearly a 30 percent decline in the share of loans held by commercial banks. The smallest businesses (0 employees), those hiring 20-99 employees and those in business 20 years of more realized a significant decline in the share of loans held by commercial banks from 1993 to 2003. Manufacturing businesses increased their share of loans held by commercial banks, while service businesses' share decreased. Other significant declines in the share of commercial bank loans were seen by urban-based small businesses, sole proprietorships and partnerships, older owners, more experienced owners, men-owned businesses and non-minority businesses. A similar pattern exists when comparing the shares of loans held by commercial banks in 1998 and 2003.

Table H Commercial Bank and Finance Company Shares by Business and Owners Borrower Characteristics for 1993, 1998 and 2003

	Commercial Bank			Finance Company		
Characteristic	1993	1998	2003	1993	1998	2003
All Borrowers	0.42 *	0.43 *	0.38	0.11 *	0.12 *	0.16
Owner filed for bankruptcy in last 3 years						
no	0.48 *	0.51 *	0.46	0.12 *	0.14 *	0.19
yes	0.35	0.36	0.25	0.17	0.23	0.34
Number of employees						
0	0.47 *	0.46 *	0.37	0.12 *	0.17 *	0.27
1 - 4	0.48	0.47	0.47	0.12 *	0.16	0.18
5 - 9	0.44	0.56 *	0.42	0.12 *	0.13 *	0.17
10 - 19	0.48	0.53	0.53	0.17	0.12	0.13
20 - 99	0.58 *	0.55	0.52	0.11 *	0.11 *	0.18
99 - 499	0.60	0.66	0.62	0.11	0.14	0.15
Age of the firm						
Less than 4 years	0.39	0.41	0.39	0.14	0.18	0.16
4 - 9	0.44	0.46	0.42	0.13 *	0.15 *	0.19
10 - 19	0.51	0.56 *	0.48	0.11 *	0.12 *	0.21
20 or more	0.53 *	0.56 *	0.49	0.11 *	0.14 *	0.19
Industrial classification						
Mining and construction	0.47	0.58 *	0.45	0.16 *	0.18 *	0.26
Manufacturing	0.41 *	0.49	0.52	0.13	0.09 *	0.13
Transportation	0.44	0.40	0.36	0.22	0.22	0.29
Wholesale trade	0.57	0.52	0.52	0.11 *	0.15	0.17
Retail trade	0.48	0.54 *	0.48	0.13	0.11	0.12
Finance, insurance, real estate	0.53	0.49	0.47	0.03 *	0.09	0.13
Services	0.47 *	0.48 *	0.42	0.11 *	0.16 *	0.22
Rural location						
no	0.61 *	0.61 *	0.50	0.08 *	0.10 *	0.19
yes	0.44	0.48 *	0.44	0.13 *	0.15 *	0.19
Legal organization						
Sole proprietorship	0.48 *	0.48 *	0.43	0.12 *	0.17 *	0.23
Partnership	0.58 *	0.61 *	0.46	0.08	0.10	0.12
Corporation, subchapter s	0.45	0.51 *	0.45	0.12 *	0.13 *	0.18
Corporation, regular	0.47	0.51	0.50	0.14 *	0.13 *	0.18

Table H Commercial Bank and Finance Company Shares by Business and Owners Borrower Characteristics for 1993, 1998 and 2003 (continued)

	Commercial Bank			Finance Company		
Characteristic	1993	1998	2003	1993	1998	2003
Owner age						
Less than 25	0.00 *	0.39	0.46	0.02	0.07	0.11
25 - 34	0.35	0.43	0.39	0.17	0.14	0.15
35 - 44	0.44	0.46	0.42	0.13 *	0.16 *	0.21
45 - 54	0.50 *	0.54 *	0.46	0.11 *	0.13 *	0.19
55 - 64	0.54 *	0.52 *	0.47	0.10 *	0.13 *	0.19
65 and older	0.54	0.55	0.48	0.12 *	0.17	0.21
Owner experience						
Less than 4 years	0.35	0.42	0.45	0.13	0.23 *	0.13
4 - 9	0.41	0.42	0.45	0.12 *	0.13	0.18
10 - 19	0.48 *	0.52 *	0.43	0.13 *	0.13 *	0.19
20 or more	0.52 *	0.54 *	0.46	0.11 *	0.15 *	0.21
Owner gender						
Man	0.49 *	0.52 *	0.46	0.12 *	0.14 *	0.19
Woman	0.44	0.47	0.41	0.12 *	0.14 *	0.20
Owner race						
White	0.49 *	0.52 *	0.45	0.12 *	0.14 *	0.19
Non-white	0.37 *	0.41	0.48	0.13 *	0.15	0.20
Number of observations	2,969 #	2,017	2,651	2,969	2,017	2,651

Note: * = alpha less or equal to 0.05; columns after 1993 compare 1993 and 2003; columns after 1998 compare 1998 and 2003.

A nearly opposite pattern exists for finance companies. Borrowers who have filed for bankruptcy in the past three years saw their share of loans held by finance companies increase from 1993 to 2003. The share of loans held by finance companies increased for nearly all sizes and ages of small businesses. Finance companies seem to be especially interested in mining/construction, wholesale trade, finance/insurance/real estate (FIRE) and service businesses. Both rural and urban businesses and all types of legal organizations (except partnerships), realized significant increases in the share of finance company loans. In addition, older, more experienced, men and women owners, and non-minority owners realized increases in the share of loans held by finance companies from 1993 to

2003. A similar pattern emerges when comparing the share of loans held by finance companies from 1998 to 2003.

Tables B through H focused on the loans by source and supplier. However, a more complete review of all liabilities is needed to assess the debt structure of these firms. Appendix A–Tables 1.8a through 9.9a review all liabilities held by small firms by asset and employment size categories.

The multivariate analysis reported in Table I largely supports the bivariate analysis reported in Table H. After controlling for business and owner characteristics, commercial bank shares decreased significantly between 1993 and 2003 (and 1998 and 2003). Several of the control variables warrant further discussion. Owners filing for bankruptcy in the past three years, those living in rural areas, those owners with more experience, women-owned small business, and those holding capital leases or other traditional loans had a smaller share of commercial bank loans than other firms. Larger and older firms had a larger share of loans held by commercial banks. Partnerships had a larger share of loans with commercial banks than firms organized as C corporations. Older owners had a larger share of loans with commercial banks than younger owners. Those owners holding lines of credit and mortgage loans had a larger share of loans with commercial banks than other borrowers.

Table I Determinants of commercial bank and finance company shares of all loans (1993, 1998 and 2003)

	Commercial Bank Shares			Finance Company Shares		
Variable[1]	Parameter Estimate	Standard Error	p-value	Parameter Estimate	Standard Error	p-value
Constant	-0.0272	0.0941	0.7725	0.2209	0.0692	0.0014
Year - 1993	0.0638	0.0115	0.0001	-0.0828	0.0084	0.0001
Year - 1998	0.0764	0.0113	0.0001	-0.0477	0.0083	0.0001
Owner filed for bankruptcy in last 3 years	-0.0893	0.0310	0.0039	0.0628	0.0228	0.0058
Number of employees, log	0.0383	0.0061	0.0001	-0.0078	0.0045	0.0810
Age of the firm, log	0.0396	0.0081	0.0001	-0.0142	0.0060	0.0177
Mining and construction	0.0044	0.0147	0.7674	0.0114	0.0108	0.2933
Manufacturing	-0.0304	0.0175	0.0820	-0.0257	0.0129	0.0455
Transportation	-0.0449	0.0234	0.0555	0.0535	0.0172	0.0019
Wholesale trade	0.0118	0.0190	0.5344	-0.0031	0.0140	0.8236
Retail trade	0.0004	0.0131	0.9763	-0.0162	0.0096	0.0910
Finance, insurance, real estate	-0.0003	0.0194	0.9892	-0.0405	0.0143	0.0046
Rural location	-0.0953	0.0115	0.0001	0.0217	0.0084	0.0102
Sole proprietorship	0.0241	0.0141	0.0878	0.0136	0.0104	0.1907
Partnership	0.0766	0.0193	0.0001	-0.0378	0.0142	0.0079
Corporation, subchapter s	0.0000	0.0131	0.9986	-0.0149	0.0096	0.1210
Owner age, log	0.0933	0.0267	0.0005	-0.0072	0.0196	0.7120
Owner experience, log	-0.0255	0.0102	0.0127	0.0187	0.0075	0.0129
Owner gender	-0.0340	0.0114	0.0030	0.0038	0.0084	0.6480
Owner race	-0.0079	0.0170	0.6431	0.0036	0.0125	0.7708
Line of credit loan, yes	0.2283	0.0100	0.0001	-0.0928	0.0074	0.0001
Mortgage loan, yes	0.1143	0.0118	0.0001	-0.1099	0.0087	0.0001
Vehicle loan, yes	-0.0100	0.0099	0.3121	0.1356	0.0073	0.0001
Equipment loan, yes	0.0103	0.0117	0.3780	-0.0100	0.0086	0.2439
Capital lease, yes	-0.1525	0.0125	0.0001	0.0444	0.0092	0.0001
Other traditional loan, yes	-0.0496	0.0120	0.0001	-0.0919	0.0088	0.0001
Adjusted R-squared			0.1397			0.1351
Number of observations			7,637			7,637

[1] Reference groups are year 2003, service industry and regular corporation.

After controlling for business and owner characteristics, finance company shares increased significantly between 1993 and 2003 (and 1998 and 2003). Older firms held a smaller percentage of loans with finance companies than younger firms. Firms engaged in manufacturing or FIRE industries held a smaller percentage of loans with finance companies than firms engaged in service industries. Partnerships held a smaller percentage of loans with finance companies than regular corporations. Firms holding lines of credit, mortgage and other traditional loans held a smaller percentage of loans with finance companies than other firms. Owners filing for bankruptcy in the past three years had a larger share of finance company loans than other firms. Firms engaged in the transportation industries held a larger percentage of loans with finance companies than firms engaged in the service industry. Firms located in rural areas and owners with more experi-

ence held a higher percentage of loans with finance companies than other firms. And finally, firms holding vehicle loans and capital leases held a larger percentage of loans with finance companies than other borrowers.

The final analysis in this study examines the relationship between commercial banks and finance companies from 1993 to 2003 (Table J) and 1998 to 2003 (Table K).

Table J Determinants of commercial bank loan amounts (complements/substitutes), 1993 to 2003

	Commercial Bank Amount		
Variable[1]	Parameter Estimate	Standard Error	p-value
Constant	-2.5804	1.1643	0.0267
Finance company loan amount, log	-0.3254	0.0219	0.0001
Year 2003	-0.2004	0.1451	0.1672
Interaction - finance company loan and year 2003	0.0336	0.0265	0.2044
Owner filed for bankruptcy in last 3 years	-1.2556	0.3923	0.0014
Number of employees, log	0.9559	0.0768	0.0001
Age of the firm, log	0.0917	0.1025	0.3713
Mining and construction	-0.0775	0.1854	0.6758
Manufacturing	-0.1540	0.2205	0.4849
Transportation	0.6153	0.2934	0.0360
Wholesale trade	0.8126	0.2407	0.0007
Retail trade	0.2583	0.1636	0.1145
Finance, insurance, real estate	0.2818	0.2449	0.2499
Rural location	-0.4263	0.1439	0.0031
Sole proprietorship	-0.3873	0.1773	0.0290
Partnership	0.4332	0.2438	0.0756
Corporation, subchapter s	-0.0662	0.1643	0.6872
Owner age, log	1.2571	0.3358	0.0002
Owner experience, log	-0.0385	0.1295	0.7664
Owner gender	-0.5014	0.1461	0.0006
Owner race	0.0976	0.2156	0.6509
Line of credit loan, yes	4.6468	0.1259	0.0001
Mortgage loan, yes	3.1907	0.1528	0.0001
Vehicle loan, yes	2.3057	0.1352	0.0001
Equipment loan, yes	1.5226	0.1472	0.0001
Capital lease, yes	0.0902	0.1644	0.5834
Other traditional loan, yes	1.1079	0.1514	0.0001
Adjusted R-squared			0.3414
Number of observations			5,620

[1] Reference groups are year 2003, service industry and regular corporation.

Table K Determinants of commercial bank loan amounts (complements/substitutes), 1998 to 2003

Variable[1]	Commercial Bank Amount Parameter Estimate	Standard Error	p-value
Constant	-0.9449	1.2876	0.4631
Finance company loan amount, log	-0.3380	0.0226	0.0001
Year 2003	-0.1359	0.1558	0.3834
Interaction - finance company loan and year 2003	0.0327	0.0275	0.2346
Owner filed for bankruptcy in last 3 years	-1.0003	0.4477	0.0255
Number of employees, log	0.9776	0.0838	0.0001
Age of the firm, log	0.2291	0.1095	0.0365
Mining and construction	0.4684	0.2034	0.0213
Manufacturing	0.2334	0.2401	0.3311
Transportation	0.3471	0.3078	0.2594
Wholesale trade	0.2279	0.2695	0.3979
Retail trade	0.4068	0.1812	0.0248
Finance, insurance, real estate	-0.0252	0.2643	0.9242
Rural location	-0.3440	0.1589	0.0305
Sole proprietorship	-0.6113	0.2016	0.0024
Partnership	0.2945	0.2700	0.2754
Corporation, subchapter s	-0.1820	0.1838	0.3220
Owner age, log	0.6387	0.3642	0.0795
Owner experience, log	0.0514	0.1361	0.7056
Owner gender	-0.2258	0.1533	0.1410
Owner race	0.1300	0.2231	0.5602
Line of credit loan, yes	4.6985	0.1357	0.0001
Mortgage loan, yes	3.0979	0.1525	0.0001
Vehicle loan, yes	2.3887	0.1492	0.0001
Equipment loan, yes	1.5142	0.1675	0.0001
Capital lease, yes	0.4398	0.1738	0.0114
Other traditional loan, yes	1.0330	0.1679	0.0001
Adjusted R-squared			0.3636
Number of observations			4,667

[1] Reference groups are year 2003, service industry and regular corporation.

This analysis utilizes the log of total commercial bank and finance company loans to examine whether commercial bank and finance company loans are complements or substitutes. Increases in finance company loan amounts were associated with decreases in commercial bank loan amounts suggesting that commercial bank and finance company loans are substitutes, rather than complements in both regression runs (Tables J and K). When controlling for owner and business characteristics and loan types, the dollar amount of commercial bank loans was unchanged from 1993 to 2003 (Table J) and 1998 to 2003 (Table K).

Other control variables also warrant discussion in the analysis (Table J). Business owners with recent bankruptcy experience, those located in rural areas, sole proprietors and women-owned businesses held smaller loans with commercial banks in the regression using data from 1993 and 2003 (Table J). Larger firms, those engaged in transportation or wholesale trade and older owners held higher loan amounts with commercial banks. In addition, those holding all traditional loans, except capital leases, held higher loan amounts with commercial banks.

Other control variables also warrant further discussion in Table K. Business owners with recent bankruptcy experience, those located in rural areas, and sole proprietors held a smaller amount of their loans with commercial banks in the regression using data from 1998 and 2003. Larger firms, older firms and those engaged in mining/construction or retail trade held a larger amount of their loans with commercial banks. Those firms holding any traditional loan held a larger amount of their loans with commercial banks.

5. Conclusions

This descriptive study documents the dominance of commercial banks and the rise of finance companies over the decade from 1993 to 2003 for small business borrowers. Commercial banks remained the dominant player in the market with over 40 percent of all firms holding at least one loan with a commercial bank. On average, small business borrowers held 42 percent of all loans with commercial banks in 2003. In addition, over 47 percent of aggregate small business loans were held by commercial banks in 2003. Finance companies were the second most significant player in the market, with over 22 percent of all firms holding at least one loan with a finance company. On average, small business borrowers held about 16 percent of all loans with finance companies in 2003. In addition, over 11 percent of the aggregate value of small business loans was held by finance companies. More than 45 percent of all small businesses utilize business and personal credit cards; however, credit card financing (that is, having an outstanding balance at the end of the month) comprised less than 1 percent of the aggregate value of small business loans.

A report prepared for the SBA five years ago (Haynes, 2005), drew the following conclusions:

> The continued deregulation of commercial banks in interstate banking, as well as the relaxation of regulations on national banks and bank holding companies, has enabled commercial banks to consolidate and expand. As a result, banking assets have increased significantly during the past decade and have been concentrated in the hands of giant banks and especially bank holding companies. . . . While finance companies have successfully increased their market share of asset-backed

> loans, they appeared to have made no progress in encroaching into the market for lines of credit. . . .Commercial banks have gained additional market share in line of credit lending, and have the potential to gain additional market share in asset-backed lending by forming finance company subsidiaries. While finance companies appear to have gained some market share for equipment loans, there appears to be no evidence of finance company encroachment into the market share held by commercial banks. The most substantial decreases in market share were realized by leasing companies and other businesses loaning money to small businesses. (Haynes, 2005)

A similar situation exists for commercial banks and finance companies in 2003. The current research extends the 2004 study by more carefully examining the relationship between commercial banks and finance companies. The aggregate statistics suggest that commercial bank shares decreased from 42 percent to 38 percent, while finance company shares increased from 11 percent to 16 percent (Table H). This aggregate result is supported by more rigorous analyses controlling for business, owner, and loan types. When considering the average shares held by commercial banks and finance companies for all small business borrowers, commercial bank shares decreased and finance company shares increased from 1993 to 2003 (Table I). Although no loan price information is utilized in this study, this study does suggest that commercial banks and finance companies are substitute lending institutions (Tables J and K).

It is important for policymakers and agency administrators to understand this relationship between commercial banks and finance companies more fully. Most importantly, the findings in this study show that, all else equal, firms borrowing more from finance companies will borrow less from commercial banks. This finding may suggest that firms with credit from one source find it more difficult to obtain credit from another source. This substitute relationship may exist because obtaining the initial credit is a negative signal about borrower quality or perhaps because finance companies provide mentoring and other services not provided by commercial banks. This critical relationship between commercial banks and finance companies warrants further review.

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Appendix A: Contents of Online Statistical Addendum

A statistical addendum contains numerous data tables from the SSBF.

The tables mentioned in the report (Tables 1.1a through 9.9a) are located at: http://www.sba.gov/advo/stats/rssbf_98.xls.

Table A.1 enumerates the complete set of SSBF patterns tables. These were originally submitted on compact disk, and are now contained in a compressed file located at: http://www.sba.gov/advo/stats/tabssbf03.zip.These tables are numbered as follows:

Summary tables for the percentage of small firms using credit by sources of credit (Tables 1.1a through 9.1e);

Percentage of small firms using credit by suppliers of credit (Tables 1.2a through 9.2e);

Number of firms with 0, 1, 2, 3 or more than 3 types of loans (Tables 1.3a through 9.3a);

Aggregate value of all debt held by small firms by sources of credit (Tables 1.4a through 9.4e);

Aggregate value of all debt held by small firms by suppliers of credit (Tables 1.5a through 9.5e);

Share of aggregate value of all debt held by small firms by sources of credit (Tables 1.6a through 9.6a);

Proportion of small firms borrowing by sources and suppliers of credit (Tables 1.7a through 1.7e).

In addition, balance sheet information is available for all firms only as follows:

Balance sheet information by asset size categories (Tables 1.8a through 9.8a); and

Balance sheet information for all firms by employment size categories (Tables 1.9a through 9.9a).

Table A.1 Summary of Tables on Compact Disk using 2003 SSBF

	All firms	Traditional Borrowers	Minority	Black	Hispanic	Women	Fast Growth	Younger	Corporate >1 owner
Percentage of small firms using credit	1.1a	2.1a	3.1a	4.1a	5.1a	6.1a	7.1a	8.1a	9.1a
by sources of credit	1.1b	2.1b	3.1b	4.1b	5.1b	6.1b	7.1b	8.1b	
	1.1c	2.1c	3.1c	4.1c	5.1c	6.1c	7.1c	8.1c	
	1.1d	2.1d	3.1d	4.1d	5.1d	6.1d	7.1d	8.1d	9.1d
	1.1e	2.1e	3.1e	4.1e	5.1e	6.1e	7.1e	8.1e	9.1e
Percentage of small firms using credit	1.2a	2.2a	3.2a	4.2a	5.2a	6.2a	7.2a	8.2a	9.2a
by suppliers of credit	1.2b	2.2b	3.2b	4.2b	5.2b	6.2b	7.2b	8.2b	
	1.2c	2.2c	3.2c	4.2c	5.2c	6.2c	7.2c	8.2c	
	1.2d	2.2d	3.2d	4.2d	5.2d	6.2d	7.2d	8.2d	9.2d
	1.2e	2.2e	3.2e	4.2e	5.2e	6.2e	7.2e	8.2e	9.2e
Number of small firms with 0, 1, 2, 3	1.3a	2.3a	3.3a	4.3a	5.3a	6.3a	7.3a	8.3a	9.3a
and more than 3 types of loans									
Aggregate value of all debt held by	1.4a	2.4a	3.4a	4.4a	5.4a	6.4a	7.4a	8.4a	9.4a
small firms by sources of credit	1.4b	2.4b	3.4b	4.4b	5.4b	6.4b	7.4b	8.4b	
	1.4c	2.4c	3.4c	4.4c	5.4c	6.4c	7.4c	8.4c	
	1.4d	2.4d	3.4d	4.4d	5.4d	6.4d	7.4d	8.4d	9.4d
	1.4e	2.4e	3.4e	4.4e	5.4e	6.4e	7.4e	8.4e	9.4e
Aggregate value of all debt held by	1.5a	2.5a	3.5a	4.5a	5.5a	6.5a	7.5a	8.5a	9.5a
small firms by suppliers of credit	1.5b	2.5b	3.5b	4.5b	5.5b	6.5b	7.5b	8.5b	
	1.5c	2.5c	3.5c	4.5c	5.5c	6.5c	7.5c	8.5c	
	1.5d	2.5d	3.5d	4.5d	5.5d	6.5d	7.5d	8.5d	9.5d
	1.5e	2.5e	3.5e	4.5e	5.5e	6.5e	7.5e	8.5e	9.5e
Share of aggregate value of all debt	1.6a	2.6a	3.6a	4.6a	5.6a	6.6a	7.6a	8.6a	9.6a
held by small firms by sources of credit									
Proportion of small businesses borrowing	1.7a								
by source and supplier of credit	1.7b								
	1.7c								
	1.7d								
	1.7e								
Liability summary for small firms by	1.8a	2.8a	3.8a	4.8a	5.8a	6.8a	7.8a	8.8a	9.8a
asset categories									
Liability summary for small firms by	1.9a	2.9a	3.9a	4.9a	5.9a	6.9a	7.9a	8.9a	9.9a
employment size categories									

Note: a=all firms, b=sole proprietorships, c=partnerships, d=corporation - sub S, and e=corporation - regular.

