THE COST AND AVAILABILITY
OF CREDIT AND RISK
CAPITAL IN NEW ENGLAND

by

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Introduction

The New England economy is a mature economy without competitive advantages in the form of traditional economic resources. The region's ability to generate jobs and to compete effectively in the national and international market place will increasingly depend on its ability to exploit its intangible, and unconventional advantages. New England is a center of venture capital funds and expertise. A reservoir of technical know-how resides in New England's academic institutions, consulting firms, individual inventors and technology-based enterprises. Fifteen percent of the energy-related inventions recommended for development by the National Bureau of Standards originated in New England despite the fact that New England represents six percent of the U.S. population. Finally, and least tangible of all, New England retains an achieving tradition based on Yankee ingenuity, self-reliance and willingness to assume calculated risks. These
characteristics are reflected in the successful new enterprises founded in New England in recent years.

New England's intangible, unconventional advantages combined with a skilled, stable work force dictate that New England adopt an entrepreneurial economic strategy based on the formation of technology-based manufacturing enterprises employing innovative technologies and production processes. Entrepreneurial strategies involve the dynamics of change, either through the formation of new firms or the transformation of existing firms. In either case, innovative and risky financial strategies are required. Recent studies of technology transfer, and of the capital markets, universally cite the shortage of risk capital as the single most serious barrier to the formation of new technology-based enterprises. The cost and availability of credit and risk capital are therefore critical concerns for the revitalization of New England's economy.

The analysis that follows will focus upon the credit and risk capital requirements of new and growing enterprises. Emphasis has also been placed upon the credit and risk capital requirements of firms that will never have access to the public capital markets. These firms form the foundation of the New England economy and their financial problems have been

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overlooked in recent studies of the venture and equity capital markets.

The credit and risk capital markets for small firms are fragmented and diverse. Good, hard data on the cost and availability of credit and risk capital are non-existent. The last serious attempt to gather such data occurred in the mid-1950's prior to passage of the Small Business Investment Company Act of 1958. Therefore, the following discussion focuses upon the analysis of basic issues and concepts affecting the financing of small, growing firms.

Definitions

Credit and risk capital are diverse commodities and "small business" is a term encompassing firms with a range of capital requirements. For purposes of clarity, the following definitions will be employed throughout the paper:

**Firm Size**

"Life Style Firms" - Firms with annual sales under $1 million or less than 20/30 employees; frequently formed and operated by individuals willing to sacrifice salary and status of corporate positions for life-style of small firm.

"Foundation Firms" - Firms with sales between $1 million and $20 million and from 20/30 to 400/600 employees. These firms form the backbone of the New England economy, but seldom have access to public capital markets.
"High Potential Firms" - Firms with potential sales in excess of $20 million and over 400/600 employees.

**Growth Rates:**

"Nominal Growth" - Firms growing no faster than the regional or national economy, e.g., 5% to 10% per year. Normal trade credit and bank credit plus retained earnings are typically adequate sources of funds.

"Moderate Growth" - Firms growing at approximately twice the growth rate of GNP (10%-20% per year). These firms often require new sources of credit and external equity capital. Foundation firms frequently exhibit moderate growth.

"Rapid Growth" - Firms growing in excess of 20% per year. These firms invariably require new sources of credit and external equity capital. "Rapid Growth" is essential if a new venture is to achieve public market status within 10 years of formation.

**Risk Capital**

"Risk Capital" - The source of funds bearing the ultimate financial risk includes venture capital and equity capital.

"Venture Capital" - High-risk, paid-in capital and debt with equity participation. Performs the creative function of finding, and financing investment opportunities worth more than they cost. Function fulfilled within 5-10 years of original investment. Reward realized through capital gains.
Successful Foundation Firm

Life Cycle:

Birth and Adolescence

RISK CAPITAL

Venture Capital
Personal Savings
Friendly Sources
Informal Investors
SBIC’s
Venture Capital Firms
Equity Capital
Retained Earnings
Public Equity Markets

COSTS

Risk

Cost of Risk Capital (Annual Rates of Return)

Venture Capital
Equity Capital

RISK CAPITAL SOURCES

Venture Capital

Personal Savings

Friendly Sources

Informal Investors

SBIC’s

Venture Capital Firms

Equity Capital

Retained Earnings

Public Equity Markets

Extreme

50%-100% and up

50%

30%

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Though the above definitions involve arbitrary distinctions, they facilitate discussion of the credit and risk capital markets in New England. Figure I illustrates the application of these definitions to the financing of a new foundation firm experiencing moderate growth. Note that sales for a typical foundation firm do not approach the levels required for access to public capital markets. Note also that new foundation firms are of little interest to SBIC's and venture capital firms. Informal investors often provide the risk capital that bridges the gap between start-up and attainment of rapid growth. Finally note that, without access to public capital markets, growth rates are often constrained by the growth in positive cash flow.

