THE SOURCES OF EQUITY FINANCING
FOR RAPIDLY GROWING VENTURES

by

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Submitted to the Alfred P. Sloan School of Management
and the School of Engineering
in partial fulfillment of the requirements for the degree of

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ABSTRACT

This thesis investigates the usage of equity-type financing by firms with sustained
annual growth rates of 50% or more. The study is directed at determining if most rapidly
growing ventures seek outside equity financing and what role informal investors play in
providing risk capital to high-growth firms. Little empirical research activity has been
recorded in this area.

Textbook theory and conventional wisdom suggest that rapidly growing ventures
will be forced to seek outside risk capital because they quickly exceed the supply of
internally generated funds and find access to debt financing limited and insufficient.
Earlier studies indicate that the informal supply of risk capital is many times greater than
any source of formal capital. Four hypotheses are developed concerning the equity
financing patterns of rapidly growing ventures and risk capital sources.

This study is based upon a mailed questionnaire sent to 722 high growth firms. The
information requested included the year of each round of financing, the source, amount,
and the stage of the venture at the time. The final sample included 171 firms from across the
U.S. and from every business sector.

Results clearly indicate that surprisingly, most of the responding rapidly growing
ventures do not use outside equity-type financing to fund their growth requirements. Of
those that do, informal investors are not the dominant source of funds. Their participation
measured in dollars is by far the lowest of any source. The author concludes that informal
investors must concentrate their investments on non-rapidly growing firms, or that earlier
scale estimates of the informal capital supply are not valid. This study confirms earlier
findings about the complementary roles adopted by informal and formal risk capital
investors. Informal investors tend to invest in smaller amounts and earlier in the life of a
venture than formal sources.

Thesis Advisor: Russell W. Olive
Title: Senior Lecturer
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CHAPTER 1

INTRODUCTION

1.1 PURPOSE OF RESEARCH

Economists and politicians have been puzzled by the resilience shown by the American economy in recent years. The national budget deficit grows, the trade deficit looms widely, the stock market crashes, mergers and acquisitions continue at a frenzied pace, massive reductions in workforces are announced by the major firms, yet unemployment drops and GNP shows robust growth.

Evidence continues to accumulate indicating that the estimated seven million small and medium-sized businesses in the U.S. are principally responsible for the job creation [Birch, 1987a, 1988; Reynolds, 1987, 1988], product and process innovations [SBA, 1987; NSF, 1983, 1987], and the consumption of goods and services that fuel the national economy [SBA, 1987; Birch, 1988]. Of these firms, many are considered to be rapidly growing (an annual growth rate of 50% or more). These rapidly growing ventures contribute a disproportionate share of the economic benefits [Birch, 1988; Reynolds 1987, 1988].

How these firms raise the capital needed to sustain explosive growth is an area that has not received much study. Understanding where rapidly growing firms obtain expansion capital may have many implications for entrepreneurs, investors, and the makers of public policy.
1.2 OVERVIEW OF STUDY

An examination of the literature provides much information to confirm the importance of small business, and of rapidly growing firms in particular, to the national economy. Traditional finance theory and current research indicate that ventures experiencing sustained high growth:

1) Quickly exceed the ability to finance themselves from internally generated funds.

2) Find access to traditional debt financing limited and insufficient to meet growth requirements.

3) Are likely to turn to outside equity investors for risk capital to fund their expansion needs not met by the first two methods.

Firms seeking outside equity investments have a number of potential sources. Professional venture capital funds are the most highly visible providers of risk capital, but their annual investments total only three to four billion dollars in a good year [Venture Capital Journal, 1989]. Public stock offerings for new issues totaled only $6 billion in 1988 [INC, 1989]. These amounts are known because they occur in a formal marketplace. Investment activity by other sources is not as well understood because they work through informal processes. However, recent studies provide evidence that annual investments made by informal investors may total as much as $56 billion [Gaston & Bell, 1988].

This study is directed at two important questions:

1) Do most rapidly growing ventures raise outside equity capital?
2) What role do informal investors play in providing risk capital to rapidly growing firms?

Four hypotheses are presented for investigation of these questions. To gather data, questionnaires were sent to 722 firms identified as having sustained growth rates of greater than 50% for four or more years. The questionnaire was principally designed to determine their financial histories including the year of each round of equity financing, the source, the amount, and the stage of the venture at each round.

1.3 SUMMARY OF FINDINGS AND CONCLUSIONS

The research results indicate that most rapidly growing ventures do not secure outside equity investments to fund their growth. Of those that do, informal investors play a significant role by providing risk capital in earlier stages and in lesser amounts than formal sources. The research confirms earlier findings that private investors play a complementary role to formal investors, such as venture capitalists [Wetzel & Frear, 1988]. Estimates of the scale of the informal supply of risk capital in other studies [Gaston & Bell 1986, 1988; Aram, 1987] are not consistent with the financing patterns found in this research. Gaston and Bell [1988] estimate that the supply of informal risk capital is many times larger than that available from formal sources. If their scale estimates are valid, then informal investors must concentrate their investment efforts on firms that are not rapidly growing.
CHAPTER 2

RESEARCH MOTIVATION

2.1 INTRODUCTION

Not too long ago, the study of small business was considered to be of little importance and the word entrepreneur was associated with "...people who sold T-shirts during papal visits or bottled water after natural disasters" [Hawken, 1987]. In recent years, entrepreneurship and the role of small business have become serious topics receiving an increasing level of research.

This chapter discusses the significant role these firms play in the national economy. Evidence will be presented to reveal that the relatively small segment of firms classified as rapidly growing contribute the majority of the economic benefits. The effects of rapid growth on an organization and the capital requirements to fund that growth are examined. The purpose of this chapter is to demonstrate the importance of understanding how small businesses, and in particular rapidly growing ones, finance their activities.

2.2 IMPORTANCE OF SMALL BUSINESS IN THE U.S. ECONOMY

The Hidden Economy1 - David Birch [1988] states that "We are living in a nation of two economies, one visible, one hidden." The businesses of the Visible Economy dominate Wall Street and the media. The membership of

---

1 The term "Hidden Economy" is attributed to David Birch.
the Hidden Economy is comprised of millions of smaller firms. They are generally privately held and frowned upon releasing information about their finances or activities. Recent research reveals the extent of the impact that these seven million firms have upon our economy:

**Job Creation and Employment** - In the period from 1980-1987 the Fortune 500 firms have cut their payrolls by 3.1 million employees. At the same time, smaller companies have created more than 17 million jobs [Castro, 1988; Birch, 1988]. In his important study "Job Creation in America" David Birch [1987a] shows that small firms created 98% of net new jobs in the U.S. This is consistent with the results of studies in the states of Minnesota [Reynolds, 1988] and Pennsylvania [Reynolds, 1987].

**Sources of Innovation** - The National Science Foundation (NSF) has announced an estimate that 98% of all 'radical' product innovations are developed in the research labs of small companies [Castro, 1988]. Small firms generate both more patents and more new products per R&D dollar than larger firms [NSF, 1987]. Another study by the NSF showed that small firms spend about double the percentage of their research and development budgets on fundamental research than large companies [NSF, 1983]. The U.S. Small Business Administration (SBA) has found that small firms developed more than twice as many 'first-of-type' innovations as measured on a per-employee basis [SBA, 1987].

**Small Firms as Consumers** - Just as smaller firms are great users of human resources, they are also great consumers of goods and services - often provided by other small businesses. Office equipment, computers,
commercial real estate, furniture, insurance, accounting, legal services and more are all needed to maintain and grow a business. The SBA reports that the small business sector plays a significant role in ensuring efficient allocation of resources by employing previously used capital equipment [SBA, 1987].

**Other Economic Influences** - Small high-technology related firms studied by the Bank of Boston began exporting their products virtually as soon as they began operating [Castro, 1988]. Birch [1988] reports that much of the employment growth is in service-related businesses and that while the US has experienced an overall decline in its balance of payments, the balance of trade for services has actually increased almost continuously since 1970.

The SBA reports that small business plays an important role in ensuring the mobility of capital and human resources. They find that small firms act as "market shock absorbers" by the flexibility that they can call upon to respond to random and temporary variations in demand [SBA, 1987].

2.3 RAPIDLY GROWING COMPANIES

**Defining Rapid Growth** - Of the seven million or so small and medium-sized firms that make up the Hidden Economy, only about 7% experience growth of more than 20% per year. Of these 500,000 firms, about 80,000 grow at a rate greater than 50% per year [Birch, 1987b]. This section examines current research concerning the contributions these high growth
firms make to the economy. A discussion of the unique challenges facing managers of firms experiencing explosive growth follows.

**Disproportionate Share of Economic Benefits** - Although it has become understood that small business in general is responsible for a good deal of the economic growth, recent studies indicate that high growth firms provide the greatest contribution. Birch [1988] reports that 5% of all companies created 87% of the gross new employment for a four year period ending in 1987. Similar results were found by Reynolds in his research\(^2\). He reports that in both Pennsylvania and Minnesota, 76% of all companies examined grew slowly or showed no growth. The remaining 24% of the new start-ups firms accounted for 80% of new company sales and 60% of new jobs [Reynolds 1987, 1988].

**Effects of Rapid Growth on Firms** - Clifford and Cavanaugh [1985] have demonstrated that the nation's most successful midsized companies outperformed both the economy and the Fortune 500, not by following the conventional wisdom, but by challenging it and developing what they call "maverick business strategies". In most cases it appears that these strategies were founded early in the life of the business - when they were small firms. Clifford and Cavanaugh conclude that a business must have the "will and the skill" to advance from small to mid-size or greater.

