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University Grant Program Research Report

POLICIES AND PROGRAMMES
FOR THE PROMOTION OF TECHNOLOGICAL
ENTREPRENEURSHIP IN THE U.S. AND U.K.
PERSPECTIVES FOR CANADA

by

I.A. Litvak and C.J. Maule
Department of Economics,
Carleton University.
May, 1975

Rapport de recherche sur le Programme de subventions aux universités

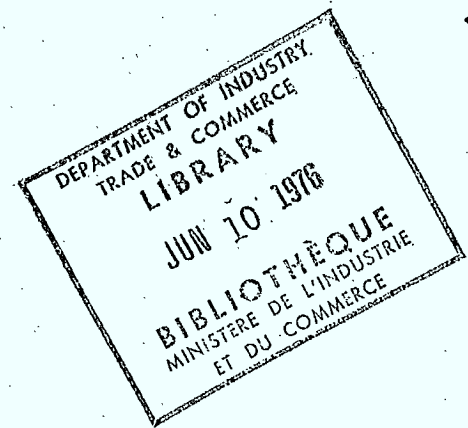


Industry, Trade
and Commerce

Industrie
et Commerce

Office of Science
and Technology
Ottawa, Canada

Direction des sciences
et de la technologie
Ottawa, Canada



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The views and opinions expressed in this report are those of the authors and are not necessarily endorsed by the Department of Industry, Trade and Commerce.

EXECUTIVE SUMMARY

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1. Pioneering research has been undertaken recently in the U.K. into small firms and the small firm sector of the economy. This research emphasizes the contribution of small firms to the economy in general and to technical entrepreneurship and innovation in particular.
2. The approach of this research can be used to formulate comparable research topics in Canada, and to improve on the work already done. Particular attention should be given to analysis which (a) compares the small firm sector to the large firm sector, (b) compares small firms to each other and (c) examines the way in which small firms evolve over time either successfully or unsuccessfully. The significance of this type of analysis is that it will indicate whether greater pay-offs re technical entrepreneurship will more likely occur from policies which promote the small firm sector as a whole, or which promote individual small firms. If the former, then it is necessary to examine the issue of the optimum size distribution of large and small firms in the economy as a whole. If the latter, then it is necessary to know why some small firms are more successful than others, and to know at what stage of their development to provide assistance, and the type of assistance needed. Our earlier research on the start-up of new technically-oriented enterprises in Canada looks at the early stages of the firms development and the type of assistance required. The next requirement is to follow the firms' progress in subsequent years.
3. A development-stage approach to the small firm engaged in technical entrepreneurship is proposed. This approach highlights the characteristics (strengths and weaknesses) and needs of the firm at each stage. Use of this framework of analysis permits the tailoring of assistance to small firms to their particular needs at each stage of their development. It also permits analysis of the effectiveness of existing programmes of assistance.

4. The small firm must be viewed both as a producing unit and often as an object of consumption in the sense that the owner-manager may treat the firm as his hobby-interest and make expenditures, especially the unpaid for use of his services, which certainly in a static sense do not result in production efficiency. The issue here is to know whether allowing and encouraging the technical entrepreneur to pursue his hobby is likely to promote the commercialization of innovations. Again the issue becomes how to spot the winners, especially those that can sustain a firm over a number of years. The U.K. research does indicate how further analysis might be undertaken in order to develop public policies.
5. The U.K. government has judged the small firm sector to be of sufficient importance to implement at once many of the recommendations of these research findings. In some instances, policies have been altered and in other cases new policies have been added. At present it is possible to show why the U.K. altered the policies but insufficient time has elapsed to assess the effectiveness of the new policies. A general point arising out of the U.K. research is that careful consideration has to be given to determining whether support for individual firms, along the line of PAIT, is likely to be more effective than support for small firms in general, along the lines of lower corporate taxation for small firms. In the U.K. the emphasis seems to be on the latter approach.
6. No obvious shortages of venture capital appear to exist in the U.K. The existing institutions have funds available for further financing. There may be a shortage in that their terms of lending are too tough, but in the judgment of a recent report this is not the case.

7. In the U.K. there is a specialized institution set up to handle loans to small firms, the Industrial and Commercial Finance Corporation Ltd. One part of this institution handles loans for technical projects, Technical Development Capital Ltd. The institution was set up as a result of government instigation and is owned by the private clearing banks and the government-owned Bank of England.
8. Despite this specialized institution, the ICFC (Industrial and Commercial Finance Corporation), the small firms' knowledge about it, and other sources of venture capital is abysmally bad. No satisfactory way has yet been found to plug the small businessman effectively into the network of information about capital sources or other services available to him. As in Canada, the U.K. banks have provided little assistance in this regard.
9. The National Research and Development Council plays an important government-sponsored role in financing innovation under its terms of reference. The policy issue here is whether this function should be performed by a special arm of government, or within one of the government departments. The 'special arm' route has the advantage of establishing a core of persons who specialize in innovation. The departmental route has the advantage of concentrating most of the government's relevant financial activity in one place and thus reduces some of the search costs for the potential borrower.
10. The U.K. has recently accorded substantially greater recognition than previously to small firms by the reorganization of government departments. Major recommendations of a recent report have been accepted, and we are now witnessing a rationalization of existing policies, some of which have been terminated and others added.

11. Proposals have been put forward by the Ontario government for the establishment of venture investment corporations along the lines of the Small Business Investment Corporation (SBIC's) in the U.S. These proposals require amendments to federal tax legislation. Before any such proposals are implemented a careful review and analysis of the operation of SBIC's should be undertaken.

12. To-date, it can be shown that SBIC's have experienced severe problems in their evolution since 1958. These problems have been associated with the regulations which have had to be introduced to curb undesirable practices of SBIC's; with the decline in the amount of investments undertaken since 1966; with the violation of regulations; with the restricted coverage of SBIC loans; with the dominance of bank-affiliated SBIC's; and with the lack of efficiency of SBIC's in using their funds for investment purposes. These problems are sufficiently extensive that any duplication of this policy programme in Canada requires very careful consideration.

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PART A

INTRODUCTION

This study is part of a continuing study on "The Climate For Technological Oriented Entrepreneurs in Canada" which has been financially and academically assisted by the office of Science and Technology, Department of Industry, Trade and Commerce. The study to date has provided empirical data about the characteristics of 112 successful Canadian technical entrepreneurs, about the characteristics of their firms, and about their perception of the environment for entrepreneurship in Canada. A unique feature of this study has been that the data were collected and analysed on a regional basis -- Ontario, Quebec, the Prairies, British Columbia, and the Maritimes. In addition, the data collected were examined with respect to a comparison of Canadian and non-Canadian born entrepreneurs.

The following items resulting from this research have been published:

1. "Entrepreneurship, Corporate Citizenship and the Branch Plant", Science Forum, Vol. 4, No. 4, August 1971, pp. 9-12.
2. "Branch Plant Entrepreneurship", The Business Quarterly, Vol. 37, No. 1 (Spring 1972) pp. 44-53.
3. "Managing the Entrepreneurial Enterprise", The Business Quarterly, Vol. 37, No. 2 (Summer 1973), pp. 42-50.
4. "Science Policy, Innovation and the Small Firm", Science Forum, Vol. 5, No. 6, December 1973, pp. 9-11.
5. "Government-Business Interface: The Case of the Small Technology-Based Firm", Canadian Public Administration, Spring 1973, pp. 97-109.

6. "Some Characteristics of Successful Technical Entrepreneurs", IEEE Transactions on Engineering Management, Vol. EN 20, No. 3 (August 1973), pp. 62-68.

Three Working Papers have been submitted to the Office of Science and Technology.

1. Canadian Entrepreneurship: A Study of Small Newly Established Firms, October 1971.
2. A Study of Successful Technical Entrepreneurs in Canada, September 1972.
3. Climate for Entrepreneurs in Canada: A Comparative Regional Examination, January, 1974.

The scope of this study is to examine the nature and effectiveness of that part of the public and private sector infrastructure which is designed to promote technical entrepreneurship in the United States and the United Kingdom.

The comparison of our earlier findings on technical entrepreneurship in Canada with comparable research in the U.K. and U.S. is dealt with in this report in the following way. In Part B, a statistical comparison is made, concerning the characteristics of technical entrepreneurs, their backgrounds, their reasons for starting new companies, the problems they encountered and the environment in which they operated. In Part C, implications for research and public policy are drawn from two recent comprehensive studies of small firms and the small firm sector in the U.K. And in Part D, government assistance to technical

entrepreneurs in the U.S. and U.K. is discussed with special attention given to venture financing and the role of Small Business Investment Corporations in the U.S.

PART B

TECHNICAL ENTREPRENEURSHIP

A COMPARISON OF CANADIAN, U.K. AND U.S. FINDINGS

Identifying and supporting the activities of potentially successful entrepreneurs has become a major concern for an increasing number of governments in developing as well as developed economies. In the case of the latter, even in the "New Industrial State", public policies are designed to increase the pool of entrepreneurs and to promote the formation of certain types of enterprises which foster technological activity. The objective of these policies is to encourage indigenous technological activity and thus nourish and enhance the competitiveness of national firms in the global market place. In the developing economies, the problems of entrepreneurship are more acute. The absence of a viable industrial and private sector, the deficiencies of the existing infrastructure and the often apparent dominance of foreign-owned firms in the local economy tend to have a limiting effect on the capacity of the community to give birth to national entrepreneurs. Thus, the challenge facing the public policymaker in such a community is "to grow an adequate cadre of persons endowed with the qualities for successful business enterprise."¹

Canada, although a developed country, exhibits some of the characteristics reflective of a developing economy: the industrial composition of the economy lacks balance and shows a distinct weakness in the manufacturing sector; foreign investment, primarily U.S., is concentrated in the growth sectors and dominates the high technology industries in the Canadian economy; and, the infrastructure possesses gaps in management, capital and technology.²

In 1971-1972 the authors conducted a survey designed to provide empirical data about the characteristics of successful Canadian technical entrepreneurs, about the characteristics of their firms, and about their perception of the environment for entrepreneurship in Canada. The population examined in that study consisted of 39 entrepreneurs involved in the establishment of one or more technologically based enterprises in the secondary manufacturing sector.³ "A technology-based firm is defined as a company which emphasizes research and development or which places major emphasis on exploiting new technical knowledge."⁴ In 1972-1973 the study was expanded to involve an examination of one hundred and twelve successful technical entrepreneurs and the firms with which they were involved. The term "successful" in the context of this study is seen as the survival of the entrepreneurial operations during the initial (five) years of its operations.⁵ The respondents in our sample satisfied this criteria. All these firms were in the secondary manufacturing sector, and the great majority of them were small with a present annual sales volume of less than one million dollars.

Information about these entrepreneurs and their firms were obtained through a 10-page mail questionnaire, reinforced by 50 personal interviews conducted in the field. A total of 343 questionnaires were mailed to selected entrepreneurs throughout Canada in 1972. 112 questionnaires were found to be useful by criteria of completeness and consistency with selection criteria based on the objectives of the

study. A useable response rate of 33% was achieved through the questionnaire mail-out (this excludes 27 returned questionnaires which were not useable).

The information obtained from the completed questionnaires was coded and cross-classified according to pre-established criteria.⁶ The major classification was country of birth, with the entire sample divided into Canadian and non-Canadian born entrepreneurs. Seventy-three of the respondents were Canadian born entrepreneurs and thirty-nine were non-Canadian born entrepreneurs. In this paper, these findings are compared with comparable studies conducted in the United States and the United Kingdom where data permits.

Entrepreneur's Background

The questions raised in the first part of the questionnaire were designed to obtain some insights into the characteristics of technical entrepreneurs. In short, the focus is on the entrepreneur. At the time the questionnaire was completed, the mean age of the entrepreneurs was 47.4 years, with little difference between Canadian and non-Canadian born entrepreneurs. However, the pertinent point to note is that their mean age at the time they incorporated their first firm was 33. This finding is comparable to the finding of similar studies conducted in the U.S. which note that U.S. technological entrepreneurs tend to be in their middle thirties when they establish their first business venture.⁷

Approximately two-thirds of the entrepreneurs were born in Canada. Of those who were not Canadian born, seventy-five per cent came from Europe, and approximately fifteen per cent came from the United States. Whereas our sample consists of 34.8% non-Canadian born respondents, the population-wide statistic (based on the % of households with heads of non-Canadian origin in 1971), is 23.2%.⁸ Thus, in our sample, persons of non-Canadian origin are over-represented relative to the population.

Fifty-six per cent of the entrepreneurs were of the Protestant faith, 27% were Catholic, 10% were Jewish and the remaining were of other religious persuasions. The comparable census figures for 1971 were:⁹ Protestant 43.6%, Catholic 47.3%, Jewish 1.3%, and others 7.9%. Thus, the Catholics are well under-represented, and those of the Jewish faith significantly over-represented in our sample relative to the Canadian population. There were no notable deviations between Canadian born and non-Canadian born entrepreneurs.

Our breakdown of the respondents' religious faith also resembles the U.S. statistic. For example, 56% of our respondents identified themselves as Protestants, while the comparable figure in the U.S. was 57%. The Catholics in the Canadian sample accounted for 27% as opposed to 19% in the U.S. The breakdown for the Jewish segment was 10% in Canada and 13% in the U.S.¹⁰

An important characteristic of the entrepreneur is that he

is relatively well educated. Slightly less than half of the respondents (45%) were university graduates, the majority (86%) of them in science and engineering fields, largely at the Bachelor's level. This contrasts sharply with the 1965 population statistic for those persons 25 years and over, where only 2.5% had university degrees and 4.2% had some university education.¹¹ Though this figure may have increased in recent years, it is safe to assume that the current percentage is nowhere near 50%. About the same proportion in our sample (46%) had only a primary or secondary education. The remaining nine per cent held technical diplomas.

While studies in the U.S. are not directly comparable due to sampling "biases" introduced by focussing on spin-offs from technical laboratories where a university degree would be expected, they do support two general observations: (a) that technical entrepreneurs, relative to some norm, are well educated, and (b) that their education tends to be in the sciences or engineering.¹²

The most notable difference between Canadian and non-Canadian born entrepreneurs was that all technical diplomas were held by the non-Canadian born group (accounting for 26% of their educational distribution). Moreover, the non-Canadian born group contained 6 per cent more university graduates (49%), and 32% fewer respondents (25.6%) with only primary or secondary education. These relationships are approximately borne out by population-wide statistics (for males in 1967),

broken down into native born Canadians and post-war immigrants. Thus, both in our sample and in the population at large, the non-Canadian born tend to be relatively better educated.

TABLE 1

	NATIVE BORN CANADIANS	POST-WAR IMMIGRANTS
Elementary or Some High School	75.4	62.9
High School	19.8	27.8
University	4.8	9.3
Median Years of Education	9.1	10.0

SOURCE: Computed from Special Labour Force Studies #6: Labour Force Characteristics of Post-War Immigrants and Native-Born Canadians, 1956-67, (DBS, 1968).

