SBA 504 Loans Help Improve Balance Sheets: A Micro Analysis

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The US Small Business Administration's (SBA) 504 Loan Program was established to provide long-term, fixed-rate financing for small businesses. Research on SBA lending has tended to focus on economic development, revenues, and delinquency factors as measures of SBA lending success. This paper studies 504 Loans initiated by the Wisconsin Business Development Finance Corporation (WBD) to determine if such financing helped improve the balance sheet structure of small businesses. Employing commercial lending ratio analysis, this study finds a positive improvement in small business balance sheets. It further appears that the staying power of small businesses is substantially enhanced.

INTRODUCTION

In the early 1980s, Congress created the 504 loan program to "provide a long-term financing tool for economic development within communities." The program is administered by the US Small Business Administration (SBA) in concert with a "Certified Development Company" (CDC) to offer small businesses requiring "brick and mortar" capital with long-term financing to acquire major fixed assets for expansion or modernization. A CDC is a private, non-profit corporation established to achieve certain economic development goals within a specified geographic area. CDCs are certified and governed by SBA regulations and rules in providing financing to small businesses (US Small Business Administration, 2010).

Since SBA was established in 1953, the effectiveness of its loan programs has been the subject of numerous studies, reports, and papers. While effectiveness can be interpreted in many ways, the focus of such analyses has almost always been whether the small business concern (SBC) would have succeeded or prospered with or without SBA loan assistance. Those questioning the legitimacy or need for government loan programs to small business look at the relatively small number of businesses receiving such assistance as compared to the total number of small businesses nationally. That this issue has haunted SBA since its beginnings is noted by Craig, Jackson, and Thompson as recently as 2009. "The recent growth of SBA loan guarantee programs, as well as their overall magnitude, raises questions as to whether there are demonstrable benefits to SBA activities and whether the benefits exceed their costs" (Craig, et al., 2009, p. 222). These observations are based more in politics and the focus of national economic development policy dictated by different administrations. Thus, they are extremely difficult to quantify.

This paper set out to answer a fundamental question: *Does the use of the 504 Loan Program strengthen the balance sheet of an SBC and thus assist the long-term staying power of an SBC?*

In the 2008 study by The Urban Institute, Brash and Gallagher analyzed the performance of SBA's loan and investment programs by posing a broader question—"Does assistance from the US Small

Business Administration *help* [emphasis added] firms that receive it?" *Help* has broad interpretations, and as Brash and Gallagher admit, a definitive answer "would require an impact analysis…beyond" their scope of research. They undertook a global approach by developing determinates to measure what happened to sales, employment, and survival before and after firms receive financing from SBA. Then, using a variety of data, they examined the major SBA loan programs within the framework of three commonly used business outcomes—annual sales, number of employees, and survival. These were used to determine characteristics associated with firm performance. This broader approach was necessitated by the population base of the study; i.e., Brash and Gallagher used data from SBA administrative files for firms that received assistance in 1999, 2000, and 2001. Then, for a sample of firms, Dun and Bradstreet (D&B) reports were combined "in order to conduct descriptive and multivariate analyses of firm performance" (Brash & Gallagher, 2008).

This paper has the subtitle "A Micro Analysis" because only the 504 Loan Program was analyzed given that this program is unique in offering a long-term, fixed rate financing structure. Further, only the loans closed by the Wisconsin Business Development Finance Corporation were included in the analysis. While sales and employment growth are highly useful measures of success and survival, they are not the sole determinants of the firm's performance and by inference the success of SBA loan programs. By analyzing only 504 loans using seven balance sheet related ratios, definitive conclusions are reached as to the strength or weakness of the firms' balance sheets, albeit within a smaller universe than other studies.

An old wag once quipped, "Nothing strikes fear like the unknown interest rate!" This being the case, it follows that firms with fixed-rate financing structures should be able to stabilize their cash flows and over time, strengthen their balance sheets. Past research on SBA programs has provided evidence of positive associations with firm performance. Using a telephone survey, Warden Associates and Price Waterhouse (1998) concluded that firms receiving assistance through SBA's 7(a) program had four-year survival rates exceeding those of a comparable group of businesses. Although perceptions from small businesses about the benefits of SBA programs are important, they do not provide the most rigorous evidence about a firm's staying power (Brash & Gallagher, 2008).