Appendix B: Regression Analysis of Borrowers, 1993-2003

This study has examined changed in financing patterns from 1993 through 2003. This appendix examines the likelihood that borrowers were more likely to hold a line of credit, mortgage, vehicle, equipment or other traditional loan or capital lease in 2003 than in either 1993 or 1998. The analysis for this appendix regresses the independent variables utilized in Table 3 on each type of loan or capital lease.

This additional study suggests the following: (1) Borrowers are more likely to hold a line of credit loan in 2003 than either 1993 or 1998; (2) Borrowers are more likely to hold a mortgage loan in 2003 than in 1993 only; (3) Borrower are more likely to hold a vehicle loan in 2003 than 1998 only; (4) Borrowers are less likely to hold an equipment loan in 2003 than 1993 only; (5) Borrowers are less likely to hold a capital lease in 2003 than in either 1993 or 1998; and (6) Borrowers are less likely to hold an other traditional loan in 2003 than in 1993 only. Please refer to Table B.1.

Table B.1 Determinants of Holding a Traditional Loan (1993, 1998 and 2003)

	Line of Credit		Mortgage		Vehicle		Equipment		Capital Lease		Other	
Variable	Parameter Estimate	p-value	Parameter Estimate	p-value	Parameter Estimate	p-value	Parameter Estimate	p-value	Parameter Estimate	p-value	Parameter Estimate	p-value
Constant	0.2016	0.0663	0.1180	0.1996	0.7506	0.0001	0.4975	0.0001	0.2409	0.0054	0.6063	0.0001
Year - 1993	-0.0821	0.0001	-0.0915	0.0001	-0.0232	0.0896	0.0758	0.0001	0.0323	0.0023	0.0368	0.0010
Year - 1998	-0.0610	0.0001	0.0267	0.0168	-0.0530	0.0001	0.0084	0.4542	0.0548	0.0001	0.0074	0.5079
Owner filed for bankruptcy in last 3 years	-0.1783	0.0001	-0.0262	0.3923	0.0694	0.0621	0.0082	0.7898	-0.0040	0.8886	0.1027	0.0007
Number of employees, log	0.0499	0.0001	0.0283	0.0001	-0.0129	0.0691	0.0724	0.0001	0.0618	0.0001	0.0184	0.0016
Age of the firm, log	0.0244	0.0108	-0.0010	0.8993	0.0642	0.0001	0.0025	0.7580	-0.0228	0.0025	-0.0336	0.0001
Mining and construction	0.0112	0.5121	-0.0221	0.1230	0.2442	0.0001	-0.0203	0.1586	-0.1252	0.0001	-0.0343	0.0160
Manufacturing	0.0736	0.0004	-0.0142	0.4113	-0.0161	0.4436	0.0568	0.0011	-0.0039	0.8094	0.0347	0.0437
Transportation	-0.0677	0.0143	-0.0597	0.0100	0.1364	0.0001	0.0060	0.7975	-0.0134	0.5378	0.0334	0.1470
Wholesale trade	0.2049	0.0001	0.0071	0.7036	0.0991	0.0001	-0.0656	0.0005	-0.0515	0.0034	0.0418	0.0241
Retail trade	0.0433	0.0046	0.0357	0.0054	-0.0236	0.1308	-0.0754	0.0001	-0.0975	0.0001	0.0571	0.0001
Finance, insurance, real estate	-0.0703	0.0020	0.2214	0.0001	-0.0769	0.0009	-0.0652	0.0006	-0.0737	0.0001	-0.0056	0.7675
Rural location	-0.0051	0.7049	-0.0983	0.0001	-0.0108	0.4288	-0.0661	0.0001	0.0397	0.0002	-0.0445	0.0001
Sole proprietorship	-0.0564	0.0007	0.0922	0.0001	-0.0395	0.0194	-0.0039	0.7784	-0.0419	0.0014	0.0196	0.1560
Partnership	-0.0347	0.1269	0.1394	0.0001	-0.0640	0.0058	-0.0118	0.5374	-0.0314	0.0807	-0.0370	0.0508
Corporation, subchapter s	-0.0120	0.4354	0.0468	0.0003	0.0089	0.5715	-0.0289	0.0263	-0.0216	0.0767	-0.0067	0.6044
Owner age, log	0.0347	0.2691	-0.0086	0.7447	-0.1130	0.0004	-0.0973	0.0002	-0.0246	0.3219	-0.0960	0.0002
Owner experience, log	-0.0100	0.4107	0.0317	0.0017	0.0029	0.8168	0.0046	0.6538	-0.0039	0.6826	0.0028	0.7809
Owner gender	-0.0532	0.0001	0.0366	0.0012	-0.0128	0.3526	-0.0214	0.0588	-0.0141	0.1837	0.0072	0.5219
Owner race	-0.0608	0.0024	0.0210	0.2105	0.0511	0.0121	-0.0437	0.0094	-0.0158	0.3159	0.0503	0.0025
Adjusted R-squared		0.0523		0.0610		0.0501		0.0482		0.0514		0.0220
Number of observations		7,637		7,637		7,637		7,637		7,637		7,637

How Strong Is the Link Between Internal Finance and Small Firm Growth? Evidence from the Survey of Small Business Finances

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While a vast literature exists examining the link between firm investment and cash flow, few studies have examined the link between firm growth and internal funds, and those that exist have focused exclusively on publicly traded firms. This study posits that internal funds are critically important to small firm growth. While other studies have utilized Compustat and other databases containing responses from publicly traded firms, this study utilizes the Federal Reserve Board's Survey of Small Business Finances, a database containing responses from non-publicly traded firms with fewer than 500 employees. We show that small growth firms are more likely than non-growth firms to have lines of credit, motor vehicle loans, capital leases, equipment loans, and loans from both commercial banks and finance companies. We find a strong, positive relationship between internal funds and employment growth across small, private firms. In addition, we find that the relationship between internal funds and employment growth is especially important for very small and women-owned firms. These results highlight the importance of programs that effectively reduce the costs of borrowing and increase net profits in foster-

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ing the growth of small businesses, especially for very small and women-owned firms. For the practitioner working with small businesses, this study suggests that while outside capital is often needed, internal capital is critically important for the growth of small businesses.

1. Introduction

Compared to the vast literature that examines the link between firm investment and the availability of internal funds, few studies examine the link between finance and firm growth, and those that do focus exclusively on publicly traded firms (e.g., Carpenter and Petersen, 2002). In this study we provide new evidence on the financing of small, private growth firms using data from the Federal Reserve Board's 1993 and 2003 Surveys of Small Business Finances (SSBF). We show that small growth firms are more likely than non-growth firms to have lines of credit, motor vehicle loans, capital leases, equipment loans, and loans from both commercial banks and finance companies. We also find a strong positive relation between the level of internal funds and the likelihood that small firms report positive employment growth. Though exploratory in nature, our results are consistent with a model of firm growth in which firm expansion is constrained by the availability of internal and external funds.

Our study has several important implications. First, our results suggest that the strong link between finance and real firm behavior documented extensively for publicly traded firms also holds for smaller firms with limited access to public equity markets. In particular, small growth firms are more likely to rely on key external sources for credit (e.g., commercial banks and finance companies), and hence the impact of improved (or reduced) access to such sources could be expected to have the greatest impact on small *growth* firms. Second, the very strong relation between internal finance and the likelihood that small firms report positive growth suggests that small firms in the United States may face economically important financing frictions. Data limitations temper the conclusions we can confidently draw from this finding, but our findings at least suggest that financing constraints may be particularly important for the growth of very small firms (those with fewer than 20 employees and less than $1 million in sales) and firms with women-owners. This finding highlights two key firm characteristics that public policy efforts to address small firms' financing difficulties might emphasize.

In the next section provides a brief survey of the literature on financing constraints and small firms. In section three we discuss the growth of firms in a model with binding financing frictions. In section four we discuss our data source and empirical strategy, and we present the sample summary statistics. Section five contains finance-growth regressions, and section six concludes the paper.

2. Literature Review

The literature discusses several reasons why small growth firms might face a high cost of external capital. First, asymmetric information problems may be especially severe for smaller firms, which can lead to both adverse selection and moral hazard,[2] and potentially even to credit rationing (e.g., Stiglitz and Weiss, 1981). In addition, smaller ventures may have difficulty obtaining debt finance because their returns are uncertain and highly volatile, and creditors do not share in firms' returns in the good states (Stiglitz, 1985). Smaller firms also may possess limited collateral which is often necessary for obtaining debt financing, particularly for risky firms (Berger and Udell, 1990). Finally, external equity financing is likely even more expensive than debt for almost all small firms, due to both high floatation costs associated with public issues (Lee, Lockhead, Ritter and Zhao, 1996), and the "lemons premium" that any potential equity supplier may demand due to asymmetric information problems (Myers and Majluf, 1984).

Several recent studies present evidence suggesting that financing constraints are important for small firm investment and growth. In the paper most closely related to our study, Carpenter and Petersen (2002) find strong evidence that the growth of small, publicly traded firms in the United States is constrained by internal funds. Evans and Jovanovic (1989) show that "most individuals who enter self-employment face a binding liquidity constraint and as a result use a suboptimal amount of capital to start up their businesses" (p. 810). Holtz-Eakin, Joulfaian, and Rosen (1994a) find evidence suggesting that liquidity constraints impact entrepreneurial success and growth.[3] Hennessy and Whited (2007) present a structural model indicating that equity floatation costs are high for small firms. Tsoukalas (2006) presents evidence suggesting that the inventory investment of small firms is constrained by internal funds.[4] Finally, Hadlock and Pierce (2008) compare a large number of proxies for the likelihood that firms face financing frictions and conclude that firm size and age are very strong predictors of a firm's financial constraint status.[5]

Recent work utilizing the SSBF found that African-American business owners may face discrimination in the market for financial credit. Cavalluzzo, Cavalluzzo and Wolken (2002) found that, after controlling for business characteristics, substantial differences in denial rates between firms owned by African Americans and white males still existed. These results have been supported by more complex econometric work completed by Blanchflower, Levine and Zimmerman (2003) who found that black-owned

[2] Defined as the lack of incentive to guard against a risk when you are protected against it (as by insurance).
[3] Also see Holtz-Eakin, Joulfaian, and Rosen (1994b).
[4] A comprehensive survey of the large literature on financing constraints for physical investment is provided by Hubbard (1998).
[5] We note that some recent studies conclude small firm access to credit may have improved in recent years, including Petersen and Rajan (2002) and Vos, Yeh, Carter, and Tagg (2007).

small businesses are about twice as likely to be denied credit, even after controlling for differences in creditworthiness and other factors.

And finally, a comparison of the earlier editions of the SSBF with the most recent 2003 SSBF by Mach and Wolken (2006) suggests that non-depository institutions have become more important to small business owners, although commercial banks have remained the dominant supplier of most financial services.

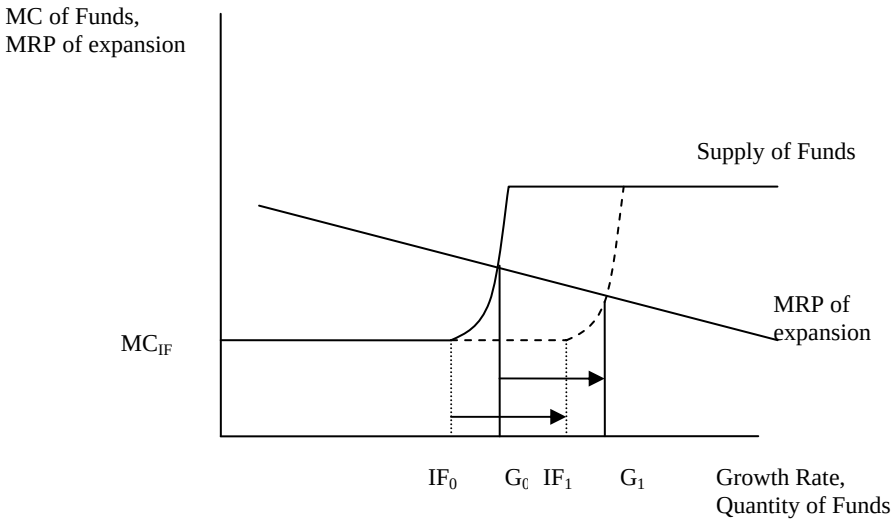
3. Theoretical Framework: A Model of Finance Constrained Growth

The discussion above suggests that small firms may face a financial pecking-order when financing their growth, wherein they first exhaust internal funds before turning to debt, and then perhaps to external equity, if demand for funds is sufficiently high (Myers, 1984). Alternative theories of capital structure include the trade-off theory, which focuses on the choice of a debt level that balances the tax benefits of debt with the costs of financial distress, and the market timing theory (Baker and Wurgler, 2002), which argues that the timing of stock issues to correspond to high stock prices will have a persistent impact on firm capital structure. Almost all studies that attempt to evaluate these theories of capital structure focus on publicly traded firms, and, obviously, the market timing theory is only relevant for such firms. There appears to be no consensus from this literature on which theory best rationalizes the observed capital structure of public firms (Shyam-Sunder and Myers, 1999; Frank and Goyal, 2003; and Fama and French, 2002 and 2005). More importantly for our purposes, however, a recent study by Cole (2008) shows that the capital structure of small, private firms is consistent with the predictions of the pecking-order theory.

A financing hierarchy based on these ideas is illustrated below. The model is taken directly from Carpenter and Petersen (2002) and Hubbard (1998). The change in firm size and quantity of finance are measured on the horizontal axis, and the marginal cost of funds and marginal revenue product (MRP) of expansion are measured on the vertical axis. The quantity of available internal finance is IF, and the marginal opportunity cost of internal finance is MC_{IF}. The firm exhausts internal finance first, and then, if the marginal returns from expansion are high enough, turns to debt (the upward sloping portion of the supply curve). To see that such a firm is "constrained" at the margin, note that an increase in available internal funds from IF_0 to IF_1 shifts the entire supply schedule out and leads to an increase in the firm's rate of growth from G_0 to G_1. Note as well that as financing constraints are relaxed the upward sloping portion of the supply of funds schedule becomes more elastic (closer to a supply of funds schedule consistent with per-

fect capital markets) and the sensitivity of firm growth to the availability of internal funds declines.

Figure 1. Financing Hierarchy Model



Data, Estimation Strategy, and Summary Statistics

We construct the sample from the 1993 and 2003 SSBFs. The SSBF is a cross-sectional survey of small, private firms in the United States designed to generate representative samples of economy-wide small firm activity. We exclude firms in the following industries from the sample: utilities (two-digit SIC code 49); finance, insurance and real estate (two-digit SIC code 60-69); and public administration and unclassified (two-digit SIC code of 91 or greater). We also exclude the relatively few firms that report being publicly traded (32 firms in the 1993 sample and 9 firms in 2003 sample).

The SSBF in both 1993 and 2003 asks firms whether employment growth over the past three years has been positive, unchanged, or negative. We consider all firms that report positive employment growth to be "growth" firms and all other firms to be "non-growth" firms. Given this measure of firm growth, firms that have not been in business for three years are necessarily excluded from the sample. The primary measure of internal finance we use is the natural log of firm profits (plus one). Because a sizeable number of firms report negative profits, we "scale up" reported profits in each sample year by adding the minimum profits value reported that year to all reported profit values. Obviously,

profits is an imperfect measure of internal funds, so in Appendix A we report results with the log level of internal equity (total assets minus total liabilities) used in place of profits. The final sample consists of 3,905 firms from the 1993 survey and 3,447 firms from the 2003 survey, or 7,352 total firm-year observations. For all the descriptive statistics and regression results reported in the paper, we apply the appropriate sampling weights as provided in the 1993 and 2003 SSBFs. The 2003 SSBF contains five separate data implicates and we use the first implicate.

4. Empirical Strategy

We begin by considering whether growth and non-growth firms differ in the type and sources of external credit they obtain. To evaluate how financing sources are associated with growth and non-growth firms after controlling for various firm and owner characteristics, we estimate logistic regressions of the following form:

$$\Pr(\text{Credit\_Type})_i = \alpha_1 \text{PositiveGrowth}_i + \boldsymbol{\beta}\textbf{FirmCharacteristics} + \boldsymbol{\delta}\textbf{OwnerCharacteristics} + \sigma_t + \varepsilon_i.$$

We estimate separate regressions for major types and sources of credit, so Credit_Type is a dummy variable equal to one if the firm has a particular type of credit (e.g., a capital lease) or obtains credit from a particular source (e.g., a finance company). PositiveGrowth_i is a dummy variable equal to one if the firm reports positive employment growth over the prior three years. The vector of firm characteristics includes age, sales and industry; while the owner characteristics include age, education, experience, race (minority dummy variable), gender (women dummy variable), and a dummy variable equal to one if the owner recently filed for bankruptcy.

Our second, more exploratory interest is the link between internal finance and growth across firms. Empirically, the model developed in the previous section suggests a baseline specification like the following:

$$\text{PositiveGrowth}_i = \alpha_1 \text{Internal Funds}_i + \gamma_j + \sigma_t + \varepsilon_i.$$

Given data availability in the SSBF, we define PositiveGrowth_i as a dummy variable equal to one if firm *j* reports positive employment growth over the previous three

years and, as noted above, we proxy for Internal Funds with the log of firm profits.[6] γ_j is an industry-specific fixed effect, σ_t is a year-specific fixed effect, and ε is a random disturbance.

Similar specifications have been used to draw inferences about the importance of financing frictions for small firm growth among samples of publicly traded firms (e.g., Carpenter and Petersen, 2002). One concern with using this regression to draw strong conclusions about financing constraints among small firms in the SSBF is that internal funds are measured at the end of the survey year (1993 or 2003), while firm growth is measured over the prior three years. Consequently, it is difficult to determine the direction of *causality* between internal funds and growth: Do small firms grow faster because they have more internal funds, or do they have more internal funds because of their fast growth? While the available data limits our ability to conclusively deal with this issue, we do note that if the regression is merely capturing the fact that high growth firms end the period with greater profits, then we should find similar correlations between internal funds and growth for all groups of firms, irrespective of the *a priori* likelihood that they face financing frictions.

A related concern is that internal funds and firm growth may be positively related for reasons *other than* financing constraints. In particular, internal funds are likely to be positively correlated with firm growth opportunities across firms, so if the regression does not adequately control for growth opportunities we may find a positive internal finance-growth link even for firms that face no financing constraints. Though the industry and year dummies in the baseline specification will capture all growth opportunities at the industry and year level, we take two additional steps to address this concern. First, we add additional controls for growth opportunities to the baseline specification. In some specifications we include the log of firm age, the log of new credit obtained, the log of new equity acquired, and, in a particularly strong test of robustness, a dummy variable equal to one if the firm reports positive sales growth over the previous three years. Sales growth is widely used to control for growth opportunities and, not surprisingly, it is strongly correlated with both employment growth and internal funds at the firm level. Though still speculative, the inferences we can draw about the importance of internal funds for small firm growth are much stronger if we continue to find a positive link between internal funds and employment growth after including sales growth in the regression. Second, we estimate the growth regression separately for groups of firms that are *a priori* more or less likely to face binding financing constraints. This approach has been used in the financing constraint literature since Fazzari, Hubbard, and Petersen (1988). If the regression results reveal information about financing frictions, then firms which are *a priori* more likely to face binding constraints should exhibit a stronger link between in-

[6] Of course, firm profits is not a perfect proxy for the availability of internal funds, but we know of no perfect proxy provided in the SSBF. Furthermore, profits will be a sufficient proxy for internal funds in this framework as long as it is highly correlated with the "true" measure, which we expect it to be.

ternal funds and growth, whereas the link between internal funds and growth should be similar across groups if profits simply proxy for growth opportunities, or if growth firms systematically have higher profits at the end of the sample period. The primary split we use is based on firm size, which has been widely used as a proxy for the degree of financing frictions (e.g., Gilchrist and Himmelberg, 1995; Almeida, Campello, and Weisbach, 2004).

Summary Statistics

Tables 1, 2 and 3 describe the key features of our data. Table 1 reports mean and median values for the key regression variables. Several interesting facts emerge from Table 1. First, note that Table 1 shows substantial variation in firm size across the firms covered by the SSBF. In particular, the firms we classify as "smaller" are significantly smaller in terms of both employees and sales than the firms we classify as "larger." Second, the median firm in the pooled sample is thirteen years old and is thus *not* a new start-up enterprise (recall that firms younger than four years old are dropped from the sample). Perhaps not surprisingly, smaller firms are slightly younger than larger firms at both the mean and the median. Third, positive employment growth for firms in the SSBF database is the exception rather than the norm: 28 percent of firms in the pooled sample report positive employment growth over the prior three years; a larger fraction of firms in the 1993 sample report positive growth than in the 2003 sample. Fourth, note that larger firms are more likely to report positive employment growth. Finally, both small and large firms are more likely to report positive sales growth than they are to report positive employment growth.

Table 2 provides detailed evidence on average employment growth by firm age, size, and industry. First, note that employment growth over the previous three years is clearly increasing with both with the current level of employees (this is true in both 1993 and 2003) and the current level of sales. Second, employment growth is more likely for younger firms, consistent with the large empirical literature that has studied firm growth over the life cycle. Third, employment growth is similar across industries; in both 1993 and 2003 growth was highest in transportation. Finally, services and retail trade account for the largest share of firms in our data.