Approximately one-half of the entrepreneurs came from families where the father was self-employed. This pattern is echoed in the Canadian/non-Canadian born breakdowns. Relative to the population at large, this may be considered a high proportion. Studies in other countries also bear out this finding. According to D.S. Watkins,

"Since entrepreneurs are more likely than not to come from families in which the father is self-employed, this will reinforce the rate of entrepreneurship. It is certainly the case that British technical entrepreneurs too tend to come from backgrounds in which paternal self-employment played a part."¹³

This statistic is comparable to U.S. findings (50%). With regard to financial status, 62.5% of the entrepreneurs identified their families as being well-off (middle class), 34.8% as poor and 2.7% as wealthy. The distribution for non-Canadian born entrepreneurs is skewed slightly more towards wealthy and middle class and away from the poor.

The mean number of jobs held by the entrepreneurs before establishing their first firm was 3 (most entrepreneurs held 2 jobs with the odd exception of upwards of 10 jobs). A weighted average computed from a U.K. study yields a mean number of about 2.4. That study displayed an equi-modal distribution of # of employers = 1, 2 and 3.¹⁴ There is a slight tendency for non-Canadian born entrepreneurs to change their jobs more often with a mean of 3.46 (jobs held before incorporation) as opposed to 2.87 jobs for Canadian born entrepreneurs. However, for most cases in each category the norm (mode) was 2 jobs. In switching jobs before establishing their first venture, the entrepreneurs exhibited a marked tendency for upward career mobility. Of particular note is the increase in managerial occupations from 4.6% to 38.7% from first to last job.

When comparing Canadian and non-Canadian born entrepreneurs, three points are deserving of mention: (1) the non-Canadian born group tends to have a lower proportion of white-collar jobs, and a higher proportion of blue-collar jobs - a point which is also echoed

in population-wide statistics (see Table 2), (2) the rate of switch out of blue-collar occupations was also higher for this same group.

TABLE 2

	POST-WAR IMMIGRANTS	NATIVE BORN CANADIANS
White Collar	52.4	56.1
Blue Collar	42.0	28.7
Other	5.6	15.2

SOURCE: Computed from Special Studies #6, op. cit.

In general, the types of occupation held by the respondents were significantly different from that held by their fathers. Relating this point to the entrepreneur's "poor" to "middle class" socio-economic background, and taking note that this study surveyed only successful entrepreneurs, this implies that there is a significant and early break by the entrepreneur from his family socio-economic background.

It has been suggested that entrepreneurial fathers are more likely to produce entrepreneurial sons because of the demonstration effect. For example, family conversations about business may spark interest on the part of children to consider the merits of being self-

employed. This suggestion would appear to be borne out by the finding that 50% of our respondents had fathers who were self-employed. This figure is very high compared to what one would expect from a census sample. This observation, however, is not necessarily related to the entrepreneur's ultimate success (or lack of it). With reference to 50% of the respondents whose fathers were not self-employed, a U.S. study may shed some light: "Over half of the entrepreneurs referred to deprivation in early years and their determination to overcome its effects ... only two entrepreneurs (out of twenty) referred to a positive paternal influence as causing their development in this direction."¹⁵ One might draw from this that entrepreneurial motivation may derive both from positive as well as negative conditions. Though self-employment and relative well-being may provide the incentive for entrepreneurship, the absence of these conditions does not imply that the incentive is withdrawn - only that it becomes a different one. This observation may apply further to our sample to the extent that a significant proportion (34.8%) came from backgrounds identified as "poor".

Establishing the First Company

The second part of the questionnaire dealt with the events leading up to the establishment of the entrepreneur's first company. It has often been argued that profit maximization underlies the private enterprise system. However, the entrepreneur is motivated by other

factors as well. For example, Professor McClelland has found that the typical entrepreneur is motivated by the "need for achievement" (n'ach) rather than by the need for power.

Since McClelland's work has become a point of departure for numerous other studies on the subject, his concept of n'ach calls for some elaboration. McClelland's entrepreneur is "the man who organizes the firm (the business unit) and/or increases his productive capacity."¹⁶ The presence of the n'ach motivation equips an individual particularly for the entrepreneurial role which provides him with more opportunities for making the most of his talents than do other jobs. The entrepreneurial personality is recognized by three characteristics. (a) He favours situations in which he takes personal responsibility for finding solutions to problems.¹⁷ The entrepreneur does not relish situations where the outcome depends not on skill and effort but on chance or other uncontrollable factors. The idea of winning by chance simply does not produce the same achievement satisfaction as winning by one's own efforts. (b) The entrepreneur tends to set moderate achievement goals and to take "calculated risks". By avoiding those choices which lie at either end up the risk continuum, he stands the best chance of maximizing his sense of personal achievement.¹⁸ (c) The man with a high level of n'ach also wants concrete feedback as to how well he is performing; he has a compelling interest to know whether he was right or wrong.¹⁹

There are two points to be made respecting the above three characteristics. First, each trait gives the individual personal achievement satisfaction; second, each characteristic would seem to suit men unusually well for the role of business entrepreneur. Also, it was found that high need achievers were willing to work harder and persisted longer.²⁰ They tended to be self-confident, to select meaningful personal goals, accept responsibility for failure, and have greater skill "in a more active entrepreneurial exploration of their environment for opportunities and resources."²¹

What role does money play as a motivating force? McClelland argues that profit is not a major concern with high need achievers who work for satisfaction and not simply for the sake of money.²² Rather money performs a feedback function in that it is a symbol that proves one is achieving.

In order of importance, our study found the following principal features most attractive with having one's own enterprise: (a) the challenges; (b) being one's own boss, and (c) the freedom to explore new ideas. It should be noted that the relative percentage figures for (b) and (c) are so close (26.6% and 23.4% respectively) that the difference of rank cannot be considered statistically significant. However, "challenge" with a relative percentage of 28.8% stands out as the most significant reason for incorporation. In absolute terms, 74% of all respondents made mention of this reason, whereas approximately 50% of the respondents mentioned the other two prime reasons.

Thus, our findings confirm McClelland's contention that profit in money terms is not the primary factor which motivates the entrepreneur.

A similar study in the U.K. found the major two (and similarly ranking) motivating factors to be: "Desire for independence" and "Desire for increased job satisfaction", followed, by a significant margin, by "A release for creative urges" and "Financial motivation". The only significant difference with our study is the financial rewards aspect. The other areas, though they do not all correspond precisely to our wordings (the meanings are similar) would indicate that our study has captured some of the characteristics of entrepreneurs "in general".²³

Some interesting differences can be noted when comparing the reasons for incorporation between Canadian and non-Canadian born entrepreneurs. Whereas the relative percentage difference between "being one's own boss" and "the freedom to explore new ideas" becomes even smaller than the sample average for Canadian born entrepreneurs, it becomes large and statistically significant (30.5% and 23.6% respectively) for the non-Canadian born group. This greater emphasis on "being one's own boss" does not take place at the cost of the other prime reasons, but shows up mainly in a lower percentage of respondents who mention salary as a motivating factor (5.2% vs. 19.2% in absolute terms). In general, the non-Canadian born group tends to concentrate slightly more on the three prime reasons mentioned above.

There were many specific events precipitating the entrepreneur to leave his former company. These typically included: learned of a market for his new ideas; learned of possible financial backing; a new breakthrough or new idea; and, acquisition of partners to join a venture. Using only those events which received mention by more than 10% of the respondents, we obtain the following ranking in order of importance: (1) learned of a market for his idea (30.4%); (2) a new breakthrough or idea (21.4%); (3) acquisition of partners to join venture (20.5%); (4) learned of financial backing (19.7%); (5) personal conflict in last job (12.6%); and (6) taking up partnership in a new enterprise (11.7%). It should be noted that approximately one-third of the responses were not covered by our list of events (i.e., were categorized as "other"). Whereas the most important reason "market for idea" refers primarily to the development of a new market segment for an existing product, the second most important reason "new breakthrough" refers to a new product being sold in existing or new market segments.

The following table provides a comparison of the rankings of the importance of the various "events" to Canadian and non-Canadian born entrepreneurs. The "events" are listed in the order of their rank in the total sample.

<u>EVENTS</u>	<u>RANK</u>	
	<u>CANADIAN BORN</u>	<u>NON-CANADIAN BORN</u>
Market for New Ideas	1	2
New Breakthrough	4	1
Acquired Partners	3	3
Financial Backing	2	-
Personal Conflict	-	3
Take Up Partnership	5	5

The significant observations to note are as follows: (1) "new breakthrough" becomes the single most important event for non-Canadian born entrepreneurs and drops significantly to the bottom of the list for Canadian born entrepreneurs; (2) "financial backing" becomes much more important for Canadian born entrepreneurs and drops off the list for the non-Canadian born group; and (3) "personal conflict" becomes more significant for the non-Canadian born group and drops off the list for the other group.

Among those respondents who had a new idea or product to develop, 83.7% felt that their last employer would not have allowed them to exploit their new product ideas in their organizations. Though these respondents felt obliged to resign from their former employers in order to pursue their new product developments, this did not always result in a complete break in their relationships. It was not uncommon

for some of these entrepreneurs to become suppliers to their former employers. Of the two groups of entrepreneurs, the non-Canadian born were all (100%) convinced that their former employers would not have permitted them to develop their projects. The percentage figure for the Canadian born group was 76.6%. Of the sampled entrepreneurs, 70.5% established firms with "significant" technological content. The criteria for determining "significant" include some or all of the following: completely new technology, design variations for existing technology, and exploitation of technology requiring relatively high fixed capital investment.

There is no significant difference between the Canadian and non-Canadian born groups, although the foregoing comments would lead one to expect otherwise. This lack of difference can be explained primarily by the way in which "significant technology" is defined to include cases of high fixed capital investment. In such cases, no "product breakthrough" need be implied. If this definitional characteristic is in fact the explanation for this unexpected equality of "significant" technological content, then this would suggest that Canadian born entrepreneurs tend to enter more capital intensive industries.

Our study confirms findings for the U.S. which show that most entrepreneurs form their first company after they have acquired some operating experience in industry. In addition, there appears to be a considerable amount of technology transfer from their former employer's

organization. In other words, the fledgling entrepreneur usually tries to exploit that which "he knows best". This finding is indicated in the extent to which the entrepreneur's choice of industry is related to his previous job experience and education. About 60% of the respondents chose industries that were related to their last job, and 47% chose industries that were related to their education. This would point to previous job experience as a prime factor in determining the industry in which the entrepreneur will be operating. With reference to both last job and education, the non-Canadian born group displayed a greater degree of association between previous experience and choice of industry in which they established their first firm. Within the non-Canadian born group, 68% of the respondents chose industries related to their last job; for the Canadian born group the figure was 55%. Similarly, 61.5% of the non-Canadian born entrepreneurs chose industries related to their education; the figure for the Canadian born group was only 39%.

Fifty-six per cent of the entrepreneurs established their first firm with partners. This pattern is comparable to the findings for the U.K. and the U.S.:

"Fifty-five per cent of the Founding Your Own Business (FYOB) sample have formed or intend to participate in the formation of companies having multiple founders (N=46), compared (for example), with 48% in Austin, 61% in Palo Alto." 24

We find a significantly greater tendency for non-Canadian born entrepreneurs to "go it alone". Of the latter group 63.2% established their first company on their own. This was true for only 34.2% of the Canadian born group. While the majority (70.6%) of the first firms were established in metropolitan areas, most of them (63.4%) were not situated in the same area as the entrepreneurs' first eighteen years of residence. There was a tendency for both entrepreneurial groups to locate in metropolitan areas, but, as might be expected, a larger proportion of the non-Canadian born group situated their first firm in areas different from their first eighteen years of residency.

The typical first company was financed largely through personal savings, bank loans, and loans from friends and relatives (in that order of importance). It should be noted that venture capital firms represent a relatively unimportant source of financing. Personal savings provided a larger proportion of the financing for the non-Canadian born group, apparently at the cost of venture capital and other equity financing sources. Canadian born entrepreneurs employed five times as much equity financing as non-Canadian born entrepreneurs. An interesting phenomenon to note is that non-Canadian born entrepreneurs made greater use of government grants as a source of funds for establishing their first firm, than did Canadian born entrepreneurs (13% as opposed to 8%).

Some form of government grant was received by 52% of the respondents. Most of these grants (90%) were federal, and eighty per cent were technical in nature. While our study does not permit us to judge specifically what proportion of the 48% (who did not receive any form of government assistance) can be attributed to lack of awareness, it is felt that this factor played a minor role. While 56% of the Canadian born respondents received some form of grant, the percentage for non-Canadian born entrepreneurs was 44%.

In the course of establishing and managing their first venture, the respondents overwhelmingly identified finance as the key problem area. This holds true for both groups of entrepreneurs. Our finding is quite comparable to similar studies in the U.K. where 33% (compared to our 38%) identified financing as a major problem. For the U.S., comparable studies (Lincoln and Instrumentation Laboratory "spin-off" samples) turn up percentages in the 6-15% range.²⁵ The second critical problem area given equal rank by both groups of entrepreneurs is that of selling. The third ranking problem was in the area of managing personnel. It is of note that the non-Canadian group felt the personnel problem more acute (41% as opposed to 30% for the Canadian born group.)

The great majority (78%) of the entrepreneurs formed more than one company. A number of the respondents had in excess of ten operating firms. Professor Cooper notes that "Past entrepreneurship also generates experienced entrepreneurs ... Eight of the 30 companies in the Palo Alto area were founded by men who previously had been in the founding groups

of other companies ... Without exception, these men stated that it was easier to start a company the second time, both in regard to making the decision psychologically and in knowing what was involved in launching a firm."²⁶ The mean number of firms formed in our sample was 3.25, with an average of 2.87 still in operation. Of the firms no longer in operation (11.7%) due to sale of company, commercial failure and/or merger, about 80% were first companies.

Since these entrepreneurs were successful with their subsequent ventures, this might imply some support for Cooper's comment that subsequent firms are more readily established (and in these cases more successful). Entrepreneurship would thus appear to involve a certain amount of learning through trial and error. The difficulty lies in identifying (especially as a policy-maker or venture capitalist) those who have learned through their failures and are more likely to be successful because of those experiences, and separating them from the "wishful thinkers".

Canadian born entrepreneurs tended to establish a greater number of firms (mean = 3.5 as opposed to 2.9 for the non-Canadian born), but also had a lower percentage of companies still operating (85.7% versus 93.1% for the non-Canadian born group).

The most popular pattern of corporate expansion is the mini-conglomerate, closely followed by horizontal integration, each accounting for about one-third of the respondents. While an approximately equal proportion of both groups established more than one company,

the non-Canadian born group of entrepreneurs tended more towards horizontal integration (35.1% versus 23.9%), and made more use of vertical integration (18.9% versus 11.3%). The Canadian born group favoured the mini-conglomerate (38% versus 21.6%).

