Iowa State University
Digital Repository

Management Publications | Management

2003

An Empirical Investigation of Bootstrap Financing Among Small Firms

Howard Van Auken
Iowa State University, vanauken@iastate.edu

Follow this and additional works at: http://lib.dr.iastate.edu/management_pubs

Part of the Business Administration, Management, and Operations Commons, Entrepreneurial and Small Business Operations Commons, and the Finance and Financial Management Commons

The complete bibliographic information for this item can be found at http://lib.dr.iastate.edu/management_pubs/22. For information on how to cite this item, please visit http://lib.dr.iastate.edu/howtocite.html.

This Article is brought to you for free and open access by the Management at Iowa State University Digital Repository. It has been accepted for inclusion in Management Publications by an authorized administrator of Iowa State University Digital Repository. For more information, please contact digirep@iastate.edu.

المنارة للاستشارات

www.manaraa.com

An Empirical Investigation of Bootstrap Financing Among Small Firms

Abstract

This study examines the use of 27 bootstrap financing methods among a sample of 91 small firms. Owners' rankings of the importance suggested that bootstrap financing was not central to their firms 'financing strategy. Owners who had greater difficulty of raising capital ranked bootstrap financing methods that (I) slowed disbursements, (2) generated cash, and (3) subsidized operations as being more important than owners who experienced less difficulty in raising capital. Owners who believed their firms were more undercapitalized ranked bootstrap financing methods that (I) slowed disbursements. (2) generated cash, and (3) minimized investment as being more important than owners who experienced less difficulty in raising capital. The use of bootstrap financing was also directly related to the risk of the firm. The results can be used by owners of small firms, consultants, and support agencies that provide assistance to small firms in areas of financial planning and capital acquisition. Understanding the use and availability of all sources of capital will enable owners to obtain a comprehensive understanding of capital alternatives and financial strategies. Agencies that provide support services can use the information to better assist small firms in developing financing strategies. This information could easily be built into training programs for both new and existing small businesses.

Disciplines

Business Administration, Management, and Operations | Entrepreneurial and Small Business Operations | Finance and Financial Management

Comments

This article is from *Journal of Small Business Strategy* 14 (2003): 22.

Rights

This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

This article is available at Iowa State University Digital Repository: http://lib.dr.iastate.edu/management_pubs/22

المنارة للاستشارات

www.manaraa.com

JOURNAL OF SMALL BUSINESS STRATEGY

AN EMPIRICAL INVESTIGATION OF BOOTSTRAP FINANCING AMONG SMALL FIRMS

Howard Van Auken, Ph.D.
Iowa State University
vanauken@iastate.edu

ABSTRACT

This study examines the use of 27 bootstrap financing methods among a sample of 91 small firms. Owners' rankings of the importance suggested that bootstrap financing was not central to their firms' financing strategy. Owners who had greater difficulty of raising capital ranked bootstrap financing methods that (1) slowed disbursements, (2) generated cash, and (3) subsidized operations as being more important than owners who experienced less difficulty in raising capital. Owners who believed their firms were more undercapitalized ranked bootstrap financing methods that (1) slowed disbursements, (2) generated cash, and (3) minimized investment as being more important than owners who experienced less difficulty in raising capital. The use of bootstrap financing was also directly related to the risk of the firm. The results can be used by owners of small firms, consultants, and support agencies that provide assistance to small firms in areas of financial planning and capital acquisition. Understanding the use and availability of all sources of capital will enable owners to obtain a comprehensive understanding of capital alternatives and financial strategies. Agencies that provide support services can use the information to better assist small firms in developing financing strategies. This information could easily be built into training programs for both new and existing small businesses.

INTRODUCTION

The acquisition of capital is one of the most important issues faced by small firms (Ang, 1992a). Capital acquisition is also a time consuming, frustrating, and difficult challenge confronting business owners. Without the appropriate level and combination of capital, a company's financial viability will be threatened. A weak financial structure can result in poor operating performance and, ultimately, failure (Timmons, 1999). Adequate capitalization can enable owners of small firms to pursue market opportunities and reduce the personal stress associated with operating a business (Gersick, Davis, Hampton, & Lansberg, 1997).

Much of the theory of finance assumes that a firm's capital acquisition strategy should achieve an optimal capital structure that maximizes wealth. This theory of capital structure, however, relies on specific assumptions that are not relevant for most small firms. Owners of small firms, for example, lack information about capital alternatives and access to capital

markets (Holmes & Kent, 1991). The lack of information about and access to capital markets results in small firms having either a sub-optimal structure or being under-capitalized (Van Auken, 2000).