Many people assume that running a small business is very similar to running a larger one, just on a smaller scale. In their article "A Small Business Is Not A Little Big Business", Welsh and White [1981] argue that

---

\(^2\) The Birch and Reynolds studies utilized different criteria to categorize growth. Adjusting for this variation, the results are remarkably consistent.
the very size of a small venture creates conditions that call for unique managerial perspectives and strategies.

One of the most critical areas of management concern is financial planning. The common analytical models employed by big business are of little use in this area [Welsh & White, 1981; Stancill, 1987]. A common financial rule of thumb is that cash flow equals net profit plus depreciation and other noncash expenses. This describes a business in relative equilibrium. Rapidly growing firms are highly volatile [Birch, 1988] and are nowhere near equilibrium. Growth requires cash for investment. Accounting profits may accumulate, but they are merely a mirage since profits are not cash. A manager must concentrate on detailed and projected cash needs and spend a great proportion of time on maintaining and ensuring liquidity - while at the same time watching the bottom line [Welsh & White, 1975]. As sales increase, the cash outflow to support that growth occurs much earlier than the cash inflows from sales. These conditions are proportionately worse for firms that are rapidly growing.

2.4 CAPITAL REQUIREMENTS OF GROWING FIRMS

When a firm experiences sales growth, assets and expenses grow as well. A common rule of thumb says that for manufacturing firms every new sales dollar will require between 50 cents and one dollar of additional assets [Wetzel, 1989]. Other types of firms may be able to sustain growth with lower multiples, but they too must face the need for additional financing.

The annual net new capital requirements for new and growing businesses may be in excess of $80 billion [Birch, 1988]. Birch estimates that
the 500,000 growing enterprises require an average of $100,000 in new capital each year to finance new growth. If one estimates that the 80,000 rapidly growing firms each need, on average, somewhere between $200,000 and $500,000 each year to fund their growth, the annual net new capital requirements for them ranges from $16 billion to $40 billion. This estimate may be somewhat inaccurate, but it is unlikely to be in error by an order of magnitude. It appears reasonable to presume that the rapidly growing firms need tens of billions of dollars in new capital every year.

2.5 CHAPTER SUMMARY

The rapidly growing firms of the New Economy are responsible for the majority of the economic benefits generated by small business. Of the many challenges facing growing ventures, cash management and the acquisition of sufficient capital to support their growth are critical. The aggregate annual capital requirements are large, and research concerning the sources of funds is important.
CHAPTER 3

LITERATURE REVIEW AND DEVELOPMENT OF HYPOTHESES

3.1 INTRODUCTION

Very little work has been done concerning the financing patterns of high-growth enterprises. This chapter examines current research regarding the sources of capital for small business in general. This information is utilized to develop four hypotheses investigating the financing activities of rapidly growing ventures.

Investigation of the financing question for smaller firms is often complicated by the comingling of personal and business transactions. Financial records only report corporate operations and for small private companies this information alone is unreliable [Levin & Travis, 1987]. For example, loans to the business secured by the personal guarantee or the personal property of the owner do not appear.

There are three basic ways for companies to fund their growth. They can draw upon internally generated funds (retained earnings), they can borrow the money required, or they can exchange shares of ownership in the enterprise for cash. Most firms follow this "pecking order" as the cost of capital increases at each step in the hierarchy [Myers, 1984].
3.2 INTERNALLY GENERATED FINANCING

In the corporate financing decision process, internally generated cash flow is the preferred and dominant source of funds for long term financing [Brealey & Myers, 1984; Ross & Westerfield, 1988]. This cash can come from current operations or could have been accumulated over time\(^3\). It is generally accepted that the maximum growth rate a young business can support solely from internal cash flow is about 20%-25% [Wetzel, 1989].

The concept of the sustainable growth rate of the firm [Higgins 1981] has been popularized by the Boston Consulting Group. This notion provides a growth rate equation that can be applied to illustrate the limitations of internal financing to support growth. To simplify matters, several assumptions can be made [Ross & Westerfield, 1988]:

1) The firm's assets will grow in proportion to sales.
2) The net profit margin remains constant.
3) The firm has a given dividend payout ratio and debt/equity ratio.
4) The number of outstanding shares of stock remains constant.

The equation utilized by Ross and Westerfield is:

\[
growth\text{ rate} = \frac{\Delta S}{S_0} = \frac{p(1-d)(1+L)}{T[p(1-d)(1+L)]}
\]

The variables are:

- \(S_0\) = sales this year
- \(\Delta S\) = change in sales \((S_1 - S_0)\)
- \(p\) = net profit margin on sales
- \(d\) = dividend payout ratio
- \(L\) = debt/equity ratio
- \(T\) = ratio of total assets to sales

\(^3\) Under the Internal Revenue Code of 1986, Sections 531-537, corporations are subject to penalties for excess accumulation of undistributed retained earnings.
Most rapidly growing firms are earning a small or negligible accounting profit (after taxes) as they endeavor to sustain their growth\(^4\). For this demonstration we will use an unusually high annual net profit margin (after tax) of 20%. We will assume that the firm pays no dividends (a dividend payout ratio of 0). To illustrate the maximum internal-only contribution to growth we will assume that the firm has no debt (debt/equity ratio is 0).

By applying these values to the growth equation, we see that the maximum sustainable growth rate of this firm is 25%\(^5\).

\[
\text{growth rate} = \frac{\Delta S}{S_0} = \frac{0.2(1-0)(1+0)}{1-0.2(1-0)(1+0)} = 0.2 = 0.25 = 25\%
\]

A firm growing rapidly (50% or more each year) cannot rely upon operations to provide the capital needed and must turn to the debt and equity markets in search of cash.

### 3.3 DEBT FINANCING

Debt comes in many forms and from many sources. Many businesses find it advantageous to structure transactions such that they can be called debt but that are really equity investments. This gives them the benefit of the tax shield on interest but the advantages of equity. Lenders themselves are finding that having an equity kicker can produce a desired minimum rate of

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\(^4\) As reported by INC Magazine on the INC 500 years 83-88, the number of firms with after tax earnings of 5% or less ranges 55-60% while only about 10% or fewer firms report annual profits of 16% or greater.

\(^5\) In this case the growth rate is equal to the firm's return on equity (ROE). In general, the sustainable growth rate for a firm can be approximated by ROE X RR (retention rate).
return plus much more if the business really takes off [Torpey & Viscione, 1987; Brophy, 1984]. For the purposes of this research, any transaction that is quasi-equity (involves potential equity participation through conversion privileges, warrants, or options) will be considered to be equity\textsuperscript{6}. The terms equity and equity-type will be used interchangeably unless otherwise noted.

The principal sources of debt financing include: commercial banks, finance companies, trade credit, and government (local, state, and federal). For smaller firms, trade credit represents a higher percentage of total liabilities than in larger companies [Timmons, 1985]. Small firms also have higher debt/equity ratios than larger businesses and a greater percentage of short-term debt compared to all sources [Andrews & Eisenmann, 1984].

Credit evaluation practices differ between the various types of lending institutions, but interest rates also tend to vary. In general, the less rigorous the requirements, the higher the rates. Lenders like to see that the principals of the borrowing firm have a significant personal investment in the business. The lender looks for the current ability to service the interest and principal payments from cash flow and the future ability to meet the terms of the loan agreement. As the term of the loan increases, applications are more rigorously evaluated because the risk increases as cash flows become more uncertain.

There is evidence to suggest that the financial markets tend to discriminate against small business by denying those firms access to credit

\textsuperscript{6} This treatment is consistent with generally accepted accounting principles (GAAP). In the calculation of fully diluted earnings per share, the same interpretation prevails for common stock equivalents.
at terms commensurate with their actual risk levels. Bankers often perceive smaller firms as riskier than actual performance justifies and are discouraged by top management from making loans even at higher rates sufficient to cover the perceived risk levels [Guenther, 1984]. Two factors may contribute to a perception of greater uncertainty in estimating risk for small business. Assymetric information\(^7\) is a greater problem for smaller ventures leading to higher rates and limited loan sizes since lenders find it difficult to distinguish borrower quality [Jaffee & Russell, 1976]. The added flexibility that small firms have can allow them to readily exchange assets that may result in a change of the risk level of the firm [Petit & Singer, 1985].

Borrowing to fund expansion is generally assumed to mean the acquisition of long term debt as the amounts needed are larger than typical working capital requirements and the resulting cash flow from the application of funds does not occur for some time. Growing ventures seek any kind of debt capital they can get their hands on. Levin and Travis [1987] report that:

"Textbook theory says to match sources and uses of capital. But the old bromide that you do not use short-term debt to finance fixed assets is nonsense in small privately held companies. In a growth spurt, these organizations get capital any way they can and use it any way they need to."

---

\(^7\) Assymetric information is used to describe the situation where insiders in firms have information that outsiders do not have. This may be a result of a failure to adequately communicate this information, or a deliberate attempt to withhold it.
Source and use decisions are based...not on traditional financial wisdom."

While the relatively stable small business may satisfy a lender as to their creditworthiness and ability to repay, rapidly growing firms find it difficult to convince lenders. Rapidly growing ventures experience capital requirements that cannot be secured by existing assets of the business. Owners of these firms quickly reach the limits of borrowing even when secured by their personal assets. Once the firm's debt/equity ratio becomes high, additional debt financing becomes difficult, if not impossible, to locate.