The Environment for Entrepreneurship

The primary objective of the third part of our survey was to gain an appreciation of the entrepreneurs' perception of the problems affecting their activities, as well as to elicit their views on the type of policies that should be introduced to promote a healthy entrepreneurial climate. A number of open-ended questions were listed to allow the respondent to tackle each question in an unstructured fashion. The areas included venture capital, government policies designed to stimulate the formation of new enterprises, the marketing of new products, and measures aimed at promoting Canadian entrepreneurship. Our interpretation of these comments recognizes that they reflect the abilities and characteristics of the entrepreneurs, as well as the environment in which the entrepreneurs operate.

It was noted earlier that the financing of entrepreneurial operations was viewed by the respondents as the single most important problem. This consensus again emerged in the entrepreneurs' responses to the issue of obtaining venture capital. Approximately eighty per cent of the entrepreneurs identified at least one specific problem they had encountered in raising venture capital. Eighty per cent of

those identifying a specific problem explained it in terms of the conservatism of Canadian financial institutions. The symptoms of this conservatism were usually identified as financial institutions charging a relatively higher interest rate to smaller ventures, and a greater over-all reluctance to issue loans to smaller firms. This point was reinforced by the fact that many of the respondents either found or perceived capital to be more readily available on better terms in the United States.

This perception is borne out by the Gibbons and Watkins findings and reinforced by the observation that "The largest factor impeding the successful development of commercially exploitable ideas in the U.S.A. was found to be a lack of the time and facilities to develop the ideas further, while in the U.K., the largest single factor was lack of adequate finance."²⁷ There is further evidence to support the contention that not only is venture capital more readily available to U.S. firms in the U.S., but also to subsidiaries of U.S. firms in Canada.²⁸

In approaching financial institutions in Canada, the entrepreneurs felt this conservatism to be manifested in what were perceived to be "unreasonable" conditions for granting loans to small firms. The experiences of the entrepreneurs suggested that they were obliged to "prove" the ultimate commercial success of their ventures before establishing eligibility for a loan. This they felt to be inconsistent with the very risk-taking nature of entrepreneurial ventures. Further-

more, they echoed a familiar small business complaint that "to get the loan you have to prove that you don't need it". In short, it was felt that the conservatism of financial institutions led them to avoid both financial and commercial risks associated with any small business venture. This contention finds reflection in the observations made by the Watkins task force which charged that financial institutions in Canada failed to mobilize sufficient savings for entrepreneurial investment.²⁹ Not all evidence, however, unanimously supports this view. Numerous financiers have argued that at least part of the problem is the small firm's inability to make effective use of the existing financial resources. Thus, as noted previously, it is not surprising that personal savings, and loans from friends and relatives were such important sources of finance. Even when granting financial support through loans, financial institutions (chartered banks, in particular) did not escape criticism because of the "unfavourable" terms under which the financing was extended.

Many entrepreneurs commented that there is no general shortage of capital, but that too little of it is being channelled into entrepreneurial ventures in the form of risk capital. In addition, the terms under which such venture capital can be obtained, whenever it is granted, are unduly costly and constraining. This latter point is most often made when commenting on the equity control and management participation demanded by venture capital firms as a pre-condition

for granting financial assistance.

The demand for some equity, and perhaps management participation, however, is by no means unique to Canadian venture capital firms. This holds true for venture capital firms in the U.S., U.K., and particularly Sweden. Perhaps the following quote will put this characteristic into perspective:

"Venture capital firms generally have the same objective -- to earn capital gains by aiding the development of a young company. This means that the venture capitalist becomes a partner exposed to the same risks and the same opportunities as the entrepreneur himself. After helping the young company grow to the point where its shares can be traded publicly or it can be absorbed by a larger company, the venture capitalist sells his interest for a gain."³⁰

The desire for equity and management participation is also based on the venture capitalist's concern for his client's management capability.³¹

The extent of equity and management participation common among the U.K. and other European venture capital firms is illustrated by the following: (1) EED (European Enterprises Development) demands typically 25% equity participation and an active and continuing involvement in the management of the firm; (2) TDC (Technical Development Capital) aims for similar equity participation but places less emphasis on management participation; and (3) Incentive AB of Sweden pursues the policy of taking control of the ventures it invests in.³² Although entrepreneurs have tended to associate initial equity participation by venture capitalists with control or even

"takeover", the point is made that there need not be a fixed relationship between equity investment and management control. Nonetheless, it is true that "A venture capitalist is not just another stockholder who never attends meetings. He acts both as a businessman and as a banker. In the business in which he purchases an interest, he will be an associate in the fullest sense of the word."³³ As a general rule, the more competently a firm is managed the less inclined the venture capitalist will be to translate his interest into control. Moreover, the venture capitalist's involvement may also reflect the provision of management expertise as part of his investment package.

With this perspective we might make some comments on the remarks of our respondents. Where complaints were voiced about venture capitalists they were with regard to equity and management participation or the "unfavourable" terms on which the venture capital had to be obtained. One might criticize this type of remark on the grounds that it represents a "having-one's-cake-and-eating-it-too" attitude. Equity participation and higher rates are an integral part of the venture capital business. It is neither evidence that they are being "unfair" or that Canadian venture capital is less palatable than American or European. One might speculate that where Canadian entrepreneurs are dissatisfied with venture capital, it is, at least in part, a reflection of their: (a) misunderstanding of what "venture capitalists" are about, and (b) underestimation of

the riskiness they represent as an investment. This all leads us to comment that the issue is not one-sided, that perhaps both sides need some "educating".

Marketing related problems (sales and product distribution) constituted the second most critical problem area in managing entrepreneurial operations. Many of the respondents (24%) argued that the Canadian market was too small and dispersed and 20% found that Canadian customers -- consumers and industrial users -- were unwilling to purchase goods which have not received the prior seal of approval through customer acceptance in the U.S. The foregoing criticism was viewed as the major marketing obstacle to the introduction of new products by entrepreneurs in Canada. While this observation may be valid, it also signals a major shortcoming on the part of Canadian entrepreneurs. Few of them conduct any marketing research before making the decision to commercialize their product idea. Market assessment in terms of size and customer acceptance is virtually absent in their "technical" feasibility studies. This is one of the chief reasons underlying the fact that sales performance of their "new" products seldom achieve their initial sales projections. In fact, most of the respondents who had no specific comment or felt that their operations were free of "marketing" problems (55%) displayed a distinct lack of understanding of the "concept of marketing" and the implied problem areas. This contention receives support in a government study of failures under PAIT which identified "marketing

as the main problem area".

Several differences between Canadian and non-Canadian born entrepreneurs should be noted. Among the non-Canadian born group, a larger proportion (62% as opposed to 50% for the Canadian born group) had no comment or felt there was no problem. Of those who mentioned specific problems, the non-Canadian born group placed greater emphasis on the dispersion and small size of Canadian markets (28% as opposed to 22%), and paid much less attention to consumer conservatism (10% as opposed to 26% for the Canadian born group). Given the greater experience with markets other than the Canadian one (62% had job experience outside Canada, whereas only 12% of the Canadian born group had acquired such experience) -- usually European markets -- and the nature of the comments, two deductions might be suggested:

- (a) the perception of Canadian born entrepreneurs is influenced largely by comparisons exclusively with U.S. markets,
- (b) their more critical appraisal of the Canadian consumers may be partly a result of their more limited perspective.

Respondents addressed themselves primarily to government conservatism (27%) and taxes (29%) as the key problems of the policy environment for entrepreneurship in Canada. In the area of taxation most respondents made a distinction in their comments between the

level of taxes and the structure of the tax system. Comments on tax structure were usually linked to incentive systems directed at promoting innovation and entrepreneurship. Most respondents favoured tax relief for start-up ventures and new product projects as opposed to government grants. With respect to level of taxes, the criticism was two-fold: too high for firms with low sales volume, and generally, too high for business. The latter criticism was more frequently linked to a general anti-government bias. Favoured treatment of larger businesses in granting monies was seen as the major dimension of government conservatism. Criticism in this area was similar to that of Canadian financial institutions. Generally speaking, non-Canadian born entrepreneurs appeared to be more worried about the level of taxes, and less concerned with the structure of the tax system.

In the light of their experiences, the respondents were asked to comment on the measures which should be taken to promote the environment for entrepreneurship. It was noted earlier that the respondents regarded lack of venture capital and high taxes as the two major obstacles to the formation of new enterprises. It is therefore not surprising that most of the respondents centered their recommendations on increasing the supply of venture capital, by altering the attitude and structure of Canadian financial institutions, by lowering the tax base for new ventures, and by providing incentives through tax relief rather than grants. Tax relief in those circumstances where the corporation is in its embryonic stage and has no taxable income might

be undertaken by permitting the entrepreneur to offset his initial losses against his other income sources, including salary earned while employed simultaneously in another organization. A significant number of respondents also favoured a general reduction in government involvement or an increase in government business expertise.

Recommendations by Canadian and non-Canadian born groups on the tax issue were a reflection of the relative importance which they attached to this area as a policy problem. The non-Canadian born group had emphasized the level of taxes. Thus, their major tax recommendation was to lower the tax burden. Similarly, since the Canadian born group had placed relatively more emphasis than the non-Canadian born group on tax structure, their prime recommendation with regard to taxes was to change the tax structure. The Canadian born group was more in favour of reducing government involvement and the impact of trade unions (i.e., all forms of "countervailing power"). On the other hand, non-Canadian born respondents were far more concerned about increasing the level of government business expertise. Perhaps, this attitude is a reflection of the "European" background where government-business co-operation is more acceptable, and the role of the union tends to be viewed in a less antagonistic fashion.

It is evident that there is a close correlation between the way in which entrepreneurs view the "policy environment" and the

the recommendations they make to improve that environment.

It is not entirely speculative that the backgrounds of the entrepreneurs have a significant impact on the Canadian and non-Canadian born differences in perception of the problems and the recommendations designed to alleviate them.

FOOTNOTES

1. See statement by Sir Arthur Lewis, "The Shortage of Entrepreneurship", Third Annual Meeting of the Board of Governors, Caribbean Development Bank, Jamaica, April 26th, 1973.
2. See Foreign Direct Investment in Canada, Ottawa, Information Canada, 1972 and A Science Policy for Canada, Report of the Senate Special Committee on Science Policy, Ottawa, Queen's Printer, 1970, Vol. I, p. 151.
3. See I.A. Litvak and C.J. Maule, "Some Characteristics of Successful Technical Entrepreneurs", IEEE Transactions on Engineering Management, Vol. EN 20, No. 3, August 1973, pp. 62-68.
4. A.C. Cooper, "Incubator Organizations, Spin-Offs, and Technical Entrepreneurship", in Proc. Indiana Academy of the Social Sciences, 3rd Series, Vol. 4, April 1970, p. 33.
5. E.B. Roberts, "How to Succeed in a New Technology Enterprise", Technology Review, December 1970, p. 22.
6. The SPSS (Statistical Program for the Social Sciences by McGraw-Hill) was used to process the findings.
7. See E.B. Roberts and H.A. Wainer, "Some Characteristics of Technical Entrepreneurs", IEEE Transactions on Engineering Management, Vol. EN-18, August 1971, pp. 100-109.
8. Statistics Canada, Census of Canada, 1971, "Households: Households by Size", Cat. 93-702, Vol. II - Part:1, (Bulletin 2.1-2) and "Households - Households with Immigrant Heads", Cat. 93-706, Vol. II - Part:1, (Bulletin 2.1-6), Information Canada, Ottawa, 1973.
9. Statistics Canada, Census of Canada, 1971, "Population: Religious Denominations", Cat. 92-724, Vol. I - Part:3, (Bulletin 1.3-3), Information Canada, Ottawa, 1973.
10. E.B. Roberts and H.A. Wainer, op. cit.

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11. Dominion Bureau of Statistics, Special Labour Force Studies, No. 1: Educational Attainment of the Canadian Population and Labour Force/1960-65, Cat. No. 71-505 Occasional, Queen's Printer, Ottawa, 1966.
12. E.B. Roberts, "How to Succeed in a New Technology Enterprise", op. cit., pp. 24-25.
13. D.S. Watkins, "Technical Entrepreneurship: A CIS-Atlantic View", R & D Management, Vol. 3, No. 2, February 1973, p. 66.
14. Ibid, p. 66.
15. J.A. Horneday and C.S. Bunker, "The Nature of the Entrepreneur", Personnel Psychology, Vol. 23, No. 1, 1970, p. 51.
16. D.C. McClelland, The Achieving Society, Princeton, N.J.: Van Nostrand, 1961, p. 10.
17. D.C. McClelland, "Business Drive and National Achievement", Harvard Business Review, July-August, 1962, p. 104.
18. Ibid, p. 104; and H.A. Wainer and I.M. Rubin, "Motivation of R & D Entrepreneurs: Determinants of Company Success", I. (Revised), Research Paper, M.I.T., 1967, p. 1.
19. Ibid, p. 105.
20. See D. Weiner and A. Kukla "An Attributional Analysis of Achievement Motivation", Journal of Personality and Social Psychology, Vol. 15, No. 1, 1971, pp. 1-20.
21. R.C. Hodgson, "Who are the Achievers and What Motivates Them", The Business Quarterly, Spring 1971, pp. 17-23.
22. D.C. McClelland, "Business Drive and National Achievement", op. cit., pp. 105-106.
23. D.S. Watkins, op. cit., p. 67.
24. Ibid, p. 66.

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25. See M. Gibbons and D.S. Watkins, "Innovation and the Small Firm", R & D Management, Vol. 1, No. 1, October 1970.
26. A.C. Cooper, "Entrepreneurial Environment", Industrial Research, September 1970, p. 75.
27. M. Gibbons and D.S. Watkins, op. cit.
28. M.R. Hecht and J.P. Siegel, "A Study of Manufacturing Firms in Canada: With Special Emphasis on Small and Medium Sized Firms", Toronto, University of Toronto, Faculty of Management, Working Paper, 1971, p. 41.
29. See Foreign Ownership and the Structure of Canadian Industry, Report of the Task Force on the Structure of Canadian Industry, Ottawa, Ontario, Queen's Printer, 1968.
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32. R. Winsburg, "Financing the Entrepreneur", Management Today, October 1968, p. 77.
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PART C

PUBLIC POLICY AND SMALL FIRM ANALYSIS

WITH SPECIAL REFERENCE

TO TECHNICAL ENTREPRENEURS

The small firm sector has received little attention in the study of industrial organization, either from a theoretical or empirical point of view. This situation has been altered in part as a result of recent pioneering research in the U.K. Amongst other issues, this research has examined the contribution of individual small firms and the small firm sector to the economy in general, and to technical entrepreneurship in particular. Our purpose is to relate the findings of this research to our findings on the subject of technical entrepreneurship among small firms in Canada, in order to discuss their policy implications.