Many small firms cope with the challenges of capital acquisition through bootstrap financing methods (Van Auken & Neeley, 1996). A wide variety of bootstrap financing techniques are available for business owners, including for example use of credit cards, delaying tax payments, sharing equipment and employees with other businesses, an leasing. Freear, Sohl, and Wetzel (1995) defined bootstrap financing as "highly creative ways of acquiring the use of resources without borrowing money or raising equity financing from traditional sources." Bhide (1992) believed that the true entrepreneurial spirit is often demonstrated in the business owner's ability to creatively find and use bootstrap financing. Bootstrap capital provides financing alternatives to small firms that are confronted with the lack of access to traditional sources of capital. Winborg and Landstrom (2001) and Gibson (1992) referred to small firms' difficulties associated with capital acquisition in the context of a "financing gap ." Bootstrap financing methods help provide capital to fill this financing gap when traditional sources of capital are not available.

The purpose of this paper is to present the results of a study that examined small firm's use of bootstrap financing methods. Specifically the paper examines the relationship between the ranking of importance of bootstrap financing among owners of small firms and (1) owners' assessment of the difficulty of capital acquisition, (2) owners' assessment of the degree to which the firm is undercapitalized, (3) risk, and (4) organizational structure. Although a common source of financing, few studies have investigated the use of bootstrap financing among small firms. The use of bootstrap capital would be expected to be related to small firm risk and organizational structure. Small firms that are more risky (including risks arising from organizational structure), for example, may have greater difficulty in acquiring traditional sources of finance and, thus, rely more heavily on bootstrap financing methods than firms that are less risky.

The next section of this paper reviews the literature on the financing of small firms, especially previous research related to small firm financing. Section III presents the methods used in the analysis. Section IV discusses the results of the analysis. The last section provides the summary, implications, and suggestions for further study.

SMALL FIRM FINANCING

Beginning with Tobin's (1958) separation theory and Modigliani and Miller's (1958) theory of capital structure, much of finance theory is based on the assumptions of capital market theory. The financial theory of capital structure posits that owners should select a financing mix that minimizes the firm's overall cost of capital by identifying the optimal levels of equity and debt capital. One of the basic tenets of finance theory is the assumption that all firms have equal access to and are able to fully participate in the financial markets with similar competitive positions. The acquisition of capital by small firms may not be consistent with wealth maximization due to numerous constraints that limit their access to the capital markets (Petty & Bygrave, 1993; Ang 1992b). Complex objective functions, market imperfections, and agency relationships are major distinctions that detract from the application of finance theory to small firms (Ang, 1992a; McMahon, Holmes, Hutchinson, & Forsaith, 1993). For example, small business owners may include business and personal goals, may not have complete information about or access to capital markets, and experience obstacles due to high monitoring costs, bonding costs, and residual loss. As a consequence, small firms often rely on a different set of financing sources relative to large firms.

Traditional sources of capital include funds from personal savings and borrowing from financial institutions. Entrepreneurs who are unable to raise adequate amounts of capital from traditional sources commonly raise additional capital from bootstrap financing sources. Bootstrap capital, or alternatives to traditional sources of financing, is often important through all stages of a firm's life (Van Auken & Neeley, 1996; Thorne, 1989). Freear, Sohl, and Wetzel (1995) and Petty and Bygrave (1993) noted that bootstrap financing methods are especially important source of funds for rapidly growing companies.

Bootstrap financing often has the advantages of being easy to obtain (i.e. credit cards) and convenient (i.e. loans from life insurance), and having minimal requirements (i.e. home equity loans). In addition, bootstrap sources of financing commonly do not require a business plan or collateral. Disadvantages associated with bootstrap financing may include, for example, higher cost (i.e. loans from public financing companies) and loss of ownership control (i.e. venture capital). The availability of bootstrap financing may also result in the funding of firms that are not viable, especially if traditional sources of capital are unwilling to commit funds to the business.

