Development of the Venture Capital Market in Australia

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DEPARTMENT OF ACCOUNTANCY and LEGAL STUDIES

DEVELOPMENT OF THE VENTURE CAPITAL MARKET IN AUSTRALIA

by Victor Wan

October 1988
To remedy a shortage of venture capital for the development of emerging high technology businesses, the Australian Government in 1984 initiated a Management and Investment Companies (MIC) Program. Under the Program, 11 MIC’s were licensed to raise venture capital from investors who are allowed to claim 100 per cent of their investments as a tax deduction. Apart from the 11 MIC’s, there are other venture capital organisations currently operating in Australia. This study identified a total of 47 venture capital organisations of different ownership structures and investment preferences. Undoubtedly, the MIC Program has played a catalytic role in the rapid development of this market to its current capital base of $353 million. However, there are still segments within the market where venture capital supply is deficient. Further, the recent stock market downturn has dampened the venture capital supply generally. The Government’s initiatives in reviewing its policy framework at this juncture are crucial in order to remove impediments and create a positive environment conducive to the long term development of the venture capital market in Australia.
I. INTRODUCTION

Over the last few years, there has been an increasing awareness among many industrialised nations of the importance of providing venture capital, which has been defined as "high risk capital directed towards new or young businesses with prospects of rapid growth and high rates of return" (Bureau of Industry Economics, 1987). There is increasing emphasis on the use of innovative and competitive technology in developing export-orientated products in the climate of highly competitive world markets. Improved export performance will in turn contribute towards economic growth and job creation in the economy. In view of its significance to economic development therefore, it would be of interest to study the experience of an industrialised country such as Australia in developing its venture capital market.

The purpose of this paper is to delineate and analyse the venture capital market in Australia, to discuss its future development and finally to consider the policy implications.

II. DEVELOPMENT OF VENTURE CAPITAL MARKET IN AUSTRALIA

2.1 Shortage of Venture Capital in Australia:

The development of an organised Australian venture capital market is of relatively recent origin. A small number of private venture capital organisations were established in the 1960's and 1970's, but the credit squeeze of the early 1970's together with the undercapitalisation of those firms at that time caused most of them to fail or to cease making new investments (Peacock, 1977). It was widely believed that there was a shortage of venture capital in the 1970's for the development of young technology-based firms (Ferris, 1980). Concerned with the worsening export performance and the need to stimulate the
developing of the high technology sector, in 1981 the Australian Government appointed the Espie Committee to report on the environment for commercialising high technology ventures and recommend on the appropriate actions for improving this environment, particularly in respect of the availability of venture capital (Espie Committee, 1983). The Committee confirmed the deficiency in the supply of venture capital, especially for high technology start-up businesses. It also found, inter alia, a lack of managerial skills among such businesses. The Committee's main recommendation was the establishment of venture capital companies, known as "Management and Investment Companies" (or MIC's), which would provide financial and managerial support to these businesses.

2.2 The Management and Investment Companies (MIC) Program:
in accepting the Espie Committee's recommendation, the Government commenced operation of the Management and Investment Companies (MIC) Program in 1984. The MIC Program operates under the Management and Investment Companies (MIC) Act, 1983, and is administered by the MiC Licensing Board which consists of senior Government officials and prominent business people. The specific aims of the MIC Program are as follows:

(1) To stimulate the development of a private Australian venture capital market.

(2) To provide financial and managerial assistance for the start-up and initial expansion of locally based businesses which are export-oriented, use innovative technology and have the potential to expand rapidly.

So far eleven MIC's have been licensed to raise an amount of "tax concessional capital" approved by the Board. Under such an
arrangement, the MIC's can offer their shareholders a 100 per cent tax deduction for their investments in the share capital of the MIC's, provided they hold the shares for at least four years. They must invest a minimum of 70 per cent of their entire capital in businesses which have to be first certified by the MIC Licensing Board as being "eligible businesses". Such businesses are generally small, innovative, fast-growth, export-oriented, employment-creating businesses (Wan, 1986). They are also restricted to investing no more than 20 per cent of their funds in any one investee company.

The MIC Licensing Board currently allows the various MIC's to raise each year a maximum of $40 million of tax concessional capital, as well as a maximum of $5 million of non-tax concessional capital to supplement tax concessional capital. In this context, tax concessional capital refers to capital on which investors may claim the 100 per cent tax deduction while this deduction is not available for non-tax concessional capital. The Board allocates the $40 million among MIC's based on its assessment of their investment plans and performance. The approved fund raising must be completed within a stipulated time limit.