3.4 DEVELOPMENT OF HYPOTHESIS 1

Textbook theory and current research indicate that ventures experiencing sustained rapid growth quickly exceed the ability to finance themselves from internally generated funds. They are then limited in accessing traditional debt financing markets because of their size and large new capital requirements. Since these two sources of funds are insufficient to meet expansion needs, rapidly growing firms are likely to turn to an outside equity investor to fulfill their capital requirements. This reasoning leads to the first hypothesis this research will test:

H1) **Most rapidly growing ventures find it necessary to raise outside equity-type capital for at least part of their growth financing.**
3.5 EQUITY FINANCING

History shows us that risky ventures have been able to attract investors willing to provide capital in return for a share of the expected profits. Queen Isabella's funding of Columbus is one often used example. Today, the sources of outside risk capital can be classified into two categories, formal and informal. The formal sources include the professional venture capital funds, public stock offerings, and non-financial corporations. The investment activities of the formal sources are well known and understood since they are for the most part conducted in a public marketplace. The informal transactions are not generally made public and activity can only be estimated as the market is largely invisible. Informal sources include family, close friends, and private individuals (also known as business angels).

The following sections will provide definitions for these sources as employed in this study, examine what is known about them, and develop several additional hypotheses.

3.6 FORMAL SOURCES - INDICATORS OF SCALE

*Venture Capital Firms* are investment funds organized for the purpose of offering risk capital to ventures. They are professionally managed and usually have an established capital base. Most are structured as limited partnerships with the general partners being the fund managers. The limited partners are investors in the fund and provide the bulk of the risk capital. Small Business Investment Corporations (SBICs) and Minority
Enterprise Small Business Investment Corporations (MESBICs)⁸ that provide equity financing are included in this category. The number of venture capital firms and the magnitude of their collective investment pool are substantial enough to be referred to as an "industry". As with other industries, there exist numerous organizations whose business it is to examine, track, record, and report on the activities of venture capitalists.

The venture capital industry as we know it today was formed in the period following the second World War. In 1946, J.H. Whitney established the first privately held venture firm with an initial capitalization of $10 million. The formation of American Research and Development (ARD) with General George Doriot as president occurred in the same year. Doriot and ARD are recognized as instituting many of the principles now regarded as common practice in venture capital [Wilson, 1985]. In 1958 the Small Business Investment Company Act led to the establishment of SBICs (essentially government subsidized venture capital firms). The next twenty years were turbulent as a few notable successes were overshadowed by many more failures. The economy and mismanagement of both the venture funds and their portfolio companies were major factors in reshuffling the structure of this emerging industry [Morris, 1989].

The growth of funds invested in venture capital firms jumped dramatically in 1978 as the federal government reduced the maximum capital gains tax rate from 49% to 28%. Another substantial increase in the

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⁸ SBICs and MESBICs are licensed by the SBA and can leverage government funds four-to-one against privately raised capital. There are various restrictions governing their operation and activities, but they can provide either debt or equity financing. About 135 of these provide risk capital in return for equity participation [Timmons, 1985].
annual level of new funds occurred in 1981 with the further reduction of the
long-term capital gains rate to 20% [Burrill & Norback, 1988]. Currently, the
total investment pool managed by the more than 800 venture capital firms is
in excess of $30 billion and these firms are raising and investing capital at
an annual rate of about $3-4 billion [Morris, 1989]. See Table 3-1 below for
detailed information.

<table>
<thead>
<tr>
<th>Year</th>
<th>New Capital</th>
<th>Total pool under Mgmnt.</th>
<th>Portfolio Investments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
<td>0.7</td>
<td>4.2</td>
<td>1.1</td>
</tr>
<tr>
<td>1981</td>
<td>0.9</td>
<td>5.1</td>
<td>1.4</td>
</tr>
<tr>
<td>1982</td>
<td>1.4</td>
<td>6.7</td>
<td>1.8</td>
</tr>
<tr>
<td>1983</td>
<td>3.4</td>
<td>12.1</td>
<td>2.8</td>
</tr>
<tr>
<td>1984</td>
<td>3.2</td>
<td>16.3</td>
<td>3.0</td>
</tr>
<tr>
<td>1985</td>
<td>2.3</td>
<td>19.6</td>
<td>2.6</td>
</tr>
<tr>
<td>1986</td>
<td>3.3</td>
<td>24.1</td>
<td>2.9</td>
</tr>
<tr>
<td>1987</td>
<td>4.2</td>
<td>29.0</td>
<td>3.9</td>
</tr>
<tr>
<td>1988</td>
<td>2.8</td>
<td>31.1</td>
<td>-NA-</td>
</tr>
</tbody>
</table>

Public Stock Offerings (PSOs) are a significant source of financing for
established and growing firms. While companies can raise substantial
funds through initial public offerings (IPO) or later issues, it may be difficult
to find an underwriter or a willing marketplace unless the venture has a
significant and strong performance record. Many times smaller issues are
accepted by the underwriters on a "best efforts" basis rather than as a firm
underwriting [Wallace, 1989]. The SEC provides specific criteria for

---

determining what constitutes a "public offering". In addition to federal regulations, there are also state laws governing these activities.

There are many disadvantages to going public. These include the loss of privacy, limitations on management's freedom of action, a cost for capital higher than other alternatives, and the large amount of management time and effort required to comply with SEC procedures both during the underwriting process and after the issue [Timmons, 1985; Burrill & Norback, 1988].

Wetzel [1989] concludes that the public equity markets are not a source of capital for most high-growth firms since of the 3 million corporations in the United States, only about 12,000 (less than one half of one percent) can be considered publicly owned and only 4,000 of them are traded through national or regional exchanges.

The number of firms filing IPO's is quite small, but these firms raise a lot of cash. In 1988 216 firms raised $5.9 billion through their IPO's [Dealer's Digest, 1989]. Of these, 35 firms raising $756 million were backed by venture capital fund investments [Venture Economics, 1989]. Table 3-2 provides information for 1980-1988. Composite yearly averages for the period 1980-1988 are perhaps more instructive as the IPO market is highly cyclical:

Total IPO's - 384 firms raising $7.7 billion
Venture backed IPO's - 62 firms raising $1.4 billion
Table 3-2: Initial Public Offerings / Scale Indicators ($ billions)

<table>
<thead>
<tr>
<th>Year</th>
<th># Issues</th>
<th>$ Value</th>
<th># Issues</th>
<th>$ Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
<td>152</td>
<td>1.4</td>
<td>27</td>
<td>.4</td>
</tr>
<tr>
<td>1981</td>
<td>355</td>
<td>3.2</td>
<td>68</td>
<td>.8</td>
</tr>
<tr>
<td>1982</td>
<td>124</td>
<td>1.4</td>
<td>27</td>
<td>.5</td>
</tr>
<tr>
<td>1983</td>
<td>687</td>
<td>12.5</td>
<td>121</td>
<td>3.0</td>
</tr>
<tr>
<td>1984</td>
<td>354</td>
<td>3.9</td>
<td>53</td>
<td>.7</td>
</tr>
<tr>
<td>1985</td>
<td>357</td>
<td>8.5</td>
<td>47</td>
<td>.8</td>
</tr>
<tr>
<td>1986</td>
<td>694</td>
<td>18.2</td>
<td>98</td>
<td>2.1</td>
</tr>
<tr>
<td>1987</td>
<td>515</td>
<td>14.4</td>
<td>81</td>
<td>1.8</td>
</tr>
<tr>
<td>1988</td>
<td>216</td>
<td>5.9</td>
<td>35</td>
<td>.8</td>
</tr>
</tbody>
</table>

**Non-Financial Corporations:** Investors classified as non-financial corporations are firms whose principal operating activity is not the provision of financing. These are often larger corporations who set up their own venture capital groups with the primary motivation of obtaining "windows" into new technologies or in developing candidates for acquisition. Examples include DEC's investment in Trilogy and investments by major pharmaceutical companies in new biotechnology startups. The few corporations who set up venture investment groups with the principal objective of capital gains are not included in this category (they are classified along with the venture capital funds). While these firms appear to be willing to supply substantial capital to their investments ($10-20 million) [Silver, 1982] they enter into relatively few deals with only 5% of the total dollars and

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10 Data source: the editors of GOING PUBLIC: The IPO Reporter, a publication of the Dealers Digest Inc., NY, NY. Totals reported exclude closed-end funds and best-efforts underwritings.

investment rounds reported in a equity financing study of new technology-based firms [Wetzel & Freear, 1988].

3.7 INFORMAL SOURCES - ESTIMATES OF SCALE

We know that informal sources of equity capital exist and that this population consists of family members, close friends, and unrelated private individuals (angels). However, our knowledge about their investment activities is limited and the research literature in this area is scant. This section will show that estimates of the pool of funds available for equity investments by informal sources is many times larger than the formal sources.

By pooling several regional studies, Gaston and Bell [1988] computed scale estimates for the informal supply of capital in the US. The underlying studies were made by Gaston & Bell [1986, 1988] and Aram [1986]. They report that nearly 500,000 equity-type investments are made each year totalling $56 billion. They estimate that the total pool of informal capital is $78 billion. A summary of their estimates is presented in Table 3-3.