Research on the use of bootstrap financing among small firms is limited. An early paper by Thorne (1989) pointed out that many companies obtain a considerable amount, often all, of their financing through bootstrapping. The dynamic nature of the acquisition of bootstrap finance suggests that all methods may not be documented. Bhide (1992) emphasized that use of bootstrap financing methods requires a different approach than used for the acquisition of traditional sources of capital. Becoming operational and reaching breakeven quickly, conserving cash, and growing slowly provide strong support of a financing strategy that relies on bootstrap financing. Winborg and Landstrom (2000) identified six clusters of bootstrap financing methods (owner and relatives, management of accounts receivable, sharing and borrowing resources among businesses, delaying payments, minimization of investment, and subsidies) among firms in Sweden. An empirical study by Van Auken and Neeley (1996) indicated that firm characteristics (form of legal organization and type of firm) affected the use of bootstrap financing. Sole proprietorship and firms requiring high capital investment relied on bootstrap financing to a greater extent than other firms.

SAMPLE, QUESTIONNAIRE DEVELOPMENT, AND METHODOLOGY

Sample and Questionnaire Design

The sample consisted of 185 small firms located in a Midwestern state. Sample firms were obtained from listing of chambers of commerce. A questionnaire was developed and pre-tested during the Fall, 2001. The first and second mailings of the questionnaire occurred during Spring, 2002. A total of 91 questionnaires were returned, providing a response rate of 49.1%.

The questionnaire collected information on the (1) use and importance of bootstrap financing among small firms and (2) relationships between owners' rankings of importance and (a) owners' assessment of the difficulty of raising capital, (b) owners' assessment of their firms' degree of undercapitalization, (c) firm risk, and (d) organizational structure.. The questionnaire was segmented into three sections. The first section asked questions about the characteristics of the business, including age, type of business (product, service, consulting, other), ownership (sole proprietorship, partnership, S-Corp., Corporation, and Limited Liability Corporation), total capital raised since business started (<$100,000; $100,001-$500,000; $500,001-$1,000,000; $1,000,001-$5,000,001; and >$5,000,000). and market area served (local, regional, national, international) . The second section asked respondents to rank the importance of 28 methods of bootstrap financing using a Likert scale(0=never used,

1=seldom used and 5=frequently used). The Likert scale and methods of bootstrap financing were adopted from Winborg and Landstrom (2000). The third section of the questionnaire asked respondents to assess the extent to which their company is undercapitalized (1=very undercapitalized and 5=not undercapitalized) and questions related to the owners' experience and efforts associated with capital acquisition.

METHODOLOGY

The data was initially summarized using univariate statistics (means and frequencies) to provide a better understanding of the respondents and characteristics of the data. The initial summary statistics included those relating to demographic information and the means rankings of importance of the various bootstrap financing methods.

The sample was segmented and evaluated using two different criteria. First, the sample was segmented into two groups according to the owners' ranking of undercapitalization (undercapitalized=rankings of 1or 2; not undercapitalized=rankings of 4 or 5). A Wilcoxon 2-sample test of difference in means compared the mean rankings of importance of the bootstrap financing methods for the two sample segments. The purpose of the difference in means tests was to identify significant differences in the importance of the alternative bootstrapping methods between owners who ranked their firms as being undercapitalized versus owners who ranked their firm as not being undercapitalized. Second, the sample was also segmented into firms who owners ranked capital acquisition as being difficult and owners who ranked capital acquisition as not being difficult (difficult=rankings of 1 or 2; not difficult=ranking of 4 or 5). A Wilcoxon 2-sample test of difference in means compared the mean rankings of the bootstrap financing methods for the two sample segments. The purpose of the difference in means tests was to identify significant differences in importance of bootstrapping methods between owners who owners ranked capital acquisition as being difficult versus owners who ranked capital acquisition as not being difficult.

The rankings of importance of all bootstrap financing methods were averaged. Logit regression analysis was subsequently used to determine the relationship between the owners' ranking of importance of bootstrap financing and (1) risk proxy, (2) organization structure, (3) type of business activity, (4) ln (age of firm in years), and (5) ln (total capital raised since firm was launched). The ln (business age in years) and ln (total capital raised since business was launched) were used as control variables.

The risk proxy used in the study was a combination of the owners' assessment for difficulty of raising capital (1=not difficult and 5=difficult), degree of undercapitalization (1=not undercapitalized and 5=undercapitalized), growth objectives (1=low growth and 5=high growth), and limits on growth due to lack of capital (1=no limit on growth and 5=severe limit on growth). All of these variables would be expected to be related to the risk of the firm. For example, firms that exhibit greater risk would be expected to have greater difficulty of raising capital, have higher growth objectives, have growth opportunities that are limited due to lack of capital, and be more undercapitalized. The correlations of all four of the variables were highly and significantly related.