Table 3 reports characteristics of "growth" and "non-growth" firms. Growth firms tend to be larger and older than non-growth firms, and they have higher profits. In addition, growth firms obtain, on average, more total credit, more commercial bank credit, and more finance company credit. Furthermore, a significantly larger fraction of growth firms have lines of credit, motor vehicle loans, capital leases, and equipment loans. A larger fraction of growth firms also have loans from commercial banks, savings and loans, finance companies, and leasing companies. Overall, this table shows that external credit is particularly important for the small private firms that are expanding.

5. Regression Results

Financing Characteristics and Small Firm Growth

While growth firms are, on average, more reliant on external credit than non-growth firms, they differ in other important ways (e.g., size and age) that might explain the differences we observe in Table 3. So, in Table 4 we explore whether the relation between reporting positive growth and relying on external credit persists after controlling for other key firm and owner characteristics. For different types and sources of credit, we estimate the logistic regression discussed above and report the coefficient estimate on the "PositiveGrowth" dummy variable in Table 4.

The findings in Table 4 show that growth firms are significantly more likely to use some sources of external credit than non-growth firms, after controlling for firm and owner characteristics. In particular, we find that firm growth is positively related to having a line of credit, a motor vehicle loan, a capital lease, an equipment loan, a loan from a commercial bank, and a loan from a finance company. We find no significant differences between growth and non-growth firms in the likelihood that they have a mortgage loan, a loan from a savings and loan institution, a loan from a credit union, credit from a brokerage or mutual fund, credit from a leasing company, or credit from an insurance or mortgage company. These findings suggest that firm growth is a potentially important characteristic for understanding the use of external credit by small firms.

The Internal Finance-Growth Relation: Baseline Estimates

Table 5 reports estimates of the internal finance-growth regression discussed above. Column one includes only the level of internal funds (log of profits) and industry and year dummies as dependent variables and shows a strong positive link between internal funds and the likelihood of employment growth across small firms. In column two, we add firm age to control for the widely documented fact that firm growth rates (and growth opportunities) are a function of firm age (Sutton, 1997). The estimated coefficient on age is negative and highly significant, showing that older firms are less likely to exhibit positive employment growth, and the coefficient on internal funds remains positive and significant.

In column three, we add a dummy variable indicating whether the firm reports positive sales growth over the prior three years. As discussed above, sales growth is widely employed as a control for firm growth opportunities and should be positively correlated with both employment growth and the level of internal funds. Indeed, the coefficient on sales growth is positive and large, reflecting a strong positive relation between sales growth and employment growth. More importantly, however, the estimated coefficient on internal funds remains positive and significant even after controlling for sales

growth. Finally, in column four we include the amount of new external finance raised by the firm. Credit raised from traditional sources is positively related to firm growth (as expected given the findings in Tables 3 and 4), but equity raised is not related to likelihood of firm growth. (Recall from the descriptive statistics that small firms raise very little external equity.) Including the external finance variables reduces the estimated coefficient on internal funds slightly, but it remains positive and significant.

At a minimum, the findings in Table 5 provide the first empirical evidence we are aware of on the correlation between internal finance and growth among small private firms. More speculatively, these findings are consistent with the finance-constrained model of small firm growth developed above. In particular, we find a strong positive link between internal funds and the likelihood of growth across small firms even after controlling for firm age and sales growth. The results with sales growth are especially valuable for interpreting the internal finance-growth relationship. If the positive relation between internal funds and employment growth simply reflects the fact that firms with high growth opportunities also have more internal funds, then including sales growth in the regression should substantially reduce or eliminate the positive coefficient on internal funds. The fact that the coefficient on internal funds remains positive, large, and significant after controlling for sales growth is consistent with an interpretation that the growth of small firms is constrained by internal funds.

As discussed above, profits is not a perfect proxy for the level of internal funds. In Table 6 we therefore report a set of regressions identical to those in Table 5, except that we replace profits with the level of internal equity (assets minus liabilities). Across all specifications we find a significant positive correlation between the level of internal equity and the likelihood that the firm reports positive employment growth.

Split Sample Estimates

Table 7 reports results from splitting the sample into “smaller” and “larger” categories. The smaller firms have fewer than 20 employees and less than $1 million in sales, while larger firms have at least 20 employees or at least $1 million in sales. This split into size categories follows Berger and Udell (1998). In general, the results in Table 7 show a particularly strong link between internal funds and growth among the smallest firms (though the estimate in column two is imprecise and just misses statistical significance at the 10 percent level). This finding is potentially important because larger firms are more profitable and are more likely to report positive employment growth (see Table 1), suggesting that the growth regression is not simply capturing the fact that firms with positive growth over the past three years also end the period with more internal funds. Again, though speculative, these results are consistent with a world in which the growth of firms most likely to face financing frictions (very small firms) is constrained by the availability of internal funds.

Results by Year

In Table 8, we consider whether the correlation between internal funds and growth differs between 1993 and 2003. First, we use the concatenated data and include an interaction term between internal funds and a year 2003 dummy. Second, we estimate separate regressions for the 1993 and 2003 sample periods. Overall, the results show a positive link between internal finance and growth in both 1993 and 2003. Furthermore, the internal finance-growth link may have weakened over time. If so, this would be consistent with recent studies citing improved access to finance for small firms in recent years (e.g., Petersen and Rajan, 2002).

Results by Owner Characteristics: Race and Gender

In Table 9, we estimate the finance-growth regression separately for minority- and women-owned firms. Columns one and two show a very strong relation between internal funds and growth for non-minority-owned firms. Columns three and four show a positive relation between internal finance and growth for both women- and men-owned small firms, though the link appears particularly strong in the sample of women-owned firms. Again, though these findings should be interpreted with caution, they are at least consistent with minority- and women-owned firms having, on average, more limited access to external finance than other firms. We continue to find a significant positive correlation between growth and internal funds among the non-minority- and men-owned firms.

Results by Firm Characteristics: Legal Organization and Location

Table 10 shows separate estimates of the baseline finance-growth regression based on potentially important firm characteristics. In columns one and two, we split firms into separate categories based on whether or not the firm is legally incorporated. We find a positive and significant link between growth and internal funds for both incorporated and non-incorporated firms. However, the coefficient on internal funds is substantially larger for the non-incorporated firms.

In columns three and four in Table 10, we split firms into “urban” and “non-urban” groups based on their geographic location. We find positive and significant coefficients on internal finance for both groups of firms, though the relation appears particularly strong for firms located in non-urban areas.

Results by Riskiness: Dun and Bradstreet Credit Score

In Table 11, we split firms based on the Dun & Bradstreet credit score, which is only available in the 2003 SSBF. We find positive and significant coefficients on internal

finance for both "more" and "less" risky firms, though the relation appears particularly strong for the more risky firms.

6. Conclusions

We provide new evidence on small firm finance and growth using the 1993 and 2003 Surveys of Small Business Finances. We find significant differences in the financing of growth and non-growth firms. *In particular, we find that growth firms are more reliant than non-growth firms on the external finance supplied by commercial banks and finance companies.* We also show a strong, positive relation between the level of internal funds and the likelihood of employment growth across small firms covered by the SSBF. The relation between internal finance and growth is especially strong for the smallest firms, firms with women owners, firms that are not incorporated, firms in non-urban locations, and firms with risky credit ratings. Though we are cautious in the conclusions, our findings are consistent with a model of firm growth in which the growth of firms most likely to face financing frictions is constrained by the availability of finance.

While this evidence would suggest that firm growth is dependent upon internal funds, the firm growth story may be simply a firm recovery story. The three years prior to 1993 and 2003 were moderate recession years; therefore, when firms were asked to compare sales with the previous year, the increase in sales may have been recovery from decreased sales, rather than growth. This analysis is constrained by the data available to distinguish between a recovery and growth story. If a community variable, such as the County Business Patterns sales information, could be added to the SSBF, then an adequate proxy for recovery could be included in the analysis and enable the recovery and growth stories to be more carefully examined. Unfortunately, county locations are not identified in the SSBF.

While an extensive literature exists for publicly traded firms on the relationship between internal financing and growth utilizing Compustat and other databases, few studies have used the SSBF or other small business databases to address this issue. This study has made an important contribution to the literature by recognizing that small publicly traded firms face similar binding internal financing constraints as non-publicly traded firms, even though publicly traded firms have more access to external funds. This study provides important information for public policymakers addressing financing constraints for small business owners. Most importantly, this study finds a strong, positive relationship between internal funds and employment growth across small, privately held firms. In addition, it suggests that most severe internal funds constraints may be realized by very small firms and women-owned firms. These results highlight the importance of programs that effectively reduce the costs of borrowing (and increase net profits) in fostering the

growth of small businesses, especially for very small and women-owned firms. For the practitioner working with small businesses, this study suggests that while outside capital is often needed, internal capital is critically important for the growth of small businesses.

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8. Tables

Table 1. Sample Descriptive Statistics

The sample is constructed from the 1993 and 2003 Surveys of Small Business Finances. The sample excludes publicly traded firms and firms located in SIC 49 (utilities), SIC 60-69 (finance, insurance and real estate), and SIC 91-98 (public administration). "Smaller" firms have fewer than 20 employees and less than $1 million in sales. Firms must report positive, zero or negative employment growth since 1990 for the 1993 sample and since 2000 for the 2003 sample, meaning firms in business three years or less are excluded from the sample. All values are in 2003 dollars.

		1993			***2003***			***Pooled***		
Size Category:		*Smaller*	*Larger*	*All*	*Smaller*	*Larger*	*All*	*Smaller*	*Larger*	*All*
Employees	*mean*	3.009	33.486	8.291	3.289	30.660	8.912	3.156	31.856	8.623
	median	2	20	3	2	18	3	2	18	3
Sales	*mean*	254592	5376137	1142314	228883	4829399	1174054	241089	5060659	1159297
	median	172380	2354735	229840	140000	2000000	217000	151000	2165093	224094
Age	*mean*	14.487	18.852	15.243	15.928	18.278	16.411	15.244	18.521	15.868
	median	12	15	12	14	16	14	13	15	13
Profits	*mean*	32725	218209	64876	46344	627286	165698	39878	454254	118823
	median	17238	77080	21064	19000	121000	24535	18000	100795	22984
Employment Growth	*mean*	0.287	0.474	0.319	0.187	0.471	0.246	0.235	0.472	0.280
	median	0	0	0	0	0	0	0	0	0
Sales Growth	*mean*	0.566	0.692	0.588	0.453	0.654	0.494	0.506	0.670	0.537
	median	1	1	1	0	1	0	1	1	1
Traditional Credit	*mean*	29663	548816	119648	55284	633979	174176	43119	597957	148825
	median	1149	76691	3677	500	93430	6000	919	86000	4660
Equity Raised	*mean*	8081	72253	19204	1368	17141	4608	4555	40452	11394
	median	0	0	0	0	0	0	0	0	0

Table 2. Growth Statistics by Size, Age, and Industry

Table 2 reports average employment growth for firms in different size, age and industry groupings. The sample is described in Table 1. Employment growth is a dummy variable equal to one if the firm reports positive employment growth over the prior three years, and zero otherwise.

	Pooled		1993		2003	
Category	Avg. Employ-ment Growth	*n*	Avg. Employ-ment Growth	*n*	Avg. Employ-ment Growth	*n*
Any Firm	0.280	*7352*	0.319	*3905*	0.246	*3447*
Number of Employees						
0-1	0.099	*1737*	0.157	*1000*	0.036	*737*
2-4	0.279	*1443*	0.352	*770*	0.219	*673*
5-9	0.403	*999*	0.442	*545*	0.371	*454*
10-19	0.439	*654*	0.478	*338*	0.413	*316*
20-99	0.549	*1775*	0.524	*872*	0.567	*903*
100 or more	0.628	*744*	0.696	*380*	0.574	*364*
Total Sales						
Less than 25,000	0.118	*559*	0.223	*264*	0.046	*295*
25,000-49,999	0.135	*454*	0.186	*233*	0.098	*221*
50,000-99,999	0.177	*616*	0.272	*357*	0.086	*259*
100,000-249,999	0.257	*1158*	0.300	*691*	0.210	*467*
250,000-499,999	0.299	*859*	0.312	*497*	0.287	*362*
500,000-999,999	0.379	*777*	0.391	*404*	0.370	*373*
1 million-2,499,999	0.420	*922*	0.440	*470*	0.407	*452*
2,500,000-4,999,999	0.498	*608*	0.461	*323*	0.529	*285*
5 million-9,999,999	0.518	*577*	0.498	*283*	0.533	*294*
10 million or more	0.565	*822*	0.569	*383*	0.561	*439*
Age						
Less than 4	n/a	n/a	n/a	n/a	n/a	n/a
4-9	0.341	2326	0.374	1404	0.306	922
10-19	0.268	2593	0.300	1404	0.239	1189
20 or more	0.221	2433	0.264	1097	0.193	1336
Industry						
Mining/Construction	0.290	*906*	0.320	*515*	0.258	*391*
Manufacturing	0.309	*962*	0.393	*518*	0.228	*444*
Transportation	0.352	*284*	0.428	*144*	0.304	*140*
Wholesale Trade	0.349	*642*	0.412	*388*	0.272	*254*
Retail Trade	0.265	*1600*	0.261	*910*	0.270	*690*
Services	0.262	*2958*	0.310	*1430*	0.228	*1528*

Table 3. Characteristics of Growth Firms

Table 3 reports key characteristics of growth and non-growth firms for the sample described in Table 1. Firms are considered growth firms if they report positive employment growth over the prior three years, and non-growth firms otherwise. All values are in 2003 dollars.

Category		All Firms	Growth Firms	Non-Growth Firms	*Difference p-value*
Employees	*mean*	8.623	15.430	5.977	*0.000*
	median	3	6	2	
Sales	*mean*	1159297	2056466	810469	*0.000*
	median	224094	453865	172380	
Age	*mean*	15.868	14.182	16.524	*0.000*
	median	13	11	14	
Profits	*mean*	118823	210010	83369	*0.007*
	median	22984	34476	20000	
Traditional Credit (Total)	*mean*	148825	269235	102008	*0.000*
	median	4660	17238	1007	
Commercial Bank Credit	*mean*	89407	162484	60994	*0.000*
	median	0	0	0	
Finance Company Credit	*mean*	27218	50582	18134	*0.019*
	median	0	0	0	
Share with Line of Credit		0.313	0.410	0.276	*0.000*
Share with Mortgage Loan		0.097	0.106	0.094	*0.108*
Share with Motor Vehicle Loan		0.266	0.325	0.243	*0.000*
Share with Capital Lease		0.093	0.141	0.074	*0.000*
Share with Equipment Loan		0.132	0.188	0.110	*0.000*
Share with Other Traditional Loan		0.105	0.135	0.094	*0.000*
Share with Any Traditional Loan		0.595	0.710	0.551	*0.000*
Share with Commercial Bank Loans		0.415	0.525	0.372	*0.000*
Share with S&L Loans		0.047	0.057	0.043	*0.012*
Share with Credit Union Loans		0.029	0.034	0.026	*0.077*
Share with Any Depository Credit		0.461	0.572	0.418	*0.000*
Share with Finance Company Credit		0.182	0.240	0.159	*0.000*
Share with Brokerage or Mutual Fund Credit		0.006	0.006	0.006	*0.717*
Share with Leasing Company Credit		0.063	0.088	0.053	*0.000*
Share with Insurance or Mortgage Company Credit		0.015	0.014	0.015	*0.911*
Share with Any Non-Depository Credit		0.241	0.313	0.213	*0.000*

Table 4. Likelihood of Growth Firms Using Credit, by Source and Type

Table 4 reports estimates from logistic regressions that examine how the likelihood of obtaining different types and sources of external credit differs across growth and non-growth firms after controlling for key firm and owner characteristics. The table reports coefficient estimates on a dummy variable equal to one if the firm reports positive employment growth over the prior three years, and zero otherwise. The sample is described in Table 1. Robust standard errors are in italics. *, **, *** denote significance at the 10%, 5% and 1% levels.

Type or Source of Credit	Coefficient on Growth Dummy	*Robust Standard Error*	Log Likelihood
Line of Credit	0.196	*0. 082***	-3905.07
Mortgage Loan	-0.010	*0.121*	-2230.40
Motor Vehicle Loan	0.154	*0.081**	-3997.47
Capital Lease	0.297	*0.118***	-2060.34
Equipment Loan	0.226	*0.103***	-2606.07
Other Traditional Loan	0.157	*0.115*	-2376.53
Any Traditional Loan	0.253	*0.082****	-4339.09
Commercial Bank Loan	0.212	*0.077****	-4363.77
S&L Loan	0.200	*0.168*	-1358.22
Credit Union Loan	0.258	*0.212*	-926.737
Any Depository Credit	0.233	*0.077****	-4456.50
Finance Company Credit	0.245	*0.097***	-3188.47
Brokerage or Mutual Fund Credit	-0469	*0.433*	-233.97
Leasing Company Credit	0.052	*0.132*	-1569.86
Insurance or Mortgage Company Credit	-0.044	*0.377*	-535.25
Any Non-Depository Credit	0.156	*0.086**	-3730.74

Table 5. Internal Finance and Growth – Pooled Regression Results

Table 5 reports logistic regressions showing the correlation between internal finance and the likelihood of growth across firms. The sample is described in Table 1. The variable "PositiveGrowth" takes the value of one if the firm reports positive employment growth (since 1990 for the 1993 SSBF; since 2000 for the 2003 SSBF) and zero otherwise. InternalFunds is the natural log of net profits as described in the paper. Age is the natural log of firm age. Sales growth takes the value of one if the firm reports positive sales growth (since 1990 for the 1993 SSBF; since 2000 for the 2003 SSBF) and zero otherwise. CreditRaised is the natural log of total borrowing from traditional sources. EquityRaised is the natural log of new external equity raised. Industry and year fixed effects are included in each specification. Robust standard errors are in parentheses. *, **, *** denote significance at the 10%, 5% and 1% levels.

	Dependent Variable: (PositiveGrowth)$_j$			
	(1)	(2)	(3)	(4)
(InternalFunds)$_j$	5.501	6.037	4.876	4.124
	*(1.157)***	*(1.553)***	*(1.309)***	*(1.190)***
(Age)$_j$		-0.457	-0.329	-0.335
		*(0.059)***	*(0.061)***	*(0.062)***
(SalesGwth)$_j$			1.177	1.133
			*(0.078)***	*(0.079)***
(CreditRaised)$_j$				0.059
				*(0.007)***
(EquityRaised)$_j$				-0.004
				(0.011)
Industry Effects	yes	yes	yes	yes
Year Effects	yes	yes	yes	yes
Log Likelihood	-4298.81	-4245.18	-3962.28	-3897.29
Observations	7352	7352	7230	7230

Table 6. Internal Equity and Growth – Pooled Regression Results

Table 6 reports logistic regressions showing the correlation between internal equity and the likelihood of growth across firms. The sample is described in Table 1. The variable "PositiveGrowth" takes the value of one if the firm reports positive employment growth (since 1990 for the 1993 SSBF; since 2000 for the 2003 SSBF) and zero otherwise. InternalEquity is the natural log of firm equity (total assets minus total liabilities). Age is the natural log of firm age. Sales growth takes the value of one if the firm reports positive sales growth (since 1990 for the 1993 SSBF; since 2000 for the 2003 SSBF) and zero otherwise. CreditRaised is the natural log of total borrowing from traditional sources. EquityRaised is the natural log of new external equity raised. Industry and year fixed effects are included in each specification. Robust standard errors are in parentheses. *, **, *** denote significance at the 10%, 5% and 1% levels.

	Dependent Variable: (PositiveGrowth)$_j$			
	(1)	(2)	(3)	(4)
(InternalEquity)$_j$	2.485	3.534	2.818	1.899
	*(1.261)***	*(1.374)****	*(1.399)***	*(1.362)****
(Age)$_j$		-0.466	-0.334	-0.335
		*(0.059)****	*(0.061)****	*(0.063)****
(SalesGwth)$_j$			1.184	1.142
			*(0.078)****	*(0.079)****
(CreditRaised)$_j$				0.060
				*(0.007)****
(EquityRaised)$_j$				-0.004
				(0.011)
Industry Effects	yes	yes	yes	yes
Year Effects	yes	yes	yes	yes
Log Likelihood	-4312.43	-4255.21	-3970.05	-3905.85
Observations	7352	7352	7230	7230

Table 7. Internal Finance and Growth – Regression Results by Firm Size

Table 7 examines whether the correlation between internal finance and the likelihood of growth differs across firms in different size classes. The sample is described in Table 1. "Smaller" firms have fewer than 20 employees and less than $1 million in sales. "Larger" firms have at least 20 employees or at least $1 million in sales. The variable "PositiveGrowth" takes the value of one if the firm reports positive employment growth (since 1990 for the 1993 SSBF; since 2000 for the 2003 SSBF) and zero otherwise. InternalFunds is the natural log of net profits. Age is the natural log of firm age. Sales growth takes the value of one if the firm reports positive sales growth (since 1990 for the 1993 SSBF; since 2000 for the 2003 SSBF) and zero otherwise. CreditRaised is the natural log of total borrowing from traditional sources. EquityRaised is the natural log of new external equity raised. Robust standard errors are in parentheses. *, **, *** denote significance at the 10%, 5% and 1% levels.

