THE ROLE OF THE FINANCIAL INSTITUTIONS OF A COMMUNITY IN THE FORMATION, EFFECTIVENESS AND EXPANSION OF INNOVATING COMPANIES

FEBRUARY 1983

By Albert Shapero

Prepared for:

THE SMALL BUSINESS ADMINISTRATION
Contract No. 2564-79
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PREFACE

The study reported here was conducted under Contract Number 2564-79 with the Office of Economic Research of the Chief Counsel for Advocacy of the Small Business Administration.

The principal investigator wishes to acknowledge those who have contributed to the work including the many respondents who gave liberally and patiently of their time. Of particular help was the data collection efforts of Mr. Norris Krueger of The Ohio State University and Mr. David Schluer, a former graduate student. Thanks are due to Mrs. Ruth Minnery for her help with the manuscript.

A special note of appreciation is due to Mr. Gerald L. Feigan and other members of the staff of the Chief Council for Advocacy for their understanding and patience during an extended period of serious illness of the principal investigator.
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THE ROLE OF THE FINANCIAL INSTITUTIONS OF A COMMUNITY IN THE FORMATION, EFFECTIVENESS AND EXPANSION OF INNOVATING COMPANIES

Introduction

The study reported here is about the initial financing of new ventures or company startups. The study was carried out for the Office of Economic Research of the Chief Counsel for Advocacy of the Small Business Administration (SBA) in pursuit of its interest in developing the body of knowledge concerning "the capabilities of financial markets and institutions to supply capital for small business" in order to develop relevant policy options that are both feasible and useful. The interest of the office is based on the fact that capital is vital to the startup of new businesses, to the survival and profitability of ongoing businesses and to the expansion of growing small businesses.

The research reported here is based on the reasonable assumption that more company startups will result in more desirable surviving firms of all kinds. Further, the research reported is based on an assumption that initial financing is a vital part of the entrepreneurship process, and is a part amenable to policy actions on the part of federal, state and local governments. Policies that lead to increased flows of private investment to company startups under conditions
that enhance the probabilities of their survival and success should lead to an increase in the number of desirable (from a social viewpoint) company startups. Furthermore, such policies should lead to a decrease in the number of undesired failures, and significantly shorten the time from company inception to company success. Formulating and applying policies aimed at influencing the availability of resources, particularly financing, for socially desirable ventures are among the most traditional and prevalent roles of government at all levels.

Objectives of the Study

The objective of the research reported here was to study the role of financial institutions at the community level in the formation, growth and effectiveness of innovating companies with a view to developing a body of knowledge to aid those responsible for developing relevant and feasible policy programs and options. More specifically, the research effort was devoted to the study of the financing of new ventures in a community with a view to measuring the differentials in propensity for financing innovating small companies in different communities.

This is a report of the first phase of a three phase study of the role of financial institutions at the community level in the formation, growth and effectiveness of innovating companies. The study was carried out with a view to aiding those responsible for developing relevant and feasible policy programs and options. The three phases of the study were
I. Development and test of the data-collection instruments and study of the financing of new ventures in a community.

II. Study of the financing of new and young companies in terms of operational financing and the study of the financing of expansion of growing companies in a community.

III. Measurement of differentials in propensity and capability for financing innovating small companies in different communities.

Organization of the Report

The report is organized into the following sections:

1. An analysis and discussion of sources of initial financing of startup ventures, particularly of those considered to be economically desirable.

2. The research.

3. Discussion of results and implications.
CHAPTER TWO

THE SOURCES OF INITIAL FINANCING OF STARTUP VENTURES

This study of initial financing of new ventures grows out of a larger national concern with elicitation and enhancement of entrepreneurship in the interest of national, regional and community development. It is reasonably argued that new venture formation is vital to the creation and maintenance of economic dynamism in terms of responsiveness to events, innovation, initiative-taking and risk-taking. Consequently, it is seen as in the national interest to take steps, where necessary, to provide a climate that encourages entrepreneurship, including an environment that improves the availability of financing for companies engaged in the production and distribution of goods and services judged to be desirable from a public viewpoint.

Despite much public discussion about "venture capital" and its relationship to entrepreneurship and innovation, little is known in a systematic, data-based way about the initial financing of new ventures. With almost no exception, public discussion of venture capital has essentially focussed on an extremely small segment of the millions of new and young ventures in the United States. Current public focus has been on ventures identified with so-called "high-technology," and on ventures that essentially are at a stage where capital requirements are in excess of $500,000.

As a result of the current focus there are considerable data available on the formal venture-capital community; their
numbers, investments, methods, decision processes and the tax and regulatory incentives they desire. There is also considerable reportage and study of initial and subsequent stock market offerings particularly as they concern "high-technology" firms. There are, however, almost no data available on the initial financing of the vast majority of new ventures whether in terms of sources of financing, the amounts of resources entailed, the practices or the factors that influence the sources of their practices.

The public discussion of venture capital for desirable ventures leaves troubling questions unanswered. Should we not be concerned with initiation of new ventures as well as subsequent growth phases, and the initial financing of ventures as well as the financing of subsequent growth? Can we assume that the present company formation rates, that occur almost by happenstance, are sufficient to achieve the number of surviving companies required? Should we enhance the rate of new venture formations or can we assume that the current company formation process provides us with the distribution of growth companies and industries we need? Is today's "high-technology" all we should be concerned with, or should we concern ourselves with a broader segment of the overall spectrum? If we prefer "high-technology", what do we mean by the term?

By any measure the number of new company formations in 1982 was on the order of hundreds of thousands. No statistics are available that give us a good handle on the number, but
we have some indications that the numbers may approach a million a year. The Dun & Bradstreet estimates of company formations in 1982 were on the order of 5-600,000 and since Dun & Bradstreet does not include all companies, particularly companies in the service sector which includes a large fraction of company startups in its listings, it can be assumed that the number of startups is easily 1,000,000. The companies formed in 1982 joined an 'inventory' of approximately 14-15 million existing businesses. 

Each of the new businesses represented a dramatic assumption of risk and a large commitment of personal effort by the individuals involved. Further, each of the new businesses represented one or more decisions to take resources previously committed to other purposes, and apply them to the new venture. How much capital was used in last year's startups is not known, but even the most conservative of estimates suggests that the totals must be substantial. We can assume an average 'investment' of more than $88,000 per venture (See Footnote 36), the total investment represented by 1,000,000 startups is on the order of $88 billions.

Where does the capital for new venture startups come from? Answers to the question of where the capital comes from for new and young ventures is of more than academic interest. Answers to the question are important to economic development discussions that place heavy emphasis on the role of new and young ventures, particularly those that are innovation bearing companies. Decisions affecting tax policies, financial incentives to attract companies to a community, set-aside
programs for designated categories of businesses, government loan support and government support of investment institutions are only some of the policy decisions affected by the perceptions held and assumptions made concerning the sources of capital. To determine what will channel more investment into desirable new and young companies requires a more realistic notion of the dynamics of such investments than has been manifested by policies to date.

The available data are very fragmentary on where the capital come from, but analysis of what is available suggests the very great majority of capital for startups is personal and local. The great majority of all monies for startups come from personal savings and borrowings on the part of the entrepreneurs, from relatives, personal friends and from persons of wealth in the communities in which the entrepreneurs are located. Very little of the funds for startups come from institutions such as venture capital firms, syndicates, SBIC's, stock brokerages, and merchant banking firms. Yet it is the latter group of institutions most discussed with regard to eliciting and enabling an increase in desirable venture startups by Congressional committees, cognizant government officials, academics and the financial press.

Extrapolating and interpolating from the scattered available data provides us with some idea of the relative role of the formal financial venture institutions in company startups, and, particularly, their role in the startup of the apparently desired "high technology" startups.
A study, sponsored by the National Science Foundation (NSF) surveyed 140 firms engaged in venture capital investments and found that they made an average of 3.4 investments per year over a period of 4-1/2 years of which 1.3 investments, or 34.9%, were for startups. The average amount invested was $462,000 per company and ranged from $50,000 to $3,000,000. A more recent study by Brophy reported that in the years 1977-1980, the 73 venture capital firms reported financed 1,016 firms, of which 33.5% or 341 were classified as startups, or 85 per year. The amount invested in the 341 startups was $155.4 millions or an average of $455,700 per company. Assuming the same percentage of investments made in startups found in the Brophy study applies to the estimated 500 venture capital firms in the United States (a figure that errs on the high side), the number of startups receiving investments from the venture capital community is on the order of 425 companies, and the amount of money invested in them is on the order of $200 millions.

Looking further, however, the number of startup investments reported by venture capital firms must be discounted to the extent that more than one venture capital firm takes part in a particular company financing. When a company is considered favorably by a venture capital organization but is larger or somewhat more risky than they would like to undertake, it is not unusual that other venture capital firms will be invited to take part of the investment. When such a deal is shared by more than one firm, each reports
its investment separately resulting in multiple counting of the financing of a single company. In 1979, for example, 24% of the new venture investments of all kinds were made by single venture capital firms acting alone, only 6% was made by two firms together and all the rest were made by multiple firms. As much as 16% of the investments were made by more than 10 firms acting together. Analysis of the "new" venture deals reported by the venture capital firms in the foregoing study suggests that the actual number of startup companies represented (as opposed to the number of investments made by the venture capital firms in startups) was 102 rather than the 425 when you take into account joint investments.

Another view of the venture capital community is obtained from a report in Venture Magazine on the 1981 investments of the 100 largest venture capital organizations in the United States. The venture capital organizations reported 1,704 investments in 1981 of which 517 or 30.3% were startups. Startups received $288.07 millions or 33.0% of the total of $872.87 millions invested in 1981 for an average of over $637,000 per startup.

SBIC's

In the 24 years, ending September 30, 1982, the country's SBIC's provided funds to 67,000 small companies for a total of $4.5 billions or an average of $67,164 per company. In the year ending September 30, 1982 financing was provided for 2,147 small companies for a total of $329 millions or an
average of $153,237 per company. Taking the year 1978 as an example, 39% of the firms financed by SBIC's are startups and just over 50% are under three years of age at the time of financing. In 1978 there were 814 SBIC financed startups (26,130 startups from the inception of the SBIC program through September 1982).

In the example year of 1978, 26.9% of the SBIC financings were for manufacturing concerns (as differentiated from retail trade, 23.0%; services, 13.2%; finance, insurance and real estate 6.8%; wholesale trade, 5.5%; transportation, communication and utilities, 9.1%; construction, 8.3%; all other, 7.3%). Assuming that the same distribution applied to startups, there were just under 220 manufacturing startups financed by SBIC's.

Stock Market Offerings

According to a study by the Directorate of Economic and Policy Research of the Securities and Exchange Commission (SEC), of 706 initial public offerings (IPO's) made between 1972-1979, only 115 (14/year), or 16.3% can be considered as being for startups since they were for issuers with revenues of less than $50,000 at the time of the public offering. The total dollar volume of the offerings for the 115 startup companies was $246.5 million, 12.1% of the $2,039.1 millions involved in all 706 IPO's. During the same time period an additional 20 IPO's were issued without a broker-dealer serving as a financial intermediary. According to these figures, there was an average of less than ten startup companies per year attempting to obtain financing through public offerings. Of the IPO's, 63, or 54.8%, were issued on a 'best efforts
basis' rather than a 'firm commitment basis,' as compared to 9.1% for the more established firms. It is important to note the sensitivity of the number of IPO's to the investment climate in a given year. Of the 706 IPO's reported, 481, or 68.1% were issued in one year, 1972, while in 1975 there were only six IPO's' registered.

In 1969, at the height of the so-called "go-go" years on the stock market, total number of issues for common stock were 1,703, of which 698 were issued by companies with assets less than $5 million. It should be kept in mind that only a very small fraction of the issues were for startups. Some idea of the dollars involved can be obtained from the total dollars for all issues in 1969 which was $7.125 billions. Some idea of the relative amounts of new-issue money available to smaller firms can be derived from the data for 1972. In that year 1,020 common stock issues were offered of which 409 were for companies with less than $5 million in assets, and 633 of all issues were IPO's. It can be assumed that smaller companies were heavily represented among the IPO's. In terms of dollars, the IPO's were $1.69 billions of the total of $6.662 billions or 25% of the total. Using the percentage of IPO's attributed to startups in the SEC study discussed above, 16.3%, it can be assumed that 103 of the 633 IPO's in 1969 were start-ups, and that they received 12.1%, or only $200 million of the securities market dollars for IPO's in that "go-go" year.

Other, more recent information on IPO's is provided by
a monthly listing of new issues in Venture Magazine that focusses on small businesses and technological issues in particular. The Venture Magazine information reflects something of a resurgence in the IPO market in 1982, particularly for issues seen as being for technology oriented companies.

New stock issues of small businesses, reported in Venture Magazine over a twelve month period (December 1981 to December 1982), numbered 221 of which 60, or 27.2% could be considered startups or near startups (one year old or less), and 118 (including the 60 startups), or 53.4%, could be considered young companies. The 221 issues reported totalled $1.5 billions. The issues ranged in size from $200,000 to $68 millions with a median amount per issue of $4.5 millions. Startup issues (those with an age of approximately one year) had a median of $3.5 millions per issue for the 60 issues listed; with the median for the 19 technical companies being $4.5 millions. Interestingly, no technical issue was above $5 millions while 11 non-technical issues were above $5 millions.

**Estimate of the Number of Startups Financed by the Formal Venture Capital Institutions Per Year**

Extrapolating and interpolating the available data and giving them every benefit of the doubt, one must infer that the formal venture capital community in terms of organized venture capital organizations, stock brokerages and SBIC's account for the financing of something like 1,000 of the hundreds of thousands of business startups per year in the United States. Further, the data suggest that the formal venture capital
community does not become a serious factor in the financing of new and young companies until their financial needs are on the order of $500,000 or higher, preferably above $1 million, and unless the product or service of the venture is of popular interest at the time (e.g. "high-technology" such as biotechnology which shows no projected profitability for several years or oil and gas exploration and investment firms in 1980 and 1981).

**Major Questions Raised By The Data**

Major questions are raised by the inferences stated in the previous paragraph, including the following:

- Do the startup ventures financed through the formal venture capital community represent all of the "good deals" available in any given year? Does the financial marketplace operate to make sure the great majority of new ventures that objectively qualify for financial support (from the viewpoint of good business practice) obtain such support from financial institutions formally organized for that purpose?

- Do new ventures, engaged in developing, producing and marketing of socially desirable goods and services, gain the financial support they need from the existing marketplace? As one example of socially desirable ventures, startup ventures concerned with the development, production and marketing of technical innovations, do they obtain the financial support they require from the formal venture capital financial marketplace?
-If not the formal venture capital institutions, where then do venture startups receive their financing, and what possible policy options might effect an increased flow of that kind of financial support to new ventures, particularly ventures engaged in socially desirable goods and services?

Do the great majority of 'deserving' new ventures obtain financial support through the normal operations of the venture capital market place?

One opinion, expressed by venture capital professionals, is that, "All deals, worthy of support, get financed." The opinion is based on the assumption that all worthy 'deals' are passed about through the venture capital community, and will eventually be financed by one or another of the firms in that community. The opinion is far from unanimous, but with the available data there is no direct way to obtain an answer to the fundamental question of whether or not many good firms fail or cannot realize their potential because of the way the financial markets operate.

First, by inspection of the gross numbers, it seems implausible that only a few hundreds of the hundreds of thousands of companies formed each year are objectively deserving of financial support. Comparing the total number of companies in the Census of Manufacturers\textsuperscript{11} for 1977 with that of 1972 we find there was an increase of 33,171 companies in the five year time period. The statistics represent a rate of increase of 6,634 companies per year. If we include the
statistics in the Census of Service Industries\textsuperscript{12} for 1977 we add 40,744 companies per year.\textsuperscript{13} Thus there was a total of 47,378 manufacturing and service companies added per year.

The preceding figures must be considered something far less than actual company formation rate since it leaves out the companies exiting from the inventory of companies due to failure, merger and acquisition or close down without failure (retirement and other). Though there is a wide range of estimates as to the failure rate of new companies, ranging from 90\% in the first year to 65\% by the third year, the rates of exit can be realistically assumed to be far lower. The few careful studies of company failures indicate more conservative rates of somewhere between 35\% to 60\% exiting in their first five years of existence\textsuperscript{14}.

Restricting our focus to the kinds of manufacturing and service concerns of prime interest in this study the numbers of company startups are still quite large compared to the numbers of such companies receiving financial support from the formal venture capital community. Restricting our analysis to the kinds of ventures that might be considered technological\textsuperscript{15} we find that between 1972 and 1977 there were 9,563 companies added to the Census of Manufacturers and 3,342 added to the Census of Service Industries for an average of 1,913 manufacturing companies and 669 service companies per year or 2,582 companies per year. Assuming a conservative exit rate of 40\% per year, it is estimated that the annual formation rate was on the order of 3,500 companies. Again, by inspection of the gross
statistics, it is clear that even if other reasonable or more limiting assumptions are employed, a significant majority of companies deserving of serious consideration for financial support did not receive that support from the venture capital companies, the SBIC's or the stock market. Further, it might also be inferred that some reasonable fraction of the companies that exited could have been saved by timely and adequate financial support.

The question of what might have been the effect of timely and adequate financial support on the survival and growth of deserving companies can only be a matter of speculation. What would have been the results of earlier financial support for anyone of our current major industries? There is some evidence to suggest that the location of the automobile industry owes much to the efforts of a single banker.

Partial, data-based answers to the question can be teased out of the results of the NSF studies discussed above, and from a more recent study of venture capital decision making. In the first studies the 85 firms responding reported receiving 22,205 requests for financing of which 1,190 received hard study and 305 were financed. When queried as to the effects of a government program of limited guarantees for investments in new and high technology ventures (i.e., A guarantee of 50% of the investment by qualified venture capital firms in such ventures.) the respondents indicated that the
result would be investments in 500 new companies per year. The foregoing suggests that there is a substantial number of ventures that lie just below the threshold of the present criteria for investment being applied by venture capital firms. The NSF study also reported the track record of the venture capital firms responding, showing that 65.4% of the investments made by the respondents were considered satisfactory, 19.3% were failures, 15.3% were expected to fail or considered to have uncertain futures, and the remaining investments unclassified.

In the second study mentioned above, 46 venture capitalists were interviewed with a view to examining their decision making process. Among the data obtained were data on the subsequent status of entrepreneur firms whose proposals were denied by the respondents. Of the 161 such firms denied funding by the responding venture capitalists, 104 or 64.6% were known to be surviving. Only 9 or 5.6% were known to have failed, and the status of the rest was unknown at the time of publication. When the data on performance of denied proposals are combined with the report by Timmons \(^{19}\) that 94% of the 51 venture capital firms reporting say they fund less than 5% of the proposals they receive, it must be concluded that a substantial percentage of financially and technically worthy firms do not receive financial support from the formal venture capital institutions.

In reply to similar questions, individuals who regularly invest in new companies stated the number of reasonable investments from both a business and technical viewpoint are a large
multiple of the number of companies being funded by venture capital organizations. The latter viewpoint is supported by the fact that there are many examples of successful firms that did not receive the attention or support of the formal venture capital community until they were already successful. As one individual investor, who has since formed a successful venture capital firm in Canada, put it, "I have 18 backers, representing over $1 billion in assets, not one of whom would have met the criteria of the formal venture capital firms when they started out."

And what about socially desirable firms?

Assuming that high technology firms are socially desirable, we find that according to the data in Venture Magazine in 1982, 101 technological companies made up 46% of the IPO's reported. Of the 221 IPO's reported between December 1981 and December 1982, 19 or 9% were identified as technological company startups, 30, or 14%, were very young technological companies (one to three years old), and 52, or 24%, were established technological companies. Altogether, technological issues made up 33% of the total. There were more than twice as many non-technical startups, 42 or 19%, of the total IPO's reported.

Of the 1,015 investments reported in the 1974 NSF study, 43.3% involved new or high-technology (small computer and computer peripheral equipment, electronic components and communications equipment), a percentage similar to that found in the Venture Magazine report. However, we may be experiencing
a change in support for technologically oriented businesses. Brophy reports similar percentages for investment in technological firms by his 73 venture capital firms for 1976 (47.7%) and 1977 (52.5%), but sharp increases in 1978 (63.2%), 1979 (72.3%) and 1980 (85.8%) with the greatest growth being investments in computer and computer related equipment. Supporting the picture of a growth in the percentage of venture capital investments made in technological firms, Fast writing of the leading 125 to 150 venture capital organizations states, ".....We estimate that 60% to 70% of their investments during 1981 were in technology-based business -- an increase of 5%-10% in the last two years."

The statistics on SBIC financings do not permit a direct count of those that were made for technologically oriented companies. It is possible, however, to gain some notion of the possible order of magnitude. In the example year of 1978, 26.9% of the SBIC financings were for manufacturing firms and 9.1% were for transportation, communications and utilities. All the rest were for retail trade (23.0%), services (13.2%), finance, insurance and real estate (6.8%), wholesale trade (5.4%), construction (8.3%) and all other (7.3%). At the most, technologically oriented companies received 36% of the financing, but, realistically the number must be estimated at something on the order of 15% or less of the total and far fewer of the startups.

Examining the data on the financing of startup organizations on the part of all of the major formal institutional sources
of venture capital it can be estimated that of the approximately 1,000 startups they finance annually perhaps as many as 230 of them could be considered technological. Compared to an average of just over 3,000 such companies added to the inventory of companies in the United States between 1972 and 1977 it is readily concluded that the great majority of technological companies formed in the country do not receive any of their financing from the formal investment community.

Examination of the historical record is another way of gaining important insights into the question of financial support for deserving companies. History is full of examples of ventures, important from a national or business viewpoint, that could not obtain sufficient support from the major financial institutions throughout their early, critical years, but which subsequently proved to be successful from both a business and technical viewpoint (e.g. interchangeable manufacture, the steamboat, the telegraph, the automobile). It is more the exception than the rule when funds are supplied in sufficient quantity to enable a new technology to proceed from research to commercial application without years of delay. Under conditions of national emergency or need governments become the sources of funding as with Eli Whitney's musket factory at the end of the eighteenth century, aircraft in World War I and II, radar and penicillin in World War II and electronics and spacecraft during the Cold War.
The Financial Support of Startup Companies Is Personal and Local

All of the explicit and implicit evidence points to the conclusion that the financial support for startup ventures is personal and local. Where studies have been made of the sources of funding for new and young companies, the answers have uniformly shown that the great majority of financing of startup and young companies is personal and local. The finances come from the savings and borrowings of the company founders and from investment by local individuals.