Spearman correlations (shown in Table II) between the independent variables in each equation were calculated to assess significant relationships between the variables. Since no significant correlations between the independent variables are present, multicollinearity should not have been a problem.

$$\textbf{Bootstrap Financing} = a_0 + b_1 \text{(Risk Proxy)} + b_2 \text{(Legal Structure)} + b_3 \text{(Type of Business)} + b_4 \ln \text{(Age)} + b_5 \text{(Total Capital Raised)}$$

where:

Bootstrap Financing	= Mean Ranking of Importance of Bootstrap Financing Methods
Risk Proxy	= (Difficulty of Raising Capital + Degree of Undercapitalization + Growth Objectives + Limits on Growth Due to Lack of Capital)/4
Legal Structure	= Type of Legal Organization (1 = Sole Proprietorship and 2 = Other)
Type of Business	= Primary Activity of Business (1=Products Oriented Firm & 2 = Other)
ln (Age)	= ln (Business Age in Years)
ln (Total Capital Raised)	= ln (Total Capital Raised Since Business Started)

RESULTS

Respondent Characteristics

Table I shows that the primary business activity of most firms (55.6%) was products. The remaining firms fell into services (32.2%) and other (12.3%) categories. Approximately the same percentages of firms were organized as S-corporations (40.7%) and C-corporations (39.6%). The remaining firms were organized as sole proprietorships (6.6%), partnerships (4.4%), and limited liability companies (8.8%). Approximately 43.0% of the firms served a local market, 14.0% served a regional market, 16.1% served a national market, and 26.8% served an international market. Approximately one-half of the firms raised less than $500,000 of total capital since business launch (32.2% less than $100,000 and 16.7% of the respondent firms raised $100,000-$500,000). Of the remaining firms, 18.9% raised $500,001-$1,000,000 and 31.2% raised more than $1,000,000. Approximately 22.8% of respondent firms are less than 6 years old, 18.5% are 6-10 years old, 14.9% between 10-15 years old, and 43.3% more than 15 years old.

Percentage of Use and Mean Rankings of Bootstrap Financing

Table II shows the percentage of firms using and mean rankings of importance of each bootstrap financing method. Table II shows several general patterns. First, the percentage of firms using the bootstrap financing techniques is closely related to the mean ranking of importance. Bootstrap financing methods used the most were also ranked as being the most important. Bootstrap financing methods that were used the least were also ranked as being the least important. This result may not be surprising since owners probably consider those financing sources that they use to be relatively important.

Second, some bootstrap financing methods were much more important in terms of use and ranking than other methods while other methods had very low use and mean ranking of importance. Third, almost all methods of bootstrap financing were ranked relatively low in terms of importance. The average ranking of 12 of the 27 bootstrap financing methods was less than 1.0. None of the average rankings of importance was greater than 4. Only two of the average rankings were above 3.0.

Table I - Percentage of Sample Firms by Category (n=90)	
Category	**Percentage of Firms**
Type of Firm	
Products	55.6
Services	32.2
Consulting	5.6
Other	6.7
Type of Legal Organization	
Sole Proprietorship	6.6
Partnership	4.4
S-Corporation	40.7
Corporation	39.6
Limited Liability Company	8.8
Market Size	
Local	43.0
Regional	14.0
National	16.1
International	26.8
Total Capital Raised	
<100,000	32.2
100,001-500,000	16.7
500,001-1,000,000	18.9
>1,000,000	31.2
Age of Firm	
< 6 years	22.8
6-10 years	18.5
11-15 years	14.9
>15 years	43.3

The bootstrap financing techniques that had the highest mean ranking of importance were negotiate best payment terms with suppliers (3.59), buy used equipment (2.13), offer same terms to all customers (2.93), use routines to minimize capital investment (2.14), and speed-up invoicing (2.36). These were the only bootstrap financing methods that had a mean ranking of importance of greater than 2.0. The five bootstrap financing methods ranked lowest were factor accounts receivable (0.10), delay tax payments (0.31), obtain loans from friends/relatives (0.38), share employees with other businesses 0.40), run business from home (0.45), and share equipment with other businesses (0.47). The most surprising of these lowly ranked bootstrap financing methods was obtaining loans from friends/family. Although a financing method often cited as an important source of capital for small firms, loans from friends/family was infrequently used and a relatively unimportance as a source of financing.

