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Evidence of Bootstrap Financing Among Small Start-Up Firms

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This study examines the use of bootstrap financing for a sample of 78 firms in a Midwestern state. The results show that traditional sources of capital accounted for 65% of the firms' start-up capital and 35% of the start-up capital was obtained from bootstrap sources. A Chi-squared analysis indicates a significant difference between the percentage of (1) sole proprietorship versus other firms and (2) construction/manufacturing versus other types of firms using bootstrap financing as compared to traditional sources of financing when bootstrap financing comprised at least 60% of the total start-up capital. No significant difference was found between the percentage of firms located in communities less than 10,000 versus greater than 10,000 that used bootstrap financing as compared to the traditional sources of financing.

I. INTRODUCTION

The success of a new firm often depends on the entrepreneur's ability to identify and access sufficient sources and levels of capital. Without the necessary level and composition of initial capital, a company's viability and success will be threatened. Either high levels of debt or insufficient amounts of capital can result in a start-up firm's inability to remain viable and capture market opportunities. The impact of a weak initial financial structure can result in poor operating performance and, ultimately, failure (Walker & Petty, 1978; Gaskill, Van Auken, & Manning, 1993; Van Auken & Carter, 1989).

Small firms' difficulties associated with raising capital are a result of their lack of access to the capital markets and inability to attract external investors (Holmes & Kent, 1991; Van Auken & Carter, 1989; Hutchinson, Piper, & Ray, 1975). One solution to their difficulties of raising capital and insufficient capitalization has been that smaller firms often heavily rely on debt capital to finance initial operations. The result, however, is a large debt service at a time when other start-up

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costs are high and revenues are low (Ang, 1992; Osteryoung, Constand, & Nast, 1992; Carter & Van Auken, 1990). Landstrom (1992) and Petty and Bygrave (1993) believe that agency problems resulting from asymmetric information compound smaller firms' difficulty in raising capital.

Traditional sources of start-up capital include funds from personal savings and borrowing from financial institutions. Entrepreneurs who are unable to raise adequate amounts of capital from traditional sources may attempt to raise additional capital from alternative sources. Commonly referred to as bootstrap financing, these alternative sources of capital are often important to the launch of the new firm and to support growth strategies (Thorne, 1989; Neeley & Van Auken, 1995). Petty and Bygrave (1993) noted that bootstrap financing methods are an important source of funds for high-growth companies. Freear, Sohl, and Wetzel (1995) found that small software firms actively employ bootstrap financing as an important source of growth capital.

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" (*Frontiers of Entrepreneurship Research,* pp. 394-406). Bhide (1992) refers to bootstrap financing as the financing of ventures with modest personal funds. In this study, start-up bootstrap financing is defined as capital acquired from sources other than traditional providers of capital. Traditional sources of start-up capital include personal savings and debt from financial institutions. Bootstrap financing sources in this study include all sources of capital used after personal savings and loans from financial institutions are either exhausted or are not available, such as loans from friends and relatives, credit cards, home equity loans, life insurance, supplier credit, leases, and customer financing. No generally accepted definition or definitive definition of bootstrap financing has appeared in the literature. The definition of bootstrap financing in this study seems to captures the essence of previously suggested definitions. That is, bootstrap financing includes those sources of capital that are used after exhausting personal savings (but not personal ìsourcesî of capital) and loans from banks. Some methods may be highly creative (such as specialized leasing arrangements) while others are less creative (such as credit cards). A large number of firms use such financing schemes that are different from traditional methods. These methods are often important in providing the required capital base to support companies' operations and growth. However, few previous studies have examined the use of bootstrap sources of capital among start-up small firms.

Bootstrap financing has the advantage of often being easy to obtain (credit cards), convenient (loans from life insurance), and with few requirements (home equity line of credit). 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 (loans from public financing com-

panies) and loss of ownership control (venture capital). The availability of bootstrap financing may also result in the funding of start-up firms that are not viable. The lack of funding from traditional sources of capital, especially from financial institutions, may be a signal that the proposed business is not a good idea. The ability to launch the firm using bootstrap capital may result in the launch of a company that has limited chance for success.

This paper reports the results of a study that examined the relationship between the use of bootstrap financing by small start-up firms and specific characteristics of the firm. Previous studies have suggested a number of different definitions for small business. Osteryoung and Newman (1993) described the historical development of the definitions of small business from the nineteenth century to the present. They emphasize that the definition of small business has changed over time. Common variables used to define what is a small business include criteria based on number of employees, annual sales, amount of assets, management structure or industry dominance. They defined a small business as a firm (1) that does not have existing publicly traded common stock and (2) in which planned financing must be personally guaranteed by the owners.