The universe of this paper consisted of 210 loans originated and closed by the Wisconsin Business Development Finance Corporation (WBD) during the years 1998, 1999, and 2000. The WBD was established in 1981 and is one of the oldest of the now 247 active CDCs. In addition, WBD has consistently been among the top twenty CDCs in number of loans approved during the past 10 fiscal years. For example, in the 2009 fiscal year, SBA approved 6,608 SBA 504 loans nationwide and WBD ranked 11th with 141 loans approved. Similarly, in fiscal year 2008, 8,883 SBA 504 loans were approved and WBD again ranked 11th with 158 approvals (NADCO Website, 2010). There is a distinct advantage in selecting loans from an established CDC whose portfolio consists of a broad base of business entities.
This paper is organized into four primary sections:

- Summary of the three major SBA loan programs and discussion of relevant research.
- Discussion of the statistical methods and data preparation.
- Limitations of the study.
- Conclusions and implications of the study.

SBA LOAN PROGRAMS AND LITERATURE REVIEW

The US Small Business Administration administers a variety of loan and technical assistance programs as directed by Public Law 85-699—"The Small Business Investment Act" as amended. Three of these programs, however, account for over 80 percent of the fiscal authority provided to SBA in the fiscal year budgets and appropriations. All three are loan programs: Section 7(a) Loan Guarantee, the CDC/504 loan program, and the Small Business Investment Company (SBIC) program. The one exception to this budgetary authority is SBA's disaster loan program under which the agency receives a specific appropriation only when a Presidential disaster area is declared (US Small Business Administration, 2010).

The 7(a) Loan Program is SBA's primary program to help start-up and existing small businesses obtain financing when they might not be eligible for business loans through normal lending channels. The 7(a) loans are the most basic and commonly used type of loans. They are also the most flexible since financing can be guaranteed for a variety of general business purposes including working capital, machinery and equipment, furniture and fixtures, land and building (including purchase, renovation and new construction), leasehold improvements, and debt refinancing. Loan maturity is up to 10 years for working capital and generally up to 25 years for fixed assets.

Most American banks participate in the program as do non-bank lenders, expanding the availability of loans. Participating lenders agree to make, service, and liquidate loans according to SBA regulations. SBA does not fully guarantee 7(a) loans but can guarantee up to 85 percent of loans $150,000 and less, and up to 75 percent of loans above $150,000. The maximum guaranteed amount is $1,500,000. SBA charges a loan guarantee fee ranging from 2 percent to 3.75 percent of the amount guaranteed. These fees are based on the size of the guaranteed amount and are usually paid by the borrower.

The CDC/504 loan program is a long-term financing tool for economic development within a community. While the 504 program is similar to the 7(a) program in that it provides financing to small businesses deemed unable to secure financial assistance on reasonable terms, it has four distinct differences from the 7(a) program. First, a 504 loan can only be accessed through a CDC; second, loans can only be used to finance fixed assets; third, 504 loans have a fixed rate of interest for the term of the loan (under the 7(a) program interest rates can be fixed or variable); and finally, 504 loans carry an interest rate usually below the prevailing market rate.

A certified development company (CDC) is a private, non-profit development corporation established under SBA rules and regulations and is a key part of the structure of 504 loans. A typical 504 project includes a senior lien position loan from a private sector lender covering up to 50 percent of the project cost. A loan from the CDC (backed by a 100 percent SBA-guaranteed debenture) with a junior lien provides up to 40 percent of the project and the borrower provides at least10 percent equity. The maximum debenture is $2.0 million except for manufacturers where the maximum debenture is $4.0 million. Interest rates are pegged to an increment above the current market for 5-year and 10-year US Treasury issues. Loans have maturities of 10 or 20 years.

The Small Business Investment Companies (SBICs) have supplied equity capital, long-term loans, and management assistance to small businesses since 1958. The structure of the program is unique in that SBICs are privately owned and managed investment funds, licensed and regulated by SBA. They use their own capital plus funds borrowed with an SBA guarantee to make equity and debt investments in qualifying small businesses.