The term "technical entrepreneurship" in the present context has been explained as follows:

"The firm is started by two founders, both of whom are in the middle thirties. One usually can be described as the driving force. He conceives the idea and enlists the other founder. They come from the same established organization, which is where they got to know each other. Either both are in engineering development, or one is in engineering and the other is a product manager, or in marketing. Often they have achieved significant prior success, with titles such as Section Head, or Director of Engineering, being common." 34

Reference will be made to two U.K. studies: the

first, government sponsored, is entitled Small Firms: Report of the Committee of Inquiry on Small Firms,³⁵ hereafter referred to as Bolton, and the second, a private study by J.S. Boswell entitled The Rise and Decline of Small Firms,³⁶ hereafter referred to as Boswell. While the general subject matter of the two studies is the same, the sample of firms studied in each case varied.³⁷

The methodological approach of Bolton can be described as inter-sectoral, while Boswell's is inter-firm. Bolton examines and emphasizes aspects of the small firm sector of the economy, noting the contribution of this sector to the economy, and contrasts it to the role and contribution of the large firm sector. Boswell, on the other hand, emphasizes the differences between firms in the small firm sector, finding that some are much more dynamic and efficient than others, and attempts to classify these differences by examining internal managerial aspects of small firms as well as external factors. It is not surprising, therefore, that their policy recommendations vary, with Bolton emphasizing measures which apply to the small firm sector as a whole, and Boswell suggesting measures which discriminate between firms in the small firm sector.

These two methodological approaches are, in fact,

complementary and need not produce conflicting policy recommendations if they are carefully integrated, with one set of measures aimed at the environment of the firm and the other at the firm itself. They represent two different but useful ways of throwing light on small firms and especially on entrepreneurial activity.

A second methodological issue is illustrated by the two studies. In order to examine small firms or the small firm sector, use is made of comparative time series analysis, which looks at the small firm sector or a cross-section of small firms at different points in time. For example, Bolton shows the decreasing size of the small firm sector over time from 1924 - 1968.³⁸

The difficulty with this approach is the problem of attempting to generalize about objects which are changing by observing them at a point in time. Most small firms, like other firms are in a constant process of change, growing or shrinking, becoming more or less efficient, experiencing different kinds of managerial, financial and marketing problems. In order to understand the conditions of and possibilities for small firms, not only is it necessary to know the attributes of existing small firms, which are observed at a given point in time, but also what happened to those small firms which became

large and those which went out of business. An understanding of the viability of small firms thus requires not only comparing existing small firms to existing large firms (Bolton), and comparing existing small firms to each other (Boswell), but also comparing existing small firms to those firms that once were small and no longer are for reasons of growth-takeover or failure-liquidation.

A third methodological approach would therefore be the development of a life-cycle or evolutionary-stage approach to the analysis of small firms. Boswell's study goes part way to this end. It does examine in detail the reasons for the decline and increasing inefficiency of certain existing small firms, and it does deal with the question of takeovers of small firms, and the motivations of the founders of new small firms. That is to say, while looking at existing small firms, Boswell does attempt to show why some are born, grow and decline. But there is no comparison of existing small firms with those no longer in existence for one reason or another.

The significance of such details is illustrated by the following example. The number of small firms in the U.K. was observed to decline over time. This decline

may be due to a decline in the number of new entrants or an increase in the number that exit for reasons of growth, takeover, failure or voluntary liquidation, or due to an increase in the rate of exit relative to the rate of entry. Unless it is known what happened to the would-be entrants or to those that exited, only partial information is available about the small firm sector. It may be, for example, that the efficiency of the small firm sector is increasing over time, and that the smaller size of this sector is being accompanied by an improvement in the way in which resources are used in the sector. Inter-temporal comparisons of the existing stock of small firms should throw light on this question, but given the difficulties associated with evaluating accounting information, particularly in small companies,³⁹ it would be useful to know the characteristics of those small firms no longer in existence as well as those that do exist. The observed part of the iceberg provides only partial information for the navigator in small firm analysis.

In fact, research into the whole question of why the small firm sector is declining would probably throw considerable light on the nature of the sector

itself. There are a large number of hypotheses that need testing, some of which relate to the characteristics of existing firms, which are discussed by Bolton and Boswell, but others which concern firms which are no longer small firms.

The foregoing suggests an approach to the analysis of small firms that integrates the sectoral approach of Bolton with the firm approach of Boswell, but extends the analysis to incorporate concepts involving the evolutionary development of firms.

Stages of development might include:

STAGE 1 Events leading up to the establishment of the small firm.

The idea for establishing the new firm is hatched with preliminary consideration given to technical, financial, marketing and management requirements; the process of and requirements for incorporation are discussed.

STAGE 2 Events associated with the birth of the small firm up to the time when substantial additional managerial and financial resources are required.

The firm is started with an initial amount of financial and managerial inputs. Output is produced and sold so that a cash flow is generated.

STAGE 3 Events associated with the expansion of an ongoing firm.

The firm becomes a commercial success in that its output expands, but perhaps not a financial success. Typically, the firm needs to alter both its financial and managerial structure if it is to adapt to its commercial success. The original founder-owners now find

that to continue they must either expand the management team and sell off part of the equity, or they must sell out completely. Failure to respond in either of these ways tends to result in both commercial and financial failure. This third stage may coincide with a family generation change whereby the founding generation has to hand over to the next generation.

At each of the three stages, a different set of problems is encountered. Stage 1 requires search behaviour with respect to the organizational, financial and managerial requirements necessary to establish a new firm to develop the idea. Costs are thus incurred in collecting information. The reasons for the technical entrepreneur establishing a new firm have been examined in our studies of the characteristics of entrepreneurs and their reasons for starting new enterprises.

In order of importance, our study found the following principal features most attractive with having one's own enterprise: (a) the challenges, (b) being one's own boss, and (c) the freedom to explore new ideas.⁴⁰ A similar study in the U.K. found the major two (and similarly ranking) motivating factors to be: "desire for independence" and "desire for increased job satisfaction."⁴¹

At Stage 2, the commitment to establish the new firm has been made and the requirement is for creating a

financial and managerial organization which can handle the on-going operations of the firm. Typically, there will exist a lack of managerial balance in the organization. If the founder is a production man, he will be weak on finance and marketing; if a finance or marketing man, he will likely be weak in the other areas. The tendency will be to underplay the importance of the management areas in which there is weakness, and not to complement strength in one area with strength in the other areas. Education is therefore required to assist the firm to balance its managerial structure. The start-up problems encountered by technical entrepreneurs in Canada have been examined in our studies. The key factor stressed is the problem of financing.⁴² A similar situation exists for U.S. and U.K. findings.

By Stage 3, the firm has survived to the point of requiring an injection of additional capital and a restructuring of its organization. Strong resistance to change on the part of the original owner-managers is often displayed, especially with respect to the possible dilution of their equity position. In addition, the acquisition of new management or the handing-over to

younger members of the family often presents problems.

Different types of venture financing are appropriate at each stage. Stage 1 requires equity investment to develop the product idea, product, process or service to a point where the market is defined. Stage 2 requires development financing associated with commercialising the project profitably. And Stage 3 would involve expansion financing designed to assist an on-going operation to realize the full market potential, at home and abroad, for its product.⁴³

At any point in Stages 2 and 3, the firm can fail, or by Stage 3, the firm may make the necessary adjustments and move out of the small firm category either by continuing to grow or by being acquired. "Turn Around" or "Buy Out" financing would be required under these circumstances.⁴⁴

It has been noted that small technical firms which survive the initial five years of their operations are viewed as being successful and will continue in existence.⁴⁵ All three stages will have been experienced in that period of time.

The evolutionary-stage approach channels the analysis of small firms into time periods, and character-

istics of the firms associated with the time periods. From this approach, it may be possible to determine the nature of the process of birth and subsequent change in small firms, how firms make the transition from one stage to the next and handle certain problems, and under what circumstances small firms grow, are taken-over, or fail. The implications for public policy are that the provision of assistance to small firms, those involving technical entrepreneurship and others, requires an appreciation of the stage of development that a firm has reached, and the type of problems associated with that stage of development. For example, at each stage, the management functions could be listed and a detailed analysis made of the ones to which policies should be specifically directed.

At present, in Canada, there is a tendency to develop incentive programmes which are aimed at all firms regardless of size, without recognition that both the response of firms and the needs of firms will vary with size. The result is that programmes tend to be biased in favour of certain types of firms. The Programme for the Advancement of Industrial Technology (PAIT) either by intent or results falls into this category.

Both small and large firms have been recipients of PAIT support, but the largest share of the support given has been to large firms. A number of reasons may account for this. First, the larger firms may be more aware of existing support programmes than small firms; second, larger firms may have greater expertise in applying for support than small firms; third, the granting agency may prefer the larger firm feeling that there is less risk associated with supporting a larger firm; and fourth, the larger firm may have the greater innovative potential which it is the objective of the programme to promote. While the fourth reason would justify the emphasis on supporting larger firms, it must be recognized that it is based on the assumption that the granting agency knows where the innovative potential is concentrated. One interesting aspect of Bolton is that the small firm sector is identified as a source of innovative activity⁴⁶, but it is felt that it is impossible to spot winners between small firms that have innovative potential. On the basis of this view, any support for innovation should not be biased against small firms.

There are, of course, other government policies which are aimed more specifically at small firms in Canada,

namely Small Business Loans, administered by the Department of Finance, the operations of the Industrial Development Bank (IDB), and corporate tax provisions. Neither Bank Managers nor small businessmen interviewed commented favourably on the effectiveness of the Small Business Loans plan, because of the paperwork involved and because the banks did not find it a rewarding plan to administer. Criticism of the IDB concerned the conservatism of its lending policies, and the fact that other lending institutions had to be almost bribed to produce the necessary letters stating that they were unwilling to extend loans, thus qualifying the borrower for an IDB loan.

While the IDB claimed that it provided venture financing, the default rate on its loans was a far cry from the experience of private venture capital companies. The tax system is certainly a boost to small firms, but the benefits only accrue when the firm is able to pay taxes, which eliminates most start-up situations from any immediate benefits.

The stages of small firm development suggest that if the small firm sector is the object of government policies, and if at the same time it is difficult to spot the winners, then at least the policies should be tailored

to the type of problems that can be expected to occur at each of the three stages. Consideration of some specific proposals will be made later in the paper. Here we would like to draw attention to further aspects of the studies of Bolton and Boswell.

A second important issue arising from the studies of small firms by Bolton and Boswell is the noted importance of an individual or a small group of individuals associated with the operation of the small firm. One feature common to the literature on small firms is an emphasis on the challenges, opportunities and problems faced by the owner-manager of small firms. In many instances the individual becomes so closely associated with the operation of the small firm, that he finds it difficult to view objectively the commercial feasibility of the firm. This has been shown to be the case particularly where the individual is in the process of introducing a new product or process onto the market. While identifying the success of the new product or process with his own personal success, he frequently fails to assess the potential market for the item, with disastrous consequences. However, the firm may continue in existence for a long time, even though it does not make a reasonable return on capital.

The point here is that the economic activities of some small firms must be viewed as acts of consumption as well as acts of production. In the past, studies have emphasized the production side, i.e., the efficiency with which the small firm converts inputs into outputs which can be marketed, and the associated earning of a reasonable return on capital. A modified approach would concern itself not only with these activities, but also with the way in which expenditures and behaviour in the small firm represents the interests or hobby of the individual who is running the firm. What may appear to be inefficient behaviour in a production sense, may represent inefficiency, but it may also represent behaviour by the individual in pursuing his hobby. An individual may be willing to spend money or earn a low rate of return on his capital, if he obtains satisfaction from pursuing his personal interests within the framework of a small firm. If it is the characteristics of owner-management that leads to this result, then medium and large-size owner-managed firms may perform in a similar manner.

In economic theory, the firm is viewed as a production unit which, with rational behaviour (profit maximization) on the part of the decision-makers, will

engage in efficient production, i.e., producing any given level of output at a point on its average cost curve. The idea suggested here is that a firm may be deliberately inefficient by making expenditures which cause production to take place at a point above its known average cost curve, because these expenditures satisfy the hobby-interests of the decision-maker.⁴⁷

Another way of looking at this feature is to consider the firm producing a joint output, the product or service sold by the entrepreneur, and the hobby-interest enjoyed (consumed) by the entrepreneur in operating his firm. A noted psychologist's view of this behaviour is that the motivation for profit maximization in the case of the typical entrepreneur is replaced by the motivation for the "need for achievement."⁴⁸

The significance of this line of reasoning for purposes of public policy is as follows: some technical entrepreneurs will be engaged in their activities primarily because of the interest and satisfaction which they obtain from them, as well as for the net income earned, and for this group there is no assurance that the outcome of their actions will redound to the benefit of society as a whole. Public policy aimed at promoting entrepreneurship needs therefore to be selective and

discretionary between entrepreneurs in order to support those which have a serious interest in commercializing their products or processes. The conditions for this selection are much more difficult to formulate, and the stage of development framework is not helpful in making such a selection. Alternatively, public policy needs to be structured in such a way that it rewards those technical entrepreneurs which actually commercialize their products, or which follow a line of action from which the probability of successful commercialization is high. Difficulties of implementation will arise because it is a sensitive issue for governments to reward actual success (ex-post), and it is also difficult to spot the potential winners (ex-ante).

POLICY RECOMMENDATIONS - BOLTON AND BOSWELL

Two of the economic functions of small firms have been described by Bolton as follows:⁴⁹

- i) "The small firm sector is the traditional breeding ground for new industries - that is for innovation writ large."
- ii) "Perhaps most important, small firms provide the means of entry into business for new entrepreneurial talent and the seedbed from which new large companies will grow to challenge and stimulate the established leaders of industry."

These two differ from the remaining six functions in that they are not felt to be 'self-rewarding', so that the private benefits earned might lead firms to underinvest in innovation. Bolton argues that a case for subsidization of the small firm sector, if it is to be made, would have to rest on this notion.

With respect to this proposal for subsidization, the case is not made in the U.K., for the existence of unrequited private and public benefits.⁵⁰ If subsidization is to be considered, the cost of subsidizing the small firm sector should be compared to the cost of alternative policies aimed at achieving the same result, i.e., more innovation and competition.

Bolton also concludes that it would be necessary to support the small firm sector as a whole in order to get the desired results, because "it is not possible to identify in advance those small firms which will eventually grow into large companies, will nurture the great businessmen of the future or will prove the forcing ground of new industries."⁵¹

The significance of these findings for the design and implementation of public policies towards technical entrepreneurship in small firms in Canada is that incen-

tive schemes such as PAIT should have a low probability of success in terms of their application to small firms. These schemes are based on the notion that individual firms can be selected for support, and that it is possible to spot the winners with a reasonable probability of success. Some would argue that it may be necessary to provide support, in the future, but that when undertaken support should be applied to the small firm sector as a whole and not to individual firms, unless further research permits the identification of probable winners.

