KEY FINDINGS FROM THE EVALUATION OF THE SMALL BUSINESS ADMINISTRATION'S LOAN AND INVESTMENT PROGRAMS

Executive Summary

January 2008

Prepared for:
U.S. Small Business Administration

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CONTENTS

TABLES

FIGURES

I. INTRODUCTION

The Small Business Administration (SBA) recently commissioned the Urban Institute (UI) to evaluate four programs, including the 7(a) Loan Guaranty Program, the Certified Development Company (CDC) 504 Loan Program, the Small Business Investment Company (SBIC) Debentures Program, and the MicroLoan Program. This effort was intended to help SBA assess past performance of the designated programs, as well as to test methodologies that can assist the agency in setting meaningful goals/targets as benchmarks for future accomplishments.

Policy and Research Questions

The project was designed to address the following questions:

1. *Does SBA assistance help the firms that receive it?* SBA's strategic plan couches such help in terms of at least two long-term objectives: (1) increasing the "positive impact" of SBA assistance on the number and success of small-business start-ups, and (2) maximizing the sustainability and growth of existing SBA-assisted small businesses. In the UI project, we measured the performance of assisted businesses and estimated the impact of SBA's assistance on their performance, using agency records, Dun & Bradstreet (D&B) records, and self report of business principals.

2. *To what extent does SBA assistance serve its market?* SBA circumscribes its market by stipulating the long-term objectives of increasing small business success by bridging competitive opportunity gaps (COGs), and special competitive opportunity gaps (SCOGs)[1] facing entrepreneurs. The research estimated the size of the market of firms facing COGs and SCOGs, as well as the extent to which SBA has been meeting this market.

3. *Do SBA programs duplicate or overlap with other public sector programs?* Although this policy question is not explicitly addressed as part of the agency's Strategic Plan or Performance and Accountability Report (PAR), SBA wanted to determine whether overlap exists, and, if so, the nature of the duplication. The UI study examined whether (and how) selected SBA programs overlap both within the agency and with assistance offered by other public sector programs.

Description of Evaluated Programs

As previously noted, four SBA programs, managed by the Office of Capital Access, were examined in this research: the 7(a) Loan Guaranty Program, the Certified Development

[1] Firms facing *special* opportunity gaps are defined as "small business concerns located in urban or rural areas with high proportions of unemployed or low-income individuals or owned by low-income individuals, and other groups that own and control little productive capital because they have limited opportunities for small business ownership" (SBA, 2003: 16).

Company (CDC) 504 Loan Program, the Small Business Investment Company (SBIC) Debentures Program, and the MicroLoan Program. Each provides different types of financing intended to meet the needs of small businesses facing competitive opportunity gaps and therefore unable to obtain financing in the marketplace on reasonable terms. The remainder of this section provides a brief overview of the characteristics of these programs.

All four SBA programs make capital available to small businesses that might otherwise have difficulty accessing funds; however, the programs differ in their scope, vehicle, and purpose. The SBA's largest programs—the 7(a) Loan Guaranty and the CDC 504 Loans—are similar in that they provide large amounts of money to businesses that have been denied credit by private funding sources. As detailed below, the financing mechanisms differ: under the 7(a) program, the SBA guarantees a loan issued by a bank or other private lender; whereas under the 504 program, the agency guarantees a debenture issued by a nonprofit "certified development company" (CDC). As shown in Table 1, the two programs also differ in that 7(a) loans can be used to finance most business purposes, including both working capital and fixed assets, while 504 loans can only be used to finance fixed assets.

Table 1: SBA Program Overview

Program	Program Type	Use of Proceeds	Maximum SBA Exposure	Does program have a "credit elsewhere" requirement?	Do funds originate from SBA?	Loan Volume, Calendar Years 2003-2005
Section 7(a) Loan Guaranty	Loan guaranty	Working capital, fixed assets, and other general business purposes	$1.5 million	Yes	No	$30.9 billion
CDC/504	Debenture guaranty	Fixed assets only	$4 million	Yes	No	$7.9 billion
MicroLoan	Loan	General business purposes	$35,000	Yes	Yes	$88.5 million
Small Business Investment Company (SBIC)	Debenture guaranty	Investment in small businesses	300 percent of equity raised by small business investment company	No	No	$2.6 billion

Source: Brash, 2008: 4

The MicroLoan program differs from the 7(a) and 504 programs in that it provides much smaller loan amounts and the SBA originates the loans. Rather than providing or guaranteeing loans for

small businesses, the debenture SBIC program guarantees debentures issued by venture capital firms that invest in small businesses.

Section 7(a) Loan Guaranty Program

The Section 7(a) Loan Guaranty Program provides loan financing to small businesses deemed unable to obtain financial assistance on reasonable terms in the private credit markets. The Office of Management and Budget (OMB) PART Assessment for the 7(a) program states: "the loans guaranteed by SBA are of a lower quality from what the private sector is willing to make…" (OMB, 2005). Most of the small businesses aided in the 7(a) program are minority-, women-, or veteran-owned, or located either in rural areas or in special zones determined by federal legislation to be in special need of economic development aid. About one-third of businesses are start-ups.

The Section 7(a) program is delivered by private lenders that make, service, and liquidate loans; SBA guarantees up to 85 percent of principal and interest of any loan. Lenders set loan terms and conditions according to the purpose of the loan and form of collateral (e.g., real estate or equipment), loan size, and perceived risk, consistent with maximum rates and terms set by SBA. SBA charges a loan guaranty fee, which is usually paid by the borrower. These loans are intended to supply the kinds of credit that may not be easily available to the class of borrowers targeted by the program. This credit includes loans of longer maturity to borrowers of higher credit risk, who can offer only single-purpose collateral and have limited equity (OMB, 2005).

The maximum amount that the SBA guarantees under the program is $1.5 million. Interest rates are negotiated between the borrower and the lender, subject to SBA maximums, which are pegged to the prime rate. Businesses can use 7(a) loans to finance working capital and fixed assets, and for limited refinancing of existing debt. Refinancing is permitted in limited cases. From calendar years 2003 to 2005, the SBA guaranteed $30.9 billion under the 7(a) program.

Certified Development Company (504) Loan Program

The 504 program, like the 7(a) program, provides loan financing to small businesses deemed unable to obtain financial assistance on reasonable terms in the private credit market. It differs from the 7(a) program in two significant ways: (1) the 504 loans can only be used for fixed assets (i.e., land and buildings) and (2) have fixed interest rates (under the 7(a) program, rates may be fixed or variable). Under the 504 program, businesses obtain loans through certified development companies (CDCs), local nonprofit organizations that work with the SBA and a private-sector lender. There are about 270 504 CDCs nationwide. The typical 504 project includes a loan secured with a senior lien from a private-sector lender, covering up to 50

percent of the project cost; a loan secured with a junior lien from a CDC, covering 40 percent of the project cost (backed by a 100 percent SBA-guaranteed debenture); and a contribution of at least 10 percent equity from the small business.

Maximum amounts allowed under the program vary based on the goal of the loan. Under the 504 program, the maximum debenture for businesses other than small manufacturers is $1.5 million. For small manufacturers, the maximum debenture is set considerably higher, at $4 million. Refinancing is permitted under the 504 program in very limited conditions. Interest rates are pegged to an increment above the current market rate for five- and ten-year U.S. Treasury issues. Program fees are approximately three percent and can be financed with the loan (SBA, 2006). From calendar years 2003 to 2005, the SBA guaranteed $7.9 billion in loans under the program (SBA Administrative Data).

MicroLoan Program

The MicroLoan Program provides very small loans to start-up and early-stage businesses through funding to community-based "intermediaries" that accept applications from potential borrowers, evaluate ability to repay, provide technical assistance to prospective and current borrowers, and originate and service loans.[2] The maximum loan amount is $35,000, although the average loan size is about $10,500. Loan terms are for a maximum of six years, although actual terms vary, and interest rates are set by the intermediaries, in part based on their own cost of funds.

All intermediaries are required to supply technical assistance to firms seeking loans, supported by SBA grant funds of up to 25 percent of the total balance owed to SBA on loans the intermediaries originate. For loans exceeding $20,000, intermediaries are obliged to certify that the borrowers are not otherwise able to obtain credit. Industry sources claim that the overwhelming majority of micro-loan borrowers have no established credit record.

Debenture Small Business Investment Company (SBIC) Program

The Debenture SBIC Program makes capital available to small business investment companies that are privately-owned, for-profit companies licensed by the SBA to provide venture capital to start-up and expanding small businesses. Rather than provide assistance directly to small businesses, under the Debenture SBIC Program, the SBA allows privately-operated venture capital funds to leverage their capital through SBA guaranteed debentures. Debenture SBICs

[2] As of spring, 2005, there were 170 active intermediaries.

may issue securities that provide for a maximum of 300 percent leverage of equity raised by the SBIC.

Debentures issued by SBICs pay market interest rates to investors through semi-annual interest payments for ten-year terms. Debenture SBICs may prepay their securities at any time; prepayments after five years carry no penalty. Debenture SBICs are obligated to make all payments to investors, and so companies in which debenture SBICs invest must have sufficient cash flow to allow the SBIC to service its debt by the time the first semi-annual interest payment is due.

Debenture SBICs provide equity capital, long-term loans, near-equity investments, and management assistance to qualifying small businesses, using their own funds and funds borrowed or otherwise obtained at favorable rates with SBA guarantees. In general, assistance provided by debenture SBICs is some form of mezzanine financing: subordinate debt[3] that also includes warrants or options that can be exercised by the SBIC to take an equity position in the company.

II. DOES SBA ASSISTANCE HELP THE FIRMS THAT RECEIVE IT?

The UI study included two components designed to assess SBA's performance in assisting firms that receive funding under the agency's programs:

- *A Performance Analysis of SBA's Loan and Investment Programs* (Brash and Gallagher, 2008) reported on rigorous, quantitative analyses of business outcomes—annual sales, number of employees, and survival—for firms receiving assistance through the SBA's Section 7(a) Loan Guaranty Program, Certified Development Company (504) Loan Program, or Small Business Investment Company (SBIC) Program between 1999 and 2001. The analyses, which relied on SBA administrative records and data collected privately by D&B, focused on two related questions: (1) what happens to sales, employment, and survival before and after firms receive financing from the SBA; and (2) what explains the changes observed in sales or employment after firms receive financing from the SBA?

- *An Assessment of Small Business Administration Loan and Investment Performance: Survey of Assisted Businesses* (Hayes, 2008) presented customer satisfaction outcomes

[3] The debt instrument originated by the debenture SBIC is often subordinate to other debt, which could be conventional or with an SBA guaranty, that the firm already has on its balance sheet.

and a limited number of other indicators based on a sub-sample of the same assisted firms that were targeted in the more rigorous, quantitative performance analyses based on SBA and D&B data (Brash and Gallagher, 2008).

Methodology

Performance Analysis Methodology

Past research on SBA programs has provided evidence of positive associations with firm performance (Warden Associates and Price Waterhouse, 1998; Price Waterhouse, 1992). This study went beyond previous studies in three respects: the use of better-quality data on firm outcomes provided by D&B, larger sample sizes that allowed for more precise performance estimates, and more powerful multivariate analysis. The study used data from SBA administrative files for firms that received assistance in 1999, 2000, and 2001; SBA loan-level files were converted to firm-level files. Then, for a sample of firms, D&B data were combined with SBA administrative data in order to conduct descriptive and multivariate analyses of firm performance. A discussion of the measures employed is presented in Appendix A.

Samples from SBA Portfolios. Throughout the analyses, firms participating in 7(a), 504, and SBIC were examined separately. Samples of firms participating in SBA programs were obtained through stratified sampling based on program [7(a), 504, SBIC], loan year (1999-2001), and race of the business owner (minority status, rather than specific race, of owner was used for SBIC). Samples were drawn proportionately from each stratum. For each program sample, firms from each of the three cohorts (1999, 2000, and 2001) were combined. Reserve samples were identified for use if the D&B match rates for the main samples were not sufficiently high; this reserve sample was used seamlessly with the main sample because its sampling frame was identical. The total sample was 1,500 businesses in each program for each of the targeted years (1999, 2000, and 2001).

D&B Data. Historical data were requested for each sampled firm. Table 2 presents the general outline of the D&B data for each loan year cohort. For each cohort, historical data for the three years before financing, and four to six years after financing were licensed.

Table 2: General Outline of D&B Data for Assisted Firms

Analysis	Data reference year									
	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
1999 cohort	X	X	X	X	X	X	X	X	X	X
2000 cohort		X	X	X	X	X	X	X	X	X
2001 cohort			X	X	X	X	X	X	X	X

Source: Brash and Gallagher, 2008: 10

D&B Match Rates. Two issues were raised in assessing the D&B match success for firms in the Performance Analysis samples: (1) whether firms were found in the D&B databases, and (2) whether D&B provided adequate historical data for the firms to be included in the analysis. D&B used an algorithm to match firms in the Performance Analysis sample with those in their database; the quality of the match was conveyed through a confidence code. Consistent with the standards employed by SBA's Office of Lender Oversight for this type of study, we used matches with confidence codes of seven or higher. Some firms were not found in the D&B database; others had confidence codes lower than seven. Failure to match firms to records in the D&B database was due to one or more of the following factors: (1) incomplete name and address information in the SBA administrative data, (2) firms missing in the D&B database, or (3) D&B's firm name and address matching process dates back just two years, while the SBA administrative data for this analysis were from 1999 to 2001. Firms matched with a confidence code of sever or higher represent 21 percent of 7(a) and 504 firms in stratified samples sent by UI to D&B, and 39 percent of sampled SBIC firms.[4] Despite the imperfect match rates, the firms found in the D&B database were similar to all firms in the SBA universe on a variety of dimensions—female and veteran ownership, minority status or specific race of owner, start-up status, region, industry, number of employees, and size of SBA investment. However, match rates for taxi medallions in the SBIC program were very low, generating a distinct mismatch between the SBIC firms available for analysis and all SBIC firms in the SBA portfolio. Therefore, taxi medallions were explicitly eliminated from the analysis, and the results for the SBIC performance analysis do not apply to taxi medallions.

Even when D&B matches were found for sample firms, data were sometimes only available for the years preceding or following the initial year of financing. Although the econometric models initially required seven years of historical data for each firm (three years before financing and three years after), this eliminated too many start-up businesses. Thus, the final econometric

[4] D&B maintains an inactive longitudinal database. In which missing information subsequently discovered on firms remains omitted from the historical file.

models required a slightly less demanding longitudinal sample: firms with data one year before financing and three years after financing. Still, a large proportion lacked historical data necessary for analysis—47 percent of 7(a) matches, 29 percent of 504 matches, and 62 percent of SBIC matches did not have one year of data before financing and three years of data after financing. Yet D&B matches with historical data were similar to all firms in the SBA portfolio, with the following exceptions: start-ups were somewhat underrepresented, and SBIC firms were slightly more likely to be in the manufacturing industry and slightly less likely to be in the information industry.

Finally, when D&B data were not available for a firm in a particular year, we could not discern whether that firm continued to exist, had been purchased, or had gone out of business. With one exception, all descriptive and multivariate analyses employed firms with data available the year before financing and three years after financing. In these cases, firms missing data for one or more years in this five-year period were excluded from the analysis. For examining survival rates, firms with missing data in a given year, as well as firms missing all D&B data, were included.

Descriptive and Multivariate Analyses. Descriptive analyses were employed to examine sample characteristics and overall trends in the outcome measures. These were conducted using cross-tabulations and frequency distributions.

Multivariate Ordinary Least Squares (OLS) regression was conducted to examine the independent influences of various firm, financing, and market characteristics on sales and employment growth. Dependent variables for the multivariate models were defined as the employment and sales growth from the time of financing to three years after financing. They were interpreted as the percent change in sales or employment between the time of the financing and three years after financing. Explanatory variables included firm characteristics at the time of financing (including COG characteristics), financing characteristics, and market characteristics. Coefficients on the explanatory variables were interpreted as the percentage point difference in sales or employment between firms with a particular characteristic and firms without a particular characteristic, after controlling for other factors. Specifications for the performance analysis models were:

For firm i

$Y_i = X_i\beta_1 + Z_i\beta_2 + W_i\beta_3 + E_i$

where

Y represented the outcome of interest (e.g., percent change in sales between year of financing and three years after financing; percent change in employment between year of financing and three years after financing),

X represented characteristics of the firm (e.g., average sales or employment growth in the year before financing, minority ownership, female ownership, veteran ownership, start-up status, age of firm, credit score, and industry),
Z represented characteristics outside of the firm (including industry, region, and local unemployment rate),
W represented financing characteristics (including financing amount, interest rate, and maturity term), and
E represents the error term.

Because the firm age, region, and industry measures are categorical, dummy variables were created for their inclusion in the model. This approach requires the exclusion of one or more of the categories so that it can be used as a reference for the other categories. The reference age group is those greater than ten years old, the reference region is the Midwest and Outlying Areas, and the reference industry is manufacturing.

Assisted Business Survey Methodology

The initial survey design was based upon the goals of both measuring customer satisfaction and collecting additional performance data on surveyed firms. Questions were drawn from earlier surveys of assisted businesses and from suggestions and feedback provided by SBA. In order to keep the burden low for respondents, and to improve the potential response rate, the survey was designed to be completed in less than ten minutes.

The initial sample of 2,985 records was drawn as a subset of the larger sample of SBA records sent to D&B for record-matching. Records were selected using a stratified sampling plan, ensuring that the sample matched the proportions of firms by year of loan (2000 or 2001) and minority ownership status in the general population of assisted businesses. An additional 2,838 records were drawn as a reserve sample, using the same sampling strategy.

The survey was intended to be administered only to surviving firms. Due to the difficulty of tracking down owners of businesses that had failed or otherwise ceased operations, the decision was made to use a sample of convenience—we drew our sample from the full list of assisted businesses, but no effort was made to determine which businesses had survived and which had not. We did, however, make several efforts to update the contact information in the SBA files.

Initial contact to potential respondents in the sample was made by letter from the survey subcontractor, Silber & Associates, identifying the survey as being conducted by the Urban Institute on behalf of the SBA. Recipients were invited to complete the survey by logging onto a

Website programmed with the survey, using a special username provided in the letter. Of these initial letters, 35 percent were returned to sender.

Approximately two weeks after the first mailing, a reminder postcard was sent. A second postcard reminder was mailed shortly thereafter. A certified letter, naming an SBA representative who could be contacted by potential respondents to verify that the survey was sanctioned by the SBA, was also mailed in an effort to further increase the response rate. Telephone follow-up began in the third week of field work. Those successfully contacted were given the option of completing the survey online, or by telephone.