There are over 400 licensed SBICs in operation today and they pursue investments in a broad range of industries, geographies, and stage of investment. Some SBICs invest in a particular field or industry in which their management has expertise, while others invest more generally. The form of SBA funding that a particular SBIC uses can vary and will have an impact on the type of investments they can make.

- *Debenture SBICs* focus primarily on providing debt or equity with equity features. Debenture SBICs will typically focus on companies that are mature enough to make current interest payments on the investment so that, in turn, the SBIC can meet its interest obligation to SBA.
- *Participating Securities SBICs* typically focus on making pure equity investments but can make debt investments as well. Participating SBICs are able to invest patient equity capital in earlier stage opportunities because interest is accrued on their obligation to SBA.

SBA requires a minimum private capital investment of $5 million for a debenture SBIC. A minimum of 30 percent of this capital must come from sources unaffiliated with the fund management. A licensed SBIC with a demonstrated need for funds may receive leverage of up to 300 percent of its private capital although most are approved for a maximum of 200 percent. The current maximum is $150 million per SBIC and $225 million for two or more licenses under common control. Once leverage is committed to an SBIC, it may be drawn down on a periodic basis over the entire four- to five-year commitment period (US Small Business Administration, 2010).

A broad range of research exists analyzing various aspects of the SBA loan programs. The research develops different methods to draw conclusions on whether SBA loans assist small businesses. Writing a review of the research literature in the *Journal of Small Business Management,* Craig et al. observed "it should be possible to empirically test for any signs of differential economic performance across local geographic markets based on the amount of SBA guaranteed loans flowing into those markets" (p. 223). The authors observe there are a few recent studies which test the impact of SBA guaranteed lending on economic performance, and "they generally find a positive one" (p. 231). However, Craig et al. conclude "very little serious empirical evidence exists on whether the net economic impact of SBA's guaranteed lending programs is positive or negative." They further conclude that a "significant amount of (additional) empirical research" is necessary before a "reasonable" assessment of the economic impact of these programs can be made (Craig et al. 2009).

Craig et al. noted the need for additional "empirical research," an important observation because the authors studied different economic impacts of SBA loan programs and such an observation underscores the difficulty in developing a consensus of research as to SBA loan program effects. Part of the difficulty lies in the vast array of data available and similarly used in research to measure the impact of SBA loans. Most include models based upon various (and seldom the same) economic, social, or financial data (Craig, Jackson, & Thompson, 2005). Craig, Jackson, and Thompson, for example, have been using a regression model relating several measures to test their "null hypothesis" first by "extending" their 2005 analysis and again in 2006 by estimating a similar regression model equation using "classic Arellano-Bond panel regression." The authors feel this model (2007) more effectively exploits the cross-section and time-series variations of their data (Craig et al. 2007a).

The issue with theses several studies is not with the methods or the models, but with the sources of data. Craig, Jackson, and Thompson used data from three broad sources; loan-specific data on all SBA guaranteed loans; data on economic conditions from the National Bureau of Economic Research, the Bureau of Labor Statistics, the Bureau of Economic Analysis and finally, data from Federal Deposit Insurance Corporation's annual summary of deposit data. All of these sources are measured within a specific time frame (Craig et al. 2007b).

Craig, Jackson, and Thompson have further refined their model by sampling over 360,000 SBA loans in approximately 2,200 local markets over a period of 11 years (1991 through 2001). Nowhere else is found a database employing an empirical strategy and using a model relying on such a large collection of data. It follows then, that given the large population of the analysis and the refinement over time of the model, the scope of the study should further the authors' conclusions. However, the conclusions of Craig and other studies continue to be affected by the sources of data and how it is employed in the models they have developed.

In their 2008 study, Brash and Gallagher limited its scope and model development to more conventional measures—sales, employment, and survival—that are directly related to the business receiving SBA loan assistance. They refer to these as "three commonly used business outcomes…" Brash and Gallagher admit, however, that outcomes are linked to the characteristics of the firm itself. These include, age, size, structure (single/multi-unit), location, capital intensity, ownership, and firm stage; i.e., start-ups versus established firms. While admitting these characteristics affected outcomes, Brash and Gallagher sought to ensure the generalizability of their results by employing multiple cohorts (years, 1999, 2000, and 2001) from each of the programs. Recognizing certain limitations in data from SBA programs, Brash and Gallagher employed methods used by Dun & Bradstreet (D&B) (Brash & Gallagher, 2008).

