

Venture Capital Industry Development in the Hong Kong and Pearl River Delta Region

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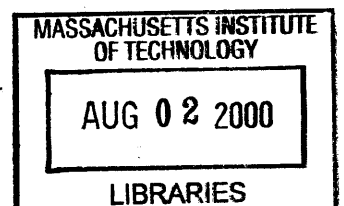
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ABSTRACT

Venture capital has been the initial source of capital for some of the most visible new firms in the United States for the past decades. The well-known multinational high-tech companies such as Intel, Apple Computer, and Microsoft, were all backed by venture capital funds at their inception. Thus, it is well recognized that venture capitalists play a crucial role in supporting many new high-tech firms to grow into successful, if not multinational, companies. Nowadays, other countries in Europe and Asia are also attempting to establish high technology industries of their own for the sake of restructuring their economic systems. As a result, venture capital has naturally become an issue of concern.

In this thesis, I will use the Hong Kong and Pearl River Delta Region as a case study. I generalize the factors that are influencing venture-capital development and review the current development of venture-capital activities. I also investigate the investment profile, investment style, competition, and other important elements, of venture-capital firms in the region, especially in Hong Kong.

This research was conducted through review of current literature and personal interviews with practitioners in the Hong Kong high-technology industry and venture capital industry development. The goal of this thesis is to draw a conclusion on the potential of the development of the venture-capital industry in the subject region.

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CHAPTER 1

Introduction

Venture capital has been the initial source of capital for almost all of the most visible new firms in the United States for the past decades. The well-known multinational high-tech companies such as Intel, Apple Computer, and Microsoft, were all backed by venture capital funds at their inception. Thus, it is well recognized that venture capitalists play a crucial role in supporting new high-tech firms to grow into successful, if not multinational, companies. Today, the U.S venture capitalists are more aggressive than ever in channeling capital into the development of high-tech startups. According to Gompers and Lerner, who recently wrote a new book on the venture-capital cycle, the pool of venture-capital funds has expanded from less than \$1 billion in 1976 to over \$60 billion in 1999 (Gompers, 1999). Most of these funds go to Silicon Valley in California and Route 128 in Massachusetts, which are the heart and soul of the U.S. “new” economy (Zook, 1999). This perhaps is the best evidence that venture capital has lead to the success of high-tech industries, and consequently a robust economy.

Nowadays, other countries, mainly those in Europe and Asia, are also attempting to establish high technology industries of their own for the sake of restructuring their economic systems. As a result, venture capital has naturally become an issue of concern. Among these countries are the less developed countries, which are hoping to utilize venture capital to promote economic growth. In fact, venture-capital investment has already been seriously considered as an alternative strategy for economic development by multilateral financial institutions such as the World Bank (Sagari, 1992).

For countries that play a different role from the United States in the global economic system, there are uncertainties as to in what form venture-capital activities should operate. Should they transplant the U.S model, or create a new one that fits into their existing economy? There is certainly more than one question to be answered as far as venture-capital development is concerned. For example, are there enough high-tech startups in which venture capital can invest? Also, are there skilled venture-capital managers in the region to add value to the investees, which is the major task of venture capitalists? Answers to these questions are important because they lead decision-makers to discover what policy and business environment will contribute to the success of the venture-capital market. In this thesis, I will use Hong Kong and the Pearl River Delta as a case study, because this region has undergone a rapid transformation over the past two decades and is attempting to develop high-tech industries, which implies its needs for venture-capital markets. Simultaneously, Hong Kong's economic integration with the Pearl River Delta (PRD) region of Mainland China may pose both positive and negative implications for Hong Kong's high-technology development and its venture-capital market development.

Since China carried out the open door policy in the late 1970s, the region has evolved from a rural economy into an industrialized, export-oriented, economy. It is now the richest province in China, and it is attempting to develop high-tech industries to sustain its phenomenal economic growth. What does that mean for Hong Kong?

I will examine the opportunities for venture capitalists to invest in high-technology industries, especially the services-related information technology industries, in Hong Kong. In particular, I will assess the potential for Hong Kong to become the

headquarters of venture-capital firms in the PRD region and in non-Japan Asia. Although both the PRD and Hong Kong intend to develop high-technology industries, there is a shortage of venture capitalists to provide financial resources for startups. This is true not only for the Hong Kong/PRD region, but also for the non-Japan Asia region as a whole (The Economist, 2/5/2000). As the supply of venture capital is essential to the success of high-technology industries, it is my interest to discover what it takes to establish a well-functioning high-technology oriented venture-capital market in Hong Kong.

The specific chapter plan is as follows:

In Chapter 2, I first review the development of the U.S venture-capital industries. This gives readers a brief introduction to the history, facts, and recent development trends of venture-capital activities in the United States, which has the largest amount of venture-capital fund in the world. Then, I focus on the characteristics of the venture-capital industry itself.

In Chapter 3, I generalize the factors that are influencing venture-capital development. I discuss what the specific issues are concerning venture-capital development in Hong Kong/PRD. My goal in this part is to set up a framework to analyze the potential for venture-capital development in the subject region. I have identified several factors that may affect venture-capital development, which are discussed in detail in this chapter.

In Chapter 4, I use the framework I establish in Chapter 3 to examine the environment of Hong Kong/PRD for venture-capital investment.

In Chapter 5, I review the current development of venture-capital activities in this chapter. I investigate the investment profile, investment style, competition, and other important elements of venture-capital firms in the region, especially in Hong Kong.

In Chapter 6, I conclude by bringing out the implications of my findings to policy makers and potential venture capitalists who are considering entering the Hong Kong market.

CHAPTER 2

The Venture-Capital Industry: History and Facts

In order to assess the potentials of venture-capital development in the PRD and set the stage for discussion in the following chapters, it is necessary to examine the characteristics of this industry and understand the role it has been playing historically. Here, I examine the U.S. venture-capital industry to give the reader a brief introduction to the history, facts, and recent development trends of this largest venture-capital market in the world.

History of Venture Capital in the United States

The formal venture-capital industry in the United States is actually very young, with only about 50 years of history. The first modern venture-capital firm, American Research and Development (ARD), was born in the post World War II period. ARD was established in 1946 by Karl Compton, the MIT President, Professor Georges F. Doriot of Harvard, and some local business leaders who wanted to commercialize the technologies developed for World War II. At that time, it was virtually impossible to find institutional investors to invest in ARD, because the idea was too foreign to them. As a result, ARD was structured as a publicly traded closed-end fund, targeting individuals (Liles 1977). A decade after ARD appeared, a few more venture funds were formed, most of which were publicly traded funds. The first limited partnership did not appear until 1958. Since then, limited partnerships started to increase but remained as a minority throughout the 1960s and 1970s. The flows of venture-capital funds at this stage were insignificant, never

exceeding a few hundred million dollars and usually were much less (Gompers 1999).

But as the market evolved over time with better policy incentives and removal of certain restrictions for pension funds to invest in venture capital, and with the opening of Nasdaq some 29 years ago, the size of funds kept growing. Over the span of 20 years, they grew from \$457 million to \$11.7 billion in 1997.

Table 2.1 shows the growth pattern of the size of funds from 1978 to 1997.

Table 2.1
 Statistics for venture-capital fundraising 1986-1997.
 (millions of 1997 U.S. dollars)

Year	Number of funds	Size (millions of 1997\$)
1978	23	457
1979	27	517
1980	57	1,333
1981	81	1,831
1982	98	2,234
1983	147	5,832
1984	150	5,176
1985	99	4,482
1986	86	4,735
1987	112	5,752
1988	78	3,977
1989	88	3,698
1990	50	2,681
1991	34	1,635
1992	31	2,151
1993	54	2,722
1994	105	5,098
1995	72	4,876
1996	97	8,477
1997	136	11,669

Sources: Based on Gompers and Lerner 1999.
The Venture Capital Cycle. Cambridge, MA:
 The MIT Press.

Table 2.1 indicates that over the span of 20 years, there were also ups and downs in the development of the venture-capital market, demonstrating the cyclical nature of the venture-capital market, at least on the supply side. According to Gompers and Lerner, the sudden increase of venture funds in the late 1970s was the result of the government

allowing pension funds to invest in the venture-capital market, which helped explain much of the increase from the early 1980s to late 1980s. Starting from 1988, the size of funds started to decline because there was overinvestment in various industries and the entry of inexperienced venture capitalists on the market (Gompers 1999). As the returns to investment dropped, capital went elsewhere, and those inexperienced venture capitalists left the market, leaving the experienced ones in the business. Consequently, the market revived and the size of funds has been increasing dramatically in recent years.

Another point worth mentioning about the U.S. venture-capital market is that the venture funds have specific targets, both in terms of geographic area and sub-high technology industry. Table 2.2 and Table 2.3 show the distribution of venture-capital funds by states and by industry respectively.

Table 2.2
Geographic concentration of venture-capital funds (10 most active States).
(millions of 1997 U.S. dollars)

State	1975-79	%	1980-84	%	1985-89	%	1990-96	%
California	310	25	1,863	35	2,645	32	3,380	36
Massachusetts	155	12	708	13	1,014	12	1,028	11
Texas	84	7	373	7	584	7	489	5
New York	73	6	311	6	324	4	276	3
New Jersey	47	4	171	3	291	4	336	4
Colorado	31	2	194	4	258	3	298	3
Pennsylvania	32	3	120	2	290	4	298	3
Illinois	31	2	133	2	214	3	312	3
Minnesota	42	3	170	3	186	2	194	2
Connecticut	37	3	136	3	217	3	210	2
10 states total	842	67	4,179	78	6,023	74	6,821	73
All states total	1,253	100	5,365	100	8,154	100	9,406	100

Sources: Based on Gompers and Lerner 1999. *The Venture Capital Cycle*. Cambridge, MA: The MIT Press.

Table 2.3
The four largest venture capital receivers in the United States by industry.
(millions of 1997 U.S. dollars)

Industry	1975-79	%	1980-84	%	1985-89	%	1990-96	%
Drugs	34	8	245	10	554	17	746	24
Communication and electronic	60	15	497	20	736	22	709	23
Professional and scientific instruments	70	17	383	16	549	17	544	17
Office and computing machines	108	26	744	30	641	19	442	14
All Industry total	413	100	2,470	100	3,327	100	3,150	100

Sources: Based on Gompers and Lerner 1999. *The Venture Capital Cycle*. Cambridge, MA: The MIT Press.