From the original sample, we achieved 491 completed surveys. After 6 weeks, UI released the reserve sample, of 2,798 records, from which we completed an additional 138 surveys. Our final tally of completed surveys was 629: 209 for the 504 program, 188 for Section 7(a), 124 for MicroLoan, and 108 for SBIC.

Findings

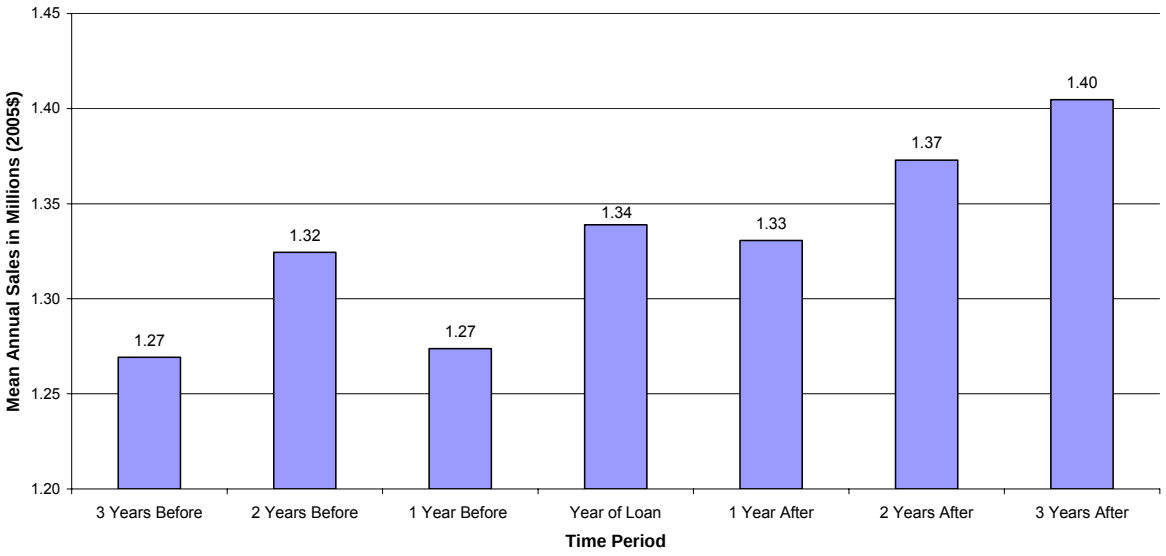
Performance Analysis of SBA's Loan and Investment Programs

Three key outcomes were examined as part of the descriptive analyses: (1) sales, (2) employment, and (3) survival. Sales values for all firms were averaged to provide an estimate of mean sales in each of the three years leading up to financing, the year of financing, and each of the three years after financing.[5] Average sales, measured in 2005 dollars, increased over time for firms in all three programs (see Figures 1, 2, and 3). For all three programs, the increase in the three years prior to financing was greater than the increase in the three years following financing. The difference in the pre- and post-financing years was most pronounced in the 504 program, where the average sales increased more than twice as much in the three years before financing (from $2.7 million to $3.4 million average) relative to the three years after financing (from $3.4 million to $3.5 million on average). Both the 7(a) and 504 programs showed a slight dip in sales in the year after financing, followed by an upswing in sales.

[5] Sales data for the year of financing may represent sales before or after SBA assistance. In addition, the composition of firms shown in the pre-financing years may be slightly different from the composition of firms in the post-financing years. Specifically, because the key analytical samples include firms with at least one year of data before financing and at least three years of data after financing, the outcomes presented two and three years before financing are based on a subset of firms in the key analytical sample.

The analysis found somewhat greater sales growth in years immediately following receipt of financing (e.g., the percent change[6] in sales between the year of financing and one year after financing was 18 percent for firms in the 7(a) program; it rose by 18 percentage points to 36 percent by two years after financing, and then it only rose by 6 percentage points to 42 percent by three years after financing (see Figure 4). SBIC firms had the highest rate of change: 54 percent between the year of financing and one year after financing, as compared to 18 percent for firms in the 7(a) program (see Figure 4).

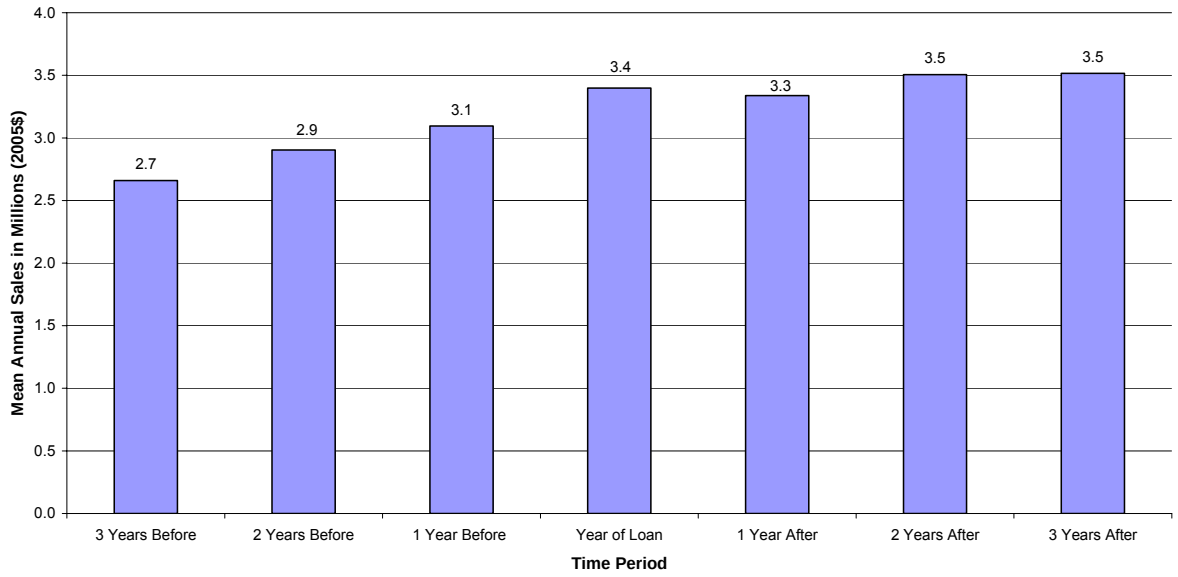
Figure 1: Sales by Year for 7(a) Firms



Source: Tabulated by The Urban Institute using samples of SBA administrative files with matches from D&B for firms included in mutlivariate analyses of factors associated with sales growth.

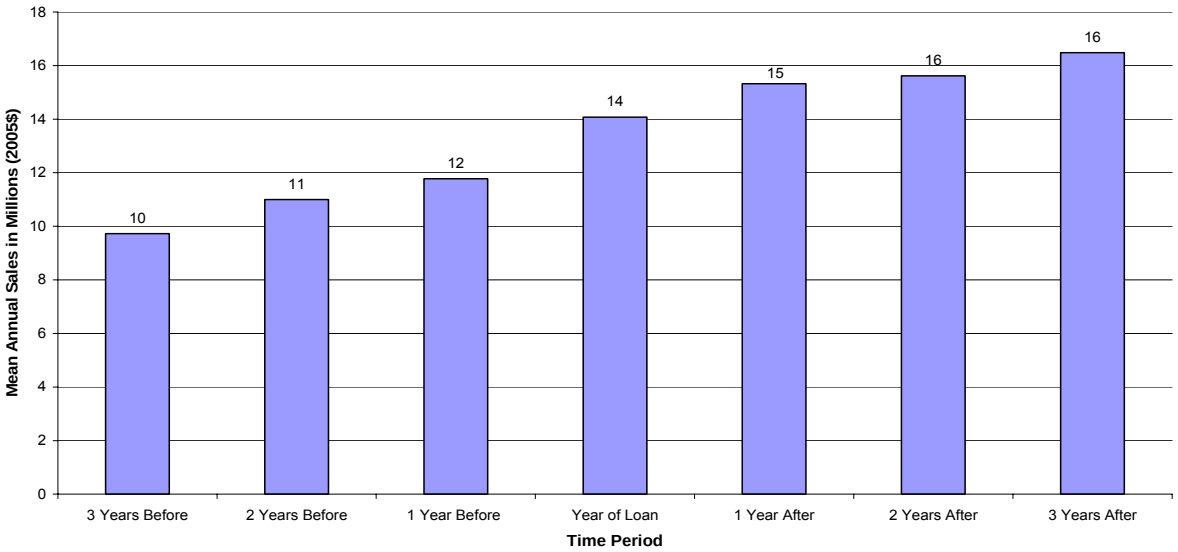
[6] Percent change allows one to take into consideration the sales of the individual firm during the year of financing, and measures the proportional increase for that firm during a three-year period. This helps to account for the circumstances of both large and small firms.

Figure 2: Sales by Year for 504 Firms



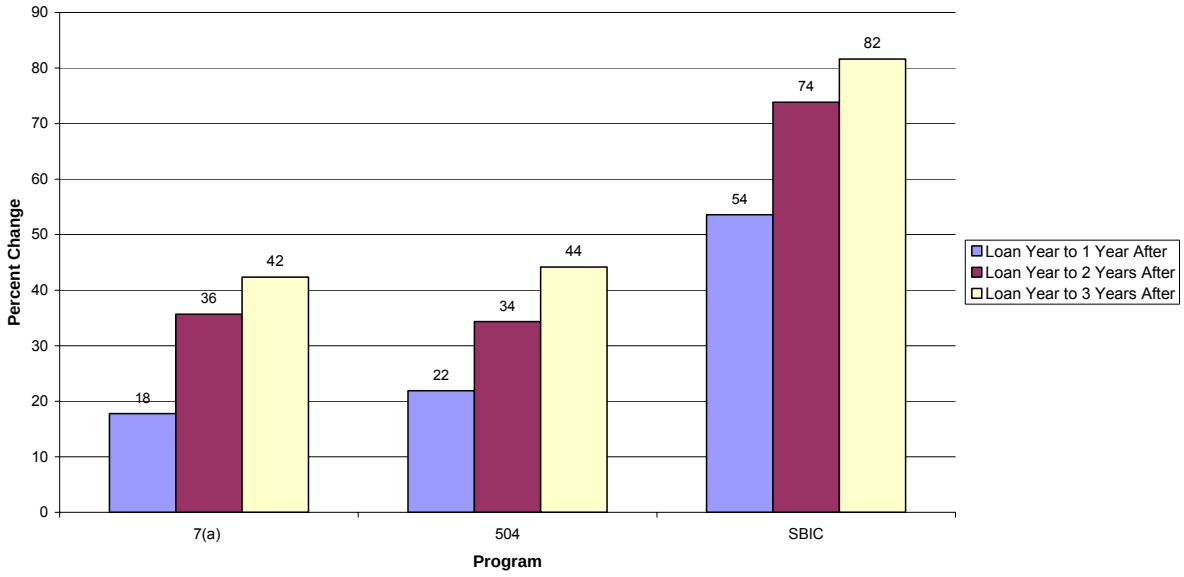
Source: Tabulated by The Urban Institute using samples of SBA administrative files with matches from D&B for firms included in mutlivariate analyses of factors associated with sales growth.

Figure 3: Sales by Year for SBIC Firms, Taxis Excluded



Source: Tabulated by The Urban Institute using samples of SBA administrative files with matches from D&B for firms included in mutlivariate analyses of factors associated with sales growth.

Figure 4: Difference in Sales after Financing for 7(a), 504, and SBIC Firms

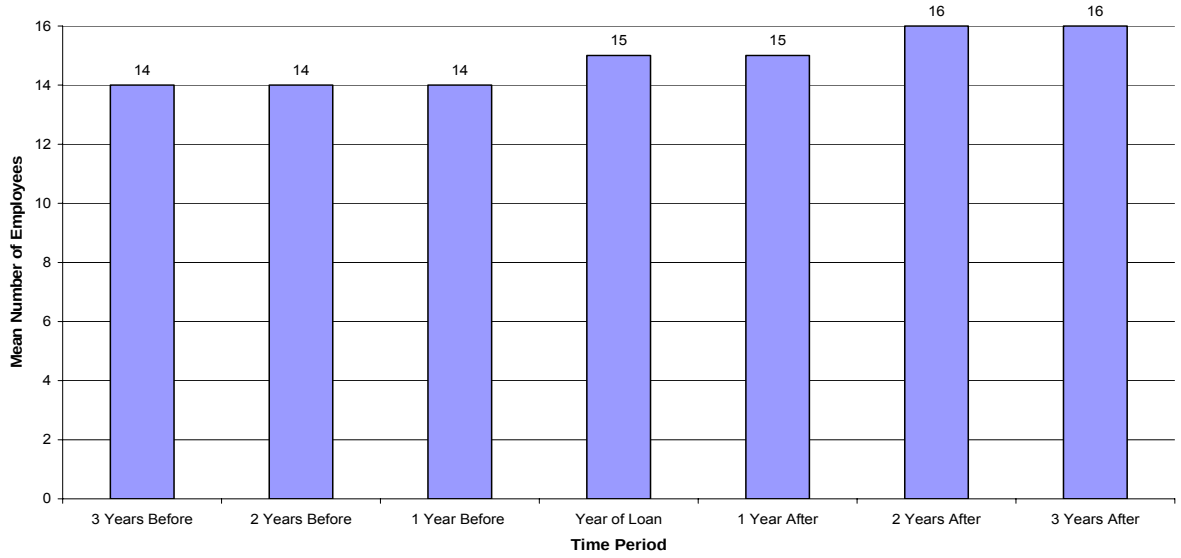


Source: Tabulated by The Urban Institute using samples of SBA administrative files with matches from D&B for firms included in mutlivariate analyses of factors associated with sales growth.

As shown in Figures 5, 6, and 7, average employment[7] also increased over time for firms in all three programs: increases in the pre- and post-financing years were similar for firms in the 7(a) and 504 programs; however, SBIC firms demonstrated a greater increase from three years before financing to the year of financing (from 73 to 97 employees on average) than they did in the three years following financing (from 97 to 110 employees on average).

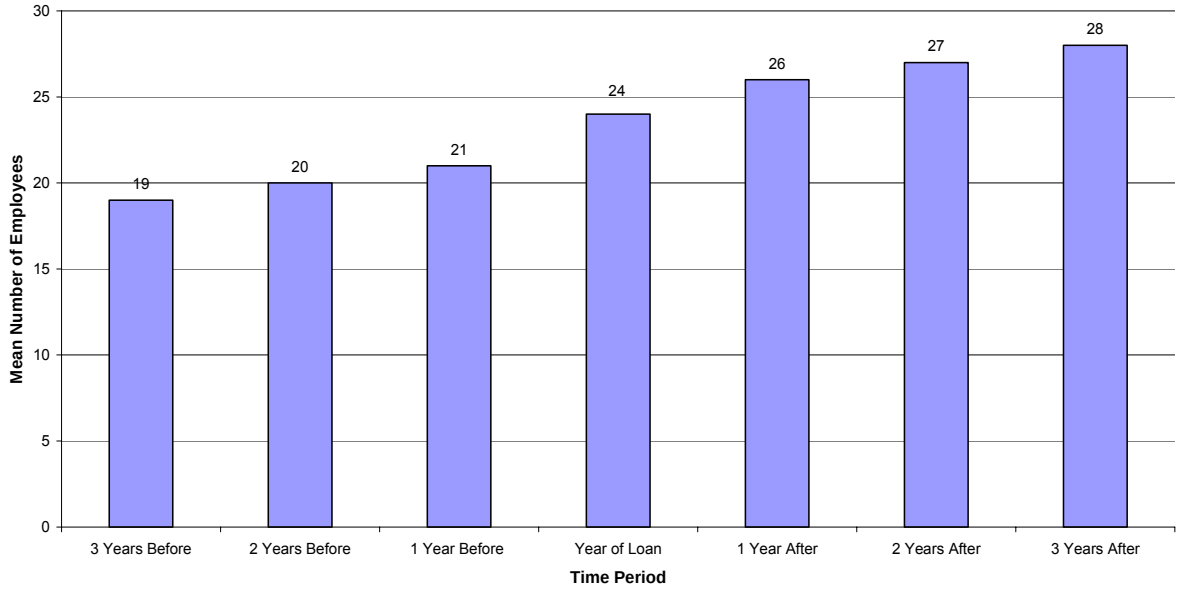
[7] Employment data for the year of financing may represent employment both before and after SBA assistance. And, the composition of firms shown in the pre-financing years may be slightly different from the composition of firms in the post-financing years (i.e., the outcomes presented two and three years before financing are based on a subset of firms in the key analytical sample).

Figure 5: Employment by Year for 7(a) Firms



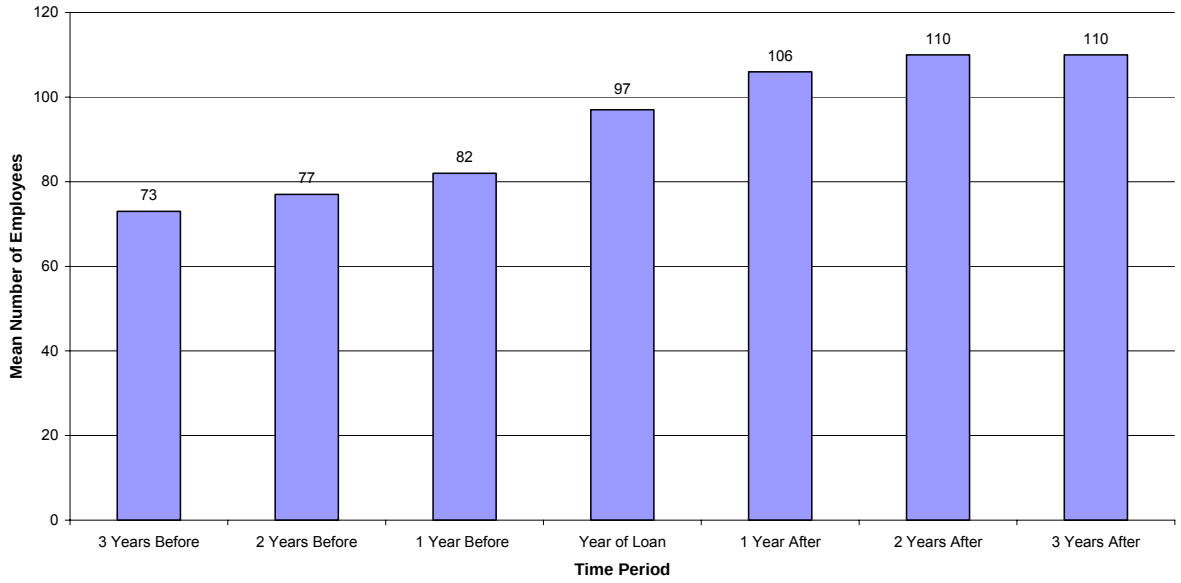
Source: Tabulated by The Urban Institute using samples of SBA administrative files with matches from D&B for firms included in mutlivariate analyses of factors associated with employment growth.