Data from 466 interviews with entrepreneurs in Austin, Texas; Columbus, Ohio; West Texas and Rochester, New York were summarized and analyzed for this study to determine their sources of initial financing. The 466 companies represented by the interviewees included a wide range of manufacturing, technical, service, retail and wholesale businesses. Though most of the businesses in the interview population are small, several could be considered to be middle-sized and one is now in the Fortune 500. The sources of the initial financing of the 466 were overwhelmingly local and personal as can be seen in the following table:

<table>
<thead>
<tr>
<th>Sources of Initial Financing</th>
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<tr>
<td>n=466</td>
</tr>
<tr>
<td>Sources:</td>
</tr>
<tr>
<td>Savings alone</td>
</tr>
<tr>
<td>Loans+savings</td>
</tr>
<tr>
<td>Family</td>
</tr>
<tr>
<td>Partners</td>
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<tr>
<td>Friends</td>
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<tr>
<td>Friends+family</td>
</tr>
<tr>
<td>Savings+bank+friend</td>
</tr>
<tr>
<td>Investors</td>
</tr>
<tr>
<td>Stock</td>
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<tr>
<td>Government</td>
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</tbody>
</table>
A 1955 study of the primary sources of initial, long-term capital for 33 new firms in Columbus, Ohio, reported that 86% of the funds came from the savings of the entrepreneurs; 9% from trade credit, and 5% from loans from friends and relatives. In the case of the 14 manufacturing and construction firms studied, the dependence on personal savings went up to 91%.

Using Dun & Bradstreet data, Kieschnick reported on the sources of financing of 52 new firms in Buffalo, Cincinnati, Atlanta and Salt Lake City. Personal savings, including equipment, monies from other companies and gifts, accounted for 85% of the startup capital; bank and other loans for the remainder. One of the loans was from the SBA. Though not explicitly stated, the data appear to include private, inactive investors among those supplying their savings to finance the companies studied. A 1963 study of small R&D companies in Metropolitan Washington and Maryland found that 25.3% of the companies received their startup financing from sale of common or preferred stock or bonds. (No mention was made whether these were sold locally, regionally or nationally.) Approximately 75% of the funding came from personal savings, partners (53.1%) and loans from various sources.

Though the savings and borrowings of the company formers is the predominant source of initial funding for new ventures it is clear that an important role in initial financing is played by the private individual investor. There is even some suggestion that the private individual investor may be particularly important to the startup manufacturing or
technical venture that requires more capital and more patient
capital than does a service, retail or wholesale business.
Investigations\textsuperscript{29} revealed that the individual
private investor is indisputably the most important
source of initial equity capital for the new firm...
The private individual investor is not only more likely
to supply initial risk funds than the venture capital
organization, but is likely to supply them on rather
more liberal terms.\textsuperscript{30}

The Importance of the Attitudes of Local Investors

Urban economist, Thompson, linked local company formation
and growth to the attitudes of a community's private investors,

\textit{......While the total amount that this group
(wealthy residents of a local community) is willing
to invest in any given firm may be trivial compared to
the needs of a very large corporate business, resident
wealth might easily marshal enough capital to build
a veritable hothouse for the growth of small firms.....the wealthy residents of an area may
serve as financiers and patrons to local inventors
and innovators}.\textsuperscript{31}

Thompson further speculated that whether a community had
more or less than its share of wealthy residents might make
a difference to its development, but his emphasis on quantity
is questionable. The presence of wealthy individuals can
be shown in all of the most underdeveloped sections of the
country.
The presence of wealth in a community is not sufficient though it is certainly necessary for investment. It is the attitude of potential investors that makes the difference. The question is whether not the wealthy residents of a community (potential investors) are willing to invest in the apparently high risk associated with company startups and whether or not they are even interested in company startups as opposed to other high risk for high gain investments. One indicator of the percentage of wealthy individuals that might invest in high risk ventures can be obtained from a study of the individual investor that found that less than 3% of the families owning stock indicate a willingness to assume the high risks to make high gains that characterize investments in startup companies.  

Hoffman, in his study of Austin and Waco, Texas, showed that the number of wealthy individuals in a community, even given 3% overall are willing to invest in startups, does not provide an index to the amount of money available for such investments. Communities vary markedly in their responsiveness to opportunities to invest in new companies and in companies that are different from what they are familiar with. Hoffman found important differences between the two communities in the way they responded to the same opportunities to invest. Though there was little difference in the expressed overall readiness of local investors (persons of wealth) to invest, there were very great differences in the way they invested. As Hoffman concluded:
......differences were identified in the investment practices between Austin and Waco. In general, the Austinites...invested more money, requested less ownership in the company, took a more active and participative role in the company's management, placed fewer negative restraints on management, and expected less return on their investments than the Waco investors did...Austin(ites) obtained a much greater variety of information from outside Austin than Waco investors from outside Waco...Waco venture capitalists refused to ask other investors to participate...Austin(ites) were often anxious to bring their friends and associates in....

Factors Affecting Investment Behavior

Individuals most likely to invest in new ventures appear to be those who have "made it themselves," first generation money. Second generation money is more likely to invest more conventionally. In a discussion of venture capital in Northeastern states, "....In fact, much of the money pouring into high-tech venture capital operations comes out of the pockets of top executives in successful high-tech corporations - some of whom were once recipients of venture capital themselves." The same phenomenon is to be found on the West Coast in the San Francisco Bay area where a number of venture capital organizations draw upon executives from the high-tech companies of the area. Earlier, Baty speculated that
investors who were self-made" identified and spent their time with the industry in which they had made their wealth, while those inheriting wealth became members of the broader financial community. One plausible explanation is "enjoyment of the game". Perhaps a more plausible explanation can be given by the familiarity of those who have gone through the process with the possibilities of a particular technology and with the possibilities of forming a successful new company.

Credibility: The Key to Obtaining Financial Support for New and Young Ventures

There is much truth in the age-old and universal complaint against financial institutions, "They only provide you with money when you don't need it." The constraints on financial institutions, whether regulatory, legal or investor generated, impose a substantial measure of conservatism on the disbursement of funds in response to proposals or "deals." Essentially it is a matter of credibility. The more credible the entrepreneur, the technology, and the venture appear to be, the easier it is to obtain financial support.

Given a good track record on the part of the entrepreneur, a demonstrated technology and some record and prospects of sales it is relatively easy for a venture to obtain financial support. Someone who has been very successful in past ventures may easily obtain support on the basis of his ideas alone. If someone with the track record (personal credibility) of a Land of Polaroid or a Beckman of Beckman Instruments was to initiate a new venture and seek funds he or she would
not have difficulties. Similarly, venture capital firms have sought out competent and experienced technologists to start new companies in industries that have achieved 'glamor' status in the stock market such as semiconductors or computers and biotechnology; taking advantage of both personal credibility and technology credibility. Once a venture begins to make sales and can reasonably project more sales it can borrow money from banks and interest venture capitalists.

"Glamor" of a particular technology or industry is a function of mass psychology as affected by media reportage, publicity and spectacular events. The aircraft industry is a good historical example. The pioneers such as Curtiss and Wright depended for their initial capital on small personal investments, private individuals, and financed their manufacturing from income from sales. This condition persisted through the large expansion that took place in World War I. Very few public issues of stock were made, and when the aviation industry collapsed following the war only a very few, "scattered private individuals had the faith to provide capital to meet the crisis and keep the few remaining companies operating." It was only after the long-distance flights of 1927, such as Lindbergh's, that public enthusiasm for aviation was translated into rush to purchase any kind of aviation stock. By October 1929 the market value of aviation stocks was more than one billion dollars.35

The success of two recent federal programs to support technology can be attributed in good part to the unintended
credibility provided to individual inventors or companies by the receipt of government "approval." The approval of a proposal for support from the government provided a form of certification of both technical and personal validity that attracted private financial support in addition to or in advance of the funds provided by the government. One of the two federal programs, the Energy Related Invention Program (ERIP) of the Department of Energy and the National Bureau of Standards, provides one time financial support for energy related inventions "to move them one step forward." In a number of instances, award recipients were able to receive financial support from banks and individual investors simply on the basis of notification that their proposals had been approved.

Results similar to those described for the ERIP were experienced with the Small Business Innovation Research Program of the National Science Foundation (NSF) which provides funding to small companies for the development of particular technological developments in areas of national interest. The funding is provided in three phases, each subsequent phase being dependent on both technical performance and the pledge of support by outside investors. It was found that the award by the NSF acted to attract investors to some degree whatever the intrinsic validity of the technology. It is to be expected that the financial support for startup ventures is local and personal. At the time of a venture's startup there is little in the way of a record. The facilities may be very
limited or nonexistent. The technology has not yet been proven. The market has not been touched. Though the entrepreneur has no record in terms of past successful ventures, the entrepreneur's personal credibility can often be established at the local level where there are individuals who might lend credence in terms of the individual's character and competence. At the local level there might be a chance to demonstrate the technology and catch the personal interest of individuals with money who do not have to answer for their decisions as might the investment officer of a formal institution that is investing other people's money.

Questions

It is clear that very little money for new ventures comes from the formally established institution for venture capital, including the venture capital companies, the SBIC's and the stock market. The primary sources of financing for new ventures, including desirable new ventures such as the high-technology companies, comes from personal and local sources.

To elicit a greater number of company formations, and to make sure that new and young companies have an improved probability of surviving and growing than it must be aimed at the sources that are now available for funding and not at the formal venture capital institutions. The formal venture capital institutions play a vital role at the point where the financial requirements of a venture are on the order of a half million dollars or more, and the venture is ready to expand greatly.

Is there any point to the formulation of policies for
enhancing the financing of startups rather than waiting till companies are ready for larger investments and substantial growth? Is there not some virtue to seeing who survives that initial period of establishment? The historical record clearly demonstrates that but for lack of adequate early funding, the steamboat, the telegraph, and a great many other socially desirable innovations would have found their way into general use years sooner. Further, a strong case can be made that earlier funding might have accelerated the early growth of many of our major industries, and might have distributed their benefits far differently from the viewpoint of particular countries, regions and communities.

The foregoing raises major questions from the viewpoint of those charged with responsibility for development policy and actions; questions that are directly relevant to their efforts. Who are the individuals who invest in startups? What denotes them from others? How large a population are we discussing? How do private investors perceive investing in new, young and different companies? What influences them? How do they structure their investments? What are their investment goals? How do they structure actions; questions that are directly relevant to their efforts? Who are the individuals who invest in startups? What denotes them from others? How large a population are we discussing? How do private investors perceive investing in new, young and different companies? What influences them? How do they structure their investments? What are their investment goals? How
do they structure their exit strategies? Where do they get their relevant information for investment decisions? What differentiates towns in their propensity and style of investment in startup ventures?
FOOTNOTES


2 There is no consensus on what is meant by "high-technology" among users of the term. Many would include semiconductor production which is presently being carried out by illiterates in underdeveloped countries, but would leave out precision mechanical machinery. What is probably meant by the term is the industry referred to by the British as a "sunrise" industry, one which is on the verge of growing into the future. Often the foregoing is seen as coming out of advanced research.


4 Venture capital organizations include investment bankers, independent partnerships, syndicates, subsidiaries of operating companies and privately owned companies.


7 Ibid.


13 The data in the Census of Service Industries are only in terms of establishments rather than companies. To determine the number of companies, use was made of the ratio of establishments to companies found in the Census of Manufacturers, or 1.2 establishments to company. The actual ratios for 1977 and 1972 were 1.1992655 and 1.197393. Only service establishments were payrolls were included in the calculations to avoid self employed individuals.


15 The following SIC Codes were included: Drugs (283), Engines and turbines (351), Construction and related machinery (354),
Special industry machinery (355), General industrial; machinery (356), Office and computing machinery (357), Miscellaneous machinery (359), Communications equipment (366), Electronic computers and accessories (367), Miscellaneous electrical and electronic (369), Aircraft and parts (372), Guided missiles and space vehicles (376), Instruments and related (38), computers and data processing services (737), Commercial R&D laboratories and testing laboratories (7391 and 7392).

16A good example is provided by the automobile industry which grew to become the dominant industry in the United States, but whose first securities were issued 10-15 years after the appearance of a workable automobile. See Krooss, H.E. and C. Gilbert, American Business History, New Jersey, Prentice-Hall, 1972.

17Diebold, op.cit.


21 The Diebold Group, op.cit.

22 Brophy, op.cit.

23 Computers systems and related equipment, Medical and scientific instruments and equipment, Energy related, Communications, Electronic capital equipment and component, Optical character recognition.


25 Based on estimates that .65 of the 102 investments made by venture capital firms are made for technical firms, .27 of the 150 such IPO's and .15 of the 813 made by SBIC's


29 Rubenstein, op.cit.


36 Combs, RP, G.C. Pulver and R.E. Shaffer, *Financing Small Business Enterprise in Wisconsin*, R 3198, Madison, Wisc., Research Division, College of Agricultural and Life Sciences, University of Wisconsin, Madison, 1983. This very recent report of a study of 132 firms in several SIC's found that the average startup financing, including current and fixed assets, was $87,785.
The Research Approach

The research was designed as a field study in which the first two phases were to be conducted in a representative community in which the data collection instruments were to be developed. On the basis of the data collected from the first two phases a 'model' of the structure and dynamics of the financial flows in a community relevant to the financing of small business was to be developed to be used as the basis for comparisons of communities. As the first phase was actually conducted elements of the first and third phases of the study were combined as will be detailed in the discussions that follow.

The research consisted of the following steps:

1. Analysis of sources of initial financing of startup ventures
2. Development and test of data collection instruments
3. Identification and selection of respondents
4. Data collection
5. Analysis of the data

1. Analysis of Sources of Initial Financing of Startup Ventures, Particularly Those Considered Economically Desirable

An analysis was made of available data on the sources of initial financing of startup ventures, especially those considered economically desirable such as "high-technology" based
ventures. The purpose of the analysis was to determine the relative extent to which startups are dependent on various sources of financing, particularly as sources for the kinds of new and different companies that are concerned with the kinds of technology associated with future growth industries such as electronics, computers, machinery and instrumentation. The analysis attempted to sort out the relative roles placed by different institutions in financing new and young companies, and the extent to which such financing is local vs national. Further, the analysis aimed at developing inferences as to the factors that appear to affect if and how various sources of capital finance new and young companies at the local level including cultural and geographic differences.

An extensive review was made of the literature on venture capital (See Appendix C) and of literature on the initial financing of venture startups including available studies of initial public stock offerings. In addition, the analysis made use of relevant government statistical sources.

2. Development and Test of Data Collection Instruments

The data collection was designed to use a combination of questionnaire and interview instruments that elicit response to a set of calibrated loan and investment situations. The questionnaire and interview instruments were used in tandem in order to take full advantage of the strengths of each type of instrument while overcoming their individual disadvantages. Thus, the statistically satisfying niceties of questionnaire responses were enriched
by the depth of understanding provided by interviews. The use of a set of calibrated situations to which the respondents reacted provided a means for obtaining reasonably realistic responses not possible with instruments that ask the respondent for reasoned (and often spuriously logical) listings of criteria. The approach, aimed at capturing the actual investment policies of respondents through their responses to given situations, has been used successfully in previous studies of loan officer behavior and studies of private investor behavior.¹

a. The Questionnaire/Interview Protocol — Sets of questions were developed to be used for collecting data from private investors (for the first phase) and loan officers (for the second phase). The majority of the questions were based on experience gained from previous studies of loan officers and private investors. In addition, a number of policy questions were included drawn primarily from a report prepared by the Office of the Chief Counsel for Advocacy of the SBA.² Questions pertaining to perceived risk were reviewed with Professor Lee Tavis of the University of Notre Dame. (See Appendix A)

b. The Investment and Loan Situations — A set of investment and loan situations were developed for use in the data collection efforts. The investment situations were developed from actual cases of high technology companies, and, for comparison purposes, more conventional companies. Efforts were made to include high technology cases to represent areas of expressed national interest. Some of the companies were drawn from those
that received awards from the NSF's Directorate for Engineering and Applied Science Small Business Awards program. Some of the companies were taken from previous studies in order to be able to make comparisons with previously obtained results.

The set of investment situations included ten technical and industrial companies (See Appendix B). They included firms engaged in the following fields:

- computer aided design/manufacture (CAD/CAM)
- signal physics
- nuclear waste disposal
- membrane technology
- medical analysis computers
- steel pallets
- lasers
- home energy conservation devices
- synthetic medical enzymes
- security devices

A summary of company characteristics, by individual company is shown in Table 1.

**c. The Sample of Respondents** -- The primary population for this study was that group of private individuals who make investments in startup or very young ventures. To be included in the study an individual had to have made a number of investments, and, thus, could be considered a regular rather than a one-time
<table>
<thead>
<tr>
<th>Co.</th>
<th>Product</th>
<th>Years in Operation</th>
<th>Profitability</th>
<th>Avg Age Mgt</th>
<th>Previous Mgt Experience</th>
<th>Mgt Education</th>
<th>Mgt Amount Required</th>
<th>Technology Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>CAD &amp; CAM software services</td>
<td>3</td>
<td>Yes</td>
<td>42</td>
<td>Yes</td>
<td>MBA</td>
<td>$160</td>
<td>High</td>
</tr>
<tr>
<td>B</td>
<td>Signal Physics</td>
<td>3</td>
<td>Yes</td>
<td>37</td>
<td>Yes</td>
<td>BSEE, MBA JD, PHD</td>
<td>300</td>
<td>High</td>
</tr>
<tr>
<td>C</td>
<td>Nuclear Waste Disposal</td>
<td>2 1/2</td>
<td>Yes</td>
<td>45</td>
<td>Yes</td>
<td>NA</td>
<td>200</td>
<td>Moderate</td>
</tr>
<tr>
<td>D</td>
<td>Membrane Technology</td>
<td>3</td>
<td>Yes**</td>
<td>NA</td>
<td>Yes</td>
<td>PHD</td>
<td>150</td>
<td>High</td>
</tr>
<tr>
<td>E</td>
<td>Medical Analysis Computers</td>
<td>1-</td>
<td>NA**</td>
<td>37</td>
<td>No</td>
<td>MSEE</td>
<td>225</td>
<td>Moderate</td>
</tr>
<tr>
<td>F</td>
<td>Steel Pallets</td>
<td>1/4</td>
<td>NA**</td>
<td>46</td>
<td>Yes</td>
<td>NA</td>
<td>200</td>
<td>Low</td>
</tr>
<tr>
<td>G</td>
<td>Lasers</td>
<td>4</td>
<td>Yes</td>
<td>NA</td>
<td>Yes</td>
<td>MBA</td>
<td>150</td>
<td>High</td>
</tr>
<tr>
<td>H</td>
<td>Home Energy Conservation Devices</td>
<td>1/3</td>
<td>NA*</td>
<td>39</td>
<td>Yes</td>
<td>BSEE</td>
<td>280</td>
<td>Moderate</td>
</tr>
<tr>
<td>I</td>
<td>Synthetic Medical Enzymes</td>
<td>NA</td>
<td>NA**</td>
<td>55</td>
<td>Yes</td>
<td>NA</td>
<td>160</td>
<td>High</td>
</tr>
<tr>
<td>J</td>
<td>Security Devices</td>
<td>NA</td>
<td>NA**</td>
<td>35</td>
<td>No</td>
<td>MBA, BSEE PHD, CPA</td>
<td>90</td>
<td>Moderate</td>
</tr>
</tbody>
</table>

NA: Not Available
**Profits projected in 2nd year
**Profits projected in 1st year
investor. The latter criterion was employed in order to obtain data that might provide systematic rather than ideosyncratic information.

The population of relevant investment decision makers in a community consists of several subpopulations, each of which requires a different approach in determining what is an appropriate sample. For example, it may be possible to include the total population of bank loan officers since their numbers can be determined and the cooperation of a limited number of bank managements is required. In the case of bank loan officers, the use of statistical sampling is simply a function of the relative willingness of bank management to cooperate. Conditions, similar to those pertaining to bank loan officers, are found with investment officials in insurance companies, SBIC's, investment firms and city and state funding agencies.

In the case of private investors there is no way of objectively determining the exact population of such individuals. In previous studies we found that the number of private investors that invest more than once a year in ventures could only be crudely estimated; Hoffman\(^3\) estimated that there were well over 200 such investors in the cities of Austin and Waco, Texas at the time of his study. Consequently, modified snowball sampling was used since the population of respondents could not be identified in advance of the data collection efforts. This type of sampling technique has been used in a variety of sociological research, particularly to measure the extent of informal communication among scientists.
Since there was no way to objectively determine the total number of private investors in Columbus and Louisville or their distribution, snowball sampling was utilized. It is a method that depends on finding a rational point of entry to informal social networks, and following the network connection.

Basically, snowball sampling is a method in which each respondent is asked to suggest other respondents to be included in the study. According to Kadushin:

A snowball sample is a device for obtaining an open-ended sociometric. Starting with a given list, usually a sample of some universe, each respondent is asked to name several others who are then interviewed, and so on.

A total of 33 investors were interviewed for the study, 22 in Columbus and 11 in Louisville.

d. The Cities Studied

The study was carried out in Columbus, Ohio and Louisville, Kentucky. Columbus was selected for reasons of economy and convenience and because Columbus appeared at first examination as almost the ideal community for use as a test-bed and basis for a community model. Columbus has a large diversity of industry and commerce, a major university as well as a number of colleges, major non-profit technical institutions (i.e., Battelle, Chemical Abstracts and federal laboratories), corporate laboratories, a major concentration of insurance company headquarters, investment companies, a number of major
## The Two Cities -- Selected Statistics

<table>
<thead>
<tr>
<th></th>
<th>Columbus</th>
<th>Louisville</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Population (1980)</strong></td>
<td>945,037</td>
<td>906,152</td>
</tr>
<tr>
<td><strong>Employment (1977)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manufacturing</td>
<td>409,000</td>
<td>346,000</td>
</tr>
<tr>
<td>Wholesale/Retail</td>
<td>104,000</td>
<td>110,600</td>
</tr>
<tr>
<td>Finance, Insurance, Real Estate</td>
<td>125,500</td>
<td>95,400</td>
</tr>
<tr>
<td>Transportation</td>
<td>36,400</td>
<td>22,500</td>
</tr>
<tr>
<td>Services</td>
<td>24,100</td>
<td>20,700</td>
</tr>
<tr>
<td>Contract construction</td>
<td>92,800</td>
<td>73,900</td>
</tr>
<tr>
<td>Other</td>
<td>22,000</td>
<td>20,300</td>
</tr>
<tr>
<td></td>
<td>3,200</td>
<td>2,600</td>
</tr>
</tbody>
</table>

| **Establishments (1977)**   |          |            |
| Manufacturing               | 1,315    | 1,109      |
| Wholesale                   | 1,815    | 1,538      |
| Retail                      | 7,754    | 6,457      |
| Selected Service            | 8,788    | 6,870      |
banks, and the state capitol with its state development agencies. Furthermore, Columbus is not part of a larger megalopolitan area, and thus is not 'contaminated' by close proximity to financial centers such as New York, San Francisco and Chicago.