Table 2.2 shows that most of the funds have been allocated to California and the Commonwealth of Massachusetts, while each of the other States has received less than 5% of the market share. Such geographic distribution of funds occurred because most of the venture-capital firms are located near to the Silicon Valley in California and Route 128 in Massachusetts, the high-technology regions. In addition, venture-capital firms located elsewhere would also invest in these two region, because the two States are where innovation takes place. For instance, the State of New York received only 9.4% of venture capital from the local venture-capital firms (Weaver, 1998). This low in-state investment situation happening outside of the two States help to explain how California and Massachusetts can outperform other states in the country in terms of venture-capital funding.

In terms of industry concentration, Table 2.3 indicates that the Drug, Office and Computing Machines, Communication and Electronic, and Professional and Scientific Instruments, are the targets of funding from the venture-capital firms. All these industries, which involve a high level of technological research and development (R&D), usually do not generate positive earnings. Most of them are in the early stage of their life

cycles. Notice that although venture funds appear to have a target industry in the United States, it is still a relatively diversified venture-capital market given its broad economic base. Weaver (1998) argues that while the Computer-Related industry is by far the largest venture capital receiver, other industries, such as the consumer-related business, traditional manufacturing, and non-technological industries are still the investment choices of the venture-capital firms.

Nature of Venture-Capital Markets

The U.S experience has shown the picture of venture capital on a macro level. On a micro level, the industry has the following characteristics:

- Venture capitalists focus on financing start-up companies that lack substantial tangible assets and usually have negative earnings.
- Venture capitalists usually can provide advice to the young high-tech firms, because most of the venture capitalists have significant experience in high technology sectors.
- Venture-capital investments have a finite investment time period, usually lasting 10-15 years, which is considered to be a long investment period.

Relationship between start-up and venture-capital firms

The relationship between the venture-capital firms and start-up firms are not purely the former giving money to the latter. It involves more commitment than providing funds. Venture-capital firms bring technical skill, operating experience, and networks of industry contacts to the start-up firms in which they invest. Moreover, the

venture-capital firms usually are very involved with the venture, namely the new start-up, by advising the entrepreneurs on business plan and recruiting key managers, and even serving on boards of directors (Saxenian 1994, pp. 39).

Furthermore, because most of these high-tech ventures have neither tangible assets, nor sufficient cash flows from their operation, “it is only rarely that a venture is self-financing from the start,” said Young (1985) in his book Venture Capital in High-Tech Companies. Under this situation, “venture capital, [in general] has come to mean the provision of corporate development support as well as provision of money. Experienced venture investors have considerable skills and ‘contacts’ to place at the disposal of investee companies ” (Young, 1985, p. 191).

Stages of venture capital finance

These characteristics of the venture-capital market can be well reflected by the venture-capital investment cycle. Specifically, the cycle is divided into the following investment stages¹.

1. Seeding Finance

This stage usually lasts for about one year. At this stage, the new firm has not yet been set up. A business plan is submitted to the investors in a venture-capital firm. If, after reviewing the plan and interviewing with the entrepreneurs/engineers who have come up with the new technology idea, the investors think that the plan has potential to succeed, they will provide capital for concept development (OECD, 1985).

2. Start-up Finance

¹ Adapted from the 1998 Guide to Venture Capital in Asia (Asian Venture Capital Journal, 1998), pp. 17-18

At this stage, a firm has to be set up. Venture capitalists have to provide capital to manufacture a product or provide a service that has already been devised, and to carry out the business plan. Notice that many venture capitalists are experienced in the technical aspects of the new product, because many of them were either entrepreneurs or engineers before they switched to this industry. Therefore, besides providing money for the young firm, they also provide valuable technical knowledge and management skills to the young and inexperienced entrepreneurs. Venture capitalists work very closely with the young firms at this critical period, and it takes about a year before they can move to the next stage (OECD, 1985).

3. Expansion Finance

After the start-up stage comes the expansion stage, which may take up to several years to complete. The firm now has a product or service on the market, but it still lacks a brand image and a sales network and in many cases an efficient production system. Venture capitalists at this stage are concerned with setting up these competitive features. At this point, the firms may still be earning negative profit, thus lack the stable cash flows to obtain financing from traditional financial intermediaries. Hence venture capital is still needed at this stage.

4. Mezzanine Finance

This is most often the last stage of venture capital raising before the company goes public. At this stage, the start-up firm should have become established in its particular market. Yet, a final injection of venture-capital funds may be needed for a full-scale expansion of production and distribution capacities in order to realize economies of scale. As mentioned above, a venture-capital firm has an exiting plan toward the end of

the project, which is at this stage of the cycle. What would happen is that the venture-capital firm exits the project at this point by preparing an initial public offering (IPO), or in other words, taking the start-up firm public.

There are other types of venture-capital finance that serve specific purposes for the start-up firms. They are Buyout, Turnaround, among other venture-capital funds.

5. *Buyout:*

This type of funding is provided in terms of loans and /or equity investment, to enable the existing management team or an investor from outside to acquire a product line of business.

6. *Turnaround:*

This type of funding is provided to re-establish a business that has encountered performance difficulties.

7. *Other stages:*

This type of funding is made available to the private sector, as bridge loans, and for purchase on the public market.

In summary, venture capitalists have developed this stage-by-stage investment strategy to finance and manage the development of high-tech firms.² Traditionally, the whole investment cycle takes about five to ten years from the inception to the relatively mature stage of the new firm, but it has been shortened to as fast as two years in recent years (WSJ 2/22/2000). Throughout this period, venture capitalists provide money for the firm strategically so as to give the entrepreneurs/engineers the right incentive to work hard for the success of the firm. Venture capitalists also provide new firms with value-

² For detail about the staged investment strategy, see *Venture Capital in Information Technology*, OECD, 1985.

added management skills and technical expertise, which perhaps are worth even more than the capital to the talented, but inexperienced, entrepreneurs.

CHAPTER 3

Factors Influencing Venture-capital Market Development

The previous chapter introduced the venture-capital industry through the U.S. experience and through the venture-capital cycle. In this chapter, I summarize the factors that are influencing the development of the venture-capital industry based on the literature on venture capital. I will bring out some of the general factors, followed by specific factors, that may be of importance for the Hong Kong/PRD region.

Previous literature on venture capital indicates several characteristics that are common to a successful venture-capital industry. Sagari and Guidotti (1992) list at least ten of these factors in a report submitted to the World Bank. For instance, they suggest that large inflow of deals is one the most important factor for venture capital firms to thrive. They also suggest that the availability of exit mechanisms is important to venture capital firms (Sagari and Guidotti 1992, pp. 37).

Tyebee and Bruno (1984, pp. 125) suggest that tax policy and the availability of credible entrepreneurs are strong determinants of how much venture capital is invested. They also point out that many researchers have shown that the investment preferences of venture capitalists have traditionally been in technology-intensive business. In short, Tyebee and Bruno generalize the factors into four major characteristics of a region's environment influencing venture-capital flows. They are:

- Size of technology sector
- Culture of entrepreneurship
- Financial markets for new companies

- Public policy incentives

Size of Technology Sector

There are two reasons why size does matter when venture capitalists evaluate the opportunities for venture investment in a region. The first one is the clustering-of-industry effect, which is emphasized by Michael Porter in his book, The Competitive Advantage of Nations (Porter, 1990, p. 148). Porter (1998, pp. 216-218) explains that having a cluster of related industries (in this case the high-tech industries) locate in the same area will have the effect of strengthening these industries, making them more competitive. This is because within the cluster, firms can have better access to specialized inputs and employees, faster access to information, better access to institutions and public goods, and higher incentive and performance measurement than if operating in isolation. All these, according to Porter, will lead to higher productivity, thus higher profit. Here, the implication of the importance of the size of the high-tech industries is that, in order to be competitive, a cluster of the related-industries should exist.

The second reason is easier to understand with common sense. The bigger the high-tech sector, the higher the chances are for venture-capital firms to make investment in this sector. And as the opportunity to invest in high-technology companies increases, the opportunity to gain substantial returns also increases. Although the sources of funds are plentiful these days, thanks to the triple-digit percentage gains that venture-capital investment has achieved (WSJ 2/22/2000), finding more firms in which to invest is difficult. That is why most of the venture-capital funds have been directed to California

and Massachusetts, because these two places have the highest number of cutting-edge firms and technology start-ups, and they are the places where venture capitalists can find investment projects. Therefore, size of the technology sector does matter.

Culture of Entrepreneurship

Joseph Schumpeter (1934) is a renowned economist whose concept of entrepreneurship introduced a new dimension into economics. According to Schumpeter, entrepreneurs are defined as people who innovate, and innovation is the act of combining productive factors in some new way.

This includes the introduction of a new good or quality of a good, introduction of a new method of production, the opening of a new market, the utilization of some new source of supply for a raw material or intermediate good and the carrying out of the new organization of any industry (Schumpeter 1934, pp. 87-88).

In the old days, great inventors were entrepreneurial and responded systematically to market conditions. They were those who have a desire to innovate and turn cutting-edge ideas into commercial products for rewarding economic returns (Khan and Sokoloff, 1993, p. 38). Likewise, today's engineers behind the many start-ups in the United States still have the same kind of entrepreneurial spirit in them. High-tech start-ups are usually "started" by engineers who possess entrepreneurial spirit and have acquired operating experience and technical skills working in other firms in the region (Saxenian 1994, p. 39). The presence of entrepreneurship is important to the development of high-tech (high-risk) companies, which, in turn, is an important element to attract venture capitalists, who are also entrepreneurs themselves. Good potential entrepreneurs are always avidly sought by venture capitalists, and this combination of entrepreneur and

venture capital has produced companies such as Apple, Compaq, and Lotus (Young 1985). Venture capitalists understand that profitability comes from brilliant ideas, which always come from good entrepreneurs, and the managerial skills of those entrepreneurs is secondary, because this is what venture capitalists can provide to them. In short, in order to have a vibrant venture-capital market in a region, the region needs to have a culture of entrepreneurship, which is the seabed of new ideas and capital.

Financial Markets for New Companies

As mentioned in Chapter 2, most venture capitalists plan to exit the investment at the final financing stage by taking the companies public. This implies that there is a need for an efficient public-equity market in the region where venture capitalists can execute their exiting plans. From the venture-capitalists' perspective, higher efficiency means they do not have to wait for a long time before their investments/companies can go public. In the United States for example, about 42% of the companies listed on Nasdaq, the stock market that primarily consists of high-tech companies, are in business for fewer than 10 years (WSJ, 2/22/2000). This efficient-market environment provides venture-capital firms the liquidity they desire for new and more aggressive venture investments.