The Cost And Availability Of Credit

The cost and availability of credit for small firms in New England varies primarily with the size and age of the firm, i.e., with factors affecting the administrative costs and risks in a loan portfolio. The cost of credit in New England is generally at or below rates elsewhere in the country. Differentials in regional mortgage rates favor New England borrowers. New England banks also appear to be among the most aggressive in implementing two-tier loan rates providing discounts from market rates for small firms. In a recent market survey, ten of forty-four banks
(23%) offering reduced small business loan rates were located in New England.12

On the other hand, there is evidence that commercial banks in New England are less aggressive in making commercial loans than their counterparts in other regions. Table I illustrates two characteristics of New England bank loan portfolios. First, total loans represent a higher proportion of total assets than the U.S. average. Second, with the exception of the Boston dominated Massachusetts' figures, New England bank loan portfolios include a smaller proportion of commercial, agricultural and industrial loans and a higher proportion of real estate loans than U.S. averages.

Table I

COMMERCIAL BANK ASSETS AND LOANS

United States and New England - 1975

<table>
<thead>
<tr>
<th>Bank Assets per capita</th>
<th>Ratio of Loans to Assets</th>
<th>Per Cent of Total Loans</th>
</tr>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Real Estate Loans</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Agricultural and Industrial Loans</td>
</tr>
<tr>
<td>United States</td>
<td>$4,370</td>
<td>0.57</td>
</tr>
<tr>
<td>New England</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Connecticut</td>
<td>2,980</td>
<td>0.59</td>
</tr>
<tr>
<td>Maine</td>
<td>2,130</td>
<td>0.62</td>
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<tr>
<td>Massachusetts</td>
<td>3,120</td>
<td>0.58</td>
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<tr>
<td>New Hampshire</td>
<td>2,230</td>
<td>0.65</td>
</tr>
<tr>
<td>Rhode Island</td>
<td>4,120</td>
<td>0.70</td>
</tr>
<tr>
<td>Vermont</td>
<td>3,040</td>
<td>0.67</td>
</tr>
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</table>


Real estate lending requires a minimum of specialized knowledge by bank personnel. The professional skills required to handle commercial credit aggressively, safely, and profitably are not always available outside urban areas. If this diagnosis is correct, it is doubly unfortunate as commercial bank loan officers are the financial management professionals most accessible to small firms, most familiar with loan clients' financial requirements, and in a position to counsel firms requiring non-bank sources of funds. However, loan officers throughout the region generally lack the training, experience, contacts, and time to deal comprehensively with the financial requirements of small firms.
Planning guidance and efficient access to the full range of financial sources are two of the most critical needs of small firms. In some cases sources of financing are available but are unfamiliar to the average commercial loan officer or small firm. In other cases, the expertise required to research and prepare the business plans and financial projections necessary to attract outside financing is unavailable. Small Business Development Centers (SBDC) can provide a mechanism for filling the planning and information gap. SBDC's should work with the banking industry to provide counselling assistance to small firms and to provide loan officers with professional services including information referral and quality training programs dealing with comprehensive financial planning for dynamic small firms. Support for the Small Business Development Centers concept is highly recommended.

Life Style Firms

New life-style firms are financed primarily from personal savings and bank loans based on personal credit. There is no evidence that new life-style ventures are unable to attract adequate credit despite the fact that the infant mortality rate of life-style ventures demonstrates that many should never been started in the first place.

Credit problems for life-style firms generally fall in the medium term category, i.e., three to ten years. Participation in the Small Business Administration's (SBA) 7(a) loan guaranty program has permitted banks to provide medium-term credit to
life-style firms. The development of a secondary market for the guaranteed portion of 7(a) loans has been useful in providing a continuing flow of funds for life-style firms. Bank participation in the 9(a) program is a proven technique. Streamlined bank and SBA processing procedures and tax credits for a fraction of the interest earned on 7(a) loans (e.g., 20%) are recommended steps to expand the volume of 7(a) credit.