The next section reviews the literature on the financing of small firms. Section III develops the research questions that are examined in the study. Section IV provides an overview of the data collection and analysis. Section V presents the results of the analysis. The last section discusses the implications of the results.

II. THE FINANCING OF SMALL FIRMS

Beginning with Tobin's (1958) separation theory and Modigliani and Miller's (1958) theory of capital structure, much of the traditional finance theory is based on the assumptions of capital market theory. Using these assumptions, a large part of finance theory has focused on valuation of the firm. According to traditional finance theory, the value of the firm stems from the cash flows the firm's assets are expected to produce, and is directly related to the risk associated with the risk, size and timing of these cash flows (Brigham & Gapenski, 1996). One of the basic tenets of finance theory is perfect capital markets. Perfect capital markets assume that equilibrium between providers and users of capital is facilitated through equal access to the financial markets by all participants, the absence of any friction that might impede the supply and demand of capital, and equal accessibility of information. In the context of small firm financing, perfect capital markets assume that all firms have equal access to and are able fully to participate in the financial markets with similar competitive positions.

It is well-known and documented that smaller firms, however, have constraints in their access to the equity and debt markets. These constraints result in the concept of perfect capital markets being less relevant to smaller firms as com-

pared to larger firms. Ang (1992), McMahon, Holmes, Hutchinson, and Forsaith (1993), and Walker and Petty (1978) discuss the differences between small and large firm finance theory. Differences in the objective function, market imperfections, and agency relationships are major and important distinctions that affect the application of finance theory to small firms.

Numerous studies have cited smaller firms' lack of access to the capital markets (Van Auken & Carter, 1989; Gaskill, Van Auken, & Kao, 1994; Ang, 1991). Petty and Bygrave (1993) noted that owners of smaller firms may consider lifestyle issues equally important to decisions as value maximization. As a consequence, smaller firms often rely on a different set of sources of financing from larger firms. These include, for example, greater use of debt relative to equity and short-term capital relative to long-term capital than is found in larger firms (Van Auken & Carter, 1994; Osteryoung, Constand & Nast, 1992).

The difficulties associated with smaller firms' acquisition of capital often result in high leverage, illiquidity, and cash flow problems. These difficulties are especially prevalent and troublesome during the firms' early years in operation when costs are high and revenues low. The associated financial distress often results in firms not being able to pursue market opportunities, limits on growth, and bankruptcy (Brigham & Gapenski, 1994). The financial distress often is directly related to poor managerial skills (Haswell & Holmes, 1989; Ang, 1992). Poor managerial skills and their impact on the financial operations of the firm are often evident in the poor overall operational management of the firm (Gaskill, Van Auken & Manning, 1993).

The most common sources of start-up financing are personal savings and loans from financial institutions. Since these sources are typically not sufficient to meet the initial funding requirements, other methods of raising start-up capital may be used to supplement the more traditional sources of capital (Neeley & Van Auken, 1995). For example, loans from friends and relatives, cash value of life insurance, and home equity are sometimes used to supplement initial financing sources (Van Auken & Carter, 1989). Freear, Sohl, and Wetzel (1995) refer to these alternative sources of capital as bootstrap financing. In a recent study they found that customers, suppliers, delayed compensation, business alliances, and private investors are common sources of bootstrap capital and that sources of bootstrap capital differed according to the firm's stage of development.

Sources of growth financing are often different from the sources of start-up capital. For example, formal venture capital (Bruno & Tyebjee, 1985; Maier & Walker, 1987) and informal investors (Wetzel, 1983; Freear, Sohl & Wetzel, 1995) are often cited as sources of capital for the rapidly growing firm. Most firms are unsuccessful in attracting venture capital and must pursue alternative sources of growth capital (Bruno & Tyebjee, 1985). The largest source of capital for growth companies is from private investors. Private investors are estimated to

invest in approximately two million individual companies each year. In total, about 250,000 private investors invest approximately $10 billion each year in about 30,000 firms (Freear, Sohl & Wetzel, 1995).

RESEARCH ISSUES

R1. The distribution of firms organized as sole proprietorships is expected to be different from the distribution of other organizational types of firms when nontraditional capital comprises 60% or more of total start-up capital.