Public-Policy Incentives

Government at all levels can also provide incentives to venture capitalists to establish a new market in its governing region. It could contribute to the development of the venture-capital market by setting the right incentives for venture capitalists, such as by providing a tax incentive for investment in high-tech industries. For instance,

according to the National Venture Capital Association, in 1997,³ the Congress passed the tax bill that contained a broad-based reduction in the capital-gains tax. This bill is the largest tax victory ever for the venture capital and entrepreneurial communities, because for the first time, taxpayers will be treated the same as ordinary income taxpayers for capital-gains purposes.

In addition, in Chapter 2, I illustrated from the history of the U.S. venture-capital market that the big jump in funding to the venture-capital market in the early 1980s was the result of a government action. The Federal government removed the restriction to prohibit pension funds from investing substantial amounts of money in venture capital. As a result, funding almost doubled in just a couple of years (Gomper 1999). Government policy definitely is one of the major factors influencing venture-capital flows.

The above are the common factors that are found in the burgeoning venture-capital industry. Besides these factors, however, there are other perhaps equally important ones that are relevant to the Hong Kong/PRD region on which I am focusing. They include:

- Overall economic development of the country
- Political stability of the country

Overall Economic Development

Especially in the less-developed countries (LDCs), the overall economic development of the region cannot be ignored when analysts assess the potential of

³ This information is extracted from the National Venture Capital Association official web page. <http://www.nvca.org>

venture-capital development. I assume that the more developed a country is, the higher the country's potential in developing an efficient and sophisticated venture-capital industry. The fact that the United States and Europe are two of the largest venture-capital markets in the world seems to serve as a support for such an assumption. In the Hong Kong/PRD region, the stage of development as measured by per capita GDP seems to be moving towards a new level. For instance, China's eventual accession to the World Trade Organization (WTO) may have a significant impact on the economic development process in the region. I discuss details on this stage of development in Hong Kong and the PRD region in the following chapters.

Political Stability

Unlike their western counterparts, political stability is always a concern in China and other Asian countries. This factor is tied directly to the stage of economic development in the LDCs. It is reasonable to think that a poor political climate can deter any venture capitalists seeking opportunities to make a market in the region, for it may also affect the strategy of venture capitalists, as I discuss in the next chapter. For example, the uncertain future of Hong Kong before its reunification with China in 1997 had pressured the venture-capital firms to make short-term rather than long-term, investments (Fung 1990). Therefore, I will examine rather closely the political environment of the PRD in the following chapters. In summary, size of technology sector, culture of entrepreneurship, availability of financial market, the overall economic condition, and political stability, are all important factors that influence the development

of venture-capital industry. In the next chapter, I use these attributes to evaluate venture-capital markets.

CHAPTER 4

The Environment of Hong Kong/PRD for Venture Capital

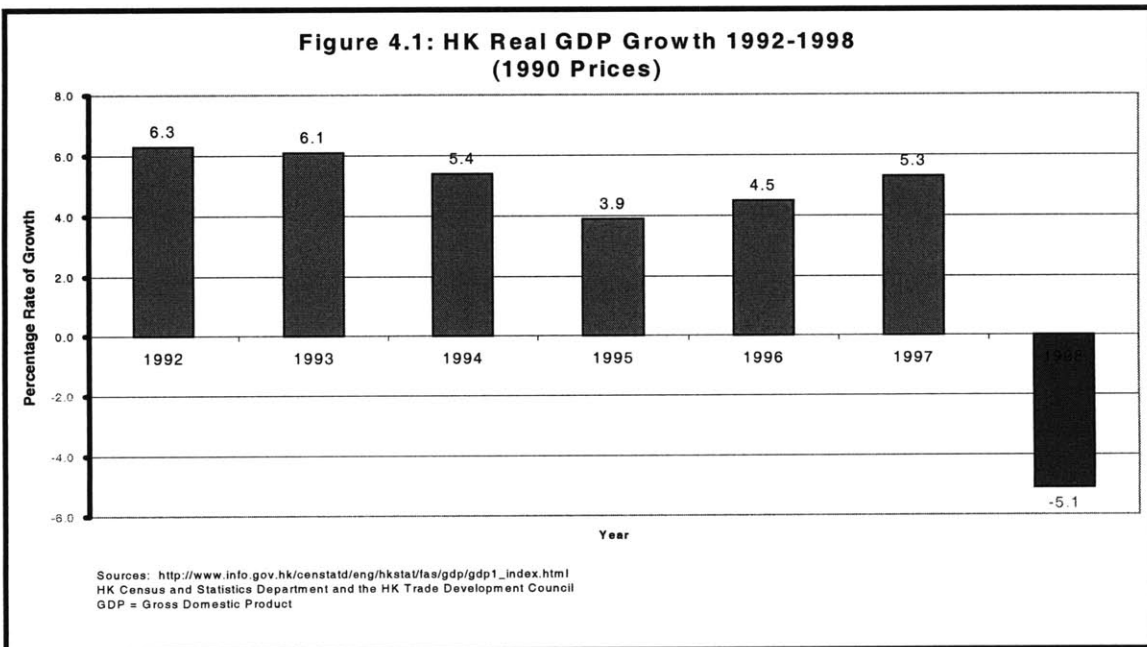
In the previous chapters, I introduced the characteristics of the venture-capital industry, its successful stories in the United States, and the attributes that are conducive to the development of this market. In this chapter, I evaluate the potential of the Hong Kong/PRD region in developing high technology-oriented venture-capital market. I use the attributes I developed in Chapter 3 to evaluate the positive and negative factors that may facilitate or curb a venture-capital market to grow in the region. I first review the stage of economic development of the PRD. Then, I examine the size of technology sector, the culture of entrepreneurship, the financial market for new high-technology companies, and the public policy on the high-tech venture-capital industry in the region.

Stage of Economic Development

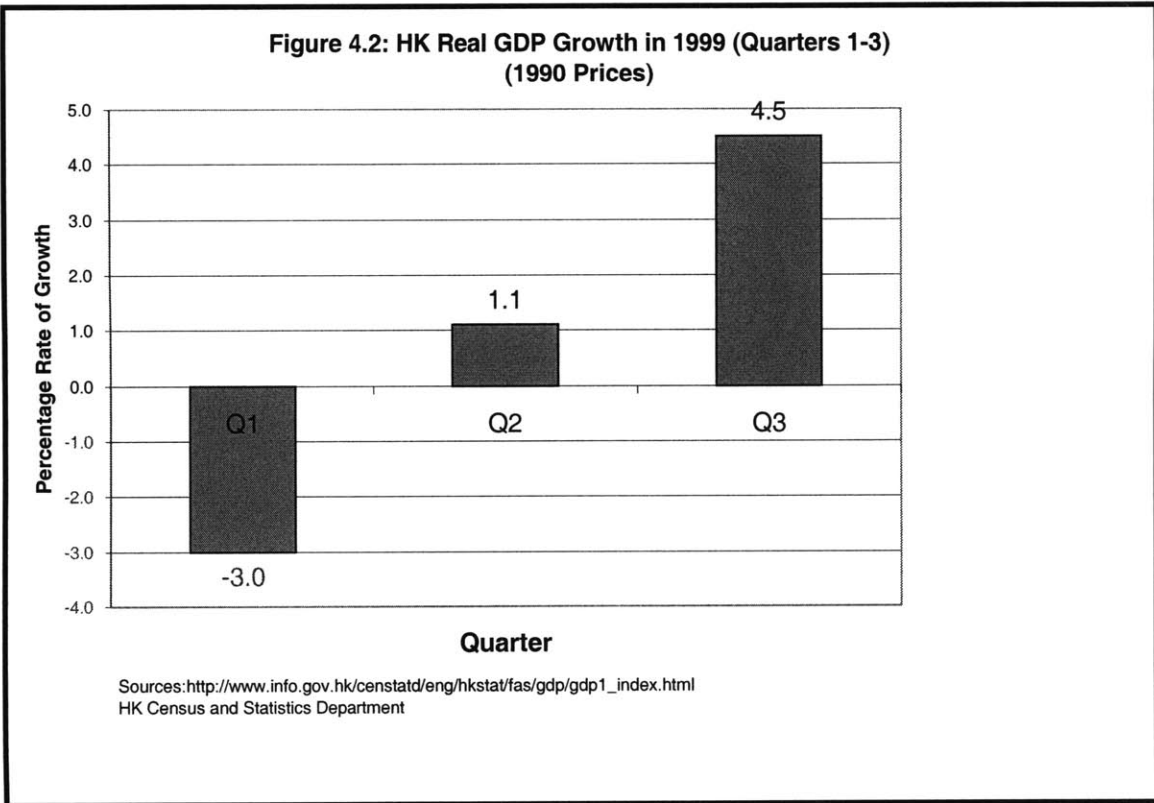
When examining the stage of economic development in the PRD region, the best way to do it is to look at Hong Kong and the rest of the PRD separately, because the two entities have very a different economic history and structure and different types of infrastructure development. For example, per capita GDP of Hong Kong is approximately ten times higher than the PRD (see Table 4.1). Moreover, while the non-Hong Kong PRD is a less developed economy, Hong Kong is essentially a developed economy, it is difficult to generalize the characteristics of both at once.

Hong Kong

Despite the economic downturn triggered by the Asia financial crisis, Hong Kong was rated the world's freest economy, the 2nd largest source of outward foreign direct investment in Asia, and the world's 3rd most competitive economy in 1999 according to the Hong Kong Trade Development Council (Hong Kong Trade Development Council).⁴ These outstanding ratings indicate that Hong Kong is an important center of trade and investment relative to other neighboring countries in the region. Actually between 1992 and 1997, real gross domestic product (GDP) increased steadily at about 5.2 percent per year. In 1998, however, real GDP became negative due to the financial crisis that economically affected almost every Asia economy. Yet, in just one and a half years, Hong Kong was able to regain its positive growth. In the second quarter of 1999, real GRP increased by 1.1 percent, and 4.5 percent in the third quarter (see Figures 4.1, 4.2).