III. STATE OF THE PRESENT VENTURE CAPITAL MARKET

3.1 Data Collection

The discussion of the present state of the venture capital market is based largely on data drawn from a recent survey conducted by Wan (1988b). Data from other published sources were also utilised as background information to this paper (Bureau of Industry Economics, 1987; MIC Licensing Board, 1987a). The survey took the form of a questionnaire mailed to 183 organisations. These
organisations encompass large industrial firms, Government-funded development corporations, major investment and financial institutions, as well as other organisations which are considered to be likely suppliers of venture capital. They were compiled by combining the suggested lists contributed by a panel of five senior executives from relevant Government and private-sector organisations, as well as regular monitoring of recent reports from the financial press.

The survey instrument contains questions relating to a range of financial and organisational characteristics of the surveyed firms, as well as their investment preference and history. Of all the 183 questionnaires sent, 81 replies were received, giving a response rate of 44.2 per cent. Of the 81 replies received, 47 replies indicated that they were involved in venture capital investment. The panel were not aware of any other organisation active in the field.

3.2 Description of the Market:

An organised Australian venture capital market, since its inception, has grown rapidly and become more diversified. This growth of the venture capital market may be shown by an increase in the venture capital available from the MIC's and other private-sector sources, which grew from $2 million at 30 June 1983 to $353 million at 30 June 1987 (MIC Licensing Board, 1987a). The investment of venture capital funds by the MIC's alone has increased rapidly since the commencement of the MIC Program. For the year ending 30 June 1987, the MIC's have invested a total of $51 million spread over 59 investments in 48 different businesses (MIC Licensing Board, 1987a), some of which received funding from more than one MIC. The corresponding value of investments for all
other types of venture capital organisations was estimated at $208 million.

The major private sources of venture capital are derived mainly from domestic investors. Overseas sources of funds are estimated to comprise only two per cent of the total funds (Bureau of Industry Economics, 1987). The distribution of the private sources of funds in the Australian market as well as in the United States market, which is a better established market, is shown in Table 1. This Table will be discussed further in Section 4.1.

Table 1: Comparison of Private Sources of Venture Capital, between Australia and the United States, 1987

<table>
<thead>
<tr>
<th></th>
<th>Australia $m</th>
<th>(%</th>
<th>United States $m</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pension funds, insurance companies and other financial institutions</td>
<td>130</td>
<td>44</td>
<td>2,020</td>
<td>59</td>
</tr>
<tr>
<td>Individuals</td>
<td>101</td>
<td>34</td>
<td>392</td>
<td>12</td>
</tr>
<tr>
<td>Corporations</td>
<td>61</td>
<td>20</td>
<td>400</td>
<td>12</td>
</tr>
<tr>
<td>Endowments</td>
<td>0</td>
<td>0</td>
<td>209</td>
<td>6</td>
</tr>
<tr>
<td>Overseas sources</td>
<td>6</td>
<td>2</td>
<td>361</td>
<td>11</td>
</tr>
<tr>
<td>Total</td>
<td>298</td>
<td>100</td>
<td>3,382</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Author's survey, BIE and Venture Economics

The Australian venture capital market is concentrated in the two largest cities of Sydney and Melbourne. The location of the offices of the respondent venture capital organisations in the survey is shown in Table 2.
6.

Table 2: Number of Offices Maintained by Various Types of Venture Capital Organisations

<table>
<thead>
<tr>
<th>State Capital City Location</th>
<th>MIC No. Head Offices (%)</th>
<th>MIC No. All Offices (%)</th>
<th>Non-MIC No. Head Offices (%)</th>
<th>Non-MIC No. All Offices (%)</th>
<th>Government Funded Corporations No. Head Offices (%)</th>
<th>Government Funded Corporations No. All Offices (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sydney</td>
<td>4</td>
<td>36</td>
<td>14</td>
<td>48</td>
<td>3</td>
<td>43</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5</td>
<td>38</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>20</td>
</tr>
<tr>
<td>Melbourne</td>
<td>3</td>
<td>27</td>
<td>8</td>
<td>28</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4</td>
<td>31</td>
<td></td>
<td></td>
<td>3</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>20</td>
</tr>
<tr>
<td>Perth</td>
<td>2</td>
<td>18</td>
<td>4</td>
<td>15</td>
<td>2</td>
<td>29</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>15</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>20</td>
</tr>
<tr>
<td>Brisbane</td>
<td>1</td>
<td>9</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>8</td>
<td></td>
<td></td>
<td>0</td>
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<td>2</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>13</td>
</tr>
<tr>
<td>Adelaide</td>
<td>1</td>
<td>9</td>
<td>3</td>
<td>10</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>8</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>13</td>
</tr>
<tr>
<td>Hobart</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
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<td></td>
<td>2</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>13</td>
</tr>
<tr>
<td>Total</td>
<td>11</td>
<td>100</td>
<td>13</td>
<td>100</td>
<td>29</td>
<td>44</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>100</td>
<td>100</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Author's survey