The search for start-up capital is affected by the financial risk to which the providers of capital are exposed. The higher the firm's financial risk, the greater the difficulty in acquiring start-up capital (Brigham & Gapenski, 1996). Firms organized as sole proprietorships expose the providers of capital to potentially higher levels of risk since the risk of repayment depends on a single owner. Financial institutions often require that the entrepreneur provide evidence of an external source of income or asset-backed collateral prior to extending a start-up loan due to the uncertainty of profitability during the early years in operation (Churchill & Lewis, 1986). Firms organized as other forms of ownership such as partnerships, corporations and limited liability corporations, have the risk of repayment spread among greater numbers of owners. These types of firms may either be better able to provide evidence of an external source of income, greater collateral, or more equity capital. Entrepreneurs not able to secure start-up capital from traditional sources may subsequently rely on bootstrap sources (Thorne, 1989; Bhide, 1992). Ang, Lin and Tyler (1995) discussed the differences in capital acquisition relative to form of business ownership. They referred to the differences in, for example, liability exposure and personal guarantees as affecting the firm's financial structure. The result is that the ability of the new firm to acquire initial capital is directly affected by the ownership structure of the firm. In the context of this study, owners of sole proprietorships likely will rely on more bootstrap capital, especially when the bootstrap capital provides a very large percentage of start-up capital.

R2. The distribution of firms located in small communities (towns having a population less than 10,000 people) is expected to be different than the distribution of firms located in larger communities (towns having a population more than 10,001 people) when bootstrap capital comprises 60% or more of total start-up capital.

This relationship is based on the belief that the flow and availability of information in small communities is not as efficient as in larger communities. Other factors such as whether the business is located close to a university or research facility may also be related to the use of bootstrap financing. However, this study only examines size of community in which the business is located and focuses on the issue of information efficiency. This efficiency refers to knowledge of and

skills related to the acquisition of capital and is directly affected by the degree to which information is freely and widely available (Brigham & Gapenski, 1996). Holmes and Kent (1991) referred to the "knowledge gap" as resulting from a limited awareness of the alternative financing sources. The existence of a knowledge gap would be a factor affecting the efficiency of the distribution of information about alternative financing sources among small business owners and providers of capital. Weinzimmer, Fry, and Nystrom (1996) emphasized the importance of the firm's operating environment on the entrepreneur's search for market opportunities. Environment is not under the control of the firm, but has an important impact on the entrepreneur's search for capital. Entrepreneurs will adopt a financing strategy designed to manage the environmental constraints associated with operating in an environment characterized by a lack of funding opportunities or an inefficient flow of information concerning funding opportunities. The inadequate flow and availability of information may be a result of less sophistication among both the users and providers of capital about sources, amounts and criteria related to the acquisition of initial capital. Petty and Bygrave (1992/93) contend that information asymmetry is one of the more important issues affecting the firm's capital structure. Differences in knowledge and understanding of the availability of alternative sources of capital is expected to vary depending on the size of community in which the firm is located. The result of inadequate information concerning the availability of capital is that a greater number of new business owners in the smaller communities would be expected to use bootstrap sources of start-up capital than entrepreneurs in larger communities.

R3. The distribution of manufacturing/construction firms is expected to be different from the distribution of other types of firms when bootstrap capital comprises 60% or more of total start-up capital.

Manufacturing and construction firms are expected to use less bootstrap capital than other types of firms when bootstrap capital comprises a substantial percentage (i.e., 60% or greater) of start-up capital. Manufacturing and construction firms are more likely to have greater needs for start-up capital due to their high cost of asset acquisition. Van Auken and Carter (1989) found that the initial capital structure of smaller firms is dominated by debt financing. One of the more important lending criteria used by providers of debt financing is the level of asset backed collateral (Ang, Lin & Tyler, 1995; Dollinger, 1995). The relatively higher level of assets owned by manufacturing and construction firms as compared to other types of firms (i.e. service firms) provides a strong collateral base from which to acquire debt financing (Allen, 1995). The assets acquired by the manufacturing and construction firms are expected to provide a strong base of collateral for the traditional providers of capital. As a consequence, manufacturing and construction firms are expected to have the capacity to raise greater levels of more traditional levels of

initial capital and, as a consequence, use less bootstrap sources of initial capital than other types of firms.