Our own research relates to this point in that it has involved an attempt to determine those attributes which characterize successful technical entrepreneurs, in small firms in Canada, and to examine the Canadian environment for entrepreneurship.⁵² As far as the environment is concerned, Bolton deals with many of the aspects which we have considered, namely sources of finance, impact of taxation, management skills, attitude towards government and government policies. Many of the findings are similar to ours; a major caveat is that Bolton is concerned with all small firms, while our research concentrates on small firms involving technical entrepreneurship.

The policy recommendations of Boswell stem from his approach of comparing small firms to each other.⁵³ A selective strategy is proposed which will have two objectives: (1) deal with small firms that are inefficient, old or congealed, and (2) encourage new entrepreneurship. In order to meet the first objective it is suggested that financial institutions should be encouraged to be more selective in their loans to small firms, that small firms should be forced to divulge more details about their management (age and succession), and that there should be a tougher system of inheritance taxation in order to encourage the transfer of resources from old sectors to new. In connection with the last proposal, Boswell suggests the establishment of a Small Firm Transition Trust which would assist small firms, at the time of inheritance, so that they could either be liquidated, or passed on to inheritors or others when justified on grounds of managerial competence. Small firms would receive inheritance tax relief, if they allowed the Trust to decide what should happen to them, the alternatives being corporate euthanasia, continuation under the same management, or transfer to new management.

The second objective of encouraging new entrepreneurship would be met by a raft of measures aimed at influencing the environment for entrepreneurship as follows:

- 1) provide 'second chance education' to those of an older age;
- 2) ease taxation on upper working class and lower middle class incomes, because new firm founders tend to come from this group;
- 3) facilitate the procedure for new firms to locate and establish new plants by reducing bureaucratic procedures;
- 4) undertake research on infant entrepreneurship and its problems;
- 5) provide subsidies to infant firms by channelling them through existing institutions, or giving tax concessions to firms for the first five years;
- 6) provide advisory service re finance, business strategy, planned approach to retirement and succession;
- 7) pressure old bosses to retire;
- 8) encourage entrepreneurial entry into viable older firms via the Trust getting managers in large firms to move to smaller firms;
- 9) use of universities, business schools and an Entrepreneurial Institute.

IMPLICATIONS FOR CANADIAN POLICIES

In an earlier article we made a series of policy recommendations with respect to the promotion of technical entrepreneurship in small firms in Canada. These recom-

recommendations based on the analysis of a sample of entrepreneurs who responded to a questionnaire and some of whom were interviewed, are listed in Table 1.⁵⁴ The analysis dealt with the background of the entrepreneur, the circumstances leading to the start up of their first ventures, and their views of the environment in which they operated. It is interesting to note that recommendations Nos. 1, 2, 4, 5, 10, 11 and 12 have been implemented in whole or in part.

Our findings stressed the managerial deficiencies of the entrepreneurs, especially in the area of marketing, their unwillingness to dilute their equity position in the enterprise and their reluctance to forming a balanced management team as the enterprise developed. The entrepreneurs' attitude to government was mixed: there was a lack of awareness of government assistance programmes, and they felt that the tax system provided insufficient incentives to them. On the other hand, those that had received assistance showed a much more positive response to government. A continual complaint was the lack of venture financing. Consequently, our recommendations were addressed to the topics of taxation and the provision of information, management assistance and venture financing.

TABLE 1POLICY RECOMMENDATIONS RE: PROMOTION
OF TECHNICAL ENTREPRENEURSHIP IN CANADA*

1. There should be consultation between the federal and provincial governments on rationalizing the financial assistance schemes to small businesses.
2. The federal government should give consideration to rationalizing its own financial assistance programs. Instead of a separate program and a separate agency with a banking function for each industrial objective, e.g., technological entrepreneurship, regional economic expansion, defence production, consideration should be given to the establishment of a single federal financial authority, such as a revised IDB. This authority would act as the banker for the recommendations put forward by each department, monitoring the financial performance of the recipients and ensuring that grants are not stacked unnecessarily. In this way government expertise in fostering the private sector could be improved.
3. The private banking system should be given financial incentives to pass on information to businesses about the availability of government's financial assistance schemes.
4. All commercial banks should be encouraged to establish their own venture capital departments. The impetus for this may come from the previous recommendation.
5. The CDC should consider increasing its venture capital commitments by investing in private venture capital companies for loans to companies in Canada.
6. Consideration should be given to examining ways in which an entrepreneur can deduct entrepreneurial expenses and losses from personal income in the early stages of the innovation process.
7. Consideration should be given to ways of increasing the cash flow of entrepreneurial firms through provisions for depreciation, rebate of sales tax and tariffs on machinery and equipment in the early stages of development.

8. Consideration should be given to eliminating capital gains accruing to venture capital commitments by venture capital firms for a limited period of time.
9. Consideration should be given to promoting entrepreneurial poles in Canada in conjunction with the establishment of industrial estates. This would be useful for the entrepreneur who is in the stage of the innovation process where he is ready to start manufacturing. Industrial estates may provide the entrepreneur with a more viable commercial environment.
10. Long-term measures will have to involve faculties of business and engineering in the universities and government sponsored seminar and training programs. Liaison for these programs should take place between universities, government and the proposed Canadian Venture Capital Industry Association.
11. Immediate managerial assistance might be provided the entrepreneur in conjunction with financial assistance. In the U.S. venture capital firms do provide managerial assistance to entrepreneurs, and Canadian venture capitalists should be encouraged to do the same in the initial stages of the operation.
12. At the same time, government financial assistance should be dispensed with management assistance when required. While NRC is able to pay the salary of a scientist in a firm, for a period under certain conditions, a similar procedure should be available for paying, for a period, the salary of a person possessing required managerial skills. The marketing function is frequently a weak point of the entrepreneur and requires assistance. U.S. studies show that 'successful' companies had a formal marketing department.

*SOURCE: I.A. Litvak and C.J. Maule, "Government-Business Interface: The Case of the Small Technology-Based Firm", Canadian Public Administration, Vol. 16, No. 1, Spring 1973, pp. 103-109.

The recommendations in Table 1 will be considered in the light of the findings of Bolton and Boswell. It is not suggested that the U.K. and Canadian situations are directly comparable, especially in view of the relative market sizes of the two economies, the high level of direct foreign investment in Canada and socio-cultural differences. However, there are similarities concerning the problems faced by small firms in the two countries which makes a comparison useful.

The successive stages of a firm's development will be associated with a growing awareness of the environment in which it operates. Management of the firm can therefore be expected to experience a learning curve whereby its general ability to run the firm improves over time. This ability will be related to internal and external factors. Of course, failure to experience a learning curve or any interruption in it may spell failure for the firm. As far as external factors are concerned, the lack of the firm's awareness of government assistance programmes can be expected to be greatest at Stages 1 and 2. At Stage 1, the provision of general information by way of general education or printed information is the main method by which the entrepreneur can familiarize himself with the

opportunities. An analogy to Stage 1, is with child-birth. General educational services should provide parents with knowledge about the methods and fun of conception. Anything more would find the government in the bedrooms (and in our case, the boardrooms) of the nation.

At Stage 2, once the firm has been initiated, assistance to the firm can be much more direct. Here, the onus can either be placed on the firm to search the environment for measures of assistance that are available to it, or public authorities can take the initiative to bring assistance to the firm. Up until 1973, the U.K. government financed an Industrial Liaison Service (I.L.S.), whereby experienced businessmen often with engineering backgrounds were attached to technical colleges or universities. These persons were given the responsibility to make themselves known to the firms in their locality, and to offer to provide information to firms about assistance that was available on a wide variety of issues. The onus was on the liaison officer to contact the firm.

As a result of one of Bolton's recommendations, government financial support for this scheme has been dropped, and it has been replaced by the establishment of 10 Small Firm Information Centres (SFIC), regionally

located, to which businessmen can address queries about problems that they face. While the effectiveness of this scheme is not yet known because it has only recently been implemented, we would feel that it is an inappropriate method for dispensing information and advice in Canada, and probably also in the U.K. The reasons for this are as follows. First, the SFIC's switched the onus to the entrepreneurs to make the enquiry while the I.L.S. placed the onus on the liaison officer to visit and make known his services to the companies. At Stage 2 of the firm's development, the owner-manager, who tends to combine all the management functions in himself, has little time to initiate any activity other than running the firm on a day-to-day basis. Second, the I.L.S. was staffed by persons from the private sector while the SFIC's are staffed by civil servants with little business experience, who have been seconded for limited periods from government departments. Small firms tend to feel uneasy in dealing with large bureaucracies, which is how the SFIC's are likely to be viewed. Third, the association of the I.L.S. with educational institutions generated external benefits for both the firms and the institutions. The firms learnt of the services available through the institutions by way of

technical and managerial advice and courses given, and the institutions developed expertise in assisting small firms, which became translated into revenue generating functions through the provision of consulting services. No such direct externalities result from the SFIC approach. In fact, the I.L.S. was so successful that some colleges retained the services of the liaison officers after government support was withdrawn because of the benefits which accrued to the institutions. This may be an argument in favour of withdrawing government support in the U.K., namely that the programme had been so successful it was self-sustaining.

Such an argument cannot be made in the case of Canada because there does not exist a close working relationship between small firms and educational institutions. If such a relationship is to be promoted, then an ILS-type of approach rather than a SFIC-type approach is preferable, given the prevailing conditions in Canada.

At Stage 3, the firm has matured to a point where general information about government assistance programmes is more likely to be sufficient. At this stage, the crucial issue becomes the ability of the owner-manager to create a management structure and a financial base which will permit the firm to carry on beyond Stage 3

and become a larger firm. The resistance to change will be associated with an unwillingness to give up control of management functions and to dilute the equity ownership. This problem arises from the fact that the personal characteristics required to start up an enterprise are not the same as those required to manage an on-going and expanding enterprise. Seldom does the same person combine both sets of attributes.

A number of measures are likely to be required at Stage 3. First, the firm's external financial advisors, its banker or accountant need to be in a position to assist the firm in arranging its financing. Second, either the advisors or the lending institutions should be prepared to use their leverage to ensure that an appropriate management structure is introduced. It has been suggested that a firm's bank provides one certain link with the external environment. The bank can then be used as a channel of communication with respect to the availability of financial and managerial assistance. However, the effectiveness of this channel will depend on whether there is any pay-off to the bank to act in this capacity.

The provision of management assistance, financial

assistance and information are interrelated topics. Separation of the firm's activities into its stages of development suggest ways in which that assistance can be effectively transferred to the firm, and the type of assistance which is likely to be required at each stage. One area of Canadian government policy which has a direct relationship to these issues is the emergence of the Federal Business Development Bank (FBDB) out of the Industrial Development Bank. At the Federal Government level, it is this institution which can play a major role in promoting small firms and acting as a catalyst for technical entrepreneurship. Critical issues here include the extent to which the FBDB will be willing to take a marketing approach, and to go out and promote business for itself in the fields of financing and managerial assistance, as opposed to waiting for applications from firms; the extent to which it will provide general information about other assistance programmes at the federal and provincial levels when it cannot provide such assistance itself; the extent to which it will be willing to provide venture financing where the risks of default are high; and the extent to which it will be reluctant to

become an aggressive lender, because of criticism which may come from competing privately-owned financial institutions.

The questions raised by these comments in part concern the extent to which a government-owned financial institution is a suitable vehicle to provide the type of support required, or whether a more effective route is to channel government funds through private venture capital companies, as is being done by the Canada Development Corporation. Even with the FBDB, there is likely to be an information gathering problem for small firms as long as a wide range of other government assistance programmes exist, and other levels of government provide assistance which may be seen to compete with the FBDB. While the FBDB is a move to rationalize certain government policies and programmes, there is still room for further rationalization.

The issue of taxation can also be seen to vary according to the stage of development of the firm. The taxable income of a firm will tend to increase as it moves from Stage 1 to Stage 3. Any reduction or remission of corporate income tax is of little value to

a firm that is making losses, or whose taxable income is very low. Thus Recommendations 6, 7 and 8 in Table 1 are especially relevant to firms in Stages 1 and 2.

A further related issue has now been injected in the form of the Foreign Investment Review Agency (FIRA), which may discourage innovative activity. The venture capitalist and/or technical entrepreneur is stimulated by the opportunity for gain from the capital appreciation which may result from selling a firm once it has been successfully launched. First, the introduction of a capital gains tax has diminished the prospect of gain, and now the FIRA has the power to disqualify would-be foreign purchasers of the assets of Canadian companies above a certain size, where the foreigners may be willing to pay the highest price. As a result of the operations of FIRA, firms may be sold to foreigners before they reach the critical size (\$250,000 gross assets or \$3 million gross annual revenues), or a further incentive may have been removed for Canadian entrepreneurs to establish new enterprises in Canada. The alternative may be to emigrate to the U.S. Prior to FIRA it was noted that the Canadian

venture capitalists invested a large proportion of their funds (approximately one-half) in the U.S. With FIRA that tendency is likely to be reinforced.

FOOTNOTES

34. A.C. Cooper, "The Palo Alto Experience", Industrial Research, May 1970, pp. 58-60.
35. London, HMSO, 1972.
36. London, Allen and Unwin, 1973.
37. See Appendix 'A' for details of difference.
38. Bolton, op. cit., pp. 58-60.
39. Boswell, op. cit., p. 202.
40. See I.A. Litvak and C.J. Maule, "Some Characteristics of Successful Technical Entrepreneurs", IEEE Transactions on Engineering Management, Vol. EN 20, No. 3, August, 1973, pp. 62-68.
41. See M. Gibbons and D.S. Watkins, "Innovation and the Small Firm", Working Paper, Department of Liberal Studies in Science, University of Manchester, 1972.
42. See I.A. Litvak and C.J. Maule, "Profiles of Technical Entrepreneurs", Business Quarterly, Spring, 1974, pp. 40-49.
43. See Sources of Venture Capital: A Canadian Guide, (Ottawa, Information Canada, 1973), p. 2.
44. Ibid., p. 2.
45. E.B. Roberts, "How to Succeed in a New Technology Enterprise", Technology Review, December, 1970, p. 22.
46. Appendix 'B' shows the contribution which Bolton notes the small firm sector makes to the economy.