Dependent Variable: (PositiveGrowth)$_j$				
	(1)	(2)	(3)	(4)
Firm Size	*Smaller*		*Larger*	
(InternalFunds)$_j$	21.847	13.898	1.291	1.005
	*(9.128)***	*(8.569)*	*(0.614)***	*(0.582)**
(Age)$_j$	-0.599	-0.463	-0.451	-0.351
	*(0.076)****	*(0.078)****	*(0.101)****	*(0.109)****
(SalesGwth)$_j$		0.913		1.533
		*(0.093)****		*(0.144)****
(CreditRaised)$_j$		0.045		0.034
		*(0.009)****		*(0.013)****
(EquityRaised)$_j$		-0.005		-0.012
		(0.013)		*(0.017)*
Industry Effects	yes	yes	yes	yes
Year Effects	yes	yes	yes	yes
Log Likelihood	-2207.00	-2074.08	-2130.31	-1921.93
Observations	4207	4123	3145	3107

Table 8. Internal Finance and Growth – Regression Results by Year

Table 8 reports logistic regressions showing the correlation between internal finance and the likelihood of growth across firms separately for the 1993 and 2003 sample years. The sample is described in Table 1. The variable "PositiveGrowth" takes the value of one if the firm reports positive employment growth (since 1990 for the 1993 SSBF; since 2000 for the 2003 SSBF) and zero otherwise. InternalFunds is the natural log of net profits. Age is the natural log of firm age. Sales growth takes the value of one if the firm reports positive sales growth (since 1990 for the 1993 SSBF; since 2000 for the 2003 SSBF) and zero otherwise. CreditRaised is the natural log of total borrowing from traditional sources. EquityRaised is the natural log of new external equity raised. IF*2003 is the interaction between InternalFunds and a year 2003 dummy variable. Industry and year fixed effects are included in each specification. Robust standard errors are in parentheses. *, **, *** denote significance at the 10%, 5% and 1% levels.

	Dependent Variable: (PositiveGrowth)$_j$		
	(1)	(2)	(3)
Sample	*Pooled*	*1993*	*2003*
(InternalFunds)$_j$	42.900	32.696	3.591
	*(17.069)***	*(15.518)***	*(1.133)****
(Age)$_j$		-0.326	-0.356
		*(0.078)****	*(0.100)****
(SalesGwth)$_j$		0.722	1.557
		*(0.098)****	*(0.129)****
(CreditRaised)$_j$		0.039	0.081
		*(0.009)****	*(0.011)****
(EquityRaised)$_j$		-0.005	0.007
		(0.011)	*(0.025)*
(IF*2003)$_j$	-37.513		
	*(17.128)***		
Industry Effects	yes	yes	yes
Year Effects	yes	yes	yes
Log Likelihood	-4296.70	-2261.80	-1647.77
Observations	7352	3788	3442

Table 9. Internal Finance and Growth – Regression Results by Owner Characteristics

Table 9 examines whether the correlation between internal finance and the likelihood of growth differs by characteristics of firm owners. The sample is described in Table 1. The variable "PositiveGrowth" takes the value of one if the firm reports positive employment growth (since 1990 for the 1993 SSBF; since 2000 for the 2003 SSBF) and zero otherwise. InternalFunds is the natural log of net profits. Age is the natural log of firm age. Sales growth takes the value of one if the firm reports positive sales growth (since 1990 for the 1993 SSBF; since 2000 for the 2003 SSBF) and zero otherwise. CreditRaised is the natural log of total borrowing from traditional sources. EquityRaised is the natural log of new external equity raised. Robust standard errors are in parentheses. *, **, *** denote significance at the 10%, 5% and 1% levels.

	Dependent Variable: (PositiveGrowth)$_j$			
	(1)	(2)	(3)	(4)
Owner Characteristic	*Minority*	*Not Minority*	*Women*	*Men*
(InternalFunds)$_j$	7.229	3.983	7.550	3.698
	(4.423)	*(1.206)***	*(4.404)**	*(1.166)****
(Age)$_j$	-0.178	-0.346	-0.376	-0.337
	(0.191)	*(0.066)****	*(0.154)***	*(0.069)****
(SalesGwth)$_j$	1.346	1.120	1.137	1.137
	*(0.253)****	*(0.083)****	*(0.175)****	*(0.089)****
(CreditRaised)$_j$	0.044	0.060	0.048	0.061
	*(0.021)***	*(0.007)****	*(0.015)****	*(0.008)****
(EquityRaised)$_j$	0.054	-0.008	-0.020	-0.001
	*(0.027)***	*(0.011)*	*(0.026)*	*(0.012)*
Industry Effects	yes	yes	yes	yes
Year Effects	yes	yes	yes	yes
Log Likelihood	-472.54	-3411.15	-704.26	-3193.84
Observations	905	6323	1401	5829

Table 10. Internal Finance and Growth – Regression Results by Firm Characteristics

Table 10 examines whether the correlation between internal finance and the likelihood of growth differs by characteristics of the firm. The sample is described in Table 1. The variable "PositiveGrowth" takes the value of one if the firm reports positive employment growth (since 1990 for the 1993 SSBF; since 2000 for the 2003 SSBF) and zero otherwise. InternalFunds is the natural log of net profits. Age is the natural log of firm age. Sales growth takes the value of one if the firm reports positive sales growth (since 1990 for the 1993 SSBF; since 2000 for the 2003 SSBF) and zero otherwise. CreditRaised is the natural log of total borrowing from traditional sources. EquityRaised is the natural log of new external equity raised. Robust standard errors are in parentheses. *, **, *** denote significance at the 10%, 5% and 1% levels.

Dependent Variable: (PositiveGrowth)$_j$				
	(1)	(2)	(3)	(4)
Firm Characteristic	*Incorporated*	*Not Incorporated*	*Urban*	*Not Urban*
(InternalFunds)$_j$	1.362	17.294	3.406	12.292
	*(0.652)***	*(4.336)****	*(1.096)****	*(5.949)***
(Age)$_j$	-0.282	-0.443	-0.387	-0.161
	*(0.081)****	*(0.101)****	*(0.071)****	*(0.127)*
(SalesGwth)$_j$	1.312	0.852	1.174	0.974
	*(0.104)****	*(0.123)****	*(0.090)****	*(0.167)****
(CreditRaised)$_j$	0.050	0.051	0.061	0.054
	*(0.009)****	*(0.011)****	*(0.008)****	*(0.015)****
(EquityRaised)$_j$	-0.000	-0.018	0.007	-0.050
	(0.013)	*(0.019)*	*(0.012)*	*(0.026)**
Industry Effects	yes	yes	yes	yes
Year Effects	yes	yes	yes	yes
Log Likelihood	-2634.87	-1287.77	-3063.50	-820.792
Observations	4484	2746	5703	1527

Table 11. Internal Finance and Growth – Regression Results by Dun & Bradstreet Credit Score (2003 only)

Table 11 examines whether the correlation between internal finance and the likelihood of growth differs by the DB credit score. The sample is described in Table 1. The variable "PositiveGrowth" takes the value of one if the firm reports positive employment growth (since 1990 for the 1993 SSBF; since 2000 for the 2003 SSBF) and zero otherwise. InternalFunds is the natural log of net profits. Age is the natural log of firm age. Sales growth takes the value of one if the firm reports positive sales growth (since 1990 for the 1993 SSBF; since 2000 for the 2003 SSBF) and zero otherwise. CreditRaised is the natural log of total borrowing from traditional sources. EquityRaised is the natural log of new external equity raised. Robust standard errors are in parentheses. *, **, *** denote significance at the 10%, 5% and 1% levels.

Dependent Variable: (PositiveGrowth)$_j$		
	(1)	(2)
Firm Type	*DB More Risky*	*DB Less Risky*
(InternalFunds)$_j$	6.197	2.456
	*(2.361)***	*(1.097)***
(Age)$_j$	-0.457	-0.325
	*(0.167)***	*(0.125)***
(SalesGwth)$_j$	1.380	1.675
	*(0.215)***	*(0.159)***
(CreditRaised)$_j$	0.085	0.076
	*(0.018)***	*(0.014)***
(EquityRaised)$_j$	0.005	0.023
	(0.041)	*(0.029)*
Industry Effects	yes	yes
Year Effects	n/a	n/a
Log Likelihood	-553.61	-1084.61
Observations	1197	2231

Who Needs Credit and Who Gets Credit? Evidence from the Surveys of Small Business Finances

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This study uses data from the Federal Reserve Board's 1993, 1998, and 2003 Surveys of Small Business Finances to classify small businesses into four groups based upon their credit needs and to model the credit allocation process into a sequence of three steps. First, do firms need credit? Those that do not are classified as *nonborrowers*; these firms have received scant attention in the literature even though they account for more than half of all small firms. Second, do firms need credit but fail to apply because they fear being turned down? Such firms are *discouraged borrowers*. Like nonborrowers, discouraged borrowers have received little attention in the literature and often are pooled with firms who applied for credit, but were denied. Discouraged borrowers outnumber firms that applied but were denied credit by more than two to one. Third, do firms apply for credit but get turned down? These firms are *denied borrowers*. Finally, firms that applied for and were extended credit are *approved borrowers.* The results here reveal strong and significant differences among each of these four groups of firms. Nonborrowers look very much like approved borrowers, consistent with the pecking-order theory of capital structure. Discouraged borrowers resemble denied borrowers in many respects, but are significantly different along a number of dimensions. This finding calls into question previous studies that have pooled together these two groups of firms in analyzing credit allocation.

[1] Research performed under contract number SBAHQ-06-Q-0013. The statements, findings, conclusions, and recommendations are those of the author and do not necessarily reflect the views of the Office of Advocacy, the U.S. Small Business Administration, or the U.S. government.

Finally, the study finds strong evidence that denied borrowers differ from approved borrowers across numerous characteristics as previously documented in the literature. Of particular note, minority-owned firms, and especially black-owned firms, were denied credit at a far higher rate than firms with owners who were white.

1. Introduction

Among small businesses, who needs credit and who gets credit? The answer to this question is of great importance not only to the small firms themselves, but also to prospective lenders to these firms and to policymakers interested in these firms' financial health.

The availability of credit is one of the most fundamental issues facing a small business and therefore has received much attention in the academic literature (see, e.g., Petersen and Rajan, 1994; Berger and Udell, 1995; Cole, 1998; Cole, Goldberg and White, 2004; Berger *et al*., 2005). However, many small firms indicate that they do not need credit (nonborrowers) while others indicate that they need credit but did not apply for it (so-called discouraged borrowers). Discouraged borrowers have received scant attention in the literature, and the studies that have analyzed them often combine them into potentially inappropriate groups. For example, discouraged borrowers are combined with denied borrowers—firms that actually applied for credit and were turned down. Yet many discouraged borrowers more closely resemble approved borrowers (firms that applied for and received credit) than denied borrowers. Nonborrowers essentially have been ignored by the existing literature; we know of no studies that have analyzed these firms separately from firms that need credit.

In this study, we analyze these four groups of firms to shed new light upon how they differ. We utilize data from the Federal Reserve Board's 1993, 1998, and 2003 Surveys of Small Business Finances (SSBFs) to estimate a sequential set of three logistic regression models, where a firm first decides if it needs credit (nonborrowers versus all other firms), then decides if it will apply for credit (discouraged borrowers versus denied borrowers and approved borrowers), and finally, learns from its prospective lender whether or not it is extended or denied credit (approved borrowers versus denied borrowers). As the first rigorous evidence on the differences in these four groups of firms, results of this study provide policymakers with new insights on how to tailor macroeconomic policy and regulations to help small businesses obtain credit when they need credit.

Why is this issue of importance? According to the U.S. Department of the Treasury and the Internal Revenue Service, more than 35 million U.S. taxpayers are self-

employed.[2] The small firms operated by these self-employed taxpayers are vital to the U.S. economy. According to the U.S. Small Business Administration, Office of Advocacy, small businesses account for half of all U.S. private sector employment and produce 60 to 80 percent of net job growth in the United States each year over the past decade.[3] A better understanding of who needs credit and who gets credit can help policymakers take actions that will lead to more jobs and faster economic growth.

We contribute to the literature in at least four important ways. First, we provide the first rigorous analysis of the differences in the four types of firms: nonborrowers, discouraged borrowers, denied borrowers, and approved borrowers. Discouraged borrowers are significantly different from denied borrowers on a number of dimensions—a finding that calls into question the results of research that have combined these groups in ways that these results suggest are inappropriate, such as pooling discouraged borrowers with denied borrowers in analyzing the availability of credit. Nonborrowers look very much like approved borrowers in ways that are consistent with the pecking-order theory of capital structure.[4] This is the first rigorous evidence about how this group of firms compares with the firms that need credit.

Second, we provide an analysis of credit availability that properly accounts for the inherent self-selection mechanisms involved in the credit application process: who needs credit, who applies for credit conditional upon needing credit, and who receives credit conditional upon applying for credit. Many previous researchers have ignored firms that do not apply for credit; have pooled firms that do not need credit with those needing credit; and/or have pooled discouraged borrowers with denied borrowers. These results shed new light on the credit-allocation process.

Third, we provide the first rigorous evidence from the 2003 SSBF on the availability of credit to small businesses. This survey includes methodological improvements on the previous SSBFs (1987, 1993, and 1998) that enable us to better address the issue of availability of credit to small firms. One of the most important is the identification of applications to renew existing lines of credit, which enables us, for the first time, to differentiate the availability of new credit from renewals of existing credit. This turns out to be very important because renewals of existing lines of credit account for about 40 percent of all applications, but only about 10 percent of all denials; in other words, new applications are turned down at four times the rate of renewals. The results here indicate that inclusion of these renewals does not qualitatively affect the results, providing support

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[2] The IRS defines a self-employed taxpayer as one filing a Schedule C, Schedule C-EZ, E, or F, or Form 2106. See *Federal Register* document FR Doc 05-18505.

[3] See *Frequently Asked Questions,* U.S. Small Business Administration, Office of Advocacy (2006). For research purposes, the SBA and Federal Reserve Board define small businesses as independent firms with fewer than 500 employees.

[4] Cole (2008) provides strong evidence that privately held U.S. firms appear to follow the pecking-order theory of capital structure.

for previous works using the 1993 SSBF, which did not allow researchers to disentangle this effect, and the 1998 SSBF, which excluded renewals altogether.

Fourth, we provide the first comprehensive evidence from the three SSBFs on the availability of credit to minority-owned firms. Previous researchers have analyzed data from the 1993 and 1998 SSBFs separately, and there are no studies of which we are aware that analyze the 2003 SSBF for evidence on how minority-owned firms fare relative to white-owned firms in their applications for credit, nor are we aware of any studies that analyze each of the three SSBFs for which loan approval data are available for commonalities across time and credit regimes. The strong evidence provided here across each of the three SSBFs is that minority-owned firms are denied credit at significantly higher rates than nonminority-owned firms, even after controlling for the wide array of variables available from the SSBFs.[5]

In the next section, we briefly review the literature on the availability of credit, followed by a description of the data and the methodology. The results appear in the next section, followed by a summary and conclusions.

2. Literature Review

The issue of availability of credit to small businesses has been studied by financial economists for at least 60 years, dating back at least to Wendt (1946), who examines availability of loans to small businesses in California. Since then, scores of articles have addressed this issue. This review is limited to the most prominent studies using SSBF data that have appeared in the financial economics literature over the past two decades.

A large body of research has developed around the seminal work of Petersen and Rajan (1994) who were the first to analyze credit availability using data from the SSBF. This body has focused on the importance of firm-lender relationships in the allocation of credit. Because of the relative opacity of small firms, those firms with stronger relationships with their prospective lenders are more likely to receive credit. Petersen and Rajan (1994) use data from the 1987 SSBF to find that close ties with creditors lead to greater availability of credit at lower rates of interest.

Berger and Udell (1995) were the first to extend Petersen and Rajan, also using data from the 1987 SSBF. These authors focused their analysis only on lines of credit, a type of lending where relationships should be especially important. They find that loan rates are lower when firms have longer preexisting relationships.

[5] Of course, there remain numerous potentially important explanatory variables, such as those related to culture and family endowments, which prevent interpreting the results as definitive evidence of discrimination against minority-owned firms.

Cole (1998) was the first to analyze data from the 1993 SSBF. He focuses on the lender's decision whether or not to extend credit, rather than on the rate charged by the lender, and finds that it is the existence rather than the length of the firm-lender relationship that affects the likelihood a lender will extend credit.

Several studies have used SSBF data to analyze how race and gender influence the availability of credit. Cavalluzo and Cavalluzo (1998) use data from the 1987 SSBF to find little variation in credit availability by gender but significant differences by race. Cavalluzzo, Cavalluzzo, and Wolken (2002) use data from the 1993 SSBF to find significant differences in availability of credit by race. Blanchflower et al. (2004) use data from the 1993 SSBF and also find significant differences by race. Also using data from the 1993 SSBF, Coleman (2003) finds that black-owned small businesses were less likely to even apply for a loan because they expected to be turned down, i.e., they were more likely to be a discouraged borrower as well as to be a denied borrower. Most recently, Cavalluzo and Wolken (2005) use data from the 1998 SSBF, which provides information on personal wealth, an important omitted variable in earlier analyses, yet they also find significant differences in credit availability by race.

Two recent articles have used the SSBF data to analyze how availability of credit differs at large and small banks. It is thought that small banks have a competitive advantage over large banks in lending to small firms because small banks enjoy stronger relationships with their borrowers. Hence, small banks should rely more upon relationship variables while other banks should rely more upon financial variables. Cole, Goldberg and White (2004) as well as Berger et al. (2005) provide support for this idea.

Chakraborty and Hu (2006) use data from the 1993 SSBF to analyze how relationships affect lenders' decisions to secure lines of credit and other types of loans. They find that the length of the relationship decreases the likelihood of collateral for a line of credit but not for other types of loans. Previously, Berger and Udell (1995) had shown that longer relationships reduced the likelihood of collateral being required for lines of credit, using data from the 1987 SSBF.

3. Data

This study uses data from the Federal Reserve Board's 1993, 1998, and 2003 SSBF.[6] In each survey, the firms surveyed constitute a nationally representative sample of small businesses operating in the United States as of the survey year, and at the time of the in-

[6] Data from the 1987 SSBF are not analyzed because it does not provide information on nonborrowers, discouraged borrowers or denied borrowers. See Elliehausen and Wolken (1990) for a detailed description of the 1987 survey; Cole and Wolken (1995) for a detailed description of the 1993 survey; Bitler, Robb and Wolken (2001) for a detailed description of the 1998 survey; and Mach and Wolken (2006) for a detailed description of the 2003 survey.

terviews, which took place during the following year. A small business is defined as a nonfinancial, nonfarm enterprise employing fewer than 500 employees. The survey data for each year are broadly representative of approximately five million firms operating in the United States as of the survey year.

The SSBF provides detailed information about each firm's most recent borrowing experience. This includes whether or not the firm applied for credit and, if the firm did not apply, did it fail to apply because it feared its application would be rejected (discouraged borrowers). For firms that applied, the SSBF provides information on the identity and characteristics of the potential lender to which the firm applied, other financial services (if any) that the firm obtained from that potential lender, and whether the potential lender approved or denied the firm's credit application. The survey data also provide information on each firm's balance sheet and income statement; its credit history; the firm's characteristics, including standard industrial classification (SIC), organizational form, and age; and demographic characteristics of each firm's primary owner, including age, education, experience, and credit history. Balance sheet and income statement data are derived from the enterprise's year-end financial statements. Credit history, firm characteristics, and demographic characteristics of each firm's primary owner are taken as of year-end.

We impose a number of restrictions on the SSBFs. First, we exclude the small number of firms reporting that they were publicly traded in order to focus exclusively on privately held firms. Second, we exclude firms reporting assets or sales greater than $10 million (some as large as $200 million) so as to focus on truly small firms; the $10 million threshold is the typical cut-off used by bankers to differentiate small businesses from middle-market businesses. [7] Third, we exclude firms reporting that no owner controlled at least 10 percent of the firm's shares because for these firms the SSBF does not collect information on the primary owner, such as age, education, and personal wealth. Fourth, we exclude firms reporting that another business is the primary owner of the firm because, again, the SSBF does not collect information about the primary owner of such firms. Finally, we exclude firms reporting zero assets, as a positive value of assets is needed to scale the financial variables. These restrictions yield the final samples for 1993/1998/2003.

[7] Results obtained when these larger firms are included in the analysis are not qualitatively different from those obtained under this sample restriction.

4. Methodology and Hypotheses

Methodology

Both univariate and multivariate tests are employed to provide new evidence on who needs credit and who gets credit among small businesses. First, we classify firms into one of four categories of borrower type based upon their responses to questions regarding their most recent loan request over the previous three years.[8]

Nonborrower: the firm did not apply for a loan during the previous three years because the firm did not need credit.[9]

Discouraged borrower: the firm did not apply for a loan during the previous year because the firm feared rejection, even though it needed credit.

Denied borrower: the firm did apply for a loan during the previous three years but was denied credit by its prospective lender(s).

Approved borrower: the firm did apply for a loan during the previous three years and was granted credit by its prospective lender(s).[10]

Once we have classified our sample firms, we calculate descriptive statistics for each group of firms and test for significant differences across categories. We also conduct multivariate tests on the data, estimating a sequence of logistic regression models that explain the sequential selection of the loan application and approval process (Figure 1).

First, a firm decides whether or not it needs credit. We include all five groups of firms in this analysis, and assign a value of zero to nonborrowers and a value of one to all other firms.

[8] Each firm is asked about its most recent applications (approved and/or denied) during the previous three years, excluding applications for credit cards, loans from owners and trade credit with suppliers, as well as applications that were withdrawn or were pending at the time of the interview. Applications for renewals of credit lines were included. We test the impact of their inclusion in Table 5.

[9] Note that most of these firms borrowed funds more than three years before the survey, so that they do report outstanding debt in their capital structure.

[10] For firms with multiple credit applications during the previous three years, the 1998 and 2003 SSBFs provide information on the most recent approval and denial. The dates of these two applications are used to determine which is the "most recent" application, and only information on that application is included.