Table 3-3: Estimates of Informal Capital Supply

<table>
<thead>
<tr>
<th>Scale Measurement</th>
<th>Estimated US Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firms with Informal Investors</td>
<td>445,600</td>
</tr>
<tr>
<td>Number of Informal Investors</td>
<td>719,600</td>
</tr>
<tr>
<td>Number of Annual Investments</td>
<td>489,000</td>
</tr>
<tr>
<td>Total Annual Informal Capital Investments</td>
<td>$55.6 billion</td>
</tr>
<tr>
<td>Total Pool of Informal Capital</td>
<td>$77.9 billion</td>
</tr>
</tbody>
</table>
Using data from the 1983 Consumer Finance Survey, another study estimates that informal investors held invested assets totalling $250 billion in mid-1983 [Ou, 1986]. Assuming an average holding period of about 5 years and that an amount equal to the original investments is reinvested in new opportunities, this results in an estimate of annual informal activity of about $50 billion. This is consistent with the Gaston & Bell research.

3.8 DEVELOPMENT OF HYPOTHESIS 2

Initial public offerings totalled $6 billion in 1988 and investments placed by professional venture capital firms average around $3 billion in recent years. In comparison, the studies cited above of the informal supply of risk capital consistently estimate an annual investment activity of $50 billion or more. These estimates suggest that informal investors are the dominant source of equity funds for all firms using outside equity financing. Informal investors also have high return on investment (ROI) criteria [Wetzel, 1989; Haar et al., 1988]. Since high-growth firms can more easily meet this requirement [Wetzel, 1989], it would be expected that informal investors dominate the equity financing sources of such firms.

Therefore, the second hypothesis is:

H2) **More rapidly growing ventures raise equity-type financing from informal sources than from any other source, including venture capital funds.**
3.9 SIZE AND STAGE PREFERENCES

**Formal Sources:** As the venture capital funds have grown in size their required minimum capital investment has also increased. Most of the venture funds are not inclined to even seriously investigate individual investments of less than $500,000 [Maier & Walker, 1987; Haar et al., 1988]. Funds that once placed investments of $100,000 are requiring minimum placements of $1 million or more. The larger limited partners of the major funds have begun to impose performance-based payback provisions as a condition of further investment [Saffo, 1989] causing the fund managers to seek less risky (later stage) investments.

While public stock offerings of under $7.5 million can be filed using SEC Form S-18 Registration Statement instead of the more complex and extensive Form S-1, any registration is still costly. The nature of the public offering makes it unlikely that many firms will utilize it for early stage funding or to raise financing amounts under $2 million.

Non-financial corporations tend to seek later stage investment candidates with potential revenues of $200 million or more and are willing to invest large amounts ($10 million or more is not unusual) [Timmons, 1985].

**Informal Sources:** Family and friends are usually small investors early in the formation of a venture. These funds are typically used for the seed and startup stages. Private individuals tend to invest early also, but in more substantial amounts. In a 1981 study, Seymour and Wetzel found that 75% of the investments by angels in New England were under $50,000. A more recent study in 1988 of angels in the metropolitan New York area
reported a much higher average investment of $130,000 [Haar et al., 1988]. These numbers reflect the actions of a single individual, but most transactions are early stage and include other private investors with total participation typically ranging from $100,000 to $500,000 and averaging $250,000 [Wetzel, 1987; 1989]. Gaston and Bell [1988] report an average investment of $114,000 per investor and an average of 5.6 investors per firm totalling $636,000 per firm. While they do not report results on a per transaction basis, these numbers are consistent with all other studies.

A recent study of new technology-based firms in New England by Wetzel and Freear [1988] reported that

"The most significant finding is that private individuals and venture capital funds play complementary rather than competing roles in the financing of new technology-based firms. This complementarity has two dimensions, size and stage."

The study clearly indicated a polarization between formal and informal capital sources on both the size and stage issues: 82% of informal investments were $500,000 or less and 70% of all informal investments were in early stages. Venture capital funds invested more than $500,000 87% of the time and 50% of their investments were in later stages.

3.10 DEVELOPMENT OF HYPOTHESIS 3

There seems to be general agreement that the average round of financing provided by informal investors is around $250,000 and typically involves more than one investor [Wetzel, 1989; Haar et al., 1988]. The trend
among the professional venture capital funds indicates that a majority are unlikely to consider a deal where the financing amount is under $500,000 [Maier & Walker, 1987; Haar et al., 1988]. This is supported by research showing that informal investors make very few investments of greater than $500,000 while venture capital funds make most in that range [Wetzel & Freear, 1988]. The results of the above studies are drawn from research about the general populations of enterprises and investors, or research on samples such as technology-based firms. There are no indications that rapidly growing firms experience different financing patterns, so the third hypothesis is:

H3) Informal providers of risk capital are the primary source of outside equity-type financing for rapidly growing ventures when the financing per round is under $500,000.

3.11 DEVELOPMENT OF HYPOTHESIS 4

The notion that informal investors typically restrict their investment activity to financing rounds of under $500,000 implies that much of this activity is directed at the early stage financing needs of a venture. In recent years, many venture funds have become hesitant to make early stage investments because of the higher risk levels [Maier & Walker, 1987; Haar et al., 1988; Saffo, 1989]. This indicates a propensity for informal sources to concentrate upon early stage investments while venture capital funds and other formal sources focus their attention on the later stage ventures. Once again, the works cited reflect conclusions drawn from the general
population of enterprises and investors, and there is no reason to believe that rapidly growing firms are different than most ventures seeking financing. To investigate this issue, the fourth hypothesis to be tested is:

**H4) Informal sources of equity-type capital tend to invest earlier in the life of a rapidly growing venture than formal sources.**
CHAPTER 4

RESEARCH METHODOLOGY

4.1 INTRODUCTION

This research project is a survey of the equity financing patterns for rapidly growing ventures in the United States. There are a number of important considerations required to plan and execute a meaningful investigation:

1) Definition of the total population, the universe of rapidly growing firms.
2) Selection of a sample to represent the population.
3) Design of the survey instrument to gather desired data.
4) Execution of data gathering.
5) Processing information from the sample.
6) Analysis of data in relation to hypotheses.

Each of these considerations will be discussed in this chapter.

4.2 DEFINING THE POPULATION OF RAPIDLY GROWING VENTURES

For this study, an enterprise is considered to be rapidly growing if it has sustained annual revenue growth of 50% or more. The universe of rapidly growing ventures is estimated to be quite large (80,000) but the firms are difficult to identify. They include public and private corporations, partnerships, and even sole proprietorships. Most of these firms do not
appear in the national financial media and do not publicly release operating information.

Since 1982, INC Magazine has conducted an annual search for the nation's 500 fastest-growing private companies\(^{12}\). In 1988, the highest performing firm showed a four-year revenue growth rate (1983-87) of 82.168%, a 436% compound annual growth rate. The 500th firm on this list showed a 65% compound annual growth rate. The average compound annual growth rate of all firms for the four year period was just over 97%.

While only a portion of the firms repeat their appearance on the listing (32% from 1987 to 1988), many of them continue to show revenue growth, but at a less frenzied pace than the current year's applicants (36.8% in 1988). However, their largely continuous growth for at least the four-year period before selection makes the INC 500 firms well suited for this research about the equity financing histories of rapidly growing ventures.

4.3 SELECTING SURVEY PARTICIPANTS FROM THE POPULATION

Budgetary constraints precluded an effort to survey all firms appearing on the INC 500 lists since its inception in 1982. This led to a potential problem. The current years' list of fast growing companies includes by definition only those that are privately held; whereas,
information about companies is more difficult to ascertain as time passes. To minimize these concerns, two years were selected (1983 and 1984) that allowed sufficient time for firms electing to go public to have done so. The years from 1983-1987 had a record high number of initial public offerings.

The current addresses and names of chief executive officers were researched for the 1000 firms. After eliminating duplications due to repeat appearances on the INC 500 and firms for which no current information existed, the remaining list of 722 apparently active firms formed the target population of rapidly growing firms to be surveyed.

4.4 QUESTIONNAIRE DEVELOPMENT

Discussions with a number of business-people indicated that they regularly receive survey documents from graduate school students throughout the US. A majority of these requests end up unanswered. Comments from these executives indicated that several characteristics would enhance the chances of rising above the noise and getting their attention and time for completing a questionnaire. First, the package that they receive must be professional in appearance. The cover letter should be brief and to the point. Finally, the questionnaire should be short and simple.

With these observations in mind, the survey package was developed. Using the previous Wetzel and Freear [1988] study of new technology-based firms in New England as a model, a questionnaire was designed to collect certain historical financial data about each firm. The information requested concerned equity or equity-type investments made in the company.
Participants were told that equity-type investments include any financial arrangements that are not straight debt. Examples are: common stock, preferred stock, convertible debt, notes with warrants, or any transaction with stock purchase rights attached. Firms were instructed to report the amount of cash actually received regardless of the structure of the transaction or instrument employed.

After pre-testing an initial survey document with local executives of smaller firms and solicitation of comments from my advisors and associates, a final questionnaire was developed and consisted of the following (see Appendix B):

1) A question to determine if the firm ever raised outside equity-type capital.

2) A question to determine which business sector\textsuperscript{13} best describes the firm.

3) A question regarding which industry category\textsuperscript{14} best describes the firm.

4) A table to be completed by firms using outside equity-type capital. The table requested the following information for each round\textsuperscript{15} of financing:

\textbf{YEAR} - the year that the transaction was completed and funds were actually received.