Brash and Gallagher agree on some of the limitations of D&B in that it collects what data it can, "but relies on modeling when it cannot obtain full information from businesses" (2008, p. 11). The authors employed two D&B databases to provide historical data and "more recent data" four to six years after SBA financing. The two models D&B employed for their data together with the SBA Administrative Data allowed Brash and Gallagher to overcome limitations and provide a reasonable estimate of survival rates in the analysis of the three SBA Loan Programs over time. For example, "Firms were assumed to have survived if D&B had information on those firms in 2005" (p. 24). The study then uses such data to

develop conclusions by SBA Loan Program for the "commonly used business outcomes" employing a reasonable database to produce a multivariate analysis (Brash & Gallagher, 2008).

There is a tendency of many studies to focus on the SBA 7(a) guaranteed loan program, which until the advent of the 504 loan program, accounted for the bulk of SBA's lending authority. Glennon and Nigro in two companion studies examine the loan performance of firms receiving SBA guaranteed loans using a "discrete-time hazard framework." In their first paper, Glennon and Nigro establish that the default behavior of SBA 7(a) guaranteed loans is "time sensitive" and dependent on program-specific and borrower-, lender-, loan-specific factors. (Glennon & Nigro, 2005a) In the later study, Glennon and Nigro employ the same "discrete-time hazard approach" but also show the importance of "loan maturity, seasoning, economic conditions, and other firm-specific factors in predicting the likelihood of SBA loan defaults" (p. 77). Most cogent is one of their conclusions that "The performance of loans…usually lenders with the most experience with SBA-qualified borrowers—supports the hypothesis that small business lending is unique and may require a higher degree of expertise to do well" (Glennon & Nigro, 2005b).

The articles by Henry Wichman, Jr., et al. in *Strategic Finance* and in the *Journal of Accountancy,* while including both SBA 7(a) and 504 Loan Programs, are focused on helping various practitioners (CPAs, CFOs, etc.) understand the SBA Loans Programs and how such can be accessed to help practitioners' clients (Wichman, Harter, & Sparks, 1999; Wichman, Abramowicz, & Sparks, 2008). Wichman and Boze have written a similar review for *The CPA Journal* designed specifically for accountants and the clientele they service. These essays are useful in that they are designed as "How To…" guides for specific practitioners (Wichman, & Boze, 2007).

SBA 504 Loan Program research has tended to focus on job creation and economic development aspects because enabling legislation established the 504 program as a long-term financing tool that promotes economic development in communities. As recently as May 2010, the Comptroller of the Currency's publication *Insights* revisited the 504 Loan Program to explain how the program was working one year after the passage of the American Recovery and Reinvestment Act (ARRA). ARRA was a major part of the Obama Administration's efforts to stimulate economic recovery and as the key goals of the 504 Loan Program are job growth and economic development, it was only natural that some provisions of ARRA would affect the delivery of such loans. While highly informative, the *Insights* paper is more of a primer for lending institutions (most regulated by the Comptroller of the Currency) on how to access the 504 Loan Program. It also details key risks and regulatory considerations presented by SBA 504 Loans, as well as how a "typical" 504 loan might be structured (Hyra, Rhine & Reeves, 2010).

To evaluate the economic impact of the 504 Loan Program, the National Association of Development Organizations (NADCO) commissioned Applied Development Economics, Inc. to undertake an economic impact study which is the first formal economic assessment of the 504 Loan Program since its beginnings. A survey was performed by the Program for Applied Research and Evaluation (PARE) within the California State University, Chico Research Foundation. PARE conducted a survey of 831 SBA 504 loans issued between January 2003 and February 2005 (National Association of Development Companies, 2008).

The study found 72 percent of businesses reported increasing revenues; 62 percent reported job growth from 24 jobs to 28 jobs after the loan. The study applied these results to the over 15,000 SBA 504 loans issued during the 2003-2005 period and concluded the program supported net growth of 54,000 jobs with about $4.6 billion in increased labor income. Other conclusions of the study concentrated on the multiplier effects of such direct economic activity; the increase in federal, state, and local tax revenues; and the efficiency of the program when accounting for SBA's operating expenditures for the 504 program.