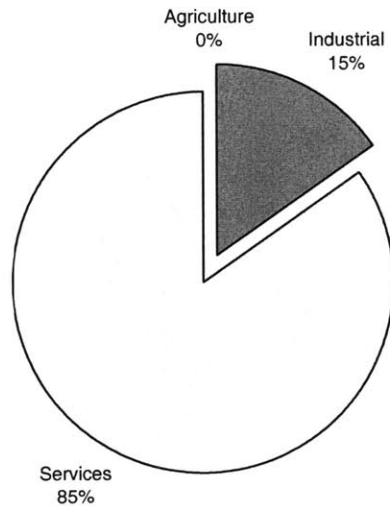


⁴ For detail, please refer to the TDC home page at <http://www.tdctrade.com/main/economic.htm>



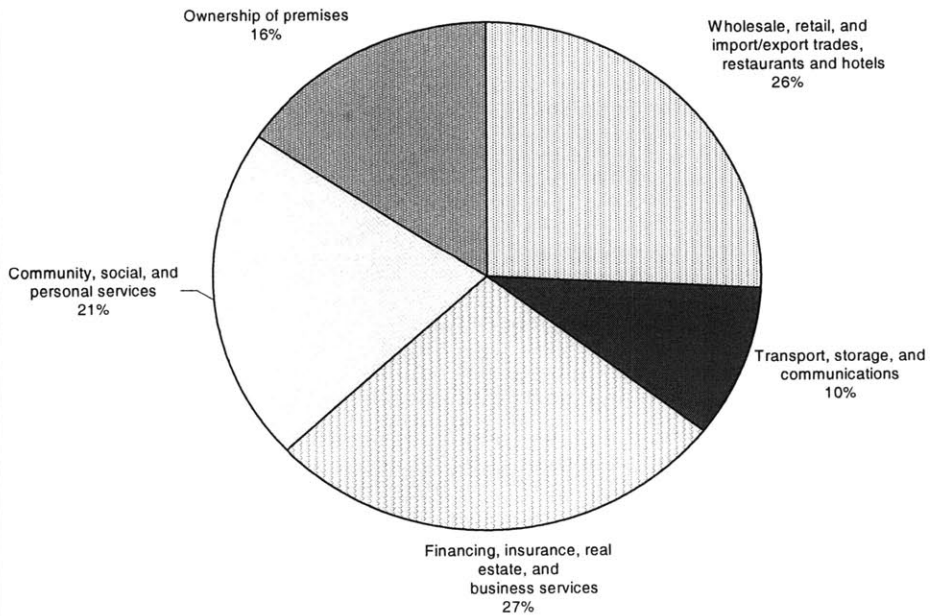
In terms of industrial mix, Hong Kong is heavily concentrated in the services sector. Throughout the entire 1990s, the services sector dominated the Hong Kong economy, and its share as a percentage of GDP increased steadily in every single year from 1990 to 1997. In 1998, the services sector accounted for 84.7% of GDP. Of this 84.7%, FRIB (Finance, Real Estate, Insurance, and Business Services) and Wholesale and Retail Trade accounted for roughly 17% and 25%, respectively. Note that if the financial intermediation services are counted as part of the FRIB, this subsector would account for 25% of Hong Kong's GDP in 1998 (Figures 4.3, 4.4).

Figure 4.3
Percentage of GDP by Sector, Hong Kong, 1998



Source: http://www.info.gov.hk/censtatd/eng/hkstat/fas/gdp/gdp6_index.html
Hong Kong Census and Statistics Department

Figure 4.4
Percentage Share of GDP in the Services Sector, 1998



Source: http://www.info.gov.hk/censtatd/eng/hkstat/fas/gdp/gdp6_index.html
Hong Kong Census and Statistics Department

As Figure 4.4 shows the wholesale and retail sub-sector is the largest contributor of Hong Kong's GDP. It declined by 16.7% in 1998 due to reductions in domestic consumer purchases and declining tourist expenditures (Hong Kong Trade Development Council)⁵. Fortunately, with a more stable economic environment and a revival of tourist arrivals, since July 1999, the volume of retail sales continued to rise, and they recorded a 2% growth for the third quarter of 1999. This is the sign of possible economic recovery.

The Pearl River Delta

The Pearl River Delta (PRD) is situated in Guangdong Province, which was one of the first provinces in China opened to foreign direct investment by means of special economic zones. The region has developed into an export-oriented economic zone since its establishment in 1980. Its most developed industries include electronics, toys, food processing, textiles, and garments. In 1980, three special economic zones (SEZs)--Shenzhen SEZ, Zhuhai SEZ and Shantou SEZ--were established to attract technology transfers. To attract foreign investments, favorable policies were granted by the State Council to these SEZs, which have a high degree of autonomy to handle their economic affairs and tax benefits. In 1985, the state designated the whole Pearl River Delta as an open economic zone.

The Pearl River Delta Open Economic Zone covers an area of 45,000 square kilometers, or 25% of the Guangdong Province, with 14 cities and towns, which include Guangzhou, Shenzhen, Zhuhai, and other smaller cities. The zone's population, GDP, and retail sales of consumer goods accounted for 31%, 66%, and 59% of the province's total (Table 4.1).

⁵ Information obtained from <http://www.tdctrade.com/mktprof/china/mpgud.htm>

Table 4.1: Major Socioeconomic Indicators for Hong Kong and the PRD			
	China (1999)	PRD (1998)	Hong Kong
Population (million)	1,259.1	22.1	6.9
Land Area (square kilometer)	9,600,000	45,000	1,098
GDP (US\$ billion)	991.0	63.3	157.7
Per capita GDP (US\$)	787	2,858	22,855
Exports (US\$ billion)	194.9	55.0	173.0
Imports (US\$ billion)	165.8	39.7	178.6
Note: PRD Imports and exports are estimated to be account for 72% of the Guandong Province			
Surces: http://www.tdctrade.com/mktprof/china/mpgud.htm			
Hong Kong Trade Development Council			

In 1997, exports from the zone amounted to US\$55 billion, accounting for 72% of Guangdong's total exports. In the same year, the zone signed more than 16,335 foreign-investment projects with contracted and utilized foreign capital of US\$7.6 billion and US\$11.8 billion, respectively. The majority of export-processing activities are located in this region, which has virtually become a production base for Hong Kong (Hong Kong Trade Development Council).⁶

According to the Hong Kong Trade Development Council, the Guangdong provincial government of China has decided to (1) invest heavily in infrastructure projects in the near future; (2) develop a strong production base of automobile, electronics, iron and steel, building materials; (3) and expand the tertiary sector.

As the economy grows, the PRD is gradually developing its consumer market. It has the biggest consumer market in China even though its population only ranks the 5th largest among all provinces, municipalities, and autonomous regions. Retail sales of consumer goods increased annually by 11.7% to Rmb324.9 billion in 1998, accounting for 11.1% of the country's total sales.

⁶ Information obtained from <http://www.tdctrade.com/mktprof/china/mpgud.htm>

In foreign trade, the PRD's external trade totaled US\$131.5 billion in 1998, accounting for 40% of the country's total. Exports amounted to US\$76.3 billion in 1998. Major export items included agricultural products, chemicals, electrical appliances, electronics, textiles, garments, toys, and shoes. Hong Kong is the PRD's largest export market, accounting for 39% of its total. PRD's imports totaled US\$55.2 billion in 1998. Major imports included raw material and other resource-based intermediate goods, electronics, machinery, and complete sets of equipment. Major import sources included Japan, Taiwan, Republic of Korea, the United States, and Singapore.

Among all provinces and municipalities, the PRD ranked the top in attracting foreign investment. In 1998, the province approved 4,348 foreign-invested projects with contracted capital of US\$9.2 billion. Compared to the previous year, foreign-invested projects and contracted capital increased 16.1% and 19.0% respectively. Actual utilized foreign investment in the year grew by 2.6% to US\$12 billion. Foreign investments in the PRD are mainly engaged in manufacturing industries, including computer accessories, computers, biological products, mechanical and electrical products, refined chemistry, toys, garments, and hardware. Table 4.1 summarizes the major socioeconomic indicators for both Hong Kong and the PRD.

In sum, there are signs that both Hong Kong and the PRD will continue to grow in the coming years, and the PRD will not only maintain its export level, but also will expand its domestic consumer markets. This is going to be beneficial to the development of high-technology-oriented, venture-capital industry.

Political Stability

Since Hong Kong's reunification with the People's Republic of China in 1997, Hong Kong has experienced no political instability. Under the Basic Law, the constitution for Hong Kong, its capitalist system and "way of life" will be preserved for 50 years (Enright 1997). Moreover, Hong Kong has a well-established legal framework and non-corrupt government to support its socioeconomic system. On the surface, political stability in Hong Kong is thus ensured, at least in the short run.

However, political stability in Hong Kong will not ensure political stability for the PRD. As the economic integration between Hong Kong and the PRD intensifies, there are urgent needs to improve the communication between the two sides. Some of the most pressing issues involved are border-crossing and environmental issues, which are the major concerns for both sides (Ng and Tang, 1997, pp. 17).

On the border-crossing, the issue is how to let the inflow and outflow of citizens on both sides move across the border more efficiently. As of now, border-crossings during busy season can be very chaotic. For instance, it is possible to wait for 6 to 7 hours to pass the border during the holiday season, because the border checkpoints were not able to handle the large number of flows (SCMP 4/22/2000). As far as businessmen traveling between Hong Kong and the PRD are concerned, these long waiting hours are a huge opportunity cost. For the venture capitalists who may need to do this kind of traveling, this is a nightmare.

On environment, in March 28, 2000, air pollution rocketed to dangerous levels in some parts of Hong Kong as windless conditions brought down a blanket of smog. As a response to this worsening environmental condition, a business conference organized by

a European-based organization for 250 sales and marketing executives was called off (SCMP 4/10/2000).

If the two governments do not handle these issues and solve the problems that are associated with them, political instability may be the consequence. All these would affect the business environment of Hong Kong and the PRD, and the two governments would need to have a high level of cooperation to resolve the common problems. Due to the difference in political and legal systems on both sides, there are not yet substantial improvement in any of the above issues concerning the two entities. The idea is clear, but the plan is still vague. The problems are not easy to resolve, because it is difficult to determine a solution that is satisfactory to both sides on a particular issue. At this moment, both sides are trying to take control of their respective areas even though communication is continuing.

Size of Technology Sector

The size of the technology sector is another important element that will affect the development of venture capital. That is, a region needs to have a sizable technology sector if it is to attract venture capital, but without venture capital, the technology sector is difficult to expand. When Tyebjee and Vickery (1988) measure the size of technology sector, they use the number of patent applications, the number of engineers and technicians in research and development, and the level of expenditures on research and development, as the indicators, because these indicators should be correlated to the size of technology.

Number of Patent Applications

Table 4.2 reports information about the number of patent applications in selected Asian countries.

Table 4.2 Number of Patent Applications in Asia

Country	Patent applications (1994-96 average)
China	43,076
Hong Kong Special Administrative Region	1,900
India	6,552
Japan	386,953
Korea	90,382
Singapore	18,222
Malaysia	2,546

Source: United Nations. 1998. Statistical Yearbook 1998. New York: United Nations, 1999

The table shows that Hong Kong is far behind all of its potential competitors in the region in terms of total number of patent applications, while China is only remotely behind Japan. Note this high-tech sector comparison is in absolute terms rather than relative to the population size or size of economy in each country. Therefore, the indicator does not illustrate the technology intensity of the country but rather the size of the technology sector.