\textsuperscript{13} To simplify matters I utilized the same business sector classifications as INC Magazine [1983, 1984]: Service, Construction, Retail, Distribution, and Manufacturing.

\textsuperscript{14} Once again I used the same industry categories as INC Magazine [1983,1984], see Appendix B - Sample Questionnaire for a listing.

\textsuperscript{15} A round of financing is considered to be all transactions that constitute a single negotiation for funds.
SOURCE - identification of the risk capital provider from a list of potential sources\textsuperscript{16} consisting of: Founding team, Family and/or close friends, Private individuals, Venture capital funds, Non-financial corporations, Public stock offering, and Other.

FINANCING AMOUNT - the amount of cash proceeds actually received from the transaction.

STAGE - classification of the financing stage from a list\textsuperscript{17}: Seed, Start-up, First Stage, Second Stage, Third Stage, and Bridge Financing.

EQUITY PERCENTAGE - to identify the amount of equity ownership transferred to the capital source in the transaction.

REVENUE - the total annual revenues of the firm during the year of the transaction.

TIME FRAME - the length of time (in months) taken from the decision to seek financing until actual receipt of funds.

PLANNED DURATION - when the venture decided to seek investors, how long did they anticipate the new funds would last?

ACTUAL DURATION - how long did the new funds actually last?

INVESTOR ACTIVITY - ventures were asked to identify the level of participation of the investment source in the activities of the firm. The

\textsuperscript{16} For definitions of the source classifications given to survey recipients see Appendix A.
\textsuperscript{17} Stage definitions were adapted from \textit{Pratt's Guide to Venture Capital Sources} [1989] and are included in Appendix A.
choices were: No involvement, Very little activity, Moderate, Frequent activity, and Total involvement.

**SATISFACTION** - the venture was asked to rate their overall level of satisfaction on a scale ranging from completely unsatisfactory to completely satisfactory.

### 4.5 SURVEY IMPLEMENTATION

In designing the survey package much attention was given to developing a professional appearance and personalizing the process to enhance response. A customized cover letter was addressed to every CEO by name. Each letter was hand signed and designed to gain their cooperation by recognizing their growth, convincing them of the importance of their participation, and assuring them of the confidentiality of their response.

The questionnaire itself was professionally typeset and printed. Each survey package included a postage pre-paid and addressed envelope for return of the completed questionnaire. See Appendix B for representative samples of the survey package contents. For response tracking purposes, an identification number was assigned to each company and recorded on each questionnaire and cover letter.

Complete survey packages were prepared for the 722 firms. These were sent by first class mail on January 22, 1989. Responses were tracked by ID number. After three weeks, a personalized follow-up cover letter was prepared for all non-respondents and mailed in a package that included a replacement questionnaire and another postage pre-paid envelope.
4.6 DATA HANDLING

The completed questionnaires received from respondents were subjected to stringent quality control procedures before they were entered into the data base designed to track responses. Incoming questionnaires were inspected for consistency of answers and missing data. Clearly implausible responses were either clarified by telephone contact or omitted.

A computer data base was designed in accordance with the data elements required. To minimize typographical errors, the data entry routine was programmed to reject invalid codes. All entries were cross-checked against the original questionnaires to verify accurate transcription.

All survey results are subject to reporting and non-response errors. Reporting errors occur when respondents misunderstand questions, purposefully provide incorrect answers, or do so by accident. As was performed in this research, this type of error can be minimized by pre-testing survey documents for clarity and by carefully checking the data for consistency and plausibility. There are two types of non-response errors: Complete (no questionnaire returned) and Item (some questions unanswered). Item non-response was rare, particularly for the critical elements impacting upon testing the hypotheses. For these elements, every category had 100% item response except for one which recorded a 95% response rate. No missing data were imputed. All the data presented in this research report are real responses. A detailed discussion of complete non-response error is presented in section 5.2.
CHAPTER 5

RESEARCH RESULTS

5.1 INTRODUCTION

After utilizing the methodology described earlier to capture data, the responses were tabulated in order to test the research hypotheses. This chapter will describe the response rate, discuss sample bias, and present the results of the numerical analysis. These results are introduced in respect to each of the four hypotheses. Conclusions drawn from this examination are developed in Chapter 6.

5.2 RESPONSE RATE

From the total of 722 questionnaires that were mailed, 30 were undeliverable leaving 692 apparently active firms. Of these, 188 were returned, for an overall response rate of 27.2%. Of this total, 17 firms either declined to participate or did not provide adequate information in response to the questions. The final sample included 171 firms from across the U.S. and from every business sector resulting in a usable response rate of 24.7%. This response rate compares favorably with earlier studies of this type.18

Table 5-1 indicates the distribution of respondents by business sector and the distribution of the original population of 722 firms. The pattern of

---

18 A regional study of technology based-firms had an overall response rate of 26.6% [Wetzel & Freear, 1988].
respondents to the survey by business sector shows no statistically different pattern than the target population (Chi-square alpha=0.05).

<table>
<thead>
<tr>
<th>SECTOR</th>
<th>RESPONDENTS</th>
<th>POPULATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Qty</td>
<td>%</td>
</tr>
<tr>
<td>SERVICE</td>
<td>73</td>
<td>42.7</td>
</tr>
<tr>
<td>CONSTRUCTION</td>
<td>7</td>
<td>4.1</td>
</tr>
<tr>
<td>RETAIL</td>
<td>7</td>
<td>4.1</td>
</tr>
<tr>
<td>DISTRIBUTION</td>
<td>26</td>
<td>15.2</td>
</tr>
<tr>
<td>MANUFACTURING</td>
<td>58</td>
<td>33.9</td>
</tr>
<tr>
<td>Totals</td>
<td>171</td>
<td>100.0</td>
</tr>
</tbody>
</table>

5.3 SAMPLE BIAS

It is important to bear in mind that there was a potential for self-selection bias. Respondents in this study reporting no use of outside equity-type financing were faced with a lower cost of participation both in terms of the time required to complete the questionnaire and in the amount of information revealed. The number of firms reporting no use of equity-type financing indicates a potential tendency for these types of firms to respond to the questionnaire. This is an example of possible complete non-response error.

This concern is somewhat mitigated because of the significant response rate and the observation that the differences between the target population and the respondents are not statistically significant (see section 5.2). Non-response does not alter the random character of the resulting sample unless the non-responding members of the population are
systematically different from the rest. To further test for this, the research results were compared to the yet-unpublished results of a survey conducted by INC magazine.\footnote{19} The more than 2,000 firms appearing on the INC 500 since 1982 (including our non-respondents) were questioned about a wide range of issues. The focus of survey was on the personal aspects of entrepreneurship, but it included some questions on the origins of growth financing. The related INC findings are completely consistent with all the results of this study. Because the surveys were substantially different in scope and content, it is unlikely that their results have the same non-response bias and any misleading effects attributable to this factor are apt to be minimal.

5.4 RESULTS - HYPOTHESIS 1

**Most rapidly growing ventures find it necessary to raise outside equity-type capital for at least part of their growth financing.**

Of the 171 firms that responded to the survey, only 54 firms (32\%) reported raising one or more rounds of equity-type financing from sources other than the founding team. The remaining 117 firms (68\%) reported that they never obtained this type of financing. The data indicate that the hypothesis is NOT supported by the results of the study.

The business sector distribution of respondents, based upon their usage of outside equity financing, is presented in Table 5-2. The response
patterns on this question did not have a statistically significant difference (Chi-square alpha=0.05) between firms in the various industries.

Of the 54 firms that responded positively to the question about raising outside equity-type capital, 28 (52%) can be classified as technology-based.20 In comparison, of the 177 firms reporting no use of outside equity capital, 30 (26%) could be similarly classified.

<table>
<thead>
<tr>
<th>SECTOR</th>
<th>DID USE</th>
<th>DID NOT USE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Qty</td>
<td>%</td>
</tr>
<tr>
<td>SERVICE</td>
<td>22</td>
<td>40.7</td>
</tr>
<tr>
<td>CONSTRUCTION</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>RETAIL</td>
<td>2</td>
<td>3.7</td>
</tr>
<tr>
<td>DISTRIBUTION</td>
<td>10</td>
<td>18.5</td>
</tr>
<tr>
<td>MANUFACTURING</td>
<td>20</td>
<td>37.0</td>
</tr>
<tr>
<td>Totals</td>
<td>54</td>
<td>100.0</td>
</tr>
</tbody>
</table>

5.5 RESULTS - HYPOTHESIS 2

More rapidly growing ventures raise equity-type growth financing from informal sources than from any other source, including venture capital funds.

The data do NOT support this hypothesis by any of the measures that could be applied - number of firms, number of rounds or total investment dollars.

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20 Firms were classified as technology-based using information supplied by respondents and descriptive information concerning their business activities published in *INC Magazine*. 
**Number of firms:** Of the 54 firms that responded positively to raising outside equity capital, 26 (48%) had raised one or more rounds from informal sources. This is slightly more than the 23 firms (43%) that reported raising one or more rounds from venture capital firms but the difference is not statistically significant (alpha = .05). Table 5-3 shows the reported activity of the various sources.

**Number of rounds:** The 54 sample firms reported raising a total of 90 rounds from all sources. Venture capital firms accounted for the greatest portion of these - 34 rounds (38%). There were 29 rounds (32%) involving informal sources. All other sources were significantly lower. Table 5-3 includes this information.