All referenced research contains a plethora of information, empirical data, models, and conclusions from which inferences are made about the success, usefulness, and efficiency of the SBA guaranteed loan programs. Nowhere was found, however, a conventional financial analysis of the SBCs receiving SBA guaranteed loan assistance and, in particular, 504 loan assistance.

METHODOLOGY

This paper analyzed financial statements collected by Wisconsin Business Development of firms receiving 504 loan assistance (closed loans) during fiscal years 1998, 1999 and 2000 (the base period). The paper's analysis used seven financial ratios commercial lenders commonly employ to evaluate a firm's financial strength or weakness. Then, it used these same ratios to perform similar financial analysis in years 2001 thru 2006. In this matter, trends could be tracked over time and conclusions reached as to whether the fixed-rate 504 loan program assisted in strengthening the SBC's financial position.

The seven ratios (current, net working capital turnover, total debt, debt-to-equity, long-term debt, cash coverage, and operating cash flow) were selected because they tend to be the best predictors of balance sheet stability and SBC success or failure. Liquidity, leverage, debt structure, and cash capacity are highly accurate indicators of a firm's staying power. History has shown that small businesses succeed or fail not from a lack of sales, but rather from high leverage (debt) and/or insufficient cash flow.

The six- to eight-year period of this study's concern was deliberately chosen to provide a period of time for analysis when conditions spanned economic cycles presenting challenges as well as opportunities. A concerted effort was made to avoid one or two years of highly unusual economic activity which when added to the six- to eight-year period could skew the results in a favorable or unfavorable manner.

During the three-year base period, WBD originated 273 SBA 504 loans for a total amount loaned of $132,514,000. Of the 273 loans originated during the base period, 210 loans were closed, funded, and the loan debentures sold. Reasons for this disparity are discussed in the "Limitations" section, but as a summary, 29 loans were withdrawn by the applicant business or lender, and 21 loans were closed and funded in years later than the base period. Further, 13 loans were "transferred" to SBA meaning the loans were in some stage of liquidation. These loans were excluded from the study thus providing a net base of 210 SBA 504 loans.

The 504 loans analyzed in this paper were either "start-up" entities or existing firms. The analysis of data from existing firms relied upon historical (or actual) financial statements in the base period. Therefore, there was a mix between actual or historic financial statements and financial statements created for application purposes. The paper's financial analysis of new businesses was forced to rely on pro-forma financial statements for base period analysis. Pro-forma statements tend to present a "best picture" and usually differ from historical or actual results.

The types of industries represented in the base sample covered a broad range as detailed by Table 1. Table 1 divides the 210 WBD 504 loans into 13 North American Industry Classification System (NAICS) major groups and 34 subgroups. It was originally thought to divide the WBD 504 loans into NAICS industry groups and compare them with their Robert Morris Associates (RMA) peer group for purpose of financial ratio analysis. Such a division of the base population would allow analysis of the firms separately within each of the NAICS industry groups. After testing a number of loans, it quickly became apparent this approach provided limited meaningful comparative ratio analysis due to the small sample within each of the NAICS groups.

TABLE 1
NAICS CLASSIFICATIONS OF SAMPLE

NAICS Code	Industry Description	Number of Base Period Loans	Percent of Total
11	**Agricultural Production**	11	5.24%
112	Dairy Cattle and Milk Production	11	5.24%
31-33	**Manufacturing**	40	19.05%
311	Food Manufacturing	1	0.48%
323	Printing	4	1.90%
326	Plastics and Rubber Products	1	0.48%