Foundation Firms

Foundation firms encounter problems in filling both medium and long term credit requirements. The SBA's 7(a) program is limited to maturities under ten years. For foundation firms, there are no sources of long term credit on terms comparable to those available in the corporate bond markets. The institutional structure of long term lenders, primarily insurance companies and pension funds, limits their portfolios to the strongest credits and to individual loans in excess of $1-2 million. Established foundation firms are foreclosed from long term institutional credit sources.

When the capital markets fail to provide funds in amounts or on terms believed reasonable, it is usually because the risks or costs are not justified by the potential rewards. The negative cost/benefit relationships implicit in a portfolio of small loans results in part from the fact that private investors cannot participate in many of the benefits that new jobs in growing foundation firms provide, e.g., the benefits of increased employment, increased tax collections, maintenance of competition
in the market place, commercialization of new technology, etc. When these benefits are factored into the equation, the case for a publicly supported source of long term credit for healthy foundation firms gains strength. (See the Birch and Smollen papers for evidence of the significant contributions to new job creation made by new firms.)

It is recommended that the concept of a New England Capital Corporation be reevaluated as a publicly supported source of long term (10-20 year) credit for profitable foundation firms on terms comparable to those available to larger firms with access to the public bond markets. The level of public support would be marginal in nature, i.e., only enough to establish a New England Capital Corporation at a level of profitability adequate to attract private investment resources. Partial subsidy of the annual operating costs of maintaining an adequate professional staff could be sufficient to attract private investment capital and would be more than offset by regional benefits. The use of public funds as a catalyst to mobilize private resources would maintain the investment rigor characteristic of competitive capital markets. A privately funded and managed but partially subsidized capital corporation would be a logical investment vehicle for a fraction of private pension portfolios if ERISA

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portfolio management restrictions are modified as recommended in Part III.

High Potential Firms

Small firms with sales potential in excess of $20 million are seldom constrained by inadequate long term credit. The size of the credits involved and eventual access to public capital markets open a variety of credit alternatives for high potential firms. These alternatives include the financial and professional resources of money center banks, institutional investors, and Small Business Investment Companies (SBIC's).

The Cost And Availability Of Risk Capital

For at least three reasons, the cost of risk capital is more difficult to measure than the cost of debt. First, the yield on risk capital is not a contractual rate that can be observed as can the yield on debt. Second, the yield to risk investors is derived from a combination of dividends and capital gains. In the case of new and rapidly growing firms, yields are earned through appreciation of the market value of equity and do not represent current cash outflow to the firm. Third, the cost of risk capital depends upon the degree of risk, ranging from annual returns of 100% or more in the case of start-up investments in new ventures to 20%-25% in the case of equity investments in established small firms. Risk and lack of marketability account for premiums over the cost of equity for leading national corporations, currently estimated at about 15%.
The extraordinary risk premiums required for start-up and early stage investments do not reflect total portfolio returns to venture capital firms or SBIC's. Extraordinary returns from successful ventures offset losses on unsuccessful ventures. Average portfolio returns are far lower.

Venture Capital

The financial evolution of successful new ventures is pictured in Figure I. Figure I illustrates the definitions presented previously and highlights the distinction between venture capital and equity capital.

Several characteristics of venture capital affecting its cost and availability should be noted. First the venture capital performs the creative function of financing the formation and early growth of new ventures. Second, it bears the extreme risks that creative, innovative processes involve and therefore requires the prospect of high returns. Third, unlike debt amortization, its costs is not a cash burden to the firm. Venture capital creates its own reward in the forms of market values based on capitalized earning power. Fourth, the creative, risk-bearing function is a medium term, specialized activity. Venture capital investors anticipate recapture of their original advances within five to ten years. Finally, from the firm's point of view, venture capital is permanent capital that undergoes a transformation to traditional equity capital as operating performance confirms profit expectations, i.e., as risk (uncertainty) is reduced.
The creative power of venture capital, in terms of jobs and technological innovation as well as investment values, is a unique characteristic. The size of the venture capital pool and its rate of flow through the five to ten year cycle from investment to liquidation to investment are affected more by capital gains taxes than by any other variable under the direct influence of the Federal government. The reason is clear: venture capital earns its return exclusively through capital gains. These capital gains are large, reflecting the risks inherent in creative activities, and they arise frequently, within five to ten years, reflecting the length of the creative venture initiation cycle.