IV. SAMPLE AND METHODOLOGY

Sample and Questionnaire Development

The sample of 387 small businesses were randomly selected from the 1992 list of small businesses served by the Small Business Development Center in a Midwestern state. Development of the questionnaire was based on previous research on small firm financing by Van Auken and Carter (1989) and Freear, Sohl and Wetzel (1995) and contained three sections. The first section contained questions relating to the demographic characteristics of the firm (type, age, ownership, community size, and level of start-up capital). The second section of the questionnaire asked respondents to list the percentage of start-up capital that was obtained from (1) equity (savings, sale of personal asset, home equity loan, life insurance, sale of stock, inheritance, other) and (2) debt sources (loan from financial institutions, venture capital, loan from public finance company, sale of accounts receivable, credit card supplied credit, manufacturing financing, leasing, R&D financing, customer financing, government grant, bond, other). The third section of the questionnaire asked the respondents to rank the difficulty of raising start-up capital using a five-point Likert scale.

The questionnaire was initially pretested and revised. Subsequently, the questionnaire was mailed in early March 1993, and a second mailing was sent during late March 1993. A total of 119 usable questionnaires were returned, providing a response rate of about 30.7%.

The sample was restricted to only those firms using bootstrap start-up capital. For the purposes of this study, bootstrap financing includes all forms of capital other than personal savings and loans from financial institutions. The 78 firms using bootstrap capital (defined in this manner) as part of their start-up financing comprised the final sample used in the study.

Methodology

The data were initially analyzed using univariate statistics (frequencies, means, and standard deviations) to provide a better understanding of the characteristics of the firms and their sources of start-up capital. This phase of the analysis provided insight into the characteristics of the sample firms and their sources of start-up capital.

Subsequently, the sample was segmented into two groups—those whose initial sources of start-up capital included more than 60% of bootstrap sources of cap-

ital and those whose initial capital structure was comprised by 60% or less of bootstrap capital. The major thrust of the paper is to examine the relationships between the use of bootstrap financing and (1) ownership structure, (2) community size, and (3) manufacturing/construction vs. other type of firms when bootstrap financing constitutes a large and significant proportion of start-up capital. The 60% level of bootstrap sources of capital was selected in order to examine the relationships when a large and significant percentage of bootstrap sources were used as start-up capital. By selecting the 60% level of bootstrap financing, the study examines these relationships when bootstrap financing has become the most important source of start-up capital rather than a complementary, less important, source of capital. A different criterion could have been used to segment the sam-

Table I
Characteristics of Respondent Firms (N = 80)

Type of Firm	Percentage of Respondents
Retail	16.7
Services	29.6
Construction	16.7
Manufacturing	32.1
Wholesale	5.1
Size of Community	Percentage of Respondents
< 10,000	47.5
10,001 - 50,000	16.7
50,001 100,000	24.4
> 100,000	24.4
Ownership	Percentage of Respondents
Sole Proprietorship	43.6
Partnership	11.5
Corporation	30.8
S Corporation	12.8
Limited Liability Company	1.3
Number of Employees	Percentage of Respondents
< 3	45.0
4-10	29.8
11-20	19.4
21-100	14.5
Sales	Percentage of Respondents
$150,000	22.1
$150,001-$200,000	22.9
$200,001-$500,000	16.8
$500,001-$1,000,000	17.6
$1,000,001-$10,000,000	20.6
Initial Total Capital	Percentage of Respondents
< $20,000	96.5
$20,001-$50,000	14.1
$50,001-$100,000	15.8
> $100,001	23.6

ple, such as a 51% level of bootstrap financing. However, using 60% as a criterion insures that bootstrap financing comprises the majority, is the most significant source, and is a critical component of start-up capital.

V. RESULTS

Characteristics of Respondent Firms

The characteristics of responding firms are shown in Table I. The largest percentage of respondent firms is organized as sole proprietorships (43.6%). Approximately 30.8% are organized as corporations, 11.5% as S-corporations, 11.5% as

Table 2
Sources of Start-up Capital (N = 80)

Source of Capital	*Percentage of Start-up Capital*
Traditional Sources	
Personal Savings	33.30
Loan from Financial Institution	23.91
SBA-Guaranteed Loan	7.80
Total Traditional Sources	65.01
Bootstrap Sources	
Sale of Personal Asset	5.81
Home Equity	0.77
Cash Value of Life Insurance	1.32
Stock	0.84
Inheritance	0.20
Other Equity	9.30
Venture Capital	6.34
Loan from Finance Company	1.26
Credit Card	1.60
Supplier Credit	0.17
Manufacturing financing	0.13
Lease	0.65
Borrowing Against Stocks	0.27
Federal Government Grant	0.09
State Government Grant	1.73
Local Government Grant	0.18
Bond	0.00
Research & Development Loan	0.00
Production Loan	0.00
Other Debt	4.15
Total Bootstrap Sources	34.80