Bootstrap Financing Methods and Difficulty of Raising Capital

Table III shows the results of a Wilcoxon 2-sample test of difference between the owners' rankings of the difficulty of raising capital (D=difficult and ND=not difficult) and rankings of bootstrap financing methods. The table results show several patterns. First, the mean rankings of importance of most bootstrap financing methods (20 of the 28 methods) are not statistically different relative to the owners' rankings of the difficulty of raising capital.

Buy on Consignment from Suppliers	28	D = 1	0.75
	45	ND = 2	0.47
Employ Relatives/Friends at Below-Market Salary	28	D = 1	0.68
	45	ND = 2	0.49
Share Equipment with Other Businesses	28	D = 1	0.71
	45	ND = 2	0.31
Run the Business Completely in the Home	28	D = 1	0.68
	45	ND = 2	0.31
Share Employees with Other Businesses	28	D = 1	0.50
	45	ND= 2	0.24
Obtain Loans from Relative or Friends	28	D = 1	0.71
	45	ND = 2	0.20 *
Deliberately Delay Tax Payments	28	D = 1	0.64
	45	ND = 2	0.16 **
Raise Capital from a Factoring Company	28	D = 1	0.14
	45	ND = 2	0.09

The table also shows that the owners' rankings of eight of the bootstrap financing methods (deliberately delay payment to suppliers, withhold salary when necessary, borrow equipment, obtain payment in advance from customers, rely on income from outside employment, obtain loans from relatives/friends, employ relatives/friends at below-market salary, and deliberately delay tax payments) are significantly different relative to the rankings for difficulty of raising capital. These eight bootstrap financing methods were ranking as being more important to owners who experienced relatively greater difficulty raising capital than owners who experienced relatively less difficulty in raising capital.

These results provide insight into how owners of small firms use bootstrap financing as they adapt their financing strategies to difficulties in capital acquisition. The eight methods can be grouped into three categories: (1) delaying payments (deliberately delay payment to suppliers, deliberately delay tax payments, withhold salary when necessary); (2) generating cash (obtain payment in advance from customers, rely on income from outside employment); and (3) subsidizing (borrow equipment, obtain loans from relatives/friends, employ relatives/friends at below-market salary). Owners who experience difficulties in capital acquisition incorporate bootstrap financing into their financial strategies by delaying payments on accounts, generating additional cash, and taking actions that subsidize operations. All of these bootstrap financing methods have a positive effect on the firm's cash flow.

Bootstrap Financing Methods and Degree of Undercapitalization

Table VI shows the results of a Wilcoxon 2-sample test of difference between the owners' rankings of the degree of undercapitalization (U=undercapitalized and NU=not undercapitalized) and importance of the alternative bootstrap financing methods. The table results provide insight into the relationship between how owners adapt to undercapitalization through the use of bootstrap financing. Several patterns are evident from the table. First, owners reporting a high degree of undercapitalization did not rank the importance of 16 of the 28 alternative bootstrap methods differently than owners reporting low degree of undercapitalization. The owners' assessment of the importance of these 16 methods of bootstrap financing was not different relative to their assessment of the degree of undercapitalization.

Table VI - Financing Methods vs. Degree of Undercapitalization: Wilcoxon 2-Sample Test of Difference in Means

Financing Method	N	Degree of Undercapitlization (U=Undercapitalized and NU=Not Undercapitalized)	Mean Ranking
Negotiate Best Payment Terms with Suppliers	21	U = 1	3.86
	55	NU = 2	3.51
Offer the Same Conditions of all Customers	20	U = 1	2.85
	52	NU = 2	3.00
Speed up Invoicing	21	U = 1	2.24
	55	NU = 2	2.33
Use Routines to Minimize Capital Invested	18	U = 1	2.67
	51	NU = 2	2.08
Buy Used Equipment Instead of New Equipment	22	U = 1	2.68
	55	NU =2	1.80 *
Lease Equipment Instead of Buying	21	U = 1	2.57
	55	NU = 2	1.65 *
Use Personal Credit Card for Business Expenses	21	U = 1	2.23
	55	NU = 2	1.62
Cease Business with Customers Who Pay Late	21	U = 1	1.62
	55	NU = 2	1.85
Hire Temporary Rather Than Permanent Personnel	21	U = 1	2.19
	55	NU = 2	1.40
Obtain Payment in Advance from Customers	21	U = 1	1.90
	55	NU = 2	1.35
Deliberately Delay Payment to Suppliers	21	U = 1	2.38
	55	NU = 2	1.09 **
Deliberately Choose Customer Who Pay Quickly	21	U = 1	1.67
	54	NU = 2	1.19
Withhold Salary When Necessary	21	U = 1	2.05
	55	NU = 2	0.53 **
Borrow equipment	21	U = 1	1.81
	55	NU = 2	0.51 **
Share Office Space with Others	21	U = 1	1.86
	55	NU = 2	0.49 **
Use Interest on Over Due Customer Accounts	21	U = 1	1.02
	55	NU = 2	0.33**
Rely on Income from Outside Employment	21	U = 1	1.52
	54	NU = 2	0.33 **
Offer Customers Discount for Cash Payment	20	U = 1	1.15
	55	NU = 2	0.69
Coordinate Purchases with Other Businesses	21	U = 1	0.57
	55	NU = 2	0.85