Figure 6: Employment by Year for 504 Firms



Source: Tabulated by The Urban Institute using samples of SBA administrative files with matches from D&B for firms included in mutlivariate analyses of factors associated with employment growth.

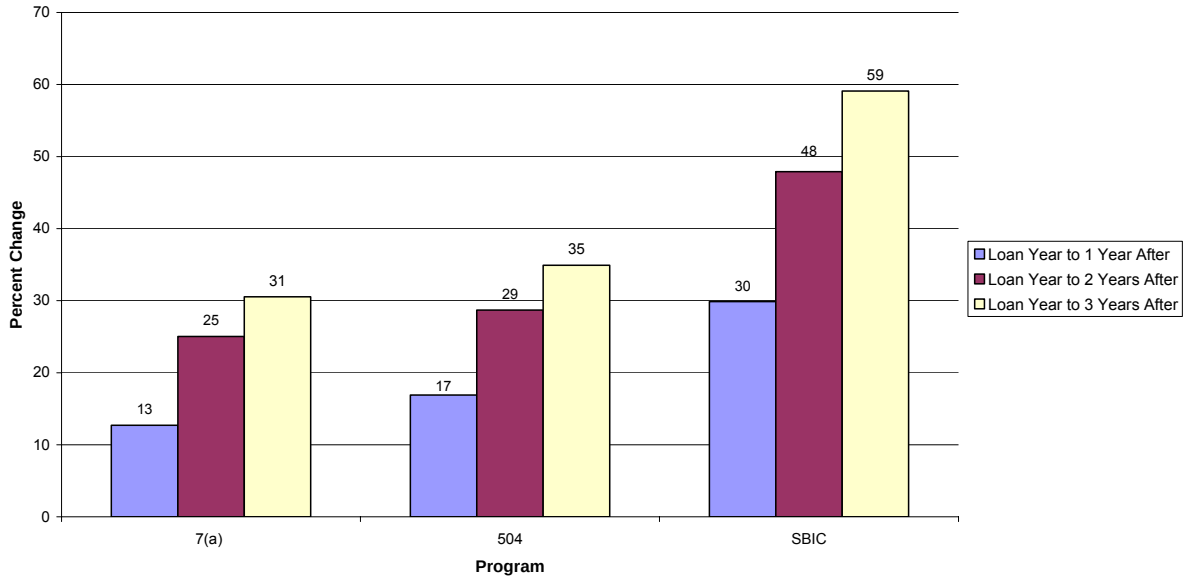
Figure 7: Employment by Year for SBIC Firms, Taxis Excluded



Source: Tabulated by The Urban Institute using samples of SBA administrative files with matches from D&B for firms included in mutlivariate analyses of factors associated with employment growth.

The analysis employed to measure proportional increases at the firm level found that percent change in employment is greater in the years immediately following receipt of financing (see Figure 8). SBIC firms had the highest rate of change, and 7(a) firms had lowest. Firms in the SBIC program experienced a 30 percent increase in employment between the year of financing and one year after financing, but it took another two years for the overall increase in employees to reach 59 percent (see Figure 8). Similarly, firms in the 504 program experienced a 17 percent increase in employment in the first year after financing, but took another two years to double the increase to 34.9 percent from the year of financing. Firms in the 7(a) program saw a lower percentage change in employment than firms in the 504 or SBIC programs, but the rate of increase did not taper as it did with those two programs. In the first year, 7(a) firms saw a 13 percent increase in employment, while in the second year that increase almost doubled to 25.0 percent. By the third year, the rate of increase slowed to 5.5 percentage points, for a total increase of 30.5 percent from the year of financing to three years after financing.

Figure 8: Difference in Employment After Financing for 7(a), 504, and SBIC Firms



Source: Tabulated by The Urban Institute using samples of SBA administrative files with matches from D&B for firms included in mutlivariate analyses of factors associated with employment growth.

Survival rates up to six years after financing were examined for existing and start-up firms, both together and separately, as presented in Table 3. The survival analysis employed two samples of firms, each of which were more broadly defined than those used to analyze sales or employment. One provides an upper-bound estimate, and the other provides a lower-bound estimate of firm survival.[8] The "real" survival rate for SBA-assisted businesses, therefore, may lie somewhere between the rates that appear below.

For both samples for all three programs, survival rates dropped slightly over time and existing firms tended to have higher survival rates than start-up businesses. Among existing firms in the 7(a) program, upper-bound estimates suggest that 96 percent survived through the first year of

[8] For both estimates, firms were assumed to have survived if D&B had information on those firms in 2005. All firms in the Performance Analysis samples (regardless of whether D&B found a match), were used to calculate the upper-bound estimates, based on the assumption that if D&B did not find a match for the firm or the firm was missing data for a given year, the firm did not survive. This was considered to be an upper-bound because firms may not have had D&B matches for reasons other than going out of business (i.e., being bought or acquired). The lower-bound estimate used firms from the Performance Analysis samples that had D&B matches. The estimate was based on an assumption that if the firm was missing D&B data for a given year, the firm did not survive. This was considered a lower-bound estimate because it included firms that were successfully matched by D&B and may have been slightly more successful than those not matched by D&B.

the loan, and 77 percent survived through six years after the loan.[9] Using the lower-bound estimates, existing 7(a) firms saw a 78 percent survival rate after one year and a 64 percent survival rate after six years. Lower-bound survival rates for 504 firms were similar to 7(a) firms; upper-bound rates dropped more slowly, with 98 percent of firms surviving after one year and 90 percent of firms surviving after six years. For existing firms in the SBIC program, lower-bound rates were lower than those of existing 7(a) firms, while upper-bound rates were comparable to 7(a) firms.

Table 3. Survival Rate by Year

Program	Years After Financing	Existing Firms		Start-up Firms		All Firms	
		Lower-bound	Upper-bound	Lower-bound	Upper-bound	Lower-bound	Upper-bound
7(a)	1	78.0	96.1	70.6	97.3	75.8	96.4
	2	75.6	93.1	68.9	94.9	73.6	93.6
	3	73.1	89.9	66.6	91.7	71.1	90.4
	4	70.2	86.4	64.7	89.1	68.5	87.2
	5	69.3	87.5	64.3	93.4	67.8	89.1
	6	64.4	77.4	56.6	76.2	61.9	77.1
504	1	79.6	97.8	68.4	98.3	77.5	97.9
	2	78.5	96.5	66.8	96.0	76.3	96.4
	3	77.4	95.1	66.1	95.0	75.3	95.1
	4	76.3	93.8	64.9	93.3	74.2	93.7
	5	73.0	94.0	65.2	96.0	71.6	94.3
	6	73.5	89.9	61.2	89.7	71.1	89.9
SBIC	1	62.5	92.8	50.2	95.4	57.2	93.6
	2	58.7	87.2	47.9	90.9	54.0	88.5
	3	55.4	82.4	46.6	88.4	51.6	84.5
	4	53.0	78.8	44.7	84.8	49.3	80.8
	5	49.6	74.3	44.0	79.8	46.6	76.5
	6	43.0	72.7	35.2	76.1	39.4	73.9

Source: Brash and Gallagher, 2008: 25

Notes: Firms were assumed to have survived if D&B had information on those firms in 2005. For the lower-bound estimates, firms were assumed to have failed if they did not appear in D&B's database or were missing data. For the upper-bound estimates, firms with D&B matches were assumed to have failed if they were missing data. In calculating the five-year survival rates, only those firms in the 1999 and 2000 cohorts (i.e., the ones that had a chance to survive that long) were used. In calculating the six-year survival rate, only the firms in the 1999 cohorts were used.

[9] In calculating the five-year survival rate, only those firms in the 1999 and 2000 cohorts (i.e., the ones that had a chance to survive that long) were used; firms in the 2001 cohort were not used because data available through 2005 would not reflect their survival five years after the loan. For this same reason, only the firms in the 1999 cohorts were used in calculating the six-year survival rate.

Multivariate regression analyses[10] were used to identify the factors independently associated with sales and employment. According to some preliminary models, levels of sales or employment at the time of financing predict about two-thirds of the variation in levels of sales or employment three years following financing. That is, a firm with high sales in the year of financing can be expected to have high sales three years after financing, while a firm with low sales can expect to have low sales three years after financing. The same holds true for employment. However, such an analysis of the *level* of sales or employment does not help to explain how the characteristics of a firm relate to the trajectory of a firm's growth in sales or employment after the receiving SBA assistance.

The multivariate models we employed sought to explain percent changes in sales and employment between the year of financing and three years after financing.[11] Firm, market, and financing characteristics used to explain changes in sales and employment included:

- *Firm Characteristics:* average employment or sales growth in year before financing, minority ownership, female ownership, veteran ownership [7(a) and 504 only], start-up status, age of firm, and credit score.

- *Market Characteristics:* industry, region, and local unemployment rate.

- *Financing Characteristics:* loan or investment amount, interest rate [7(a) and 504 only], and maturity term [7(a) only].

Together, the variables in the multivariate models predicted from two to ten percent of the variation in percent changes in sales and employment. The section below focuses on statistically significant factors related to percent change in sales and employment. All factors reported were significant at the $p<.10$ level.

The findings were similar for all three programs: firm age, industry, and region of the country were found to be significantly related to percent change in sales and employment. For all three programs, firms that were less than six years old (but not categorized by SBA as start-ups) outperformed firms that were greater than ten years old in both the sales and employment

[10] The multivariate models used the same samples as the descriptive analyses above: those firms with complete data one year before financing and three years after financing.

[11] A three-year outcome was examined because it provides adequate time for firms to use the financial support and see how the assistance translates into changes in sales or employment.

outcomes.[12] Firms located in the West had a significant advantage over firms located in the Midwest or outlying areas in two cases, while firms located in the South had a significant advantage over firms in the Midwest and outlying groups in one case. As discussed below, being in the wholesale industry was found to have both a positive and a negative effect (relative to being in the manufacturing industry) depending on which program and which outcome was examined.

For the 7(a) program, for both percent change in sales and percent change in employment, younger firms experienced greater growth than older firms; and, firms in the mining industry experienced greater growth than those in the manufacturing industry. Pre-loan sales growth, minority ownership, being in the wholesale industry, and region of the country were also significant for 7(a) firms, although not for both sales and employment growth. For firms in the 504 program, younger firms demonstrated more growth than older firms for both percent change in sales and percent change in employment. Additionally, being located in the West (relative to the Midwest or outlying areas), being in the "other services"[13] industry (relative to manufacturing), and loan amount were found to be significant, although not for both percent change in sales and employment. For the SBIC program, younger firms demonstrated greater growth than older firms for both sales and employment outcomes; firms in the wholesale industry demonstrated greater growth (relative to those in the manufacturing industry). Credit score had a significant, but very small effect on percent change in sales.

Female ownership, veteran ownership, credit score (with the exception of the small influence on SBIC investment recipients), interest rate, and regional unemployment rate were not significantly related to percent change in sales or employment.

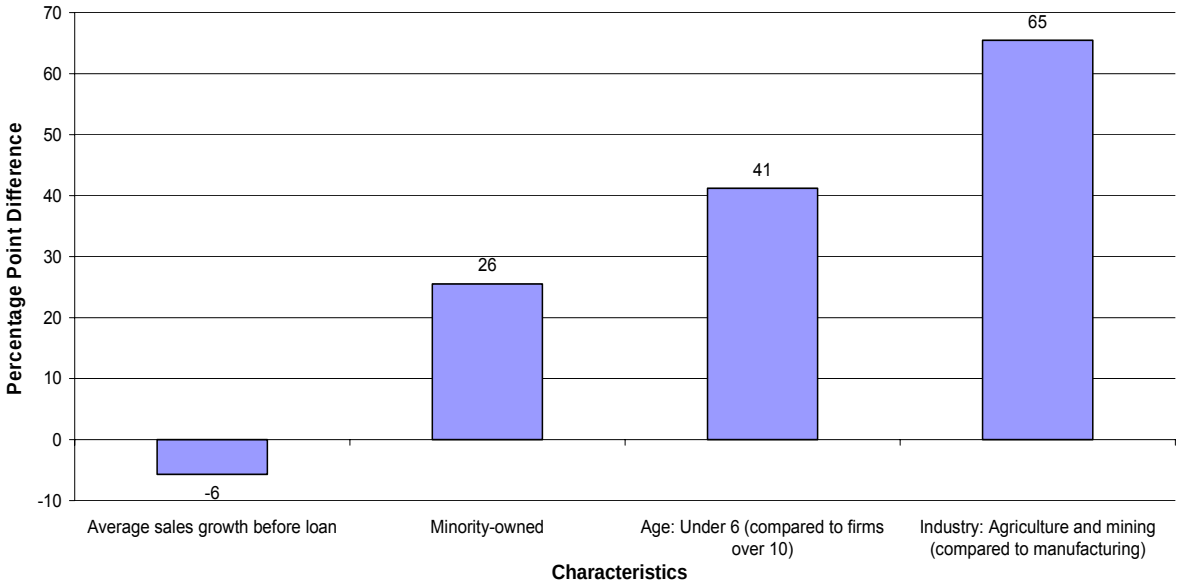
As shown in Figure 9, four characteristics significantly were associated with sales outcomes for 7(a) firms: pre-loan sales growth, minority ownership, firm age, and industry. Firms with higher sales growth during the year before the loan have lower sales growth in the three years after the loan than firms with lower sales growth during the year before the loan. Minority-owned firms demonstrated sales growth that was 26 percentage points greater than non-minority-owned

[12] As mentioned in the Methodology section, categorical measures were used in analyzing firm age, region and industry. This approach requires the exclusion of one or more of the categories so that it can be used a reference for the other categories. The reference age group was firms older than 10 years, the reference region was the Midwest and outlying areas, and the reference industry was manufacturing. The reference categories were excluded not because they represent the 'best' or 'worst,' but because they comprise a large enough portion of all firms to compare with firms in the remaining categories.

[13] For example, firms engaged in equipment and machinery repair, promoting or administering religious activities, grant-making, advocacy, dry cleaning and laundry services, personal care services, death care services, pet care services, photo-finishing services, temporary parking services, and dating services (Census Bureau, 2007).

firms. Firms that were less than six years old (but not considered to be start-ups by the SBA) demonstrated sales growth that was 41 percentage points greater than firms that had been in business for more than ten years. Finally, firms in the agricultural and mining industries had sales growth rates that were 65 percentage points higher than firms in the manufacturing industry.

Figure 9: Difference in Sales Growth for 7(a) Firms Associated with Certain Characteristics, Controlling for Other Factors



Source: The Urban Institute. Based on ordinary least squares (OLS) regression with percentage change in sales from year of loan to three years after the loan as the dependent variable. Explanatory variables include: Average sales growth in year before loan; Minority ownership; Female ownership; Veteran ownership; Start-up status; Age of firm; Credit score; Industry; Region; Loan amount, interest rate, and maturity term; and Regional unemployment rate.

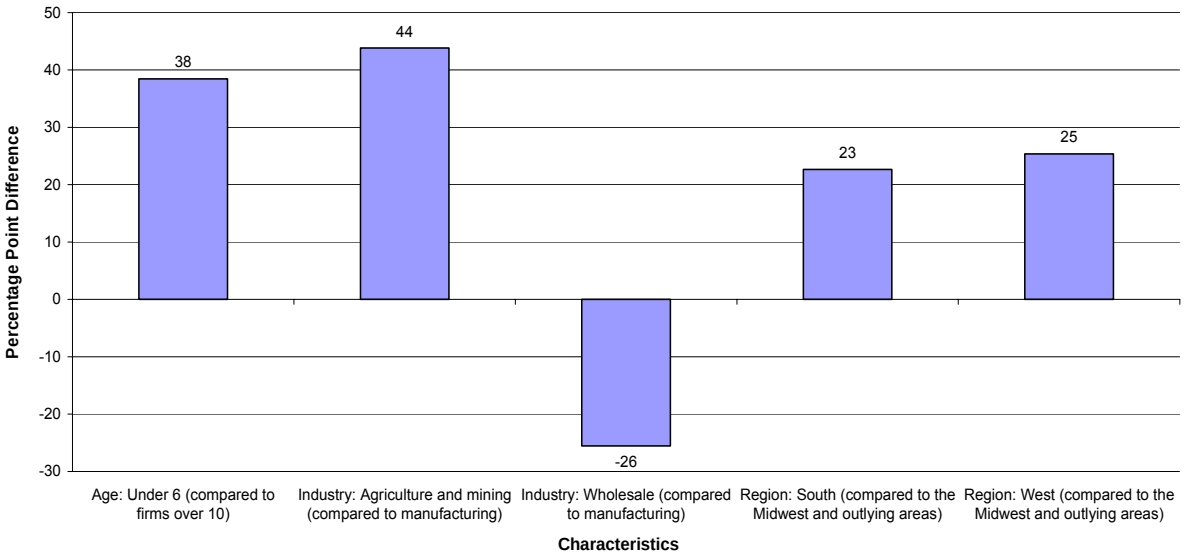
Factors not associated with sales growth for 7(a) firms include: female ownership, veteran ownership, start-up status, credit score, region, local unemployment rate, loan amount, interest rate, and maturity term.

As shown in Figure 10, five characteristics were significantly related to percent change in employment for firms receiving 7(a) loans. Firms that were less than six years old (but not considered to be start-ups by the SBA) demonstrated employment growth that was 38 percentage points greater than firms that had been in business for more than ten years. Firms in the agricultural and mining industries had employment growth rates that were 44 percentage points higher than firms in the manufacturing industry. Firms in the wholesale industry had employment growth rates that were 26 percentage points lower than firms in the manufacturing

industry. Compared to firms located in the Midwest and outlying areas, employment growth rates for firms in the West were 25 percentage points higher, and firms in the South were 23 percentage points higher.

Factors not associated with employment growth for 7(a) firms include: employment growth in the year before the loan, minority ownership, female ownership, veteran ownership, start-up status, credit score, local unemployment rate, loan amount, interest rate, and maturity term.