The survey revealed a diverse range of organisations which are involved in the provision of venture capital (Wan, 1988b). The distribution of the above venture capital firms by the categories of organisations is tabulated in Table 3. These organisations may be classified into the following three types: (1) MIC's numbering 11, (2) non-MIC private-sector venture capital firms (designated as non-MIC's in this paper) numbering 29, and (3) government funded development corporations numbering seven. Of the 29 non-MIC's, the most significant groups were operations controlled by public companies, merchant banks, stockbrokers, and independent venture capital firms.
Table 3: Types of Organisations Involved in Venture Capital Market

<table>
<thead>
<tr>
<th>Type of Organisation</th>
<th>Number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. MIC's</td>
<td>11</td>
<td>23</td>
</tr>
<tr>
<td>II. Non-MIC's:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1) Public companies</td>
<td>9</td>
<td>19</td>
</tr>
<tr>
<td>(2) Merchant banks or subsidiaries</td>
<td>7</td>
<td>15</td>
</tr>
<tr>
<td>(3) Independent venture capital funds</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>(4) Stockbrokers</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>(5) Trading banks or subsidiaries</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>(6) Insurance companies/pension funds</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>III. Government funded development corporations</td>
<td>7</td>
<td>15</td>
</tr>
<tr>
<td>Total</td>
<td>47</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Author's survey

As was shown in Table 3, seven Government funded corporations have in recent years become involved in the supply of venture capital. These are development finance corporations, two of which are funded by the Federal Government, while the remainder are funded by the various State Governments. The Government-funded corporations ensure that their investment activities are consistent with the economic policies laid down by the respective Governments. The State-funded corporations concentrate their investments in industries targeted by the State Governments as holding out the highest potential for economic development of the respective States. For example, the Victorian Investment Corporation funded by the State Government of Victoria provides venture capital to firms in a small list of selected industries identified by the Victorian State Government as being important to the economic future of that State, i.e. the biotechnology, medical technology, electronics, information technology, advanced materials and advanced manufacturing industries (Victorian Investment Corporation, 1987).
Table 3: Types of Organisations Involved in Venture Capital Market

<table>
<thead>
<tr>
<th>Type of Organisation</th>
<th>Number</th>
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</tr>
</thead>
<tbody>
<tr>
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<td>11</td>
<td>23</td>
</tr>
<tr>
<td><strong>II. Non-MIC’s:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1) Public companies</td>
<td>9</td>
<td>19</td>
</tr>
<tr>
<td>(2) Merchant banks or subsidiaries</td>
<td>7</td>
<td>15</td>
</tr>
<tr>
<td>(3) Independent venture capital funds</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>(4) Stockbrokers</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>(5) Trading banks or subsidiaries</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>(6) Insurance companies/pension funds</td>
<td>2</td>
<td>4</td>
</tr>
</tbody>
</table>

| **III. Government funded development corporations** | 7 | 15 |

| **Total** | 47 | 100 |

**Source:** Author’s survey

As was shown in Table 3, seven Government funded corporations have in recent years become involved in the supply of venture capital. These are development finance corporations, two of which are funded by the Federal Government, while the remainder are funded by the various State Governments. The Government-funded corporations ensure that their investment activities are consistent with the economic policies laid down by the respective Governments. The State-funded corporations concentrate their investments in industries targeted by the State Governments as holding out the highest potential for economic development of the respective States. For example, the Victorian Investment Corporation funded by the State Government of Victoria provides venture capital to firms in a small list of selected industries identified by the Victorian State Government as being important to the economic future of that State, i.e. the biotechnology, medical technology, electronics, information technology, advanced materials and advanced manufacturing industries (Victorian Investment Corporation, 1987).
Of the $56 million known to have been invested by all the Government funded corporations, $28 million has been invested by the Australian Industry Development Corporation (Australian Industry Development Corporation, 1987), while the Victorian Investment Corporation has invested $25.6 million in the State of Victoria (Victorian Investment Corporation, 1987).