NAICS Code	Industry Description	Number of Base Period Loans	Percent of Total
331	Primary Metal Manufacturing	3	1.43%
332	Fabricated Metal Product Manufacturing	11	5.24%
333	Machinery	15	7.14%
335	Electrical Equipment, Appliance and Component	2	0.95%
339	Miscellaneous Manufacturing	3	1.43%
42	**Wholesale Trade**	14	6.67%
421	General Wholesale Trade	3	1.43%
423	Merchants Durable Goods	3	1.43%
4231	Motor Vehicles and Motor Vehicle Parts	5	2.38%
424	Merchant Wholesalers Nondurable Goods	3	1.43%
44-45	**Retail Trade**	42	20.00%
441	Motor vehicle and Parts Dealers	5	2.38%
442	Furniture and Home Furnishings Stores	3	1.43%
443	Electronics and Appliance Stores	2	0.95%
444	Building Material and Garden Equipment and Supplies Dealers	3	1.43%
445	Food and Beverage Stores	10	4.76%
447	Gasoline stations	16	7.62%
451-454	Sporting Goods and Miscellaneous Store Retailers	3	1.43%
48-49	**Transportation**	6	2.86%
484	Truck transportation	6	2.86%
51	**Information**	1	0.48%
512	Theater	1	0.48%
52	**Finance**	4	1.90%
524	Insurance carriers	3	1.43%
525	Funds, Trusts, and Other Financial Vehicles	1	0.48%
54	**Professional and Technical Services**	9	4.29%
541	Professional, Scientific, and Technical Services	9	4.29%
61	**Educational Services**	2	0.95%
611	Educational Services (Swim instruction)	2	0.95%
62	**Health Care**	9	4.29%
621	Ambulatory Health Care Service	2	0.95%
623	Nursing and Residential Care Facilities	4	1.90%
624	Social Assistance	3	1.43%
71	**Arts, Entertainment and Recreation**	15	9.18%
713	Amusement, (Golf courses and Bowling Alleys)	15	9.18%
72	**Accommodation and Food Services**	41	19.52%
721	Accommodation	24	11.43%
722	Food Services and Drinking Places	17	8.10%
81	**Other Services**	14	6.67%
811	Repair and Maintenance	13	6.19%
812	Personal and Laundry Services	1	0.48%

While comparable ratio analysis is preferable, the absence of such analysis does not necessarily detract from the ability to examine fundamental balance sheet ratios over a span of six to seven years and reach definitive conclusions. Analysis of such ratios over a long time span led to conclusions regarding the use of 504 loans and whether such use strengthens the balance sheet of the recipient firm, albeit without NAICS sub group comparisons.

LIMITATIONS

The primary limitation of this study was the inconsistency of the financial statements provided to WBD by the SBCs. Financial statements ranged from very simple compilations prepared by the SBC to audited financial statements. As this study focused on balance sheet data to make certain conclusions, the quality of the data became a significant issue. The decision was made that when financial statements lacked fundamental data the loan would be excluded from the sample population analysis.

The second issue was the nature of the sampled population. During the base period, WBD closed and funded loans to a wide variety of businesses as classified by the NAICS codes. However, in several instances (see Table 1) the NAICS classifications represented four or fewer loans. The method of resolving this issue was to "pool" the loans into a more general NAICS category. This method did not prove satisfactory and so, as previously mentioned, comparative ratio analysis within NAICS peer groups was not used to develop the conclusions of this paper.

A third limitation was the nature of the 504 "debenture." Recall that 504 loans are 100 percent guaranteed to the purchaser of the debenture. This means the project being funded by a 504 loan must be entirely completed in the case of construction or installed and operating in the case of equipment prior to the sale of the debenture. This alters the data; i.e., the number of loans *approved* within a given fiscal year is significantly different than the number of loans *closed and funded* within the same given fiscal year. The study analyzed only loans closed and funded within the base period regardless of when the loans were approved.

Payoffs of 504 loans after they were closed and funded, was the fourth limitation of the study. Twenty-year 504 debentures have a descending balance prepayment penalty beginning at 10 percent and dropping one percent every year until the tenth year and thereafter when the prepayment penalty equals zero. Ten-year debentures have a similar descending scale with the prepayment penalty ending after year five. As 504 debentures closely follow 10-year US Treasury yields, debentures funded in years with high rates are likely to pay-off if 10-year US Treasury rates decline. A large number of payoffs did occur between the base period and the final measure point of 2006 due to a significant drop in rates during the same period.

Financial statements for businesses with 504 loans that paid off prior to 2006 were, in most cases, not available for analysis. Therefore, the paper did not include these in the ratio analysis. However, it can be reasonably concluded that a firm which had the ability to pay-off its second position 504 loan from other sources showed the lender an improved balance sheet. (Until 2010, 504 loans could not be used for refinance purposes and SBA will not allow other loan programs to refinance SBA loans). It would be unlikely that a lender would agree to assume the entire obligation if the firm was not showing acceptable financial ratios and trends.