Need credit =
f (firm characteristics, market characteristics, owner characteristics, firm-creditor relationship characteristics) (1)

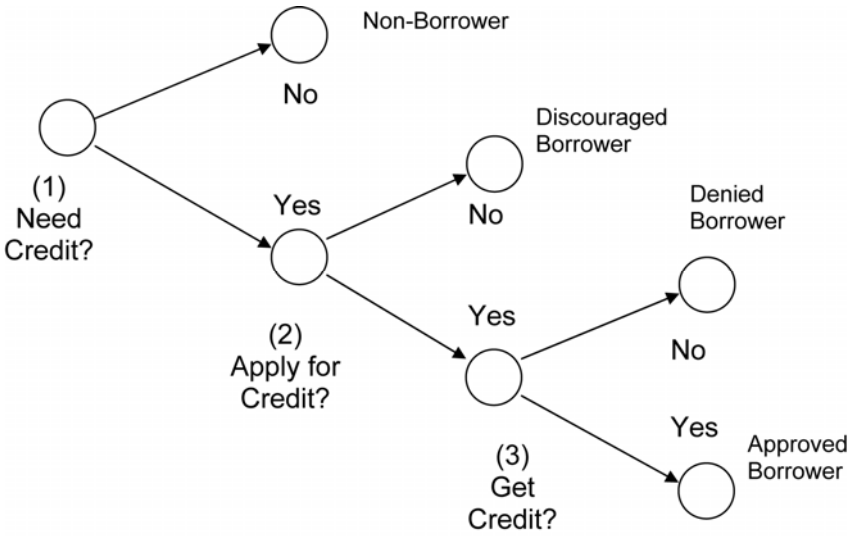
Second, a firm that needs credit decides whether or not to apply for credit. We exclude nonborrowers from this stage of the model and assign a value of one to discouraged borrowers and a value of zero to firms that applied for credit, including denied borrowers and approved borrowers.

Apply for credit =
f (firm characteristics, market characteristics, owner characteristics, firm-creditor relationship characteristics) (2)

Third, a firm that decides to apply for credit is either approved or denied credit. In this stage of the model, we include only those firms that applied for credit and assign a value of zero to denied borrowers and a value of one to approved borrowers.

Get credit =
f (firm characteristics, market characteristics, owner characteristics, firm-creditor relationship characteristics) (3)

Figure 1.
Who Needs and Who Gets Credit?
A Sequential Model



We estimate this three-step model using logistic regression models estimated in the SAS statistical package.

Hypotheses

For explanatory variables, we generally follow the existing literature on the availability of credit, which hypothesizes that a lender is more likely to extend credit to a firm when that firm shares characteristics of other firms that historically have been most likely to repay their credits.[11] We expect that the same set of characteristics should explain non-borrowers relative to need-credit firms and applied-for-credit firms relative to discouraged firms, as well as approved firms relative to denied firms.

We include a vector of firm characteristics, a vector of market characteristics, a vector of owner characteristics, and a vector of firm-lender relationship characteristics.

Firm Characteristics

Firm characteristics include public reputation as proxied by *firm age*; firm size as measured by *annual sales*; firm leverage as measured by the ratio of *total liabilities to total assets*; firm profitability as measured by *return on assets*; firm liquid assets as measured by the ratio of *cash to total assets*;[12] organizational form as measured by dummy variables for *C corporations*, *S corporations*, *partnerships* and *proprietorships*; firm credit quality as proxied by the *number of obligations on which the firm has been 60 or more days delinquent* during the previous three years, *whether the firm had declared bankruptcy in the past seven years*, and a categorical representation of the *D&B credit score*;[13] and firm industrial classification as measured by a set of dummy variables for one- or two-digit *SIC code*.

Older firms are thought to be more creditworthy because they have survived the high-risk startup period in a firm's life cycle and, over time, have developed a public track record that can be scrutinized by a prospective lender. Larger firms are thought to be more creditworthy because they tend to be better established and typically are more diversified than smaller firms. More profitable firms are thought to be more creditworthy because they have demonstrated their ability to cover future debt service out of earnings. Firms with more liquid assets are thought to be more creditworthy because they are more likely to be able to meet their current financial obligations.

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[11] See, for example, Cole (1998) and Cole, Goldberg, and White (2004).

[12] Financial ratios are winsorized at the 99th percentiles to mitigate the effects of large outliers on the results.

[13] The SSBF variable for the 2003 D&B credit score ranges from 1 to 6, with a higher number indicating better credit quality. For 1998, the SSBF variable for the D&B credit score ranges from 1 to 5, with a higher number indicating worse credit quality. The 1993 SSBF does not provide this variable.

Proprietorships are thought to be more creditworthy than partnerships and corporations, ceteris paribus, because a lender can seize the owners' personal assets, as well as business assets, to satisfy a claim. Similarly, partnerships are thought to be more creditworthy than corporations because a lender can seize the general partner's personal assets, in addition to the firm's business assets, in order to satisfy a claim. We have no expectations about the creditworthiness of S corporations relative to C corporations.

Firms with more delinquent business obligations, firms that have declared bankruptcy over the previous seven years, and firms with worse D&B credit scores are thought to be less creditworthy because they have a demonstrated history of being unable to meet their previous financial obligations. Firms in certain industries, such as construction, manufacturing, and transportation, are thought to be more creditworthy because they typically have more tangible assets that can be pledged as collateral than do firms in other industries, such as business services and professional services.

Market Characteristics

Market characteristics are measured by three dummy variables for low, medium, and high concentration as measured by a bank *Herfindahl index* and a dummy for firms located in *urban* rather than rural areas. We are severely limited with respect to available market characteristics because confidentiality concerns preclude the SSBF from providing the location of sample firms beyond Census region. However, the SSBF does provide a categorical variable indicating banking-market concentration, and a dummy variable indicating firms located within a metropolitan statistical area (MSA).

We expect that firms would be less likely to be able to obtain credit in less competitive banking markets. To the extent that this variable does not completely capture variation in banking competition, we expect that firms in rural markets also would be less likely to be able to obtain credit, as these markets tend to be less competitive.

Owner Characteristics

The vector of *owner characteristics* includes owner's reputation as measured by *age*, *years of business experience* and dummy variables for educational attainment (*high school*, *some college*, *college degree* or *graduate degree*); the race, ethnicity and gender of the controlling owner as measured by dummy variables for *black*-, *Hispanic*-, *Asian*-, and *female*-owned firms; the primary owner's credit quality as measured by the *number of credit obligations on which the owner has been 60 or more days delinquent* during the past three years, a dummy indicating whether the *owner has declared bankruptcy* during the past seven years, and a dummy indicating whether a *judgment has been rendered against the owner* within the past three years; and two measures of the owner's personal

wealth: the value of any *home equity* and the *net worth of the owner*, excluding home equity and equity in the firm.[14]

Firms with older owners are expected to be more creditworthy because older owners are thought to be wiser and have longer track records than younger owners. Firms with more experienced owners are thought to be more creditworthy because they have a longer track record in the firm's line of business. Firms with more educated owners are thought to be more creditworthy because more educated owners are thought to be better equipped to successfully run a business.

We have no expectations regarding indicators for firms with minority controlling owners (Asian, black, female, or Hispanic). We include these variables in an effort to ascertain whether minority-owned firms are experiencing disparate outcomes in the credit markets relative to firms whose controlling owners are white, non-Hispanic males.

Firms whose controlling owners have more delinquent personal obligations, have declared bankruptcy during the previous seven years, or have suffered a judgment against them during the previous three years are thought to be less creditworthy because they have a demonstrated history of being unable to meet their previous personal credit obligations. Finally, firms whose controlling owners have greater personal wealth are thought to be more creditworthy because they have more personal assets that can be pledged as collateral against firm borrowings.

Firm-Lender Relationship Characteristics

The fourth and final vector of firm-lender relationship characteristics includes variables that measure the strength of the firm's relationship with its primary financial institution (FI): the *length of the relationship*, the *distance* between the firm and its primary FI, and a set of dummy variables indicating the types of preexisting relationships with the primary FI: *checking account*, *savings account*, and/or *financial management service*. We also include dummy variables indicating if the primary FI is a *commercial bank*, a *savings bank*, or some *other type* of FI. Finally, we include the total *number of financial institutions* from which the firm obtains any financial service, which we further disaggregate into *commercial banks* and *nonbanks*.

Creditors are expected to look more favorably upon loan applications from firms with which they have had longer relationships because the creditors have more private information about the prospective borrower gleaned from the relationship, such as account balances and payment histories. A creditor is expected to favor firms located closer to the creditor because the creditor can more easily monitor firms in the nearby market areas. Creditors are expected to favor firms with which they have pre-existing checking, savings, or financial management relationships because a creditor can use these relationships to gather valuable private information about the firm's creditworthiness.

[14] The 1993 SSBF does not provide these two wealth variables.

The type of primary financial institution chosen by a firm is expected to influence the availability of credit to that firm. Specialized lenders such as finance companies and savings associations typically make only specialized loans such as mortgages or asset-backed loans such as equipment loans. If private information developed by the primary financial institution is valuable in allocating credit, firms choosing such specialized lenders as their primary source of financial services will be at a disadvantage when applying for types of credit other than those in which the primary lender specializes. Finally, firms that obtain financial services from more financial institutions have a wider set of potential lenders that have developed valuable private information about the firm and should be more likely to be able to obtain credit when needed.

5. Results

Descriptive Statistics: Firms that Need Credit versus Firms that Do Not Need Credit

For each of the three SSBFs, Table 1 presents weighted descriptive statistics for the full sample, and then, separately, for firms that need credit and for firms that have no need for credit, along with a *t*-test for differences in means of these two groups. First, we will discuss the full sample means and then we will discuss the differences in the means of the *need* and *no-need* firms.

Firm Characteristics

Average firm size as measured by annual sales declined from $566,000 in 1993 to $529,000 in 1998 before rising to $624,000 in 2003. Size as measured by total assets exhibited a similar trend, falling from $278,000 in 1993 to $249,000 in 1998 before rising to $307,000 in 2003. Size as measured by average employment was less variable, rising from 6.78 employees in 1993 to 7.01 in 1998 and 7.02 in 2003.

Profitability as measured by return on assets ranged from 61 percent in 2003 to 88 percent in 1998. Leverage as measured by total liabilities to total assets ranged from 0.559 in 1993 to 0.845 in 2003. The ratio of cash to assets rose from 0.197 in 1993 to 0.257 in 2003.

Organizational form changed dramatically from 1993 to 2003, with S corporations gaining in popularity at the expense of C corporations. In 1993, 28 percent of the firms were organized as C corporations and 20 percent as S corporations, but by 2003, S corporations accounted for 31 percent of the sample, while C corporations accounted for

only 14 percent. The portion of firms organized as proprietorships and partnerships remained relatively constant at about 46 percent and 8 percent, respectively.

The average firm had been in business for 13 to 14 years. Between 14 and 19 percent of the firms reported at least one delinquent business obligation and between 25 and 36 percent reported paying late on trade credit. The percent of firms reporting previous bankruptcy during the previous seven years (not collected for 1993) was 2.3 percent in 1998 and 1 percent in 2003. The average D&B score for 1998 was 2.99, where 1 indicates low risk, 3 indicates medium risk, and 5 indicates high risk. The average D&B score for 2003 was 3.6, where 1 indicates high risk and 6 indicates low risk.

Use of business credit cards rose from 29 percent in 1993 to 47 percent in 1998 and 2003. Use of personal credit cards for business purposes fell from 41 percent in 1993 to 34 percent in 1998 and then rose to 48 percent in 2003.

By industry, 20-25 percent of the firms are in business services, 17-21 percent are in professional services, and 19-22 percent are in retail trade. Business and professional services saw the greatest increases from 1993 to 2003, whereas transportation and primary manufacturing saw the greatest declines.

Most of the firm characteristics are significantly different for the subsamples of firms that need credit (discouraged, denied and approved) and firms that have no need for credit. *Need* firms are much larger as measured by sales, assets, and employment; less profitable; more highly levered; hold less cash; are younger; and are much less likely to be organized as proprietorships and more likely to be organized as S or C corporations. *Need* firms have inferior credit quality on all four measures—business bankruptcy, delinquent business obligations, D&B credit score, and trade credit paid late. Finally, *need* firms are significantly more likely to use both personal and business credit cards for business purposes.

In 1993, near the end of the credit crunch that afflicted the U.S. economy following the 1990-1991 recession, *need* firms accounted for 55 percent of the sample, but in 1998, when the United States was in the middle of a 10-year economic boom cycle, they accounted for only 41 percent of the sample. During 2003, as the economy was recovering from 9/11 and the 2001-2002 recession, *need* firms accounted for 49 percent of the sample.

Market Characteristics

Almost 80 percent of the firms are located in urban areas and just under half are located in highly concentrated banking markets. None of the market characteristics are consistently significant in explaining differences in firms that need credit and those that do not need credit.

Primary Owner Characteristics

The average primary owner was 49-52 years old with 18-20 years of experience and had at least a college education. Between 18 and 20 percent had a graduate degree and another 26-30 percent had a college degree. By race, ethnicity and gender, 3-4 percent of the primary owners were black, 3-4 percent were Asian, 4-6 percent were Hispanic and 21-26 percent were female. Only 1-3 percent of the owners had declared bankruptcy during the previous seven years and only 2-5 percent reported a judgment against themselves over the previous three years. On average, 12-14 percent of the firm owners had at least one delinquent personal obligation. The average value of the owner's net worth (excluding the value of the firm) was $500,000-$700,000.

As with firm characteristics, most of the primary owner characteristics are significantly different for the groups of firms that need and do not need credit across all three SSBFs. Owners of firms that need credit are significantly younger, less experienced and less educated; and have significantly worse credit quality by all measures—owner bankruptcy, owner delinquencies, and owner judgments. They also have significantly less owner personal wealth. Finally, they are significantly more likely to be black and Hispanic but not Asian or female.

Relationship Characteristics

The vast majority of firms (80-82 percent) designate a commercial bank as their primary source of financial services, with 10-13 percent designating a savings association and the remainder designating some other source. The average length of the firm's relationship with its primary source is 8-10 years (95-124 months) and the average distance from the firm and its primary source is 14-33 miles. The average firm obtained financial services from 1.2 commercial banks and from 0.8-1.1 nonbank financial institutions.

Firms that needed credit were significantly more likely to designate a finance company as their primary financial institution, had significantly shorter relationships with their primary financial institution, and had significantly fewer bank and nonbank sources of financial services.

Descriptive Statistics: Discouraged Firms versus Firms that Applied for Credit

For each of the three SSBFs, Table 2 presents weighted descriptive statistics for the full sample of firms indicating that they needed credit and, separately, for discouraged firms and applied firms (firms that applied for credit), along with a *t*-test for differences in means of these two groups.

Firm Characteristics

Compared with applied firms, discouraged firms are significantly smaller, more highly levered, have more cash, are less likely to be organized as corporations and more likely to be organized as proprietorships, are younger and have worse credit quality as measured by firm bankruptcy, firm delinquent obligations, and D&B credit score. Discouraged firms are significantly less likely to use personal credit cards for business purposes.

Market Characteristics

When we examine market characteristics, we find that discouraged firms are significantly more likely to be located in a MSA, but we find no consistent differences by banking market concentration.

Owner Characteristics

Compared with the controlling owners of applied firms, those of discouraged firms are younger, with less experience and less education, are more likely to be black and female, have worse credit quality as measured by owner bankruptcy and owner delinquent obligations, and have less personal wealth.

Firm-Creditor Relationship Characteristics

Compared with applied firms, discouraged firms are less likely to designate a commercial bank as their primary source of financial services, have significantly shorter relationships with their primary sources, and obtain financial services from significantly fewer sources, both commercial bank and nonbank.

Descriptive Statistics: Discouraged Firms versus Denied Firms

In Table 3 are descriptive statistics for discouraged firms and denied firms, along with t-statistics for tests of differences in means of these two groups. Compared with denied firms, discouraged firms are significantly smaller and more profitable, hold more cash, are less likely to be organized as corporations and more likely to be organized as proprietorships, and are younger, less likely to use business credit cards, and less likely to pay late on trade credit. Owners of discouraged firms are more likely to be black and female, are more likely to have declared bankruptcy, and have less personal wealth. Discouraged firms obtain financial services from significantly fewer commercial bank and nonbank sources.

In summary, we find a number of significant differences between discouraged firms and denied firms in variables typically used to measure the availability of credit.

This finding argues against pooling the two groups in any study of the availability of credit.

Descriptive Statistics: Approved Firms versus Denied Firms

For each of the three SSBFs, Table 4 presents weighted descriptive statistics for the full sample of firms that applied for credit and, separately, for denied firms (firms that applied for credit and whose applications were denied) and approved firms (firms that applied for credit and whose applications were approved), along with a *t*-test for differences in means of these two groups.

Compared with approved firms, denied firms are significantly smaller; are more highly levered; are less likely to be C corporations and more likely to be proprietorships; are younger; and have lower credit quality as measured by business bankruptcies, firm delinquencies, D&B score, and trade credit paid late.

Denied firms are significantly more likely to be located in urban areas. Owners of denied firms are significantly younger, less experienced, less educated, and more likely to be black; have significantly lower credit quality as measured by owner bankruptcy, owner delinquencies, and owner judgments; and have less personal wealth.

A denied firm is significantly more likely to use a commercial bank and less likely to use a finance company when applying for its most recent loan application; has a much shorter relationship with the source of its most recent loan application; and is less likely to obtain checking, savings, and other financial services from the institution where it made its most recent loan application. In general, most of these results are consistent with those found in previous studies that analyzed data only from the 1993 SSBF.

Multivariate Analysis

Tables 5, 6, and 8 present the results from estimating the three sequential logistic regression models described in Section IV: Firms that need credit versus firms that do not need credit (Table 5); discouraged firms versus firms that applied for credit (Table 6); and approved firms versus denied firms (Table 8). Table 7 presents results for discouraged versus denied firms.

Firms that Do Not Need Credit

In Table 5 are the results from estimating a logistic regression model where the dependent variable equals one if the firm indicated that it did not need credit (nonborrowers) and equal to zero otherwise (including discouraged, denied, and approved firms). For each variable, the table shows the marginal effect and the associated t-statistic.

This analysis reveals that nonborrower firms are significantly smaller, more profitable, less levered, more liquid (holding more cash), less likely to be organized as corpo-

rations and more likely to be organized as proprietorships, and older; and have higher credit quality as measured by firm bankruptcy, firm delinquencies, D&B credit score, and trade credit paid late. In general, these findings are consistent with the pecking-order theory of capital structure.

Nonborrower firms are more likely to be located in MSAs. Owners of nonborrower firms are older and less likely to be black; to have higher credit quality as measured by owner bankruptcy, owner delinquencies, and owner judgments; and to have greater owner personal wealth.

Nonborrower firms are less likely to designate a finance company as their primary source of financial services and to have longer relationships with their primary source of financial services. Finally, they use significantly fewer sources of financial services, both bank and nonbank.

Discouraged Borrowers

In Table 6 are the results from estimating a logistic regression model where the dependent variable equals one if the firm indicated that it needed credit but was discouraged and did not apply for credit (discouraged) and zero if it applied for credit (including denied and approved firms). This analysis reveals that, compared with applied firms, discouraged firms are significantly smaller; have worse credit quality as measured by firm delinquencies and D&B credit score; and are more likely to be located in MSAs.

Owners of discouraged firms are significantly younger; and have worse credit quality as measured by owner bankruptcy and owner delinquencies; and have less owner personal wealth. Discouraged firms use fewer sources, both bank and nonbank.

In Table 7 are the results from estimating a logistic regression model where the dependent variable is equal to one if the firm indicated that it needed credit but was discouraged and did not apply (discouraged) and equal to zero if the firm applied for but was denied credit (denied). Discouraged firms are significantly smaller, more profitable, and older. The owners of discouraged firms are significantly younger. Discouraged firms use significantly fewer sources of financial services, both bank and nonbank.

Approved Borrowers

In Table 8 are the results from estimating a logistic regression model where the dependent variable equals one if the firm indicated that it applied for and was extended credit (approved firms) and zero if it applied for credit but was turned down (denied firms). This analysis reveals that approved firms are significantly larger and more profitable; and have significantly better credit quality as measured by firm bankruptcy, firm delinquencies, and D&B credit scores.

The owners of approved firms are less likely to be black; and have higher credit quality as measured by owner bankruptcy, owner delinquencies and owner judgments.

Approved firms are significantly more likely to apply for their most recent loan at a potential source that is other than a commercial bank or savings association, to obtain financial services from significantly fewer nonbanks, and to apply for a mortgage, motor vehicle loan, or equipment loan—each of which provides collateral for the lender.

The results regarding the creditworthiness of both the firm and its primary owner have important implications for the growing literature on credit scoring. Berger, Cowan, and Frame (2008) report that banks using credit scoring to evaluate small business loan applications are significantly more likely to use consumer credit scores rather than small business credit scores, but very few banks use both credit scores. Our results suggest that both types of credit scores are useful in evaluating small business loan applications.

Renewals of Credit Lines

A significant portion of the most recent loan applications are, in fact, applications to renew an existing line of credit. There are 573 such renewal applications in the data here, which make up almost 40 percent of the total applications, but only 8 percent of denials. To see if these renewal applications are driving the results (and those of previous studies using the earlier SSBFs, which did not enable researchers to distinguish between renewal applications and new applications), we rerun our analysis, excluding the 573 renewal applications. (There are too few denials to perform a meaningful analysis of renewal applications by themselves.) The results are qualitatively unchanged by the exclusion of the line of credit renewal applications. Each variable that is significant when they are included remains significant when they are excluded. In fact, significance levels often increase when the renewal applications are excluded.

6. Summary and Conclusions

This study analyzes data from the 1993, 1998, and 2003 Surveys of Small Business Finances for new evidence regarding the availability of credit to small and minority-owned firms. We make at least four significant contributions to the literature on the availability of credit.

First, we provide the first rigorous analysis of the differences in four types of firms: nonborrowers, discouraged borrowers, denied borrowers, and successful borrowers. The findings have important implications for interpreting previous research that has combined these groups in ways that these results suggest are inappropriate, such as pooling discouraged borrowers with denied borrowers in analyzing availability of credit.

Second, we provide an analysis of credit availability that properly accounts for the inherent self-selection mechanisms involved in the credit application process: who needs credit, who applies for credit conditional upon needing credit, and who receives credit,

conditional upon applying for credit. Previous researchers have pooled firms that do not need credit with those needing credit and have pooled discouraged borrowers with denied borrowers. Hence, the results shed new light on the credit allocation process.