Number of Engineers and Technicians in Research and Development

Because high-tech industries require talented and well-educated individuals, I argue that an analyst can also estimate the size of the technology sector of Hong Kong/PRD by analyzing the human capital available in the region. This is inline with Tyebjee and Vickery's (1988) logic of using the number of scientists and technicians in research and development (R&D) as the indicator of the size of technology sector. Here, I use the assumption that only workers with research and development experience and technical background can work in the high-technology sector; thus, the total number of workers in that sector should give an estimate of the size of high-technology sector in both Hong Kong and the PRD.

According to the 1997 China Statistical Yearbook, Guangdong Province had less than 0.01% of the total workforce work in the Scientific Research and Poly-technical Services. This represents 72,000 workers that can work in the high-technology sector on the PRD side. When compared with the United States, this percentage is much lower. In 1996, the United States had about 3.5% of its workforce in the high-technology sector based on the U.S. Bureau of Labor Statistics projection (Basta, 1999). Apparently, the PRD lacks skilled workers and needs to be allowed to import these workers from other provinces.

On the Hong Kong side, engineers also seem to be in under-supply. Victor Li On-kwok, a University of Hong Kong information engineering professor, said in an interview with the South China Morning Post (SCMP), that fewer than 1,000 graduates of technology-related disciplines were produced locally every year, which was not enough to fill the high-technology jobs available (SCMP 10/7/1999). The good news is, given

the lack of talented workers in the region, the Hong Kong Government has a scheme to import an unlimited numbers of high-technology workers from the mainland. According to SCMP, this scheme will be implemented early next year to help boost competitiveness. Under this new scheme, talented individuals, who possess the skills and knowledge that are not found in Hong Kong, can come to the city with his/her family members, which is currently not possible given the restriction prohibiting mainlanders from crossing the Hong Kong border freely (SCMP 10/7/1999).

This policy indicates that Hong Kong lacks an educated workforce in the cutting-edge technology field. A simple hypothesis to explain why there are insufficient talented workers produced in Hong Kong is that, some of the most talented students prefer to go to the United States for their college education, where research and job opportunities in the technology sector are plentiful. On the other hand, as is well known, Universities play a very crucial role in the development of high-tech industries, and research and development opportunities seem to be limited in Hong Kong. This factor together with the lack of skilled workers in the region has created a chicken and egg dilemma.

Moreover, in Chapter 2 I pointed out that the first modern U.S. venture-capital firm was also associated with university research and development. Without high-quality research and development opportunities from universities, the technology sector in Hong Kong and the PRD will have difficulties in expanding. Some of the success of Silicon Valley and Route 128 can also be explained by their close relationship with Stanford and MIT (Saxenian 1994). Thus, the importance of the universities to the size of the technology sector cannot be overemphasized, and this is part of what Hong Kong and the PRD seem to lack in order to expand their high-technology sector.

The Level of Expenditures on Research and Development

Until recently, low-technology industries dominated the Hong Kong and the PRD economies. When the Asian Crisis affected the region in late 1997, the Hong Kong Government had clearly indicated that the region should diversify its economic sectors by introducing high-technology industries (Policy Address 1997). At the same time, the central government of China also started to emphasize that technology will be the most important element for the nation's long-term economic growth. As President Jiang Zemin told the government officials in the National People's Congress in March, 2000, all major countries except China had invested heavily in Internet technology, and China had to catch up with the other countries (SCMP 3/5/2000).

For instance, in an October 1997 policy address, Mr. Tung Chee Hwa, the Chief Executive of Hong Kong gave several government commitments to foster the development of technology in Hong Kong (Tung 1997). One of the projects is the Science Park project, which was scheduled to begin construction in 1998. According to a government spokesman, "the Science Park will strengthen the links between the higher education, research, industrial, and business communities and help develop networks between them" (ComputerWorld 1998).

Another project, the cyber-port project is underway as well. According to the developer, the Pacific Century Group, this business project aims at bringing in tenants that seek to bring to Hong Kong, or to develop within Hong Kong, leading-edge applications of information technology to generate new information businesses. I will

present the profile of the Pacific Century Group, a Hong-Kong-based, venture-capital firm later in this chapter.

On the PRD side, corresponding to the nation's policy direction to develop technology, the central government designated several places as Economic and Technological Development Zones (ETDZs). A list of ETDZs is provided in Appendix 1. Although there is only limited information available on these "new ETDZs," this is a sign of high-tech activity in the PRD.

Culture of Entrepreneurship

When the economic development history of Hong Kong is discussed by academia as well as businessmen, the word "entrepreneur" is usually heard. A story like how Mr. Li Ka Shing, the most well known tycoon in Hong Kong, had turned himself from a plastic flower manufacturer into a real estate developer, is a classic entrepreneurial venture example (Yu 1997, p 142).

In general, Tony Yu (1997) maintains that Hong Kong people are very enthusiastic to establish their own business, and spin-offs are very common in Hong Kong, especially in the manufacturing industry. He quotes a source who reported that the managing director of a software company in Hong Kong complained that he frequently lost experienced programmers, who "are too keen to be a boss." This small episode illustrates that there are entrepreneurs in Hong Kong. Empirical evidence is available to help validate this claim. Yu (1997) has calculated the establishment-employment ratios as an indicator of the number of entrepreneurs in the economy. The logic of using this

ratio is that, the higher the number of entrepreneurs in an economy, the higher the number of businesses (Yu 1997, pp. 52).

For comparison purposes, Yu (1997, pp. 53) examines the establishment-to-employment ratios among Hong Kong, Singapore, and Taiwan. His comparison shows that Hong Kong had a slightly larger ratio than both Singapore and Taiwan in 1986 (Table 4.3), which may imply that Hong Kong seems to have a more vibrant entrepreneurial culture than these two countries.

Table 4.3 A comparison of the establishment-population ratios among Hong Kong, Singapore, and Taiwan, 1986

	Hong Kong	Singapore	Taiwan
No. of establishment	161,038	70,623	531,425
Population (000s)	5,533	2,586	19,455
Establishments per 1,000 people	29.1	27.3	27.3

Source: Yu, 1997, p. 53.

Some experts, however, do not agree that the entrepreneurial spirit will serve Hong Kong’s high-technology development. As Mr. Richard Li, the chief executive officer of the Pacific Century Group and the new icon of the high-tech venture in Hong Kong, commented in an interview with Newsweek (4/5/1999 p. 62), “the culture of high-tech entrepreneurs is not there. Hong Kong isn't Israel.” This statement indicates that Hong Kong may not have a sufficient supply of entrepreneurs who have backgrounds in high technology. Another professional in the technology field, Professor Sunny Siu, an associate professor at the Massachusetts Institute of Technology and the chief technology advisor for Celestial Asia Securities Holdings Limited, also makes a similar comment. He said that although Hong Kong does have some good software engineers, they “lack the kind of entrepreneurial spirit that is strongly desirable for high-tech venture.” (Siu, personal interview, 3/1/ 2000)

On the PRD side, conversations about entrepreneurship are limited. This is mainly due to the long-time communist planned economic system since 1949, which allowed no private corporations to operate in the mainland until late 1970s when the open door policy was inaugurated. Literature on entrepreneurship in business suggests that profit seeking leads to the birth of an entrepreneur (Yu, 1997, p. 50), but this element was missing in the PRD under the communist regime. Since the region was designated as a Special Economic Zone in late 1970s, business opportunities should have started to emerge again. This is not to say entrepreneurs do not exist in the PRD. In fact, there are many factors that stop the residents in the region from being entrepreneurial. First, capital is a major constraint. Although the PRD economy has opened up to the outside world, the capital market in the PRD is still heavily controlled by the State. It means access to capital barely exists; hence, individuals/entrepreneurs are not able to have money to start their venture even if they have ideas. Second, as the PRD was not opened to the outside world before 1980, mainlanders in the region lack long experience and opportunities to gain knowledge in technology. Therefore, it is unlikely that they can come up with new idea or innovative solution to business. Although the PRD is improving in the two areas, it will take time to give birth to a new generation of entrepreneurs.

Overall, the HK/PRD region does have a culture of entrepreneurship, but they do not have the innovative mind in technology, and it will take time to change.

Financial Markets for New Companies

Although the existing strategy for venture-capital firms is not limited to the stock market, it cannot be absent in any place where venture-capital activities are to be sustained. I therefore focus only on that source of capital here. Prior to 1999, many new companies that had good business ideas and growth potential but were without a record of profitability for three consecutive years were not able to raise capital from the public market. This is because the Stock Exchange of Hong Kong (the main board of the Exchange) has a three-year record requirement, which resulted in many good potential enterprises failing to get capital. However, in the fourth quarter of 1999, the Growth Enterprise Market (GEM) was set up to bridge this gap. GEM does not require growth companies to have achieved a record of profitability as a condition of listing. This removal of entry barriers enables growth enterprises to capitalize on the growth opportunities of the region by raising expansion capital under a well-established market and regulatory infrastructure. Besides the listing of local and regional enterprises, international growth enterprises can enhance their business presence and raise their product profile in China and Asia by listing on GEM. According to the organization itself, GEM is designed for high-tech startups in the region to gain access to capital. It also promotes the development of venture-capital investments. GEM provides both an exit ground and a venue for further fund raising for investments made by venture capitalists. The organization explains that the establishment of GEM would facilitate more and earlier investments to be made by the venture capitalists in support of the growth of the industry.

In the PRD, new companies can list on the two stock exchanges, both of which offer B shares for foreign investors, they can choose to sell shares to third parties. But the preferable way for those new companies, especially the high-tech companies, is to list with either the Nasdaq in the United States or the GEM in Hong Kong. Listing with Nasdaq or GEM generates a market value of the new companies that can be substantially higher than its mainland counterparts, which explains why this is more preferable. On the other hand, the stock market in China is still small and immature, with a market capitalization of just \$4 billion in 1998.

Overall, the set up of the GEM “promotes the development of venture-capital investments” (http://www.hkgem.com/aboutgem/e_default.htm)

Public-policy Incentive for Venture-Capital Inflows

Although there is no special tax incentive as of now for venture-capital investment, Hong Kong's simple and low tax system should be a great attraction to venture-capital firms. Hong Kong operates a territorial basis of taxation under which taxes are only imposed on profits or income with a Hong Kong source. The principal direct taxes are profits tax, salaries tax, and property tax. Tax payable is calculated on a sliding scale, which progresses from 2-17%. However, no individual pays a rate higher than 15% of their total income. (Industry Department of Hong Kong web site).⁷

According to the information obtained from the Industry Department of Hong Kong's web site, the profits tax is charged on profits arising in or derived from Hong Kong from a trade, profession, or business in Hong Kong. It is charged on corporations

⁷<http://www.igsd.gov.hk/investment/html/content.asp?anony=Guide+to+Setting+up+in+Hong+Kong>

at 16% and on persons other than corporations at a standard rate of 15%. Moreover, there is no withholding tax on dividends paid by corporations. Dividends received from corporations are exempt from profits tax and there are no taxes on capital gains.