Practice Barter Instead of Buying/Selling Goods	20	U = 1	0.50
	55	NU = 2	0.58
Buy on Consignment from Suppliers	21	U = 1	0.86
	55	NU = 2	0.50
Employ Relatives/Friends Below-Market Salary	21	U = 1	0.71
	55	NU = 2	0.38
Share Equipment with Other Businesses	21	U = 1	1.10
	55	NU = 2	0.20 **
Run the Business Completely in the Home	21	U = 1	0.81
	55	NU = 2	0.24
Share Employees with Other Businesses	21	U = 1	0.76
	55	NU = 2	0.31
Obtain Loans from Relative or Friends	21	U = 1	0.81
	55	NU = 2	0.16 **
Deliberately Delay Tax Payments	21	U = 1	0.86
	55	NU = 2	0.15 **
Raise Capital from a Factoring Company	21	U = 1	0.19
	55	NU = 2	0.00 *

The table also shows that the owners' rankings of twelve of the bootstrap financing methods (buy used equipment instead of new equipment, withhold salary when necessary, deliberately delay payments to suppliers, borrow equipment, use interest on over due customer accounts, lease equipment instead of buying, relay on income from outside employment, obtain loans from relatives/ friends, share office space, deliberately delay tax payments, share equipment with other businesses, and raise capital from a factoring company) are significantly different relative to the owners' ranking of the degree of undercapitalization. These bootstrap financing methods were more important to owners who believed their firms were more undercapitalized than owners who believed their firms were less undercapitalized.

These results provide insight into the use of bootstrap financing techniques in relationship to undercapitalization. The twelve bootstrap financing methods that are different relative to the degree of undercapitalization can be grouped into three categories: (1) slowing disbursements (withhold salary when necessary, deliberately delay tax payments, and deliberately delay payments to suppliers); (2) generating cash (raise capital from a factoring company, charge interest on over due customer accounts, rely on income from outside employment, and obtain loans from relatives/friends) and (3) minimizing investment (buy used equipment instead of new equipment, borrow equipment, lease equipment instead of buying, share office space, and share equipment with other businesses). Through their positive impact on cashflow, use of all of these methods would reduce a firm's need for capital acquisition. Owners who experience undercapitalization incorporate bootstrap financing into their financial strategies by delaying payments on accounts, generating additional cash, and taking actions that minimize investment requirements. All of these bootstrap financing methods have a positive effect on the firm's cashflow.

Logit Regression Analysis

Table V shows the results of the logit regression analysis that examined the relationship between the owners' rankings of importance of bootstrap financing (dependent variable) and (1) a risk proxy (independent variable), (2) organization structure (independent variable), (3)

business activity (independent variable), (4) ln (age of business in years) (control variable), and (5) ln (total capital raised since firm launched) (control variable). The results indicate that only the coefficient for the risk proxy is significant. Organizational structure, business activity, and the control variables are not significantly related to the owners' rankings of importance of bootstrap financing.

Table V - Logit Regression Results:
Degree of Bootstrap Financing vs. Risk Proxy, Organizational Structure, Business Activity, ln (Business Age), and ln (Business Size)
(n=73)

Dependent Variable	Independent Variable	Regression Coefficient
Bootstrap Financing	Risk Proxy	0.2026 *
(χ^2 = 102.99)	Organizational Structure	0.0266
	Business Activity	- 0.1170
	ln (Business Age)	-13.6027
	ln (Business Size)	- 0.0703

* *Significant at 1%.*

The positive coefficient for the risk proxy variable indicates that as risk increases, then the importance of bootstrap financing also increases. Conversely, decreases in risk are associated with decreases in the importance of bootstrap financing. The challenge of capital acquisition would be expected to be positively associated with the risk of the firm. Higher risk firms would be expected to have greater difficulty in raising capital (especially from traditional sources of capital) than lower risk firms. As a result, higher risk firms would be expected to place a greater reliance on and consider bootstrap financing to be of greater importance than lower risk firms. Lower risk firm would likely be better able to acquire capital from traditional sources and, thus, be expected to rank bootstrap financing lower in importance than higher risk firms.