The tax laws of 1978, reducing maximum capital gains taxes to 28% have already attracted several hundred million dollars of new funds into ventures capital portfolios. The rate of flow of these funds through the venture initiation cycle, an equally important objective, can be accelerated by deferral of capital gains taxes when proceeds of investment liquidations are reinvested in new ventures within a reasonable period of time. With a 28% capital gains tax rate, new investment opportunities with comparable risk must offer yields up to 39% higher than yields on existing investments to justify liquidation. Deferral of capital gains taxes on reinvestment proceeds would eliminate this obstacle to the flow of venture capital through its natural cycle. Capital gains taxes would be imposed when funds are withdrawn from the venture capital pool and thus are no longer
generating the public benefits of venture investment. Deferral of capital gains taxes under these circumstances is recommended.

**Life Style Firms**

Venture capital for life-style firms is provided from the founder's personal savings and funds from other friendly sources. The cost of start-up capital for most life-style ventures represents a combination of financial gains and life-style satisfactions. Financial returns are seldom commensurate with the risks involved and there is no likelihood of recovery, short of liquidation, of a venture capital investment in a life-style firm. Consequently the number of life-style ventures that can be initiated is constrained by the availability of personal savings and friendly funds. The infant mortality rate of new life-style ventures suggests the existence of a more than adequate supply of start-up capital for life-style firms.

**Foundation Firms**

Recent studies of venture and equity capital for small firms have paid more attention to the problem of firms seeking public capital than to the problems of firms without access to the public markets. The latter tend to be stereotyped as small individual proprietorships almost totally dependent on debt. From New England's point of view the stereotype is inaccurate and the emphasis is misplaced.

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New England depends upon foundation firms for much of its technological innovation and new job formation. (See Birch and Smollen papers) These firms face acute problems raising start-up capital. First, since the late 1960's venture capital firms and SBIC's have avoided start-up financing of any kind, high potential firms as well as foundation firms. Second, the absence of a potential public offering within a reasonable period of time precludes recapture of invested capital in the secondary markets. Alternative exit options include merger with a larger, publicly-held firm, generally through tax-free exchange of stock, or repurchase of shares by the firm or its founders. The former is unlikely for firms with sales under $10 million and the latter often places cash flow burdens on firms still growing at attractive rates. Finally, new foundation firms typically require venture capital in amounts between $50 thousand and $250 thousand. These funds are generally in excess of personal savings and available friendly money but below the investment threshold of venture capital firms and the larger, equity oriented SBIC's.

Given the predominance of firms in New England with sales under $20 million, New England's reliance on manufacturing for its employment, and its need to develop new technology-based manufacturing firms to capitalize on its competitive advantages, the venture capital problems of foundation firms deserve more attention than they have received.
Capital Gap For Foundation Firms: Pilot Study

Informal Investors

The question, "Does the shortage of seed capital for foundation firms preclude an effective New England economic policy based on developing technology-based manufacturing ventures?", prompted a pilot research project in the Fall of 1978 conducted by the Whittemore School of Business and Economics of the University of New Hampshire. The research undertook to test two hypotheses related to the seed capital question: 1) informal venture investors, essentially individuals of means, represent a potentially significant source of seed capital for foundation firms; 2) informal investors employ investment criteria that differ in material ways from the criteria employed by professional venture capital firms. Both hypotheses grew out of past experience with New England entrepreneurs and out of the experience of individuals close to both the technology transfer process and the process of regional economic development. The role of informal investors in financing new foundation firms is illustrated in Figure I.

The pilot research was based on a comprehensive questionnaire distributed to one hundred individuals with a known interest in venture-type investment situations. These names were obtained through the cooperation of the Smaller Business Association of

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New England (SBANE) and the New England Industrial Resources Development Commission (NEIRD). Questionnaires were also mailed to fifty chief executive officers of manufacturing firms with over 100 employees and sales volume over $5 million. As an experiment in reaching investors indirectly, through likely referral services, the questionnaire was mailed to two hundred and fifty bank presidents and CPAs in New Hampshire, Vermont, and Maine.

A total of forty-five completed questionnaires were returned. The most significant results of the survey are summarized below:

21) Average age of respondent was 48, and over half have had previous experience as entrepreneurs or investors in start-up situations.