3.3 Investment Preferences of Venture Capital Organisations:

Compared with the non-MIC's, the MIC's and government funded corporations have a higher proportion of total investment funds in ventures in the earlier stages, i.e. seed, start-up and development stages. The MIC's have a much higher proportion of their capital invested in industries utilising high technology compared with the other categories of venture capital organisations. The MIC's had invested 83 per cent of their capital in such businesses as at 30 June 1987 while the corresponding figures for the government corporations and non-MIC's were 54 per cent and 58 per cent respectively. However, all the three categories of venture capital organisations have no more than one-tenth of their total funds invested in ventures in the seed stage. The values of investments by stage of development by the MIC's, non-MIC's and government corporations are shown in Table 4.

1. The seed stage refers to the phase where a product is being developed to a prototype. Ventures at the start-up stage are building an operation to achieve sales. The development stage occurs when ventures which are already operational require funding to become commercially profitable. In contrast, ventures in the expansion stages are already profitable but require funding to expand towards their full potential.

2. For present purposes, the high technology industries referred to are the same as those identified by the Australian Industrial Research and Development Incentives Scheme, such as biotechnology and computer software (Johnston and Hartley, 1985).
Table 4: Value of Investments by Stage of Development, 1987

<table>
<thead>
<tr>
<th>Stage of Development</th>
<th>MIC</th>
<th>Non-MIC</th>
<th>Government funded Corporations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$m</td>
<td>(%)</td>
<td>$m</td>
</tr>
<tr>
<td>Seed</td>
<td>2</td>
<td>4</td>
<td>15</td>
</tr>
<tr>
<td>Start-up</td>
<td>16</td>
<td>32</td>
<td>30</td>
</tr>
<tr>
<td>Development</td>
<td>17</td>
<td>34</td>
<td>6</td>
</tr>
<tr>
<td>Expansion</td>
<td>14</td>
<td>28</td>
<td>91</td>
</tr>
<tr>
<td>Mezzanine</td>
<td>1</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>Management Buyout</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>51</strong></td>
<td>100</td>
<td><strong>152</strong></td>
</tr>
</tbody>
</table>

Source: Author's survey and BIE

The preferred range of investment sizes also varies among the various venture capital organisations. In a single investment, the MIC's, on average, prefer to invest between $0.5 million and $1.3 million, while non-MIC's prefer to invest between $0.7 million and $1.7 million. The corresponding range for Government-funded corporations is between $1.5 million and $15 million.

3.4 Provision of Capital by Stock Markets:

Stock markets are traditionally organised markets for the trading of shares of companies listed on the exchanges. In 1984 the first second board market was set up in addition to the main stock exchange in Perth in the State of Western Australia. The stock exchanges in all the other Australian State capital cities have established second board markets since then. They have less stringent and costly listing requirements than the main board markets. For example, firms listed on the Sydney Second Board market in the State of New South Wales need only 100 shareholders and a minimum issued capital of $200,000 compared to at least
300 shareholders and an issued capital of $300,000 in the case of the main board market. Since their inception, these markets have grown rapidly to reach 294 companies with a market capitalisation of $3.988 billion as at 30 June 1987 (Australian Second Board Consultants, 1987).

In short, these second board markets serve the following functions:

(1) They provide smaller firms with the opportunity of raising venture capital through the issue of new shares on the market.

(2) They facilitate the sale of shares in some investee businesses. The sale of investee shares is one of the two usual means by which investors realise their capital profit on venture investment, apart from merger and acquisition with other businesses.

(3) Ideally, they provide an objective market valuation of some of the assets in a venture capital portfolio. This can be important in facilitating the raising of venture capital finance by providing an objective yardstick for venture pricing. However, since the recent stock market decline, trading has been so thin that the market does not provide a proper market value.

IV. ANALYSIS OF THE PRESENT VENTURE CAPITAL MARKET

4.1 Characteristics of the Market:

This section deals with selected features of the market under the headings of investment preferences, funding sources and geographical distribution of venture capital organisations.
(1) **Investment Preferences:**

Different venture capital organisations prefer to invest in ventures at certain stages of development (refer Table 4). For example, the MIC's generally have a preference for investing in ventures at the start-up and development stages. This reflects, to some extent, the requirement that they invest at least 70 per cent of their total capital in eligible businesses which are normally young businesses in their early stages of development. The Government funded corporations also tend to concentrate their investments in ventures in the start-up and development stages but do not compete directly with the MIC's because of their preference for larger proposals. The non-MIC's, which are not restricted by Government policies and regulations in their investment policies, generally prefer to invest in ventures at the lower risk end of the market. For example, 60 per cent of the aggregate value of their investments were in ventures at the expansion stage of development.