The insignificant relationship between the owners' assessment of the importance of bootstrap financing and organization structure shows that the legal organizational form is not related to the owners' assessment of the importance of bootstrap financing. Bootstrap financing is equally important to regardless of organizational form.

DISCUSSION

Availability of capital is a common theme in much of entrepreneurial and small business research. Most research has been devoted to traditional sources of finance (i.e. acquisition of debt and equity). Much less research has been devoted to understanding the use and importance of bootstrap financing among small firms. Bootstrap financing is probably widely used and, thus, an integral aspect of small firms' financial strategies. Some types of bootstrap financing (such as accounts payable) would be expected to evolve through normal business operations. Other methods of bootstrap financing would necessarily be planned (such as sharing office space and business equipment).

The acquisition of capital by small firms can be one of the most time consuming and frustrating aspects of business ownership. Adequate and appropriate capitalization affects all aspects of firm operations. The ability of the firm to compete and pursue opportunities is directly affected by the availability of capital. Small firms that are viewed as being more risky will undoubtedly experience greater challenges in capital acquisition than small firms

that are viewed as being less risky. One consequence of being more risky is that small firms will likely use bootstrap financing methods to a greater extent than firms that are less risky. Higher risk firms may experienced greater difficulty in acquiring traditional sources of capital and, thus, rely to a greater extent on bootstrap financing methods than lower risk firms.

The results in this study provided several broad insights into the bootstrap financing. First, the owners' use and ranking of the relative importance of bootstrap financing were similar. The greater the usage among firms, the higher the ranking of the importance of the bootstrap financing method Conversely, the lower the usage among firms, the lower the ranking of importance of the bootstrap financing method. Second owners ranked the importance of almost all methods of bootstrap financing relatively low.

Two financial issues that potentially affect the use of bootstrap financing are the owners' assessment of the degree of (1) difficulty of raising capital and (2) undercapitalization. Difficulties associated with capital acquisition and undercapitalization may lead small business owners to access a variety of sources of capital. One finding of this study is that the eight bootstrap financing methods are ranked as being more important among owners who believe that capital acquisition is difficult as compared to owners who believe that capital acquisition was not difficult. These eight sources of bootstrap financing improve the small firms' cashflow by delaying payments, generating cash and subsidizing firm operations. Each of these eight bootstrap financing methods are ranked as being more a more important source of capital among owners who believed that capital acquisition was difficult relative to owners who believed that capital acquisition was not difficult.

Another finding of this study is that twelve bootstrap financing methods were ranked as being more important among owners who believed that their firm was undercapitalized relative to owners who believed that their firm was not undercapitalized. These twelve sources of bootstrap capital improve cashflow by slowing disbursements, generating cash, and minimize investment. The twelve bootstrap financing methods were ranked as being more a more important source of capital among owners who believed that their firm was undercapitalized relative to owners who believed that their firm was not undercapitalized.

The results also showed a direct relationship between owners' rankings of the importance of bootstrap financing and a proxy used to assess the risk of the firm. Bootstrap financing was ranked as being more important as the risk of the firm increased. Conversely, bootstrap financing ranked as being less important as the risk of the firm decreased. Higher risk firms would be expected to have greater difficulty in raising capital from traditional financing sources and, thus, rely more on alternative, non-traditional sources of capital than lower risk firms. The owners' rankings of the importance of bootstrap financing methods were not, however, associated with organizational structure and the control variables.

CONCLUSIONS

This paper presents the results of a study that examined the use of bootstrap financing among small firms. Acquisition of capital is a challenge facing all firms. The challenge of raising capital is even greater among small firms due to their higher risk and lack of access to capital markets. An inappropriate capital structure, a misunderstanding of the characteristics of the financing instrument, or a lack of information about the availability of specific sources of capital can result in sub-optimal capital structure and financial distress. Many small firms rely on bootstrap financing due to the difficulty of capital acquisition, unavailability of traditional sources of capital or, in some case, due the simplicity.