22) Average desired investment in any one situation was $32,000 with 10% preferring to invest over $50,000 and 10% preferring to invest under $10,000. The total potential pool of venture capital represented by respondents exceeded $1 million per year over the next three years.

23) Respondents, in general, were interested in participating with others in venture-type investments. Preferred partners included other financially sophisticated individuals, banks and venture capital firms.

24) Required rates of return were lower than those typically required by professional venture capitalists, ranging
from 22% per year for start-up to 16% per year for investments in established, growing firms. On the average, exit horizons appeared to be longer than those required by venture capital firms.

25) Over half of the respondents indicated that they would accept a lower rate of return on investment in exchange for some form of non-monetary return. The creation of local job opportunities in an area with high unemployment was an acceptable substitute for 59% of respondents with an average ROI reduction of approximately 20%. Other trade-offs were also cited.

26) Respondents have been offered approximately three venture investment opportunities per year, most of which were directed to them by friends or business associates, not from sources such as bankers, accountants, lawyers, or investment firms. Over 60% indicated an interest in a regional service that would screen and refer venture capital investment opportunities to them.

Experience and the results of this pilot research confirm the fact that the informal venture capital markets represent a substantial potential pool of funds and are grossly inefficient in bringing entrepreneurs and investors together. Private market makers are unable, by and large, to reap the substantially public benefits of improving the efficiency of the informal capital markets. Therefore, entrepreneurs can expect to find little guidance in preparing sound investment proposals and in
identifying potential individual investors, and investors themselves will continue to rely largely on random events to bring investment opportunities to their attention.

In view of New England's need for small amounts of seed capital to spawn new foundation firms and in view of the compelling rationale for adopting an entrepreneurial development policy, it is recommended that New England experiment with publicly funded efforts to improve the efficiency of the informal capital market. Based on experience and results of the research described above, such an effort should collect and maintain on a confidential basis, data identifying potential individual investors and their investment preferences. By eliminating the inefficient and redundant effort of entrepreneurs inexperienced in the search for investors, this service alone would materially improve the effectiveness of the market place. An adequately funded experimental effort could also channel entrepreneurs inexperienced in the preparation of investment proposals. As state-wide Small Business Development Centers are established, the counselling function could logically become part of their activities. However, in view of the mobility of capital (66% of research respondents were interested in investments anywhere in New England) a market making mechanism should be at least regional in scope.
SBIC's

The 1958 Small Business Investment Company Act was designed to accelerate the flow of equity and venture capital to foundation firms. The program has had limited impact. From 1958 through 1975 less than 3/10ths of one percent of small firms, in the U.S. received funds from SBIC's. As of fiscal year end 1978, SBIC loans and investments totalled $813 million. One third of this amount was in the form of straight debt with terms comparable to the SBA's 7(a) loan guaranty program, a program fifty times larger in dollar volume. Equity-oriented SBIC's tend to be the larger SBIC's with investment policies similar to venture capital firms. The average investment per business, as of March 31, 1975, by the nine largest equity oriented SBIC's was $450,000. Seven of the nine had established at least $250,000 as a minimum investment amount.

To motivate SBIC's to devote a larger proportion of their portfolio to investments in foundation firms two recommendations are offered. Venture capital investments generate limited cash flows prior to liquidation. Venture capital is "patient money". It demands returns commensurate with risks but is willing to wait five to ten years for the cash recapture. On the other hand, SBA leverage for SBIC's is "impatient money", requiring that interest be paid in cash as accrued. SBA debt service requirements compel leveraged SBIC's to invest heavily in cash generating securities, contrary to the cash conserving requirements of new ventures. Legislation and/or regulations should be amended to permit the
use of discount debentures of interest accrual for SBA leverage provided to SBIC's investing in venture capital securities. Note that this recommendation entails accrual of interest payments on SBA leverage, not on interest subsidy.

The second recommendation is based on the public benefit, in terms of new jobs, technological innovation, and capital spending, provided by growing foundation firms. The costs of making and managing venture capital investments are primarily a function of the number of firms in a portfolio rather than the number of dollars. Profits maximizing SBIC's therefore prefer a small number of large investments. To the extent that the public benefit of smaller investments in foundation firms offsets the added costs, the SBA should subsidize the operating costs of SBIC's investing in smaller firms. The marginal costs associated with five $100 thousand investments versus one $500 investment may be well below the marginal public benefit. Note, that the marginal costs include the increased difficulty in liquidating investments in firms without public markets for their shares.