(2) **Funding Sources:**

There are significant differences in the funding sources between private venture capital organisations in Australia and those in the United States as indicated in Table 1. The proportion of pension funds, insurance companies and other financial institutions in funding venture capital organisations is 44 per cent in Australia, which is lower than the corresponding figure of 59 per cent in the United States.

In Australia there is no prudential requirement preventing pension funds from investing in venture capital organisations. This concession is not an incentive for the pension funds to invest in the MIC's as they are tax-exempt themselves (Bureau of Industry
Economics, 1987). In some overseas countries, such as the United Kingdom and the United States, the prudential controls have been relaxed to allow pension funds to invest in venture capital organisations. Moreover, the established track records of profitable venture capital funds have encouraged pension funds to invest in them.

Only five insurance companies as well as six industrial corporations are indirectly involved in the market through minority equity investments in venture capital organisations. So far, none of these large industrial corporations has established specialised venture capital divisions and subsidiaries, unlike the situation with a number of large American corporations. In fact, three-quarters of the institutional and corporate investors surveyed cited the limited track record of venture capital investments as the reason for not actively participating in the venture capital market.

(3) Geographical Distribution:
As noted in Table 2, the Australian venture capital industry is heavily concentrated in Sydney and, to a lesser extent, Melbourne. It is interesting to note that these cities contain the head offices of a large majority of Australia's largest financial institutions and industrial corporations, and are the capitals of the two most populous and industrialised states, New South Wales and Victoria. These states also have the heaviest concentrations of high technology industries, which have benefitted from the critical mass of population, infrastructure, manufacturing, research facilities and professionally trained personnel, as well as State Government policies encouraging the development of these industries.
Fifty one per cent of venture capital organisations preferred to invest only in ventures in the states in which they maintain offices. Thus, ventures in states outside New South Wales and Victoria may have more difficulty in attracting funds. On the other hand, the concentration of venture capital firms would contribute to greater interaction among the firms, and enhancing the likelihood of more co-operative efforts.

(4) Overall Trend:

The venture capital market has experienced rapid growth which has occurred from a very small base. However, the venture capital funds in Australia in 1986 amounted to only $15 per capita compared to $73 in the United States (Camilleri, Bourke and Masterman, 1987). Furthermore, the venture capital market comprised only 0.16 per cent of the total stock market capitalisation of $225 billion as at 30 June 1987, well below the OECD benchmark of one per cent for a viable venture capital market (OECD, 1986). Thus, these indicators point to the potential for further growth of the market.

4.2 Factors Affecting Market Development

What then are the factors affecting the development of venture capital market in Australia? The following may be identified:

(1) Government Initiatives:

It is generally known that the development of the ventures capital market in several developed countries including the United States and the United Kingdom has been promoted through Government initiatives. For example, the development of the United States venture capital market, which is arguably the most established among the industrialised countries, was given impetus in 1958 when the Federal Government implemented the Small Business Investment
Program (Dominguez, 1984).

The recent Government support of venture capital development in Australia can be largely attributed to fiscal measures such as the tax incentive associated with the MIC Program. Other measures include a 150 per cent tax deduction equal to the amount of expenditure incurred for eligible research and development projects undertaken by Australian firms. The minimum annual research and development expenditure is $50,000 for firms wishing to make use of the deduction. However, this tax benefit is unlikely to be realised by young start-up companies which are not yet commercially profitable.

However, not all Government initiatives in this area have been conducive to the development of the venture capital market. For example, the recently introduced capital gains tax has been perceived by many commentators as a major impediment to the growth of the venture capital market (BLE Capital, 1987; MIC Licensing Board, 1987b). Venture capitalists achieve their profits from the realising of capital gains on disinvestment after a period which may range from three to more than ten years and this tax may disadvantage the industry considerably. Overseas experience shows that a change in the capital gains tax structure can greatly affect the development of the venture capital market (Perez, 1986).

(2) Stock Market and Economic Conditions:

The supply of venture capital can be greatly affected by the state of the stock market and economic conditions. In a buoyant share market or under the condition of strong economic growth, the venture capital market may flourish. However, it can also be
extremely vulnerable to downturns in the economy or stock market.