Figure 10: Difference in Employment Growth for 7(a) Firms Associated with Certain Characteristics, Controlling for Other Factors

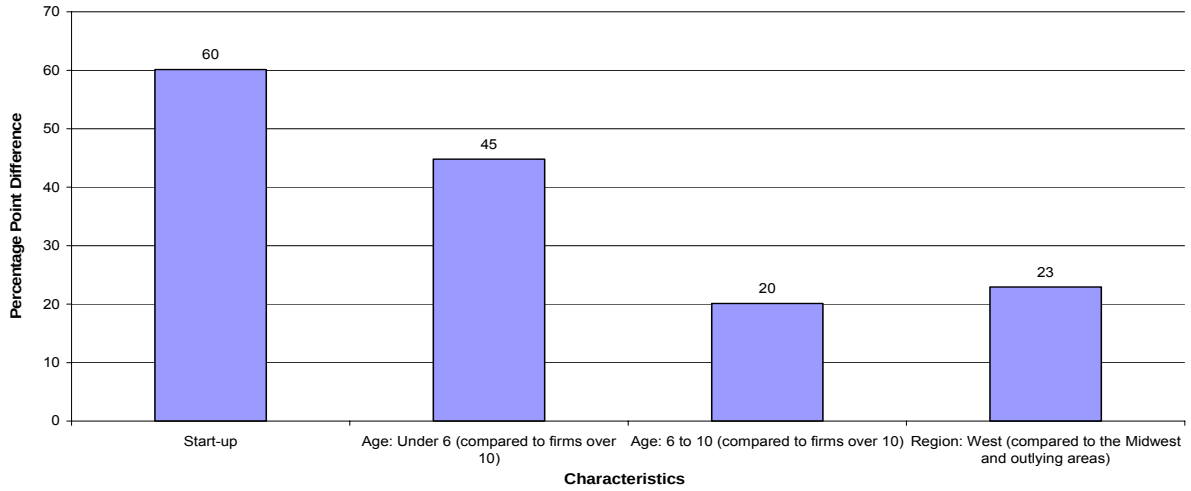


Source: The Urban Institute. Based on ordinary least squares (OLS) regression with percentage change in employment from year of loan to three years after the loan as the dependent variable. Explanatory variables include: Average employment growth in year before loan; Minority ownership; Female ownership; Veteran ownership; Start-up status; Age of firm; Credit score; Industry; Region; Loan amount, interest rate, and maturity term; and Regional unemployment rate.

As shown in Figure 11, four factors were significantly related to percent change in sales for 504 firms. Firms considered start-ups by the SBA demonstrated sales growth that was 60 percentage points greater than firms that had been in business for more than ten years. Firms that were less than six years old (but not considered to be start-ups by the SBA) demonstrated sales growth that was 45 percentage points higher than firms that had been in business for more than ten years. Firms that were six to ten years old showed sales growth that was 20 percentage points greater than firms older than ten years. As for region, sales growth rates for firms in the West were 23 percentage points higher than firms located in the Midwest and outlying areas.

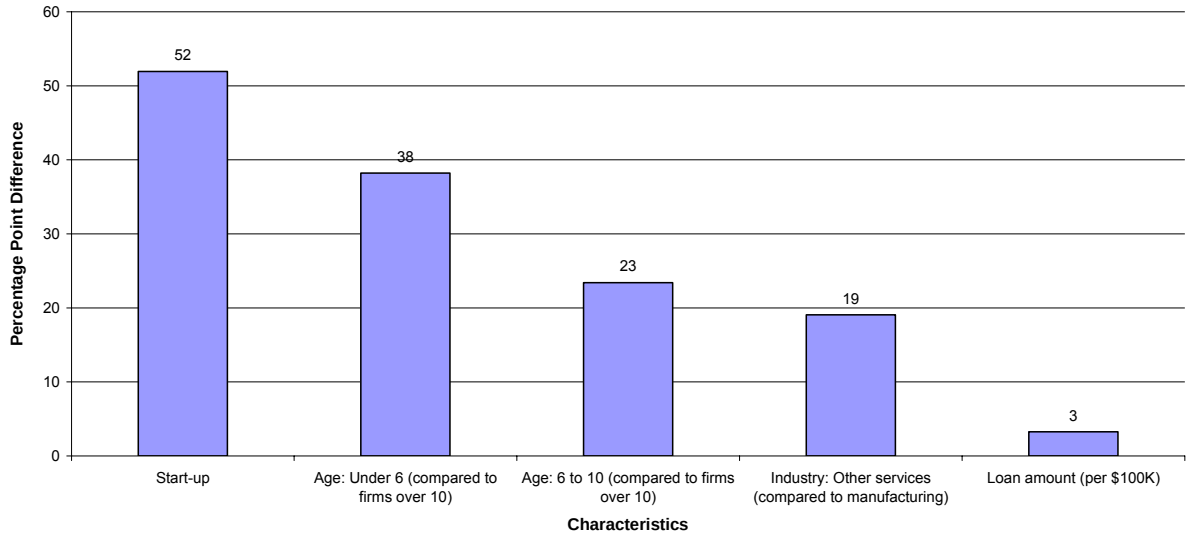
Factors not associated with sales growth for 504 firms include: sales growth in the year before the loan, minority ownership, female ownership, veteran ownership, industry, local unemployment rate, loan amount, and interest rate.

Figure 11: Difference in Sales Growth for 504 Firms Associated with Certain Characteristics, Controlling for Other Factors



Source: The Urban Institute. Based on ordinary least squares (OLS) regression with percentage change in sales from year of loan to three years after the loan as the dependent variable. Explanatory variables include: Average sales growth in year before loan; Minority ownership; Female ownership; Veteran ownership; Start-up status; Age of firm; Credit score; Industry; Region; Loan amount and interest rate; and Regional unemployment rate.

Figure 12: Difference in Employment Growth for 504 Firms Associated with Certain Characteristics, Controlling for Other Factors



Source: The Urban Institute. Based on ordinary least squares (OLS) regression with percentage change in employment from year of loan to three years after the loan as the dependent variable. Explanatory variables include: Average employment growth in year before loan; Minority ownership; Female ownership; Veteran ownership; Start-up status; Age of firm; Credit score; Industry; Region; Loan amount and interest rate; and Regional unemployment rate.

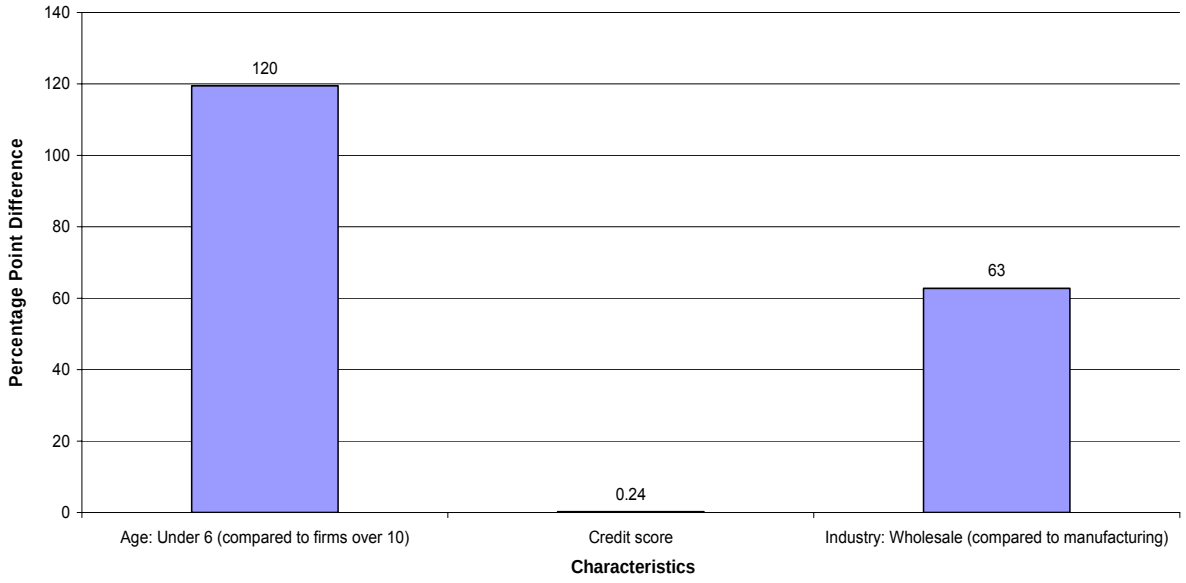
Five factors were associated with percent change in employment for 504 firms (see Figure 12). Firms considered start-ups by the SBA demonstrated employment growth that was 52 percentage points higher than firms that had been in business for more than ten years. Firms that were less than six years old (but not considered start-ups by the SBA) demonstrated employment growth that was 38 percentage points greater than firms that had been in business for more than ten years. Firms that were six to ten years old (and not considered to be start-ups by the SBA) demonstrated employment growth that was 23 percentage points greater than firms that had been in business for more than ten years.[14] As for industry, compared with firms in the manufacturing industry, employment growth for firms in the other services and public administration industries is 19 percentage points higher. Lastly, larger SBA loan amounts are associated with greater employment growth; an additional $100,000 is associated with a small (3 percentage point), but significant increase in employees.

[14] Additionally, the age category for firms missing information on the age of the firm was found to be statistically significant. Because no generalizations could be drawn about these firms, this factor was not included in Figure 12.

Factors not associated with employment growth for 504 firms include: employment growth in the year before the loan, minority ownership, female ownership, veteran ownership, credit score, region, local unemployment rate, and interest rate.

For the SBIC program (see Figure 13), three characteristics were significantly associated with percent increases in sales: firm age, credit score, and industry. Firms that were less than six years old (but not considered to be start-ups by SBA) demonstrated employment growth that was 120 percentage points greater than firms that had been in business for more than ten years.[15] Firms with higher credit scores had higher employment growth than firms with lower credit scores: A 10-point increase in the commercial credit score was associated with very small (0.24 percentage point) increase in employment. Firms in the wholesale industry had employment growth rates that were 63 percentage points higher than firms in the manufacturing industry.

Figure 13: Difference in Sales Growth for SBIC Firms Associated with Certain Characteristics, Controlling for Other Factors



Source: The Urban Institute. Based on ordinary least squares (OLS) regression with percentage change in sales from year of loan to three years after the loan as the dependent variable. Explanatory variables include: Average sales growth in year before loan; Minority ownership; Female ownership; Veteran ownership; Start-up status; Age of firm; Credit score; Industry; Region; Loan amount; and Regional unemployment rate.

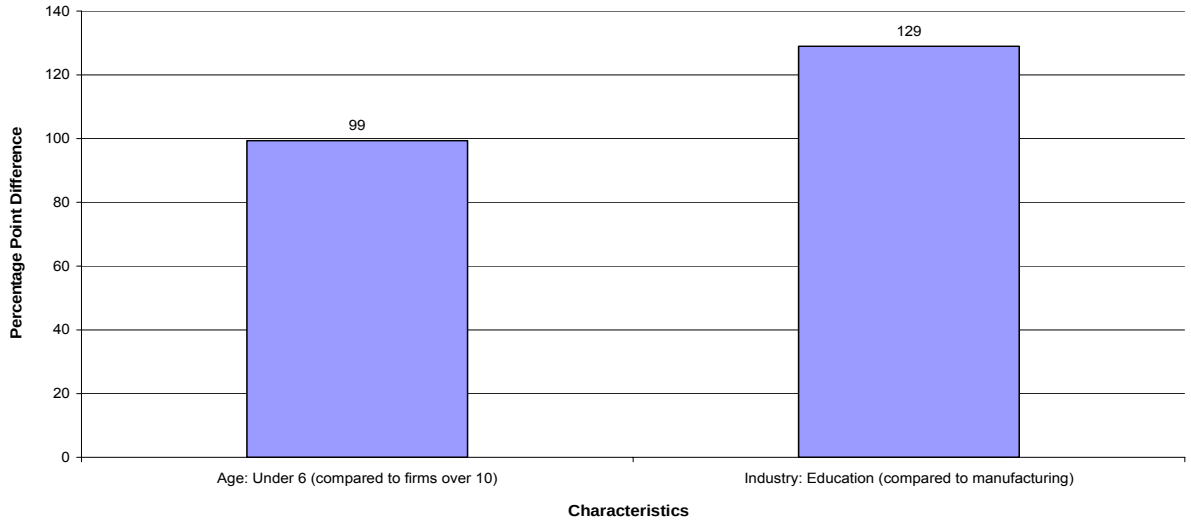
[15] Additionally, the age category for firms missing information on the age of the firm was found to be statistically significant. Because no generalizations could be drawn about these firms, this factor was not included in Figure 13.

Factors not associated with sales growth for SBIC firms include: sales growth in the year before financing, minority ownership, female ownership, veteran ownership, start-up status, region, local unemployment rate, and financing amount.

Two factors were significantly related to percent change in employment for firms receiving SBIC investment: firm age and industry (see Figure 14). Firms that were less than six years old (but not considered to be start-ups by SBA) demonstrated employment growth that was 99 percentage points greater than firms that had been in business for more than ten years. Firms in the education industry demonstrated employment growth that was 129 percentage points higher than firms in the manufacturing industry.

Factors not associated with employment growth for SBIC firms include: employment growth in the year before financing, minority ownership, female ownership, veteran ownership, start-up status, credit score, region, local unemployment rate, and financing amount.

Figure 14: Difference in Employment Growth for SBIC Firms Associated with Certain Characteristics, Controlling for Other Factors



Source: The Urban Institute. Based on ordinary least squares (OLS) regression with percentage change in employment from year of loan to three years after the loan as the dependent variable. Explanatory variables include: Average employment growth in year before loan; Minority ownership; Female ownership; Veteran ownership; Start-up status; Age of firm; Credit score; Industry; Region; Loan amount; and Regional unemployment rate.

Survey of Assisted Businesses

Most respondents were aware of the connection between their loan and the SBA (although there is undoubtedly some selection bias, since business owners unaware of the connection

might have been less likely to complete the survey). For both 7(a) and 504 recipients, more than 90 percent indicated that they were aware of the SBA guaranty (91percent and 97 percent, respectively). For MicroLoan, 73 percent were aware. SBIC recipients were least likely to know of the connection (61 percent), probably due to the complex nature of the program.

Most recipients in the 7(a), 504, and MicroLoan programs rated the loan and loan terms overall as "Excellent" or "Good" (see Table 4). MicroLoan recipients were the most satisfied (81 percent). SBIC recipients were dramatically less likely to select one of the top two ratings (28 percent); 50 percent rated the loan and loan terms as "Fair." It should be noted that most SBIC recipients did not receive the type of assistance for which this question was meaningful, so the number of respondents in the SBIC program is particularly low. Those that did respond received investments that included debt, preferred stock, or debt-like instruments with a specified interest rate and term.

Table 4: Overall Satisfaction with the Loan and Loan Terms

	N	Excellent	Good	Fair	Poor	Don't Know
Section 7(a)	179	18%	50%	20%	6%	7%
504	195	21%	45%	23%	8%	4%
SBIC	32	6%	22%	50%	9%	13%
MicroLoan	111	41%	41%	11%	5%	3%

Source: Hayes, 2008: 5

Respondents in all four programs were divided on the impact of the SBA assistance (see Table 5). Solid majorities agreed that the loan/investment was "somewhat important" or "very important", ranging from 73 percent of respondents in the SBIC program to 91 percent of respondents in the 7(a) program. However, 40 percent of respondents in 7(a) also thought that they could have obtained acceptable financing elsewhere, with comparable percentages for respondents in the 504 program (48 percent), and somewhat lower percentages for SBIC (35 percent) and MicroLoan (32 percent) respondents—although SBIC respondents were very likely to either respond "don't know" or give no response at all (36 percent).

SBIC, 7(a), and 504 respondents tended to believe that without the SBA-guaranteed loan/investment, they would not have had to change plans for the business, although few in any program felt that they could have found financing on the same terms. Fewer in the MicroLoan program felt that they had financing options, on either the same terms or different terms (32 percent).

Table 5: Importance of SBA Assistance (percent)

		7(a)	504	SBIC	MicroLoan
How important was the loan to business success?					
	Very important	62%	53%	47%	73%
	Somewhat important	28%	34%	27%	19%
	Somewhat unimportan	2%	4%	6%	3%
	Very unimportant	3%	4%	4%	0%
	DK/NR	4%	6%	16%	4%
Do you agree that you would have been able to find acceptable financing elsewhere?					
	Strongly agree	3%	10%	5%	5%
	Agree	37%	38%	30%	26%
	Disagree	32%	31%	21%	36%
	Strongly disagree	14%	11%	9%	22%
	DK/NR	14%	10%	36%	11%
What do you think would have happened if your business had not received the SBA-backed assistance?					
	Financing with same terms	16%	8%	13%	8%
	Financing with diff. ter	38%	52%	37%	24%
	Changed plans for bus	28%	26%	20%	37%
	DK/NR	18%	15%	30%	31%

Source: Hayes, 2008: 5

Most respondents in the 7(a), 504, and SBIC programs were using some other source of financing at the time of the loan in addition to the SBA-guaranteed assistance (see Table 6). Respondents in the 504 and SBIC programs were most likely to receive that funding at least in part from a bank loan (75 percent and 49 percent, respectively), while a quarter of the respondents in the 7(a) program reported using a bank loan, and a quarter used personal borrowing. Less than half of MicroLoan recipients reported other financing sources; personal borrowing was the most common source (23 percent). SBIC recipients were most apt to cite owner equity investment (38 percent). Most SBIC recipients who specified "other" financing received reported equity investment (5 respondents) or private investors or venture capital (4). The majority of "other" responses for the other programs were personal savings or credit cards.

Table 6: Other Sources of Financing Used at the Time of Receiving Loan/Investment Funding (percent)

	7(a)	504	SBIC	MicroLoan
Federal loan	3%	1%	1%	1%
State/local govt loan	3%	2%	3%	2%
Bank loan	25%	75%	49%	13%
Equity investment by owner	16%	22%	38%	10%
Personal borrowing	24%	18%	11%	23%
Other	7%	2%	13%	12%
Any of above	57%	83%	10%	48%
No other source	36%	11%	69%	43%

Source: Hayes, 2008: 6

Most respondents in any program did not report participating in other SBA loan programs. MicroLoan had the highest percentage, at 23 percent, 7(a) and 504 had fewer (18 percent and 16 percent, respectively), and SBIC had the least (7 percent). The other loan for MicroLoan recipients was apt to be another MicroLoan (6 percent), Score (5 percent), Small Business Development Center (6 percent), or some other unspecified program (6 percent). Other loans for 504 recipients were apt to be in the 504 program (7 percent) or the 7(a) program (4 percent). Other programs 7(a) recipients were most likely to have participated in were the Small Business Development Center (5 percent) or Score (4 percent).