partnerships, and 1.3% as limited liability companies. Almost 50% operate in the manufacturing (32.1%) and construction (16.7%) industry. The remaining firms operate in the services (29.6%), retail (16.7%), and wholesale (5.1%) industries. This sample distribution is somewhat different than the distribution of types of small firms in the U.S. The sample in this study is comprised of more manufacturing firms and less retail firms than would be expected from a comparable nationwide sample (see State of Small Business, 1996). Almost one-half of the respondent firms (47.5%) are located in towns of <10,000. In addition, approximately 16.7% are located in communities with populations between 10,001-50,000, 24.4% in communities 50,001-100,000, and 11.5% in communities > 100,000.

Table I also shows that almost 75% of the firms in the sample have 10 employees or fewer. All firms have sales less than $1,000,000/year, and approximately 62% have sales less than $500,000/year. The vast majority of firms (96.5%) began operations with less than $20,000 in initial capital.

Table II divides the sources of capital used to launch the new firm into traditional and bootstrap sources. The traditional sources of financing accounted for about 65% of total start-up capital and was almost evenly split between equity and debt sources. Approximately one-third of start-up capital was obtained from bootstrap sources. The bootstrap capital was obtained from a variety of sources, but heavily concentrated among only four accounts. The most prevalent were obtained from unspecified equity (9.30%), venture capital (6.34%), sale of personal asset (5.81%), and unspecified debt (4.15%). All other sources of bootstrap financing accounted for 9.2% of start-up capital.

Table 3
Use of Nontraditional Financing Versus Size of Community in Which Firm is Located: Chi-Square Test (N = 80)

Variable	*Nontraditional Capital < 60% of Start-up Capital*	*Nontraditional Capital < 60% of Start-up Capital*	χ^2
Type of Ownership			
Sole Proprietorship	76.7	23.2	
Other Firms	97.5	9.1	7.084*
Community Size			
< 10,000	86.8	13.2	
> 10,000	85.7	14.3	0.021
Type of Firm			
Construction/Manufacturing	97.4	2.6	
Other Firms	75.6	24.4	8.029*

Note: *Significant at 1%.

Chi-square Analysis

Table III shows the results of the Chi-square analysis. The table shows the differences in use of bootstrap capital relative to type of ownership (sole proprietorship vs. other), size of community in which the firm is located (<10,000 vs. >10,000), and type of firm (manufacturing/construction vs. other).

Research issue 1 stated that a higher percentage of new firms organized as sole proprietorships use nontraditional start-up capital than new firms established as other organizational forms when start-up capital comprised a substantial percentage of start-up financing. The results in Table III support this relationship (1% level of significance) in that a higher percentage of sole proprietorship (30.2%) than other types of firms (8.6%) acquired more than 60% of their start-up capital from bootstrap sources.

The second research issue stated that a higher percentage of new small firms located in small towns use bootstrap start-up capital than firms located in larger towns when bootstrap capital comprises a large percent of initial capital structure. The results in Table III do not support this relationship. Approximately 21.6% of the new firms located in towns having a population <10,001 as compared to 19.5% of firms located in towns having a population >10,000.

Research issue 3 stated that a smaller percentage of manufacturing/construction firms use bootstrap capital than other types of firms when the bootstrap capital comprises more than 60% of start-up capital. The results in Table III support this expected relationship (1% level of significance). The start-up capital of approximately 10.5% of manufacturing/construction was comprised of more than 60% of start-up capital as compared to 30.0% of other types of firms.

VI. CONCLUSIONS AND DISCUSSION

The difficulty of acquiring start-up capital is compounded by suspicions from the providers of capital about the viability of the business and abilities of the business owner. Part of the suspicions arise from the intermingling of personal and business goals among sole proprietors (Ang, 1992). Petty and Bygrave (1993) refer to the lack of separation between the firm and the owner as affecting the financial goals of the firm. As a consequence, sole proprietorships are likely to employ a mixture of personal and business financing sources to a much greater extent than firms organized in other manners.

The initial years in operation are commonly characterized by low revenues and high expenses. To attract capital, business owners must provide strong evidence of their ability to repay the providers of capital in a timely manner. Demonstrating the ability to repay external capital would be more difficult when the business is organized as a sole proprietorship as compared to other forms of business ownership.

The owners of sole proprietorships must rely on more personal resources as compared to partnerships and corporations than can draw on the resource base of a greater number of investors.