FOOTNOTES

47. This approach follows the line taken by H. Leibenstein in his discussions of internal firm efficiency, see "Allocative Efficiency vs. X-Efficiency", American Economic Review, LVI (June 1966), p. 392-415.
48. See D.C. McClelland, The Achieving Society, (Princeton, New Jersey, Van Nostrand, 1971).
49. See Appendix 'B'.
50. B.S. Yamey, "The Bolton Committee Report on Small Firms", Three Banks Review, pp. 30-38. K. Arrow has argued for the case in "Economic Welfare and the Allocation of Resources for Invention", in R.R. Nelson, Ed., The Rate and Direction of Inventive Activity, (Princeton University Press, N.B.E.R. 1962), pp. 609-626.
51. Bolton, op. cit., p. 86.
52. "Some Characteristics . . .", op. cit., pp. 62-68.
53. Boswell, op. cit., pp. 179-198.
54. Details of the enlarged sample can be found in I.A. Litvak and C.J. Maule, "Some Characteristics . . .", op. cit., pp. 62-68.

APPENDIX 'A'A comparison of small firms studies by Bolton & Boswell

The small firms studied by Bolton include firms in manufacturing and the trades, but exclude firms in agriculture, horticulture, fishing industries and the professions. The size cut off is 200 employees per firm, or less in manufacturing and a series of more or less arbitrary definitions for each trade area.¹ Incorporated and unincorporated firms are included.² Information on these firms was collected from a variety of places, including published sources and from two mail questionnaire surveys sent to 15,800 small businesses, to which there was a response of 3,500 in one case and 2,115 in the other.³

Boswell's study is "restricted to small firms in the manufacturing industry which I define as private companies with fewer than 500 employees."⁴ Two principal sources of information are used: (1) a field study involving interviews with chief executives of a sample of 64 small firms, and (2) a statistical study of the Companies House records of a larger sample of small manufacturing companies.⁵ For the field study, 104 firms were approached of which 64 cooperated: 44 firms were involved in various sectors of engineering and 20 were in the hosiery and knitwear industry.⁶ The Companies House study dealt with from 318 to 371 small firms, representing all parts of the manufacturing sector.⁷

FOOTNOTES

(Appendix 'A')

1. Bolton, op. cit., p. 2.
2. Ibid., p. 4.
3. Ibid., p. 5.
4. Boswell, op. cit., p. 15.
5. Ibid., p. 25.
6. Ibid., p. 27.
7. Ibid., pp. 28 & 29.

ROLE OF THE SMALL FIRM SECTOR IN THE ECONOMY¹

- i) The small firm provides a productive outlet for the energies of that large group of enterprising and independent people who set great store by economic independence and many of whom are anti-pathetic or less-suited to employment in a large organization but who have much to contribute to the vitality of the economy.
- ii) In industries where the optimum size of the production unit or the sales outlet is small, often the most efficient form of business organization is a small firm. For this reason many important trades and industries consist mainly of small firms.
- iii) Small firms add greatly to the variety of products and services offered to the consumer because they can flourish in a limited or specialized market which it would not be worthwhile or economic for a large firm to enter.
- iv) Many small firms act as specialist suppliers to large companies of parts, sub-assemblies or components, produced at lower costs than the large companies could achieve.
- v) In an economy in which ever larger multi-product firms are emerging, small firms provide competition both actual and potential, and provide some check on monopoly profits and on the inefficiency which monopoly breeds. In this way they contribute to the efficient working of the economic system as a whole.
- vi) Small firms, in spite of relatively low expenditure on research and development by the sector as a whole are an important source of innovation in products, techniques and services.
- vii) The small firm sector is the traditional breeding ground for new industries - that is for innovation writ large.
- viii) Perhaps most important, small firms provide the means of entry into business for new entrepreneurial talent and the seedbed from which new large companies will grow to challenge and stimulate the established leaders of industry.

1. Bolton, op. cit., pp. 83-84.

PART D

GOVERNMENT ASSISTANCE TO
TECHNICAL ENTREPRENEURSHIP

I. U.K.

II. U.S.

I. U.K.A. VENTURE CAPITAL INSTITUTIONS

A study undertaken for Bolton⁵⁵ examined the question of "Finance for Innovation" and found that there were only two such institutions in the U.K., the National Research Development Corporation (NRDC) and Technical Development Capital Ltd. (TDC). NRDC (see below) is a government financed organization, aimed at promoting industrial innovation, which estimated that, in 1968/69, 9% of its investment in projects of £3.6 m. went to small firms.

TDC is a subsidiary of the Industrial and Commercial Finance Corporation Ltd. (ICFC), the latter having been set up in 1945 by the banks with the support of the Bank of England in order to provide loans and subscriptions of share capital in the area between £5,000 and £200,000, essentially to small firms. A later government report recommended the creation of a Corporation "to facilitate the commercial exploitation of technical innovation"⁵⁶, and this resulted in the TDC "which has provided £5 million of high risk finance to small and very small businesses for whom innovation

is the rasion d'être."⁵⁷ The size of investments by the TDC have been as follows:⁵⁸

<u>£</u>	<u>Number of Customers</u>	<u>%</u>
0 - 10,000	21	
10,000 - 30,000	36	
30,000 - 50,000	10	
50,000 - 100,000	21	
over 100,000	12	

The study for Bolton concludes:⁵⁹

"In view of the somewhat fragmented nature of this important part of the capital market, we offer rather more in the way of concluding comments than in other parts of our enquiry.

- a) The relative, quantitative importance of the ICFC has already been noted. But a distinction needs to be made also between those non-ICFC/institutions that go for short-term investments and those that are willing to make long-term commitments and take income rather than capital gains. ICFC is larger and seems to be more bureaucratic, slower in its decision-making processes, more rigid in its approach; but on the other hand, it is prepared to finance the really small firm, and make more of it available in the form of fixed-interest loans.
- b) It is important to note that no institution would make any money unless it had a sufficient number of real 'winners' to compensate for the 'losers' and mediocre performers. The proportions, out of every ten investments, seem to be roughly two winners, six plodders and two losers. These 'winners', of course, only pay off if the institution has an equity interest.

All the institutions would like more cases and particularly more cases that they could take seriously. They all admit that there is no 'killing' to be made in this particular sector of the capital market. In spite of publicity and advertising, they cannot find a large number of such firms. This was the experience too of a merchant bank linked with a syndicate of building societies: demands are not generally large enough each year to exhaust their pool of funds.

- c) The institutions interviewed despair of two things: weak management of small firms, which is often the result of bad professional advice; and the small firm's lack of awareness of the capital market, of the long-term rate of interest, and of the sort of information the potential investor wants.
- d) The clearing banks are the first and most obvious source of external finance for the small firm. For many small firms, those that 'tick-over' at a relatively modest level of profits and no great expansion, the banks will continue to provide all (or most of) the external finance required. Those that do expand will eventually exhaust the bank's willingness to lend and have to go elsewhere. With reasonable management ability and future profit possibilities, they should be able to obtain the funds they need, without having to go public or give up control, from the clearing bank subsidiaries or one of the institutions in this Appendix.⁶⁰ Without management ability or profit prospects they will find it very difficult. People starting up businesses from scratch may not even be able to obtain the first external finance from the banks. The difficult question is whether an institution (as distinct from the traditional private investor) could provide finance for cases of this kind on a commercial basis.
- e) Much has been made in the past about the reluctance of the small firm to accept equity participation,

and to let in outside interests even at a minority level. The institutions interviewed confirmed that this was still the case but they thought less so than in the past. The small firm was more willing to listen to advice and to accept external finance of an equity form if the proposal was carefully explained. The general level of taxation and the rate of inflation had helped to persuade them of its inevitability if they were to expand.

- f) The small firm will pass through several 'crises' as it expands. These can be indicated in terms of profits: the first £10,000 through the £50,000 barrier, and so on. But they involve important non-profit dimensions like the problem of employing other people, the need for more careful and informative accounting procedures, and the use of simple investment decision rules. Management, in other words, is more important at times than finance. Because most small firms are also family firms, the 'crises' may be associated with inheritance from one generation to the next. Advice and finance is again required. It is interesting that although all the institutions complained about the headaches associated with the family firm, they were quick to stress their strength and value to the community."

The similarity between these comments and our findings for the Canadian situation is striking, especially with respect to the weakness of small firm management, the reluctance to give outsiders equity participation, the lack of awareness of the capital market, the importance of banks as an external source of finance, and the need for external management advice as well as external finance. It is also interesting to note that there does exist at

this stage of development an institution specializing in small firm finance, and an institution that feels that, in spite of publicity and advertising, it cannot find a large enough number of firms to be borrowers.

National Research and Development Corporation

A major source of venture capital for small firms is the NRDC. Established under the Development of Inventions Act of 1948, the corporation has two main types of work:

1. Taking on such inventions, from those offered mainly by government departments, universities and private sources, as it seems would need and justify development, and licensing them to industry. This process sometimes requires some research or survey expenditure in order to 'adjust' an invention so that it becomes suitable for acceptance by industry. Patent or other protection for industrial property is usually important so as to secure the rights of the inventor and to provide the protection for its investment that a company will need, and both this, and the activity of offering and negotiating licences, involve deep consideration of the opportunities, development needs and problems, and marketing and investment implications of each invention concerned.
2. Assisting firms in the development of their own inventions where the commercial and technological opportunities are attractive, but where for some reason there may be a shortage of the resources required. This usually involves the NRDC in unsecured loan situations with pre-arranged recovery based upon the eventual commercial rewards of the developments involved. This means consideration of

virtually the same issues as for licensing, plus all the aspects of investment judgment. NRDC does not normally play any part in project management, nor would it normally own or control any of the industrial property. Close contact would of course be maintained with the company, particularly regarding the progress and prospects of the project so that any necessary joint corrective action could be taken. The NRDC investment in a project is commonly 50% but it can be any proportion, depending on circumstances.

NRDC backs projects not companies. When a company's activities are completely identified with a project, then NRDC will provide assistance in the form of a stake in the equity of the company. In some situations no existing organization is suitable for a development so a separate company may need especially to be set up, sometimes jointly with industry. Examples include companies for developing and making printed circuits, dracones, special ceramics, fuel cells, hovercraft, enzymes, proteins and a beamriding transport system. In all such special situations NRDC may provide management and other resources as well as money. A further major aspect of the corporation is that it must consider whether projects are in the 'public interest', which tends to mean that it supports projects which incorporate major changes in technology, which have a probable pay-off in the long run, and which are likely to generate large social benefits.

NRDC is financed by a loan from the government, from whom it is authorized to borrow up to £50 million and from any excess of income over expenditures in any given year. In fact in the four years, 1969-1972, it made a profit, although the accumulated deficit amounted to £2.46 million. In total, it owed over £20 million to the government by 1972.

Extensive details of the NRDC are available in annual reports of the corporation and in its other publications.⁶¹ It is not our intention to repeat all these details here, but rather to comment on the effectiveness of the corporation in stimulating innovation in order to make comparisons where possible with schemes such as PAIT and IRDIA run by the Canadian government

NRDC is not a government department, but a public corporation set up under Acts of Parliament, with a decision-making Board of Directors of men distinguished in science, industry, business, finance, or development. The members of the Board are appointed by the Secretary of State for Trade and Industry. The main office of the corporation, although in London, is physically separated from any department of government.

Thus, there exists in the U.K. a government financed institution, relatively autonomous, which has

the objective of commercializing innovations and which has a staff whose full-time responsibility is to achieve this end. NRDC's activities are not strongly influenced by any one department of government, and its organization is such that it can develop its own expertise largely independent of individual departmental pressures. This form of organization has to be contrasted with government schemes to promote similar ends, such as PAIT, which are administered by particular departments and by individuals who have other responsibilities besides running these programmes. The superiority of one method of organization over the other is unknown, but it is worthwhile considering the comparative merits of the two approaches, both theoretically and empirically, if possible, in terms of the results obtained.

There is no theory in the area to fall back on, but a case can be made that substantial benefits are likely to accrue from a specialized form of organization and administration such as NRDC. Empirically, it is possible to point to successes with which NRDC has been associated, particularly products in the chemical and medical areas, but it is extremely difficult to compare these successes with those under other schemes, or to measure the cost per success under different schemes.

There are also plenty of criticisms of NRDC, particularly by those whose submissions have been rejected. Between 1949 and 1972, 27,916 submissions were made and only 5,670 were accepted. The nature of the activity is thus one which generates adverse criticism.

In a study conducted at Imperial College of Technology in London, it was stated:

"In many instances the NRDC had been approached to aid the development and licensing of an invention. Favourable comment about the outcome of such contacts was outweighed by criticisms of the progress of negotiations with the Corporation. However, these criticisms stemmed largely from staff whose inventions had not achieved commercial success. Moreover, in a number of cases, the Corporation had been contacted only when a direct approach to industry had failed; in these cases the odds must have been strongly against the NRDC securing industrial support. Even so, from recurrent complaints it is difficult not to conclude that the Corporation had failed to keep inventors appraised of its actions and that, in some cases, it had not pursued negotiations with sufficient vigour." 62

These criticisms probably embody two types of problems. From the applicant's point of view, apart from feeling affronted that his submission has been rejected, the terms of reference of the corporation, involving its consideration of the 'public interest' may restrict its ability to provide support. Certainly it has never had to borrow from the government more than

50% of the amount permitted under its terms of reference and thus has not been stretched financially. From the corporation's point of view, it is continually faced with submissions that may be sound technically, but about which little or no marketing research has been done, often a direct reflection of the poor managerial calibre of the applicant. Here, we return again to the problem of managerial deficiencies, particularly in small firms and in the case of academic inventors. By and large, NRDC provides very little by way of managerial assistance to firms, short of handing over the project to a firm in the private sector.

One interesting aspect of NRDC is its public relations department, which is used to disseminate its activities to industry, government and universities, and which manages to establish strong and widespread links with industry.

Our interviews suggest that NRDC provides venture capital for the early stages of development of a project, and, subject to its terms of reference, is able to support the riskier projects. If rejected by NRDC, an applicant, if he is approaching organizations rather than individuals, would turn to Technical Development

Corporation, European Business Development Company and some of the Merchant Banks, for financial support.

In sum, the issues raised by consideration of NRDC include the form, organization and administration of venture financing sponsored by government, the terms of reference of such an organization and the extent to which it should provide managerial services. Its functions will be in part dependent on the availability of venture capital from other sources.

It should be noted that in a period of marked inflation, requests for NRDC financing dropped substantially, as borrowers were unwilling to borrow for high risk projects during such a period. In general venture financing has atrophied with inflation in the U.K. as conditions do not encourage even low-risk equity financing.

B. MANAGEMENT ASSISTANCE

Technical and managerial assistance is available to small firms in the U.K. from a variety of government sources. Much of this assistance is available to all firms, large and small, although some places specialize in assisting small firms. Government actions, stemming from the recommendations of Bolton, have resulted in

providing special facilities for small firms. In fact, observing recent U.K. government policy towards small firms permits an evaluation of what one government feels to have been unsatisfactory policies in the past, and are likely to be effective policies in the future.