**Total investment dollars:** A total of $312 million in equity-type financing was raised by the responding firms. The dominant source of these funds was public stock offerings. A total of 13 firms issued 14 offerings raising a total in excess of $182 million (58%). Venture capital funds were the second largest source of funds providing $74 million (24%). Despite the relatively high number of transactions involving informal sources this category provided only $7 million (2%) of investment capital to the responding rapidly growing ventures.

<table>
<thead>
<tr>
<th>TABLE 5-3: Transaction Activity by Source</th>
<th>FIRMS</th>
<th>ROUNDS</th>
<th>DOLLARS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOURCE</td>
<td>Qty</td>
<td>%</td>
<td>Qty</td>
</tr>
<tr>
<td>INFORMAL</td>
<td>26</td>
<td>48</td>
<td>29</td>
</tr>
<tr>
<td>VENTURE CAPITAL</td>
<td>23</td>
<td>43</td>
<td>34</td>
</tr>
<tr>
<td>NON-FINANCIAL</td>
<td>9</td>
<td>17</td>
<td>10</td>
</tr>
<tr>
<td>PUBLIC OFFERING</td>
<td>13</td>
<td>24</td>
<td>14</td>
</tr>
<tr>
<td>OTHER</td>
<td>3</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Totals</td>
<td>-</td>
<td>.21</td>
<td>90</td>
</tr>
</tbody>
</table>

21 Totals to more than 54 firms and 100% because firms could use more than one source in different transactions.
5.6 RESULTS - HYPOTHESIS 3

Informal providers of risk capital are the primary source of outside equity-type financing for rapidly growing ventures when the financing per round is under $500,000.

This hypothesis is supported by the data. The sample data show that of the 90 total rounds of financing reported, 34 rounds (38%) were for amounts under $500,000. Of these, informal investors provided 26 rounds (76%) and all other sources contributed 8 rounds (24%). See Table 5-4.

<table>
<thead>
<tr>
<th>INV AMT (X1000)</th>
<th>INFORMAL</th>
<th>FORMAL</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EARLY</td>
<td>LATER</td>
<td>TOTAL</td>
</tr>
<tr>
<td>&lt;100</td>
<td>8</td>
<td>4</td>
<td>12</td>
</tr>
<tr>
<td>100-199</td>
<td>4</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>200-299</td>
<td>5</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>300-399</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>400-499</td>
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<td>1</td>
</tr>
<tr>
<td>500-599</td>
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<td>0</td>
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</tr>
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<td>0</td>
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<td>700-799</td>
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</tr>
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<td>1,000-1,999</td>
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<td>2</td>
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<tr>
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<td>3,000-3,999</td>
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<td>4,000-4,999</td>
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</tr>
<tr>
<td>≥ 5,000</td>
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</tr>
<tr>
<td>TOTALS</td>
<td>18</td>
<td>11</td>
<td>29</td>
</tr>
</tbody>
</table>

Investments by informal investors in the sample are highly concentrated within this same range. The 26 rounds under $500,000 represent 90% of the 29 total rounds reportedly made by informal sources. In
comparison, the 8 rounds from all other sources (formal sources) in this range account for only 13% of their 61 total rounds. See Figure 5-1.

![Figure 5-1: Percentage of Rounds by Source/Size](image)

**5.7 RESULTS - HYPOTHESIS 4**

*Informal sources of equity-type capital tend to invest earlier in the life of a rapidly growing venture than formal sources.*

For the purposes of this study, early stage investments will be considered to include the following stages: seed, start-up, and first. Later stages consist of: second, third, and other.

Of the 29 total rounds invested by informal sources in the sample, 18 (62%) were early stage investments. Formal sources (61 total rounds) invested in 15 early stage transactions (25%), with the remaining 46 rounds
(75%) in later stages. This hypothesis IS supported by the data. See Table 5-4 and Figure 5-2.
CHAPTER 6

CONCLUSIONS AND RECOMMENDATIONS

6.1 MAJOR FINDINGS

The first objective of the research reported here was to develop a model of the growth financing decision process faced by rapidly growing ventures. A second objective was to gather empirical data from firms that had actually experienced rapid growth to test hypotheses developed from the model. Analysis of this data suggests the following major findings of this research:

1) Most rapidly growing ventures do not use outside equity financing - they "bootstrap it".

2) Technology-based firms are more likely to use outside equity capital.

3) Informal investors play an important role in terms of the number of firms they invest in and the number of rounds of financing provided, but this activity represents only a small percentage of investment dollars from all sources.

4) Informal investors invest smaller amounts earlier in the life of rapidly growing ventures than formal sources, thereby playing a complementary rather than competitive role.
6.2 CONCLUSIONS

Synthesis of the quantitative data and qualitative descriptions provided by survey participants provide further insight into these findings and are discussed below.

1) **Most rapidly growing ventures do not use outside equity financing - they "bootstrap it".**

It appears that the conventional wisdom about how a business plans financing is not shared by a majority of CEO's of rapidly growing ventures. Growth may be important to these ventures, but retention of equity appears to be even more important.

Nearly 25% of the respondents who reported no use of outside equity financing took the time to include additional personal comments. The overwhelming sentiment was that these business owners used whatever method they could to finance growth, short of finding outside investors - and they were proud of it. As one respondent put it "We have grown to $425 million in sales through debt and internally generated funds. Our net worth now exceeds $50 million. We did not go into business to 'need' capital - we went into business to generate capital". Another said "I borrowed from the bank using my home as collateral" and that "I paced growth to avoid equity financing. I still own 100% of stock - and love it".

I spoke with the CEO's of twelve firms responding to the survey to gain additional perspective on how these firms managed to grow so quickly without outside equity. Most entrepreneurs said:
a) That they were willing to trade growth potential to retain ownership. They would consider outside equity investments but the management time required to search for funding was considerable and prospective investors always wanted (in their view) a disproportionate share of the firm in return.

b) Bank loans and equipment leases from commercial finance companies were an important source of financing, but that dealing with bankers is time consuming, frustrating, and that bank policies seemed to discourage growth. Not one of the owners indicated that high interest rates were an obstacle. They would have taken on more debt if it were available.

c) Customers and trade credit were an important source of cash. Many firms required sizable deposits from their customers or even payment in advance. Most cited flexible arrangements from suppliers as a critical factor when they were in a real cash crunch.

There are also reasons other than expansion funds for seeking outside capital. Some of the firms that did use outside equity financing indicated that there was never any financial need to do so, but that they secured funding from a venture capitalist to gain access to managerial expertise and contacts considered to be vital to the business. One of these (with 1988 revenues over $600 million) later went public to "...enable the company to give value to the options held by key employees".
The argument that giving up a piece of the pie to outside investors will ultimately yield a much larger pie for the founders does not seem to hold much water for the owners of rapidly growing ventures.

2) **Technology-based firms are more likely to use outside equity capital.**

There are a number of reasons why this could be so. First, technology-based ventures may require substantial funding in the seed and start-up stages beyond the ability of founders to provide. If it is a manufacturer, engineering professionals may be needed to complete the product design and bring it to market. Expensive capital equipment may be necessary to design, test, and manufacture the product.

Second, most of the firms began experiencing their growth in 1978 or 79 and continued until at least 1984. During approximately this same period the total funds managed by professional venture capital firms increased by nearly 1000%. In 1983, venture capital funds raised a total of $4.5 billion in new funds, invested nearly $3 billion in ventures and saw 121 of their portfolio companies file their initial public stock offerings. Much of this activity was directed towards "high-technology" firms as many investors tried to jump on the same successful bandwagon.

In 1984 the bubble burst and the unrealistic expectations of investors became evident as many of their portfolio firms faced unexpected problems. Although the investment community has become more cautious and has diversified its focus to many other industries, technology-based firms still attract more than 50% of venture capital investment dollars [Howse, 1989].
Formal investors generally seek an annual ROI of 30% to 50% depending upon the stage of the firm. They seek high potential candidates, firms that can reach substantial sales revenues and profits within a five-to-seven year time frame. Technology-based ventures generally find it easier to demonstrate the ability of meeting these requirements.

3) Informal investors play an important role in terms of the number of rapidly growing firms they invest in and the number of rounds of financing provided, but this activity represents only a small percentage of investment dollars from all sources.

If you are looking for an investor it is quite easy to find the potential formal sources. The workings of the organized venture capital community are well known and their members are accessible. Directories of venture funds are available at your local public library. This is not true for informal sources. Private individuals (angels) who are likely prospects to invest in a particular firm are hard to identify. The informal risk capital marketplace is comparatively inefficient.

Despite this difficulty, informal investors make up a sizable segment of the activity as measured in numbers of investments. This indicates that considerably more effort was expended by the ventures that ultimately received their financing. In return for this effort, the venture must have received some benefit. The data and comments from respondents suggest that the principal benefit was access to growth capital in amounts smaller than organized sources would be willing to consider. If the average
entrepreneur is reluctant to give up equity in the firm, then when faced with situations that absolutely require outside investment that entrepreneur may persevere to find an investor that will give him just enough to get through the bind and correspondingly require a smaller dilution of owner's equity.

The annual pool of funds available from informal investors has been estimated to be $78 billion [Gaston & Bell, 1988], nearly three times the pool managed by professional venture capital funds. The total annual value of informal equity-type investments has been estimated at $56 billion [Gaston & Bell, 1988], more than ten times the amount invested by venture funds. Investments by informal sources reported by the sample firms are less than 10% of those reportedly made by the venture funds.