CONCLUSIONS

The use of SBA 504 Loans continues to grow and is considered an important economic and community development tool. This is evidenced in part by the substantial incentives provided small business borrowers who access the 504 Loan Program within President Obama's American Recovery and Reinvestment Act (ARRA) enacted in 2009. Nationally, through August 2010 the number of SBA 504 Loans increased by 21 percent over a similar period in 2009 and the dollar amount of the loans increased by 19 percent for the same period. (National Association of Development Companies, 2010) During the same period, the number of WBD loans increased by 25 percent and the dollar amount increased by 38 percent over 2009 respectively (WBD, 2010).

The primary conclusion reached by this paper, that use of the SBA 504 Loan Program results in balance sheet improvement for the small business concern is summarized by the data in Table 2. The table below provides the arithmetic means and standard deviations of the means for the total loan population of the Wisconsin Business Development 504 loans analyzed in this paper. The ratios generally improve over time from the base period to 2006 and ratio deviations are reduced over the same period. It should be

recognized that the "Base Period" includes many "start-up" firms and these data are represented by "pro forma" financial statements. It is a rare case indeed when a "pro forma" statement does not show positive results. Therefore, the conclusion is based upon historical results and not what the borrower would have liked to have happened.

TABLE 2
RATIO ANALYSIS TOTAL WBD POPULATION, ARITHMETIC MEAN & STANDARD DEVIATION

Ratio	Base Period 1999-2000	2001	2002	2003	2004	2005	2006
Current Ratio							
Mean	2.03	1.03	1.39	1.98	1.99	1.70	1.79
Standard Deviation	2.14	0.41	1.27	2.79	2.12	1.45	1.60
Net Working Capital Turnover							
Mean	19.56	23.52	18.39	20.53	17.55	17.79	14.60
Standard Deviation	38.20	52.0	24.96	42.06	41.37	36.58	28.97
Total Debt Ratio							
Mean	0.68	0.995	0.88	0.91	0.55	0.56	0.93
Standard Deviation	0.31	0.37	0.43	0.48	0.85	0.88	0.83
Debt-Equity Ratio							
Mean	3.10	2.78	2.89	1.92	2.03	2.45	1.91
Standard Deviation	5.72	3.64	3.80	4.92	5.76	4.09	2.63
Long-Term Debt Ratio							
Mean	0.50	0.62	0.83	0.95	0.97	0.78	0.86
Standard Deviation	0.35	0.41	0.67	1.23	1.13	1.21	1.41
Cash Coverage Ratio							
Mean	10.23	5.67	5.01	4.26	3.32	3.13	2.90
Standard Deviation	22.72	31.63	18.34	3.34	4.56	2.98	2.21
Operating Cash Flow Ratio							
Mean	2.89	0.43	0.65	1.23	1.39	1.34	1.80
Standard Deviation	5.65	16.22	0.83	1.69	3.23	2.17	2.49

Other ratios could also have been analyzed in a similar manner. However, the primary objective of this paper was to test the ability of 504 loans to improve the balance sheet structure and thus the stability of small businesses which use the program. The current ratio, for example, is one of the best known and widely used ratios as a measure of liquidity as is the case of the three debt ratios: total debt ratio, debt-to-equity ratio, and the long-term debt ratio when measuring leverage. All four of these ratios show improvement over the period of analysis. Moreover, the standard deviations of the arithmetic mean are reduced over the same six-year period (WBD, 2011).

The conclusion reached in this paper is not without its anomalies. The cash flow ratio, net working capital turnover, and the operating cash flow ratio were deliberately chosen because strong positive cash flow is not only vicariously tied to the balance sheet, but is also an indication of staying power and business stability. However, in analyzing these three ratios, the WBD population presented its greatest challenge to the conclusion reached in this paper.