The national Association of Small Business Investment Companies (NASBIC) conducts continuing research into the performance of SBIC's. NASBIC's reports and position papers contain an extensive list of recommendations for improving SBIC's ability to channel capital to small firms.

High Potential Ventures: Start-Up Capital Gap

The venture capital problems of high potential firms lie primarily in the start-up stage. Here they share the problems of
foundation firms. "Most venture capital firms have adopted a policy of staying away from start-ups, and have put their available capital in safer and more liquid investments."16 T.A. Associates confirmed the existence of this capital gap in New England, citing a shortage of "seed capital of any nature for new and interesting products and processes."17 Similar observations are contained in other studies of the capital markets.

In the case of high potential ventures, a partial explanation of the shortage of seed capital is found in investment recapture problems resulting from limited markets from new stock issues and SEC restrictions on the sale of shares in secondary markets. Between 1969 and 1975 the market for stock issues by companies for which there was no prior market (new issues) virtually disappeared, declining from 1,298 new issues in 1969 to 19 in 1975. Since 1975 there has been a modest revival in new issues with 58 offered in 1978. Even in active secondary markets, SEC regulations, e.g., Rule 144, restrict the rate at which unregistered shares held by venture investors can be sold. Factors affecting the performance of public capital markets are too complex and technical for coverage in this paper. For a comprehensive analysis of the market for shares in small firms, and for recommendations designed to improve access to public


markets, see Small Business Financing, the Current Environment and Suggestions for Improvements, prepared by the Joint Industry/Government Committee on Small Business Financing of the National Association of Securities Dealers.

A Look At Equity Capital

Equity capital for established firms originates from two sources: earnings retained in the business and the sale of new shares (including effective equity in the form of subordinated debt and preferred stock with equity participation). Retained earnings are the primary source of new equity for all profitable, growing firms. In the case of life-style and foundation firms it is generally the only source.

Life Style Firms

Established life style firms seldom require new equity in excess of new retained earnings. Growth is limited, by choice or by the market. Adjustments to corporate income tax rates in 1978 permit life style firms to retain additional after-tax earnings and should be adequate to provide for equity requirements.

Foundation Firms

Established foundation firms with growth potential of 10% to 30% per year are critical to New England's economy, do not have access to public capital markets, and invariably require new equity in excess of retained earnings. The absence of a public market for the shares of foundation firms and the moderate growth rate also preclude these firms from acquiring capital from venture capital firms and most SBIC's. The shortage of "junior
debt and equity for small companies growing at a rate too slow to attract venture capital" was identified in T.A. Associates' study of capital gaps in New England.18

Two steps are recommended to relieve this major capital gap. The first recommendation would enhance retained earnings as a source of growth capital. The second recommendation would provide an alternative to public markets and SBIC's as a source of funds.

Corporate Income Tax: To achieve the breadth of investor interest required to support a public market for its shares, a firm must typically generate sales of at least $20 million, and earnings after taxes of at least $1 million. Since firms with profits under $1 million must rely on retained earnings for new equity capital, the most important step the Federal government can take to stimulate the growth of established foundation firms is to extend the benefit of lower income rates from the present maximum of $100 thousand of taxable income to at least $1 million when earnings are retained in the firm to finance growth. This is a proposal for a split income tax rate for growing firms without access to public equity markets. It represents a tax credit for earnings retained to finance growth. Widespread proposals for dividend tax credits would do little to relieve the cash flow problems of growing firms. Proposals for artificially accelerated depreciation

18 Ibid.
schedule would achieve temporary tax relief indirectly, at the expense of unrealistic income and asset measurements. A direct approach to tax reduction for growing firms is recommended. While tax revenues will be reduced in the short run, they will be offset by increased tax revenues in the long run and by the benefits of increased employment, accelerated technological innovation and the multiplier effect of new capital spending. (See the Toscano and Feeney paper for a detailed discussion of the role of taxation in Region I.)

New England Capital Corporation: The second recommendation recognizes that established foundation firms are foreclosed from public equity markets for the same reason they are foreclosed from public bond markets. They are too small to justify the market making costs involved in trading their securities. In view of the importance of foundation firms to New England's economy, it is recommended that the concept of a New England Capital Corporation be revived with public support for operating costs as recommended above and with investment authority to include equity investments in establishment foundation firms. In addition to direct investment in established firms, a New England Capital Corporation with equity investment authority could also acquire shares in seasoned firms from the portfolios of SBIC's and venture capital investors. The prospect of sale to a New England Capital Corporation would add liquidity to venture capital investments in foundation firms and would stimulate the flow of venture capital to such firms. The
investment skills required to manage debt and equity investments in established firms, as opposed to new ventures, are widely available and could readily be acquired by a New England Capital Corporation.