The choice of a second city was made by the research team due to the difficulties encountered in obtaining data in Columbus. The difficulties in obtaining adequate response in Columbus led to the question of whether they were caused by the research methodology, the research team or something attributable to the city itself. An opportunity to answer the questions arose with the move of one of the research team to Louisville. Louisville's choice, thus, was a matter of convenience. As so often happens in field research, necessity and difficulty became a very fortunate research opportunity. The questions concerning methodology, team, and city raised by our experiences were answered satisfactorily; the cities were indeed significantly different in terms of ease of access to respondents and data. More importantly, the ease of access to information in the two cities became an independent variable that could be measured against relative growth of new, desirable companies in the two cities.
3. Data Collection

Potential respondents were identified by starting with individuals in the formal venture capital community, the banking community and the legal community, asking them to identify individuals they considered to be investors who might fit the criterion used for the study. Some potential members of the target group were contacted directly simply because of hearsay or because they were persons "of wealth." In some cases referrals were received from technical entrepreneurs who had faced the problem of obtaining venture capital support in Columbus.

When an apparently appropriate subject was identified, a check was made whether the subject had actually invested money in at least one venture. During the first part of each interview, the research questions were explained to the subject, and a review of the questionnaire was made to make sure that every question was understood correctly.

As was pointed out above in the section describing the cities in which the study was carried out, the difficulties encountered in data collection in Columbus led to the addition of Louisville as a data source. The Louisville effort resulted in a response that contrasted sharply with that encountered in Columbus which added an important dimension to the study.
The Data -- In total 330 investment decisions were made by 33 investors in Columbus, Ohio and Louisville, Kentucky. Of the total, 200 decisions were made by 22 investors in Columbus and 110 decisions by 11 investors in Louisville.

4. Analysis

The data were analyzed along a number of apparently relevant dimensions, such as: (1) the propensity to invest; (2) the nature, extent, and type of venture capital information sources; (3) the factors critical to the investment decision; (4) the structure of the investment; (5) the expectations of the investors; (6) the exit strategy of the investors; (7) the possible effects of selected potential public policy changes.

The unexpected relative difficulty in obtaining data in Columbus as compared to Louisville was perceived as an important variable and an analysis was made of the relative addition of new, desirable companies in the two cities to see if the differences were correlated with the relative difficulty in information flow between the two cities. In all instances the data collected were compared with similar data collected from previous studies in Austin and Waco, Texas, and Hamilton County, Ohio (Cincinnati).
Research Results

The venture capital decisions of individual, private investors in response to ten venture situations were studied in Columbus, Ohio and Louisville, Kentucky. The venture capital decisions were studied with regard to the following:

- propensity to invest in all of the ten new and young companies
- propensity to invest in the companies in terms of such company characteristics as age, level of technology and relative profitability
- propensity to invest by occupation of investor
- information requirements of the investors
- propensity to invest with others or alone
- nature of the investment in terms of amount, percentage of ownership, investment structure, required controls, expected rate of return, exit strategy, willingness to put in more capital at a later time, perceived most important factor, perception of probability of success
- effects on investment decisions of various proposed government policy actions
- correlation between difficulty in obtaining data and growth of desirable industries in the communities studied

Comparisons were made between the two cities and with cities studied in previous research efforts.
Propensity to Invest -- By City

There were distinct differences between the individual investors in the two cities of the study in their propensity to invest in the companies in the 10 investment situations presented to them. As can be seen in Table 2, only 19% of the Columbus respondents' investment decisions were positive as compared to the 41% positive investment decisions of the Louisville respondents. (Six of the Columbus investors who met all criteria for inclusion in the study responded negatively to all ten companies in the sample. Because they met all of the criteria for inclusion in the study the data from the six investors are therefore included in the study. Some idea of the effect of excluding the six who responded negatively to all of the sample companies can be obtained in the total percentage of affirmative responses for Columbus that result from their exclusion, 26% as opposed to 19% and still far less than the total for Louisville.)

The highest percentage of affirmative decisions on the part of the Columbus respondents was the 36% of approvals received for the steel pallets company. The lowest affirmative response by the Columbus respondents, 0%, was given the membrane technology company. Two of the companies in the sample received only 5% positive investment decisions from the Columbus respondents; the home energy conservation device company and the security devices company. The highest positive investment response of the Louisville
Table 2

Propensity to Invest --- By Company

<table>
<thead>
<tr>
<th>Company</th>
<th>Positive Investment Decisions (Percentages)*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Columbus (n=220)</td>
</tr>
<tr>
<td>A. CAD/CAM Software Services</td>
<td>27%</td>
</tr>
<tr>
<td>B. Signal Physics</td>
<td>32</td>
</tr>
<tr>
<td>C. Membrane Technology</td>
<td>0</td>
</tr>
<tr>
<td>D. Medical Analysis Computers</td>
<td>18</td>
</tr>
<tr>
<td>E. Steel Pallets</td>
<td>36</td>
</tr>
<tr>
<td>F. Lasers</td>
<td>27</td>
</tr>
<tr>
<td>G. Home Energy Conservation Devices</td>
<td>5</td>
</tr>
<tr>
<td>H. Security Devices</td>
<td>5</td>
</tr>
<tr>
<td>I. Nuclear Waste Disposal</td>
<td>23</td>
</tr>
<tr>
<td>J. Synthetic Medical Enzymes</td>
<td>18</td>
</tr>
</tbody>
</table>

Overall averages 19% 41%

*Percentage of possible decisions; for each case in Columbus there was a total of 22 possible decisions and for Louisville 11
investors, 64%, was given to the CAD/CAM software services company, and the lowest to the company engaged in producing synthetic medical enzymes.

**Propensity to Invest -- By Age of Company**

Louisville investors were twice as likely to invest in the younger companies in the sample than were the Columbus investors. (See Table 3.) The Louisville investors gave a 38% positive response to the five companies that were one year old or less while the Columbus positive response to those companies was 16%. The corresponding percentages of positive responses for the five companies that were older (one to three years old) were 44% for Louisville and 22% for Columbus. As might be reasonably expected, there was more positive response to the companies with more of a "track record" than for pure startups. In terms of positive response to age of company, the Columbus investors were considerably more inclined to favor a proven record than the Louisville investors; with Columbus investors giving 38% more positive responses to the older companies than to startups as compared to 16% for the Louisville respondents. (See Table 3.)

**Propensity to Invest -- By Profitability**

Since the profitability of the sample companies was related to their age, the same percentages of affirmative responses were obtained as were shown above for age and the same comments apply. It is not possible with the data obtained to determine which of the variables predominated, age or profitability, though both can be seen as components of "track record." (See Table 3.)
**Table 3**

**Propensity to Invest --- By Company Characteristics**

<table>
<thead>
<tr>
<th>By Age of Company</th>
<th>Columbus</th>
<th>Louisville</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than one year old</td>
<td>(Companies D, E, G, H, J)*</td>
<td>16%</td>
</tr>
<tr>
<td>More than one year old</td>
<td>(A, B, C, F, I)</td>
<td>22</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>By Profitability</th>
<th>Columbus</th>
<th>Louisville</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not profitable yet</td>
<td>(D, E, G, H, I)</td>
<td>16%</td>
</tr>
<tr>
<td>Profitable</td>
<td>(A, B, C, F, I)</td>
<td>22</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>By Level of Technology</th>
<th>Columbus</th>
<th>Louisville</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low or Moderate Technology</td>
<td>(D, E, G, H, I)</td>
<td>17%</td>
</tr>
<tr>
<td>High Technology</td>
<td>(A, B, C, F, J)</td>
<td>21</td>
</tr>
</tbody>
</table>

*Company designations and descriptions in Table 1*
Propensity to Invest --- By Level of Technology

Though the Louisville investors were twice as likely to invest in both high and moderate technology companies than the Columbus investors they gave slightly less positive response to the high technology companies, 40%, than to the others, 42%. (See Table 3.) Interestingly, the Columbus investors were slightly more likely to invest in the sample companies engaged in high technology than in the more moderate technology companies, 21% as compared to 17%. The company with no technological innovation, the steel pallet company, received the highest positive response of any of the sample companies from the Columbus investors, 36%.

Propensity to Invest --- By Occupation of Investor

The individual investors identified in the two cities followed the patterns found in previous studies in different parts of the United States and in Europe. The investors were primarily made up of successful businessmen and professionals. In many cases the successful businessmen now primarily spent their time as investors, and could so be identified occupationally. The professionals included lawyers, medical and dental practitioners, academics, CPA's, management consultants and active managers.

The numbers of respondents were too small to draw any meaningful statistical comparisons, but general tendencies can be noted. The individuals, by profession, that responded most positively to the companies in the study were the lawyers, medical professionals and accountants followed most closely by those in sales management. Interestingly, those who responded least posi-
tively were those identified as consultants, academics and general management. Further, the latter group was most attracted to the companies with the best track records in terms of profitability and age.

Information Requirements of the Investors

It appeared that in the great majority of investment decisions the investors in this study made an initial decision to invest or not to invest. In only 15 investment decision situations (6% of the total of 330 decisions) was there a "maybe" response that might have been changed with additional information. Once a positive or negative decision was made the only considerations given to the need for additional information was with regard to those receiving positive decisions. In no case did the respondent ask for more information in order to reconsider his decision where the investment decision was negative.

All of the investors in both Columbus and Louisville responded that they would find it helpful in making their investment decisions if they could obtain more information (See question #2 in Venture Capital Questionnaire/Interview Guide in Appendix A), but only with regard to the sample companies that they responded to positively or in the few cases where they gave a "maybe" answer. There were no real differences shown between the Columbus and Louisville respondents in terms of the kinds of additional information desired. The kinds of additional information desired are as shown below:
Type of Information Requested by Investors

On the specific business

Business plans, operations statements, marketing plans, tax returns, audits, customer evaluations, creditor evaluations and credit reports, patents, etc.  42%

On the industry and technology

State of the art, industry analysis, economy, competition, market research, similar businesses, etc.  36%

On the principals and management

Personal references, percentage invested, salaries, etc.  22%

100%

Information Sources of the Investors

In almost every instance where a respondent in Columbus and Louisville gave a positive investment decision response to one of the company cases, he indicated that he would seek information from someone to help in making the final decision. In a few of the cases the responses were too general to classify; such as "pertinent sources." The remainder of the responses were classified as shown:
Types of Individuals Consulted by Investors

<table>
<thead>
<tr>
<th>Types of Individuals</th>
<th>Columbus</th>
<th>Louisville</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business associates and friends</td>
<td>26%</td>
<td>40%</td>
</tr>
<tr>
<td>Potential customers</td>
<td>6</td>
<td>15</td>
</tr>
<tr>
<td>Potential suppliers</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Potential competitors</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Financial community</td>
<td>17</td>
<td>18</td>
</tr>
<tr>
<td>Attorneys and accountants</td>
<td>11</td>
<td>10</td>
</tr>
<tr>
<td>Consultants</td>
<td>26</td>
<td>5</td>
</tr>
<tr>
<td>People who know principals</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

As can be seen from the data presented above, the respondents in both cities cited the same kinds of sources, and to a great extent to the same degree. There were noticeable differences with regard to the degree to which reference was made to the most important source of data in both cities. Business associates and friends were cited 26% of the time in Columbus as were consultants. On the other hand, business associates and friends were cited 40% of the time in Louisville, while consultants were only indicated 5% of the time.

Respondents in both cities cited attorneys and accountants to the same extents; 11% in Columbus, 10% in Louisville. Similar responses were given with regard to people who know the principals, 2% in both cases. Similar responses were given with regard to potential competitors, 6% and 7%. There were differences with regard to the extent potential customers and
suppliers would be contacted; in the case of Columbus, 6% each for both sources, and for Louisville, 15% and 3%.

**Exchange of Venture Investment Opportunities**

In an effort to determine the extent of "networking" by the respondents in both cities, the respondents were asked two kinds of questions with regard to each case:

1. If you would not invest, would you refer this company to someone else you think might be interested? If 'yes', whom? and
2. If you would invest in this company, would you do so alone or would you try to interest others in investing with you? With whom?

**Referrals of Rejected Investments**

In both cities the great majority of respondents would not refer venture investment opportunities that they had turned down to others. In Columbus, 31% of the respondents who answered the question would refer rejected investments to others while 29% of the Louisville respondents would do so. The Columbus respondents referred rejected investments to venture capital firms (44% of referrals), SBIC's (17%), private corporations in same field (17%), other investors and colleagues (17%), banks (5%). The Louisville respondents differed most from those in Columbus in the extent to which they made referrals to other investors (36%), to venture capital firms (18%), and SBIC's (27%). The Louisville respondents were similar to those in Columbus in their referrals
Sharing of Investments

In both cities the great majority of respondents would not invest alone, but would try to interest others in investing with them. In Columbus, of the 18 respondents, 12 or 67% would interest others. In Louisville of the 11 respondents, 9 or 82% would try to interest others in investing with them. Of those in Columbus most would try to interest friends and business associates with whom they have shared other investments. Two of the Columbus respondents said they would try to find a suitable corporate investor, and four stated that they would find someone who knew something about the industry. Of the Louisville respondents who would try to interest others, six or two thirds would try to interest friends and business associates with whom they had shared other investments, one would try to interest a suitable company, and two did not specify more precisely than "others."

The Effect of Additional Information on the Rejected Investment Opportunities

There was almost unanimity among all of the investors in both cities in rejection of the idea that additional information might change their negative decisions with regard to the sample companies. In only one case did a respondent reply that "better management" might change his decision, and in another case the reply was that "better numbers" might change a decision. As one respondent put it, "It is easier to find a new deal than to fix up an old one."
Nature of the Investment

With almost no exception the respondents in both cities each tended to have an approach to structuring their investments that was typical of the individual rather than of the particular investment situation being considered. Thus, an individual investor would tend to invest the same relative amount (as a fraction of the amount requested), percentage of ownership required, investment structure, required controls, expected rate of return, exit strategy, and willingness to put in more capital at a later time.

Nature of the Investment --- Amount Invested

The amount invested relative to the total amount requested in an investment situation can be considered, in a sense, as one measure of an investor's propensity to invest. As Hoffman put it,

It is one thing to respond positively to a new/small company's request with 10% of the money requested but quite another to invest 50% to 100% of the amount requested. From the viewpoint of a new or small company seeking capital, the amount invested as a percentage of the amount invested as a percentage of the amount requested critically affects whether and when the company can initiate operations and the effectiveness with which it can operate.

With regard to amount invested as a proportion of the
total requested there was little difference between Columbus and Louisville respondents. As can be seen below in 46% of the Columbus positive responses the investor would provide all of the funds requested and in 23% of the positive responses they would provide "as much as needed" which can be interpreted to mean most or all of the funds requested. In the case of Louisville the parallel percentages were 42% and 27% for a total of 69%; which is very similar to what was found in Columbus. In both cities there was an additional 23% who would provide 30-50% of the requested funds, and 8% who would provide less than 30%. An interesting side note relevant to both cities was the fact that the investors who were medical professionals responded most positively in every regard to the medically related investment case.

Nature of the Investment --- Percentage of Ownership Required

In their responses the Louisville investors were more likely to require a smaller percentage of ownership in the companies that they would invest in than the Columbus investors. As can be seen below. In 22% of the cases of positive response the Columbus investors stated that they would require less than 33% of the company's equity as compared to 27% in Louisville responses. Of the Columbus responses, 17% would require 33-50% of the company equity as compared to 36% in the case of the Louisville responses. The two sets of respondents were fairly equal in the number of responses that required more than 50% of the equity. There was a tendency in both cities for the respondents to require less ownership in the companies that were more than one year old which were also more profitable; those with more of a "track record."
The Nature of the Investment --- Investment Structure

Many of the respondents in both cities made it clear that the structuring of their investments was really a function of the times and their particular financial position at the time. There were a large variety of combinations of debt, equity and options, and it was difficult to categorize the many and various combinations used by the respondents. In the case of Columbus, the respondents opted for equity alone in the form of common stock in 25% of the cases, and in the form of preferred stock alone in 6% of the cases. Combinations of common stock and warrants, 6%; preferred stock with options or convertible, 13%; warrants or options alone, 19%; debt plus warrants, options or equity, 31%. In the case of the Louisville respondents the
requirements were as follows: Common stock alone, 36%; preferred stock with options or convertible, 18%; warrants or options alone, 9%; debt plus warrants, options or equity, 36%.

Nature of the Investment --- Controls Required

In 91% of the cases the Louisville investors imposed some kind of managerial and financial constraints as compared to the Columbus investors' 87% which was somewhat less. The investors in both cities made greatest use of representation on the board of directors; 37% in the case of Columbus, 45% in the case of Louisville. One of the Columbus investors not only would be on the board of directors but would insist on being head of the audit committee. The investors in both cities place emphasis on approval of policy decisions; 21% in the case of Columbus, 27% in the case of Louisville. Of the Columbus investors 8% wanted regular statements from the CEO or audit reports as compared to 9% of those in Louisville. The ability to take over the company in the case of poor performance was required by 4% in Columbus and 9% in Louisville. In addition 13% of the respondents in Columbus wanted to approve the chairman of the company, and 4% wanted to be an officer of the company.

Expected Rate of Return

The expected rates of return of the Columbus and Louisville respondents are described below, but should be read with a note of caution in mind. Expected rate of return, like method of structuring of the investment, is a function of the times; highly
dependent on the interest structure and the returns offered by other investment opportunities. Since these data were collected at the height of the inflationary interest rates of 1980-1, they must be read with that in mind.

The expected rate of return for investments in the sample companies stated by the respondents in Columbus and Louisville are shown below. As can be seen, in only a limited percentage of the cases did the respondents state that the expected rate of return was dependent on the industry or the apparent nature of the risk. The largest percentage of the respondents in both cities gave expected rates of return between 20% and 30% per year.

<table>
<thead>
<tr>
<th>Rate</th>
<th>Columbus</th>
<th>Louisville</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 20% /yr.</td>
<td>6%</td>
<td>--%</td>
</tr>
<tr>
<td>From 20% to 30%/yr.</td>
<td>41</td>
<td>36</td>
</tr>
<tr>
<td>From 30% to 40%/yr.</td>
<td>24</td>
<td>27</td>
</tr>
<tr>
<td>From 40% to 50%/yr.</td>
<td>12</td>
<td>27</td>
</tr>
<tr>
<td>Varies with industry</td>
<td>18</td>
<td>9</td>
</tr>
</tbody>
</table>

101%* 99%*

Doesn't equal 100% due to rounding

Willingness to Put in More Capital Later

As an additional indicator of propensity to invest in the sample companies the respondents were asked if they would be willing to put more capital if needed into the investment situations they responded to positively. Two thirds (67%) of the Columbus investors responded positively, 20% responded negatively,
and the remainder stated that it would depend on the situation. The Louisville investors responded very similarly with 73% responding positively, 18% negatively, and the remainder responding conditionally.

Exit Strategy

To gain greater insight into how the investors perceive their long term relationship with the companies they invest in, and to determine how they saw terminating their investments the respondents were asked, "How would you foresee exiting from the company; your exit strategy? How long would you expect to stay invested in the company? How would you structure your exit?"

Exit Strategy --- Length of Time in Investment

What is the time horizon of the investor who invests in new and young companies? How long does he/she expect to remain invested, and, thus, not have those funds available for other investments? Overall the Louisville investors expected to leave their funds invested longer than did those of Columbus, but the median investment time for both groups was between five and ten years. As can be seen below, there was a greater range of responses from the Columbus investors. At the low end was the anticipation of leaving the funds invested from three to five years, and at the other extreme was the anticipation of remaining permanently invested in the company. There were a number of responses which were classified as "varied." The latter included
responses such as, "I would remain in the investment until the next 'hot issues' market," "Whatever it takes?" and "It is really not an important issue to me."

**Anticipated Length of Time of Investment**

<table>
<thead>
<tr>
<th>Time Period</th>
<th>Columbus</th>
<th>Louisville</th>
</tr>
</thead>
<tbody>
<tr>
<td>Three to five years</td>
<td>8%</td>
<td>--%</td>
</tr>
<tr>
<td>Five years</td>
<td>33</td>
<td>30</td>
</tr>
<tr>
<td>Five to ten years</td>
<td>39</td>
<td>50</td>
</tr>
<tr>
<td>Varied</td>
<td>23</td>
<td>20</td>
</tr>
<tr>
<td>Permanent</td>
<td>8</td>
<td>--</td>
</tr>
</tbody>
</table>

*Does not add to 100% because of rounding

**Exit Strategy -- Anticipated Structure of Exit**

There was a large variety of exit strategies in terms of the anticipated structure of exit. By far the most frequent exits were by means of public stock offerings or merger or acquisition by another firm. In many instances a public stock offering and merger or acquisition were seen as equivalents and expressed as "...either public stock offering or merger or acquisition." Among the exit structures labelled "Other" were responses such as, "I would swap common for preferred and high paying dividends," "I would probably stay in unless there was a very profitable public offering." In most respects the responses in the two cities were fairly parallel. There was substantial interest input and call arrangements that would
entail buyout at given levels of performance, and in leveraged buyouts. In some cases the respondents had no strategy other than to wait and see what developed.

### Anticipated Structure of Exit

<table>
<thead>
<tr>
<th></th>
<th>Columbus</th>
<th>Louisville</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Offering</td>
<td>32%</td>
<td>27%</td>
</tr>
<tr>
<td>Merger/Acquisition</td>
<td>24</td>
<td>27</td>
</tr>
<tr>
<td>Put/Call</td>
<td>16</td>
<td>18</td>
</tr>
<tr>
<td>Leveraged Buyout</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>Other</td>
<td>8</td>
<td>--</td>
</tr>
<tr>
<td>Can't Tell Yet</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>No Exit Anticipated</td>
<td>-4</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>99%*</td>
</tr>
</tbody>
</table>

*Does not equal 100% due to rounding

### Most Important Factor

Each of the respondents was asked, "What is the one most important item about the company that influenced your investment decision?" The question was asked as a form of the critical incident technique which attempts to identify and classify the most factors influencing the respondents. The data are shown below, but not much weight can be given to the replies for two reasons. First, the value of the critical incident technique was constrained by the very limited number of respondents. Further, it should be recognized that the relatively greater weight placed by the respondents on factors related to the industry rather than the management and principals is affected by the relative amount of information on each presented in the company cases.
As can be seen below, factors related to the industry or business were cited far more frequently as the most important factor in the investment decisions made. Some of the specific comments illustrate how the investors perceived the cases, "I like defense related industries," "I like smokestack industries," "I look for industries with a future," "I just don't like high-technology industries," "I have to be able to understand what the industry is all about," "The most important factor to me is what my associates like."