Bolton listed a number of advisory services which were provided by the U.K. government and were available and of particular interest to small firms as of 1971. These services included the Industrial Liaison Service, Production Engineering Advisory Service, Low-Cost Automation Centres, British Productivity Council and Local Productivity Associations, National Council for Quality and Reliability, Manpower and Productivity Service and Council for Small Industries in Rural Areas and Small Industries Council for Rural Areas in Scotland.⁶³ However, the conclusion was that "There is ample evidence that small businessmen are confused by the profusion of services, commercial and otherwise, which now exist",⁶⁴ and a recommendation was made that,

"We should like to see the signposting and information function vested in a single, easily identifiable organization with a network of local offices in all the most important centres of industry and commerce."⁶⁵

This and other recommendations led the government to initiate moves which would recognize a special position for small firms in the economy. By 1973, having received the report late in 1971, the government had undertaken measures which included the following action with respect to the organization of small firms in government, government procurement, and the provision of management skills and advisory services,⁶⁶

1. The creation of the Small Firms Division and the designation of a Minister with special responsibility for small firms were announced in Parliament by the then Secretary of State for Trade and Industry on November 8, 1971. The division's terms of reference are to act as a focal point in Government where the needs of small firms can be seen as a whole. (Hansard, Vol. 825, Cols. 188-190).
2. The separate identity of the Small Firms Division has been stressed in publicity by the Department of Trade and Industry and by others.

Press Releases, November 10, 1972 and April 25, 1972.

Trade and Industry, November 11, 1971, p. 296; November 18, 1971, p. 348.

CBI Small Firms Bulletin No. 6, November 1971; No. 7, January 1972.

3. Liaison officers have been appointed in 13 other Government Departments.
4. The Government has found no evidence of discrimination against small firms. Their performance in this field has not been out of line with their share of the GNP. They also benefit as subsidiary suppliers

and sub-contractors. While there are no grounds for altering the principles underlying Government purchasing some procedural changes have been identified which might help more small firms to compete for Government business. There may also be scope for further simplifying forms. The Financial Secretary to the Treasury has arranged for these points to be studied in conjunction with Purchasing Departments.

(Hansard, Vol. 843, Col. 438).

5. A new information or signposting service is being set up by the Government. It will be based upon the Department's regional organization. The new Small Firms Information Centres will offer a confidential, rapid and free signposting service on all aspects of business, technical, financial and official matters, and will be available to small businesses in all sectors of industry and commerce.
6. Ten Centres in all are being opened in Birmingham, Bristol, Cardiff, Glasgow, Leeds, London, Luton, Manchester, Newcastle-upon-Tyne and Nottingham. (The first was opened in Newcastle on July 23, 1973).
7. The Centres will be supported by a comprehensive information bank being prepared by DTI staff in conjunction with outside bodies.

As far as the services listed above are concerned, the Industrial Liaison Service no longer receives financial support from the government (see section on ILS); the Production Engineering Advisory Service has been discontinued; the Productivity Council and Associations are being run down; the National Council for Quality and Reliability now operates out of the Institute of Mechanical Engineers and receives no government financial support; the functions of the Manpower and Productivity

service have been absorbed by the Department of Employment and the Department of Trade and Industry; and the remaining two services are being continued.

This series of changes shows how the U.K. government has reacted to the need to rationalize the services available to small firms. It thus provides a useful reflection of one government's view of the way to approach the development of policies for small businesses. It is fair to say that there is no conclusive evidence to suggest that a particular policy approach is associated with a higher probability of success. The evidence does point to the need for a pragmatic approach and the need to experiment with policies so as to measure the differential effects of policies. Very little explicit experimentation and evaluation is done in the development and application of government policies, but implicit experimentation occurs with industrial and other policies, in the sense that these policies tend to change frequently. Our suggestion is that a deliberate attempt should be made to test different policies through experimentation and comparison of results. This will require structuring the policies

in such a way as to make meaningful comparisons possible. Detailed evaluation of the U.K. situation would be helpful in this respect.

The co-ordination of policies towards small firms in the U.K. is conducted through a newly-established Small Firms Division of the Department of Trade and Industry. The main functions of the Division are:

1. to keep under review the place of small firms in the economy;
2. to act as a focal point where the needs of small firms are seen as a whole;
3. to arrange that the interests of small firms are taken into account in the formulation of Government policies; contact for this purpose is maintained through liaison officers appointed in other parts of the Department and in other Government Departments;
4. to maintain contact with the Industrial Liaison Centre Service (from which financial support has been withdrawn) and Interlab;
5. to plan and manage centrally the Small Firm Information Centres; and
6. to deal with matters arising from the Bolton report.

A major publication of the Division in 1973 was Small Firms: Register of Research and Centres of Specialized Assistance.

As in the U.S., small firms in the U.K. now have a specialist agency of government to handle their interests. The effectiveness of this agency is yet to be tested. In the transitional period, it appears to have had some difficulty in finding its role.

The foregoing has described a welter of services that are available to the private sector, both large and small firms. It is not an all inclusive list, as can be seen by the extensive list published in the Department of Trade and Industry's Technical Services for Industry (1970). Large firms find it difficult to keep track of these programmes, services and facilities, that constitute one part of the business-government interface, so it is not surprising that small firms complain of an information gap. This helps to explain why Bolton found that "small firms believed themselves to be operating in a generally hostile environment as a result of the actions of government",⁶⁷ and that "The most telling criticism of Government in this field is not that its policy towards small business is misconceived or hostile, but that it has no policy."⁶⁸ A mass of

policies appears to the businessman as no policy.

These expressions are very similar to those put forth by our sample of Canadian entrepreneurs. What we have observed is perhaps the private sector being 'over-assisted' or 'wrongly assisted' by the government. If one were to start from scratch by eliminating all existing programmes and services, it would be inconceivable that anyone would propose the network of policies that now exist. These have grown, in both Canada and the U.K., in an incremental manner such that when a new facility is added it tends to result in a net gain in that usually another facility is not dropped. Undoubtedly, programmes overlap, resulting in a waste of resources as well as the confusion in the minds of businessmen which has been noted. An interesting aspect of recent U.K. policies is that, in a process of rationalization, some programmes were in fact terminated.

Until their abolition, the Department of Trade and Industry, financed 75 Industrial Liaison Centres at colleges of technology and universities. The purpose of this scheme was to assist smaller manufacturing firms to improve their efficiency and technological

strength by the staff of the Centres visiting firms, helping them to define their problems and the indicating the range of sources of assistance available both inside and outside the colleges. It was an information and signposting service providing free, some of the services which would be typically available from a private business consultant. Follow-up contract research on a fee-paying basis might follow the advice. Personal contact was a major method of implementing the service and its success depended a great deal on the personalities involved.

An appraisal of the scheme made in 1969⁶⁹ indicated some of the pitfalls to be avoided in its implementation. Bolton recommended modification to this scheme with the advisory-signposting services being provided through the colleges on a commercial fee-paying basis. As a result, the government withdrew its financial support of this scheme and the Centres are in the process of adapting to it.

About 50% of approximately 60 of the Centres have closed down while the remainder have continued without government support. The continuation of such a large number results from their contribution to the

institutions where they are located. Continuation could be viewed as a success for past government policy. In fact the creation of 10 new Small Firm Information Centres were viewed as a substitute for the previous scheme.

These new centres are each staffed by a manager, his deputy, and a secretary, all of whom are civil servants with little, if any, previous business experience. They will return to the civil service when their tour of duty ends. Their job is to provide information when asked, not advice, and they possess pamphlets for distribution to enquirers.⁷⁰ The ten centres have 1¼ million potential customers, on average, 125,000 per centre. Unlike the Industrial Liaison Scheme it will be impossible for the new Centres' personnel to contact customers, the customers must initiate queries. Therein lies the main difference with the ILS and weakness of the new approach, since the onus is now on the small businessman to initiate the contact.

FOOTNOTES

55. Economists Advisory Group, Financial Facilities for Small Firms, (London, HMSO, 1971).
56. Report of the Committee on the Working of the Monetary System, (HMSO, Cmd. 827).
57. Bolton, op. cit., p. 155.
58. Economists Advisory Group, op. cit., p. 51.
59. Ibid., p.51.
60. Please refer to Economists Advisory Group study for this appendix.
61. See 23rd Annual Report & Accounts 1971-72, and the following leaflets published by NRDC, No. 1., An Introduction, No. 4., Help for the Inventor, No. 5., Finance for Project Development, and No. 6. Information required for Project Assessment.
62. B.E. Launder and G.A. Webster, "University Research and the Considerations Affecting its Commercial Exploitation", Technical Development Corporation, London 1969, p. iv, of the Summary.
63. Bolton, op. cit., p. 145.
64. Bolton, op. cit., p. 139.
65. Ibid., p. 139.
66. Department of Trade & Industry, Committee of Inquiry on Small Firms, Summary of Recommendations and Government Action, London, 1973, pp. 1-3.
67. Bolton, op. cit., p. 92.

FOOTNOTES

68. Ibid., p. 95.
69. See Appraisal of the Industrial Liaison Centre Scheme, Report for U.K. Ministry of Technology, October 1969, by Associated Industrial Consultants Ltd.
70. See D.S. Watkins, "Government and Quasi-Government Measures to Elicit Venture Formations - the U.K. Experience", paper presented to 1st International Conference on Entrepreneurship Research, Canadian Centre for Entrepreneurial Studies, Toronto, November 1973 (Revised Edition).

II. U.S.

A recommendation was made by the Ontario Select Committee on Economic and Cultural Nationalism (May 1974), for the establishment of 'venture investment corporations' along the lines of the Small Business Investment Corporations (SBIC) in the U.S. In addition, the 1974 budget, of the Government of Ontario proposed the creation of 'venture investment corporations' to participate in the financing of small Canadian businesses. It was recognized that the success of this proposal depended on its adoption by the Federal Government under federal income tax legislation. These proposals prompted our examination of the role of the Small Business Administration (SBA) with respect to SBIC's.⁷¹

In its 21st Annual Report, the Senate Select Committee on Small Business described the mandate of the SBA in the following manner:

"The programs set forth in the 1953 Act (Small Business Act) were designed especially to cope with problems which have not only persisted but are of special concern today: the unmet credit needs of smaller firms in periods of extremely tight money;

the transition toward a more civilian-oriented economy, the balance between rural and urban areas; assisting less advantaged Americans into the mainstream of commercial life; and helping small firms adapt to new technology, and therefore to higher environmental and consumer standards." 72

Based on this general mandate, the SBA has developed programs in the following four major areas:

(1) Financing:

- i) loan financing; in 1972/73 34,000 business loans totalling \$2.19 billion, 80% of which were SBA guaranteed loans by banks, were made;
- ii) equity financing through support of SBIC's (Small Business Investment Companies).

(2) Upgrading Managerial Competence through publications, courses, counselling, and management assistance.

(3) Help on government contracts. Some contracts are earmarked for small business. In 1973 33% went to small business, amounting to \$14 billion.

(4) Assistance in acquiring information on and adapting to new technologies.

In its 23rd Annual Report, the Senate Select Committee on Small Business referred to the SBA as "the other side of the antitrust coin". Its underlying philosophy is the competitive market -- its underlying assumption is that small businesses are a crucial element in sustaining competition.

The problems of small business usually referred to in this context are: greater sensitivity to economic fluctuations, greater problems obtaining start-up and working capital financing, a lack of well diversified managerial skills, and restricted access to information, especially in the area of government contracts because of search costs.

The SBA sees the financial support of small business as a very large part of its mandate. The following quote from a Select Committee on Small Business hearing would indicate that, in principle, this mandate is likely to remain substantial in the future:

"... studies reviewed by Professor Jack M. Guttentag and Edward S. Herman in their book Banking Structure and Performance (NYU: February 1967) tend to show that as banking concentration increases businesses pay higher interest rates, and 'as the size of the borrower increases the effect of concentration on the loan rate diminishes.'" 73

In other words, apart from the more direct regulatory options within the banking industry itself, government agencies such as the SBA are viewed as having a role to play in compensating for these alleged effects of concentration.

However, the SBA does not perceive its only role as compensatory efforts financed by its own coffers. In fact, at least three strategies are used, e.g., in the area of financing small business:

- i) direct support through SBA funds;
- ii) creation of financial intermediaries, (e.g., SBIC's) through charter or other legal tools, where these are deemed lacking in present financial markets;
- iii) encouraging the greater involvement of existing financial institutions in small business finance by:
 - (a) reducing risks to these institutions (e.g., guaranteed loans);
 - (b) increasing information available on both small business and the financial institutions.

In keeping with its considerable concern for the financial support of small business, the SBA has instituted the following financial programs over the years:

- (1) Loans under the guarantee program.
- (2) Economic Opportunity Loans which go mostly to minority groups.
- (3) Displaced business loans.
- (4) Development Company Program -- \$350,000 up to 25 years.
- (5) Revolving line of credit for construction contractors -- up to \$350,000 to small contractors.
- (6) Physical Disaster Loans
- (7) Lease Guarantee Program
- (8) Surety Bond Guarantee
- (9) New loan programs:
 - i) consumer protection and occupational safety and health loan program.
 - ii) loans to help small businesses adapt to new legislation and industry standards.

In more recent years the SBA has concentrated much of its financial assistance program on guaranteed

loans with at least two goals in mind, to increase the leverage of its own funds, and to achieve fuller integration of the financial community into the area of small business financing.

The SBA will normally guarantee 90% of a loan. In 1970, it also introduced a "three day plan" ... "whereby a loan application prepared by a bank will be considered automatically approved if not objected to by SBA within three days of its submission." 1970 saw the participation of 321 banks, in 21 cities with more than 300 loans totalling \$12 million under these arrangements.

SMALL BUSINESS INVESTMENT COMPANIES

A 1957 study by the U.S. Federal Reserve Board concluded that a gap existed in the structure of financial institutions which impeded the flow of long term debt and equity capital to small businesses. The Federal Reserve estimated the gap at \$500 million each year,⁷⁴ and the Small Business Investment Act of 1958 was introduced in order to close the gap, allowing the establishment of SBIC's.

Taxation of Small Business Investment Companies

SBIC's were viewed as sources of venture capital for small firms. These companies were intended to fill the "equity gap" which was believed to exist whereby small businesses were at an "unfair" disadvantage in the capital market.

SBIC's were corporations created by existing companies through which funds could be invested in small companies. The SBIC's were fostered by the granting of liberal tax benefits. Usually, corporations pay tax on 15% of the dividends received from corporations in which an interest is held. SBIC's pay tax on none of the dividends received from small businesses in which they invest.

For regular corporations any losses resulting from the purchase of convertible debentures are treated as capital losses. Deductions for such losses are limited to \$1,000 per annum. For an SBIC such losses are treated as ordinary losses and can be offset against taxable income. In addition, an SBIC is not subject to the accumulated earnings tax.