Levin and Travis (1987) believe that lifestyle considerations affect the owner-business separation in a manner that increases the role of lifestyle objectives relative to wealth maximization objectives. In their development of agency theory, Jensen and Meckling (1976) note that agency problems arise due to inconsistent objectives between owners and managers. The lack of separation when the firm is organized as a sole proprietorship reduces these agency costs. In the absence of agency costs, sole proprietorships are seen more likely to mix personal with business capital and access a greater variety of sources of capital (especially bootstrap sources) than other types of firms. The utilization of more bootstrap sources of capital would be consistent with the "piecing" together a capital structure from a variety of sources for sole proprietorship as compared to other types of firms.

The number of firms using bootstrap sources of start-up capital in different sized communities is related to the efficiency of the capital markets in rural areas. The expected lack of expertise and information about the financing of new firms among providers of capital in rural areas was believed to result in an increase in the number of firms utilizing bootstrap capital. This condition was expected to result in a higher risk aversion among providers of capital in the rural areas. The results do not support this relationship. Apparently, the availability of information, especially through the application of technology, as well as programs developed by, for example, the Small Business Development Centers and Small Business Administration mitigate the relative isolation of rural areas.

The finding that fewer manufacturing/construction firms, as compared to other types of firms, use bootstrap capital is not unexpected. Traditional finance theory states that financial decisions are based on whether the investment is expected to earn a market determined required rate of return. Providers of capital, who are assumed to be risk averse, evaluate the potential returns relative to the risk characteristics of the investment. The availability of assets acting as collateral provides protection to the providers of capital against loss in case the investment does not generate the anticipated returns (Brigham & Gapenski, 1994).

Manufacturing and construction companies have a greater base of assets and, thus, greater financing needs, than many other firms, such as service and retail firms, from which to provide collateral for traditional providers of capital. As a consequence, manufacturing and construction firms would be in a better position to acquire capital from traditional sources. Other types of firms having a lower collateral base (and perhaps a lower marketability of collateral—in the case of inventory for retail firms) would be less able to attract traditional capital and, thus, would need to rely on bootstrap sources to a greater extent.

The results of this study provide some insight into the acquisition of capital by smaller firms. Adequate preparation and planning are important steps in the successful acquisition of capital. The results show that capital acquisition, especially the use of bootstrap sources of capital, is significantly affected by the characteristics of the firm. First, the results suggest location of firm relative to community size does not appear to be a significant factor in the acquisition of bootstrap financing. Any market inefficiencies in the use of bootstrap financing does not appear to be due to the location of the firm. Second, the results indicate that ownership structure and type of firm do have a significant impact on the use of bootstrap financing. The results suggest owners launching firms organized as either a sole proprietorship and non-construction/manufacturing firms should be prepared to use more bootstrap financing than other firms. Owners of these types of firms should be prepared to develop a financial plan that incorporates the use of a greater variety of financing alternatives than owners of firms organized other than a sole proprietorship and construction/manufacturing firms. As such, sole proprietorship of non-construction/manufacturing firms should recognize the potential for the associated greater number of constraints and difficulties in raising start-up capital.

The interpretation of these results should be constrained by the associated limitations. These limitations provide insight into areas that future studies might address. The study examined the use of nontraditional capital in only a single state located in the Midwestern part of the U.S. and used a relatively small sample. The results are likely to be representative of those obtained from similar studies in other Midwestern states. Results obtained from studies in other regions of the US, however, may be different due to differences in factors such as economic base, lending requirements, availability of capital, types of business and backgrounds of entrepreneurs. For example, differences in the composition of initial capital and the associated use of bootstrap financing would likely be different in sections of the US having a stronger entrepreneurial ìcultureî, such as in California or New England, than in the Midwest. A similar study using a larger national sample could provide evidence on differences in bootstrap financing by type of firm, region of country, and metropolitan versus non-metropolitan area, etc. This study also only examined the use of bootstrap capital at a single point in the life of a firm and at a single point in time. The sample of firms and, thus, the results may have been skewed toward life style firms rather than rapid growth firms. Other studies could examine the use of bootstrap capital over the life cycle of a firm, longitudinally, and according to life style vs. rapid growth firms. More importantly, this study did not examine the motivations for the use of bootstrap capital. Future studies could investigate the motivations of owners when acquiring their capital. Finally, the study examined the relationship between the use of bootstrap financing and only three narrowly defined variables. Future studies could expand on this research by

investigating the relationship between the use of bootstrap financing and a more comprehensive set of variables.

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