Third, we provide new evidence on the availability of credit to minority-owned firms by examining three SSBFs spanning more than a decade during which the Community Reinvestment Act became increasingly important in the regulation of depository institutions. In each of the three SSBFs, black-owned firms are disproportionately turned down when applying for credit—10 to 18 percent more likely to be rejected than other firms, even after incorporating the increasingly extensive set of control variables available from the SSBFs. Moreover, this percentage has increased, rather than decreased, with each successive SSBF.

Fourth, we provide new evidence from the 2003 SSBF on the availability of credit to small firms. This survey includes methodological improvements on the previous SSBFs (1987, 1993, and 1998) that enable us to better address the issue of availability of credit to small firms. One of the most important is the identification of applications to renew existing lines of credit, which enables us for the first time to differentiate the availability of new credit from renewals of existing credit.

This study provides both academics and policymakers with new insights on how to tailor regulations to help small businesses obtain needed credit and reach their optimal capital structures. Of special interest is the new evidence brought to light by the sequential model of the credit application process regarding why a significant percentage of firms choose not to borrow—the nonborrowers and discouraged borrowers. This is critically important because evidence from the SSBFs reveals that almost half of all firms do not appear to "need" credit and that as many as one out of seven small firms has a negative ratio of debt to equity because their debt exceeds their assets. Theory suggests that poorly capitalized firms are less likely to hire new employees or make new long-term investments that could improve economic growth, so policies that help these firms improve their capitalization should lead to higher growth in both employment and output (GDP). The evidence here suggests that a significant portion of the discouraged firms would be successful in obtaining credit if they applied.

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Table 1 Panel A. Descriptive Statistics for Full Sample and, Separately, for Firms that Need Credit versus Firms that have No Need for Credit

	1993					1998					2003				
			No					No					No		
Variable	**All**	**Need**	**Need**	**Difference**		**All**	**Need**	**Need**	**Difference**		**All**	**Need**	**Need**	**Difference**	
Observations	4,162	2,284	1,878			3,185	1,313	1,872			3,623	1,773	1,850		
Firm Characteristics															
Sales	566.1	721.0	420.5	300.5	**a**	528.9	562.0	507.6	54.4		624.3	859.4	438.4	421.0	**a**
Assets	277.7	357.7	202.5	155.2	**a**	249.1	260.2	241.9	18.3		306.6	427.0	211.5	215.5	**a**
Employment	6.78	8.33	5.32	3.01	**a**	7.09	7.56	6.79	0.78		7.02	9.07	5.40	3.67	**a**
ln(Assets)	11.06	11.37	10.76	0.609	**a**	10.80	10.99	10.68	0.308	**a**	11.04	11.55	10.64	0.903	**a**
Return on Assets	0.709	0.590	0.821	-0.231	**a**	0.882	0.762	0.959	-0.197	**a**	0.607	0.506	0.687	-0.181	**a**
Liabilities to Assets	0.599	0.709	0.496	0.212	**a**	0.759	1.060	0.565	0.494	**a**	0.845	1.130	0.619	0.511	**a**
Cash to Assets	0.197	0.151	0.239	-0.088	**a**	0.246	0.196	0.277	-0.081	**a**	0.257	0.174	0.322	-0.148	**a**
C-Corporation	0.279	0.307	0.253	0.054	**a**	0.188	0.202	0.179	0.023		0.140	0.167	0.118	0.048	**a**
S-Corporation	0.201	0.236	0.168	0.067	**a**	0.241	0.262	0.227	0.034	**b**	0.310	0.359	0.271	0.088	**a**
Partnership	0.080	0.074	0.086	-0.012		0.067	0.075	0.062	0.013		0.084	0.078	0.089	-0.010	
Firm Age	14.11	12.51	15.63	-3.12	**a**	13.19	11.10	14.53	-3.43	**a**	14.19	13.20	14.98	-1.78	**a**
Business Bankruptcy	N.A.	N.A.	N.A.	N.A.		0.023	0.044	0.009	0.034	**a**	0.010	0.016	0.004	0.012	**a**
Business Delinquencies	0.191	0.289	0.099	0.190	**a**	0.137	0.244	0.067	0.177	**a**	0.157	0.248	0.085	0.163	**a**
D&B Bus Credit Score	N.A.	N.A.	N.A.	N.A.		2.993	3.177	2.875	0.301	**a**	3.610	3.436	3.749	-0.313	**a**
Use Business Credit Card	0.286	0.336	0.240	0.096	**a**	0.468	0.523	0.433	0.090	**a**	0.472	0.492	0.456	0.036	**b**
Use Own Credit Card	0.411	0.459	0.366	0.093	**a**	0.337	0.376	0.312	0.064	**a**	0.482	0.559	0.421	0.138	**a**
Trade Credit Paid Late	0.362	0.481	0.249	0.232	**a**	0.266	0.370	0.199	0.171	**a**	0.245	0.360	0.155	0.205	**a**
Industry															
SIC 1	0.143	0.150	0.137	0.012		0.118	0.126	0.113	0.013		0.117	0.140	0.099	0.040	**a**
SIC 2	0.039	0.042	0.035	0.007		0.037	0.044	0.033	0.012	**c**	0.031	0.033	0.029	0.004	
SIC 3	0.041	0.041	0.041	0.000		0.046	0.056	0.040	0.016	**b**	0.040	0.049	0.032	0.018	**a**
SIC 4	0.027	0.034	0.021	0.013	**a**	0.037	0.048	0.030	0.017	**b**	0.039	0.043	0.035	0.008	
SIC 51	0.082	0.103	0.062	0.041	**a**	0.068	0.070	0.068	0.002		0.057	0.062	0.052	0.010	
SIC 52	0.217	0.217	0.216	0.001		0.193	0.191	0.194	-0.0026		0.187	0.188	0.185	0.003	
SIC 6	0.068	0.057	0.079	-0.023	**a**	0.064	0.060	0.067	-0.0076		0.067	0.053	0.079	-0.026	**a**
SIC 7	0.215	0.201	0.228	-0.027	**b**	0.249	0.245	0.252	-0.0071		0.253	0.247	0.257	-0.010	
SIC 8	0.168	0.155	0.180	-0.025	**b**	0.185	0.158	0.202	-0.0446	**a**	0.210	0.184	0.230	-0.046	**a**

Notes: Data are from the 1993, 1998, and 2003 Surveys of Small Business Finances. *Need Credit Firms* include those that applied for credit (*Applied Firms*) or did not apply because they feared rejection (*Discouraged Firms*). *No Need Credit Firms* are those that did not apply for credit because they did not need credit. **a, b** and **c** indicate statistical significance at the 0.01, 0.05 and 0.10 levels, respectively.

Table 1 Panel B. Descriptive Statistics for Full Sample and, Separately, for Firms that Need Credit versus Firms that have No Need for Credit

	1993				1998				2003			
Variable	**All**	**Need**	**No Need**	**Difference**	**All**	**Need**	**No Need**	**Difference**	**All**	**Need**	**No Need**	**Difference**
Market Characteristics												
MSA	0.786	0.790	0.783	0.007	0.798	0.789	0.803	-0.014	0.793	0.778	0.806	-0.028 **b**
HHI High	0.487	0.490	0.483	0.007	0.039	0.034	0.043	-0.008	0.479	0.477	0.481	-0.004
HHI Medium	N.A.	N.A.	N.A.	N.A.	0.063	0.067	0.061	0.006	0.461	0.463	0.459	0.004
Owner Characteristics												
Owner Age	49.30	47.38	51.09	-3.712 **a**	50.07	47.85	51.50	-3.648 **a**	51.51	49.58	53.03	-3.441 **a**
Owner Experience	18.70	17.52	19.81	-2.286 **a**	18.06	16.23	19.23	-3.000 **a**	19.61	18.84	20.22	-1.373 **a**
Owner Graduate Degree	0.202	0.197	0.206	-0.009	0.184	0.170	0.193	-0.023 **c**	0.208	0.178	0.232	-0.054 **a**
Owner College Degree	0.260	0.277	0.244	0.033 **b**	0.300	0.293	0.304	-0.011	0.291	0.270	0.307	-0.036 **b**
Owner Some College	0.255	0.276	0.236	0.040 **a**	0.279	0.279	0.279	0.001	0.267	0.300	0.241	0.059 **a**
Black Owner	0.030	0.044	0.016	0.028 **a**	0.041	0.066	0.025	0.041 **a**	0.039	0.051	0.030	0.021 **a**
Asian Owner	0.036	0.028	0.043	-0.014 **b**	0.043	0.037	0.047	-0.010	0.044	0.042	0.046	-0.005
Hispanic Owner	0.043	0.053	0.034	0.019 **a**	0.057	0.069	0.050	0.019 **b**	0.044	0.048	0.040	0.008
Female Owner	0.209	0.198	0.219	-0.020	0.241	0.239	0.243	-0.004	0.263	0.252	0.271	-0.019
Owner Bankruptcy	0.027	0.044	0.011	0.034 **a**	0.006	0.012	0.002	0.010 **a**	0.025	0.038	0.015	0.023 **a**
Owner Delinquencies	0.137	0.199	0.078	0.122 **a**	0.126	0.226	0.062	0.164 **a**	0.121	0.190	0.066	0.124 **a**
Owner Judgment	0.051	0.072	0.030	0.042 **a**	0.038	0.060	0.023	0.037 **a**	0.023	0.042	0.008	0.034 **a**
Owner Personal Wealth	N.A.	N.A.	N.A.	N.A.	0.524	0.435	0.581	-0.146 **a**	0.700	0.637	0.749	-0.112 **a**
Firm-Creditor Relationships												
Primary is Community Bank	0.821	0.823	0.819	0.004	0.823	0.818	0.826	-0.008	0.801	0.811	0.793	0.018
Primary is Savings Assoc.	0.096	0.095	0.096	0.000	0.097	0.082	0.107	-0.025 **b**	0.128	0.129	0.126	0.003
Primary is Finance Company	0.014	0.022	0.006	0.015 **a**	0.018	0.030	0.011	0.019 **a**	0.010	0.016	0.006	0.010 **a**
Primary is Other	0.041	0.045	0.038	0.008	0.036	0.058	0.021	0.037 **a**	0.035	0.037	0.034	0.004
Primary Length of Relationship	110.1	94.6	124.8	-30.2 **a**	95.1	79.3	105.2	-26.0 **a**	123.8	109.8	134.8	-25.0 **a**
Primary Distance	13.86	15.45	12.37	3.08	32.48	51.27	20.41	30.86 **a**	32.91	45.77	22.75	23.02 **a**
Number of Bank Sources	1.244	1.387	1.110	0.277 **a**	1.215	1.421	1.082	0.339 **a**	1.229	1.405	1.090	0.316 **a**
Number of Nonbank Sources	0.822	1.065	0.595	0.470 **a**	0.819	1.114	0.630	0.484 **a**	1.142	1.526	0.839	0.687 **a**

Notes: Data are from the 1993, 1998, and 2003 Surveys of Small Business Finances. *Need Credit Firms* include those that applied for credit (*Applied Firms*) or did not apply because they feared rejection (*Discouraged Firms*). *No Need Credit Firms* are those that did not apply for credit because they did not need credit. **a, b** and **c** indicate statistical significance at the 0.01, 0.05 and 0.10 levels, respectively.

Table 2 Panel A. Descriptive Statistics for Firms that Need Credit and, Separately, for Applied Firms versus Discouraged Firms

	1993				1998				2003			
Variable	**Need**	**Applied**	**Discour**	**Difference**	**Need**	**Applied**	**Discour**	**Difference**	**Need**	**Applied**	**Discour**	**Difference**
Observations	2,284	1,652	632		1,313	831	482		1,773	1,456	317	
Firm Characteristics:												
ln(Assets)	11.372	11.751	10.512	1.240 **a**	10.991	11.414	10.359	1.054 **a**	11.546	11.987	10.137	1.850 **a**
Return on Assets	0.590	0.499	0.796	-0.298 **a**	0.762	0.730	0.809	-0.079	0.506	0.482	0.580	-0.097
Liabilities to Assets	0.709	0.692	0.746	-0.054 **c**	1.060	1.021	1.118	-0.097	1.130	1.042	1.412	-0.371 **b**
Cash to Assets	0.151	0.139	0.179	-0.040 **a**	0.196	0.191	0.204	-0.013	0.174	0.155	0.235	-0.080 **a**
C-Corporation	0.307	0.324	0.268	0.056 **b**	0.202	0.198	0.207	-0.009	0.167	0.192	0.084	0.108 **a**
S-Corporation	0.236	0.258	0.184	0.074 **a**	0.262	0.291	0.218	0.074 **a**	0.359	0.391	0.257	0.134 **a**
Partnership	0.074	0.078	0.066	0.012	0.075	0.079	0.070	0.009	0.078	0.080	0.073	0.007
Firm Age	12.505	13.022	11.334	1.688 **a**	11.104	11.194	10.969	0.225	13.198	14.478	9.109	5.368 **a**
Business Bankruptcy					0.044	0.026	0.069	-0.043 **a**	0.016	0.009	0.039	-0.029 **b**
Business Delinquencies	0.289	0.244	0.391	-0.147 **a**	0.244	0.221	0.279	-0.057 **b**	0.248	0.212	0.361	-0.149 **a**
D&B Business Credit Score					3.177	3.083	3.317	-0.234 **a**	3.436	3.596	2.922	0.674 **a**
Use Business Credit Card	0.336	0.375	0.247	0.129 **a**	0.523	0.532	0.510	0.021	0.492	0.483	0.519	-0.036
Use Own Credit Card	0.459	0.453	0.473	-0.021	0.376	0.438	0.283	0.154 **a**	0.559	0.593	0.452	0.141 **a**
Trade Credit Paid Late	0.481	0.474	0.497	-0.023	0.370	0.378	0.359	0.019	0.360	0.372	0.322	0.050
Industry:												
SIC 1	0.150	0.155	0.138	0.017	0.126	0.127	0.124	0.003	0.140	0.148	0.115	0.033
SIC 2	0.042	0.044	0.038	0.006	0.044	0.048	0.038	0.010	0.033	0.037	0.022	0.015
SIC 3	0.041	0.049	0.022	0.027 **a**	0.056	0.054	0.060	-0.006	0.049	0.057	0.026	0.030 **b**
SIC 4	0.034	0.033	0.038	-0.005	0.048	0.048	0.048	0.000	0.043	0.048	0.030	0.017
SIC 51	0.103	0.101	0.107	-0.006	0.070	0.073	0.066	0.007	0.062	0.066	0.048	0.018
SIC 52	0.217	0.224	0.200	0.024	0.191	0.184	0.202	-0.018	0.188	0.186	0.193	-0.007
SIC 6	0.057	0.059	0.052	0.006	0.060	0.069	0.045	0.024 **c**	0.053	0.059	0.034	0.025 **c**
SIC 7	0.201	0.171	0.269	-0.098 **a**	0.245	0.246	0.244	0.001	0.247	0.215	0.350	-0.135 **a**
SIC 8	0.155	0.164	0.136	0.028 **c**	0.158	0.150	0.169	-0.020	0.184	0.185	0.182	0.003

Notes: Data are from the 1993, 1998, and 2003 Surveys of Small Business Finances. *Need Credit Firms* include those that applied for credit (*Applied Firms*) or did not apply because they feared rejection (*Discouraged Firms*).
a, b and **c** indicate statistical significance at the 0.01, 0.05 and 0.10 levels, respectively.

Table 2 Panel B. Descriptive Statistics for Firms that Need Credit and, Separately, for Applied Firms versus Discouraged Firms

	1993				1998				2003			
Variable	**Need**	**Applied**	**Discour**	**Difference**	**Need**	**Applied**	**Discour**	**Difference**	**Need**	**Applied**	**Discour**	**Difference**
Market Characteristics:												
MSA	0.790	0.748	0.886	-0.138 **a**	0.789	0.761	0.831	-0.070 **a**	0.778	0.756	0.846	-0.090 **a**
HHI High	0.490	0.525	0.413	0.111 **a**	0.034	0.043	0.021	0.022 **b**	0.477	0.467	0.509	-0.043
HHI Medium					0.067	0.075	0.055	0.020	0.463	0.472	0.433	0.039
Owner Characteristics:												
Owner Age	47.382	47.467	47.188	0.280	47.851	47.131	48.928	-1.797 **a**	49.584	50.406	46.959	3.447 **a**
Owner Experience	17.524	18.010	16.422	1.588 **a**	16.231	16.305	16.121	0.184	18.844	19.981	15.209	4.773 **a**
Owner Graduate Degree	0.197	0.200	0.191	0.008	0.170	0.177	0.159	0.018	0.178	0.190	0.140	0.050 **b**
Owner College Degree	0.277	0.286	0.257	0.030	0.293	0.307	0.273	0.034	0.270	0.279	0.241	0.038
Owner Some College	0.276	0.286	0.254	0.032	0.279	0.264	0.302	-0.038	0.300	0.282	0.360	-0.078 **b**
Black Owner	0.044	0.031	0.074	-0.042 **a**	0.066	0.045	0.096	-0.051 **a**	0.051	0.037	0.095	-0.058 **a**
Asian Owner	0.028	0.024	0.038	-0.014	0.037	0.043	0.028	0.015	0.042	0.040	0.046	-0.006
Hispanic Owner	0.053	0.038	0.086	-0.048 **a**	0.069	0.063	0.079	-0.016	0.048	0.044	0.062	-0.019
Female Owner	0.198	0.184	0.230	-0.046 **b**	0.239	0.208	0.286	-0.078 **a**	0.252	0.209	0.389	-0.180 **a**
Owner Bankruptcy	0.044	0.024	0.091	-0.067 **a**	0.012	0.007	0.019	-0.012	0.038	0.014	0.113	-0.099 **a**
Owner Delinquencies	0.199	0.145	0.323	-0.178 **a**	0.226	0.179	0.295	-0.116 **a**	0.190	0.122	0.408	-0.287 **a**
Owner Judgment	0.072	0.048	0.127	-0.079 **a**	0.060	0.058	0.064	-0.007	0.042	0.036	0.061	-0.025
Owner Personal Wealth					0.435	0.543	0.272	0.271 **a**	0.637	0.759	0.247	0.512 **a**
Firm-Creditor Relationship Characteristics:												
Primary is Community Bank	0.823	0.853	0.754	0.099 **a**	0.818	0.833	0.796	0.037	0.811	0.824	0.771	0.053 **c**
Primary is Savings Assoc.	0.095	0.084	0.121	-0.037 **b**	0.082	0.075	0.093	-0.018	0.129	0.118	0.166	-0.048 **c**
Primary is Finance Company	0.022	0.020	0.025	-0.005	0.030	0.033	0.026	0.006	0.016	0.018	0.009	0.008
Primary is Other	0.045	0.042	0.053	-0.011	0.058	0.060	0.055	0.005	0.037	0.040	0.028	0.013
Primary Length of Relationship	94.56	99.06	84.36	14.70 **a**	79.25	80.12	77.96	2.16	109.85	120.69	75.21	45.48 **a**
Primary Distance	15.45	17.38	11.06	6.32 **c**	51.27	63.36	33.17	30.19 **b**	45.77	43.18	54.03	-10.85
Number of Bank Sources	1.387	1.521	1.085	0.436 **a**	1.421	1.614	1.133	0.481 **a**	1.405	1.501	1.101	0.400 **a**
Number of Nonbank Sources	1.065	1.155	0.860	0.295 **a**	1.114	1.357	0.750	0.607 **a**	1.526	1.631	1.190	0.441 **a**

Notes: Data are from the 1993, 1998, and 2003 Surveys of Small Business Finances. *Need Credit Firms* include those that applied for credit (*Applied Firms*) or did not apply because they feared rejection (*Discouraged Firms*).
a, b and **c** indicate statistical significance at the 0.01, 0.05 and 0.10 levels, respectively.