<table>
<thead>
<tr>
<th>Most Important Factor</th>
<th>Columbus</th>
<th>Louisville</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industry/Business Related</td>
<td>58%</td>
<td>55%</td>
</tr>
<tr>
<td>Management/Principals Related</td>
<td>21</td>
<td>37</td>
</tr>
<tr>
<td>Other</td>
<td>21</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

The Effect of Proposed Government Policies on Investment Decisions

Three proposed policy options designed to increase flow of investments into new and young ventures were presented to the respondents to determine if such policies would change any of their investment decisions. The three policies were:
1. The ability to rollover investments from real estate, stocks, bonds, other companies, etc., into the types of ventures in the study without paying capital gains tax,

2. The ability to carry forward losses from investments in the types of ventures in the study for ten years instead of the five years permitted.

3. Having gains from capital invested in the types of ventures in the study taxed at half of whatever rate would be applied normally by the IRS.

As can be seen below, in the great majority of cases the proposed policies would not change any of the investment decisions made by the respondents. Though almost all of the respondents expressed themselves in favor of all three policies, the policies had little influence on their decisions when it came to specific investments. As one of the investors expressed it, "I'm in favor of these policies in general, but they wouldn't change a specific decision." The one policy option that showed the greatest influence on changing decisions was the policy option that would increase the carry forward period from five years to ten years; the only option that would clearly change a limited number of decisions from negative to positive. The option with the least effect was rollover from other investments without being taxed.
Would Selected Policy Options Change Your Investment Decisions From 'No' To 'Yes' In Any Of The New Venture Cases

<table>
<thead>
<tr>
<th>Policy Option</th>
<th>Columbus</th>
<th>Louisville</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The ability to rollover other investments into new ventures without paying capital gains tax</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>--%</td>
<td>--%</td>
</tr>
<tr>
<td>No</td>
<td>80</td>
<td>88</td>
</tr>
<tr>
<td>Maybe</td>
<td>20</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>2. Carry forward of losses for 10 instead of 5 years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>7%</td>
<td>9%</td>
</tr>
<tr>
<td>No</td>
<td>60</td>
<td>67</td>
</tr>
<tr>
<td>Maybe</td>
<td>33</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>3. Tax at half normal IRS rate for capital investments</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>--%</td>
<td>--%</td>
</tr>
<tr>
<td>No</td>
<td>67</td>
<td>74</td>
</tr>
<tr>
<td>Maybe</td>
<td>33</td>
<td>27</td>
</tr>
<tr>
<td>held more than 5 years</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>
Recurring comments were made by the respondents with regard to policy issues that might affect their propensity to invest in new and young ventures. One of the recurring themes had to do with the IRS, taxes and uncertainty. Comments were made on the inconsistency of the IRS and its rulings which made venture investments even more uncertain than they would be otherwise. The most influential investors interviewed stated they would not consider a deal unless all of the tax considerations had been spelled out; not so much with a view to increased returns but with a view to reduction in uncertainty. One of the side effects of the concern with tax considerations is the large and increasing role played by accountants in the deal making process not only for consultation but as deal makers.

Discussions with the investors in both cities revealed a consensus on the part of the respondents that there is no shortage of capital. Many felt that those who complain of a lack of capital have simply not done their homework or lack credibility for one reason or another. Another strongly expressed reaction on the subject of capital was a concern with the possibility of government entry into the venture capital market. The specific comments with regard to the government as venture capital source included the following: 1. Government disbursement of funds run the risk of being politicized; 2. There is every likelihood that government funds would be subject to too much regulatory and administrative controls; 3. In light of potential politicization and regulation, the government would not carry out the mentoring and disciplining
function of the venture capitalist well. One respondent commented that he has had more success in teaching women and minority entrepreneurs to better compete for funds in the open market by improving their abilities "to do their homework" than could be achieved by simply earmarking funds for them.

"Openness" As a Measure of a Community's Financial Community

An unexpected result of the study was the inadvertent identification of "openness" as a potentially important measure of a community's investment climate with regard to the financing of new and young ventures. What initially appeared to be a serious difficulty in carrying out the research project became one of the most useful results of the research. Initial and subsequent difficulties in obtaining entree to respondents for the study and to get their cooperation in the project led to efforts in a second, very different community which resulted in obtaining valuable comparisons with regard to the encouragement of new ventures.

In terms of "openness," the Columbus financial community appeared to be reluctant to open up to inquiry, and hesitant to make referrals to other investors in the community. Initial contacts for the study were made with professionals such as bank officers, CPA's, lawyers, savings and loan officers and business consultants for entree to investors who would meet the criteria set forth for the study. The initial contact with these professionals was based on previous studies in which it was found that such professionals play the role of
intermediaries between those seeking financing and the investors in a community. The first difficulties were with the referrals. The majority of the referrals received were to individuals with whom the referrers had no personal connections but to rather obvious people of wealth who were in the public eye. When the referrals were made the person making the referral typically asked that no mention be made of who had made the referral. Subsequently, many of those to whom the team was referred denied any history of or interest in investments in new ventures.

Very little interconnection was found among the private individual investors contacted in Columbus. Very few referred the team to other investors. Few mentioned specific other investors that they would call upon to share a venture, though a good percentage stated they would seek other investors. There was some referencing between CPA's and lawyers. Typical of comments received on the subject of interconnection of investors in Columbus were the following: "You can't get anyone in Columbus to work together with others in the investment community." "You have to work together with investors in other cities rather than those of Columbus." Supporting the foregoing comments were the comments of entrepreneurs in Columbus on the difficulties they encountered in getting initial financing.
The difficulties encountered in obtaining response in Columbus raised a number of questions about the research effort. Were the difficulties a function of those doing the data collection? Was the research approach wrong, the instruments inadequate? Was it a function of the community and its culture? An opportunity arose to answer the questions. One of those engaged in the research transferred to Louisville, Kentucky, and advantage was taken of his move to parallel the Columbus efforts in that community. Since the data collector was one of those who had worked in Columbus, and the research approach and instruments remained constant it was possible to check the effects of community.

The Louisville effort encountered no difficulties in gaining entree to the relevant population or in obtaining their responses to the interview/questionnaire. The researcher was passed readily from person to person and freely provided with information. The experience in Louisville suggested strongly that what had been encountered is a difference in "openness" between the two communities that might be significant to the study's goals. Hoffman\(^6\) had noted a similar difference between Waco and Austin, Texas. In Waco the investment community was far more secretive and unconnected than that of Austin. Similar to the experience in Columbus, Hoffman had found the investors in Waco far less ready to pass him to others openly, and desirous of remaining unidentified to those who were identified as potential investors.
To obtain a "quick and dirty" measure of the potential relationship between the observed relative "openness" of a community's financial community and new company formation, an analysis was made of the differences in increase in what has been identified above as desirable new ventures between the cities that appeared to be more "open" in this and Hoffman's study, Louisville and Austin, and those that appeared to be less "open," Columbus and Waco.

A comparison was made of the net increase in companies in the cities studied to determine whether the measured response to 'deals' in new, different companies showed any relationship to the rate of increase in desirable companies. Comparing Columbus and Louisville it was found that Columbus had a net increase in all manufacturing companies of 97 or 9.7%, and a net increase in service industry companies of 228 or 6.2% for a total of 325 manufacturing and service industry companies or 5.8%. The figures for so-called desirable companies shows Columbus with an increase of 3 companies in the 1972-1977 time period or an increase of 1.4%. Louisville, by comparison, had a net increase in all manufacturing companies of 88 or 10.5%, and a net increase in service companies of 19 or 95% for a total of 107 desirable companies or 12.5%. Thus, Louisville showed an increase in desirable companies that was more than double that of Columbus though both were below the national rates of increase.
Referring back to the study of Austin and Waco which was made before the 1972-1977 Census periods a similar comparison was made to see the effect of similar differences on a subsequent period of time and for a Sunbelt area of the country. Waco showed a net increase in all manufacturing companies of 33 companies or 14.9% and a net decrease in service industry companies of 8 or just under 1% decrease for a total increase in 25 manufacturing and service industry companies or 1.9%. In terms of the so-called desirable companies, Waco had none of the manufacturing companies in 1972 or 1977, and showed a drop from eight to five in the service industry companies for a net decrease of three or 37.5% over all. By comparison, Austin had a net increase in 164 manufacturing firms or 59.7% and a net increase in service industry firms of 941 or 33.7% for a total of 1,105 companies or 36.0%. In terms of the so-called desirable companies, Austin had a net increase of 23 manufacturing firms or 135.3% and a net increase of 33 service industry firms or 106.5% for a total of 56 desirable firms or 140%.


Hoffman, C.A. op. cit.


3 Hoffman, op.cit.


5 Hoffman, op.cit.

6 Hoffman, op.cit.

Economic Development and Innovation Bearing New Ventures

The development of industries that will play a role in the future is an implicit or explicit key element in economic strategies being adopted at the national, regional and community levels. Thus, the strong interest in "high-technology" industries, being manifested everywhere, takes its impetus from the belief that today's high-technology will become the dominating industry of the future, what the British refer to as a 'sunrise' industry. Illustrations of the transformation of today's high-technology into tomorrow's jobs and exports are provided by automobiles in the first two-thirds of the twentieth century, and electronics in the last third of the century.

One of the problems facing an economic strategy aimed at achieving tomorrow's growth industries through concentration on today's "high" technology, however, is our inability to know, with any assurance, which industries will dominate the future. We can make some fairly safe statements about the future potentials of broad technologies, but it is only by hindsight that we can point out the obviousness of such subsequent successes as the hand calculator or electronic games. Though the success of the computer and fiber optics
were predictable, all estimates of the time it would take for them to bear economic fruit were off by decades. Consequently, an intelligent economic policy would recognize that new technologies and the industries resulting from them are vital, but such a policy would avoid trying to forecast which technology will succeed or when it will take hold.

It is possible to undertake an economic development strategy that takes advantage of new technologies, and that does not require inhuman prescience as to which technology, industry or company will succeed and when. Such a strategy loads the dice to increase the formation, survival and growth of new ventures of all kinds, particularly ventures that are innovation bearing. The argument for such a strategy is rather straightforward. It starts with the premise that we cannot outguess the future. We do not know which technology will succeed or when it will make sense economically. Further, we cannot know which company utilizing a particular technology will succeed or fail. Therefore, to take advantage of innovation and new technology we should encourage many and all kinds of apparently desirable (e.g., innovative) venture formations.

The formation and growth of an industry is a function of the formation, survival and growth of companies within that industry. It follows that anything that increases the number and quality of new ventures in a country or community, and enables those ventures to survive and prosper
contributes to development. By encouraging many new ventures we achieve actuarial results; the more companies we have trying to outguess the future, the more likely some will succeed (at a rate and in a way that no analysis can foretell). Putting together the argument for encouraging many new venture formations with the argument for encouraging a great variety of technologies directs our attention to policies that could lead to conditions that encourage entrepreneurship in a broad range of innovative fields and geared to the survival and success of new and young ventures.

It is in the national interest to proliferate innovative new ventures for the sake of the economy and for the many benefits to be gained from more innovation in terms of health, security and improved environment. Further, it is in the interest of states and communities to gain the benefits obtainable from the development of complexes of innovation bearing ventures within their boundaries. The widespread efforts to emulate "Route 128" in the Boston area and "Silicon Valley" near San Francisco show that many recognize the value of such developments. The question is how to develop policies and action programs to systematically achieve more such complexes.

Emphasis is placed here on the notion of systematic, or rational, data-based development as differentiated from the myths that pervade much of the discussion of how to generate the desired entrepreneurship and inventiveness.
Through intuitive local initiatives and/or happy accident a few communities in our nation have generated the desired concentrations of innovation bearing new ventures with all of the benefits that accrue to them. However, little is understood about how they achieved their present status. Consequently, many programs being launched today are seriously uninformed. One prime example is found in the scores of university based R&D industrial parks being established with little regard to the historical record that shows the great majority of such efforts to have failed, and shows the few successes not attributable to the reasons given in the conventional wisdom.

Entrepreneurship and inventiveness are widely distributed human activities in the United States. It is the rare community without a pool of potential entrepreneurs. There is an abundance of examples of significant companies, including technical ones, being founded in remote communities. The sheer volume of annual company formations assures us of the pervasiveness of entrepreneurship. When it comes to technically oriented entrepreneurs, the large, widely distributed inventory of first-rate institutions of higher education with graduate programs in engineering, sciences and business provides us with a large, well distributed population of technical professionals who are potential entrepreneurs. It appears obvious, then, to conclude that variables, other than the presence of the requisite entrepreneurs, are critical to the process of venture generation. The most important of the variables
is the availability of financial support.

The Role of Pre-venture Capital

A diverse range of financing needs, vital to the existence, survival and growth of a venture, are experienced long before it enters the sights of the formal venture capital institutions. The financing that precedes the time when formal venture capital institutions enter the picture has no formal label, but we will refer to it as pre-venture capital. Pre-venture capital starts with the resources needed to test an idea or technology, to get some idea of the market, to prepare a business plan; the kinds of activities carried out by staff professionals in the large corporation. The resources needed for these very first activities has been referred to by Burke Brown, a Canadian venture capitalist and student of the subject, as "shovel money." As Brown puts it, "Money for new ventures is lying in the streets, but you need the money for the shovel to pick it up." In a sense, "shovel money" enables the entrepreneur to be turned down for the right reasons and not for lack of some piece of information that leads to rejection.

Once the venture is ready to be started initial financing is needed to provide the wherewithal for equipment, facilities, initial inventory, fees of all kinds, utilities hookup and the like. Following startup, finances are needed to cover operating costs until the venture reaches a point where
it has the income to finance itself. Once the venture is on stream there are all of the financial needs entailed in maintaining operations. Financial support may be needed to cope with changes or to achieve potential growth. All of the foregoing fall into the realm of pre-venture capital. Pre-venture capital is the financial lifeblood of new, young, and the great majority of established small businesses. As the term implies, pre-venture capital is not supplied by the formal venture capital community. Pre-venture capital is essentially supplied from personal assets, personal borrowings and funds obtained from private investors.

Little money for new or young ventures comes from the formally established institutions for venture capital, including the venture capital companies, the SBIC's and the stock market. The formal venture capital institutions play a vital role at the point where financial requirements of a venture are on the order of a half million dollars or more, and the venture is ready to expand greatly. The half million dollar level is one where very few individual investors are to be found, though various forms of syndication or "mutual" funds do allow smaller investors to take part in the financing of larger ventures.

Policies to affect financing to elicit more company formations, and improve the chances that new and young companies will survive and grow, must focus on pre-venture capital. To develop policies that work, it is important
that they be based on reliable information on the sources of financing actually available for new ventures, to know who they are, how they make their decisions, and what might positively affect their support of new and young desirable ventures.

**Development is Local and Pre-venture Capital is Both Local and Personal**

In the final analysis, all development is local. National development is a non-evenly distributed aggregation of local developments. Whether something does or does not happen in terms of development is, thus, a function of what occurs with specific companies in specific communities; whether they are formed, whether they survive and whether they are enabled to grow.

What makes the difference between one community and another in the kind of dynamic development represented by a high company formation and survival rate, particularly of companies producing and distributing the kinds of goods and services identified with advanced technology? The first and foremost requirement, of course, is the presence of appropriate entrepreneurs (appropriate in the sense of having the relevant technical and/or business capabilities). Given the presence of appropriate entrepreneurs, nothing affects local development more than the effective availability of adequate financial resources for the "shovel money" to validate an idea, the initial financing of new ventures and financial support for young and growing firms.
Statistically, in terms of raw availability of capital in the form of income and savings few communities are without a substantial inventory of capital. The critical difference, then, between two communities with equal inventories of capital is the relative effective availability of that capital for the formation of new ventures and the support of young ventures. Whether a community develops new companies (and subsequent industries) and whether those new companies survive or remain in the community depends to a critical extent on the way local private investors respond to requests for initial financing and the way local banks respond to subsequent financial needs.

The results of a lack of effectively available local financing can be expressed in terms of ventures that might have formed but never crystallized, ventures that were delayed in starting, ventures that moved away, and the loss of momentum and potential growth by ventures. The author of this study encountered companies that moved from their home cities to gain access to a more responsive financial community (e.g. a company that moved from Cleveland to Boston to have access to bankers who know how to loan money on electronics). In the course of this and previous studies, several entrepreneurs commented on the time and momentum lost for product and market development due to the lack of timely and adequate financing.
It is Not a Question of the Inventory of Capital

The inventory of money is very large in every community of the United States, including communities in the more economically hurt areas of the country. Any analysis of the statistics on income reveals large streamflows of income in every community. The problem is not the absolute inventory of capital, but the effective availability of that capital for the purposes of new company formations or the expansion of young, growing companies.

That an inventory of capital does not necessarily result in its effective availability can be illustrated by the experience in the 1950's of a major insurance company with a program to provide financial assistance to small companies,

...on February 7, 1950, the Metropolitan Life Insurance Company announced a plan to make intermediate-term credit not to exceed $250,000 available to small business. It was proposed that banks participate with the insurance company by negotiating loans with business for terms of 3 to 10 years. The bank would take 10% of the loan and the insurance company, 90%. In addition to its pro rata share of the loan, interest collected on the loan, and any assets pledged to secure the loan, the bank was to receive a service fee for making the initial investigation and handling collections. Over 6,000 banks were
notified of the plan. From that time until February, 1958, the insurance company received applications for only 228 loans, of which it approved 86. ... 12 withdrew their applications after approval.\(^2\)

(emphasis added)

The presence of substantial additional funds for loans to small business was not enough in itself to make more financing available. The monies had to be filtered through the attitudes and perceptions of loan officers in order to become effectively available for working capital to new and young firms.

Sources of Pre-venture Capital

The primary sources of financing for new ventures, including desirable new ventures such as high-technology companies, are personal and local. New ventures are predominantly financed by the personal savings of the entrepreneurs, loans from local banks, family and friends, insurance companies and mortgagors, trade credit and monies obtained from private investors in the local community.

As was shown in the previous sections of this report between 85% and 98%+ of the funds for pre-venture capital come from personal savings and from loans and investments from local sources.\(^3\) By far the predominant share comes from personal savings of the entrepreneurs, between 50% and 75%. After personal savings the primary sources of pre-venture capital are bank loans, an estimated 10% to 20%, and investments by local investors, an estimated 5%
to 10%. Other sources include trade credit, the government, stock offerings and borrowings on mortgages and insurance policies.

Examination of the data make it clear that pre-venture capital financing policies should be designed to affect the loan decisions of bank loan officers and the investment decisions of private investors at the local level.

The Lending Decisions of Bank Loan Officers

There have been a number of studies of how loan officers respond to different loan situations including situations that differ in the companies being considered for loans in terms of age and level of technology. The findings of the studies can be summarized as follows:

1. There are very marked differences by community, bank and individual loan officer in the responses made to a given company loan request. As Shapero found:

   The Ozarks loan officer appeared to treat an enterprise as a mechanism that is either good or bad. Once put in place and financed, it is expected to function properly...he was much more concerned than his California counterpart with making a proper initial judgement that, once made, he would live with...the Ozarks loan officer tended to look at a company from the viewpoint of "likelihood of failure"...Once a loan was approved, he tended to impose conditions which assured the bank.... a superior position with regard to other creditors
in the event the company would fail.
The California loan officer appeared to treat
the enterprise as an organic entity that
constantly must adapt, innovate, and, if necessary,
be pruned, watered and fed...he was concerned with
achieving the proper initial conditions, and once
he made his decision, he was committed to making
it work....to demand changes in accounting and
control records, employment of financial special-
ists...periodic inspections of inventories and
receivables.

2. Whether a banker makes a loan is associated with
age, educational background, work experience and measured
preference for risk.

3. How a banker makes a loan in terms of security required
and imposition of managerial and financial constraints is
more associated with regional differences in bank loan
practices than with individual differences among loan
officers.

4. The amount and kinds of assistance and relevant
advice a banker provides to a new or young company is
associated with how the banker perceives his or her role.

The data on loan officer behavior provides us with
important clues to an explanation to some of the differences
in the way regions and communities develop. Bankers vary
greatly in how they perceive their roles and the way they
assess loan requests, and the bankers within a region
tend to show common attitudes and behaviors. Communities in which the bankers see themselves in the role of helping new and young companies are going to experience more company formations than communities where the bankers see themselves in a quite different role.

Bankers who not only lend the new venture the money it needs but who take a continuing interest in helping the new venture survive and grow make a considerable difference in what happens to a community. It is not only the funding that makes a difference to the fledgling firm. It is also the associated oversight that comes with funding that makes a difference in the rational development of a new company; the questioning, the requirement for reporting, the concerned advice. Many successful entrepreneurs have told the author of this report, "I hated being told what to do, but if it wasn't for that banker, I wouldn't be here today."

The data show a strong relationship between the personal characteristics and experience of bankers and their loan decisions and subsequent relationships to the companies to which they loan money. The foregoing strongly suggests that it is possible to make a significant difference in a community's loan officer behavior through systematic programs to educate them, change their motivation and perceptions of their role, and to provide them with information that will enable them to respond intelligently to the needs of new and different companies.
The Investment Decisions of the Local Private Investor

In addition to the entrepreneur (and family) and the bank loan officer, the local private investor is the important figure as a source of pre-venture capital for new and young ventures. Though playing a relatively small role in terms of the total number of new ventures funded, the local private investor's influence appears to be far more significant in the development of growth companies, the kinds of companies to which a community looks for jobs and income. In following his or her personal interests, the private investor provides a natural forcing function, constantly moving and prodding the enterprise in the direction of profitability and growth. The presence in a community of persons of wealth willing to invest in desirable new and young ventures can make a significant difference to whether that community will become one of those that is denoted by its industrial development.

Who is the Individual Investor

Who are the individuals who invest in startups? What denotes them from others? How large a population are we discussing? The findings in this study parallel those of Hoffman⁶ who found that retail managers, lawyers and medical professionals gave the highest percentage of positive response while venture capitalists, bankers, consultants and those in financial management were least likely to respond positively to the new and young companies in his
Similar results were found in a study made in Hamilton County (Cincinnati) by one of the author's students using Hoffman's cases. The Hamilton County study found that the medical and legal professionals were most likely to give positive responses to investments in new and young companies, followed by those in sales management.

The private individual investor in a community is a person of wealth, but only a limited fraction of those that can be considered "persons of wealth" ever invest in venture startups or young companies. Less than three percent of the families holding stock invest in high risk ventures of any kind. One thing that appears to denote those who invest in such companies from others is that they tend to be first generation wealth; they have made their wealth rather than inherited it. The respondents in this study, those in Hoffman's study, those in the Hamilton County study, and those in a parallel study done in France were predominantly working professionals or successful entrepreneurs who now spent their time on investments. Similar observations were made by Baty who speculated that those who inherited wealth tended to be less venturesome than those who were "self-made." Baty further speculated that those who were "self-made" identified themselves with the industry in which they made their wealth, while those who inherited wealth tended to be members of the financial community.
The Importance of Venture Investment Networks

An important difference between communities with regard to propensity to invest is the existence or nonexistence of venture investment networks among potential investors. A venture investment network can be defined as a group of two or more venture investors who share investment information with each other, and often invest together. Any examination of the nation's apparent "hot spots" of investment in particular kinds of new ventures such as the Boston and the San Francisco areas reveals several informal networks of venture investors in each.