Referring back to Table 1, note that "Retail Trade" and "Accommodation and Food Services" represent almost 40 percent of the total population under analysis. "Retail Trade" includes "Food and Beverage" (grocery stores), "Gasoline stations" (convenience stores), and other users of large amounts of cash. The same is true with "Accommodations and Food Services" (hotels, motels, full service and fast food restaurants). The inclusions of these two NAICS categories were primarily responsible for the large variances in both the arithmetic means and standard deviations of the three ratios. This is demonstrated by

a test of the NAICS categories in Tables 3, 4 and 5 which follow. These three tables have selected years and are compared with their peer groups. (Note that Robert Morris does not provide operating cash flow data).

TABLE 3
SUMMARY OF RATIO ANALYSIS
FOOD/BEVERAGE (CONVENIENCE STORES) & GASOLINE STATIONS
NAICS CLASS 445-447

	Period	Current Ratio	Net Working Capital Turnover	Total Debt Ratio	Debt-Equity Ratio	Long-Term Debt	Cash Coverage Ratio	Operating Cash Flow Ratio
WBD Mean	Base	2.32	42.60	0.61	3.54	0.49	5.39	1.15
	2003	1.52	43.91	0.97	-1.93	0.97	3.37	0.50
	2006	1.77	6.89	1.05	-3.07	0.98	1.21	0.14
WBD Std D	Base	1.54	59.25	0.31	3.46	0.42	2.35	0.97
	2003	0.83	33.05	0.45	6.61	0.59	3.37	0.25
	2006	0.85	30.03	0.60	8.95	0.98	2.27	0.23
RMA-Mean Std D	Base	NA	NA	NA	NA	NA	NA	NA
	2003	1.38	57.17	0.79	3.91	0.63	1.83	NA
	2006	2.10	51.20	0.81	4.62	0.69	2.25	NA

TABLE 4
SUMMARY OF RATIO ANALYSIS
ACCOMMODATIONS—HOTELS/MOTELS NAICS CLASS 721

	Period	Current Ratio	Net Working Capital Turnover	Total Debt Ratio	Debt-Equity Ratio	Long-Term Debt	Cash Coverage Ratio	Operating Cash Flow Ratio
WBD Mean	Base	1.71	6.50	0.77	3.30	0.76	1.53	5.95
	2003	1.03	9.25	0.87	5.41	0.87	1.61	3.72
	2006	2.54	10.67	0.81	3.44	0.80	2.08	5.62
WBD Std D	Base	1.23	1.93	0.04	0.57	0.03	0.26	1.30
	2003	0.81	15.47	0.09	2.30	0.09	1.05	2.14
	2006	3.31	37.77	0.10	1.19	0.11	0.87	4.13
RMA-Mean Std D	Base	NA	NA	NA	NA	NA	NA	NA
	2003	0.60	-27.5	0.95	17.87	0.92	1.60	NA
	2006	0.8	-57.3	0.90	9.42	0.87	1.80	NA

TABLE 5
SUMMARY OF RATIO ANALYSIS
FOOD SERVICE—FULLSERVICE & FAST FOOD RESTAURANTS NAICS CLASS 722

	Period	Current Ratio	Net Working Capital Turnover	Total Debt Ratio	Debt-Equity Ratio	Long-Term Debt	Cash Coverage Ratio	Operating Cash Flow Ratio
WBD Mean	Base	9.28	1.30	0.65	9.17	0.58	5.17	8.75
	2003	1.52	-1.49	1.25	5.82	0.49	1.62	1.66
	2006	1.77	22.62	1.20	10.26	0.56	3.88	1.79
WBD Std D	Base	11.39	5.16	0.25	15.69	0.32	3.22	12.57
	2003	0.83	6.89	0.77	11.62	0.73	0.78	2.81
	2006	0.85	14.37	0.74	13.39	0.51	2.23	1.85
RMA-Mean Std D	Base	NA	NA	NA	NA	NA	NA	NA
	2003	0.65	38.33	0.69	2.76	0.48	2.83	NA
	2006	0.83	25.30	0.85	6.16	0.68	3.83	NA

Comparative ratio analysis is most helpful in supporting the conclusion of this paper because when compared to their peer groups, the WBD population performs as well or better than its peer groups and the standard deviations are well within the peer group range.

This study has concluded that the use of the SBA 504 Loan Program strengthens the balance sheets of the small business concerns receiving this loan assistance. The argument that similar results might have occurred without 504 Loan Program assistance is belied by the historical data because the analyzed data show consistent ratio improvement over a span of at least six years.

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