The results of the study have several implications. First, owners and managers of small firms can gain insight into the potential for including bootstrap financing methods in their financial strategies. Usage and rankings of importance of bootstrap financing methods can assist owner and managers more completely understand alternative sources of capital that can be accessed. Better and more complete information can help in the development of comprehensive primary and contingent financial strategies.

The relatively low ranking of importance of most bootstrap financing methods may suggest that owners may not understand or appreciate the potential usefulness of bootstrap capital. Bootstrap financing can be used when other sources of capital are not available and as a complement to traditional sources of capital. Some bootstrap financing methods, such as negotiating the best payment terms with suppliers and speeding-up invoicing, can be quite cost effective even if traditional sources of capital are available.

The results can be used by consultants and support agencies that provide assistance to small firms in areas of financial planning and capital acquisition. Understanding the use and availability of all potential sources of capital is important so that owners are able to explore the ramifications of alternatives, develop contingent plans, and make informed decisions. Providing information on all potential sources of financing will enable owners to obtain a comprehensive understanding of capital alternatives and financial strategies. This information could easily be built into training programs for both new and existing businesses.

The study has several limitations that provide avenues for potential future research. The sample was collected from a single state located in the Midwest. Other studies that examine similar issues in other regions of the country could provide comparative results. For example, a large national study would enable results to be compared by region. The data was also collected at a single point in time. A longitudinal study would provide evidence in the changing pattern of information about entrepreneurs' search for capital.

REFERENCES

Ang, J., (1992a). On the Theory of Finance for Privately Held Firms. *The Journal of Small Business Finance, 1*, 185-203.

Ang, J., (1992b). Small Business Uniqueness and the Theory of Financial Management. *Journal of Small Business Finance, 1*, 3-13.

Bhide, A., (1992). Bootstrap Finance: The Art of Start-Ups. *Harvard Business Review, 70*, 109-117.

Freear, J., Sohl, J. & Wetzel, W., (1995) Who Bankrolls Software Entrepreneurs. *Frontiers of Entrepreneurship Research*, Wesley, Mass: Babson Center for Entrepreneurial Studies, 394-407.

Gersick, K., Davis, J., Hampton, M. & Lansberg, I., (1997). *Generation to Generation: Life Cycles of the Family Business*. Boston: Harvard Business School Press.

Holmes, S. & Kent, P., (1991). An Empirical Analysis of the Financial Structure of Small and Large Australian Manufacturing Enterprises. *The Journal of Small Business Finance, 1*, 141-154.

McMahon, R., Homes, S., Hutchinson, P., & Forsaith, D., (1993). *Small Enterprise Financial Management: Theory and Practice*, Harcourt Brace: Australia.

Modigliani, F. & Miller, M., (1958). The Cost of Capital, Corporation Finance and the Theory of Investment, *American Economic Review*, 261-97.

Petty, J. & Bygrave, W., (1993). What Does Finance Have to Say to the Entrepreneur? *Journal of Small Business Finance, 2*, 125-138.

Thorne, J., (1989). Alternative Financing for Entrepreneurial Ventures, *Entrepreneurship: Theory and Practice, 13*, 7-9.

Timmons, J., (1999). *New Venture Creation*. 4th ed., Irwin Pub., Chicago, IL.

Tobin, J., (1958). Liquidity Preference as Behavior Towards risk, *Review of Economic Studies* , 65-86.

Van Auken, H., (2000). The Familiarity of Small Technology-Based Business Owners with Sources of Capital: Impact of Location and Capitalization, *Journal of Small Business Strategy, 99* (2), 33-47.

Van Auken, H. & Neeley, L., (1996). Evidence of Bootstrap Financing Among Small Start-up Firms, *Journal of Entrepreneurial and Small Business Finance, 5*, 235-250.

Winborg, J. & Lanstrom, H., (2001) Financial Bootstrapping in Small Business: Examining Small Business Managers' Resource Acquisition Behavior, *Journal of Business Venturing, 16*, (235-254).

***Howard E. Van Auken** is a Professor of Management in the College of Business at Iowa State University. His research interests are in the area of new venture financing. He was a William J. Fulbright Scholar at the Instituto de Technologico y de Estudios Superiores de Monterrey (Mexico) in 1989, a William J. Fulbright Scholar at Masarykova Univeszity v Brne (Czech Republic) in 1994, and Visiting Professor at the Consortium International University (Italy) in 2001. He has published over 50 referred articles and participated in entrepreneurship programs in many foreign countries.*