The data in the preceding chapter paint a very clear picture of the greater amount of networking among the Louisville respondents as compared to those in Columbus along several dimensions. The first indication was the relative difficulty in getting personal referrals to possible sources encountered in Columbus and not in Louisville. When it came to sharing investments the great majority of the investors in both cities would share them, but the extent of sharing was significantly higher in Louisville than in Columbus; 82% as compared to 67%. In Columbus, half of the respondents would try to interest suitable corporate or private co-investors while half would turn to associates. The parallel responses in Louisville were one-third and two-thirds. The percentage of Columbus and Louisville investors that would refer rejected investments to others was about the same, 31% and 29%, but the
Columbus referrals were primarily to institutions, 83%, and only 17% to other investors or colleagues. In Louisville, 36% of the referrals of rejected investments were to other individuals. The same pattern showed up in the types of individuals that would be consulted on the investments by the respondents. The Columbus respondents would refer to business associates and friends in 26% of the cases while the Louisville respondents would do so in 40% of the cases.

The importance of the extent of networking among a community's private investors to the development community is suggested by the data generated by the research reported here. The extent to which the private investors of a community are in networks manifests itself in the relative "openness" of the members of that community. The discussion of the differences in "openness" of the two communities studied and of those studied by Hoffman found in the previous chapter points out the correlation between the apparent openness of the private investors of these communities and the percentage increases in the desirable companies formed in those communities. The suggested relationship between openness or networking and the generation of desirable new ventures has many implications relevant to possible policy options and their limitations.

The importance of informal venture investment networks has been noted by individual scholars, and the Panel on Venture Capital of the U.S. Department of Commerce Technical
Advisory Board\textsuperscript{12} which reported they,  

...became increasingly aware of an informal network of people, institutions and relationships that are significant in the process of financing new enterprises ... it is apparent that the network does not operate with the same degree of effectiveness in every geographic area of the nation ... 

The Panel pointed out that some networks operate within a community, some operate regionally and some operate at the national level, but that the networks exist alongside each other independent of any connection. 

It should not be inferred that the networks are related in a hierarchy of networks. Although there is interaction and capital flow among networks both locally and nationally each network independently seeks its own capital....

Earlier, Rubenstein\textsuperscript{13}, examining the problems encountered by new research based companies pointed out that private investors are far more dependent on their informal networks than are the large venture capital institutions, 

The fraternity of individual backers of small businesses appears to be rather close knit at least on a local level. A good deal of information is passed.
about by word of mouth. If one investor, who enjoys considerable prestige among his associates, believes a situation to be promising and recommends it to others, his friends may participate, merely on the basis of his recommendations...

Several professionals working for venture capital organizations have commented to the author on the extensiveness and importance of the formal and informal information exchange that goes on among members of the formal venture capital community. Deals are passed along among them. Deals and individuals are checked out. As has already been shown in the discussion of initial financing, deals are extensively shared. As one investment professional commented, "I join in on deals just to keep my membership up in the club. It keeps the information flowing." In some instances there appears to be a functional division or sorting of investment opportunities.

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A general note on networks -- "Networks" and "Networking" are terms that have come into general use in discussions of phenomena as widely separated as the diffusion of innovations and the progress made by women in corporations. "Networks" are social circles, and when the networks operate in a business or professionally related context they can be considered social-professional circles.
All individuals are members of a large number of social circles, some of which are professionally oriented, and are dependent on them for personal, social, economic and intellectual survival. The social-professional circle establishes norms of behavior for its members, reinforces desirable behavior, provides recognition and is the source of trusted information.

Norms are standards accepted and shared by members of a social group, and to which the members are expected to conform. Norms are 'enforced' by a group in both positive and negative ways; anything from physical harm to withdrawal of approval. Most norms are established and maintained by what is referred to as 'identification' and 'internalization.' Identification occurs when an individual defines him/herself with others and acts in a way that will gain him acceptance by those others. Internalization is the most powerful way in which norms operate; the individual defines him/herself as one who acts by those norms without surveillance or reference to anyone else. Consequently, the validity and reliability of information made by a person in one's social-professional circles is, in a sense, proven, and more likely to affect one's decisions than when coming from other sources. Further, an individual may make decisions and take actions on the basis of recommendation from his/her social network just to maintain membership.

The important role of social-professional circles has been showing up in a variety of research literatures:

1. Several scholars have studied and commented on "invisible colleges" in science. The invisible college is a social-professional circle in a field of science. It has been found that members of an invisible college know about new research findings one to two years before they are published, and receive recognition from their colleagues before the formal process of publication has occurred. The invisible college of a scientist provides feedback and reinforcement to its members, and, more importantly, establishes the values and norms by which the
individual is guided and judged.

2. Two-thirds of all employed professionals came to their present positions by way of referrals from friends and acquaintances or self-recruited (heard about the job). This is a prime illustration of the importance of social-professional circles. Furthermore, in terms of measures of mutual satisfaction such as raises received and tenure on the job, those who came through their networks did far better than those hired through formal recruitment programs, advertising or employment agencies. The latter illustrates the powerful effects of the norms of the groups through which the individual is referred for employment. The individual lives up to the norms of the group, and is not about to let the referrer down.

Social-professional circles, or informal networks, come into existence in a variety of ways, but their formation is favored by propinquity, reciprocity and similarity. The closer two individuals are located to each other physically and socially the more likely they will be attracted to each other and more likely they will choose each other as information sources. Reciprocity or mutual exchange is vital. There is a continuous flow of exchanges, particularly of information, and there are general rules that govern such exchanges. For example, those who take information from the system and do not contribute information are eventually excluded. Similarity has a powerful influence on network formation. We like and find it easy to exchange with others like ourselves, and, the longer we are in the network the more we are like others in the network.

The Investment Decision

The investment decision process of the private local investor appears to involve a series of decisions concerning the following: 1) whether or not to even look at the investment opportunity, 2) whether or not to look into it seriously, and finally, 3) to formulate the conditions for making the investment. The decisions are influenced by a number of
overlapping variables including return on investment, the investor's perceptions of risk, the credibility of the venture and the personal predilections of the investor.

To Even Look at the Investment

The private local investor does not seek out investment opportunities. None of the respondents in Columbus and Louisville reported taking an active role in seeking out investment opportunities. They reported receiving between 25 and 100 investment opportunities a year for their consideration. The opportunities came from a variety of sources including business associates, CPA's, lawyers, bankers, insurance people with whom they have an acquaintanceship and directly from those seeking the funds or, as they put it, "over the transom."

Whether or not an investment opportunity is even considered appears to be dependent on a combination of the personal predilections of the investor and the apparent potential returns promised by the venture. The investor will not even consider the investment unless it promises returns above some threshold amount. Further, the investor will not consider a business unless it is something that personally interests him/her either due to familiarity with the business or a personal interest in the technology or the entrepreneurs involved in the venture. Even if the venture promises returns far above some threshold of the
investor, no investment will be made unless he/she likes the kind of business that the venture is or will be engaged in.

The investor is not going to invest in some venture that does not come near what can be obtained by far less risky investments. On the other hand, the investor does not appear to think in terms of maximization of investment returns. A response that typifies the way the private investor perceives the investment opportunity is, "I don't care if the expected returns are 40% per year. I don't like the XYZ business! Take it to Johnson. It's his kind of thing."

The decision to consider an investment is also highly related to personal knowledge of the business field or the entrepreneur or a high regard for the third party who brings the investment opportunity to the investor for review. The reaction quoted in the previous paragraph illustrates in part the importance to the investor of a liking for the kind of business being presented, but it also is a manifestation of a factor of deeper significance, the value of personal knowledge about the business.

Personal acquaintance with the particular aspects of an industry or business has a value that is hard to quantify, but that is rational indeed. Every business has its special character that is not expressed in the theoretical formulations of the business, finance or economics texts, and that are
vital to its success or failure. What may appear as idiosyn-
cratic decisions on the part of the investors are, in
reality, an expression of a rational assessment of the
value of information and the importance of personal interest
in the investment situation. One Columbus respondent put it,
"No matter what you tell me, I will have to spend more
time with this company than I expect, so I better like the
business and know something about it."

There is one form of substitution for personal acquaint-
ance and, even, of having to like the business that can
elicit investment by the individual investor; the involvement
of a close friend or business associate in the investment.
In a sense the friend's interest and knowledge becomes a
surrogate for those of the investor. As one Columbus
investor commented, "I really am not interested in your
medical computer company, but if my colleagues like it I'll
invest too."

To Consider Seriously or Not

Once an investment opportunity is accepted for consider-
atation there is still the question of whether to take the
time for serious investigation of the venture and to expend
the effort to take it to the point of negotiating the
conditions for investment. Not much is known about the
process by which initial interest is deepened to the point
of investment. It is evidently a sequential process in-
fluenced by the perceptions of the investor; perceptions
of risk, perceptions of the credibility of the venture and
the people associated with it, and perceptions of the investor's future personal relationships with that venture. It is clear that the private individual investor does not follow the 'logical' analytical practices laid out in the texts on finance. Hoffman noted that most of his respondents were well aware of the various available methods of investment analysis, but did not put much credence in them.

Perceptions of Risk: On Actively Affecting the Odds

In the majority of situations the investor is primarily influenced by the intrinsic nature of the industry and business, the experience and perceived potential of its management and the anticipated performance of the venture. It also appeared that the investors studied did not make their investment decisions on the basis of close analytical calculations of risk. The latter point is borne out by the comments of the respondents to a question asking, "What do you think is the probability that this company could succeed?" Almost none answered the question, and many made critical remarks such as, "I don't care!" "This is a dumb question!" and "This question is irrelevant!"

The attitude towards risk of the private individual investor appears to differ from that reported for the investment professional who makes investment decisions in formal venture capital organization. If anything, the private individual investor appears to look at risk very much as do entrepreneurs. In response to the question, "How
risky did you think the venture was when you started?" 18
over 90% of the entrepreneurs queried responded that it
did not appear risky at all or entailed very little risk.
Entrepreneurs do not see the risk of the ventures they
are considering in the same way "objective" analysts would
assess them. The entrepreneur sees the odds as lower
than does the analyst because the entrepreneur perceives
that he/she is going to participate in the venture and
change the odds through personal knowledge, tenacity,
creativity, willingness to work very long hours. Similarly,
the private investor does not see the risk in the same
light as a functionary because he/she sees personal par-
ticipation and knowledge as changing the odds.

The responses with regard to financial and managerial
controls that would be imposed on the companies in which
they invest by the private investors in Columbus, Louisville
and in the Hoffman study of Waco and Austin showed a strong
partiality for keeping a personal hand on the companies
in which they would invest. This suggests that the investors,
like entrepreneurs, expect to have an effect on the odds
through their personal efforts. Another important in-
dication of the way the investors expect to take an active
role in affecting the odds shows up in their responses to
the questions of their willingness to put in more funds
later. The great majority of the investors in both Columbus
and Louisville responded positively, 67% and 73%. 
There also appears to be a strong similarity between the private investors studied and the bank loan officers found in regions and banks that are dynamic. Both groups take an active role in helping the venture succeed as opposed to a passive judgmental one that makes a judgment of risk and then takes no part in the venture. As noted in the discussion of bankers, the role of the lender or investor as advisor is one that is overlooked, but that has important implications for policies intended to enable the formation, survival and growth of new ventures.

**Credibility**

Once the investment opportunity has passed the initial barriers to consideration (i.e., above some threshold of return and meeting the personal preferences of the investor), it must go through a series of widening checks if it is to be seriously considered for investment by the investor. The checks essentially serve to establish the credibility of the investment opportunity to the satisfaction of the investor. The investor has to reach a point of comfort with all aspects of the potential investment before coming to terms.

The credibility of a particular venture to an investor (or the investment officer of a formal venture capital organization) is composed of several elements including the credibility of the principals, the credibility of the particular technology or industry of the venture, and the credibility of the specific company to be invested in. If a proposed venture is perceived as having all three forms of credibility
by an investor, he/she becomes comfortable enough to come to the point of discussion of the specifics of the investment.

There is, of course, considerable overlap between the personal knowledge an investor has about a particular kind of business and its perceived credibility. Personal knowledge provides a basis for intelligently interpreting whatever is presented in a prospectus. It is often difficult to consider or give credence to a venture about which one knows nothing. Some of the respondents put it flatly, "I won't touch anything that is high-tech. I'm not comfortable with technical businesses..." However, credibility can be generated in many ways, often going far to counterbalance an investor's personal unfamiliarity with the kind of venture opportunity being presented. Essentially, it is the function and artform of the deal maker or stock promoter to establish credibility for a venture in the minds of potential investors.

The most obvious and convincing kind of information that establishes the credibility of a proposed or young venture is its "track record." The age old complaint, "When I needed the money, I couldn't get it. Now that I don't need it, I can get all I want," expresses a fundamental truth. Once a venture can show profits or can show that it is proceeding in the direction of profits, it is credible indeed. As was shown by the responses of the investors in Columbus and Louisville, the investment
cases that had any sort of track record in terms of age and profitability got far more positive response than those for which there were only projections of performance.

Another kind of track record is that of the entrepreneur and his/her associates. Once an individual has a record of success, he/she has the credibility that can attract financial support whatever the venture. As was pointed out earlier it is not difficult for a Land of Polaroid, a Beckman of Beckman Instruments, a Cray or an Amdahl to obtain impressive funding from the venture capital community with or without a business plan. However, not every competent individual is given credence beyond the local community. For those who do not have national reputations, the perceptions of local bankers and investors are vital. It is this kind of local personal credibility that the local loan officer calls "character," and to which a local investor will respond when many nonlocal formal institutions cannot. "Track record" or credibility at the local level is a compound of work record, school record, family, reputation and perceived behavior of the individual. Local investors will "take a chance" on a local individual with an unproven business record if that person is considered to have "good character."

A young venture employing a very advanced technology or a proposed venture in a new industry is faced with questions concerning the credibility of the technology
and of the industry, if that industry has no track record. Technology credibility is developed in many ways. Credibility can come as a result of favorable test data; hence the importance of "shovel money" for testing. It can be achieved through certification by experts; hence the value of such government programs as the Energy Related Inventors Program or the Department of Energy and the National Bureau of Standards or NSF's Applied Science Small Business Awards Program. The credibility of a new industry often is the consequence of national publicity and "glamorizing" as has occurred with biotechnology.

Credibility is also achieved by association; through the recommendation of a trusted individual associated with the venture. A trusted investment advisor puts together a tax-shelter partnership to invest in a company to generate electricity using wind-mills, and many individuals readily invest. The investors know nothing about the technology. They do not know the people who are operating the company. The company has no track record. However, the advisor who is the general partner in the proposed investment group is someone with a track record, a great deal of personal credibility.

The Conditions of the Investment

As with all other aspects of the investment decision of the private individual investor, the nature of the
investment does not follow an analytical, maximizing, textbook pattern. Once the interest of the investor in a particular investment opportunity has deepened sufficiently, questions of expected returns, percentage of ownership required, the time the investor intends to remain in the investment, the strategy for exit and the financial and management controls to be imposed become pertinent. It was evident from the responses obtained in Columbus and Louisville as well as those obtained by Hoffman in Austin and Waco that the nature of the investment is more a function of the times and the individual investor's situation and style than of the venture and its characteristics.

The economic situation at the time the investment is being considered sets the thresholds and boundaries of the investment made in terms of expected returns and the time the investor expects to remain invested. Hoffman's study was carried out in 1971 before the period of high interest rates and uncertainty that typified the economic environment when the data reported here were collected. Consequently, the Columbus and Louisville respondents had higher expectations when it came to returns, and expected to remain invested longer. Within the broad parameters of the economic situation, however, the individual investors vary widely in terms of expected returns, and the time period they expect to remain invested. The conditions imposed by
individual investors also varies widely in terms of exit strategy, structure of the participation and the specific financial and managerial controls required.

The great majority of the investors in Columbus and Louisville expected a return on their investments between 20% and 50% per year, and expected to remain invested between 5 and 10 years. Examining the data Hoffman obtained in Austin and Waco in 1971-2, we find that 77% of his respondents estimated that the length of time they would remain invested in his sample ventures would be less than five years. Though almost all of the respondents in the study would impose financial and managerial controls as a condition for their investments, the combinations of controls varied widely with the investor.

The Effect of Proposed Government Policies on Investment Decisions

The private individual investor shows little sign of being influenced in making an investment decision by consideration of most of the kinds of incentives being considered by the federal government. When considering an investment the private individual investor is primarily influenced by the intrinsic nature of the industry and business, the experience and perceived potential of its management and their anticipated performance. Though almost all investors welcome any and all of the tax incentives being proposed few would be influenced by those incentives
with regard to specific investments. It also was made clear once again that the investors studied did not make investment decisions on the basis of very fine analytical calculations of risk and maximization of profit, and consequently would not change their decisions in response to a shift in the tax picture. The typical response of the majority in Columbus and Louisville to the question of how a particular tax incentive would affect their decisions was, "In general, I am in favor of the incentive. Specifically, it would not change my decisions on any one of the investment opportunities."

Implication for Policy

The research reported here was carried out on the premise it is in the national interest to proliferate innovative new ventures for the gains they offer the economy and for the many other social benefits (medical, social, defense, etc.) associated with them. Further, it is seen to be in the national interest, as well as in the obvious interest of states and communities, to achieve a far wider geographic distribution of such new ventures to take fuller advantage of the nation's capacity for creativity and entrepreneurship. The policy implications presented below were developed to aid those interested in increasing the formation, survival and growth of innovative new ventures nationally, in their states or in their communities.
1. **The Effective Availability of Pre-venture Capital is a Critical Policy Issue**

The most important factor in the generation, survival and growth of desirable new and young ventures is the effective availability of pre-venture capital. A severe price is paid for inadequate pre-venture capital in terms of the potentially valuable ventures: 1) that remain still-born for lack of the "shovel money" to enable them to achieve the credibility that would gain them necessary initial financing; 2) that are delayed in formation or fail; 3) that are unable to survive minor setbacks; 4) that are unable to develop their full potential and grow at the rates they are capable of. Consequently, enhancement of the availability of pre-venture capital to desirable new and young ventures is a critical policy issue.

The issue of pre-venture capital must be separated from that of venture capital. The two kinds of capital have been confused by policy makers with a resulting disproportionate amount of attention and effort being paid to the latter. The two serve very different purposes, deal with ventures at very different stages of their existence, draw upon very different sources, and respond to very different variables. It is important that conscious and systematic attention begin to be paid to the pre-venture
capital issue. There are several orders of magnitude more new ventures in desirable industries and services being formed and seeking financial support each year than are being funded by formal venture capital institutions.

2. Policy Implementation Should be Designed to be Carried Out at the Local Level

The sources of pre-venture capital are local, and they reflect the special outlooks of the communities in which they are found. Local cultural differences, local historical experience, local values vary significantly from community to community. To be effective, policy options should be tailored to region and community, and implemented as close to the community as possible. Implementation should be premised on encouraging a maximum of state and local action.

3. Pre-venture Capital Programs Should be Designed to Respond to Communities that Step Forward

The flow of pre-venture capital is most dependent on the attitudes and perceptions of people at the local community level. The flow of pre-venture capital is so sensitive to local perceptions that, to succeed, a pre-venture capital program must be based on the active participation of people within the community. Consequently, pre-venture capital programs designed to be fielded from the national or state level should be geared to respond to communities that take initiative or "step forward" rather than to those that have to be "sold". Hesitant
4. **Policies Relevant to Pre-venture Capital Should Focus on Bank Loan Officers and Private Individual Investors at the Local Level**

Very little pre-venture capital comes from the formally established institutions for venture capital, including the venture capital companies, the SBIC's and the stock market. The financing for new ventures comes from personal and local sources. After the personal savings of the entrepreneur, loans from local banks and funds from local private individual investors are the predominant sources of capital. To enhance the effective availability of pre-venture capital it is necessary to affect the lending and investment behavior of bank loan officers and private investors at the local level.

Efforts to generate "mutual" funds that will allow smaller investors to take part in providing venture capital do not come to grips with the importance of local knowledge. Supralocal funds, no matter what their intentions, become like the formal venture capital community, answerable to nonlocal 'stockholders.'

5. **Policy Options With the Most Promise Are Those That Focus on Factors Shown to Affect the Decisions of Bank Loan Officers and Private Local Investors**

Programs to encourage and enlarge the flow of funds
for pre-venture capital purposes must systematically build upon what is known about where the money comes from and what makes it flow in the desired directions. It is necessary to make this point to call attention to the fact that pre-venture capital is drawn from sources that do not act according to conventional popular or academic wisdom.

a. Some program design implications suggested by the available data on loan officer and private individual investor behavior

The data on loan officer and private individual investor behavior are rich in implications for the design of programs to increase the responsiveness and ability of a local financial community to support the formation, survival and growth of desirable new and young ventures in a community.

1) Programs aimed at the local bank community

To increase the propensity and ability of local bank loan officers to provide the desired loan support requires programs to develop or acquire individuals with a high propensity to make loans to such companies, and to better recognize, evaluate and manage loans to such communities.

The propensity to make loans to new and different companies is a product of the perceptions, motivation and experience of the bank loan officer, and of the constraints placed on him/her by bank management. Any program aimed at the loan officer must begin with bank management. Unless the management of one or more of the local banks is committed to a program to develop the necessary kinds of
loan officers the program cannot begin. Previous studies have shown, however, that bank managements are usually interested and even eager to participate in programs to improve the business climate of their communities.

Once a bank management is committed to a program of encouraging new ventures in the community much can be done to change the perceptions, motivations, and abilities of local loan officers through a combination of straightforward educational, motivation, and performance evaluation programs and by hiring policies that change the character of the loan officer work force. Further, much can be done to overcome the reluctance of bank officers to make loans to the kinds of businesses with which they are unfamiliar, one of the major barriers to the financing of new ventures. Ready access to the technical and financial information needed to enable loan officers to better evaluate and manage loans to new businesses can be developed. It is vital that no banker be unable, held up or discouraged from evaluating a new or young venture for lack of access to pertinent financial and technical information. Banker associations at the national, state and local level can all be used to contribute to efforts to upgrade responsiveness to desirable ventures.

In communities that are entrepreneurially dynamic, bankers play the part of key intermediaries in bringing new ventures to the attention of private individual investors.
in a community. Typically, the entrepreneur turns to the bank first in the search for financing. A conscious effort by the banking community to take on the role of intermediary can be a most potent galvanizer of a local investment network where none exists.