Results for the satisfaction questions for the 7(a) and 504 programs were compared to previous surveys conducted in 1997 by Warden Associates, Inc. and Price Waterhouse, LLP (Table 7), which targeted businesses receiving loans in 1990. For most categories, the results are similar, although the percentage responding "Excellent" or "Good" is uniformly lower in the current surveys. The greatest difference is in satisfaction with the interest rate received, in both programs, for which satisfaction is considerably lower.

Table 7: Loan Satisfaction vs. Previous Surveys: Percent Rating Service Excellent or Good (percent)

	504		7(a)	
	1990 Loans	2000-2001 Loans	1990 Loans	2000-2001 Loans
Overall Satisfaction	74%	66%	75%	68%
Speed of Processing	63%	63%	64%	62%
Interest Rates	69%	59%	71%	51%
Collateral Requirements	62%	58%	57%	45%
Pay back period	80%	80%	80%	76%
Loan Administration	76%	76%	81%	67%

Source: 1990 data from "Evaluation of the SBA Loan Programs", Warden Associates, Inc. and Price Waterhouse, LLP, February 1998. 2000-2001 data from the Urban Institute survey of SBA assisted businesses, 2006-2007.

Source: Hayes, 2008: 10

III. TO WHAT EXTENT DOES THE SBA SERVE ITS MARKET?

One of the SBA's strategic goals is to "increase small business success by bridging competitive opportunity gaps facing entrepreneurs" (SBA, 2004). "Competitive opportunity gaps exist when market or other conditions prevent small businesses from taking advantage of private financing or from competing for work contracts" (SBA, 2004). Some of these businesses are owned by "groups that own and control little productive capital because they have limited opportunities for small business ownership" (SBA, 2004). These groups consist of minorities, women, and veterans, or those who conduct business in rural or distressed urban areas (SBA, 2004). Businesses whose owners belong to these special categories are deemed to face special competitive opportunity gaps (SCOGs).

The SBA Office of Capital Access helps bridge COGs by encouraging lending to small businesses that otherwise would not qualify for financing that is not guaranteed, obtain equity, or take advantage of procurement opportunities. Three UI research reports examined the extent to which SBA is providing financing for these groups, as well as the extent to which those firms receiving loans under an SBA program could have received financing from conventional sources:

- The first report, *An Analysis of the Factors That Lenders Use To Ensure Their SBA Borrowers Meet the Credit Elsewhere Requirement* (Temkin and Theodos, 2008a), analyzed the extent to which lenders comply with the credit elsewhere requirement.

- Next, the report, *Competitive and Special Competitive Opportunity Gap Analysis of the 7(A) and 504 Programs* (Temkin and Theodos, 2008b), estimated the size of the market of firms facing so-called "competitive opportunity gaps" and "special competitive opportunity gaps" under the 7(a) and 504 programs, as well as the extent to which SBA is meeting this market.

- The third report addressing this research question, *The Debenture Small Business Investment Company Program: A Comparative Analysis of Investment Patterns With Private Venture Capital Equity* (Temkin and Theodos, 2008c), compared firms that can acquire venture financing through traditional means with those receiving SBA debenture SBIC investments.

In *An Analysis of the Factors That Lenders Use To Ensure Their SBA Borrowers Meet the Credit Elsewhere Requirement*, Temkin and Theodos (2008a) focused on two selected Office of Capital Access lending programs—the 7(a) Loan Guaranty and the CDC 504 Loans—created to ameliorate "imperfections in the Nation's capital markets [that] result in allocating to the small business sector of the economy less capital than would be allocated by a properly functioning financial system operating solely on the potential profitability of its use" (Garvin, 1971). An early (1958) Federal Reserve report to the House and Senate Banking and Currency and Small Business Committees referenced background studies showing that "there is an unfilled margin, perhaps a rather thin one, between the volume of funds available to small concerns in general, and to new firms in particular, and the volume that could be put to use without prohibitive risk" (Garvin, 1971).

SBA loan programs are required by law to serve only borrowers who otherwise would not be able to secure loans from another source: 15 U.S.C. §636(a) states, "No financial assistance shall be extended pursuant to this subsection if the applicant can obtain credit elsewhere. No immediate participation may be purchased unless it is shown that a deferred participation is not available; and no direct financing may be made unless it is shown that a participation is not available." A lender may substantiate that a borrower meets the credit elsewhere requirement if that borrower could not receive a loan without the guaranty with reasonable terms. In general, loans are defined as having reasonable terms if they are originated with a loan amount,

amortization period, and interest rate that are within the repayment ability of the borrower (SBA, 2000:12-2).

Although central to SBA's mission that lenders serve borrowers who are not able to receive loans, there has been relatively little analysis of the extent to which lenders actually comply with the credit elsewhere requirement. Temkin and Theodos (2008a) present such information collected through interviews with representatives of 23 commercial bank lenders (the sample lenders) that originate both SBA and conventional small business loans. Based on the results of these interviews, the first report documents the types of factors that the sample lenders use to recommend a loan with an SBA guaranty (SBA loans) and how these factors are consistent with the requirement that SBA loan recipients could not obtain credit elsewhere.

Competitive and Special Competitive Opportunity Gap Analysis of the 7(A) and 504 Programs (Temkin and Theodos, 2008b) investigated the extent to which the 7(a) and 504 SBA programs facilitate capital availability for firms that otherwise would not be served by alternative capital providers. To that end, we constructed a two-tiered analysis. [16] The comparative analysis highlights differences and similarities between SBA- and non-SBA-assisted firms, while the market penetration analysis documents the share of the market of small business interested in, and eligible for, debt financing that is reached by the 7(a) and 504 programs.

The Debenture Small Business Investment Company Program: A Comparative Analysis of Investment Patterns With Private Venture Capital Equity (Temkin and Theodos, 2008c) analyzed the investments made by debenture SBICs between 1997 and 2005,[17] and compared these investments—with regard to their size, the location of assisted firms, and the types of industries in which assisted firms operate—to investments provided by private venture capital funds. The SBIC program makes capital available to small business investment companies that are privately-owned, for-profit companies licensed by the SBA to provide venture capital and mezzanine finance to start-up and expanding small businesses. Rather than provide assistance directly to small businesses, under the SBIC program, the SBA allows privately-operated venture capital funds to leverage their capital through SBA-guaranteed debentures or participating securities. The debenture SBIC program has specified job creation goals for companies aided by investments of capital for start-up or expansion. Provision of capital for start-up and early stage concerns is intended to fill the gap in smaller debt and equity

[16] For the purposes of this report, "competitive opportunity gaps" were defined to mean the same as "capital gaps," which have received extensive treatment in the literature.

[17] 1997 is the first year for which we had complete debenture SBIC data. Note that all years are calendar years, not fiscal years. We used calendar years since Thomson Financial data are only available for calendar years.

financings, and to expand the reach of venture capital into underserved urban and rural markets.

As of 2005, the SBIC program had committed capital totaling $20 billion, with $5.7 billion mobilized with SBA leverage since FY 1994, and some $800 million in FY 2002 alone in over 4,000 financings (OMB, 2005). Debenture and participating securities SBICs combined provide more than 62 percent of all venture financings, although reflecting the small size of SBIC investments relative to the industry, only 8 percent of total dollars invested (OMB, 2005).

Unlike other SBA programs, firms assisted by debenture SBICs are not required to meet a credit elsewhere test, under which a lender that originates a loan with a SBA guaranty must substantiate that the assisted company would not have received the loan without the guaranty. Nonetheless, to be consistent with SBA's Strategic Goal #2 (i.e., to increase small business success by bridging competitive opportunity gaps facing entrepreneurs), debenture SBICs should make investments in companies that may not be able to secure financing from private venture capital sources.

The methods and findings from these three reports are presented below.

Methodology

Factors Used to Ensure Borrowers Meets Credit Elsewhere Requirement

All of the sample lenders used for these analyses were selected from a frame based on information provided in call reports, and so are depository institutions.[18] From the population of 7,678 commercial banks, we selected a sample of 73 institutions. In order to ensure response from the largest small business lenders, the ten largest small business lenders, as measured by small business lending dollar volume, were included in our sample. These ten lenders, not surprisingly, are among the largest US commercial banks, each with over $50 billion in total assets.

However, community lenders account for 44 percent of the total dollar volume of small business lending in the United States. The remaining sample, 63 firms, was drawn from banks with assets below $1 billion. In proportion to their share of small business lending, 18 banks with assets greater than $500 million and less than $1 billion, and 45 banks with assets greater than

[18] As a result, the sample lenders do not include any non-depository lenders or small business lending companies (SBLCs), which hold approximately 20 percent of all outstanding SBA loans (SBA, 2005).

$100 million and less than $500 million were selected. As the lending environment may vary depending on local economic conditions, we selected these 63 community banks across the nine Census divisions, seven from each division.

To ensure that regional lenders contacted for discussions originated SBA loans, prior to the sampling, we used SBA administrative data to determine the SBA guaranty portion of the bank's overall small business lending volume. Only those lenders that originated at least three SBA-assisted loans for the targeted programs in the past year were included. This process ensured that key informants were knowledgeable about SBA lending and reporting requirements.

Twenty-three banks responded and agreed to be interviewed. Interviews were completed with lenders following an U.S. Office of Management and Budget-approved discussion guide. Guided discussions were typically conducted with the person primarily responsible for managing small business lending and lasted approximately 30 minutes.

Of the 23 completed discussions, 7 respondents were large national lenders and 16 were community banks. Regional lender respondents were distributed across seven of the nine Census divisions.

7(a) and 504 Gap Analysis

The comparative and market penetration analyses relied on data gathered from the 2003 Survey of Small Business Finances (SSBF) collected by the Federal Reserve, SBA administrative data for the 7(a) and 504 loan guaranty programs, and D & B matched data on SBA-assisted firms. SBA collects relevant firm, owner, and loan characteristics at the time of application. Data were analyzed for the years 2001 to 2004, as this is the period during which the 2003 SSBF was collected.

The SSBF provided the comparison data source. A stratified random sample drawn from more than 10 million D&B small business records, it records the responses of 4,240 small businesses. The SSBF includes data on firms' financial information (balance sheet information, creditworthiness, number of employees, and firm ownership), debt and equity information (whether a firm applied for and received a loan in the past three years, loan type, terms, and amount, whether a firm failed to apply fearing denial, and whether the firm received venture capital or other forms of equity investments), as well as information on the firms' business sector, ownership demographics, and other variables.

The comparative analysis is a "book-to-book" comparison of firms receiving loans conventionally and through the 7(a) and 504 SBA loan guaranty programs. We restricted this analysis to loans with a term greater than 12 months, since such loans are very short-term sources of capital. [19] Using the SBA administrative, D & B, and SSBF information, we compared firms in two groups: (1) those that received loans under the 7(a) and 504 programs and (2) those that received conventional small business loans. For each group, we calculated the share of loans for different geographic types (e.g., rural versus urban) and different regions of the country, owner demographic, industry sector, and other sub-groups. We compared these distributions—by number and lending volume—to firms identified in the SSBF that received a loan within the targeted three years (2001 to 2004). The comparative analysis was used to determine if firms that faced capital opportunity gaps (women-, minority-owned, and start-up firms) accounted for a larger share of 7(a) and 504 loans as compared to conventional small business loans. To the extent that such borrowers comprised a larger share of 7(a) and 504 loans, it suggests that the SBA programs are meeting capital opportunity gaps.

In other studies of SBA's market penetration, analysts have compared SBA's lending volume to overall small business lending or to the number of small businesses in the country. These approaches are flawed. SBA programs, by definition are only supposed to be originated to firms that could not get credit elsewhere. SBA's share of overall small business lending is based on factors beyond its control: the underwriting standards used by conventional lenders to qualify small businesses for a loan and the creditworthiness of small businesses applying for small business loans. As a result, is it is not appropriate to measure SBA's market penetration by comparing the volume of loans with an SBA guaranty to overall small business lending. Moreover, not every small business wants or needs a loan; many small businesses raise capital through equity investments. It, therefore, is incorrect to measure SBA's market penetration by comparing the number of small businesses receiving SBA loans to the total number of small businesses.

In light of these flaws, the market penetration analysis defined SBA's target market as follows: firms that (1) had a demand for a loan, (2) met the credit elsewhere requirement (and so could not qualify for a conventional small business loans), and (3) were as creditworthy as other firms that received small business loans. Such firms constitute SBA's total potential market, since they exclude firms that did not want a loan, could get a conventional loan, or were insufficiently creditworthy to qualify for a loan even with an SBA guaranty. We identified such firms with data

[19] Firms that received a loan with a term of 12 months or less were excluded from both the SSBF and SBA databases in order to construct comparable samples. Forty-three percent of firms in the SSBF who received financing did so with a term of 12 months or less, while under 1 percent of firms receiving a SBA guaranteed loan had a loan with a term of 12 months or less.

from the 2003 SSBF and used this information to compare SBA's market penetration of particular market sectors, defined by region, industry, and type of owner.

We calculated the ratio of firms receiving a loan with a 7(a) or 504 guaranty between 2001 and 2004, by region, industry, and borrower type, to firms identified in the SSBF as having a demand for a loan and meeting the credit elsewhere requirement. These ratios provide SBA with information about the extent to which it is meeting the demand for loans among firms that would like a loan, but do not qualify for conventional small business loans.

Debenture SBIC Comparative Analysis

Debenture SBICs are different from other venture capital providers, since they must pay investors according to a payment schedule, similar to traditional debt financing. In fact, between 1997 and 2005, about two-thirds of the debenture SBIC investments consisted of debt financing or debt financing with near-equity features. This means that most of the SBIC debenture investments during this period were not pure equity. This is not the case with most private venture capital funds. Therefore, it was not appropriate to compare debenture SBIC investment patterns to all private venture capital funds. Rather, for the analyses presented in this report, we identified comparable private venture capital investments in data collected by Thomson Financial and reported in its VentureXpert data. These comparable investments meet the following criteria:

- The company receiving the investment is located in the United States.
- The private venture capital fund is an independent private partnership.
- The investment is for second stage, third stage, and bridge financing.

The criteria restrict the comparable private venture capital investments to stages in which assisted firms are likely to have sufficient cash flows to service debt. As a result, these firms are more similar to companies assisted by debenture SBICs, since such firms also must have positive cash flows for debt service.

The data collected by the Thomson Financial vendors do not have all of the owner-level information that would allow for a comparison of the types of owners assisted through private equity transactions and those assisted by debenture SBICs. Specifically, there are *no* measures for the owner's demographic traits that are important for special competitive opportunity gaps: gender, race, and veteran status. Further, there are no measures in the Thomson Financial VentureXpert data indicating disadvantaged metropolitan or rural regions.

Findings

Factors Used to Ensure Borrowers Meets Credit Elsewhere Requirement

The sample lenders interviewed for this study are aware of the credit elsewhere requirement and say that they only use SBA programs for borrowers who cannot meet their conventional small business loan underwriting standards. Most commonly, the businesses that receive SBA loans do not have sufficient net operating income (NOI) to meet the required debt service coverage requirement (DSCR) for a loan with the maximum conventional loan term. SBA loans are offered with longer terms than conventional loans allowing borrowers to meet DSCR requirements, as presented in Table 8.

Table 8: Analysis of Loan Term on Required Net Operating Income

	Conventional A	Conventional B	SBA (7a)
Loan Amount	$250,000	$250,000	$250,000
Interest Rate	7.5%	7.5%	7.5%
Term (in years)	3	5	7
Annual Fully Amortizing Payment	$93,319	$60,114	$46,015
Annual NOI required w/ DSCR 1.25x	$116,648	$75,142	$57,519

Source: Temkin and Theodos, 2008a: 10

Sample lenders' small business loan production processes are largely dependent on sales staff or branch-based bankers who discuss loan products with potential small business loan applicants. These staff members are familiar with the Lender's general underwriting standards, and so can determine, early in the process, whether a prospective applicant is best suited for either a conventional or SBA loan product.

According to Lender representatives, most SBA applicants are referred to the program for one of three reasons: (1) businesses do not show sufficient NOI to meet the bank's required debt service coverage ratio requirement, given the maximum available loan term; (2) the collateral offered to secure the loan is likely to either depreciate quickly or have a low resale value because it is specialized equipment; and for real estate-related loans, (3) the borrower does not have sufficient equity for the required downpayment.

To the extent that sample lenders are aware of the credit elsewhere requirement, and comply by substantiating that SBA borrowers would not have received a loan at reasonable rates and terms without the guaranty, there is likely to be relatively little overlap between borrowers who

receive SBA versus conventional loans. Sample lenders said that SBA borrowers frequently are (1) unable to meet DSCR standards without longer loan terms, which are not available without a SBA guaranty of (2) using loan proceeds to purchase equipment that is likely to provide relatively little proceeds if liquidated. Borrowers who receive loans under the 504 program typically do not have sufficient equity to meet sample lenders' requirement of between 20 and 25 percent equity for a commercial real estate loan.

Sample lenders in nearly every case were aware that borrowers who receive loans with an SBA guaranty cannot be eligible for conventional loans with reasonable rates and terms. Many Lender representatives, when asked to define the term credit elsewhere were able to offer a working definition, but a select few were unfamiliar with the term "credit elsewhere", though not necessarily the requirement. As an example, a representative of a large national lender said that the credit elsewhere requirement means "…a borrower would not be able to secure financing…If [an] applicant can get credit elsewhere [the borrower] should not use [SBA] funds…" Another Lender's representative, consistent with many other Lender representatives, said that the credit elsewhere requirement is met in cases when an applicant would not be approved for a conventional loan.

Underwriters, for most sample lenders, are responsible for selecting a reason that substantiates that a borrower meets SBA's credit elsewhere requirement. Lender representatives said that the inability of borrower to meet the bank's DSCR requirement for a conventional loan term is often the reason used to substantiate that the borrower meets the credit elsewhere requirement. Other reasons include a lack of operating history or insufficient collateral.

It is interesting to note that sample lenders said that a borrower's credit history was not a determinant for recommending an SBA loan to a prospective applicant. In fact, most sample lenders said that the credit scores for SBA borrowers are similar to conventional borrowers. The higher risks associated with SBA loans, then, are not the result of lending to borrowers with problematic credit histories; they result from lending to borrowers who do not have the same level of equity of conventional borrowers or who are in business areas that reflect more potential risk.