Several explanations are possible to explain the low dollar value of informal sources. First, informal investors may avoid rapidly growing firms. This does not seem reasonable since informal investors have ROI requirements similar to professional investors and high growth firms are more likely candidates to achieve these returns. Second, rapidly growing firms can interest investors because of their growth and they first look in the easiest place - the formal sources. This implies that non-growth firms may have no choice but informal investors. Finally, the scale estimates of the informal capital supply may not be valid.

4) Informal investors invest smaller amounts earlier in the life of rapidly growing ventures than formal sources, thereby playing a complementary rather than competitive role.
The informal investor concentrates upon financing that total $500,000 or less per round and tends to make this investment in the earlier stages. Formal sources of equity financing devote almost all their interest to later stage transactions of $500,000 or more. This polarization indicates that the two sources play complementary roles.

6.3 PRESCRIPTIVE IMPLICATIONS

The findings discussed in the previous section may have significant implications for entrepreneurs, investors, and public policy formation. The following discussion draws upon these conclusions and the underlying data to provide suggestions for the formulation of effective strategies in each area.

**Entrepreneurs** - The owner of a rapidly growing venture needing expansion financing should first look to internal operations and then his banker. If sufficient capital cannot be raised from these sources the entrepreneur seeking to minimize equity dilution can, in most cases, use innovative techniques to raise the funds needed without equity-type investors.

It is important for entrepreneurs to establish objectives and expectations, and then operate within them. If they are unwilling to trade equity for growth capital, then they may have to accept a lower growth rate that can be financed without outside equity investment. If the decision is made to seek outside equity-type capital, and the venture is in an early stage or requires $500,000 or less, the entrepreneurs should search for informal investors.
There may be benefits to a venture that is continually short of funds. The chaos that comes along with rapid growth can ultimately devastate an organization. Limited financing may limit growth and this may act as a safety valve to prevent damage to the firm. Furthermore, access to capital is no guarantee of success. In recent history many well funded startups turned into spectacular failures. Somehow, when you're spending OPM (other peoples' money) it is not as important to be careful. When it's your own cash (or your house is on the line) you may tend to optimize the efficiency of the available capital.

Textbook solutions are rarely employed by the rapidly growing venture. Courses in new venture creation taught at leading business schools tend to emphasize the need for outside equity investment in a new enterprise. The arguments for this perspective are logical and powerful, but most rapidly growing firms ignore this approach. More consideration should be given to bootstrapping techniques. This is not quite as glamorous as venture capital, but perhaps just as valuable.

**Investors** - The nation's rapidly growing ventures are becoming successful without outside investors. Both formal and informal investors should adopt a more proactive approach to search out these enterprises. The number of venture funds has increased dramatically in recent years along with the investment pool. There are now more people competing for high potential investments. Identifying potential rapid growth companies early in their lifetimes and keeping in contact with them may provide the opportunity to make profitable investments that competing investors may not be aware of.
Early identification of high potential ventures may not be enough. Most entrepreneurs do not wish to hand over any equity to outside investors. It may be possible to strike a deal if they believe that investors have more to offer than just cash. Venture investors should consider positioning themselves as a valuable business resource that can add value to what many entrepreneurs consider just a financial transaction.

Investors should be willing to structure a more flexible deal. Instruments such as convertible debt and warrants may be useful negotiating tools to expand the potential zone of agreement.

If venture capital firms wish to focus on later stage investments, they can benefit by viewing the informal investor as kind of a "farm team". Establishing relationships with successful private investors can result in benefits for both parties. The angel could feel more confident that follow-on financing in later stages beyond his resources will be available should the venture warrant it. By keeping an inside track with the angel, the venture capitalist would have much of the benefit of an early stage investment without the risk.

Public Policy - Government can do many things to encourage investment in these ventures. The State of Maine recently introduced a new program to give state income tax credits of up to 30% for direct equity investments in qualifying small companies [Brown, 1989]. The proposal by the Bush administration to lower the capital gains tax rate to 15% would encourage both private investors and formal sources to increase their
investments while reducing their ROI requirements. A lower hurdle rate will mean that entrepreneurs will be asked to give up less equity for the same investment dollar.

The historical connection between the long-term capital gains rate and venture investments is clear. It would appear to be more than just circumstantial that GNP and employment both showed robust growth during the same period. The objective of lower capital gains rates is to provide incentive for long-term investment. Perhaps the rates should be tied to the length of the investment. For example, gains from investments held over 2 years could be taxed at 20% and investments held 4 or more years could decrease to the proposed 15% level.

Local and state governments can encourage efforts to establish marketplaces where informal investors and entrepreneurs can locate each other without relying upon random events. A model for this activity is presently operated by the University of New Hampshire as a not-for-profit organization called Venture Capital Network (VCN). VCN provides a kind of computer dating service for entrepreneurs and investors. VCN provides a confidential referral system for risk capital investment in new or growing ventures. Focusing on the six-state New England region since 1984, VCN has thus far served over 500 investors from 35 states and 700 entrepreneurs from 30 states. VCN reports that 2300 investor/entrepreneur introductions were made, but since their involvement ends with the introduction, accurate information about actual investments is not available.
6.4 SUGGESTIONS FOR FURTHER RESEARCH

This study raises more questions than it answers. It would seem that research into the capital acquisition practices of growing firms that do not use outside equity investments would provide fascinating and useful information. The scale estimates of the informal capital supply bear further and more rigorous investigation. Who these informal investors are and what types of enterprises they really invest in are important questions that still need answers.

6.5 SUMMARY

Of the significant findings of this research, two seem to be surprising: Most rapidly growing firms do not use outside equity-type financing, and informal investors are not major providers of risk capital to those that do. The scale estimates made by earlier studies [Gaston & Bell 1986, 1988; Aram, 1986] concerning the supply of informal capital are not consistent with investments that are made in the firms surveyed. If the scale estimates are valid, then informal investors must concentrate their investment efforts on firms that are not rapidly growing.

This research does confirm earlier findings by Wetzel and Freear [1988] that private investors play a complementary role to formal investors such as venture capital firms. This complementarity has two dimensions, size and stage. Informal investors tend to provide risk capital in earlier stages and in lesser amounts than formal sources.
It is important to bear in mind that this study was directed at ventures known to have experienced extremely rapid growth. The results may not be generalizable to ventures that are not rapidly growing or are not otherwise comparable to firms appearing on the INC 500.
REFERENCES


Going Public: The IPO Reporter (1989), telephone interview, a publication of Dealers Digest Inc.


Nation's Business (1989), "The Real Entrepreneurial Angels are Your Neighbors", Jan, 8.


APPENDIX A

DEFINITIONS

ROUND - A round of financing is considered to include all transactions that constitute a single negotiation for funds.

EQUITY (EQUITY-TYPE) CAPITAL - For the purposes of this study, equity capital is considered to include all straight equity and quasi-equity transactions. This includes common stock, preferred stock, convertible preferred, notes with warrants, or any other financial arrangements that include stock purchase rights (exercised or not).

OUTSIDE INVESTORS - As applied in this research, outside investors are those that are not part of the founding team or management of the firm. Family investments forming the initial capitalization are excluded from this category.

INFORMAL INVESTORS - Principally private individuals, but also include family and friends when their participation is specifically identified with an exchange of equity in the venture after initial capitalization. See definitions of individual sources.

FORMAL INVESTORS - This category describes the professional sources of risk capital: venture capital funds, non-financial corporation, and public stock offerings. See definitions of individual sources for further details.

SOURCES OF EQUITY FINANCING

FOUNDING TEAM (FT) - Personal funds invested by the founders and management team.

FAMILY and CLOSE FRIENDS (FF) - Used to describe investments from family members or very close friends.

PRIVATE INDIVIDUALS (PI) - Also known as business angels. Investors who are not family members, close friends, and who do not represent a professional investment group. They may be sophisticated investors with considerable experience funding ventures, but they make these investments with personal funds for persona gain.

VENTURE CAPITAL FUNDS (VC) - Investment funds organized for the purpose of offering risk capital to ventures. They are professionally managed and generally have limited partners providing the bulk of funds under management. SBICs and corporate venture groups making investments for the express purpose of capital gains are included.

NON-FINANCIAL CORPORATIONS (NFC) - Firms whose principal operating activity is not the provision of financing. These include corporate venture groups whose primary investment motivation is not financial, but strategic, in nature.

PUBLIC STOCK OFFERINGS (PSO) - This includes initial public offerings (IPOs) and seasoned issues of equity governed by the SEC and/or state regulations.
FINANCING STAGES

SEED FINANCING - A relatively small amount of capital provided to an inventor or entrepreneur to prove a concept and qualify for start-up capital. This usually involves initial product development and market research.

START-UP FINANCING - Provided to firms for use in completing product development and initial marketing activity. Companies may be in the process of being organized, or they may have been in business for a short time, but they have not sold their product commercially.

FIRST STAGE FINANCING - Used to fund firms that have expended their initial capital (often in developing and market testing a prototype) and require funds to initiate full scale manufacturing and sales.

SECOND STAGE FINANCING - Working capital for the initial expansion of a company that is producing and shipping, and has growing receivables and inventories. Although the company has clearly made progress, it may not yet be showing a profit.

THIRD STAGE FINANCING - Funds provided for major expansion of a company whose sales volume is increasing; the company is breaking even or is profitable. Funds are used for plant expansion, marketing, working capital, or development of new products.