2) Programs aimed at the private investment community

Responsive groups of local private investors play a role in catalyzing and nurturing local entrepreneurial development that goes far beyond their readiness to invest and the amounts of funds invested. Such "networks" provide the support and guidance that helps generate an environment conducive to new venturing. Only a small percentage of persons of wealth invest in new ventures, and usually people who have made their own wealth. As a result, communities that are already entrepreneurially active produce the persons of wealth most likely to invest in other ventures. Nevertheless, every community has a population of successful professionals and businessmen with a potential for transformation into pre-venture capital investors.

To activate the desired kinds of investments, however, depends on local initiatives. "Turning on" the local potential for the desired kinds of investments is not readily amenable to direct government actions. It takes the actions of local leadership. Once a community opts for a program of new venture development, national and state government agencies can support it with information
on investment behavior in lively communities so it can see what has to be done.

Only a marginal shift in pre-venture capital investment can be achieved by tax incentives such as 'rollovers from other investments without paying capital gains tax," "extension of the time for loss carry forward" and "a lower tax rate" for such investments. Tax incentives are welcomed, in general, by private investors in ventures, but such incentives would influence only a small fraction of their investment decisions.

One tax incentive that apparently does attract private investment in pre-venture capital situations is the R&D partnership. The R&D partnership goes far beyond such tax "shelters" as those devoted to oil and gas exploration in that they generate the economic development and jobs that stem from innovation. R&D partnerships add value to local and national economies. R&D partnerships attract funds that help move technical ventures forward significantly.

Though intended to attract investors through its liberal tax provisions, the R&D partnership inadvertently builds upon another feature of the investment decision process. R&D partnerships attract investments to pre-venture capital situations through the credibility associated with a trusted individual who has a personal track record with the investors. The tax incentive works through the intermediation of individuals who function as trusted advisors and then
serve as general partners in the R&D partnerships.

6. **There is Need for a Policy and Programs to Provide "Shovel Money" for the Earliest Stages of Venture Formation**

   Financial support is needed to bring a new business notion to the point where it can be properly responded to by potential sources of further pre-venture financing. Money for the "shovel" to pick up the needed pre-venture capital is the most pressing need of the inventor and potential entrepreneur. The support is needed for testing, feasibility studies, market studies, business plan preparation that will enable the idea to receive an adequate hearing in the financial marketplace.

   The provision of "shovel money" kinds of support is in an area of policy and program support well fitted for national, state and local government support. "Shovel money" enters the process of new venture formation when the risks are highest and almost completely unattractive to private investors, and when the costs are lowest. Once a concept has been tested and proven to any extent the risks are lower, and the technical and personal credibility necessary to the private investor and the bank loan officer is established. The kind of support obtained through "shovel money," such as testing, feasibility studies, market studies, business planning, are provided through government programs such as:
- The Department of Energy/National Bureau of Standards Energy Related Inventions Program and the National Science Foundation's Applied Science Small Business Awards Program

- The Small Business Administration's Small Business Institute program

- The many community resource development programs fielded by various federal, state and university extension efforts

- University entrepreneurship and small business programs

The provision of "shovel money" is being done in Canada by a private group of investors, and is done here and there by individual investors in the United States. This is a policy area in which tax incentives can make a marginal difference to the activation and enlargement of funds available from individuals and groups. In this regard the effect of R&D limited partnerships are worthy of study to see if they have helped direct substantial financial support to this stage of pre-venture financing.
FOOTNOTES

1 In one sense the author of this report is reluctant to use the term, "pre-venture capital" since it positions all other aspects of new and young venture financing in relationship to the formal venture capital institutions. By constantly relating early financing to the activities of the formal venture institutions too much emphasis is placed on their concerns and interests with a consequent loss of clarity with regard to the many and varied needs of the new ventures and the possible policy options available to local, state and federal agencies.


3 See data in Chapter 2; also from unpublished study by Shapero, Wert, J.E., op. cit.; Kieschnick, M., op. cit.; and Combs et al, op. cit.


5 Shapero et al, ibid.

6 Hoffman, op.cit.
Baker, R., Venture Capital Investment Behavior: The Risk-Capital Investor in Hamilton County, Ohio, Unpublished report, Columbus, Ohio State University, 1979

Blume, op. cit.

Benoit, op. cit.

Baty, op. cit.

Hoffman, op. cit.


Rubenstein, op. cit.


Hoffman, op. cit.

Based on analysis of interview data with 466 entrepreneurs by the author of this report

Hoffman, op. cit.

Hoffman, op. cit.
APPENDIX A

QUESTIONNAIRE/INTERVIEW
PERSONAL DATA AND RELATED QUESTIONS

1. Age: __________

2. Education: (Colleges Attended and Degrees Received)

3. Professional Experience:

<table>
<thead>
<tr>
<th>Company</th>
<th>Location</th>
<th>Type of Business</th>
<th>Position</th>
<th>Number of Years</th>
</tr>
</thead>
</table>

4. Approximately how many times each year are you asked to invest in companies that are seeking capital?

5. Approximately how many times each year do you make investments in such companies?

6. Where or from whom do most of the requests you receive for investment originate? (E.G., "my banker send them to me", "the moneyseeker comes in 'cold'", etc.)

7. Please list the last three investments you have made in new or small companies.

<table>
<thead>
<tr>
<th>Company's Major Product/Service</th>
<th>Age of Company</th>
<th>Location of Company</th>
<th>Amount Invested</th>
<th>Date of Investment</th>
</tr>
</thead>
</table>

VENTURE CAPITAL QUESTIONNAIRE/INTERVIEW GUIDE

Please answer the following questions about the firm and the investment requested. If you need additional space to answer any question, use the back of this page.

1. Would you invest in this company?

2. Besides meeting the company's officers, what additional information, if any, would be helpful to you in deciding whether to invest?

3. Would you seek advice from anyone in deciding whether to invest in this company?
   
   If 'yes', from whom?

   IF YOU ANSWERED "YES" TO QUESTION #1, PLEASE OMIT QUESTION #4.

4. If you would not invest, would you refer this company to someone else you think might be interested?
   
   If 'yes', whom?

   What changes in the company would make the company attractive to you so you would invest?

   IF YOU ANSWERED "NO" TO QUESTION #1, PLEASE OMIT QUESTIONS #5 TO #12, AND GO DIRECTLY TO QUESTION #13.

5. If you would invest in this company, would you do so alone or would you try to interest others in investing with you?

   Who would you try to interest in joining you in this investment?

6. What is the total amount you (and your associates, if any) would invest in this company?
7. What percentage of company ownership would you require in exchange for your investment? (Assuming all options and conversion privileges are exercised.)

8. How would you structure your investment? (e.g., Half of my investment would be 15% convertible debentures and half would be common stock.)

9. What managerial or financial controls, if any, would you place on the company? (e.g., Representation on the board; approval of major spending plans, budgetary, etc.)

10. What rate of return would you expect from this investment?

11. How would you foresee exiting from the company; your exit strategy:

   How long would you expect to stay invested in the company?

   How would you structure your exit? (e.g., Work out an arrangement for management to buy me out; through a public issue of stock, etc.)

12. What if the company does well, but more capital is needed three years later? Would you expect to provide more capital?
VENTURE CAPITAL QUESTIONNAIRE/INTERVIEW GUIDE, page 3

13. What is the one most important item about the company that influenced your investment decision? (e.g., I don't like high-technology companies; I don't think that this industry has a good future, etc.)

IF YOU ANSWERED "NO" TO QUESTION #1, PLEASE ANSWER THE FOLLOWING QUESTIONS.

14. How familiar are you with this kind of business:

Not at all 50/50 Very

15. What do you think is the probability that this company could succeed?

90% chance of failure 50/50 success

16. If you could "rollover" investments from real estate, stocks, bonds, other companies, etc., into this company without paying capital gains tax, would this change your decision from "no" to "yes"?

17. If losses from investment in this firm could be carried forward for ten years instead of the five years now permitted, would it change your investment decision?

18. If gains from capital investment in this firm, if held for more than five years, would be taxed at half of whatever rate would be applied normally by the IRS, would that change your investment decision?
VENTURE CAPITAL QUESTIONNAIRE/INTERVIEW GUIDE

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VENTURE CAPITAL QUESTIONNAIRE/INTERVIEW GUIDE, page 2

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IF YOU ANSWERED "NO" TO QUESTION #1, PLEASE ANSWER THE FOLLOWING QUESTIONS.

14. How familiar are you with this kind of business:

<table>
<thead>
<tr>
<th>Not at all</th>
<th>50/50</th>
<th>Very</th>
</tr>
</thead>
</table>

15. What do you think is the probability that this company could succeed?

<table>
<thead>
<tr>
<th>90% chance of failure</th>
<th>50/50</th>
<th>90% chance of success</th>
</tr>
</thead>
</table>

16. If you could "rollover" investments from real estate, stocks, bonds, other companies, etc., into this company without paying capital gains tax, would this change your decision from "no" to "yes"?

17. If losses from investment in this firm could be carried forward for ten years instead of the five years now permitted, would it change your investment decision?

18. If gains from capital investment in this firm, if held for more than five years, would be taxed at half of whatever rate would be applied normally by the IRS, would that change your investment decision?
APPENDIX B

The Investment and Loan Situation
COMPANY A

Formed three years ago, Company A provides computer programming and software services for computer-assisted design (CAD) and computer-assisted manufacturing (CAM). The principals were all previously employed in the manufacturing/computer division of a major corporation -- primarily in systems analysis and computer applications. Most of them have other industrial and design experience. Three of the principals are in their late 30's, one is 49, and one of them has an M.B.A. The company is seeking $160,000 to develop additional proprietary software packages. The company has decided that the development of such packages should not be financed by bank loans.

BALANCE SHEET

<table>
<thead>
<tr>
<th></th>
<th>1979</th>
<th>1978</th>
<th>1977</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed Assets</td>
<td>35,482</td>
<td>24,850</td>
<td>13,267</td>
</tr>
<tr>
<td>Current Assets</td>
<td>292,613</td>
<td>223,680</td>
<td>179,661</td>
</tr>
<tr>
<td>Total Assets</td>
<td>328,095</td>
<td>248,530</td>
<td>190,258</td>
</tr>
<tr>
<td>Capital Stock</td>
<td>173,315</td>
<td>77,340</td>
<td>37,130</td>
</tr>
<tr>
<td>Long-term Debt (Bank)</td>
<td>44,940</td>
<td>63,360</td>
<td>36,384</td>
</tr>
<tr>
<td>Current Liabilities</td>
<td>109,840</td>
<td>107,830</td>
<td>116,744</td>
</tr>
<tr>
<td>Total Liabilities</td>
<td>308,095</td>
<td>238,530</td>
<td>190,258</td>
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</table>

INCOME STATEMENT

<table>
<thead>
<tr>
<th></th>
<th>1979</th>
<th>1978</th>
<th>1977</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fee Income</td>
<td>905,464</td>
<td>545,472</td>
<td>161,575</td>
</tr>
<tr>
<td>Expenses</td>
<td>821,534</td>
<td>510,922</td>
<td>311,663</td>
</tr>
<tr>
<td>Net Income (Loss)</td>
<td>83,930</td>
<td>34,550</td>
<td>(150,088)</td>
</tr>
</tbody>
</table>
COMPANY B

Company B was formed in early 1977 to perform research and development in signal physics and process control for governmental agencies and commercial clients. Since its inception, the Company has carried out a large number of R&D contracts, primarily for the Navy and geophysical firms. The Company has also developed and manufactured several proprietary products, including a computer terminal that can be used with almost every type of computer. The Company is seeking $300,000 for continued development and marketing of their proprietary products. Their contract backlog as of January 1, 1980 was approximately $625,000. All of the officers-employees of the firm have considerable experience in high technology industry being former employees of large R&D organizations. The president is 42 and has a degree in electrical engineering; the other four founders/employees are all 35; two have master's degrees in engineering; one has a Ph.D. in physics, and one has a law degree.

### BALANCE SHEET

<table>
<thead>
<tr>
<th></th>
<th>1979</th>
<th>1978</th>
<th>1977</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash</td>
<td>$65,079</td>
<td>$62,510</td>
<td>$40,726</td>
</tr>
<tr>
<td>Accounts Receivable</td>
<td>673,544</td>
<td>353,779</td>
<td>213,587</td>
</tr>
<tr>
<td>Inventories</td>
<td>44,666</td>
<td>43,473</td>
<td>29,560</td>
</tr>
<tr>
<td>Prepaid Expenses</td>
<td>17,613</td>
<td>14,973</td>
<td>3,351</td>
</tr>
<tr>
<td>Current Assets</td>
<td>$800,902</td>
<td>$474,735</td>
<td>$287,224</td>
</tr>
<tr>
<td>Investment—Subsidiary</td>
<td>$50,213</td>
<td>$47,683</td>
<td>$18,953</td>
</tr>
<tr>
<td>Fixed Assets—Net</td>
<td>48,699</td>
<td>37,993</td>
<td>33,147</td>
</tr>
<tr>
<td>Deferred Charges</td>
<td>69,581</td>
<td>153,991</td>
<td>120,045</td>
</tr>
<tr>
<td>Total Assets</td>
<td>$969,395</td>
<td>$714,402</td>
<td>$459,369</td>
</tr>
<tr>
<td>Note Payable</td>
<td>$271,103</td>
<td>$191,535</td>
<td>$81,400</td>
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<tr>
<td>Accounts Payable</td>
<td>100,335</td>
<td>85,557</td>
<td>55,300</td>
</tr>
<tr>
<td>Accrued Expenses</td>
<td>64,121</td>
<td>56,439</td>
<td>62,439</td>
</tr>
<tr>
<td>Current Liabilities</td>
<td>$435,559</td>
<td>$333,531</td>
<td>$199,139</td>
</tr>
<tr>
<td>Subordinated Deb. (Due 1975)</td>
<td>$82,500</td>
<td>$82,500</td>
<td>$82,500</td>
</tr>
<tr>
<td>Equity</td>
<td>$451,336</td>
<td>$298,371</td>
<td>$177,730</td>
</tr>
<tr>
<td>Total Liabilities &amp; Equity</td>
<td>$969,395</td>
<td>$714,402</td>
<td>$459,369</td>
</tr>
</tbody>
</table>

### INCOME STATEMENT

<table>
<thead>
<tr>
<th></th>
<th>1979</th>
<th>1978</th>
<th>1977</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td>$2,222,000</td>
<td>$1,215,255</td>
<td>$696,697</td>
</tr>
<tr>
<td>Direct Costs</td>
<td>1,876,472</td>
<td>1,039,003</td>
<td>607,171</td>
</tr>
<tr>
<td>Gross Profit</td>
<td>$345,528</td>
<td>$176,252</td>
<td>$89,226</td>
</tr>
<tr>
<td>General &amp; Adm. Expense</td>
<td>$203,715</td>
<td>$124,023</td>
<td>$71,042</td>
</tr>
<tr>
<td>Net Profit</td>
<td>$141,813</td>
<td>$52,229</td>
<td>$18,484</td>
</tr>
</tbody>
</table>
COMPANY C

The firm has for the last three years sold products and services to the nuclear industry for the clean-up and disposal of waste materials. Management feels that the market is enormous for competent handlers of radioactive waste and requests $200,000 to expand operations (primarily capital equipment needs). The principals are all in their forties and each has ten or more years' experience in this and related industries.

**BALANCE SHEET (000's)**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Current</td>
<td>$853</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fixed</td>
<td>713</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1,566</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Liabilities:</th>
<th>1978</th>
<th>1979</th>
<th>1980 (Est.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current</td>
<td></td>
<td>541</td>
<td></td>
</tr>
<tr>
<td>Long-term</td>
<td></td>
<td>618</td>
<td></td>
</tr>
<tr>
<td>Equity</td>
<td></td>
<td>407</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>1,566</td>
<td></td>
</tr>
</tbody>
</table>

**INCOME STATEMENT (000's)**

<table>
<thead>
<tr>
<th></th>
<th>1978</th>
<th>1979</th>
<th>1980 (Est.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenues</td>
<td>286.1</td>
<td>420.4</td>
<td>765.5E</td>
</tr>
<tr>
<td>Expenses</td>
<td>262.0</td>
<td>340.6</td>
<td>621.6E</td>
</tr>
<tr>
<td>Wages/Salaries</td>
<td>96.1</td>
<td>161.3</td>
<td>222.4E</td>
</tr>
<tr>
<td>Net Income</td>
<td>24.1</td>
<td>79.8</td>
<td>143.9E</td>
</tr>
</tbody>
</table>
COMPANY D

Company D was recently founded by two primary researchers of the leading firm in their field, membrane technology. Both have Ph.D.'s (in biochemistry and biophysics), have over ten years' industrial experience and are in their forties. The firm's existing technology is currently marketed in the form of reverse osmosis-based desalination. Using membranes is somewhat slower than distillation for desalinization, but uses far less energy. (Overall, costs per kiloliter of water are comparable.) At present, BR depends on low-profit government contracts (mostly DOD), but seeks to expand higher-profit commercial sales. They seek $150,000 to gear up a full production line for commercial units.

BALANCE SHEET

<table>
<thead>
<tr>
<th></th>
<th>1979</th>
<th>1978</th>
<th>1977</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Assets</td>
<td>109,423</td>
<td>79,850</td>
<td>34,558</td>
</tr>
<tr>
<td>Cash</td>
<td>13,203</td>
<td>27,389</td>
<td>8,767</td>
</tr>
<tr>
<td>Total Assets</td>
<td>147,454</td>
<td>97,259</td>
<td>47,511</td>
</tr>
<tr>
<td>Current Liabilities</td>
<td>66,519</td>
<td>46,370</td>
<td>20,344</td>
</tr>
<tr>
<td>Long-term Debt</td>
<td>17,730</td>
<td>17,587</td>
<td>17,535</td>
</tr>
<tr>
<td>Equity</td>
<td>63,205</td>
<td>33,302</td>
<td>9,632</td>
</tr>
</tbody>
</table>

PROJECTED INCOME STATEMENT

<table>
<thead>
<tr>
<th></th>
<th>1980</th>
<th>1981</th>
<th>1982</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenues</td>
<td>94,000</td>
<td>200,000</td>
<td>300,000</td>
</tr>
<tr>
<td>Net Income</td>
<td>11,000</td>
<td>22,000</td>
<td>33,000</td>
</tr>
</tbody>
</table>
COMPANY E

Company E, formed a little less than one year ago, produces and markets computerized analyzers for medical laboratories. Their product is technically superior to the competitors'. The company currently has a large backlog of orders and estimates a potential market of 500 hospitals. The 37-year-old founder-manager, M.S.E.E., employs a team of several engineers. The company employs external management consultants. They are looking for $225,000 for working capital.

BALANCE SHEET 1979 (000's)

<table>
<thead>
<tr>
<th></th>
<th>1979</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fixed Assets</strong></td>
<td>83</td>
<td></td>
</tr>
<tr>
<td><strong>Inventories</strong></td>
<td>352</td>
<td></td>
</tr>
<tr>
<td><strong>Accounts Receivables</strong></td>
<td>282</td>
<td></td>
</tr>
<tr>
<td><strong>Cash</strong></td>
<td>114</td>
<td></td>
</tr>
<tr>
<td><strong>Total Assets</strong></td>
<td>831</td>
<td></td>
</tr>
<tr>
<td><strong>Equity</strong></td>
<td>161</td>
<td></td>
</tr>
<tr>
<td><strong>Medium-term Debt</strong></td>
<td>204</td>
<td></td>
</tr>
<tr>
<td><strong>Current Liabilities</strong></td>
<td>466</td>
<td></td>
</tr>
<tr>
<td><strong>Total Liabilities</strong></td>
<td>831</td>
<td></td>
</tr>
</tbody>
</table>

PROJECTED INCOME STATEMENT

<table>
<thead>
<tr>
<th></th>
<th>1980</th>
<th>1981</th>
<th>1982</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sales</strong></td>
<td>1,910</td>
<td>2,527</td>
<td>3,870</td>
</tr>
<tr>
<td><strong>Gross Margin</strong></td>
<td>955</td>
<td>1,264</td>
<td>1,685</td>
</tr>
<tr>
<td><strong>Expenses</strong></td>
<td>730</td>
<td>990</td>
<td>1,236</td>
</tr>
<tr>
<td><strong>Gross Profit</strong></td>
<td>225</td>
<td>574</td>
<td>949</td>
</tr>
<tr>
<td><strong>Depreciation</strong></td>
<td>68</td>
<td>90</td>
<td>110</td>
</tr>
<tr>
<td><strong>Profit Before Taxes</strong></td>
<td>157</td>
<td>184</td>
<td>339</td>
</tr>
<tr>
<td><strong>Allowance for Taxes</strong></td>
<td>70</td>
<td>83</td>
<td>153</td>
</tr>
<tr>
<td><strong>Net Profit</strong></td>
<td>87</td>
<td>301</td>
<td>686</td>
</tr>
</tbody>
</table>
COMPANY F

Company F has been organized during the last three months to manufacture and sell a new kind of steel pallet that can be used with current types of fork lifts. The company's steel pallet sells for approximately $12 and it has a five to ten times greater life expectancy than most wooden pallets. The average price for wooden pallets is $7. An initial market survey of over 20 major corporations showed considerable interest in purchasing large quantities of the company's steel pallet. To date, limited production facilities have prevented large scale sales. Company F is seeking $200,000 to purchase the facilities and equipment needed to mass produce and market its metal pallet. The president of Company F is 45 years old and has been active in this industry during the past 15 years. The Vice President is 48 and has considerable experience as a manager of production and welding operations.

PROJECTED INCOME STATEMENT

<table>
<thead>
<tr>
<th></th>
<th>1980</th>
<th>1981</th>
<th>1982</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>572,105</td>
<td>1,058,030</td>
<td>1,742,093</td>
</tr>
<tr>
<td>Cost of Sales</td>
<td>367,413</td>
<td>674,207</td>
<td>1,085,238</td>
</tr>
<tr>
<td>Gross Profit</td>
<td>154,692</td>
<td>283,823</td>
<td>456,855</td>
</tr>
<tr>
<td>General and Adminis. Expense</td>
<td>123,090</td>
<td>169,547</td>
<td>219,239</td>
</tr>
<tr>
<td>Net Profit</td>
<td>41,602</td>
<td>164,276</td>
<td>287,616</td>
</tr>
</tbody>
</table>
COMPANY G

This firm was founded four years ago as a specialty producer of xenon, argon and krypton lasers and plans to expand into more profitable laser applications (e.g., optical detectors, photography, range finding). Management consists of three experienced engineers, one of whom has a recent M.B.A. The firm currently has fifty non-union employees. They seek $150,000 for capital equipment.