Lender representatives are aware the SBA program should not be used to serve customers who can qualify for conventional loans. Many sample lender representatives said that, the credit elsewhere requirement notwithstanding, market pressures discourage them from offering SBA loans to customers who can qualify for conventional loans. The reason is that SBA loans typically are originated with higher fees. Consequently, sample lenders who offer SBA products

to borrowers who can receive a conventional loan from another bank are likely to lose that customer's business, which is obviously not in the Lender's financial interest.

Sample lenders said that the SBA programs allow them to serve borrowers who would otherwise not be able to qualify for loans. For most of these banks, the SBA program accounted for a small share of their overall small business lending volume: between 3 and 10 percent. This is consistent with Rugy's finding that SBA loans account for a small share of the overall small business lending market (Rugy, 2006). But, while a small share of overall lending, Lender representatives said that SBA loans can account for a larger share of lending to particular market niches, such as start-up companies and businesses within certain industry groups. For such companies, the SBA program is a critical source of liquidity that would likely not be otherwise available.

Underwriters typically evaluate small business loan applications without the use of an automated system, and are responsible for substantiating that an SBA borrower meets the credit elsewhere requirement. Overall, sample lenders said that that the SBA programs allow them to serve borrowers who do not meet their standard conventional underwriting guidelines, and there is little overlap between SBA and conventional lending.

7(a) and 504 Gap Analysis

This component analyzed the extent to which the SBA's 7(a) and 504 programs serve borrowers who face capital opportunity gaps. Two analytic approaches were used: (1) a comparative analysis that highlights differences and similarities between SBA- and non-SBA-assisted firms, and (2) a market penetration analysis that documents the share of the small business market interested in, and eligible for, debt financing that is reached by the 7(a) and 504 programs.

The comparative analysis showed that women- and minority-owned firms (which historically faced a capital opportunity gap) accounted for a higher share of the loans made under the 7(a) and 504 programs between 2001 and 2004 as compared to such firms' share of conventional small business loans during the same time period (see Table 9). The analysis also showed that, consistent with the SBA's mission of serving firms that cannot get credit elsewhere, start-up firms accounted for a larger share of lending volume under the 7(a) and 504 programs than conventional small business lending. In addition to serving a higher share of start-ups, loans made under the 7(a) and 504 programs went to firms that, on average, had lower sales volume and fewer employees than firms that received conventional small business loans, as shown in Table 10.

Table 9: Comparison of Characteristics of Firms that Received 7(a) and 504 SBA Loans and Conventional Small Business Loans Made Between 2001 and 2004

	Number of Loans		Dollar Volume	
	Percentage of 7(a) and 504 SBA Loan Recipients	Percentage of Conventional Small Business Loan Recipients	Percentage of 7(a) and 504 SBA Loan Recipients	Percentage of Conventional Small Business Loan Recipients
Minority-Owned Businesses (>50%)	27.0	9.9	28.5	5.5
Women-Owned Businesses (>50%)	21.3	16.0	16.2	4.4
Start-up Businesses	24.4	12.2	22.7	6.1

Sources: Temkin and Theodos, 2008b: 13, using SBA administrative data for SBA loans, 2003 SSBF for conventional small business loans.

Table 10: Comparison of Characteristics of Firms that Received 7(a) and 504 SBA Loans to Firms that Received Conventional Small Business Loans Made Between 2001 and 2004

	7(a) and 504 SBA Loans*	Conventional Small Business Loans
Median Annual Sales	$1,429	$335,000
Mean Annual Sales	$403,748	$1,721,862
Median Number of Employees	4.0	5.0
Mean Number of Employees	9.0	13.0

Sources: Temkin and Theodos, 2008b: 15, using SBA administrative data for SBA loans, 2003 SSBF for conventional small business loans.

* Start-up firms with no annual sales are excluded from this table.

Despite higher risks associated with firms that received loans under the 7(a) and 504 programs between 2001 and 2004, firms received variable rate loans under the 7(a) program for amounts that, on average, were almost identical in size to conventional variable rate loans received by small businesses, as shown in Table 11. While SBA loan recipients paid higher interest rates than conventional small businesses for their variable rate loans, their loans had, on average, longer terms, and so payments were amortized over longer periods.

Table 11: Comparison of Loan Characteristics for Firms that Received a 7(a) or 504 SBA Loans to Conventional Small Business Loans Made Between 2001 and 2004

	Fixed Interest Rate Loans		Variable Interest Rate Loans	
Loan Characteristic	7(a) and 504 SBA Loans	Conventional Small Business Loans	7(a) and 504 SBA Loans	Conventional Small Business Loans
Median Loan Term	120	60	84	60
Median Loan Amount	$163,000	$34,000	$99,000	$100,000
Median Interest Rate	6.07	6.50	7.18	5.25

Sources: Temkin and Theodos, 2008b: 15, using SBA administrative data for SBA loans, 2003 SSBF for conventional small business loans.

These differences suggest that SBA's 7(a) and 504 programs served borrowers who face capital opportunity gaps. Women- and minority-owned firms, as well as start-up firms (all of which face capital opportunity gaps) accounted for a larger share of loans made under the two programs than these firms' share of conventional small business loans. Moreover, firms that received 7(a) and 504 program loans, on average, had lower sales volume and fewer employees (and so were more risky) than firms that received conventional small business loans.

The two programs are not limited to any one region of the country: there were no sizeable differences in the location (measured by a firm's Census division, or whether it was in an urban versus rural location) of firms that received 7(a) or 504 loans compared to firms that received conventional small business loans.

Consistent with the comparative analysis results, the market share analysis suggests that the 7(a) and 504 programs serve firms that face capital opportunity gaps (see Table 12). Overall, the 7(a) and 504 program loans have a greater penetration within markets that consist of creditworthy women-, minority-owned firms, and start-up firms that do not meet standard small business lending underwriting standards as compared to other types of markets (see Table 13).

Table 12: Comparison of Firms that Received a 7(a) or 504 SBA Loan to All Firms that Received a Small Business Loan and Firms that Faced a Capital Opportunity Gap between 2001 and 2004

	7(a) and 504 SBA Loan Recipients	Small Businesses that Faced a Capital Opportunity Gap	Small Businesses that Received Conventional Loans[20]
Total Number of Firms	229,148	362,008	987,335
Median Annual Sales	$1,429	$178,000	$335,000
Mean Annual Sales	$403,748	$574,663	$1,721,862
Median Number of Employees	4.0	3.0	5.0
Mean Number of Employees	9.0	7.0	13.0
Percentage of Minority-Owned Businesses	27.0	23.7	9.9
Percentage of Women-Owned Businesses	21.3	24.7	16.0
Percentage of Start-up Firms	24.4	10.3	12.2

Sources: Temkin and Theodos, 2008b: 17, using SBA administrative data for SBA loans, 2003 SSBF for small businesses facing a capital opportunity gap and receiving conventional small business loans.

Table 13: Ratio of Number of Firms, by Borrower Type that Received a 7(a) or 504 SBA Loan to Firms that Faced a Capital Opportunity Gap between 2001 and 2004

Borrower Type	Firms that Received 7(a) and 504 SBA Loans between 2001 and 2004	Number of Firms that Faced a Capital Opportunity Gap between 2001 and 2004	Ratio
Minority-Owned Business	57,769	85,636	1 : 1.5
Non Minority-Owned Businesses	156,049	276,372	1 : 1.8
Women-Owned Business	49,912	89,532	1 : 1.8
Non Women-Owned Businesses	184,163	272,476	1 : 1.5
Start-up Business	52,550	37,401	1 : 0.7
Existing Businesses	162,452	324,601	1 : 2.0
Total	229,148	362,008	1 : 1.6

Sources: Temkin and Theodos, 2008b: 20, using SBA administrative data for SBA loans, 2003 SSBF for small businesses facing a capital opportunity gap and receiving conventional small business loans.

Note: Total loan recipients and ratio values are calculated for all SBA and conventional loan recipients, not the sum of responses to this question, due to missing information for some observations.

[20] Firms receiving loans with a term of 12 months or less were excluded from both the SSBF and SBA data.

Debenture SBIC Comparative Analysis

In order to be consistent with the SBA's goal of providing capital to entrepreneurs that face competitive opportunity gaps, debenture SBICs' investment patterns should be different than those of comparable private venture capital funds. Comparative analyses were performed between assisted firms and those that received comparable private venture capital investments along three key attributes:

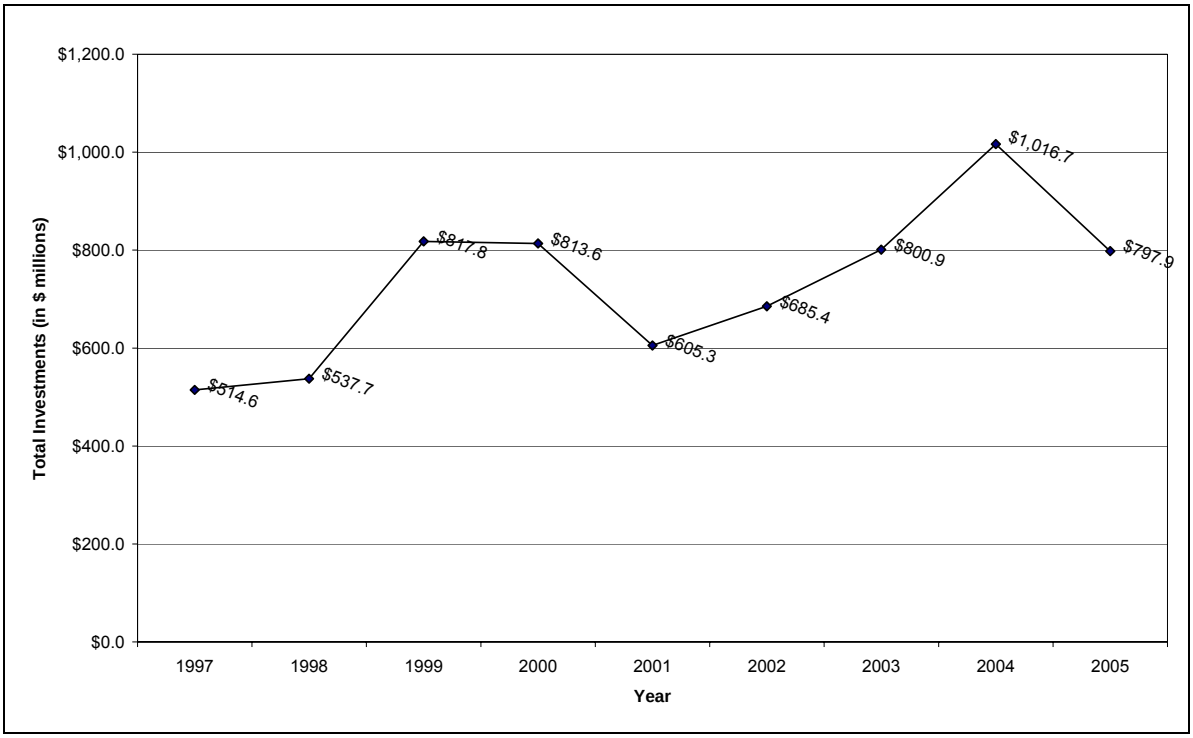
- Investment size.
- Type of industry.
- Location of investment.

We began with an analysis of the overall volume of investments made by debenture SBICs between 1997 and 2005, which set the stage for the remaining analyses that compared debenture SBIC investments, measured by their size, the industries in which assisted firms are categorized, and the location of assisted firms to companies that received comparable investments from private venture capital sources. We did not compare the debenture SBIC investments to all private venture capital investments; rather, we made comparisons to second stage, third stage, and bridge loans because these investments are likely to be of the same character (debt with equity features) as those made by debenture SBICs.

Our findings indicate that debenture SBICs investments are very different from those made by comparable private venture capital funds. Overall, debenture SBIC investments are (1) much smaller than private investments; (2) not as heavily concentrated in companies within the technology sector, and are in different types of industries; and (3) less geographically concentrated than comparable private venture capital investments. All of these findings are consistent with the debenture SBIC program supporting a key SBA goal by providing capital to entrepreneurs who are underserved by the private venture capital industry.

Debenture SBICs between 1997 and 2005 made investments that totaled $6.5 billion. As shown in Figure 15, the annual dollar investments during that period ranged from a low of $506 million in 1997 to a high of $1.0 billion in 2004, with a mean annual investment of $723 million between 1997 and 2005. The debenture SBIC investment volume increased from about $506 million in 1997 to roughly $800 million in 1999 and 2000; this volume dropped in the following year to $604 million. Comparable private venture capital investments surpassed debenture SBIC investment volume by 11 times, with a total of 77.2 billion invested from 1997 to 2005, with a mean of $8.4 billion during the nine years. Comparable private venture capital exhibited a much greater increase in annual investment amount, rising from $3.4 billion in 1997

Figure 15: Total Dollar Volume of Debenture SBIC Investments: 1997-2005 (in $ millions)



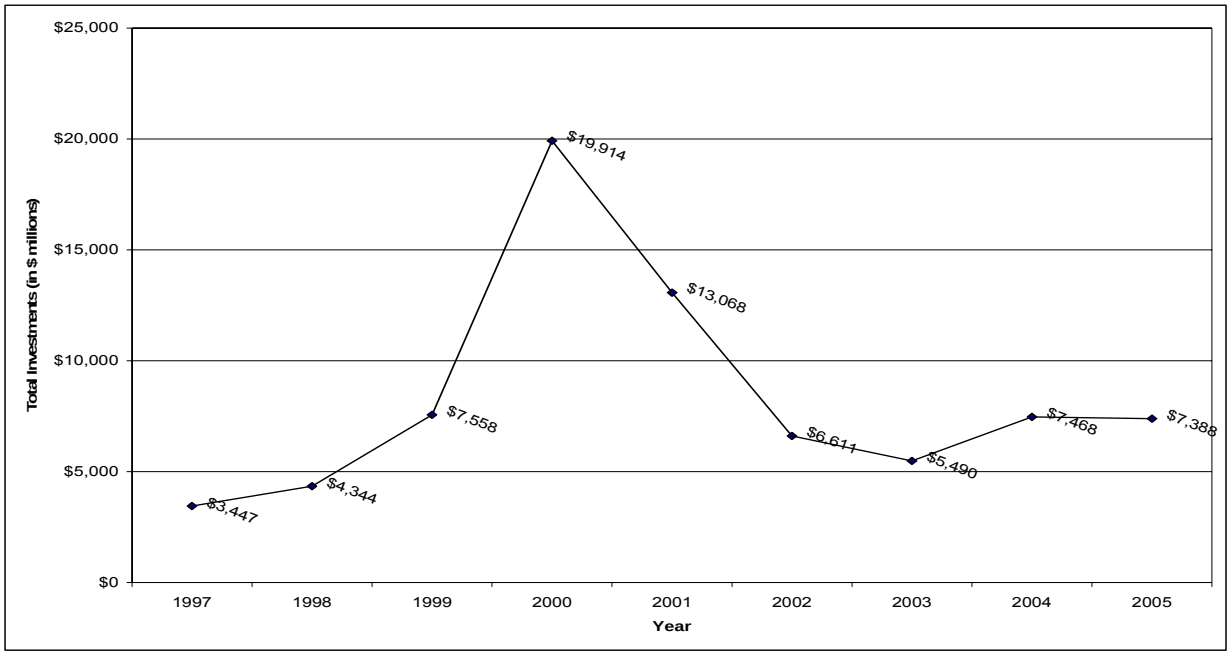
Source: Temkin and Theodos, 2008c: 6, using SBA Debenture SBIC Program Data

to $7.6 billion by 1999, before ballooning to $19.9 billion in 2000 (see Figure 16). Comparable private investments fell for the next three years, decreasing to $5.5 billion in 2003, before leveling off around $7.4 billion in 2004 and 2005.

Private venture capital funds' investments are generally much larger than those made by debenture SBICs, as shown in Table 14. Between 1997 and 2005 the median investment per year by private venture capital funds ranged from a low of $3.6 million in 1997 to just over $10.0 million in 2000. Perhaps as a result of the dot-com crash, the median size of investments made by private venture capital funds dropped by nearly 50 percent from this 2000 high to $5.3 million in 2003. The median investment subsequently increased to $6.2 million in 2005.

As with investment sizes, the investment patterns of debenture SBICs and private venture capital funds differed significantly in the period from 1997 to 2005 (see Table 15). As measured by dollar volume, debenture SBIC financing is less concentrated by industry than financing from

Figure 16: Total Dollar Volume of Comparable Private Venture Capital Investments: 1997-2005 (in $ millions)



Source: Temkin and Theodos, 2008c: 6, using Thomson Financial

private venture capital firms. Debenture SBICs distribute 86 percent of all financing across three sectors: 29.8 percent in manufacturing, 29.7 percent in wholesale trade and transportation, and 26.3 percent in information and finance. The value of investments by private venture capital firms is predominately directed towards information and finance, with 77.4 percent of the total dollar value of investments going to firms in these sectors. Computer and internet-related firms, alone, received 51.9 percent of all investments, as measured by dollar volume.

We also determined the extent to which the location of firms assisted by debenture SBICs is different from those that receive investments from private venture capital firms, as presented in Table 16. The dollar volume of investments from private venture capital funds between 1997 and 2005 is much more concentrated than for debenture SBICs. Firms located in New York received 18.6 percent of all debenture SBIC investments between 1997 and 2005, while California, with 11.1 percent, received the next largest share of investments. The remaining states in the top ten received no more than 10 percent of all monies invested by debenture SBICs in the nine-year period between 1997 and 2005.

Table 14: Comparative Analysis of Median Investments between Debenture SBICs and Comparable Private Venture Capital Investments: 1997-2005

	SBIC Debenture Investments*	Comparable Private Venture Capital Investments **
Total Dollar Volume of Investments: 1997-2005 (in $000s)	$6,505,371	$75,288,390
Total Number of Investments 1997-2005	9,598	7,775
Median Investment by Year (in $000s)		
1997	$155	$3,585
1998	$180	$4,710
1999	$175	$6,400
2000	$241	$10,060
2001	$263	$7,755
2002	$204	$5,780
2003	$210	$5,250
2004	$260	$6,090
2005	$281	$6,230

* Source: SBA Debenture SBIC Program Data

** Source: Thomson Financial

Source: Temkin and Theodos, 2008c: 7

Private venture capital investments in firms located in California account for nearly 46 percent of the total; Massachusetts, with slightly less than 13 percent of private venture capital investments, is second to California. The remaining states in the top ten each do not have more than six percent of the total volume. Because of the high concentration of private investments in California and Massachusetts, the top ten states in terms of their share of the total dollar volume invested account for close to 84 percent of the total, compared with only 64 percent for debenture SBIC investments. This finding suggests that firms that receive SBICs investments are less geographically concentrated than those that receive investments from private venture capital firms.