A report by the OECD has noted that:

... the supply of venture capital can, however, be highly volatile and can virtually dry up in periods of recession and/or stockmarket decline (OECD, 1986).

An attempt to develop the venture capital market in the 1970's was hindered by the lack of a suitable stock market in which shares in small technology-based companies could be sold. This made investment in these companies unattractive because it was difficult for financiers to realise their investments.

However, the establishment of the second board markets has greatly alleviated this problem. The generally buoyant markets, which prevailed between 1984 and late 1987, greatly assisted venture capital organisations in their fund raising activities and this contributed to the substantial growth of the venture capital market during this period. Besides the MIC's, many organisations took advantage of the favourable economic conditions to become involved in the venture capital market. Buoyant market conditions were also an important factor in the rapid expansion of the United States venture capital market from US$2.5 billion in 1977 to US$16.3 billion in 1984 (Bureau of Industry Economics, 1987).

(3) Regulatory Environment of Financial Markets:

Deregulation has acted to remove or to relax some of the regulations that had stifled the development of an Australian capital market. In theory, the development of the venture capital market should be assisted by the deregulation of the financial markets.
Prior to April 1985, Government regulation of the financial markets such as the maximum interest rate chargeable to credit facilities of less than $100,000 tended to discourage financial institutions from investing in small innovative firms. A series of deregulatory measures, such as the lifting of the interest rate ceiling on loans of less than $100,000 to make these markets more flexible and competitive, was introduced from 1985 onwards following a review of the Australian financial system by the Campbell Committee in 1981 and the Martin Report in 1983. Another example of deregulation is the relaxation of regulations relating to the exchange controls, which has facilitated the inflow of foreign capital. Furthermore, the sixteen licences granted to foreign banks in 1985 has led to greater competition which is reflected in a wider range of financial services and more aggressive marketing.

However, an analysis of the contents of the trading banks' annual reports and publications in recent years revealed little direct evidence that these measures have had a significant impact on their involvement in the venture capital market. Of all the trading banks operating in Australia, only Westpac and Citibank have venture capital subsidiaries. These subsidiaries were in fact established before the commencement of the MIC Program.

It may be argued that the competitive capital market environment which resulted from the deregulation has given rise to a wider range of services provided, including the provision of loans to smaller business ventures, particularly in their later stages of development. This would have the effect of easing demand on the limited supply of equity funds in the fledgling venture capital market.
(4) Venture Capital Management:

Many venture managers are much less informed about the nature of investments in high technology industries than are the inventors and entrepreneurs themselves. This is particularly true if the managers are more commercially than technically orientated in their background. This asymmetry of available information on new ventures has been noted by a number of writers such as Carleton and Cooper (1981). Thus, there is an increasing emphasis in recruiting and training managers with both commercial and technical knowledge in the industry.

The total number of professional staff (i.e. employees with recognised tertiary qualifications) employed in the industry has grown from a few persons to 109. The number of professional staff is at present considered by many to be still small; in fact, a number of the venture capital organisations considered that a lack of staff was one of the constraints to the expansion of their investment activities (Bureau of Industry Economics, 1987). A larger number of qualified professional management staff is necessary for the further expansion of the industry.

(5) Entrepreneurial Resources:

Entrepreneurs are scarce resources and known to possess certain personal qualities which distinguish them from others (Begley and Boyd, 1987; Sexton and Bowman, 1985). Without entrepreneurs who are prepared to take the necessary risks, there can be no new ventures. In the past, a shortage of entrepreneurial people and business planning skills were noted (Gibbons, 1986). However, in recent years, new programs have been initiated by the Australian Government (Wan, 1988a; Wan, forthcoming). These programs are aimed at facilitating the development of entrepreneurial
qualities, providing training in business planning skills and improving societal attitudes towards entrepreneurship.

(6) Growth of High Technology Firms:
The high technology sector has expanded considerably in the 1980's (Camilleri, Bourke and Masterman, 1987; Morris, Tardif and McAlister, 1987). As high technology firms constitute the largest client base of venture capital organisations, the rapid expansion of the sector has created many attractive ventures for investment, thus exerting a "demand pull" effect on the development of the venture capital market. The number of applications for funding received by venture capital organisations has increased from 2,235 for the year ending 30 June 1984 to 4,710 for the year ending 30 June 1987, an increase of 211 per cent (Bureau of Industry Economics, 1987).