Table 3 Panel A. Descriptive Statistics for Firms that Need Credit and, Separately, for Denied Firms versus Discouraged Firms

	1993					1998					2003				
Variable	**Need**	**Denied**	**Discour**	**Difference**		**Need**	**Denied**	**Discour**	**Difference**		**Need**	**Denied**	**Discour**	**Difference**	
Observations	935	303	632			667	185	482			471	154	317		
Firm Characteristics:															
ln(Assets)	10.710	11.163	10.512	0.651	**a**	10.489	10.850	10.359	0.491	**a**	10.499	11.368	10.137	1.231	**a**
Return on Assets	0.680	0.415	0.796	-0.382	**a**	0.751	0.590	0.809	-0.219	**c**	0.551	0.483	0.580	-0.097	
Liabilities to Assets	0.757	0.781	0.746	0.035		1.150	1.238	1.118	0.120		1.498	1.704	1.412	0.291	
Cash to Assets	0.165	0.135	0.179	-0.044	**a**	0.199	0.186	0.204	-0.018		0.205	0.132	0.235	-0.103	**a**
C-Corporation	0.271	0.279	0.268	0.011		0.185	0.123	0.207	-0.084	**a**	0.101	0.140	0.084	0.056	
S-Corporation	0.213	0.281	0.184	0.097	**a**	0.235	0.283	0.218	0.066	**c**	0.298	0.397	0.257	0.140	**a**
Partnership	0.059	0.042	0.066	-0.024		0.070	0.071	0.070	0.001		0.075	0.079	0.073	0.006	
Firm Age	10.980	10.173	11.334	-1.162	**c**	10.424	8.909	10.969	-2.060	**a**	9.799	11.459	9.109	2.350	**b**
Business Bankruptcy	N.A.	N.A.	N.A.	N.A.		0.076	0.095	0.069	0.025		0.037	0.034	0.039	-0.005	
Business Delinquencies	0.398	0.413	0.391	0.022		0.321	0.438	0.279	0.159	**a**	0.355	0.342	0.361	-0.019	
D&B Business Credit Score	N.A.	N.A.	N.A.	N.A.		3.326	3.351	3.317	0.034		2.850	2.678	2.922	-0.244	**c**
Use Business Credit Card	0.268	0.315	0.247	0.068	**b**	0.530	0.585	0.510	0.075	**c**	0.533	0.568	0.519	0.049	
Use Own Credit Card	0.478	0.488	0.473	0.015		0.294	0.323	0.283	0.040		0.480	0.547	0.452	0.095	**c**
Trade Credit Paid Late	0.505	0.524	0.497	0.027		0.389	0.474	0.359	0.115	**a**	0.358	0.442	0.322	0.120	**b**
Industry:															
SIC 1	0.145	0.163	0.138	0.026		0.124	0.124	0.124	0.000		0.114	0.112	0.115	-0.002	
SIC 2	0.039	0.040	0.038	0.002		0.043	0.054	0.038	0.016		0.025	0.033	0.022	0.012	
SIC 3	0.033	0.058	0.022	0.036	**b**	0.061	0.063	0.060	0.004		0.042	0.080	0.026	0.053	**b**
SIC 4	0.039	0.042	0.038	0.004		0.045	0.038	0.048	-0.010		0.045	0.079	0.030	0.049	**c**
SIC 51	0.106	0.104	0.107	-0.004		0.057	0.031	0.066	-0.034	**c**	0.045	0.036	0.048	-0.012	
SIC 52	0.215	0.249	0.200	0.049		0.193	0.168	0.202	-0.034		0.198	0.208	0.193	0.014	
SIC 6	0.047	0.034	0.052	-0.018		0.045	0.045	0.045	-0.001		0.036	0.041	0.034	0.007	
SIC 7	0.246	0.193	0.269	-0.076	**b**	0.268	0.334	0.244	0.090	**b**	0.315	0.230	0.350	-0.120	**b**
SIC 8	0.130	0.116	0.136	-0.020		0.162	0.142	0.169	-0.027		0.181	0.180	0.182	-0.002	

Notes: Data are from the 1993, 1998, and 2003 Surveys of Small Business Finances. *Need Credit Firms* include those that applied for credit (*Applied Firms*) or did not apply because they feared rejection (*Discouraged Firms*).
a, b and **c** indicate statistical significance at the 0.01, 0.05 and 0.10 levels, respectively.

Table 3 Panel B. Descriptive Statistics for Firms that Need Credit and, Separately, for Denied Firms versus Discouraged Firms

	1993				1998				2003			
Variable	**Need**	**Denied**	**Discour**	**Difference**	**Need**	**Denied**	**Discour**	**Difference**	**Need**	**Denied**	**Discour**	**Difference**
Market Characteristics:												
MSA	0.873	0.844	0.886	-0.042 **c**	0.824	0.804	0.831	-0.027	0.846	0.846	0.846	0.000
HHI High	0.436	0.487	0.413	0.074 **b**	0.027	0.045	0.021	0.024	0.504	0.491	0.509	-0.019
HHI Medium					0.059	0.071	0.055	0.017	0.442	0.463	0.433	0.029
Owner Characteristics:												
Owner Age	46.800	45.916	47.188	-1.272 **c**	47.883	44.976	48.928	-3.952 **a**	47.117	47.499	46.959	0.540
Owner Experience	16.375	16.268	16.422	-0.154	15.580	14.075	16.121	-2.046 **a**	15.685	16.832	15.209	1.623
Owner Graduate Degree	0.188	0.181	0.191	-0.010	0.158	0.154	0.159	-0.005	0.129	0.104	0.140	-0.036
Owner College Degree	0.257	0.257	0.257	0.001	0.271	0.264	0.273	-0.009	0.248	0.266	0.241	0.024
Owner Some College	0.280	0.340	0.254	0.087 **a**	0.301	0.297	0.302	-0.005	0.358	0.355	0.360	-0.005
Black Owner	0.075	0.078	0.074	0.004	0.099	0.108	0.096	0.012	0.123	0.190	0.095	0.094 **b**
Asian Owner	0.038	0.037	0.038	-0.001	0.038	0.066	0.028	0.038 **c**	0.043	0.036	0.046	-0.010
Hispanic Owner	0.071	0.037	0.086	-0.050 **a**	0.091	0.124	0.079	0.045	0.060	0.055	0.062	-0.007
Female Owner	0.232	0.237	0.230	0.007	0.270	0.224	0.286	-0.062	0.345	0.238	0.389	-0.151 **a**
Owner Bankruptcy	0.081	0.059	0.091	-0.031 **c**	0.022	0.031	0.019	0.012	0.095	0.053	0.113	-0.060 **b**
Owner Delinquencies	0.319	0.311	0.323	-0.012	0.319	0.383	0.295	0.088 **b**	0.385	0.329	0.408	-0.080
Owner Judgment	0.123	0.114	0.127	-0.014	0.088	0.153	0.064	0.089 **a**	0.065	0.073	0.061	0.012
Owner Personal Wealth					0.283	0.313	0.272	0.041	0.300	0.427	0.247	0.180 **a**
Relationship Characteristics:												
Primary is Community Bank	0.772	0.812	0.754	0.057 **b**	0.792	0.784	0.796	-0.012	0.773	0.778	0.771	0.007
Primary is Savings Assoc.	0.103	0.061	0.121	-0.061 **a**	0.094	0.098	0.093	0.006	0.158	0.140	0.166	-0.026
Primary is Finance Company	0.025	0.025	0.025	0.000	0.031	0.044	0.026	0.017	0.017	0.036	0.009	0.027
Primary is Other	0.068	0.102	0.053	0.049 **b**	0.060	0.074	0.055	0.019	0.033	0.046	0.028	0.018
Primary Length of Relationship	81.853	76.150	84.358	-8.207	74.707	65.661	77.958	-12.296 **b**	79.943	91.317	75.212	16.105 **c**
Primary Distance	17.870	33.364	11.064	22.300 **b**	36.575	46.042	33.172	12.869	55.728	59.805	54.032	5.772
Number of Bank Sources	1.207	1.486	1.085	0.401 **a**	1.260	1.614	1.133	0.481 **a**	1.247	1.599	1.101	0.498 **a**
Number of Non-Bank Sources	1.032	1.423	0.860	0.562 **a**	0.886	1.266	0.750	0.517 **a**	1.451	2.080	1.190	0.889 **a**

Notes: Data are from the 1993, 1998, and 2003 Surveys of Small Business Finances. *Need Credit Firms* include those that applied for credit (*Applied Firms*) or did not apply because they feared rejection (*Discouraged Firms*).
a, b and **c** indicate statistical significance at the 0.01, 0.05 and 0.10 levels, respectively.

Table 4 Panel A. Descriptive Statistics for Firms that Applied for Credit and, Separately, for Denied Firms versus Approved Firms

	1993				1998				2003			
Variable	**Applied**	**Denied**	**Approved**	**Difference**	**Applied**	**Denied**	**Approved**	**Difference**	**Applied**	**Denied**	**Approved**	**Difference**
Observations	1,652	303	1,349		831	185	646		1,456	154	1,302	
Firm Characteristics:												
ln(Assets)	11.751	11.163	11.893	-0.730 **a**	11.414	10.850	11.592	-0.742 **a**	11.987	11.368	12.080	-0.712 **a**
Return on Assets	0.499	0.415	0.519	-0.104	0.730	0.590	0.774	-0.184 **c**	0.482	0.483	0.482	0.001
Liabilities to Assets	0.692	0.781	0.670	0.111 **a**	1.021	1.238	0.952	0.286 **b**	1.042	1.704	0.943	0.761 **a**
Cash to Assets	0.139	0.135	0.140	-0.005	0.191	0.186	0.193	-0.007	0.155	0.132	0.159	-0.026
C-Corporation	0.324	0.279	0.335	-0.056 **c**	0.198	0.123	0.222	-0.099 **a**	0.192	0.140	0.200	-0.060 **c**
S-Corporation	0.258	0.281	0.253	0.028	0.291	0.283	0.294	-0.011	0.391	0.397	0.390	0.006
Partnership	0.078	0.042	0.086	-0.044 **a**	0.079	0.071	0.081	-0.010	0.080	0.079	0.080	-0.001
Firm Age	13.022	10.173	13.707	-3.535 **a**	11.194	8.909	11.916	-3.008 **a**	14.478	11.459	14.929	-3.471 **a**
Business Bankruptcy	N.A.	N.A.	N.A.	N.A.	0.026	0.095	0.005	0.090 **a**	0.009	0.034	0.006	0.028 **c**
Business Delinquencies	0.244	0.413	0.203	0.210 **a**	0.221	0.438	0.153	0.285 **a**	0.212	0.342	0.193	0.149 **a**
D&B Business Credit Score	N.A.	N.A.	N.A.	N.A.	3.083	3.351	2.999	0.352 **a**	3.596	2.678	3.734	-1.056 **a**
Use Business Credit Card	0.375	0.315	0.390	-0.075 **b**	0.532	0.585	0.515	0.071 **c**	0.483	0.568	0.471	0.097 **b**
Use Own Credit Card	0.453	0.488	0.444	0.044	0.438	0.323	0.474	-0.151 **a**	0.593	0.547	0.600	-0.053
Trade Credit Paid Late	0.474	0.524	0.462	0.062 **c**	0.378	0.474	0.347	0.127 **a**	0.372	0.442	0.361	0.081 **c**
Industry:												
SIC 1	0.155	0.163	0.153	0.011	0.127	0.124	0.128	-0.004	0.148	0.112	0.153	-0.041
SIC 2	0.044	0.040	0.045	-0.005	0.048	0.054	0.047	0.008	0.037	0.033	0.037	-0.004
SIC 3	0.049	0.058	0.047	0.011	0.054	0.063	0.051	0.013	0.057	0.080	0.053	0.026
SIC 4	0.033	0.042	0.030	0.012	0.048	0.038	0.051	-0.013	0.048	0.079	0.043	0.037
SIC 51	0.101	0.104	0.101	0.003	0.073	0.031	0.086	-0.054 **a**	0.066	0.036	0.071	-0.035 **c**
SIC 52	0.224	0.249	0.218	0.031	0.184	0.168	0.189	-0.020	0.186	0.208	0.183	0.024
SIC 6	0.059	0.034	0.064	-0.030 **b**	0.069	0.045	0.077	-0.033 **c**	0.059	0.041	0.062	-0.020
SIC 7	0.171	0.193	0.166	0.027	0.246	0.334	0.217	0.117 **a**	0.215	0.230	0.213	0.017
SIC 8	0.164	0.116	0.176	-0.060 **a**	0.150	0.142	0.152	-0.010	0.185	0.180	0.185	-0.005

Notes: Data are from the 1993, 1998, and 2003 Surveys of Small Business Finances. Applied firms include firms that applied for credit and whose applications were denied or approved. **a, b** and **c** indicate statistical significance at the 0.01, 0.05 and 0.10 levels, respectively.

Table 4 Panel B. Descriptive Statistics for Firms that Applied for Credit and, Separately, for Denied Firms versus Approved Firms

Variable	1993 Applied	1993 Denied	1993 Approved	1993 Difference	1998 Applied	1998 Denied	1998 Approved	1998 Difference	2003 Applied	2003 Denied	2003 Approved	2003 Difference
Market Characteristics:												
MSA	0.748	0.844	0.725	0.119 **a**	0.761	0.804	0.747	0.057	0.756	0.846	0.743	0.103 **a**
HHI High	0.525	0.487	0.534	-0.047	0.043	0.045	0.043	0.002	0.467	0.491	0.463	0.028
HHI Medium	N.A.	N.A.	N.A.	N.A.	0.075	0.071	0.076	-0.005	0.472	0.463	0.473	-0.011
Owner Characteristics:												
Owner Age	47.47	45.92	47.84	-1.925 **a**	47.13	44.98	47.81	-2.837 **a**	50.41	47.50	50.84	-3.343 **a**
Owner Experience	18.01	16.27	18.43	-2.161 **a**	16.30	14.08	17.01	-2.934 **a**	19.98	16.83	20.45	-3.621 **a**
Owner Graduate Degree	0.200	0.181	0.204	-0.023	0.177	0.154	0.184	-0.030	0.190	0.104	0.203	-0.099 **a**
Owner College Degree	0.286	0.257	0.293	-0.035	0.307	0.264	0.320	-0.056	0.279	0.266	0.281	-0.016
Owner Some College	0.286	0.340	0.273	0.067 **b**	0.264	0.297	0.254	0.043	0.282	0.355	0.271	0.084 **c**
Black Owner	0.031	0.078	0.020	0.058 **a**	0.045	0.108	0.026	0.082 **a**	0.037	0.190	0.014	0.175 **a**
Asian Owner	0.024	0.037	0.021	0.017	0.043	0.066	0.035	0.031	0.040	0.036	0.041	-0.005
Hispanic Owner	0.038	0.037	0.039	-0.002	0.063	0.124	0.043	0.080 **a**	0.044	0.055	0.042	0.013
Female Owner	0.184	0.237	0.171	0.066 **b**	0.208	0.224	0.203	0.022	0.209	0.238	0.205	0.033
Owner Bankruptcy	0.024	0.059	0.015	0.044 **a**	0.007	0.031	0.000	0.031 **b**	0.014	0.053	0.009	0.044 **b**
Owner Delinquencies	0.145	0.311	0.105	0.207 **a**	0.179	0.383	0.115	0.268 **a**	0.122	0.329	0.091	0.238 **a**
Owner Judgment	0.048	0.114	0.032	0.081 **a**	0.058	0.153	0.028	0.126 **a**	0.036	0.073	0.030	0.043 **c**
Owner Personal Wealth	N.A.	N.A.	N.A.	N.A.	0.543	0.313	0.616	-0.304 **a**	0.759	0.427	0.809	-0.382 **a**

Notes: Data are from the 1993, 1998, and 2003 Surveys of Small Business Finances. *Applied Firms* include firms that applied for credit (*Applied Firms)* and whose applications were denied (*Denied Firms*) or approved (*Approved Firms*).
a, b and **c** indicate statistical significance at the 0.01, 0.05 and 0.10 levels, respectively.

Table 4 Panel C. Descriptive Statistics for Firms that Applied for Credit and, Separately, for Denied Firms versus Approved Firms

	1993				1998				2003			
Variable	**Applied**	**Denied**	**Approved**	**Difference**	**Applied**	**Denied**	**Approved**	**Difference**	**Applied**	**Denied**	**Approved**	**Difference**
Relationship Characteristics:												
MRL Source is a Community Banks	0.806	0.812	0.804	0.008	0.686	0.740	0.669	0.071 **c**	0.747	0.845	0.732	0.113 **a**
MRL Source Savings Assoc.	0.068	0.058	0.071	-0.013	0.077	0.054	0.084	-0.031	0.113	0.083	0.117	-0.035
MRL Source Finance Company	0.047	0.034	0.050	-0.017	0.111	0.050	0.130	-0.080 **a**	0.084	0.046	0.090	-0.044 **b**
MRL Source Other	0.079	0.096	0.075	0.022	0.115	0.138	0.108	0.030	0.056	0.027	0.061	-0.034 **b**
MRL Length of Relationship	87.48	66.33	92.58	-26.24 **a**	57.17	38.06	63.15	-25.09 **a**	103.00	67.72	108.28	-40.56 **a**
MRL Distance from Firm	50.04	67.61	45.85	21.76	125.12	77.18	140.13	-62.96 **a**	66.25	27.50	72.05	-44.55 **a**
Number of Bank Sources	1.521	1.486	1.529	-0.043	1.614	1.614	1.614	0.000	1.501	1.599	1.486	0.112
Number of Nonbank Sources	1.155	1.423	1.091	0.332 **a**	1.357	1.266	1.386	-0.119	1.631	2.080	1.564	0.516 **a**
MRL Checking Relationship	0.678	0.624	0.690	-0.066 **b**	0.479	0.479	0.479	0.000	0.666	0.581	0.678	-0.097 **b**
MRL Savings Relationship	0.181	0.079	0.205	-0.127 **a**	0.117	0.100	0.122	-0.022	0.137	0.082	0.145	-0.063 **b**
MRL Fin'l Svcs Relationship	0.256	0.193	0.272	-0.078 **a**	0.266	0.222	0.280	-0.058	0.436	0.391	0.442	-0.052
MRL Line of Credit Relationship	0.049	0.041	0.051	-0.010	0.114	0.075	0.126	-0.050 **b**	0.111	0.119	0.110	0.009
MRL Loan Relationship	0.209	0.183	0.216	-0.033	0.161	0.056	0.194	-0.138 **a**	0.222	0.133	0.235	-0.102 **a**
MRL is a Credit Line	0.495	0.411	0.516	-0.105 **a**	0.373	0.578	0.308	0.270 **a**	0.367	0.074	0.411	-0.337 **a**
MRL is a New Credit Line	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	0.205	0.463	0.166	0.297 **a**
MRL is a Lease	0.025	0.022	0.026	-0.003	0.055	0.067	0.051	0.016	0.014	0.009	0.015	-0.006
MRL is a Mortgage	0.112	0.108	0.113	-0.005	0.109	0.059	0.125	-0.066 **a**	0.106	0.101	0.106	-0.006
MRL is a Motor Vehicle Loan	0.089	0.048	0.099	-0.051 **a**	0.155	0.028	0.194	-0.166 **a**	0.114	0.086	0.118	-0.032
MRL is an Equipment Loan	0.105	0.115	0.103	0.012	0.133	0.067	0.154	-0.088 **a**	0.102	0.144	0.096	0.048
MRL is an Other Loan	0.173	0.296	0.144	0.152 **a**	0.175	0.201	0.167	0.034	0.093	0.123	0.088	0.035

MRL = most recent loan.

Notes: Data are from the 1993, 1998, and 2003 Surveys of Small Business Finances. *Applied Firms* include firms that applied for credit and whose applications were denied (*Denied Firms*)or approved (*Approved Firms*).

a, b and **c** indicate statistical significance at the 0.01, 0.05 and 0.10 levels, respectively.

Table 5 Panel A. Logistic Regression
(No Need Credit Firm = 1, Need Credit Firm = 0)

	1993				1998				2003		
Variable	**Marginal**				**Marginal**				**Marginal**		
	Effect	**t-stat**			**Effect**	**t-stat**			**Effect**	**t-stat**	
Intercept		4.83	**a**			1.94	**c**			3.25	**a**
Firm Characteristics											
ln(Assets)	-0.022	-4.38	**a**		0.004	0.73			-0.028	-5.25	**a**
Return on Assets	0.000	-0.09			0.016	2.56	**b**		0.009	1.01	
Liabilities to Assets	-0.103	-7.69	**a**		-0.040	-5.54	**a**		-0.026	-6.28	**a**
Cash to Assets	0.202	6.10	**a**		0.095	3.07	**a**		0.153	5.33	**a**
C-Corporation	-0.013	-0.72			-0.009	-0.38			-0.042	-1.74	**c**
S-Corporation	-0.037	-1.91	**c**		0.000	-0.01			-0.033	-1.86	**c**
Partnership	0.014	0.51			-0.062	-2.00	**b**		0.004	0.15	
Firm Age	0.003	2.80	**a**		0.004	3.67	**a**		0.001	1.13	
Business Bankruptcy					-0.224	-3.86	**a**		-0.210	-2.21	**b**
ss	-0.107	-5.13	**a**		-0.091	-3.40	**a**		-0.033	-1.37	
D&B Business Credit Score					-0.028	-3.44	**a**		0.013	2.42	**b**
Use Business Credit Card	-0.028	-1.83	**c**		-0.036	-2.25	**b**		-0.033	-2.18	**b**
Use Own Credit Card	-0.042	-2.97	**a**		-0.025	-1.45			-0.055	-3.55	**a**
Trade Credit Paid Late	-0.091	-5.98	**a**		-0.048	-2.56	**b**		-0.097	-5.25	**a**
SIC 2	0.034	0.85			-0.044	-0.97			0.056	1.18	
SIC 3	0.064	1.69	**c**		-0.060	-1.45			0.001	0.03	
SIC 4	-0.055	-1.21			-0.021	-0.46			0.079	1.87	**c**
SIC 51	-0.075	-2.49	**b**		0.015	0.42			0.050	1.35	
SIC 52	0.024	1.05			0.036	1.28			0.096	3.50	**a**
SIC 6	0.060	1.84	**c**		0.005	0.13			0.075	2.08	**b**
SIC 7	0.009	0.40			0.035	1.29			0.057	2.19	**b**
SIC 8	0.034	1.21			0.042	1.32			0.042	1.44	

Notes: Data are from the 1993, 1998, and 2003 Surveys of Small Business Finances. *No Need Credit Firms* are those that did not apply for credit because they did not need credit. *Need Credit Firms* include those that applied for credit or did not apply because they feared rejection.
a, b and **c** indicate statistical significance at the 0.01, 0.05 and 0.10 levels, respectively.