BRIDGE FINANCING - Financing for a company expecting to go public in the near future. Often structured to be repaid from the proceeds of the offering. It may also include restructuring of major stockholder positions through secondary transactions.
APPENDIX B

SAMPLE SURVEY PACKAGE

This section provides a sample of the survey materials sent to the CEO's of the selected rapidly growing firms. The exhibit marked as Cover Letter 1 was sent initially. The enclosed materials included the four page questionnaire and a postage pre-paid return envelope. After three weeks, non-respondents were sent Cover Letter 2 along with a replacement questionnaire and another postage pre-paid return envelope.

Appendix contents:

- Cover Letter 1
- Cover Letter 2
- Questionnaire Page 1
- Questionnaire Page 2
- Questionnaire Page 3
- Questionnaire Page 4
- Envelope Samples
Mr. John Smith, President
ACME Manufacturing
123 Main Street
Cambridge, MA 01111

January 20, 1989

Dear Mr. Smith;

I am a graduate student at the MIT Sloan School of Management and I am writing to ask your assistance in obtaining information for a research project that will serve as the basis for my Master's Thesis. This work is also sponsored by the Center for Venture Research at the University of New Hampshire.

My research is directed at determining the sources of equity-type financing for rapidly growing ventures. A better understanding of where firms actually receive financing during various stages of growth may provide important insight for others seeking funds and for the makers of public policy. I am asking for your help since your firm has been recognized as one of the fastest growing companies in America.

I will be most grateful if you will take the few minutes necessary to complete the enclosed questionnaire and return it in the postage paid envelope provided. I can assure you that your response will be treated with complete confidentiality. My published report will examine the data in aggregate only. To ensure complete security I have encoded your questionnaire with a unique ID number. Your name, and the name of your company, will never be placed on the questionnaire or included in the research analysis.

Thank you for your time and consideration in this matter. I look forward to receiving your response soon. Your assistance will be greatly appreciated and I assure you that your reply will be kept strictly confidential. A summary of the research results will be sent to you once the study is complete. If you have any questions about this research, please feel free to contact me at (603) 743-3993.

Sincerely,

Roman M. Lubynsky
COVER LETTER 2

Mr. John Smith, President
ACME Manufacturing
123 Main Street
Cambridge, MA 01111

February 21, 1989

Dear Mr. Smith:

About three weeks ago I wrote to you seeking your assistance in learning about the types of financing your firm has used. As of today, I have not yet received your completed questionnaire.

My research is directed at determining the sources of equity-type financing for rapidly growing ventures. A better understanding of where firms actually receive financing during various stages of growth may provide important insight for others seeking funds and for the makers of public policy. I am asking for your help since your firm has been recognized as one of the fastest growing companies in America.

I am writing to you again because of the significance each completed questionnaire has to the usefulness of this study. I assure you that your response will be treated with complete confidentiality. The published report will examine the data in aggregate only. To ensure complete security I have encoded your questionnaire with a unique ID number. Your name, and the name of your company, will never be placed on the questionnaire or included in the research analysis.

In the event that your questionnaire has been misplaced, a replacement has been enclosed along with another postage paid envelope for your use. Please take the few minutes necessary to complete it.

Your cooperation is greatly appreciated. A summary of the research results will be sent to all respondents. If you have any questions, please feel free to contact me at (603) 743-3993.

Sincerely,

Roman M. Lubynsky
THE SOURCES OF EQUITY FINANCING FOR RAPIDLY GROWING VENTURES

INTRODUCTION
This questionnaire has been designed to collect certain historical financial data about your firm. The information requested concerns equity or equity-type investments made in your company.

Equity-type investments include any financial arrangements that are not straight debt. Examples include: Common Stock; Preferred Stock; Convertible Debt; Notes with warrants; or any transaction with stock purchase rights attached. Please report the amount of cash actually received regardless of the structure of the transaction or form of instrument employed.

This research project is directed at determining the timing, source, and amount of financing received. It should take 15 minutes or less to complete the questionnaire by filling in the appropriate information. Definitions of the various classifications have been included for your convenience. If you are not sure which selection applies, select the item that seems closest.

QUESTION FORMAT
1. ROUND - a round of financing is considered to be all transactions that constitute a single negotiation for funds.
2. YEAR - Fill in the year that the transaction was completed and the funds received.
3. SOURCE - Select the appropriate source from the items listed and insert the corresponding letter code in the space provided.
4. AMOUNT RECEIVED - Please indicate the amount of cash proceeds actually received from this transaction.
5. STAGE - Classify this round of financing using the stage definitions provided. Fill in the corresponding letter code.
6. EQUITY % - Please indicate (by percent) approximately how much ownership of the company was transferred in this transaction.
7. REVENUE - Fill in the approximate total annual revenues of your firm during the year of this financing round.
8. TIME FRAME - Please indicate (in months) approximately how long it took from the decision to seek additional financing until the funds were actually received.
9. PLANNED DURATION - When you decided to seek financing, how long did you anticipate these funds to last?
10. ACTUAL DURATION - How long did the funds actually last.
11. INVESTOR ACTIVITY - Please indicate the level of participation by the investment source in the activities of your firm.
12. SATISFACTION - Please rate your overall level of satisfaction with this round of financing.

ALL INFORMATION PROVIDED BY PARTICIPANTS IN THIS RESEARCH WILL BE KEPT STRICTLY CONFIDENTIAL

ID#____________
DEFINITIONS

EQUITY CAPITAL: Include all straight equity positions and equity-type financing. (Common stock, preferred stock, convertible preferred stock, convertible debt, debt with warrants).

FINANCING STAGES:

A. SEED FINANCING: A relatively small amount of capital provided to an inventor or entrepreneur to prove a concept and qualify for startup capital. This would generally involve product development and market research.

B. STARTUP FINANCING: Financing provided to firms for use in completing product development and initial marketing. Companies may be in the process of being organized, or they may have been in business for a short time but have not sold their product commercially.

C. FIRST STAGE FINANCING: Financing provided to companies that have expended their initial capital (often in developing and market testing a prototype) and require funds to initiate full scale manufacturing and sales.

D. SECOND STAGE FINANCING: Working capital for the initial expansion of a company that is producing and shipping, and has growing accounts receivable and inventories. Although the company has clearly made progress, it may not yet be showing a profit.

E. THIRD STAGE FINANCING: Funds provided for major expansion of a company whose sales volume is increasing; the company is breaking even or is profitable. These funds are utilized for further plant expansion, marketing, working capital, or development of an improved product.

F. BRIDGE FINANCING: Financing for a company expecting to go public within 6 months to one year. Often bridge financing is structured so that it can be repaid from the proceeds of a public offering. It can also involve restructuring of major stockholder positions through secondary transactions.

SOURCES OF EQUITY FINANCING:

A. FOUNDING TEAM: Personal funds invested by the founders.

B. FAMILY and/or CLOSE FRIENDS: If funds were raised from relatives or very close personal friends, please use this category.

C. PRIVATE INDIVIDUALS: Investors that are not family members or close friends and who do not represent a professional venture fund. These people may be sophisticated investors with considerable experience, but they make these investments with personal funds for personal gain.

D. VENTURE CAPITAL FUNDS: Investment funds organized for the purpose of offering financing to ventures. These are professionally managed and generally have limited partners provided the bulk of the investment funds under management.

E. NON-FINANCIAL CORPORATIONS: Investments by other firms whose principal operating activity is not financing.

F. PUBLIC STOCK OFFERING: Initial or other public offerings.

G. OTHER: Please describe the source for any financing not covered by Items A-F.
CONFIDENTIAL FINANCIAL HISTORY

1. Has your firm ever raised equity type capital?  YES [ ]  NO [ ]

2. Which business sector best describes your firm (please check one):
   SERVICE [ ]  CONSTRUCTION [ ]  RETAIL [ ]  DISTRIBUTION [ ]  MANUFACTURING [ ]

3. Which industry category best describes your firm (please check one):
   BUSINESS SERVICE [ ]  COMPUTER RELATED [ ]  CONSTRUCTION & ENGINEERING [ ]  CONSUMER GOODS [ ]
   INDUSTRIAL EQPT. [ ]  MEDICAL & PHARMACEUTICAL [ ]  PUBLICATIONS & MEDIA [ ]  TELECOMMUNICATIONS [ ]
   OTHER [ ]

4. Please complete the following table (see instructions on page 1).

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SOURCE

A. Founding team
B. Family and close friends
C. Private individuals
D. Venture Capital Funds
E. Non-financial corporations
F. Public stock offering
G. Other (please specify)

STAGE

A. Seed financing
B. Startup financing
C. First stage
D. Second stage
E. Third stage
F. Bridge financing

INVESTOR ACTIVITY

1. No involvement
2. Very little activity
3. Moderate
4. Frequent activity
5. Total involvement

SATISFACTION

1. Completely unsatisfactory
2. Mostly unsatisfactory
3. Moderate
4. Mostly satisfactory
5. Completely satisfactory
Thank you for your time and cooperation in this research effort. Please return this questionnaire in the postage paid envelope provided. Your response will be treated with complete confidentiality. Your name, and the name of your company, will never be revealed in the research analysis. The published report will examine the data in aggregate only. A summary of the research results will be sent to you once the study is complete.

If you have any comments or suggestions, please use the space provided in the box below.

THANK YOU