In addition, in order to increase the attractiveness of Hong Kong as a business center, the government has slashed the re-export declaration charges by half, and merchant shipping registration fees have been reduced. Furthermore, to foster an innovation and technology culture the government introduced funding schemes to assist small entrepreneurs. It is also exploring the feasibility of setting up a co-investment scheme providing government venture capital. The government has also opened a HK\$ 5 billion Innovation and Technology Fund to increase the capacity of local businesses to innovate and to stimulate technology development and application in Hong Kong (Industry Department of Hong Kong).

The situation of the PRD is similar to that of Hong Kong's. No special tax incentives are provided for venture-capital investment in the region. Under the "Income Tax Law of the PRC Concerning Foreign Investment Enterprises and Foreign Enterprises," dividends and profit distribution received by foreign investors from foreign investment are exempted from any income tax, including withholding tax. Capital gains from the disposal of such an enterprise are subject to a withholding tax of 10% in the PRD (Industry Department of Hong Kong).

Another important incentive that both Hong Kong and the PRD can offer should be a sound and enforceable patent law, which, as far as I understand, has not been specifically covered in the policy of the development of high-technology industries. An enforceable patent law is to protect an inventor's economic interest that he/she may

capture from a new idea/ product. However, both the PRD and Hong Kong are known to undermine intellectual property rights. In 1994, for example, the United States branded China's action on curbing piracy of music and software as virtually non-existent and moved towards imposing tough sanctions (SCMP 7/2/1994). In addition, the fact that very little attention has been given to this issue when considering the development of high-technology industries is the evidence for such attitude. The economic reason for such problems existing in China and Hong Kong is that there are huge profits involved in selling pirated products. As a result, despite a full range of copyright laws, piracy remains a serious problem for China, says an Hong Kong government official (SCMP 7/13/1994).

In summary, the Hong Kong/PRD region seems to most of the factors that are required for a successful venture-capital industry, except the protection of intellectual property rights. If this is true, then it should be reflected by the current development of the industry, which is the focus of Chapter 5.

CHAPTER 5

Current Development of the Hong Kong/PRD Venture-Capital Industry

In this chapter, I discuss the current development of the venture-capital industry in the Hong Kong/PRD region. In the late 1980s, venture capital in Hong Kong had a capitalization of US\$1 billion. By 1996, the amount had reached US\$8 billion (AVCJ 1998). In fact, most of the current venture-capital activities in HK and the entire China combined took place on the Hong Kong side. Figure 5.1 indicates that Hong Kong and China combined had a venture-capital pool of US\$9.5 in 1996; thus Hong Kong accounts for about 84% of the pool. When looking at the development of venture-capital industry in the HK/PRD region, I therefore give more attention to the Hong Kong side.

In Hong Kong, investors in this industry vary from large corporations to high-net-worth individuals. Appendix 3 shows a list of major venture-capital funders in 1996.

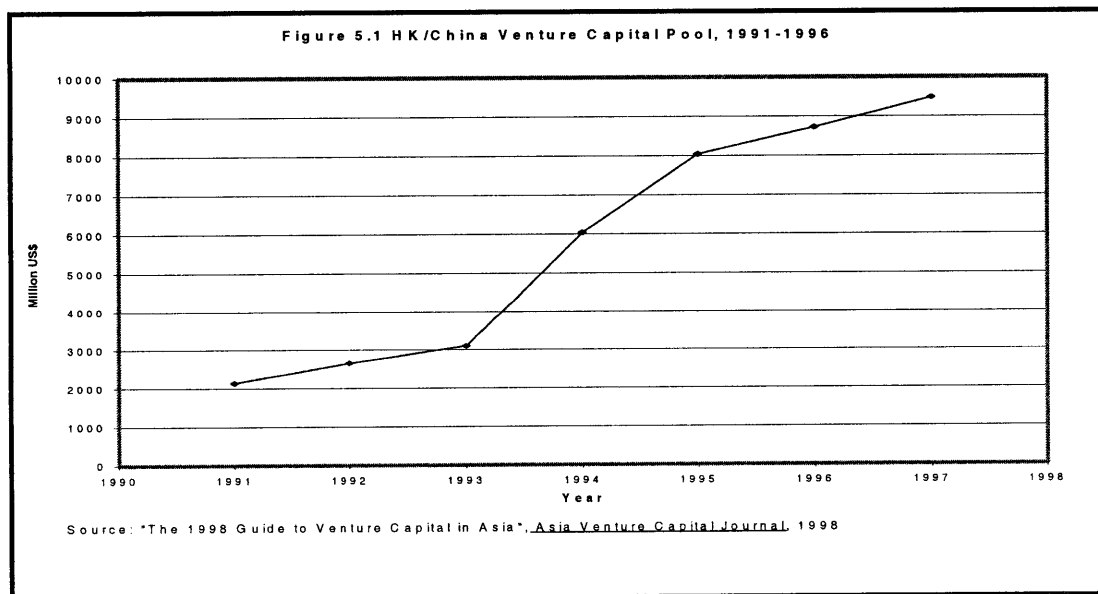
The latest venture-capital development in Hong Kong and the PRD region has been fairly profitable. This is due to the increasing high-technology activities, the establishment for a new financial market for new companies, and the incentive of the government that I covered in Chapter 4.

Investment profile

Most Hong Kong venture-capital funds are invested in the start-up and the expansion stages, while very few invest in the seed-financing stage. Figure 5.2 indicates that in 1996, the start-up stage accounted for 38% of the disbursement in HK, followed by the expansion stage (34%). Seed financing only received 2% of the total disbursement

due to the high risk involved.⁸ Mezzanine, Buyout, Turnaround, and other stages, each receive more or less the same amount of funds (between 5-8%) in the same year.

Disbursement by industry tells us the current investment profile from a different angle. Table 5.1 indicates that the Industrial Product sector and the Construction sector in Hong Kong received most venture-capital funds, each accounted for 17% of the funds in 1996. In contrast, the Computer Related sector and the Medical/Biotech sector received only 1.1% and 1.5% in the same year. This disbursement pattern clearly shows that Hong Kong venture capital has provide little support to the high-tech industries. This is inevitable, however, given that the computer and the biotech sectors were also the smallest sectors in Hong Kong and the PRD. Nevertheless, this pattern still shows that there was no high-tech-oriented, venture-capital market as of 1996.



⁸ For the differences in the stages of financing, please refer to Chapter 2.

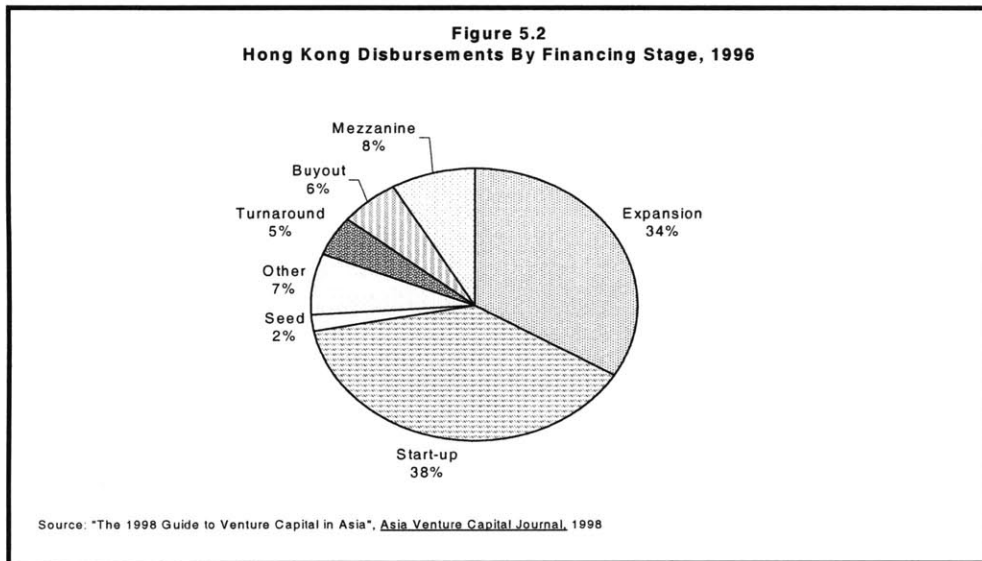
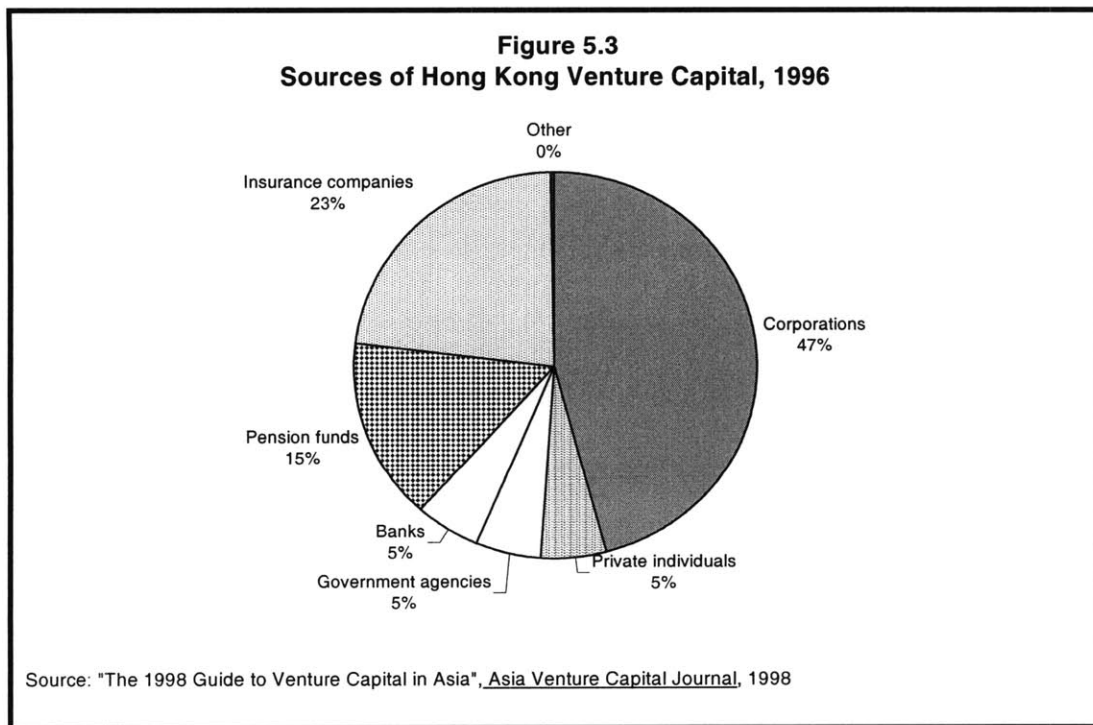


Figure 5.3 indicates that in terms of funding source to venture-capital firms, most of the funding in 1996 came from large corporations, insurance companies, and pension funds, and most of the funds are from overseas, primarily from Non-Asia Countries such as the United States and Europe (Figure 5.4). The government also contributed to 5% of the source in the same year. There are two factors to explain why this is not unusual in the region. First, as most of the funds were devoted to the construction and industrial sectors of the economy, the government is likely to be involved, because these are mostly infrastructure development, which are typically a hybrid of private-public goods. Second, when the venture-capital market is still in its inception, especially the high-tech related sector, government involvement is normal, even in the United States. For example, between 1985-1990, the U.S. government contributed 11.6% of the venture capital (WSJ 2/22/2000). As the market becomes mature in the future, we expect the share of funds from the government to decrease as funds from the private sector increases.