In order to encourage investors to invest in SBIC's, all profits from the sale of SBIC shares are treated as capital gains while all losses are treated

as ordinary losses, and thus are deductible from ordinary income.⁷⁵

Under normal circumstances the SBIC is not subject to the personal holding company tax (70% of undistributed income). It is able to set up bad debt reserves which may permit a postponement of income tax. After 1975 the loss carryback of SBIC's is to be extended to ten years. This compares to a carryback of three years for regular companies.⁷⁶

Federally Financed Leverage

Since the passing of a public law in October 1972,⁷⁷ the SBIC's have been eligible to borrow two dollars from the Small Business Administration (SBA) for every one dollar of private equity capital up to a maximum of fifteen million dollars. SBIC's specializing in venture capital (i.e., which have invested 65% of their total funds in venture capital)⁷⁸ may borrow three dollars from the SBA for every one dollar of private capital up to a maximum of twenty million dollars. The minimum amount of private capital required for SBIC's is \$150,000 in order to gain 2-1 leverage and \$500,000 for venture capital SBIC's to be allowed 3-1 leverage.

Prior to October 1972 the maximum SBA borrowing was \$7.5 million for venture capital SBIC's. But the law did more than double the limits. It also cut in half the minimum private capital required by a venture capital SBIC (from \$1 million to \$500,000) and made the 3-1 leverage available from the very first dollar of private capital. Prior to 1972 the 3-1 leverage was only applied to private capital in excess of \$1 million.

In 1967, D.H. Woods analyzed the federally financed leverage provided by the Small Business Act of 1958.⁷⁹ It was shown that the debt capacity of SBIC's as measured by Federal financing potential actually decreased as equity increased. Thus there was an incentive to start several SBIC's in order to take advantage of the leverage potential.

"Since federal funds are the primary source of leverage for this industry, there is a definite incentive to stagnate and stay small. These incentives are contrary to classic economic logic, which implies that increased return and lower risk are the natural results of economies of scale and portfolio diversification. This incentive structure certainly is the reverse of what would be found in freely competitive capital markets."⁸⁰

Subsequent amendments have increased the potential leverage of an SBIC of a given size.⁸¹

It appears that it is the larger SBIC's which have been successful and have survived. Between 1964 and 1971, while an exodus from the SBIC industry was occurring, some of the surviving companies were having excellent results. Those that were leaving the industry were usually the small SBIC's. The larger SBIC's have generally been profitable. Many of the successful were wholly owned or affiliated with banks. Of the thirteen largest SBIC's, twelve are wholly owned by banks, which tend to dominate the industry.

	Number	Total Private Capital (\$ million)	Average Private Capital (\$ million)
Wholly owned by banks	27	67.2	2.5
Affiliated with banks	38	90.8	2.4
Non-affiliated	376	184.6	.5
Total	441	342.6	.8

SOURCE: Review of Small Business Administration's Programs and Policies - 1969, Hearings before the Senate Select Committee on Small Business, U.S. Congress, Government Printing Office, Washington, 1969, pp. 305-306.

The Bolton Committee on Small Firms reported

" ... 64 per cent of the total net income of the industry had been earned by the top 13 per cent by number, of the SBIC's. These tended to be the larger and best-established companies, which had not allowed the availability of cheap capital to corrupt their normally cautious standards of judgment." 82

Criticisms of the SBIC program are of three varieties, including basic theoretical criticisms, criticism of the administration of the program and criticisms concerning the actual operating history of the program as opposed to its intended role.

1. Questioning the Theoretical Economic Rationale

Woods argued that SBIC's can channel more investment funds to small business because the SBIC form of organization can reduce the risk discount applied to the expected rates of return on such investments. 83

He argued the SBIC's provide the advantage of task specialization and financial diversification. SBIC's specialize in financial assistance to small firms only, or perhaps choose to specialize further by providing loans to small firms in a particular industry. The improved information which results should reduce the perceived risk. As the number of investment opportuni-

ties investigated by an SBIC grows and expertise is developed, search, selection and the monitoring costs are reduced. As the scale of the SBIC grows, portfolio diversification becomes feasible. As a result the actual rate of return to the SBIC will converge on the expected rate of return on small business investments.

The problem with this analysis as a rationale for government support is that if the analysis is correct then adopting the SBIC form of organization becomes a self-rewarding activity as specialization occurs. No incentive other than the possibility of reducing the risk involved with a portfolio is needed. The fact that private venture capital firms existed in the U.S. before the Small Business Investment Act of 1958 suggests that lending venture capital can be privately profitable, and that tax incentives are not required to establish such firms. What is being argued here is that there is no obvious divergence between the private rate of return which can be obtained by cautious investment in small business, and the social rate of return on such investment. In the absence of a divergence there is no rationale for providing SBIC's with tax incentives.

2. Problems Encountered in SBA Administration of SBIC's

a) Regulation

SBIC's are regulated by both the Small Business Administration and the Securities and Exchange Commission. Due to the many problem companies, which became SBIC's in the wake of the excessive optimism generated by the Small Business Investment Act, regulation of the SBIC's became tighter during the sixties. S.M. Rubel told the Senate Select Committee on Small Business,

"Many of the regulations were initially designed to curb a particular practice by a limited number of SBIC's. Many were designed to stop activities of certain SBIC's that should never have been licensed in the first place. Many regulations have placed arbitrary limits on the degree of equity an SBIC can hold, how much can be charged in interest and management service fees, minimum maturity of an investment, how long certain investments can be held before divestiture is required, arbitrary size limits on businesses financed have been established, methods in which investments must be made are limited and an almost unbelievable number of other restrictions have been established that inhibit normal venture capital activities." 84

The dilemma is obvious. The SBA fears that SBIC incentives can be taken advantage of in ways embarrassing to the SBA. Regulations of the type described by Rubel makes SBIC's little more than SBA puppets. If regulation is reduced, the program is unscrupulously exploited.

If regulation is increased the flexibility and effectiveness of SBIC's is severely impaired.

b) Rescue Missions

The original incentives and cheap money offered to SBIC's proved to be an inadequate incentive. After an initial optimistic influx, SBIC's began to fail and later some were forced out by the SBA. As noted, regulation increased to the point at which new venture capital firms chose not to seek an SBIC license, feeling that the benefits of SBIC incentives were outweighed by the costs of reduced flexibility. Even some of the successful SBIC's threatened to drop out of the program.

The total collapse of the SBIC industry which might have occurred was unacceptable politically so the answer was sought in increased incentives. Amendments were made in 1967 and 1972 to sustain the failing SBIC's. The federal government appears to have become trapped into increasing support of the SBIC's.

Despite these rescue missions which have had the effect of increasing the availability of funds to individual SBIC's, the total demand for SBIC financing by small businesses appears to have fallen off. Table 1

presents gross loans and investments made by SBIC's between 1960 and 1971. In current dollar terms the value of gross loans and investments peaked in 1966 at \$552.4 million, declined by \$100 million during 1966-69 and then rose slowly to \$472.9 million in 1971. However, in 1960 constant dollars gross disbursements peaked at \$504 million in 1966 and declined steadily to \$346.2 million in 1971.

TABLE 1

Gross Loans and Investments of SBIC's
(millions)

	<u>Current \$</u>	<u>Deflated by CPI¹</u>
1960	9.9	9.9
1961	79.4	78.6
1962	233.7	288.9
1963	386.9	374.5
1964	490.5	468.9
1965	536.5	504.2
1966	552.4	504.5
1967	535.8	475.4
1968	448.7	382.2
1969	437.1	353.4
1970	470.3	359.0
1971	472.9	346.2

1. CPI (1960 = 100)

SOURCES: Current dollar figures are quoted from Osborn, Table 5, p. 82. Consumer price index is quoted from the U.S. Statistical Abstract for various years.

3. Problems in the Operations of SBIC's

a) Violations

In 1966 Fortune magazine printed an interview with R.E. Kelly who had recently resigned as Deputy Administrator of the SBA responsible for SBIC's.

"He declared that 232 SBIC's about a third of the total, were 'problem' companies. Of this group, Kelly said, fifty-five had lost at least half their private capital, forty-seven had significantly violated SBA regulations, seventy more were being sued or investigated by the SBA and sixty were inactive or about to surrender their licenses. He added that the situation had been even worse before he came to the SBA and began licensing and other procedures. He explained that 'nearly all' the troublesome SBIC's were privately owned and that about three-quarters of these were one-man operations." 85

One type of violation frequently mentioned was self-dealing. These are investments in companies in which principals of the SBIC hold substantial interests. An individual who owned a small business could apply for an SBIC license and then make a loan from this SBIC to his own small firm. By so doing he would enjoy the privilege of federally financed leverage and, of course, the tax incentives.

b) "Larger" Small Business

Another problem has been that SBIC's have provided financing for many companies which are relatively

large. Osborn comments,

"The larger SBIC's have verified in their experience what bankers have long known: that business risk varies inversely with the size of the borrower and that the cost of administering small disbursements is extremely high. In order to survive, these organizations concentrate on making their financial commitments in bigger amounts to the larger small businesses, which not only have a lesser degree of failure but are more likely to show dynamic growth and to become sufficiently large to make public offerings of their securities." ⁸⁶

c) Coverage by SBIC's

Furthermore, only a very small fraction of small businesses will ever receive SBIC loans. In 1971 the cumulative number of disbursements by all SBIC's since their introduction was 38,113 loan and equity financings. ⁸⁷ In 1967 the number of small businesses in the U.S. was between 8.4 million and 12.0 million depending on the definition used. ⁸⁸ Firms which obtained SBIC financing therefore accounted for less than half of one percent of the total.

d) Dominance of Bank Affiliated SBIC's

The dominance of a handful of bank affiliated SBIC's of the industry has been noted above. There are indications that this development was not intended or welcomed by some officials. The following statement

by Senator Wright Patman illustrates this point:

"When the Small Business Investment Act of 1958 was enacted, it provided that national banks and Federal Reserve banks, and state non-member banks were allowed by applicable state law could invest up to 1% of their capital and surplus in the stock of SBIC's. This provision was placed in the act primarily to assist SBIC organizers in raising the necessary private capital to obtain a license. It was not anticipated that banks would wholly own small business investment companies. Commercial banks presently own or have an affiliation with 84 SBIC's, 24 of which are wholly owned by banks. This is an undesirable situation and one loaded with dangerous monopolistic potential".⁸⁹

As a result, the Small Business Investment Act was amended. The limit on total investment by banks in SBIC's was raised from 1% to 5% of the bank's capital plus surplus, but banks were prohibited from holding 50% or more of the equity of any one SBIC.

e) SBIC Efficiency

It has been charged that SBIC's were inefficient in the sense that a large portion of SBIC funds were not being effectively channelled into small business investments.²⁰ As a measure of "efficiency" Widicus calculated SBIC disbursements to small businesses as a percentage of total SBIC borrowing from SBA plus private capital and surplus. He found that 73.5% of

the total funds committed to the program had actually been invested in small businesses. The remaining uninvested funds were mainly held in the form of cash or U.S. government bonds. To bring Widicus' study up to date the same calculation is performed up to 1971.⁹⁰

Gross Loans and Investments by SBIC's
as a Percentage of total debt plus equity of SBIC's
1960-1971⁹¹

	%		%
1960	23.2	1966	76.0
1961	41.1	1967	77.2
1962	46.4	1968	73.8
1963	64.1	1969	76.5
1964	72.1	1970	80.2
1965	73.5	1971	79.9

From this calculation it appears that a relatively large portion of SBIC assets are not invested in small business. The reason for this is not clear. It may be the result of "inefficiency" as Widicus suggests but probably also reflects the scarcity of what might be called reasonable investment opportunities.

The experience of the SBIC's in the U.S. suggests that great care should be taken before a similar scheme is introduced in Canada. Problems have been experienced with the administration of the program and with its effectiveness.

FOOTNOTES

71. A similar proposal has recently been made by the Government of Alberta.
72. 21st Annual Report, Select Committee on Small Business, (U.S. Senate, 1972), p. 6.
73. "Recent Changes in Banking Structure in the U.S.", Select Committee on Small Business, U.S. Senate, March 30, 1970, p. xi.
74. D.H. Woods, "The Economic Role of SBIC's", in I. Pfeffer, ed., The Financing of Small Business, (MacMillan, New York, 1967), p. 304.
75. Ibid., p. 291-292.
76. R.C. Osborn, "The Supply of Equity Capital by the SBIC's", Quarterly Review of Economics and Business, Spring 1973, p. 71.
77. Public Law 92-595, see Twenty-Third Annual Report of the Senate Select Committee on Small Business, 1973, p. 15.
78. R.C. Osborn, op. cit., p. 71.
79. D.H. Woods, op. cit., pp. 303-313.
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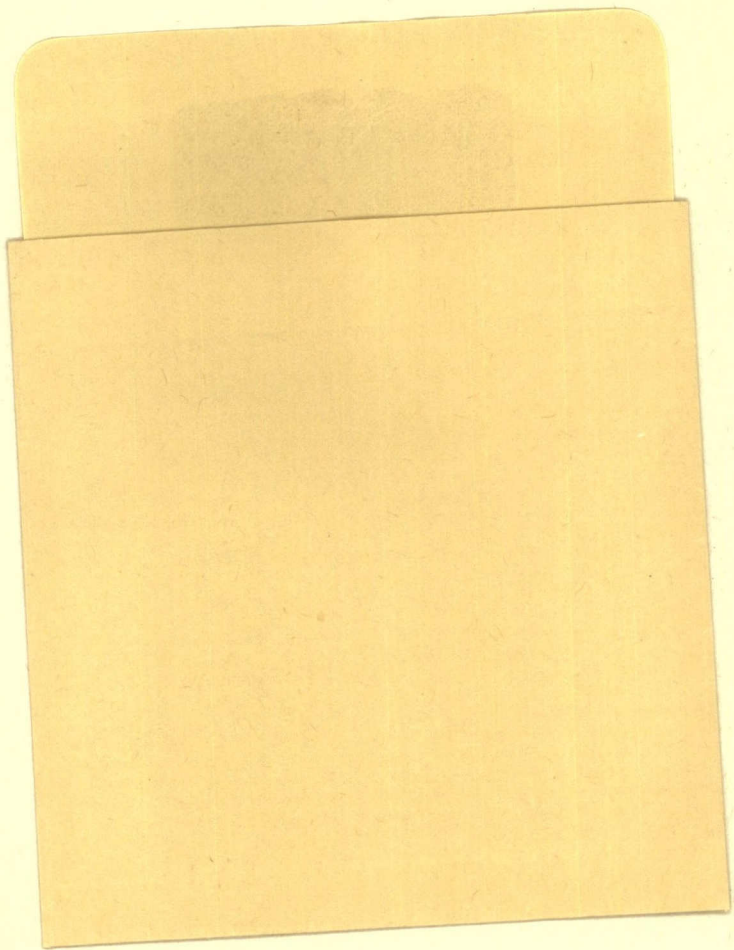
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