A professionally managed New England Capital Corporation with a portfolio of long term debt and equity investments in established foundation firms would represent a prudent investment vehicle for a fraction of pension fund assets. Modification of ERISA regulations permitting 5% of pension fund assets to be invested directly or indirectly in the securities of small firms would generate a nationwide source of long term capital of about $10 million. By way of contrast, total assets of all SBIC's in the U.S. are slightly in excess of $1 billion, and private venture capital funds total about $2 billion.

High Potential Firms

With access to public markets, the equity capital problems of growing firms with sales in excess of $20 million are less acute than they are for foundation firms. The functioning of the public equity markets for small firms is a national problem examined in depth by the NASD's Joint Industry/Government Committee on Small Business Financing. The Committee's Report contains nineteen recommendations affecting the cost and availability of equity capital.

Public And Quasi-Public Sources of Debt And Equity Capital

Recent years have seen a proliferation of public and quasi-public agencies designed to provide financial assistance for
small businesses and entrepreneurs. Several are themselves entrepreneurial in nature, and the success of these recent experimental and innovative approaches is yet to be determined. The following discussion provides a brief summary of public and quasi-public financing agencies with emphasis upon recent innovative approaches.

1) **Business Development Corporation (BDCs)**

All six New England states support a business development corporation, or development credit corporation. BDC's are usually capitalized by a state's banks, insurance companies, and major corporations. BDCs are designed to promote economic development and job creation by providing medium and long-term loans for promising firms which do not qualify for such loans from conventional lenders. BDC's have been operating in New England for over twenty years with performance ranging from very poor to very good.

2) **Industrial Development Authorities**

In one form or another, each New England state provides financial assistance to promising small firms through mortgage and credit insurance, limited direct lending, and tax exempt industrial revenue bond financing. Industrial revenue bonds are seldom feasible in amounts under $300 thousand due to the substantial fixed costs of issuance, primarily bond counsel fees. Connecticut has designed an "Umbrella Bond Program" to provide tax exempt revenue bond financing for smaller firms.
3) Connecticut Product Development Corporation (CPDC)

CPDC was created in 1972 when a Governor's Task Force for full Employment concluded that some form of state action was required to overcome the investment bias against high risk ventures by small manufacturers and to stimulate industrial expansion and the creation of new jobs. With access to $10 million of state funds, CPDC will finance up to 60% of the development costs of products with commercial potential. Repayment is based on a 5% royalty on sales of successful products. No repayment is required in the case of unsuccessful products. To cover operating costs and losses on unsuccessful products, royalties continue until CPDC has been repaid five times its original advance. CPDC was modelled after Great Britain's successful National Research Development Corporation.

CPDC serves small firms primarily. Through December, 1978, sixteen of eighteen firms financed by CPDC had sales of $5 million or less. CPDC's approach and early results show signs of successful, though conservative, performance.
4) Massachusetts Community Development
Finance Corporation (MCDF)

MCDF was created in 1977 by the Massachusetts legislature and funded at $10 million. It acts as a debt and equity financing resource for both private ventures and community-owned ventures in economically deprived areas served by a federally chartered Community Development Corporation (CDC). Its function is to develop new industries and jobs in areas of high unemployment. Success in such extreme risk investment activities will not be easy to achieve.

5) Massachusetts Technology Development Foundation (MTDF)

MTDF was formed in 1969 as the Massachusetts Science and Technology Foundation (MSTF) to expedite technology transfer and new product development in Massachusetts. Now known as Massachusetts Technology Development Foundation, MTDF administers a $2 million loan pool of Federal funds to be used to stimulate the formation and development of innovation firms.

6) Northern Community Investment Corporation (NCIC)

NCIC is a community development corporation serving the three northern counties of New Hampshire and the three northeastern counties of Vermont. NCIC administers a pool of venture capital funds which it invests in common stock and preferred stock, or subordinated debt with a call on ownership. NCIC takes a risk position and expects to benefit through capital gains. Investments are limited to potentially sound enterprises that offer the promise of growth and stable employment of local
residents. Investment limits are generally between $50 thousand and $250 thousand.