Table 15: Comparison of Distribution of Investments between Debenture SBICs and Comparable Private Venture Capital Investments by Industry: 1997-2005 (in percent)

Share of Dollar Volume		
Industry	**Debenture SBIC***	**Comparable Private Venture Capital Investments ****
1. Agriculture, Forestry, Fishing	0.13	0.04
2. Mining, Utilities, and Construction	2.45	0.16
3. Manufacturing	29.82	10.26
4. Wholesale Trade, Retail Trade, Transportation and Warehousing	29.73	1.82
5. Information, Finance, Real Estate, Professional, Scientific, Management, Administrative	26.26	77.42
6. Educational, Health Care and Social Assistance	5.08	10.28
7. Arts, Entertainment, Recreation, Accommodation, Food Services	2.99	0.00
8. Other Services	1.75	0.03
9. Public Administration	1.79	0.00

Share of Number of Investments		
Industry	**Debenture SBIC***	**Comparable Private Venture Capital Investments ****
1. Agriculture, Forestry, Fishing	0.15	0.10
2. Mining, Utilities, and Construction	1.30	0.18
3. Manufacturing	14.87	10.41
4. Wholesale Trade, Retail Trade, Transportation and Warehousing	57.86	2.65
5. Information, Finance, Real Estate, Professional, Scientific, Management, Administrative	17.34	75.68
6. Educational, Health Care and Social Assistance	2.83	10.92
7. Arts, Entertainment, Recreation, Accommodation, Food Services	2.47	0.00
8. Other Services	2.28	0.06
9. Public Administration	0.91	0.00

* Source: SBA Debenture SBIC Program Data

** Source: Thomson Financial

Source: Temkin and Theodos, 2008c: 12

Table 16: Top Ten States Receiving Investments from Debenture SBICs and Comparable Private Venture Capital Investments: 1997-2005

Debenture SBIC*		Comparable Private Venture Capital Investments *	
State	**% Share of Total $ Volume**	**State**	**% Share of Total $ Volume**
New York	18.66	California	45.80
California	11.06	Massachusetts	12.91
Texas	8.81	Texas	5.91
Illinois	5.95	New York	4.01
Massachusetts	3.62	Washington	3.14
Georgia	3.60	New Jersey	2.96
New Jersey	3.37	Colorado	2.75
Florida	3.14	Virginia	2.22
Colorado	3.05	Florida	2.01
Pennsylvania	2.77	Georgia	2.01
Total	64.03		83.72
Debenture SBIC*		**Comparable Private Venture Capital Investments ****	
State	**% Share of Total Number of Investments**	**State**	**% Share of Total Number of Investments**
New York	30.70	California	41.57
Illinois	16.50	Massachusetts	12.82
California	8.77	Texas	5.53
Massachusetts	6.31	New York	4.45
New Jersey	5.45	Washington	3.55
Texas	4.21	New Jersey	2.68
Florida	3.07	Colorado	2.48
Georgia	1.71	Georgia	2.47
Pennsylvania	1.66	Virginia	2.46
Virginia	1.50	Pennsylvania	2.20
Total	83.72		80.21

* Source: SBA Debenture SBIC Program Data

** Source: Thomson Financial

Source: Temkin and Theodos, 2008c: 20

IV. DO SBA PROGRAMS DUPLICATE OR OVERLAP WITH OTHER PUBLIC SECTOR PROGRAMS?

In *Public Sector Duplication of Small Business Administration Loan and Investment Programs: An Analysis of Overlap Between Federal, State, and Local Programs Providing Assistance to Small Businesses* (Brash, 2008), the Urban Institute assessed (1) whether duplication of SBA's Section 7(a) Loan Guaranty, 504 Loan, MicroLoan, and Debenture SBIC Programs exists at federal, state, and local levels; 2) if duplication occurs between the agency's two largest programs—7(a) and 504 Loan; and, 3) the nature of such overlaps. For this report, programs were considered as duplicative if there is overlap in type of aid, eligible businesses, eligible uses, industry, geographic market, growth stage, loan or loan guaranty amount, or maturity term. In analyzing duplication between the SBA's 7(a) and 504 programs, we looked at whether funds from the 7(a) program, the general purpose loan program, were being used for real estate purposes. We also conducted an analysis of the business characteristics of firms receiving only 7(a) loans, those receiving only 504 loans, and those receiving both loan types. Even if the program proceeds were being used for the same purpose, the programs might not be duplicative if they were serving different types of businesses. Conversely, duplication might exist if the programs were serving similar populations and being used for the same purpose (i.e., fixed assets).

Methodology

The study was conducted using SBA administrative data, on-line research, and conversations with eight SBA district staff and ten Small Business Development Center officials, as detailed in Brash (2008: 8-12). Time and resources permitted a comprehensive review of most federal programs, including both those that target small businesses, and those that provide financial aid to a wider range of businesses, including small businesses.[21] However, the review of state and local programs was more constrained: we selected a sample of 12 states and 12 cities. At SBA's request, the state sample, shown in Table 17 with their 7(a) and 504 loan frequency, includes states with the ten highest SBA-lending activity, as well as two states (Maine and North Dakota) that were added to represent lending in rural contexts.

[21] To develop the inventory of federal financial assistance programs, all programs mentioned in the GAO study, *Multiple Federal Programs Fund Similar Economic Development Activities* (September 2000) were reviewed. The majority of the programs provided technical assistance to businesses and financial assistance to nonprofit or public bodies for the purpose of economic development not specifically related to business development. The programs that provide loans, loan guarantees, and grants to small businesses or to entities that re-lend to small businesses (i.e., programs providing assistance similar to the four SBA programs of interest) were included in this duplication study.

Table 17: Study States

	State	Loan Activity
1	California	33,297
2	Texas	16,357
3	New York	12,825
4	Florida	12,671
5	Pennsylvania	12,530
6	Massachusetts	7,822
7	Ohio	7,310
8	New Jersey	6,544
9	Illinois	6,229
10	Michigan	5,536
11	Maine	1,185
12	North Dakota	870

Note: Loan activity equals the number of firms receiving 7(a) and 504 loans in fiscal years 2003 to 2005.
Source: Brash, 2008: 9

The local sample includes ten cities with the highest frequency of 7(a) and 504 loans from calendar years 2003 to 2005 in each of the ten high-activity study states. Two study states, California and Texas, each had two cities with high frequency of loans relative to other cities nationally; for these states, both cities were included in the sample, as presented in Table 18.

Table 18: Study Cities

	City	Loan Activity
1	Los Angeles	3,821
2	Houston	2,489
3	New York City	2,363
4	Miami	1,976
5	Dallas	1,213
6	Chicago	1,183
7	Philadelphia	1,129
8	San Diego	1,116
9	Boston	548
10	Cleveland	431
11	Detroit	288
12	Jersey City	117

Note: Loan activity equals the number of 7(a) and 504 loans in fiscal years 2003 to 2005.
Source: Brash, 2008: 10

Analysis proceeded in the following sequence:

- An inventory of all federal, state, and local programs available to small businesses was assembled through internet searches and conversations with program officials in selected federal agencies, states, and localities, including regional and district SBA officials.

- A matrix of program policies and activities was constructed, to be filled in with information on target businesses, terms and conditions of assistance, types of assistance available, program resources, and other aspects of programs.

- Data analysis were completed, using SBA administrative data to compare the agency's 504 and 7(a) programs.

- Descriptive information on SBA programs, other federal programs, and state and local programs were obtained from government agency and nonprofit lender websites, and

augmented by discussions with SBA district staff and Small Business Development Center state directors.

In conducting our analysis of duplication between the SBA's 504 and 7(a) programs, we used administrative data collected by the SBA. We performed two types of analyses to measure possible duplication. First, we looked at whether 7(a) funds were being used for real estate purposes. The SBA does not systematically collect information on use of proceeds, but treats term length as a substitute measure for use. Loans with terms of less than 7 years are considered working capital, 7 to 15 years for heavy equipment, and more than 15 years for real estate. 7(a) loans with a term of more than 15 years are considered to be for real estate purposes, and therefore possibly duplicative of the 504 program. As part of the 504-7(a) comparison, we also conducted an analysis of the business characteristics of firms receiving only 7(a) loans, those receiving only 504 loans, and those receiving both loan types. Even if the program proceeds were being used for the same purpose, the programs might not be duplicative if they were serving different types of businesses. Conversely, duplication might exist if the programs serve similar populations and are used for the same purpose (i.e., fixed assets).

The program comparisons consider eight program characteristics: type of aid (e.g., does the program take the form of a loan, loan guaranty, micro-loan, grant, or other form of assistance), eligible businesses, eligible uses, industry sector, geographic market, growth state, amount, and term. Interest rates were not examined because they vary considerably within programs, and making generalizations about them proved difficult.

Findings

The research found that of the four SBA programs studied, the 7(a) program has the greatest amount of potential duplication at federal, state, and local levels. At all levels of government, there is less duplication of the SBIC program and even less of the MicroLoan and 504 programs, as shown in Table 19. Although several federal agencies have financial assistance programs for small businesses, the SBA is the most significant federal source of financing for small businesses not in rural areas. In rural areas, the U.S. Department of Agriculture is the primary provider of loans and loan guarantees for small businesses.

A greater amount of potential duplication exists at the state and, to a lesser extent, local levels (see Table 19). This duplication exists for the most part among federal, state, and local general-purpose loan and loan guaranty programs that resemble the SBA's 7(a) program. There are fewer state and local loan and loan guaranty programs that resemble the 504 program, which provides loans exclusively for fixed assets, typically to finance real estate purchases. Few states

or localities run micro-loan programs, though a handful of nonprofit microenterprise organizations receiving a majority of their funding from government sources (i.e., "public" nonprofits) have loan programs. It appears that many states rely on local and national "public" and private nonprofit organizations—in addition to the SBA—to provide businesses with small loans. All of the study states have state-run or state-funded venture capital programs, but these state programs focus much more heavily on technology, science, and healthcare than the debenture SBIC program does.

Table 19: Public Sector Financial Assistance Programs for Small Businesses

Source	General Purpose Loans/Loan Guarantees	Loans/Loan Guarantees for Fixed Assets Only	MicroLoans	Venture Capital	Total
Federal government	7	1	1	3	12
State government	27	4	1	30	62
Local government	12	2	3	0	17
Total	46	7	5	33	91

Note: These numbers include programs from all federal agencies (including the SBA), the 12 study states, and 12 study cities. The number for federal programs does not include 12 programs that provide grants to state or local governments or nonprofits that may use the funds to provide loans to small businesses. The micro-loan program count does not include 20 programs run by nonprofit organizations that can be considered "public," organizations with 50 percent or more of their total revenues from government grants or contracts, as reported on the most recent (2004 or 2005) 990 IRS form available on guidestar.org.
Source: Brash, 2008: 12

The extent of similarities among federal, state, and local loan and loan guaranty programs varies by state and program. In general, SBA programs have higher maximum loan and loan guaranty amounts and longer terms than state and local programs. Size standards are similar for SBA, state, and local programs, although a few study states and localities have size standards considerably smaller than SBA standards. Standards for industry sector, geographic market, and growth stage are similar for SBA programs and state and local programs. Whether a business chooses a state or local program instead of an SBA program—or whether a bank decides an applicant should apply for a particular program—may be influenced by factors such as credit history, differences in fees, interest rates, amount of paperwork required, job creation requirements, or prevailing wage standards.

The research also found that at the federal level some potential duplication exists between SBA's 504 and 7(a) programs. The 7(a) and 504 programs were established to serve similar

clientele (businesses unable to obtain financing on reasonable terms), but with different purposes: the 504 program is intended to provide long-term financing for fixed assets only, particularly real estate; while the 7(a) program is intended to be used for working capital and purposes other than real estate, although fixed assets are an eligible use of proceeds under the 7(a) program (see Table 20).

Table 20. Comparison of 7(a) and 504 Loan Program Attributes

	Standard 7(a) Loan	Standard 504 Loan
Geographic area	Nationwide	Certified Development Companies (CDCs) are SBA-regulated entities that process, close, and service 504 loans. Each CDC has a specific geographic area – the minimum area is the state in which the CDC is located. The program is available nationwide. CDCs may expand into contiguous states as a Multi-State Expansion (for the entire state) or as a Local Economic Area (LEA) expansion (limited to contiguous counties in the contiguous state).
Program description	Loan guaranty of private loan for working capital, heavy equipment, and fixed assets.	Long-term, fixed-asset financing. The typical 504 project includes a loan secured with a senior lien from a private-sector lender, covering up to 50 percent of the project cost; a loan secured with a junior lien from a CDC, covering 40 percent of the project cost (backed by a 100 percent SBA-guaranteed debenture); and a contribution of at least 10 percent equity from the small business.
Size Standard*	• Manufacturing - 500 employees • Wholesale trade – 100 employees • Agriculture - $750,000 in average annual receipts • Retail trade - $6.5M in average annual receipts • General & heavy construction (except dredging - $31M in average annual receipts • Dredging - $18.5M in average annual receipts • Special trade contractors - $13M in average annual receipts • Travel agencies - $3.5M in commissions & other income • Business & personal services - $6.5M in average annual receipts • Architectural, engineering, surveying & mapping services - $4.5M in average annual receipts • Dry cleaning & carpet cleaning services - 4.5M in average annual receipts	For-profit businesses that do not exceed $7M in tangible net worth and do not have an average net income over $2.5M for the past 2 years. May also use the 7(a) size standard as an alternative.

Percent of guaranty	85 percent for loans of $150,000 or less. 75 percent for loans of more than $150,000.	100 percent of CDC lien. Zero percent of private lender lien.
Statutes and regulations	Originally authorized by Section 7(a) of the Small Business Act, 15 U.S.C. Chapter 14A, Section 636(a). This section was repealed Aug. 13, 1981, and amended by Title XIX of Public Law 97-35.	Small Business Investment Act and 13 CFR, part 120 governs the program.
Target processing time	13 business days	6 days
Maximum loan amount	General rule is gross loan limited to $2.0 M per loan. SBA guaranty amount limited to $1.5 M to one borrower and its affiliates.	If job creation, maximum debenture is $1.5 M. If project meets a public policy goal, maximum debenture is $2.0 M. If project is for a small manufacturer, maximum debenture is $4.0M. Therefore, the maximum project size for small manufacturer is $10.0M (Borrower =$1.0M; Lender = $5.0M; & CDC = $4.0M).
Maturity	Depends on use of proceeds. Maximum 25 years reserved for fixed assets including real estate.	10 or 20 years. Depends on use of proceeds. Machinery and equipment is generally 10 years. Real estate is 20 years.
Interest rates	Prime plus 2.25 percent for maturities under 7 years. Prime plus 2.75 percent for maturities of 7 years or more. Rates can be higher by 2 percent for loans of $25,000 or less, and 1 percent for loans between $25,000 and $50,000.	The 504 debenture that funds the 504 loan is sold to the private sector as part of a pool. There are monthly sales. The debenture's interest rate is determined at the time of the sale and is fixed. The 504 loan's interest rate is the debenture rate plus monthly fees.
Collateral policy	Available collateral (liquidation value) up to loan amount.	Project assets.
Fees paid to SBA	Upfront fees (percentage of guaranteed, not gross, amount). For maturities of 12 months or less = 0.25 percent. For maturities over 12 months: gross loan $150,000 or less = 2 percent, gross loan $150,001 to $700,000 = 3 percent, over $700,000 = 3.5 percent. For guaranteed amounts over $1 M = 3.75 percent. Annual fee is 0.545 percent.	Upfront fees: First mortgage/third party lender pays 0.5 percent on first mortgage amount. Borrower pays 0.5 percent on 504 net debenture amount. Annual fees: CDC pays 0.125 percent of the principal amount and borrower pays 0.018 percent.
Prepayment penalty	If term of loan is for 15 years or more and loan is prepaid in first three.	For 20 year debentures: Declining amount over 10 years. 100 percent of the interest rate x the principal balance the first year down to 10 percent of the interest rate x the principal balance in the 10th year. For 10 year debentures: Declining amount over 5 years. 100 percent of the interest rate x the principal balance the first year down to 20 percent of the interest rate x the principal balance in the 5th year. This penalty is paid to the investor, not to SBA.

Source: Brash, 2008: 21-23 (Tables 7 and 8)
*SBA, 2006

As shown in Table 21, between 1997 and 2005, almost half of the loan volume to firms receiving only 7(a) loans went toward real estate, despite the fact that the 504 program provides loans exclusively for fixed assets, typically to finance real estate purchases.

Table 21. Use of Proceeds by Firms Receiving 7(a) Loans Only, 1997-2005

Use of Proceeds	N	Volume (in $)	Share of Investments (%)	Share of Volume (%)	Median Interest Rate	Median Maturity Term
Working Capital	119,060	12,757,641,561	29	15	8.88	48 mos.
Heavy Equipment	220,449	34,875,185,413	54	41	8.88	84 mos.
Real Estate	69,151	37,373,170,323	17	44	9	277 mos.

Source: Brash, 2008: 25, using SBA administrative data

Note: Median interest rates were computed using an average of the portion of the loans with variable and fixed interest rates. For working capital, the fixed rate was 9 percent and variable rate 8.75 percent; for heavy equipment, the fixed rate was 8.75 percent and variable rate 9 percent; and for real estate, both rates were 9 percent.

Our analysis of the types of firms receiving only 504 loans, only 7(a) loans, and both types of loans suggests that there are minor differences across these three categories. Of the 455,859 firms receiving $105 billion from 1997 to 2005 in 504 or 7(a) loans, 81 percent of the total loan volume went to firms receiving only 7(a) loans, 15 percent went to firms receiving only 504 loans, and 3 percent went to firms receiving both types of loans, as shown in Table 22. The median loan amount for 504-only firms was $330,000 compared to $100,000 for firms receiving only 7(a) loans and $293,000 for firms receiving both.

Table 22. Average Loan Amount for Firms Receiving 504 and/or 7(a) Loans, 1997-2005

Loan Type	N	Volume ($)	Share of Firms (%)	Share of Volume (%)	Median ($)
Both 504 & 7(a)	9,255	3,639,828,677	2	3	293,000
Only 7(a)	408,660	85,005,997,297	90	81	100,000
Only 504	37,944	16,105,972,000	8	15	330,000
Total	455,859	104,751,797,974	100	100	N/A

Source: Brash, 2008: 25, using SBA administrative data

As shown in Table 23, 7(a)-only firms paid higher interest rates than 504-only firms and had shorter terms than 504-only firms. The median interest rate for 504-only firms was 5.95; for 7(a) only firms, the median rate for the fixed-rate portion of the loan was 8.75 percent and for the variable-rate portion was 9 percent. Firms receiving only 504 loans had considerably longer terms for their loans, with a median of 240 months. This compares to 92 months for the fixed-rate portion and 118 months for the variable-rate portion of loans that went to 7(a)-only firms.