Table 5 Panel B. Logistic Regression
(No Need Credit Firm = 1, Need Credit Firm = 0)

	1993				1998				2003		
Variable	**Marginal Effect**	**t-stat**			**Marginal Effect**	**t-stat**			**Marginal Effect**	**t-stat**	
Market Characteristics											
MSA	0.020	1.12			0.044	2.07	**b**		0.050	2.57	**b**
HHI High	-0.018	-1.27			0.054	1.24			0.021	0.64	
HHI Medium					-0.002	-0.07			0.015	0.48	
Owner Characteristics											
Owner Age	0.003	3.77	**a**		0.001	1.26			0.003	3.85	**a**
Owner Experience	-0.001	-0.66			0.001	0.65			-0.001	-1.02	
Owner Graduate Degree	-0.043	-1.86	**c**		0.074	2.67	**a**		0.043	1.71	**c**
Owner College Degree	-0.034	-1.78	**c**		0.054	2.44	**b**		0.034	1.59	
Owner Some College	-0.046	-2.47	**b**		0.052	2.43	**b**		-0.015	-0.72	
Black Owner	-0.187	-4.26	**a**		-0.171	-4.39	**a**		-0.112	-2.93	**a**
Asian Owner	0.086	2.30	**b**		0.033	0.86			0.016	0.46	
Hispanic Owner	-0.104	-3.13	**a**		-0.057	-1.76	**c**		0.000	-0.01	
Female Owner	0.029	1.71	**c**		0.007	0.37			-0.033	-1.86	**c**
Owner Bankruptcy	-0.273	-5.51	**a**		-0.148	-1.14			-0.154	-2.95	**a**
Owner Delinquencies	-0.075	-3.19	**a**		-0.166	-6.33	**a**		-0.136	-5.34	**a**
Owner Judgment	-0.109	-3.19	**a**		-0.080	-1.87	**c**		-0.200	-3.34	**a**
Owner Personal Wealth					0.018	2.00	**b**		0.034	3.71	**a**
Firm-Creditor Relationship Characteristics											
Primary is Savings Assoc.	-0.040	-1.56			-0.023	-0.78			-0.021	-0.81	
Primary is Finance Company	-0.183	-2.79	**a**		-0.125	-2.04	**b**		-0.030	-0.36	
Primary is Other	0.079	2.22	**b**		-0.139	-2.99	**a**		0.048	1.14	
Primary Length of Relationship	0.000	0.76			0.000	2.69	**a**		0.000	2.16	**b**
Primary Distance	0.000	0.92			0.000	-0.25			0.000	-2.29	**b**
Number of Bank Sources	-0.079	-7.50	**a**		-0.114	-9.42	**a**		-0.082	-7.32	**a**
Number of Nonbank Sources	-0.047	-6.11	**a**		-0.068	-7.87	**a**		-0.072	-9.72	**a**

Data are from the 1993, 1998, and 2003 Surveys of Small Business Finances. *No Need Credit Firms* are those that did not apply for credit because they did not need credit. *Need Credit Firms* include those that applied for credit or did not apply because they feared rejection.
a, b and **c** indicate statistical significance at the 0.01, 0.05 and 0.10 levels, respectively.

Table 6 Panel A. Logistic Regression
(Discouraged Firm = 1, Applied Firm = 0)

	1993		1998		2003	
Variable	**Marginal Effect**	**t-stat**	**Marginal Effect**	**t-stat**	**Marginal Effect**	**t-stat**
Intercept		4.55 **a**		1.81 **c**		5.98 **a**
Firm Characteristics						
ln(Assets)	-0.052	-8.69 **a**	-0.036	-4.03 **a**	-0.039	-7.84 **a**
Return on Assets	-0.003	-0.55	-0.005	-0.52	-0.015	-2.04 **b**
Liabilities to Assets	-0.007	-0.60	0.001	0.11	-0.005	-1.83 **c**
Cash to Assets	0.007	0.17	-0.101	-1.99 **b**	-0.001	-0.03
C-Corporation	0.023	1.11	0.105	3.10 **a**	-0.032	-1.42
S-Corporation	-0.026	-1.18	0.016	0.53	-0.054	-3.52 **a**
Partnership	-0.018	-0.57	-0.039	-0.84	-0.028	-1.06
Firm Age	0.000	-0.11	0.001	0.70	-0.004	-3.77 **a**
Business Bankruptcy			0.133	2.28 **b**	0.057	1.20
Business Delinquencies	0.079	4.02 **a**	0.076	2.21 **b**	0.081	4.69 **a**
D&B Credit Score			0.021	1.76 **c**	-0.009	-1.72 **c**
Use Business Credit Card	-0.030	-1.69 **c**	0.003	0.14	0.018	1.37
Use Own Credit Card	0.021	1.32	-0.070	-2.77 **a**	-0.007	-0.56
Trade Credit Paid Late	0.011	0.64	0.009	0.34	-0.025	-1.66 **c**
Industry						
SIC 2	0.018	0.43	0.012	0.19	-0.013	-0.30
SIC 3	-0.100	-1.95 **c**	-0.004	-0.08	-0.037	-0.99
SIC 4	0.051	1.12	0.089	1.45	0.024	0.68
SIC 51	0.065	2.09 **b**	0.057	1.08	0.060	1.81 **c**
SIC 52	0.049	1.88 **c**	0.025	0.62	0.009	0.38
SIC 6	0.086	2.18 **b**	-0.024	-0.40	0.008	0.22
SIC 7	0.061	2.31 **b**	-0.017	-0.43	0.042	1.93 **c**
SIC 8	-0.020	-0.63	0.040	0.868	0.003	0.10

Notes: Data are from the 1993, 1998 and 2003 Surveys of Small Business Finance. *Discouraged Firms* are firms that did not apply for credit because they feared rejection. *Applied Firms* include firms that applied for credit and whose applications were denied or approved.
a, b and **c** indicate statistical significance at the 0.01, 0.05 and 0.10 levels, respectively.

Table 6 Panel B. Logistic Regression
(Discouraged Firms = 1, Applied Firms = 0)

	1993		1998		2003	
Variable	**Marginal Effect**	**t-stat**	**Marginal Effect**	**t-stat**	**Marginal Effect**	**t-stat**
Market Characteristics						
MSA	0.129	5.65 **a**	0.073	2.26 **b**	0.082	4.46 **a**
HHI High	-0.043	-2.62 **a**	-0.064	-0.89	0.003	0.10
HHI Medium			-0.057	-1.11	-0.014	-0.53
Owner Characteristics						
Owner Age	0.002	2.06 **b**	0.004	2.85 **a**	-0.001	-0.78
Owner Experience	0.000	-0.12	0.001	0.44	0.003	3.28 **a**
Owner Graduate Degree	0.005	0.19	-0.016	-0.40	-0.013	-0.59
Owner College Degree	-0.021	-0.95	0.018	0.54	-0.007	-0.39
Owner Some College	-0.047	-2.21 **b**	0.036	1.18	-0.005	-0.30
Black Owner	0.047	1.32	0.088	1.90 **c**	-0.033	-1.25
Asian Owner	0.092	2.13 **b**	-0.026	-0.42	0.030	0.93
Hispanic Owner	0.079	2.42 **b**	-0.001	-0.03	-0.030	-1.09
Female Owner	0.006	0.32	0.033	1.22	0.018	1.27
Owner Bankruptcy	0.171	4.80 **a**	0.031	0.30	0.095	2.93 **a**
Owner Delinquencies	0.069	3.24 **a**	0.040	1.30	0.094	5.71 **a**
Owner Judgement	0.114	3.90 **a**	-0.088	-1.80 **c**	-0.036	-1.17
Owner Personal Wealth			-0.046	-2.40 **b**	-0.049	-3.18 **a**
Firm-Creditor Relationship Characteristics						
Primary is Savings Assoc.	-0.009	-0.31	0.010	0.21	-0.028	-1.29
Primary is Finance Company	0.094	1.71 **c**	0.096	1.31	0.015	0.26
Primary is Other	0.010	0.26	0.082	1.49	-0.042	-1.12
Primary Length of Relationship	0.000	-1.55	0.000	-0.54	0.000	-4.64 **a**
Primary Distance	0.000	-1.53	0.000	-1.83 **c**	0.000	0.19
Number of Bank Sources	-0.102	-7.94 **a**	-0.134	-7.26 **a**	-0.040	-3.99 **a**
Number of Non-Bank Sources	-0.030	-3.85 **a**	-0.087	-7.08 **a**	-0.016	-2.74 **a**

Notes: Data are from the 1993, 1998 and 2003 Surveys of Small Business Finance. *Discouraged Firms* are firms that did not apply for credit because they feared rejection. *Applied Firms* include firms that applied for credit and whose applications were denied or approved.
a, b and **c** indicate statistical significance at the 0.01, 0.05 and 0.10 levels, respectively.

Table 7 Panel A. Logistic Regression
(Discouraged Firms = 1, Denied Firms = 0)

	1993				1998				2003		
	Marginal				Marginal				Marginal		
Variable	**Effect**	**t-stat**			**Effect**	**t-stat**			**Effect**	**t-stat**	
Intercept		1.32				1.25				3.65	**a**
Firm Characteristics											
ln(Assets)	-0.018	-1.73	**c**		-0.006	-0.47			-0.039	-2.82	**a**
Return on Assets	0.022	1.89	**c**		0.029	2.24	**b**		-0.021	-1.00	
Liabilities to Assets	0.004	0.20			0.007	0.54			-0.013	-1.87	**c**
Cash to Assets	0.109	1.46			-0.066	-0.95			0.105	1.39	
C-Corporation	0.022	0.58			0.121	2.38	**b**		-0.073	-1.20	
S-Corporation	-0.051	-1.34			0.024	0.60			-0.114	-2.79	**a**
Partnership	0.061	0.93			-0.023	-0.36			-0.053	-0.76	
Firm Age	0.004	1.67	**c**		0.004	1.73	**c**		-0.003	-1.13	
Business Bankruptcy					-0.050	-0.81			0.062	0.61	
Business Delinquencies	0.020	0.59			-0.002	-0.04			0.116	2.66	**a**
D&B Business Credit Score					0.006	0.37			0.023	1.78	**c**
Use Business Credit Card	-0.015	-0.45			-0.047	-1.44			-0.001	-0.02	
Use Own Credit Card	0.012	0.41			-0.020	-0.56			-0.018	-0.52	
Trade Credit Paid Late	0.048	1.56			-0.036	-0.97			-0.075	-1.89	**c**
SIC 2	0.117	1.52			-0.070	-0.80			0.050	0.47	
SIC 3	-0.101	-1.27			-0.057	-0.78			-0.148	-1.72	**c**
SIC 4	0.105	1.30			0.091	0.98			-0.039	-0.46	
SIC 51	0.113	2.03	**b**		0.125	1.41			0.146	1.58	
SIC 52	0.084	1.81	**c**		0.020	0.35			0.032	0.54	
SIC 6	0.236	2.96	**a**		-0.032	-0.36			-0.016	-0.15	
SIC 7	0.132	2.83	**a**		-0.056	-1.10			0.164	2.62	**a**
SIC 8	0.111	1.95	**c**		0.017	0.27			0.020	0.28	

Notes: Data are from the 1993, 1998, and 2003 Surveys of Small Business Finances. *Discouraged Firms* are firms that did not apply for credit because they feared rejection. *Applied Firms* include firms that applied for credit and whose applications were denied or approved.
a, b and **c** indicate statistical significance at the 0.01, 0.05 and 0.10 levels, respectively.

Table 7 Panel B. Logistic Regression (Discouraged Firms = 1, Denied Firms = 0)

	1993		1998		2003	
Variable	**Marginal Effect**	**t-stat**	**Marginal Effect**	**t-stat**	**Marginal Effect**	**t-stat**
Market Characteristics						
MSA	0.036	0.86	-0.006	-0.13	0.063	1.27
HHI High	-0.046	-1.54	-0.107	-1.14	-0.083	-1.02
HHI Medium			-0.098	-1.31	-0.052	-0.65
Owner Characteristics						
Owner Age	0.004	2.28 **b**	0.006	3.20 **a**	0.000	0.19
Owner Experience	-0.003	-1.39	0.000	-0.17	0.004	1.66 **c**
Owner Graduate Degree	0.009	0.20	0.041	0.72	0.015	0.23
Owner College Degree	0.006	0.14	0.006	0.14	-0.042	-0.83
Owner Some College	-0.036	-0.94	0.023	0.56	-0.025	-0.57
Black Owner	-0.022	-0.42	-0.061	-1.18	-0.270	-4.90 **a**
Asian Owner	0.026	0.36	-0.139	-1.99 **b**	-0.056	-0.61
Hispanic Owner	0.100	1.53	-0.130	-2.60 **a**	-0.042	-0.55
Female Owner	-0.005	-0.14	0.027	0.73	0.058	1.45
Owner Bankruptcy	0.078	1.41	-0.056	-0.54	0.032	0.42
Owner Delinquencies	-0.024	-0.67	-0.062	-1.61	0.057	1.41
Owner Judgment	0.065	1.40	-0.125	-2.41 **b**	-0.070	-0.99
Owner Personal Wealth			-0.037	-1.39	-0.017	-0.45
Firm-Creditor Relationship Characteristics						
Primary is Savings Assoc	0.087	1.50	-0.084	-1.36	-0.007	-0.12
Primary is Finance Company	0.088	0.93	-0.024	-0.25	-0.099	-0.77
Primary is Other	-0.050	-0.90	0.040	0.59	-0.006	-0.06
Primary Length of Relationship	0.000	-0.62	0.000	0.65	-0.001	-2.95 **a**
Primary Distance	0.000	-2.00 **b**	0.000	-0.35	0.000	-0.07
Number of Bank Sources	-0.100	-4.75 **a**	-0.152	-6.18 **a**	-0.071	-3.05 **a**
Number of Non-Bank Sources	-0.055	-4.43 **a**	-0.071	-4.24 **a**	-0.061	-4.44 **a**

Notes: Data are from the 1993, 1998, and 2003 Surveys of Small Business Finances. *Discouraged Firms* are firms that did not apply for credit because they feared rejection. *Applied Firms* include firms that applied for credit and whose applications were denied or approved.
a, b and **c** indicate statistical significance at the 0.01, 0.05 and 0.10 levels, respectively.

Table 8 Panel A. Logistic Regression
(Approved Firms = 1, Denied Firms = 0)

	1993		1998		2003	
Variable	**Marginal Effect**	**t-stat**	**Marginal Effect**	**t-stat**	**Marginal Effect**	**t-stat**
Intercept		-2.23 **b**	831.000	-1.31		-1.84 **c**
Firm Characteristics						
ln(Assets)	0.035	5.17 **a**	0.007	0.67	0.023	3.81 **a**
ROA	0.020	2.59 **a**	0.029	2.76 **a**	-0.002	-0.24
Liabilities to Assets	0.001	0.08	-0.008	-0.72	-0.004	-1.21
Cash to Assets	0.033	0.68	0.039	0.72	0.087	2.88 **a**
C-Corporation	0.005	0.23	0.038	1.00	-0.008	-0.34
S-Corporation	-0.005	-0.24	0.040	1.29	-0.030	-1.82 **c**
Partnership	0.084	2.02 **b**	0.002	0.04	-0.036	-1.39
Firm Age	0.004	2.52 **b**	0.004	1.71 **c**	0.000	-0.05
Business Bankruptcy			-0.450	-2.81 **a**	-0.092	-1.23
Business Delinquencies	-0.080	-3.56 **a**	-0.120	-3.50 **a**	0.010	0.57
D&B Business Credit Score			0.001	0.10	0.027	5.08 **a**
Use Business Credit Card	0.025	1.39	-0.017	-0.70	0.000	0.00
Use Own Credit Card	-0.005	-0.31	0.021	0.80	0.010	0.77
Trade Credit Paid Late	0.026	1.31	-0.040	-1.44	-0.033	-2.22 **b**
Industry						
SIC 2	0.036	0.78	-0.018	-0.29	-0.013	-0.34
SIC 3	-0.009	-0.21	-0.016	-0.25	-0.054	-1.83 **c**
SIC 4	-0.014	-0.29	0.112	1.51	-0.088	-2.77 **a**
SIC 51	-0.013	-0.38	0.102	1.65	-0.015	-0.44
SIC 52	-0.025	-0.93	0.104	2.34 **b**	-0.010	-0.43
SIC 6	0.039	0.85	0.035	0.56	-0.041	-1.19
SIC 7	0.001	0.03	-0.013	-0.32	0.002	0.08
SIC 8	0.056	1.60	0.027	0.56	-0.023	-0.85

Notes: Data are from the 1993, 1998, and 2003 Surveys of Small Business Finances. *Approved Firms* are firms that applied for credit and whose applications were approved. *Denied Firms* are firms that applied for credit and whose applications were denied.
a, b and **c** indicate statistical significance at the 0.01, 0.05 and 0.10 levels, respectively.

Table 8 Panel B. Logistic Regression
(Approved Firms = 1, Denied Firms = 0)

	1993		1998		2003	
Variable	**Marginal Effect**	**t-stat**	**Marginal Effect**	**t-stat**	**Marginal Effect**	**t-stat**
Market Characteristics:						
MSA	-0.100	-4.24 **a**	-0.038	-1.05	-0.023	-1.23
HHI High	0.009	0.49	0.002	0.02	-0.094	-2.93 **a**
HHI Medium			-0.010	-0.18	-0.068	-2.15 **b**
Owner Characteristics:						
Owner Age	0.000	0.18	0.003	1.82 **c**	0.000	-0.16
Owner Experience	-0.002	-1.54	-0.001	-0.62	0.001	0.82
Owner Graduate Degree	-0.019	-0.66	0.059	1.39	0.066	2.56 **b**
Owner College Degree	0.000	0.01	0.042	1.17	-0.001	-0.08
Owner Some College	-0.015	-0.64	0.010	0.30	-0.005	-0.31
Black Owner	-0.096	-2.41 **b**	-0.168	-3.45 **a**	-0.179	-6.50 **a**
Asian Owner	-0.056	-1.19	-0.107	-2.21 **b**	-0.026	-0.83
Hispanic Owner	-0.008	-0.19	-0.173	-3.94 **a**	-0.005	-0.14
Female Owner	-0.016	-0.76	-0.003	-0.09	0.034	2.13 **b**
Owner Bankruptcy	-0.143	-2.97 **a**	-0.367	-0.54	-0.083	-1.49
Owner Delinquencies	-0.071	-2.94 **a**	-0.130	-3.89 **a**	-0.053	-2.88 **a**
Owner Judgment	-0.103	-2.98 **a**	-0.098	-2.04 **b**	0.026	0.83
Owner Personal Wealth			-0.003	-0.26	0.016	1.50

Notes: Data are from the 1993, 1998, and 2003 Surveys of Small Business Finances. *Approved Firms* are firms that applied for credit and whose applications were approved. *Denied Firms* are firms that applied for credit and whose applications were denied.
a, b and **c** indicate statistical significance at the 0.01, 0.05 and 0.10 levels, respectively.

Table 8 Panel C. Logistic Regression
(Approved Firms = 1, Denied Firms = 0)

	1993		1998		2003	
Variable	**Marginal Effect**	**t-stat**	**Marginal Effect**	**t-stat**	**Marginal Effect**	**t-stat**
Firm-Creditor Relationship Characteristics						
MRL Source Savings Assoc	0.108	2.81 **a**	-0.001	-0.01	0.035	1.43
MRL Source Finance Co	0.157	3.22 **a**	0.134	2.21 **b**	0.115	3.17 **a**
MRL Source Other	0.149	3.55 **a**	-0.091	-1.84 **c**	0.135	3.10 **a**
MRL Length of Relationship	0.000	0.82	0.000	0.18	0.000	0.56
MRL Distance from Firm	0.000	-2.11 **b**	0.000	0.00	0.000	0.90
Number of Bank Sources	0.025	1.93 **c**	0.008	0.52	-0.011	-1.32
Number of Nonbank Sources	-0.020	-3.03 **a**	0.015	1.44	-0.025	-5.40 **a**
MRL Checking Relationship	0.013	0.56	0.017	0.50	0.024	1.32
MRL Savings Relationship	0.107	3.70 **a**	-0.046	-1.14	0.031	1.32
MRL Fin'l Svcs Relationship	0.034	1.56	0.022	0.70	-0.017	-1.15
MRL Line of Credit Relationship	0.040	0.96	-0.052	-1.17	-0.041	-2.04 **b**
MRL Loan Relationship	-0.031	-1.38	0.147	3.39 **a**	0.014	0.84
MRL is a Credit Line Renewal	N.A.	N.A.	N.A.	N.A.	0.185	8.35 **a**
MRL is a Lease	-0.028	-0.51	0.039	0.71	0.027	0.44
MRL is a Mortgage	-0.017	-0.59	0.155	3.12 **a**	0.090	4.05 **a**
MRL is a Motor Vehicle Loan	0.079	2.15 **b**	0.285	5.02 **a**	0.121	4.23 **a**
MRL is an Equipment Loan	-0.024	-0.81	0.207	4.38 **a**	0.071	3.30 **a**
MRL is an Other Loan	-0.081	-3.63 **a**	0.068	2.14 **b**	0.049	2.41 **b**

MRL = most recent loan.

Notes: Data are from the 1993, 1998, and 2003 Surveys of Small Business Finances. *Approved Firms* are firms that applied for credit and whose applications were approved. *Denied Firms* are firms that applied for credit and whose applications were denied.

a, b and **c** indicate statistical significance at the 0.01, 0.05 and 0.10 levels, respectively.

About the Authors

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Current research by Dr. James R. Brown explores how firms weather dramatic decreases in financing, as well as the role that equity markets play in creative destruction. Since June 2009, Dr. Brown has been assistant professor of finance at Iowa State University. He received a bachelor of arts in economics from Transylvania University in Lexington, Kentucky, in 1996 and a master of science in economics from Kentucky University in 1999. In 2000, he received a master of arts and in 2004 a doctorate, both in economics, from Washington University in St. Louis. From 2004 to 2009, he was assistant professor of economics at Montana State University. Dr. Brown specializes in corporate finance and governance, as well as entrepreneurial finance. He has released two papers thus far in 2009, "Why Has the Investment-Cash Flow Sensitivity Declined So Sharply? Rising R&D and Equity Market Developments" (*Journal of Banking and Finance*, March 2009) and "Financing Innovation and Growth: Cash Flow, External Equity, and the 1990s R&D Boom" (*Journal of Finance*, February 2009).

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Dr. Rebel Cole's primary areas of research are commercial banking, corporate governance, financial institutions, real estate, and small business finance, and he has provided technical assistance to central banks in a number of developing countries. He is currently a professor of finance and real estate at the Kellstadt Graduate School of Business of DePaul University in Chicago, Illinois, as well as the chief executive officer of Krähenbühl Global Consulting. Originally from Asheville, North Carolina, he attended the University of North Carolina at Chapel Hill, where he earned degrees in economics and political science in 1981. In 1988, he received a doctorate in business administration from the Kenan-Flagler School of Business of the University of North Carolina at Chapel Hill, and began a 10-year career at the Federal Reserve System in Washington, D.C. He later taught at the University of New South Wales in Australia before joining DePaul University in 2003.

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