7) Maine Capital Corporation

The Maine Capital Corporation (MCC) and the Maine Development Foundation (MDF) were created in 1977 by the Maine legislature. Both are designed to mobilize private and public resources in a cooperative effort to create job opportunities in Maine. The legislation requires that operating costs of MDF be shared equally by the state and private industry. The purpose of MCC is to provide risk capital to finance new ventures and the expansion of existing ventures. Maine Capital Corporation will be funded from private sources up to a maximum capitalization of $1 million. Investors in MCC will receive Maine income tax credits not to exceed 50% of their investment over five years. MDF and MCC are now in their organizational stages.

The public and quasi-public sources of funds described above are diverse and often not well known, even within their own states. Currently small firms and entrepreneurs have no efficient source of information about these resources or how to access them. As indicated earlier, the most convenient access point for small firms would be the region's commercial bank loan officers. However, for a variety of reasons, this expertise is not widely available. An efficient mechanism for fulfilling the informational needs of both loan officers and small firms could be provided by the Small Business Development Center program concept.
It should be noted that the sources of funds described above have an impact on the region's small firms well in excess of the funds they provide directly. Their financial assistance usually takes a secondary position and thereby acts as leverage for further assistance from more conventional institutions.

Summary And Recommendations

The preceding analysis has focused upon the capital requirements of new and growing foundation firms. Foundation firms, in the manufacturing sector in particular, are important sources of jobs in New England and the development of new technology-based, manufacturing enterprises is expected to be the origin of much of New England's future employment growth.

Established foundation firms encounter problems raising long term debt. The small size of the credits involved relative to public bond underwriting criteria and to the portfolio policies of direct institutional lenders preclude access to these sources of funds.

In the case of risk capital, problems are encountered by new foundation firms seeking venture capital and by growing, established firms seeking equity capital in excess of that provided by new retained earnings. Risk capital problems are the result of the small scale investments required, the absence of public markets for the shares of foundation firms, and the difficulty in raising start-up capital in any amount. In Figure II the shaded areas depict the risk capital gaps in New England.
Risk Capital Gaps In New England

Venture Capital

R & D
- Personal Savings
- Personal Savings and Friendly Sources
- Personal Savings and Friendly Sources

Start-Up
- Personal Savings
- Friendly Sources
- Informal Investors

Early Growth
- Personal Savings
- SBIC'S
- SBIC'S and

Rapid Growth
- Personal Savings and Friendly Sources
- SBIC'S
- Venture Capital Firms

Equity Capital

Nominal Growth
- Retained Earnings

Moderate Growth
- Retained Earnings

High Growth
- Retained Earnings
- Sale of New Shares

Risk Capital Gaps
In the case of lifestyle ventures capital problems are centered around the availability of medium term debt. The problems of high potential ventures, on the other hand, are centered around the availability of high risk start-up financing.

Recommended steps to relieve the capital problems of small firms in New England are summarized below. All recommendations, to meet the needs of small firms, are based on the common goal of mobilizing private capital making private decisions in a competitive market place. Market imperfections and market segmentation impede the functioning of the private capital markets. The costs of overcoming these impediments are substantially exceeded by the public benefits and justify the application of public resources to expedite the flow of private funds to small firms.

Credit Recommendations

1) Establish SBA sponsored Small Business Development centers in each New England state.

2) Expand SBA's 7(a) loan guaranty program by allowing an income tax credit for a fraction of interest earned on 7(a) loans.

3) Establish a publicly supported New England Capital Corporation to provide long term credit for established foundation firms.
Risk Capital Recommendations

1) Amend tax laws to permit deferral of capital gains taxes on sale of investments in small firms when proceeds are reinvested in new small firms.

2) Establish a regional service to facilitate the flow of venture and equity capital from informal investors to foundation firms.

3) Amend SBIC regulations to permit accrual of interest on SBA leverage when proceeds are invested in venture-type securities.

4) Subsidize incremental operating costs of SBIC's investing in smaller firms.

5) Amend tax laws to permit surtax exemptions up to $1 million of taxable income when earnings are retained in the firm to finance operating growth.

6) Establish a privately funded, publicly subsidized New England Capital Corporation with authority to invest in debt and equity securities of established foundation firms.

7) Amend ERISA to permit the investment of 5% of pension fund assets in securities of established foundation firms.
SELECTED REFERENCES