Table 23. Average Maturity Term (in months) and Interest Rate, 1997-2005

Term/Rate	Loan Type								
	Both 504 and 7(a)			Only 7(a)			Only 504		
	N	Mean	Median	N	Mean	Median	N	Mean	Median
Term, Fixed Rate Portion	5,498	219	240	52,180	92	84	37,944	236	240
Term, Variable Rate Portion	5,085	115	84	360,591	118	84	N/A	N/A	N/A
Interest Rate, Fixed Portion	5,498	5.06	5.11	52,180	8.49	8.75	37,944	5.87	5.95
Interest Rate, Variable Portion	5,085	8.45	8.75	360,591	8.77	9	N/A	N/A	N/A

Source: Brash, 2008: 26, using SBA administrative data

An analysis of the business characteristics indicates that there are minor differences among the firms that received only 7(a) loan guarantees, those that received only 504 loans, and those that received both. As shown in Table 24, 7(a)-only firms were slightly more likely to be start-ups than 504-only firms, tended to be smaller than 504-only firms, and were more likely to be minority- or female-owned than 504-only firms. Among 7(a)-only firms, 29 percent were start-ups, compared to 18 percent for 504-only firms and 21 percent for firms receiving both loan types. Among 7(a)-only firms, 93 percent had fewer than 25 employees, compared to 74 percent of 504-only firms and of firms receiving both types of loans. As for minority ownership, 27 percent of firms receiving only 7(a) loans were at least 50 percent minority-owned, compared to 19 percent of 504-only firms, and 22 percent of firms receiving both loan types. Among 7(a)-only firms, 36 percent of firms were at least 50 percent female-owned, compared to 31 percent of 504-only firms and 33 percent of firms receiving both loan types. Eleven percent of 7(a)-only firms were owned by veterans, compared to 8 percent for 504-only firms, and 10 percent for firms receiving both types of loans.

The three types of firms showed even smaller differences across industry categories. Geographic differences among the firms receiving only 7(a) or 504 loans or both were also small.

Table 24. Comparison of Ownership and Firm Characteristics for Recipients of 7(a) and/or 504 Loans, 1997-2005

	Firms Receiving Both 504 and 7a Loans				Firms Receiving Only 7a Loan Guarantees				Firms Receiving Only 504 Loans			
Ownership and Firm Characteristics	**N**	**Volume ($)**	**Share of Firms (%)**	**Share of Volume (%)**	**N**	**Volume ($)**	**Share of Firms (%)**	**Share of Volume (%)**	**N**	**Volume ($)**	**Share of Firms (%)**	**Share of Volume (%)**
Female Ownership												
Less than 50% female-owned	6,214	2,505,087,579	67	69	261,035	57,174,273,940	64	67	26,352	11,631,112,000	69	72
At least 50% female-owned	3,041	1,134,741,098	33	31	147,625	27,831,723,357	36	33	11,592	4,474,860,000	31	28
Minority Ownership		33,704,195										
Less than 50% minority-owned	7,106	2,657,045,421	77	73	296,020	59,904,932,048	72	70	30,625	12,437,498,000	81	77
At least 50% minority-owned	2,067	949,079,061	22	26	109,504	24,610,565,442	27	29	7,114	3,568,635,000	19	22
Veteran Ownership												
Not veteran-Owned	8,365	3,305,916,330	90	91	364,545	75,553,318,849	89	89	34,953	14,844,742,000	92	92
Veteran-owned	886	333,343,347	10	9	44,107	9,451,055,448	11	11	2,991	1,261,230,000	8	8
Firm Tenure												
Existing business	7,332	2,882,872,196	79	79	290,269	63,560,477,165	71	75	31,112	12,963,283,000	82	80
Start-up	1,923	756,956,481	21	21	117,962	21,303,198,964	29	25	6,683	3,075,293,000	18	19
Firm Size												
Fewer than 25 employees	6,886	2,403,865,087	74	66	26,331	12,225,413,812	93	83	27,921	10,074,202,000	74	63
25 to 75 Employees	2,048	1,039,377,587	22	29	3,826	2,308,144,126	6	14	8,143	4,775,524,000	21	30
More than 75 employees	321	196,586,003	3	5	429	142,321,168	1	3	1,880	1,256,246,000	5	8

Source: Brash, 2008: 28, using SBA administrative data

IV. CONCLUSIONS AND POLICY IMPLICATIONS

Our descriptive analyses of SBA-assisted firms' performance found that beginning before financing was received and continuing each year after financing, average sales increased over time for firms in 7(a), 504, and SBIC programs, as did average employment (Brash and Gallagher, 2008). The average sales and employment numbers suggest that financing did not give a big boost to firms in terms of level of sales or employment; in most cases, a greater increase was found in the pre-financing years than in the post-financing years. Increases in performance in the pre-financing years may be due in part to the firms' preparations for the financing application or anticipation of impending financing, or pre-financing success may have motivated the firms' interest in seeking financing to leverage and expand the gains that had already been realized. Increases observed in the post-financing years may or may not be associated with financing received; multivariate analyses were used to identify the independent influence of firm, market, and financing characteristics.

The multivariate analyses further suggest that differences in the term, interest rate, and amount of SBA financing are not significantly associated with increasing sales or employment among firms receiving SBA financing. Instead, the analyses found that firm age, industry, and region of the country were significantly related to percent change in sales and employment for all three programs. When setting performance standards, SBA may want to take into account the advantages (or disadvantages) these characteristics confer on businesses.

Age of firm, industry, and region were responsible for explaining 2 to 10 percent of the variation in firm performance. Unmeasured characteristics must be responsible for much of the remaining variation. For example, local economic conditions that were not captured in the data available—local zoning regulations, local tax rates, or local and state business assistance programs—may influence the success or failure of an SBA-assisted firm. Other business characteristics that are difficult to quantify, such as a business owner's charisma or business acumen, also may play a role in how well a business performs after receipt of SBA financing.

Analyses of the Survey of Assisted Businesses (Hayes, 2008) found only minor differences between 504, 7(a), and MicroLoan recipients in overall satisfaction indicators, and (not surprisingly) more substantial differences in uses of loan proceeds and other sources of financing. Overall satisfaction was apparently lower in the SBIC program, but the small sample size and difficulty surveying that cohort reduces our confidence in those results.

For both the performance analyses using administrative records and D&B data, and those dependent on the survey of assisted businesses, the quality of the data was an impediment. If SBA is interested in conducting similar research in the future, the agency may want to consider:

- Augmenting its administrative data with data from sources other than, or in addition to, D&B. Even when a D&B match was found for an SBA-assisted firm, data were often available for a limited number of years, and data were often missing from important fields. Other sources of data on private firms, such as large private banks that participate in SBA programs, might be able to provide more complete data.

- Updating its own records to capture more recent contact information for assisted businesses. The sample for the Survey of Assisted Businesses was drawn six to seven years after loans were made. Currently, SBA generally does not update its administrative records to reflect changes in contact information after the loan is made; therefore, the contact information was outdated and efforts to match business names against more recent business directories (e.g., using AccuData's service) had very limited success. Since the lending intermediary presumably keeps track of the loan recipient during loan repayment, SBA can ask for better, regular updates from the lender, with a greater emphasis on high-quality contact information. This would improve contact information during the repayment period, but after that point contact information quality could be expected to continue degrading as normal. To track recipients after loans have been paid off, SBA could attempt to maintain current information for a subset of the recipients, through requesting voluntary updates or periodic mailings to confirm contact information, supplemented by use of an address-matching service. It should be noted that loan recipients were often quite cooperative, when the surveying firm had accurate information from which to work.

The analysis of lenders' compliance with SBA's credit elsewhere requirement (Temkin and Theodos, 2008a) concluded that (1) lenders regard the agency's programs as serving borrowers who do not meet the lenders' standard conventional underwriting guidelines and (2) there is little overlap between SBA and conventional lending. The study also found that the lenders interviewed were aware of the credit elsewhere requirement and reported that SBA programs were only being used for borrowers who could not meet conventional small business loan underwriting standards. Most commonly, the businesses that receive SBA loans lack sufficient NOI to meet the required DSCR for a loan with the maximum conventional loan term. SBA loans, which are offered for longer terms than conventional loans, enable borrowers to meet DSCR requirements.

Since SBA loan programs are intended to permit private lenders to make loans to creditworthy businesses that are otherwise unable to qualify for loans, differences should exist between SBA-guaranteed and conventional business loans with respect to the types of borrowers and loan terms. Overall, consistent with SBA's objective of making credit available to COGs and SCOGs, loans under the 7(a) and 504 programs were more likely to be minority-owned, women-owned, and start-up businesses (firms that have historically encountered capital gaps), as compared to conventional small business loans (Temkin and Theodos, 2008b). Further, our

market penetration analysis showed that both the 7(a) and 504 programs are meeting demand among creditworthy start-up and minority-owned firms that meet credit elsewhere requirements. While women-owned businesses are also served by these two programs, a disproportionately large number of these firms still are not served by the agency. This suggests that SBA might encourage lenders to augment marketing and other efforts that would generate increased lending to women-owned firms.

Temkin and Theodos (2008c) examined the extent to which debenture SBIC investments are similar to those made by comparable private venture capital funds, in terms of investment size, the assisted firm's industry, and location. Overall, we found that debenture SBIC investments are (1) much smaller than private investments; (2) not as heavily concentrated in companies within the technology sector, and are in different types of industries; and (3) less geographically concentrated than comparable private venture capital investments. All of these findings are consistent with the debenture SBIC program supporting a key SBA goal by providing capital to entrepreneurs who are underserved by the private venture capital industry.

Brash's (2008) research on public sector duplication suggests that some overlap exists between the SBA's 7(a) and 504 programs and that a small degree of duplication exists between SBA programs and similar programs run by other federal agencies. The USDA's Farm Loan Program appears to be the greatest potential source of overlap, although SBA administrative data suggest that only a small portion of SBA loans go to rural areas. Other USDA programs provide services similar to SBA loan programs, as do the Treasury, Interior, and Transportation Departments. These programs do not exactly replicate the SBA programs, but they provide similar types of assistance to small businesses (although they also may provide these services to larger businesses, as well). A greater degree of potential duplication exists at the state and local levels. This duplication exists for the most part among federal, state, and local general-purpose loan and loan guaranty programs that resemble the SBA's 7(a) program. There are fewer state and local loan and loan guaranty programs that resemble the 504 program, which provides loans exclusively for fixed assets. Few states and localities run micro-loan programs. Most of the states in this study have publicly funded venture capital funds, although these programs may differ from the SBA's program by the types of businesses they target or the amounts of money they offer.

Similarities among federal, state, and local loan programs vary by state and program. SBA programs have higher maximum loan and loan guaranty amounts and longer terms than local programs, so there is less duplication among businesses seeking bigger loans. Size standards are similar for SBA and state and local programs, although a few states and localities have size standards considerably smaller than SBA standards. In these states, duplication exists for very small businesses more than for larger small businesses. Standards for industry sector are also on the whole similar across the board—most programs are open to most types of industry.

There are a few exceptions: some states exclude retail or mercantile businesses from their major loan or loan guaranty programs, such as Capital Access or Linked Deposit programs, while others exclude certain industries engaged in activities considered socially undesirable. With few exceptions, geographic market and growth stage are similar for SBA programs and state and local programs.

There are few micro-loan programs provided by federal agencies other than the SBA or by the study states or cities. The growing private micro-enterprise industry, including established organizations like ACCION USA, may complement the SBA's MicroLoan program.

The duplication that exists among loan and loan guaranty programs may reduce efficiency. Less duplication might simplify the process for applicant businesses and for lenders helping businesses determine which programs they are eligible for. The overall cost of administration might be reduced if similar programs were offered through fewer levels of government. However, some duplication is inevitable, and multiple access points might reach a broader range of businesses. Further, when multiple programs provide similar services, it does not necessarily mean that resources are being wasted. The existence of parallel programs may mean that the demand for such assistance exceeds the supply. Finally, for political reasons, states and localities may want their own financial assistance programs so that they are seen as supporting small business.

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APPENDIX A: PERFORMANCE ANALYSIS MEASURES

This section outlines the key measures used in the Performance Analysis, including firm performance and other characteristics.

Firm Performance

Measures of firm performance include firm sales, employment, and survival. D&B's measure of total annual sales volume for the firm was used. All sales numbers were adjusted to 2005 dollars using the Consumer Price Index for All Urban Consumers (CPI-U) so that changes over time reflect real changes in sales, rather than changes due to inflation. To examine changes in sales over time, the percent change in sales from the year of financing to three years after financing was calculated.[22]

To represent the firm's performance in terms of employment, D&B's measure of total number of employees for the organization was used. For firms with multiple sites, this number reflected employees at all of the sites. To examine changes in employment over time, the percent change in employment from the year of financing to three years after financing was calculated.[23]

Since neither D&B, nor SBA, data included an indicator of whether a firm had failed, missing data were used as an indicator that the firm had not survived. Two different samples, both of which are distinct from the samples used for the sales and employment analyses, were employed. The first included all firms chosen for our sample, including those without D&B data; the second included only those firms in our stratified sample that had D&B data. Using the first sample, a conservative estimate was calculated by assuming that firms without D&B matches or firms with missing D&B data failed, while firms with D&B data survived. Using the second sample, a slightly less conservative estimate was calculated by assuming that firms with missing D&B data failed, while firms with D&B data survived.

It is important to note that D&B data includes some cases where the figure is the actual figure reported by the company and others where the figure is estimated because D&B was unable to obtain the actual amount. According to D&B, there is a 0.8 correlation between actual sales and estimated sales, although the correlation varies by industry. A sensitivity test was performed to determine whether the multivariate relationships differed greatly when using reported values and estimated values. No substantial differences were found, so the analyses used both

[22] Specifically, the sales variable was calculated as the difference between sales three years after financing and sales at the time of financing, divided by sales at the time of financing: ((Sales Year 3 – Sales Year 0) / Sales Year 0).

[23] The employment variable was calculated as the difference between employment three years after financing and employment at the time of financing, divided by employment at the time of financing: ((Employment Year 3 – Employment Year 0) / Employment Year 0).

reported and estimated values. This yields a larger sample size, which provides greater power to detect statistically significant associations.

When sales and employment values were unknown, firms were excluded from the analyses. Likewise, firms with extreme values at the tails were also excluded from the analyses.

Other Firm Characteristics

SBA's measures of whether the firm is at least 50 percent female-owned or whether the firm is veteran-owned were used. For 504 and 7(a), the race/ethnicity of the owner was available (i.e., White, African-American, Hispanic, Asian, Native American, Multiple Race, or Unknown, Undetermined, or Undefined). For SBIC, the specific race/ethnicity of the owner was not available; however, the data did indicate the owner's minority status and this was used in its place.

The start-up indicator from SBA was used for 7(a) and 504 even though it produces some inconsistency when compared with the D&B firm tenure measure. Some firms designated as start-ups have D&B data for more than three years prior to assistance. However, because it was not clear which measure (D&B tenure or SBA start-up indicator) was correct, the SBA start-up indicator was used. The new business indicator provided in the SBA administrative data was not used for SBIC, because SBIC staff recommended against it. Instead, they recommended using the date that the firm was established to determine its start-up designation.

Because SBA's definition of a new business and the calculated age of a business based on date of firm establishment (from D&B) were not always consistent, an alternative firm age and start-up status definition was employed in the multivariate analyses. First, firms were categorized according to start-up status using SBA's designation. Then, all non-start-ups were placed in one of four mutually-exclusive age groups (less than six years, six to ten years, more than ten years, and missing).

The credit score is used to predict delinquency in paying creditors.[24] This analysis employed the credit score from the year of financing when available, but used the score from the year closest to the year of financing, up to three years before the year of financing when necessary.

[24] Specifically, the D&B U.S. Commercial Credit Score, which predicts the likelihood that a company will pay its bills in a severely delinquent manner (+90 days past term), obtain legal relief from creditors, or cease operations without paying all creditors in full during the next 12 months. A severely delinquent firm is defined as a business with at least 25% of its payments slow and at least 10% of its payments 90 days or more past due. The Commercial Credit Score uses statistical probabilities to classify companies into three risk classifications: a 101-670 Credit Risk Score; a 1-100 Percentile Ranking, and a 1-5 Risk Class segmentation. These classifications are based on the chance of a business experiencing the above definition of "bad" payment performance during the next 12-month period (D&B Risk Management Solutions, June 2002: 1). These analyses employ the Credit Risk Score classification.

Financing Characteristics

Financing amounts, rates, and terms were provided in SBA's administrative files. Financing amounts were adjusted to 2005 dollars using the CPI-U. Interest rate at the time of origination and loan term were available for 7(a) and 504 only. However, because the loan term is standard for 504 participants, it was not included in multivariate analyses for 504 firms. Loan guarantees provided under the 7(a) program can have both a fixed-rate portion and a variable-rate portion. For cases where this was so, a weighted rate and weighted term were created based on the fixed-rate and variable-rate loan amounts. Because interest rate and maturity term are not applicable for SBIC investments, they are not included in multivariate analyses for SBIC firms.

Market Characteristics

SBA firms were grouped into Census Regions, including Northeast, Midwest, South, West, and outlying areas (e.g., Puerto Rico). The local area unemployment rate provides information about the financial health of the metropolitan area in which the firm was located. For a small proportion of firms missing adequate address data and firms located outside metropolitan areas, the state unemployment rate was used. The Standard Industry Code (SIC) and North American Industry Classification System (NAICS) code were used to assign each firm to a broad industry category. In the multivariate analyses, the following broad categories are used to represent groups of industries:

- Agriculture and Mining: Agriculture, Forestry, Fishing, Hunting, Mining, Utilities, and Construction
- Manufacturing: Manufacturing
- Wholesale: Wholesale Trade, Retail Trade, and Transportation and Warehousing
- Information: Information, Finance, Insurance, Real Estate, Rental, Leasing Professional, Scientific, Technical, Administrative, Support, Waste Management, and Remediation Services
- Education: Educational Services, Health Care, and Social Assistance
- Arts: Arts, Entertainment, Recreation, Accommodation, and Food Services

Other Services: Public Administration and Other Services (excluding Educational Services, Health Care, Social Assistance, Arts, Entertainment, Recreation, Accommodation, Food Services)