**INCOME STATEMENT (000's)**

<table>
<thead>
<tr>
<th>Year</th>
<th>1977</th>
<th>1978</th>
<th>1979</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenues</td>
<td>189.6</td>
<td>243.2</td>
<td>295.5</td>
</tr>
<tr>
<td>Net Income</td>
<td>6.7</td>
<td>9.2</td>
<td>12.2</td>
</tr>
</tbody>
</table>

**BALANCE SHEET (000's)**

<table>
<thead>
<tr>
<th>Year</th>
<th>1977</th>
<th>1978</th>
<th>1979</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assets: Current</td>
<td>90.0</td>
<td>98.8</td>
<td>117.5</td>
</tr>
<tr>
<td>Current</td>
<td>52.3</td>
<td>55.8</td>
<td>64.3</td>
</tr>
<tr>
<td>Total</td>
<td>111.5</td>
<td>123.4</td>
<td>143.6</td>
</tr>
<tr>
<td>Long-term Debts</td>
<td>12.0</td>
<td>12.0</td>
<td>12.0</td>
</tr>
<tr>
<td>Equity</td>
<td>46.8</td>
<td>55.6</td>
<td>67.3</td>
</tr>
<tr>
<td>Total</td>
<td>111.1</td>
<td>123.4</td>
<td>143.6</td>
</tr>
</tbody>
</table>
COMPANY H

Four months ago, Company H was formed to build and market a new home energy conservation device. The product is a digital, direct-reading power meter which, installed within a house, provides the residents with the means to obtain a direct reading of overall electrical consumption and that caused by use of specific appliances. The C.E.O. and C.F.O. are both 46 and have spent most of their careers as executives at a well-known instrumentation firm. Other principals include a 30-year-old electrical engineer and a 35-year-old marketing manager from a consumer electronics manufacturer. The firm expects to market this device through major utilities and needs $280,000 to expand production to appropriate levels.

PROJECTED INCOME STATEMENT (000's)

<table>
<thead>
<tr>
<th></th>
<th>1980</th>
<th>1981</th>
<th>1982</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenues</td>
<td>62.6</td>
<td>82.3</td>
<td>103.1</td>
</tr>
<tr>
<td>Net Income</td>
<td>(2.0)</td>
<td>6.0</td>
<td>10.0</td>
</tr>
</tbody>
</table>

BALANCE SHEET (Year-end 1979, in 000's)

| Assets: Current | 35.8 |
| Current Total | 43.3 |
| Liabilities: Current | 30.6 |
| Long-term Debt | 15.3 |
| Equity | (2.6) |
| Total | 43.3 |
COMPANY 1

Company M is engaged in the development and production of synthetic enzymes and antibodies, including hormones, for human medical usage. The founder of the firm, 55, is one of the ranking experts in immunology and retains affiliation with a prestigious medical institution on the West Coast. Planned future products include an implanted continuous delivery system for drugs or hormones. The firm seeks $160,000 for production equipment. Other key personnel include a former vice president for operations of a major hospital supply company.

PROJECTED INCOME STATEMENT (000's)

<table>
<thead>
<tr>
<th></th>
<th>1980</th>
<th>1981</th>
<th>1982</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>121.6</td>
<td>349.1</td>
<td>482.1</td>
</tr>
<tr>
<td>Cost of Sales</td>
<td>80.4</td>
<td>236.7</td>
<td>320.1</td>
</tr>
<tr>
<td>Gross</td>
<td>41.2</td>
<td>112.4</td>
<td>162.0</td>
</tr>
<tr>
<td>Fixed Costs</td>
<td>85.0</td>
<td>93.2</td>
<td>103.7</td>
</tr>
<tr>
<td>Net Profit</td>
<td>(43.8)</td>
<td>19.2</td>
<td>58.3</td>
</tr>
</tbody>
</table>

BALANCE SHEET (000's)

<table>
<thead>
<tr>
<th>Year-end 1979</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Assets:</td>
<td>Current</td>
<td>30.3</td>
</tr>
<tr>
<td></td>
<td>Cash</td>
<td>24.2</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>156.4</td>
</tr>
<tr>
<td>Liabilities:</td>
<td>Current</td>
<td>38.3</td>
</tr>
<tr>
<td></td>
<td>Long-term</td>
<td>135.2</td>
</tr>
<tr>
<td></td>
<td>Deficit</td>
<td>17.1</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>156.4</td>
</tr>
</tbody>
</table>
COMPANY J

Company J is engaged in the business of providing security and safety devices to business and industry. Their most significant product is a unit that can "read" fingerprints along with the usual monitoring of ambient conditions (heat, noxious gases), plus intruder detection (e.g., changes in air pressure when a door or window is opened). The fingerprint "readers" can connect to a central station or can be completely autonomous. The principal owner, 36, has a Ph.D. in electronics. His brother and C.F.O., 34, has both a C.P.A. and an M.B.A. Other principals have degrees in either electronics or engineering, and have five years or more of experience in production. The firm seeks $90,000 to finish acquisition of capital equipment.

BALANCE SHEET

Year-end 1979

Assets:

Current 47,930
Cash 7,100
Total 223,274

Liabilities:

Current 97,274
Long-term Debt 126,000
Accum. Deficit 53,292
Total 223,274

PROJECTED INCOME STATEMENT (000's)

1980 1981 1982

Revenues 50 110 200

Expenses 65 80 110

Net Income (15) 30 80
APPENDIX C

VENTURE CAPITAL INVESTMENT: AN ANNOTATED BIBLIOGRAPHY

L. M. Sokol, Ph.D.
VENTURE CAPITAL INVESTMENT: AN ANNOTATED BIBLIOGRAPHY

L. M. Sokol

Venture capital concerns investment in new/small high risk ventures. Venture capital investment is important, and its unavailability would cause our country to lose a major source of innovation, productivity and growth. More venture capital is available than in current use, yet many entrepreneurs complain about its unavailability and venture capitalists about the lack of good investments. Little is known about the actual venture capital investment process, making it difficult to structure the process so that it functions optimally.

A review of the literature showed that although a sizable number of articles have been written on venture capital, very few have any empirical or theoretical basis; most reported general perceptions or folk wisdoms. All venture capitalists have an evaluation process, but the process varies with the individual or institution. The study attempts to gather the more informative articles concerning all aspects of the venture capital investment process.

Venture capital concerns the investment in new or small high risk ventures. The process is multi-variate, complex and over-determined. It has been described as a multi-period stochastic decision process. It is in fact an ongoing process starting at a firm's inception by which an entrepreneur trades equity, debt or control for capital necessary for startup, growth and expansion.

The literature on venture capital investments typically covers one or more of the following areas: venture capital investors, the growth stages of a firm, the investment selection process, facts and myths, and recommendations for process improvement.

Investors in new/small firms can be large institutions or private individuals; they can be looking for new technologies, or large capital gains or partaking just for the pure enjoyment of it. Some of the more common types of venture capitalists are: commercial banks, insurance companies, pension funds, investment bankers, government agencies, development corporations, private organizations, professional venture capital firms and individuals.

The maturity of a business dictates the appropriate types of financing and the type of venture capitalist who would be willing to invest in the firm. During the startup stage, financing requires seed capital to develop ideas into products or processes. Financing typically comes from savings, personal acquaintances or individual venture capitalists. During the growth stage funds are needed to make the process a commercially viable one. Typically, the SBA or the SBIC or the individual investor provides financing at this stage.
When a company has been in business long enough to acquire a history, it can then go to the formal venture capital network for financing. At the next stage, the company and its early investors want to realize a gain, and they can do this by going public, merging, or being bought out.

The selection process is a complex one and is very different from the typical portfolio selection problem. Each individual or institution has its own unique process. The procedure can be formal or informal, based on rules or intuition. The process is ongoing, periodically the successful business will need new financing, and it is possible that without access to new capital, the project will be abandoned. Selection is usually based on a combination of investor-centered factors, the risk involved, the length of time the investment will need to fruition, the expected rate of return, the management of the firm, and others. Each specific venture capitalist is looking to accomplish his own personal set of objectives.

The venture capital investment process has a reputation of very high returns on investment. Data prove the process on the average to be no more profitable than any other investment, though occasionally substantial profits are made. Data also prove that technological venture capital investments are more profitable than nontechnological ventures.

The unavailability of venture capital is misunderstood. Data show that sufficient venture capital is available, but this is not to say that the capital is optimally distributed or that the system is working optimally. The low percentage of funded proposals, approximately 1/2 of 1% is probably responsible for the misconception.

The studies recommend many changes in federal and regional policies to make the venture capital process work more efficiently. Some of the changes recommended concern changing structure, allowing rollover of investments, creating more regional and development banks, creating a loan guarantee program.
Although the Northeast has the largest concentration of investment capital, it is lagging in attracting new investments. The Northeast market has five major needs: front-end capital for new firm formation; strengthened secondary markets to buy out venture capitalists; medium term expansion capital; financing of plant and equipment for small business; and capital to renew public facilities.

The problem seems to be that sufficient venture capital is available but that many firms don't seem to be able to find appropriate investors. One explanation is that small business may have difficulty due to lack of information about where to go for money as well as how to properly prepare a financial statement. Another is the lack of a secondary market to purchase the interest of venture capitalists in firms when they want to withdraw.

The study recommends the institutionalization of venture as a means of making it safer and more available and to make better investment opportunities available.


Exxon, General Electric, Standard Oil, Motorola, Emerson Electric and Timken are some of the major corporations involved in venture capital. The article claims technology, not the lure of profits, is responsible. Large companies need such investments because high technology companies are not for sale, and most significant innovations are germinated and developed outside corporations in these high technology companies. A company can invest in an area with a great deal of potential but a lot of risk without having to jeopardize the entire company. The game must be played carefully, so as to not stifle creative spirit and not be accused of various unfair or illegal practices.


Most new research-based enterprises receive their initial capital from the individual investor. Other sources are the large industrial corporation, closed-end investment companies, small business investment companies and family investment groups. The individual investor seems to be the most concerned with the managerial and technical competence of the people associated with the new company. Next most important is the
opportunity for growth in the particular target market. Baty notes that these two factors involve subjective judgments, and concludes that the actual investment decision is quite subjective. The majority of the initial investments were in the $50,000 to $200,000 range. Most of the investors received equity in exchange for the capital.


The paper examines assertions that technological innovation by new/small firms is impeded by an inadequate supply of capital. The validity of this assertion is important because new/small companies are a significant source of new innovation which is vital to our country's growth.

An analysis of existing data provides little support for the assertion on strictly economic grounds. The data, however, are inadequate to support any major policy changes. A better understanding of the inner workings of the marketplace is needed to know whether a problem with information networks or the marketplace structure exists.

The paper sets forth some of the positions taken with respect to venture capital availability and the government's role. It also examines the available data, and describes the nature of the venture process.

Conclusions: What data that do exist indicate that the majority of the venture capital firms do not fund start-up businesses. The level of interest in new technological ventures varies from year to year, as well as the specific fields of interest. There seems to be no evidence that venture investment in small business on the average yields higher returns than other investments. There is some evidence that investments in new technological businesses yield a greater profit than investment in non-technologically oriented businesses. The amount of capital now in the market may be all the market can justify on purely economic grounds.


The study explores venture capital investment behavior of individual private venture capital investors in France. The study replicates Hoffman's study of investors in Austin and Waco, Texas.

Conclusions: The investor had fewer investment opportunities than their American counterparts. Their primary source of information was the entrepreneurs themselves. The French investor's personal and demographic characteristics are very similar to the American investor's. The propensity to invest and the actual investments varied substantially, just
as in Texas. French investors tended to put less money in a company than their American counterparts. Most investors imposed some sort of financial constraints. The French investors' decisions were based on investor-centered factors, just as they were in Hoffman's study. The French venture capitalists' expectations were more conservative. The average expected rate of return was 20 percent, and the average length of the investment was four years.


If an entrepreneur can't secure personal funds, he must then make the rounds of venture capitalists. In order to get some sort of serious attention from the venture capitalists, the entrepreneur must have a business plan which describes, justifies and supports projected plans.

The plan serves two functions; it facilitates good internal management and is useful in raising capital. The plan should reflect planning for future desired objectives, intended action programs, and exploration of the means of assuring desired achievements. The entrepreneur must be able to show that with limited resources and an uncertain future that he can anticipate the future and thus reach certain objectives.

The article goes into detail on the "hows" of writing a business plan. It also details the plan's benefits: it provides a path to follow, it enhances the professional development of management personnel, it allows capital to be raised, it expedites recruiting of personnel, it facilitates the identification of critical issues, it determines the timing and amount of sources and uses of funds, it improves operational effectiveness, it helps identify user markets, pricing strategy, competitive conditions, keeps bankers informed, it induces realism, it develops better trade credit, it enhances credibility, reduces likelihood of failure, facilitates decision making, and it allows the fruits of the enterprise to be reaped.


"The ability to generate new innovative industrial activity is an intangible resource, rare among states and regions." This ability seems to be directly linked to the number of new and small technology-based firms growing in an area. A major concern has been the regional disparity in financing and terms available within the United States and its effect as an impediment to the development of these firms. Currently most new and small technology-based firms grow in clusters, in areas where financing is available.
A typical new/small technologically-based firm (NSTBF) offers a financier a different combination of risk and potential return on investment than is available anywhere else. Most sources of funds for NSTBF are from those investors who are able to adapt their portfolio to the mix of risk and return offered by this type of investment. As a result, instead of the well-defined set of alternative sources available to the seeker of more traditional types of financing, the technical entrepreneur faces a loosely joined network of sources.

There are three major components to the capital supply network:

- Institutions which supply NSTBF financing as an adjunct to their main businesses, such as commercial banks, insurance companies, pension funds, mutual funds, investment bankers, and some large non-financial operations; institutions specifically designed and operated as sources of financing for new small firms, such as government agencies (SBA), various regional and state development corporations, private organizations, professionally managed venture capital investment funds, and investment bankers; individuals who control large amounts of funds and aggressively pursue capital gains through investments which might include NSTBF financing; and intermediaries acting as catalysts, finders, and consultants in the development of the NSTBF and the bringing together of suppliers and purchasers of NSTBF financing, such as accountants, attorneys, research institutions, and individual promoters.

The term "network" is applied to this collection of suppliers because there exists among them a communication linkage. The interest and capacity of particular suppliers may change from time to time and many will maintain a stable of investment partners who may participate in financing arrangements of various kinds. As a result, the network is highly flexible and typically informal.

There is also a geographic dimension to this network concept; some components are nationwide, some in the immediate region only. Ideally, a communications link exists between the two sets of components so that the regionally oriented supplier has access to the national network and makes this access available to NSTBF.

An important element to the successful operation of NSTBF is the firm's ability to meet the financing requirements arising at each stage of its development. To accomplish this in a fashion consistent with the founder's resources and aspirations requires skill.

Each type of investor requires certain assurances with respect to risk and return before making an investment. These requirements place the firm's management in the position of having to plan accurately and well in advance the timing, amount and purpose of funds needed as well as the terms and constraints with which it can satisfactorily operate.

Financing needs occur at three distinct time-related stages. This corresponds with the firm's development from birth to maturity. Certain sources of financing have tended to be identified with each stage.
Stage 1 -- Spinoff firm requires seed capital to help bring its ideas to prototype form. At this stage the cost of assessing the potential of the firm and its products is considered prohibitive by most financial institutions. Financing typically comes from the founder's savings and from investment by personal acquaintances. Investment may range from informal to formal.

Stage 2 -- Need is for funds to support growth and expansion of the firm. This implies a certain degree of success and demonstrated management ability. As the potential of the products and the firm become more readily apparent, a wider array of financing sources become available. Commercial banks, SBIC and investment bankers become interested in NSTBF at this point.

Stage 3 -- The firm is ready to seek public financing through debt or equity issues. By now the firm has acquired some sophistication in finance and management and is considered more readily assessable risk in the eyes of the investors. Relatively large amounts of funds are typically involved at this stage and the higher stakes attract sources of funds which heretofore were perhaps disinterested.

Venture capital appears to be adequate, but its distribution throughout the country is suboptimal. It should be noted that both national and regional networks exist and than in general, there appeared to be few barriers to the successful firm obtaining Stage 3 financing through access to both regional and national networks. The problems of scarcity occur in the critical Stages 1 and 2 where regional sources are most important, and where developing firms face their most urgent need for funds and financial guidance. The increasing of availability and flow of funds is primarily dependent on improving the education and communication systems.


With the decreasing use of the public market as a money-raising mechanism for small business, venture capital has increasingly become the main source of growth capital for a large segment of new/small businesses.

The venture capital investment has two distinguishing characteristics: it has the potential for an unusually high rate of return and it carries a high level of risk. Many venture capitalists require at least a return of 25 percent pretax per annum, with this return to be realized on the sale of the investment some five to ten years hence. This rate of return must be perceived as proportionate to the degree of risk and the length of time involved with the investment. The average venture capital firm experiences losses that run somewhere between 10 percent and 30 percent of the funds invested. The average start-up cost for a high technology enterprise is often $10 million or more.
The main sources for capital are privately owned venture capital corporations and partnerships, bank-related venture funds, SBIC's, insurance companies, and wealthy individuals. Amounts can range from the $100,000 mark to $5 million, with the norm in the $250,000 to $750,000 range. The various types of investment include startups, growth financing and buyouts.

The author claims venture capital is the most expensive form of external financing, but it allows a company to achieve a higher rate of growth than would be otherwise possible.


The new Securities Exchange Commission rulings seriously affect the venture capital investor. Investors can no longer liquidate the holdings of restricted securities of nonreporting companies as easily as before. A block of "letter" stock cannot be sold within a relatively short time under the limited provisions of Rule 154. "No action" letters will probably continue to be granted. It is no longer possible to merge your controlled private company into a listed company and sell the stock as "free stock" as it was under Rule 133. Brokers and dealers will have to check the current information about a company before undertaking the public sale of "letter" stock. The main objective of these rulings is to insure that venture capital investment is not treated like a public offering.


The purpose of the study was to determine whether capital market imperfections restrict the flow of funds to small technology-based firms. No such evidence was found.

Findings: There is no indication that small technology-based firms paid higher rates of interest or returned their unaffiliated stockholders more than other small firms.

Suppliers of funds to small technology-based firms did not earn higher profits than could be earned by investing in listed securities.

There do not appear to be any elements of the structure of behavior in the venture capital industry which would enable firms in the business to charge higher rates or earn greater profits than necessary to compensate for the risks assumed.

Their conclusion that there are no major capital market imperfections does not necessarily imply that the supply of funds is in some sense ideal. It is also important to remember that investment in small technology-based firms may not be accurately reflected in that prices
those firms can get for their products and services or the rate of return which investors in such firms can expect to earn. The amount of capital which private capital markets allocate to small technology-based firms will not be optimal from the viewpoint of society even in the absence of capital market imperfections.

Tax policies and government regulatory policies affect not only the amount of capital invested but the rate of return required by suppliers of funds to small businesses. They also affect the profitability of small firms in general.

Recommendations: Changes in tax and securities regulations might increase the flow of funds to small technology-based firms by as much as 10 percent but not more. Proposals to provide loan or investment guarantees to suppliers of funds or directly to small enterprises would not change the flow by more than 10 percent. It is therefore concluded that direct government investment will only displace private investment funds, and not increase the total flow of funds.


Venture capital investment is presented as a mathematical multiperiod stochastic decision model. The particular attributes of the venture capital investment are stated: they have long horizons, typically, at least five years; the companies invested in are especially risky; there is no secondary market for the financial claims; and the initial investment will be followed by further rounds of financing before the venture capitalist can liquidate his investment.

The time horizon is dictated by the period of time it takes the company to grow to a size and profitability where it can be publically traded. The risk and multiple financial inputs are a result of rapid growth by successful companies; this growth usually implies that a company will have a need for capital in excess of internally generated funds, resulting in the extra rounds of financing. If funds are not available from either the original investors or subsequent investors, the project is abandoned.

Several simple conditions insure that the investment policy is the ideal one. The first is that either party be able to buy out the other without changing future inputs and payoffs. The second is that the entrepreneur be fully compensated for all his inputs.

The marketplace is studied with respect to risk, information imperfections, tax incentive policies, market failure, and discrimination.

Risk arises from uncertainty; information decreases the uncertainty. The amount an investor spends on information is part discretionary and part dependent on risk aversion. Information may change the expected rate of return and the variance associated with it. Information is, however, not always available, and has associated with it costs which vary from individual to individual. The process of information gathering is not an efficient one.

Governmental tax policies are not equally meaningful to all firms. New firms are not as yet concerned with taxes, and any tax help will not be meaningful for several years ahead. Not-for-profit firms are not affected by the current policies.

The failure of the capital market to act as we would have it act is attributed to the difference between public and private risk preference, information and transaction costs, market structure, discrimination, public regulation and taxes.

The study recommends that market imperfections be corrected rather than compensated for. Changes are suggested through the use of risk pooling or spreading, investment guarantees, interest subsidies, lowering of information and transaction costs, a change in tax policies, and the use of development banks.


This report examines certain aspects of the capital formation process as it relates to the first offering of a corporation's common stock to the public. The principal research findings are:

"Regional broker-dealers managed 78% of the initial public offerings distributed by managing underwriters between January 1, 1972, and June 30, 1979, accounting for 48% of the $2.9 billion raised in broker-dealer managed initial public offerings in this period.

Regional underwriters tend to manage the offerings of smaller issuers. Of the initial public offerings of corporations with less than $10 million in annual revenues, 91% were managed
by regional broker-dealers, and 73% of these smaller issuer's gross proceeds was raised in offerings managed by regional broker-dealers.

The issues managed by national broker-dealers were nearly four times the size of the issues managed by regional underwriters. Thus, national broker-dealers raised 52% of the issuer gross proceeds while managing 22% of the initial public offerings in this period.

Regional broker-dealers managed 124 of the 155 high technology issues during this period, raising 60% of these issuers' gross proceeds. Since 1976, however, issues managed by national broker-dealers have raised 50% of the gross proceeds raised for high technology enterprises.

The level of concentration in the initial public offerings market has declined since 1972.

The raising of the ceiling for issues exempt under RegulationA to $1,500,000 in 1978 appears to have resulted in more underwritten offerings of these issues, though the evidence is not conclusive.


In the world of venture capital, the 1960's have frequently been called a drunken spree, and the 1970's the hangover. Some explain the change as a result of the capital gains tax; as the tax increased, the number of investors willing to partake in risky investments decreased. Over one-third of the venture capital firms of the 1960's didn't make it to 1979. Many more of the firms that did make it, became unadventurous.

There are signs that the industry is on an upswing, that there is a renewed interest in startups. In 1978, 600 partnerships, corporations, subsidiaries, SBIC's and wealthy individuals invested $500 million; in 1976 there were only 300 investors. New public offerings by companies with less than $5 million net worth raised between $175 and $200 million last year.