The first four factors identified above affect the supply side of the market, while the remaining two affect the demand side. These factors are by no means mutually exclusive. For example, growth of the high technology firms is very much affected by prevailing economic conditions. Furthermore, the increased number of entrepreneurs in the high technology industries would ultimately contribute to an increased number of new firms in these industries.

4.4 Assessment of Market Deficiency:
The rapid growth of the venture capital market in the last few years does not necessarily mean that any deficiency in the supply of venture capital has been effectively remedied. A market deficiency implies a gap between the supply and demand of venture capital funds. Such a gap occurs when there is an imperfection in the market process, so that some ventures, with potentially
attractive returns after adjusting for the risk involved, are not funded. This may result in an inefficient allocation of resources in the economy, with funds being channelled to less profitable projects.

For the purposes of this analysis, the venture capital market may be segmented so that the presence of funding gap may be determined with respect to each of these segments. The most commonly used and most relevant segmentation is based on various stages of venture development. These various stages, in order of venture development, are the seed, start-up, development, expansion, mezzanine (i.e. bridging finance before flotation), and management buyout stages. In general, varying degrees of risk are attached to the various stages, with degree of risk decreasing from the seed stage to the other stages.

A recent study conducted by the Bureau of Industry Economics was based on an extensive personal interview of a wide spectrum of participants who were directly or indirectly involved with venture capital. Apart from various groups of venture capitalists, evidence was elicited from a variety of people including financiers, professional consultants, entrepreneurs and government officials. It was concluded that many proposals at the earlier stages of venture development (i.e. seed, start-up and development stages) with good commercial prospects were unable to attract finance (Bureau of Industry Economics, 1987). In particular, there was clear evidence that a significant gap in the provision of seed capital existed. On the other hand, there is little evidence of a venture capital gap for businesses at the later stages of development (i.e. the expansion, mezzanine and management buyout stages).
In fact, there is a Government grants scheme directed towards projects in the seed stage. Under the scheme, up to only half the approved expenses of competitively selected projects are funded. The scheme so far has not had a significant impact on the supply of seed capital, due to limited funding available under the scheme (Department of Industry, Technology and Commerce, 1987; Industry Research and Development Board, 1987).

There are two commonly cited causes for the gap in the market. These are the lack of competition in financial markets and lack of information on the part of both the suppliers and demanders of venture capital.

The lack of competition has been ameliorated by a number of deregulatory measures as discussed previously. These measures have encouraged the development of a much more competitive capital market as a whole.

The Australian Chamber of Manufactures has suggested that, with venture capital now available from a variety of sources such as MIC's, Government corporations and non-MIC's, ventures with commercial prospects have little probability of being unable to obtain funding (Australian Chamber of Manufactures, 1986). It has also been suggested that entrepreneurs are becoming more aware of the sources of venture capital funds because of the increase in the number of applications for funding (Bureau of Industry Economics, 1987). Hence, the lack of information no longer poses a serious problem, and the venture capital gap has narrowed.

However, these arguments are inconclusive, as they fail to address the possibility that there could still be a significant number of unfunded but attractive investment proposals. Therefore, there is no indication, based on these arguments, that the demand for
venture capital is actually being satisfied. On the demand side, the lack of information on the part of entrepreneurs in regard to venture capital funding sources and processes as well as business planning approaches has been noted by some writers (Griffiths, 1986; Lambert, 1984). This is also corroborated by a recent study: that many entrepreneurs are unaware of the various alternative sources of funds, and that they are not knowledgeable in the preparation of business plans for funding (Bureau of Industry Economics, 1987). The net result is that there is less than optimal quantity of funds available to entrepreneurs.

On the supply side, it has been noted that many venture capitalists still have difficulty in assessing both the technical and commercial aspects of high technology ventures, notwithstanding the fact that there has been some improvement in the assessment of venture proposals by venture capitalists in recent years.

While a precise determination of the extent of the venture capital gap is not possible, the above findings tend to support the view that a gap in the financing of ventures exists at the earlier stages of development. Furthermore, there appears to be an overall tendency for venture capital organisations to favour better established and less risky investments.