Industry	Amount Invested (million US\$)	Percent	Number of Companies	Percent
Consumer related	601	14.7	119	18.0
Computer related	95	2.3	32	4.8
Electronics related	138	3.4	49	7.4
Industrial products	708	17.4	140	21.1
Medical/Biotechnology	39	1.0	10	1.5
Communication	485	11.9	38	5.7
Energy	391	9.6	34	5.1
Transportation	585	14.4	37	5.6
Construction	699	17.1	76	11.5
Financial Services	88	2.2	21	3.2
Other services	77	1.9	21	3.2
Other manufacturing	170	4.2	85	12.8
Total	4076	100.0	662	100.0

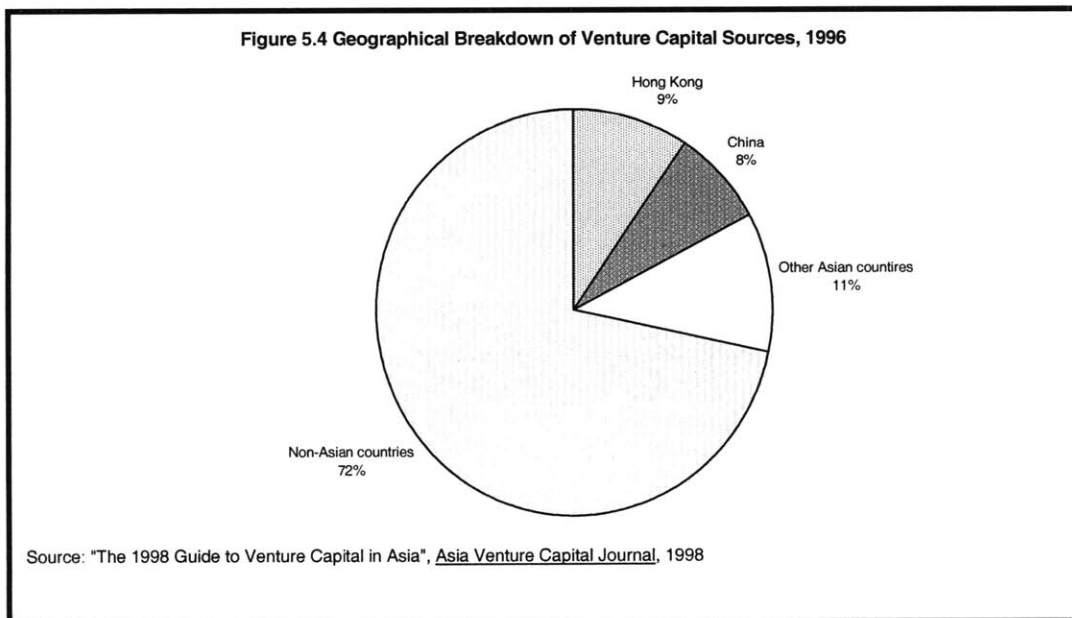
Source: The 1998 Guide to Venture Capital in Asia, Asia Venture Capital Journal, 1998



Amount of Competition and Number of “Deals”

Competition for investment projects, called “deals,” in Hong Kong has always been a challenge, since there are too many funds chasing too few deals. This is especially true for the non-high-tech venture-capital funds. The limited number of deals was due to at least two factors. First of all, the large Hong Kong based banks and corporations are always competing with the venture-capital firms. Second, investors, in general, are still not accustomed to the concept of venture-capital partnership, in which the owners have to share equity with venture capitalists. These two factors combined explain why there are only a few deals available for the Hong Kong venture-capital firms.

For the high-technology sector, the situation is a little different. The current trend is that there are not enough high-tech-oriented, venture-capital firms. The most well known one, and perhaps the only Hong Kong-based one, is the CyberWork Ventures, a venture-capital arm of Mr. Richard Li’s Pacific Century Group. Given there is only one of its kind in the region that is engaged in high-tech startup ventures, competition is not as tough as the non-high-tech ventures. CyberWorks Ventures has already invested



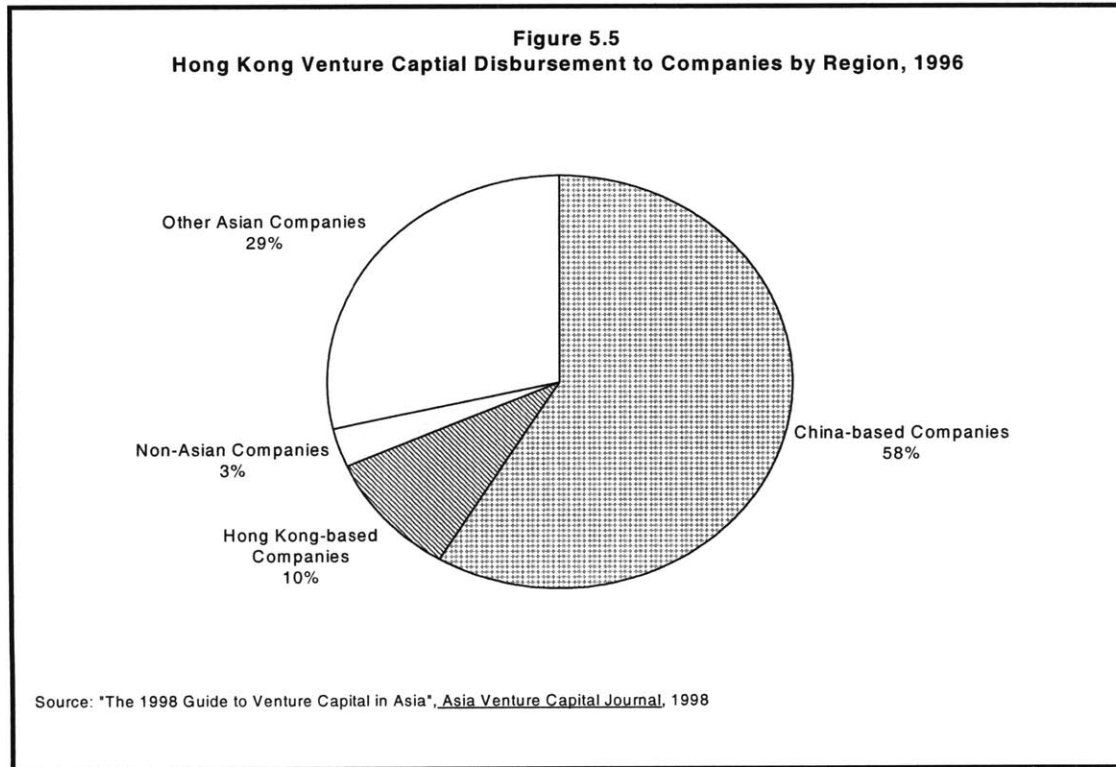
US\$500 million in cash and equity in nearly 30 companies internationally. They include big stakes in SoftNet, a broadband data-provider passing 2.4 million cable subscribers in America, and CMGI, an American-based venture-fund with a similar investment strategy. At a rate of nearly a deal a week, PCCW's venture-capital investments alone are now worth nearly US\$2 billion (The Economist 1/8/2000, p. 57).

If there is any competition to Li's company, it is most likely coming from overseas. The International Data Group (IDG), a closely held Boston-based company, will be one of the contenders among many others in corporate America ready to pour money into China. IDG already put over US\$100 million into China's Internet start-ups as early as 1996. The company has invested in some of the very successful new firms that specialize in electronic commerce, most of which are expected to list on the US Nasdaq in year 2000. IDG is expecting huge profits from the IPOs (WSJ 2/1/2000).

The IDG example indicates another trend in the high-technology oriented venture-capital investment in the region. That is, venture-capital firms seem to put more money into China-based companies, a pattern that is similar to the existing venture-capital industry in the region.

As mentioned earlier, the existing venture-capital firms have most of their funds in low-technology sectors, and most of these funds raised in Hong Kong are being distributed to China-based companies, followed by other Asian companies. Only a few go to Hong Kong-based companies. In 1996, for instance, 58% of the disbursement actually went to Chinese-based companies, and 29% went to other Asian companies. Hong Kong-based companies only received 10% of the venture-capital funds (Figure

5.5). It is not certain whether the high-technology-oriented, venture-capital funds will continue this path.



Trends

Based on the data for the last few years and the current environment in the region, the future for the venture-capital industry in Hong Kong should be promising, but still needs to be improved.

More Start-ups

In the next few years, there may be more signs indicating that more startups will emerge to capture the highest rent from this potentially new wave of economic growth in Hong Kong. I interviewed one entrepreneur at MIT, who wants to remain anonymous

(Cheung, personal interview, March 2000). When asked “why Hong Kong?” he answered “Because the window of opportunity is small, within the next few years, the chance of making profit will be much smaller than it is now.” I was also told by this interviewee that many highly qualified engineering students from Hong Kong would like to go back to their home country to work starting new ventures. This may imply that more deals are on the opportunity pipeline for venture capitalists in the region.

Successful IPO markets

Another sign of increasing deals flowing from start-ups in Hong Kong is the set up of the Growth Enterprise Market (GEM) early this year. Increasingly, start-ups from the mainland choose to list with the GEM in Hong Kong. One example is China.com, an Internet portal in China, which is planning to spin off its wholly owned Hongkong.com Internet portal through a listing on the GEM (SCMP 11/19/1999). The plan was realized and now Hongkong.com is listed on GEM.