Several recent developments are responsible for the increase in venture capital: the reduction of the capital gains tax, a liberalization of the SEC rule on the amount of capitalization of funds, and a lifting of the public offering ceiling, and allowing a simplified registration of smaller companies.

There seems to be a renewed interest in startups and early stages of businesses. However, some venture capitalists can't find suitable investments, and some firms are sought after by more than one firm. More money is available than in the 1950's, but it is spread more thinly. Only 5% to 10% of the proposals are funded.

One of the most important, if not the most important, factors affecting whether or not technical company formation will occur in an area is the availability of required financial support, both for the initial formation and subsequent growth. This support takes two institutional forms — permanent investment capital and short-term bank financing.

Though equity capital is more or less available on a regional basis to potential entrepreneurs through investment bankers, venture capitalists, stock brokers, private investing networks, and others, required working capital financing for new/small companies must usually be obtained from local sources.

The loan policies and practices presently found in most regions of the country are strongly affected by local historical influences and are based on the particular economic history of the region.


The dissertation explores the venture capital investment process by which venture capitalists identify, evaluate and structure their investments in new and small companies and to examine the individual differences in the economic growth and development of two communities, Waco and Austin, Texas.

Findings: The study found that the venture capital investment process is a multi-variate, complex and overdetermined. In the communities studied, the propensity to invest and the specific companies in which investments were made varied substantially among the individual venture capitalists.

The average number of requests received by investors in each city were approximately 24 per year. The actual approval rates varied greatly, averaging 7% in Waco and 10% in Austin.

Most of the investors were themselves entrepreneurs. Propensity to invest was greatest among those persons between ages 30 and 49, who had a variety of educational and occupational experiences, and graduate degrees, and who have had two or more jobs.

Substantial variation was found in the manner in which the venture capitalists structured their investments. Most of the venture
capitalists requested common stock in exchange for capital, though the percentage of equity received varied widely. The percentage of equity varied directly but not proportionately with the size of the investment. Two general types of investors were identified, the participative/developmental type who provided active assistance, and the judgmental/passive type. The participative investors placed a number of financial constraints on the companies; the passive investors did not.

The venture capitalists studied varied widely in their expectations concerning the expected rate of return on their investments; the range was from less than 10% to more than 90%. The anticipated holding period ranged from less than one year to more than five years.

Local, regional and nationally based networks were identified in both cities. Often the various networks were unaware of each other, and even when they were aware of other networks, there was little interaction. Intermediaries played an important function between entrepreneurs and investors.

When evaluating a company for investment potential, the most frequently contacted sources of information were the investor's friends or associates who have been employed in or have invested in businesses similar to the company requesting support. The actual investment decisions appear to usually be determined on the basis of investor-centered factors and personal policy.

If one considers the differences in development between Waco and Austin to be significant, then the results of this study suggest that local venture capital is necessary but not sufficient for the development of new/small companies. The lesser effective availability of capital in Waco would explain the smaller number of company formations there. Differences were also identified with respect to investment practices and the dynamics of the networks. No differences were identified in the absolute availability of venture capital, the opportunities for investment, or the absolute propensity to invest.


The government has become increasingly active in capital formation policies in the last decade because of a perception that imperfections exist in the money market which might restrict regional capital supplies and a feeling that institutional money management practices may limit capital availability for certain regions and urban areas. It is assumed that open market operations, changes in discount rates, and reserve requirements affect the economy. The degree of risk aversion by institutions influences capital mobility.
Three major alternatives are suggested: the use of bond and loan programs; government investment in specific sectors and regions; and state development banks. The rationale behind these alternatives is that they will provide tools for regional growth policy, money for sectors which may be discriminated against, and it provides a means for assuming risk that private sectors can't or won't take on.


The term venture capital implies investment in a business/enterprise where the uncertainties have yet to be reduced to risks which are subject to the rational criteria of security analysis. The concept involves an investor or group of investors who contribute capital money to a new or small corporation in return for an equity position. The main objective is that as the business grows and prospers, the value of that equity position will increase.

The new breed of venture capitalists views his investment as a sort of sideline activity. The traditional venture capitalist usually invested not only money but also his time, energy and experience. Venture capitalists differ from other investors via their techniques and their degree of risk. Two very major differences from the typical investor are that the venture capitalist may participate in the decision process and that his investment is illiquid.

There are four basic stages of growth in a company's life. Stage Zero is when some monies, usually those of the principal, have been invested, a great deal of effort has been expended, and perhaps a prototype has been developed. Stage I is the startup phase; the product or service is produced using seed capital. Classic venture capital has the company's initial financing coming largely from selling ownership shares. These initial financing involve relatively small amounts of funding, but the opportunities for growth here are great. By Stage II, the company has a proven record which allows it to use some of the conventional institutional sources of capital. At Stage III, further expansion is warranted, usually with funds received through a public equity offering. The public offering enables the initial investors to realize a gain by selling a portion of their shares. At Stage IV, the mature company has established itself.

The chances of an entrepreneur getting backing are not high. A venture capital firm will on the average immediately reject about 97% of the proposals submitted to it. The firm will take a first look at 3%, an in-depth look at approximately 1%, and will actually fund less than 1/2 of 1%.

The article describes several situations at which it may be appropriate for a company to go public:

A product or service has been proven successful locally and shows potential to succeed in a much larger market.

A product has become so successful that an allied new line may be in demand.

An old-line, conservative firm needs to broaden its line to lower unit distribution and marketing costs.

A new applied science product requires additional funds to manufacture and sell, or to continue research and development.

Already proven profitable, a new merchandising scheme requires more funds.

Several small, independent firms may wish to merge, forming a new company which needs a new image.

A need to purchase new equipment or add to working capital -- both being used as a base for future expansion.


The ability of business to endure and thrive is contingent upon the acquisition of adequate capital. The study analyzes the experiences of 196 new and expanding manufacturing firms in Arkansas with regard to their financial problems and availability of funds.

Summary of findings: New businesses commonly get only small loans, yet several were able to get loans with 5-year and longer maturity. Interest rates generally followed the upward trend of the 1960's. The installment plan was the most common repayment plan. Most of the loans were secured with various types of fixed assets. Almost 95% of the expanding firms indicated an urgent need for working capital.

Conclusions: The availability of funds to manufacturers at any time is influenced by current economic conditions and monetary policy, and by the state of development of the firm. Traditional sources of funds were unwilling to provide equity or loan funds to unproven entrepreneurs. Most difficult financial problem faced by new unproven firms is the acquisition of an adequate amount of initial funds. The maximum legal interest rate hindered the availability of funds to small firms.

The basic premise of the study is that small businesses have an inadequate supply of long term capital. It was expected that credit difficulties increased with decreasing size of business, though small businesses with established records could get money. The actual study was concerned with how bankers view small businesses, and the variations of their attitudes toward them.

Results: Banks do not have uniform credit criteria. The greatest credit variability was among smaller banks. Loan decisions depend on the bank and firm. The personality and age of the banker were found to be significant. Banks do not compensate high risk by higher loan rates.


An excellent article which addresses the questions: Are deserving firms getting access to long term funds? Is there a gap? Who does it affect?

Banks don't want to make long term loans; instead they prefer a maximum loan period of one year. They require that a firm be well established, have a net worth of more than $1 million and adequate collateral. The Small Business Administration requires certain management qualifications, collateral, good projections of earnings and cash flows. It has a loan limit to some fixed percentage of the collateral. The SBA has a loan maturity of about five years. Charges lower interest than the bank. The Small Business Investment Corporation's purpose is to fill the gap between friends and the sale of securities. The SBIC usually tries not to make straight loans, and avoids equity positions. It can lend an amount to a limit set by the government. It must loan money for more than five years. Small investment banks want glamorous products or part of a growth industry; they want products with obvious potential. Other sources of money are the commercial finance companies and private investors. An interesting claim, it is expensive to investigate a business; the same amount of investigation is necessary for a large loan as for a small loan.

Mahar examines the suitability of the various financing to the growth stages of small business. The beginning stage occurs when production has just begun, finances are strained, production facilities are barely adequate. At this stage, due to lack of proven growth potential, management can usually obtain financing only from private investors, either that or be forced into slower growth.
The early part of the rapid growth stage, the firm is still experiencing a cash shortage due to working capital needs, and additional production capacity. But the firm now has an established growth record, risks have lessened. The firm must now decide whether to bring in outside equity capital.

The mature stage implies a leveling off in all respects; there is less of a need for money. Money is now available from banks, SBIC's, the SBA, and formal venture capital groups provided the firm wishes to start a new growth cycle.


A general discussion of various methods of growth financing by small firms is presented.

The preferred method of growth by 9/10 of the polled small firms is through internally generated funds, but it is more usually through debt financing. Seven-eighths of the companies found the size of their firm is not an impediment to financing by the preferred method. The firms said short/long range business outlook is more important than the money market. Borrowing was found to be more costly to the small companies than to large firms.


In 1969, seven hundred small businesses with assets of about $5 million went public for approximately $1.4 billion. Since then, the number of businesses going public has decreased. The reasons for this decrease vary, but two common ones are: an equity gap, small businesses have had a hard time getting capital; and that SBIC's are not profitable enough or more private dollars would be brought in.

The early 60's were a time for selling and buying sprees. Comparatively, today it is much harder to make a quick profit. Fewer firms are able to go public. Venture capitalists find it hard to sell shares, and merger fever seems to have abated.

The study recommends that the federal government change some of its policies regarding the taxation of earnings, roll-overs, and help offset some of the SBIC's leverage costs.

The main objective of this study is the analysis and definition of the factors affecting private investment, especially the area of risk. The proposed solution to potential investor risk aversion is the use of investment guarantee, as a means of increasing the flow of venture capital into new technology.

Conclusion: There are enough valid projects among those rejected by venture capital companies to make such a program worthwhile, and there exists a sufficient amount of venture capital to cover all worthwhile projects. Currently, 2.6% of the projects are financed; the use of a guarantee program would affect an additional 4.4%.


Venture capital can be defined as involvement in any high risk financial venture, any startup financial venture, or in a company which can't go public.

Sources of venture capital are wealthy individuals, banks, SBIC's, and private venture capitalists. Private venture capitalists, whose individual assets are usually between $3 and $10 million, usually try to acquire somewhere between 25% to 100% of a company. Most venture capitalists expect a return of approximately 10 times the original investment.

There is no standard formula when it comes to financing, or the length of time involved in an investment. The problem of converting appreciation to capital gains is also not a simple or standard one.

The predicted future pattern of venture capital will be one with more people, funds, and organizations, and one which is more institutionalized.


This research examines the venture capital market and its relationship to other markets for capital. Specifically, is the venture capital market an efficient extension into the area of higher risk of the general market for equity securities, which implies comparable inter-market risk adjusted rates of return.

A survey of 59 venture capitalists was undertaken to establish and substantiate a priori beliefs regarding the probable direction of
the application of a capital asset pricing model to data derived from the venture capital market. Several characteristics were observable in the study's data. None of the firms reported any extraordinary rates of return. Where any individual investments were extraordinarily profitable, the gains were offset by losses elsewhere in the portfolio. The rates of return were spread fairly uniformly across the 0 to 30% range.

The venture capitalists perceive their market as more risky than the conventional equity markets and they therefore feel that they are entitled to a greater rate of return. In the aggregate, the venture investors feel subjectively that their market is roughly 60% riskier than conventional equity markets.

The survey also found that the two most overriding concerns to venture investors were related to the expected rate of return and evaluations of risk. Also of paramount importance is the competence of the investee firm management.

The study also found the relationship between the venture capital market and the conventional equity market displays strong indications of financial market efficiency.


The basic question addressed is whether certain economic knowledge plays any significant role in the success of small business entrepreneurs, and that if specific items can be identified, can they be taught?

Findings: There is no correlation between a small business entrepreneur's knowledge and understanding of economic and business principles upon which sound business decisions are based and the profitability of his business.


Which informational and demographic variables are important in the considerations of bankers for small business loan decisions? The variables which were considered are: accountant prepared financial statements, the amount of loan, average balances and prospects of their other banking business, character of principal, collateral available in terms of its value, collateral available in terms of its liquidity, experience of owner-manager, balance sheet information,
income statement information, nature of business, repayment history, repayment period of loan requested, repayment conditions, source of repayment, industry reports, bank size, and bank position, age, experience and educational background of decision maker.

Results: As bank size increases, more weight is assigned to financial information. The most significant piece of information is the experience of the manager. Eight variables accounted for over 90% of the sum of eigenvalues in discriminant analysis; they were repayment source, character, nature of business, balance sheet, industry report, repayment period, amount of loan, and credit history. Reliability was not found to be associated with risk. Personal attributes towards risk did not affect the investor's decisions.


Entrepreneurs want access to debt funds, but usually they are reluctant to share equity ownership. The owner must therefore evaluate the value of an undivided interest versus the value of a divided interest in the company if equity financing is used. The partial interest may be worth more in the long term than the whole. The decision to obtain equity financing depends on a long range forecast of the future.

There are three financing phases: Phase 1, for developmental purposes; Phase 2, which takes advantage of the result of Phase 1; Phase 3, the financing of a large scale application of a process that has been proved in Phase 2.


Some small percentage of every bank's portfolio should be riskier loans to small and new enterprises. Sixteen studies show the little firm is more innovative and therefore deserving of funds. New technology, new industries and new techniques tend to not come from large old companies.

Venture capitalists are interested only in unusual growth situation, but growth is risky. To avoid risk, one adopts conservative policies, and the selection process becomes highly selective, with thorough investigations, and at least part of the equity going to the investor. To achieve his goal, the investor has to be used to facing problems and being successful, and must work closely with his investment. His future success is dependent on maintaining good bank relations.

The article strongly suggests that bankers take more initiative, and that bankers and venture capitalists should refer customers to each other.

Two sources of information, the SBIC and ARD, were used to try and capture a pattern for success in venture capital financing.

Results: All firms experience some losses; losses in the 25% to 40% range should be anticipated. An average of six to seven years is required for the investments to mature to the point where they can be sold. A reasonable return on capital is a gain of 150% to 200% above cost. The minimum viable size of a venture capital firm is in the $1 million to $2 million range.


New research based enterprises perform a unique function in the economy; they translate radically new ideas into marketplace realities. They fill in a gap left by other larger firms. They are unique in that they attempt to do things no one has done before. New research firms are generally headed by technical people with little management (business) expertise.

This type of firm usually has quite a few obstacles to growth. Frequently there is a long lag in earnings, either revenue or profits, due to the elapsed time required to bring a new product from the lab to the market. Another problem is the lack of adequate management skills. A firm may also come up against minimum growth rates or levels, below which a firm may not be able to gain enough momentum to continue growing, or up against maximum growth rates which when exceeded, results in an explosion.

The new firm is always a gamble; it is hard to determine the outcome. As a firm ages, risk decreases, and the ability to estimate the outcome improves, but the potential payoff decreases.


Discusses heavy reliance on debt funds, bonds and notes, and the rather light usage of equity funds, common and preferred stock. The article points out that the wealth of owners can be maximized by arranging sources of cash to minimize the cost of the enterprise, the determination of the proper proportion of fixed charge funds, and the avoidance of bankruptcy.

The study looked at the attitudes of bank loan officers in the Ozarks region toward technical companies and compared them with their counterparts in Dallas and selected California cities.

Results: The California banks indicated a lower collateral requirement on loans but imposed more restraints on the borrowing firms than the Arkansas banks. The California banks approved more loans on an unsecured basis. The banks studied in the Ozarks region appeared to be more conservative than banks in other cities. Based on findings in the study, the borrowing firm's financial position and management has the greatest influence on loan decisions made by the banks in this study.


Findings: Technological innovation is a most important contributor to job creation, increased productivity, competition and economic growth. Small business is a principal source of major innovations when compared with large business, universities, and government laboratories.

Recommendations: There is a need for an environment more favorable to innovation and risk. The primary reliance for innovation should be placed on the private sector. Small business is underutilized in the innovation process. There is an inadequate targeting of Federal research and development procurement to small business.

Recommended Policy Changes: Proposals to aid small businesses which invest at least 3% per year for three years or 6% of gross in a single year in R&D. Deferred taxes if equity is reinvested in a business which has 3% (6%) research program. Gains held for more than five years should be taxed at half the going rate. Allow losses to be carried forward for ten years instead of the current five years. Allow startup losses to flow through the individual investors for tax purposes.
Innovation is an essential ingredient for creating jobs, controlling inflation, and for economic and social growth. Small businesses make a disproportionately large contribution to innovation. The creative process for small business is not like that of large business, so that when government regulations treat large and small firms equally, in fact they are discriminating against small firms. Small enterprises are virtually excluded from federal funding for research and development.

Small business is an opportunity for a high rate of return on capital, usually a higher rate than is available from larger firms. However, higher levels of financial and operational risk are involved. Increasing government regulation has limited small business potential growth. It is harder for small firms to obtain financing, especially long term financing. Small firms must therefore rely more heavily on internal financing.

Small firms have a higher cost of capital because of: risk as reflected in asset mix; a lower return on investment; higher costs of debt; greater illiquidity in operations; and higher levels of debt.

Recommendations: Changes in the federal tax code to again encourage the flow of capital into small innovative businesses. Changes in ERISA policies to return a portion of our national flow of savings to high risk innovations. Change in the security laws and regulations to remove obstacles for innovative enterprises to acquire seed, startup and expansions capital. Change in the regulatory policies to remove adverse discrimination against the small innovator. Change in federal R&D funding policies to produce substantially greater results by awarding a larger share to small businesses. Change in federal procurement policies to allow greater participation by small business on a more equitable basis.

In 1978, the SBIC financed 2,087 companies for $232.6 million. This was the largest number of companies and the largest dollar amount in five years. One-half of this amount went for straight debt financing. Sixty-six percent went for first-time financing. Fifty-four percent went to companies less than three years old. Detailed statistics on financing, distribution, business formation, age, use of financing, etc., are provided.

The study examines to what extent capital market imperfections may be responsible for the continued lag in the economic growth in the Ozark and Upper Great Lakes regions.

The study found both regions suffer from a shortage of risk capital. The scale of operations of the SBA, and local development companies are too small to change the situation to any great extent. Recommendations are the development of regional development banks, more state centralized planning and coordinating authorities, and a lowering of the ceiling on SBA loans so that more people can borrow.


Venture capital can provide a means by which industries can start new businesses. The reasons for doing so extend beyond profit. It gives large firms the means to grow new companies, experiment with new products or new models, and to get a jump on the competition.

Unfortunately, venture capital has had a poor success story. Some of the probable causes for this failure are that the companies did not realize how long it takes to see results, insufficient long term top management commitment, and that they did not make use of an appropriate organizational form.

The article suggests that the best way to have a successful venture capital operation is to make it an independent wholly owned subsidiary. The products made by the subsidiary companies should be ones the company needs or a technology which can benefit from the venture capital group. The subsidiary should be appropriately organized, with an experienced director and sufficient funds to make it a success.


The two most important sources of funds for small business are trade credit and bank credit. Ulrich and Cassel surveyed 124 banks with respect to 30 factors which are thought to influence the extension of credit. Quality of management, risk of default, size of loan relative to size of business, firm's debt-to-equity ratio, intended purpose of loan, and firm's liquidity position are of major importance (listed here in rank order). These factors indicate a preoccupation with risk. Of only moderate importance in rank order were type of repay-
risk. Of only moderate importance in rank order were type of repayment plan, type of collateral available, past and future trend of profits, ease with which collateral could be liquidated, rate of return the firm earns on its assets, length of time firm has been in business, and type of business activity engaged in by firm.


Most small firms do not consider public equity financing of growth; however, given clear evidence of growth potential, the company has filled the prime requisite for going public. The author feels that a successful company will be ready for going public if it has at least one of the following factors: good earnings record for the past three to five years; a unique potential for its principal product; good management; and strong growth possibilities.


The article provides an unusual report of the negative side of venture capital investment, such as: tight money, unavailability of bank loans, the disenchantment of mutual funds with letter stocks, weak stock market, and too much money being committed to venture investments. A common complaint appears to be that many venture capitalists don't know what they are doing.

There are two types of venture capitalists, the traditionalists and the new breed of venture capitalists. The traditionalists are characterized as loose groups with considerable overlapping between which very little competition exists. They generally give personal attention to their investments. The new venture capitalists are pictorialized as being impersonal and investing venture capital as one would invest in listed stocks.

The author characterizes the present state of venture capital as a "somewhat muddled state of midpassage between domination by traditional venturers and domination by the institutional nouveaux, and the patterns are far from being set. But it can be said that in the outpouring of enthusiasm and effusively amateurish press reporting most people have failed to notice the extremely significant changes that are occurring in the techniques, philosophies, motivations, and indeed the entire conception of venture capital."

The author presents a study of characteristics thought important in venture capital decision-making.

Findings: The source of a proposal seems to be a factor in the venturist's investment decision, with discrimination against those proposals received without being referred. The decision process is reasonably well-structured with a pattern of screening, investigation and evaluation. Venturists act as if they can identify risk with the variance of individual venture returns. Results indicate that the venturist's decision rules, and in particular their requirement that no more than 10% of their capital be put in any single venture, seem to essentially eliminate the risk of firm failure.


The results of interviews with 25 initial investors in new or scientific engineering firms in the New England area are summarized. About 700 such firms were formed in that area between World War II and 1963.

Conclusions: Initial investors are predominantly the affluent, individual investor who is motivated to finance new ventures by a combination of economic and non-economic reasons such as tax considerations or the pure enjoyment of it.

The large venture capital funds supply only a small percentage of initial financing, although they do serve as intermediaries between the people with ideas and individuals wishing to extend initial financing.

It was generally conceded that there is a greater need for really promising venture situations than there is for more venture money. The venture investors reported that they look for these factors in descending rank order: people; a growing market; technology; extent of product or process development; amount of venture capital required; expectations for success.


The Small Business Investment Corporation, SBIC, has three functions in the venture capital investment process: to improve information flows regarding available opportunities and relevant uncertainties; to reduce search, selection, and control costs through economies of
scale; and minimize risk by portfolio diversification techniques. The SBIC is not equipped to service very risky businesses as it is generally too small to assume large risks. The small size of the individual SBIC is due primarily to government SBIC programs which reward small SBIC's. The minimum equity financing permitted by the government is $300,000. Between $300,000 and $700,000, the following government financing applies: After approximately 80% of equity has been depleted, the SBIC can obtain 5%, 20-year subordinated debentures up to the amount of equity invested. After 75% of the above total is committed, up to 50% of this total can be borrowed at 5.5% for 15 years. So, for $700,000 equity, $400,000 can be borrowed from the government for a leverage ratio of 2:1. Above $700,000 the leverage decreases, with $7.3 million in equity funds being required to obtain the maximum amount of government borrowing, $4,700,000 resulting in a leverage ratio of .64.