V. RECENT DEVELOPMENTS AND OUTLOOK

A substantial decline in share prices in the public stock markets has been experienced in recent months. In this subdued market climate, venture capital firms generally are experiencing more difficulty in raising venture capital from the investing public. Under the existing market conditions, venture capital investment
is perceived to be much riskier than investment in more established companies. On the other hand, demand for funding from existing venture capital organisations has increased as a result of decreased supply of funds available from stock markets. Due to these uncertain market conditions, it is possible that some MIC and non-MIC companies may prefer to invest an even greater proportion of their limited funds raised in more established businesses to seek short-term profit and to generate more cash flow. Some others may use their limited capital raised to cater only for follow-on funding of their existing portfolios. As the MIC Program is relatively new, many of their investee businesses have not developed to the stage where second and third round financing is required. Therefore, any excess funds raised must be reserved for such events. This may lead to a reduction in their investments in new businesses, and thus the venture capital gap for ventures at the seed and start-up stages may be widened further. Moreover, in the subdued market condition, it will also take much longer for the venture capitalists to realise a profitable return on their investments.

Given the present market environment, it is likely that some rationalisation of the venture capital industry will occur. The number of venture capital organisations may decrease, as some of these organisations leave the industry and others merge in order to reach a more viable size. Overall, the present and future state of the stock market and economic conditions will have a

3. A rule of thumb in the venture capital industry is that two to three times the initial investment is required for later stage financing.
particularly important influence on the development of a young venture capital market like Australia's.

There is an increasing trend towards globalisation of financial markets in general, and the venture capital market in particular. In the long run, this trend will tend to blur the distinction of national boundaries, and lead to more interaction and flow of information between the Australian venture capital organisations and their overseas counterparts generally. Specifically, this may result in an increasing number of cross-border fund raising and investment activities, such as syndication and joint venture investments involving Australian and overseas investors.

International specialist venture capital organisations like the Boston-based TA Associates have recently acquired venture capital interests in Australia. Moreover, some of the MIC's have established overseas offices and associates, which facilitate such activities as the raising of capital, the transfer of technology, and the marketing of their investees' products.

In the long run, there may be an increase in venture capital investments by large industrial corporations and other financial institutions, as the venture capital industry establishes a greater track record of profitable disinvestments. This would be a significant boost to the development of the Australian venture capital market.

Undoubtedly, government policy will impact on each of the influences we have considered. These influences in turn will have different effects on the future direction of the venture capital market in Australia.
VI. CONCLUSION

At present, the Australian venture capital market is at the crossroads as it is still confronted by the problems discussed above. Government policies at this juncture will play a critical role in shaping its future development. Some of the policy areas for consideration by the Government are put forward as follows:

(1) The taxation structure, particularly the company and capital gains tax rate, may be reviewed. Although some positive changes to the tax legislation have been introduced, the current rates of corporate tax and capital gains tax still compare unfavourably with several other industrialised countries, including the neighbouring New Zealand. A more favourable taxation structure may well be of a great stimulus to investment in new ventures.

(2) The current shortage of capital for the earlier stages of venture development, particularly the seed and start-up stages has been discussed. The role of Government corporations such as the Australian Industry Development Corporation may be assessed to determine the feasibility of increasing their involvement in the provision of capital for these funding needs, at least in the short term. It is apparent that the MIC's as well as the non-MIC's in general do not currently have sufficient capital to satisfy demand for capital for these stages, and that the Government grants scheme is limited in funding and lacks the commercial orientation to make a significant contribution in this area. Furthermore, a strategy for a longer term solution to the problem should be devised taking into account some of the causes we have discussed. This would include addressing the problems of information access as well as the managerial and
entrepreneurial skill base through the provision of integrated training facilities.

(3) The Government's stated intention is to continue its support for the MIC Program for only a limited period, probably for another two to three years. There is a risk that the Program may be terminated before a viable venture capital market becomes established. This is inconsistent with several overseas government initiatives in venture capital which extent over a much longer period. Thus a possible extension of the MIC Program beyond the next two to three years may be considered.

Central to the Government strategy to develop the local venture capital market has been the MIC Program. It is too early to form a general assessment of the Program's performance as many of the investee businesses are only in the early stages of their development. However, it has already had some visible signs of achievement despite its problems. For example, their investee businesses employed more than 3,680 people, of whom in excess of 2,350 were skilled workers. Their total sales exceeded $249 million, of which more than $70 million were exports (MIC Licensing Board, 1987a). Moreover, the MIC Program has acted as a catalyst in the development of the Australian venture capital market (Bureau of Industry Economics, 1987).

However, a viable venture capital market in the long run cannot be assured through government initiatives such as the MIC Program per se. To achieve this goal calls for an overall coherent framework of government policies which create an environment favourable to the development of the venture capital market.
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