This may imply that more start-ups in China would like to raise money in Hong Kong; thus, more deal flows to the Hong Kong-based venture-capital firms. One recent example of such a start-up emerging in the region is tom.com. Tom.com is an Internet portal that aims to be the premier mega vertical portal for China-related Internet content. The popularity of this company is observed by its IPO in March 2000; thousands of people were taking days off work to queue for the Tom.com shares (The Asian Wall Street Journal 2/28-3/5/2000). It was so popular because tom.com is jointly owned by Hutchison Whampoa Limited, Cheung Kong (Holdings) Limited. In other words, tom.com is owned by the richest businessman in the region, Mr. Li Ka Shing. Indeed,

just like many of the start-up IPOs in the United States, the stock price skyrocketed on the first day of trade. The stock price went from just below HK\$ 8 to \$HK 15.35 in the first two days of trade.⁹ Tom.com's success may give an incentive to experienced venture capitalists to establish operations in Hong Kong.

Diversified Venture Funds

Besides domestic activities, the trend is that venture capital will continue to seek deals outside Hong Kong for a good reason. The 1996 data show that venture-capital funds in Hong Kong are diversifying to other Asian as well as Non-Asian countries (Figure 5.5). In fact, Hong Kong's position as the financial center provides Hong Kong venture-capital firms an ability to take advantage of opportunities throughout Asia.

Lack of Experienced Venture Capitalist

The region will still need more technology-know-how venture capitalists to help those young start-ups to grow. Not only does Hong Kong lack talented entrepreneurs as Richard Li told the interviewer of Newsweek (Newsweek 4/5/1999 p. 62), it also lacks skilled venture capitalists to guide those young entrepreneurs. This situation has brought another problem to Hong Kong. The problem is that because there are not enough experienced venture capitalists in the region, many potentially good ideas that utilize new technology may not be recognized by the non-technical venture capitalists. As a result, those young entrepreneurs will still have problems getting funds for their new ideas. As Sunny Siu said in the interview (Siu, personal interview, March 2000), "the only way

⁹ Information obtained from Boom.com, a Hong Kong-based Internet stockbroker.

right now to get funding for a new venture is still through a relationship. Without a good relationship, it is very difficult for the youngsters to get funding because the potential investors do not know much about technology.” Therefore, lack of experienced venture capitalists in Hong Kong/PRD will pose a big challenge for the high-technology venture-capital market. Hong Kong must be able to solve this problem.

Short-term vs Long-term Vision

Another problem that Hong Kong will face is its short-term oriented mentality. This kind of mentality is a stumbling block for innovation and development in technology, which require a long-term vision and long-term commitment. Without this long-term vision, research and development (R&D) is not likely to happen in the region, which, in turn, will slow down innovation and technological breakthroughs. This may imply fewer new ideas and fewer new start-ups in which venture-capital firms can invest. The situation, however, may improve in the future, because the community as a whole is now thinking about Hong Kong’s development strategy on a long-term basis. One of these communities being formed is the Commission on Strategic Development, which consists of a group of public and private sector leaders in Hong Kong to advise the chief executive of Hong Kong to prepare the region for the new era (Hong Kong Commission on Strategic Development, p. 1). One of the tasks of this commission is to investigate the needs and goals of Hong Kong for the next 30 years. Moreover, recently, there is some research on the development of Hong Kong and the Pearl River Delta region funded by business people and the Hong Kong Government, one of them being the planning studio in which I am involved at MIT. All these are signs indicating that Hong Kong people are

adjusting to a more long-term oriented mentality. This implies that the culture will be more venture-capital friendly.

In summary, the trend of the Hong Kong venture-capital industry shows a promising future. Venture-capital activities may become one of the foci in the region's finance industry. Specifically, Internet and other information-technology start-ups that serve the entire China and beyond will attract venture capital to Hong Kong.

CHAPTER 6

Conclusion

Overall, the future of venture capital in the Hong Kong/PRD region is promising. Although the U.S. venture capital can diversify its high-technology ventures due to its broader economic base, Hong Kong high-tech venture capital is likely to be focusing on service-oriented, information-technology sectors. These include Internet, financial services, real estate services, and E-commerce, the areas where Hong Kong has a definite advantage over other Asian neighborhoods (Enright, 1998). One fact about the U.S. venture capital I stressed in Chapter 2 that is worth emphasizing, namely, despite the traditional long-term horizon of venture investment, venture capitalist's vision is shortening in recent years (WSJ 2/22/200). On the other hand, Hong Kong is expanding its short-term vision into a longer one, as the community leaders from both the public and private sectors alike are searching for Hong Kong's needs for the next 30 years. Therefore, Hong Kong is likely to see the venture-capital industrial standard between the United States and Hong Kong converging, with Hong Kong getting closer to the norm in the United States.

Moreover, as China eventually will join the World Trade Organization (WTO), trading activities may further increase in the PRD region. Instead of manufacturing low value added products, the PRD may increasingly produce high-value-added products. The economic and social integration between Hong Kong and the PRD may bring the E-commerce industry into the economy. Hong Kong may still be the administrative and information center for business. One hypothetical situation is that Hong Kong with the best information infrastructure in the region, will receive sales and purchasing orders

through the Internet, while the PRD will be the production sites for the products, thus forming an E-commerce industry serving both Hong Kong and the PRD. Therefore, there are more potential deals coming to venture capitalists from the E-commerce sector.

Besides this positive picture of the overall economy, Hong Kong also has most of the necessary factors to establish a successful venture-capital industry. One area in which it should put effort to improve, however, is to increase the human-capital resources. From the opinion of the experienced venture capitalists, talented individuals with research and development experience is what Hong Kong lacks, and is perhaps the largest challenge for the region's technology sector expansion plan (Siu, personal interview, 3/1/2000). One comforting fact is that there are signs that the information technology sector is starting to grow, which may characterize the high-tech sector in Hong Kong and the PRD.

In terms of entrepreneurial culture, Hong Kong lacks entrepreneurs that have technical expertise. Most of the entrepreneurs in Hong Kong are in the finance and industrial sectors; few of them are knowledgeable about cutting-edge technologies. On the PRD side, entrepreneurs with technical background are even more difficult to find than in Hong Kong. At this stage of high-technology, venture-capital industry development, both Hong Kong and the PRD must rely on entrepreneurs with technical experts to review new ideas and implement these ideas into commercial products. An example of such a move by the Hong Kong business community is Professor Siu's case mentioned in Chapter 4. To fill the gap, Hong Kong and the PRD will need to attract more highly-qualified, technical experts to go to the region.

The birth of the GEM has provided venture capital firms with an excellent exiting option that is parallel to the Nasdaq in the United States. This new financial market resolved the lack of the exiting options problem for venture capital firms. A stronger presence of venture capital in Hong Kong can be expected. Based upon the increasing flows of venture capital, it appears that Hong Kong government so far has provided the right incentives. It has also laid down the infrastructure for the development of the high-tech industry.

With a clear sub-sector focus within the high-tech industry together with a venture capital industrial standard that is closer to the United State, a solid venture capital market eventually should be established in the region in the very near future. The first and foremost policy issue is to attract talented individuals in the technical field from around the world, especially from all of China and the overseas Chinese.

Appendix 1

Economic and Technological Development Zones in the Pearl River Delta

Zone
Guangzhou Economic and Technological Development Zone
Zhanjiang Economic Technological Development Zone
Nansha Economic and Technological Development Zone
Huizhou Zhong Kai New and High-Tech Development Zone
Foshan New and High-Tech Development Zone
Guangzhou Nansha Economic and Technological Development Zone
Shenzhen Industrial Park
Daya Bay Economic and Technological Development Zone
Guangzhou Tianhe New and High-Tech Development Zone
Zhongshan Torch New and High-Tech Development Zone

Sources: Hong Kong Trade Development Council

Appendix 2

Companies traded in Growth Enterprise Market as of 3/9/2000

Code	Company	Volume (million)	Nominal Price (Hong Kong Dollars)
8001	TOM.COM	33.043	13.400
8003	T S TELECOM	0.096	1.590
8005	YUXING INFO TECH	0.194	7.650
8006	HONGKONG.COM	248.749	7.900
8011	CHINA AGROTECH	0.044	1.110
8012	FE POLYCHEM	N/A	3.400
8013	PINE TECHNOLOGY	1.034	1.520
8015	QIANLONG TECH	0.294	1.050
8016	CHINA DATACAST	0.470	13.850
8018	SIIC MED TECH	3.037	212.500
8025	TIMELESS	1.052	5.250
8028	AIR HOLDINGS	0.114	0.960
8033	VODATEL NETWORK	32,514	3.975
8040	FORTUNETELECOM	1.050	3.325

Sources: Growth Enterprise Market home page:

http://www.hkgem.com/prices/e_default.htm?ref=54

N/A = not available

Appendix 3

20 Largest Venture Capital Funds in Hong Kong/China 1997 (June)

Venture Capital Fund	Year Founded	Capital (US \$ million)
AIG Asian Infrastructure Fund L.P	1994	1008.0
Asian Infrastructure Fund	1994	800.0
Prudential Direct Investment Fund	1986	500.0
HSBC Private Equity Fund 2 Ltd.	1997	315.0
New World Infrastructure Ltd.	1995	307.0
Lombard Asian Private Investment Co. LDC	1997	252.5
HSBC Private Equity Fund L.P.	1995	250.0
Lazard Asia Investment BV	1995	250.0
CLSA Private Equity Ltd.	1995	250.0
Asia Pacific Fund II	1994	225.3
Prudential Asia Private Equity Ltd. Partnership	1994	211.0
Peregrine Direct Investment Ltd.	1994	200.0
China North Industries Investment Ltd.	1994	185.0
Citicorp Everbright China Fund	1995	165.0
AIF Telecommunication Fund	1996	157.0
China Retail Fund	1996	157.0
BOC China Fund Ltd.	1992	150.0
Prudential InvestDirect Asia	1997	150.0
Asia Pacific Trust	1990	145.0

Source: "The 1998 Guide to Venture Capital in Asia", Asia Venture Capital Journal

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WEB SITES

National Venture Capital Association <http://www.nvca.org>

Hong Kong Trade Development Council <http://www.tdctrade.com/main/economic.htm>

Hong Kong Growth Enterprise Market http://www.hkgem.com/aboutgem/e_default.htm

Industry Department of Hong Kong

<http://www.igsd.gov.hk/investment/html/content.asp?anony=Guide+to+Setting+up+in+Hong+Kong>

Boom.com Hong Kong

<http://baby.boom.com.hk/portfolio/snapshot.asp?s=8001&m=HK&t=6m>