

The Canadian Risk Capital Market and the Role of Government Policies

A National Policy Report

CANADA

Gunseli Baygan-Robinett, PhD
November 2007

**Prepared for the International Consortium on
Entrepreneurship (ICE)**

About the International Consortium on Entrepreneurship (ICE)

The International Consortium on Entrepreneurship (ICE) is a consortium of leading entrepreneurship countries working to improve the analytical foundation for entrepreneurship policies.

The members decide biannually on new entrepreneurship projects.

ICE projects are not aimed at producing new data, but rather to critically demand accurate entrepreneurship data from other respectable sources designed to meet the specific needs of the member countries.

The consortium also initiates comparative policy studies in order to improve the understanding of the functioning of entrepreneurship policies and compare them across countries.

The ICE Provides a Foundation for Fact-Based Entrepreneurship Policies.

EXECUTIVE SUMMARY

Within the framework of the International Consortium on Entrepreneurship's (ICE) Risk Capital Policy and Data Project, FORA, a mapping of the risk capital policy instruments in Canada has been carried out.

This national policy report summarises the results of the policy mapping and compares the development of the Canadian risk capital market with the government's policy priorities.

Canadian venture capital activity soared in the 1990s. But, the growth was not sustainable.

The Canadian venture capital market experienced a period of strong growth during the second half of the 1990s. Several new venture capital funds entered the market, and the capital under management soared to over CAD 22 billion in 2002. However, the timing was not favourable. The turmoil in the international financial markets, following the investment bust in Internet and telecommunications sectors, negatively affected venture capital activity. Fund raising and the investment levels shrank drastically, almost back to the level in the mid-1990s.

Certain structural issues have exacerbated the liquidity crunch.

The Canadian venture capital market is heavily dependent on retail-funds. The lack of sufficient diversification in funding sources is particularly problematic during market downturns. Institutional investors that have longer investment horizon continue to remain cautious. International flows could offer relief in the short run to the ongoing liquidity crunch. North American venture capital markets are increasingly integrated, and Canadian funds could better leverage their geographical proximity to clusters with high venture capital activity in the United States. US pension funds could also be an important source of liquidity. The Canadian venture capital funds however face stiff competition. New markets emerge as more and more countries embrace private equity as a viable investment vehicle, e.g., China and India.

Foreign funds could play a role,

While foreign funds finance larger rounds, exiting companies, and obtaining higher values at exit, their domestic counterparts lack sufficient scale and scope. Many funds are small. And capital allocation appears to be inefficient, as funds serve far more companies, and average deal sizes are significantly smaller than in the United States. Canadian funds also have difficulty in providing multi-round financing to prospective firms, reflecting the challenging fund raising environment in recent years, further limiting their ability to carry portfolio firms to exit.

as well as, the government to diversify funding sources.

The Canadian government began to diversify the sources of venture funds by liberalizing rules for institutional and foreign investors, modifying tax incentives and introducing government equity funds. LSVCC tax benefits were modified; rules on institutional and foreign investors were liberalized. The Business Development Bank of Canada (BDC) introduced a number of innovative programs to leverage private funding. The Canada Community Investment Plan (CCIP) was launched to increase the flow of "investment ready" small firms and link them with potential angel investors. Provincial governments introduced range of programs to support business environment and access to risk capital.

New regulatory and tax changes are proposed to revitalise the venture capital activity.

The federal government has been considering further regulatory and tax changes to unlock new capital sources for venture capital funds and to revitalize the venture capital market. Budget 2007

announced additional tax measures, addressing longstanding concerns of the venture capital sector. In principle, an agreement has been reached on changes to the Canada-US tax treaty, including treaty recognition of limited liability companies and the elimination of source-country withholding tax on interest. Another important change is the removal of non-resident tax clearing requirements, "section 116 certificates", for shares that are listed on any stock exchange in any OECD country with which Canada has a tax treaty.

The Canadian venture capital market cannot effectively withstand cyclical fluctuations without long-term investors.

Patient capital is also needed for private independent funds to flourish. Poor performance of the venture capital market, however continue to deter institutional investors. Industry valuation practices are also seen as inconsistent. The *Canadian Venture Capital and Private Equity Association* has recently introduced new accounting principles and industry standards for valuation. The collection and dissemination of such information are important steps forward. Sound performance benchmarks will help build trust and establish private equity as a viable alternative asset class. While the role of government may be limited, a multi-stakeholder dialogue with industry participants, federal and provincial governments could be encouraged. To better target the needs of small firms, preparing for a public offering, and improve valuations, the *Capital Pool Company Program* has also been established.

On the demand side, a more integrated approach is needed to harness Canada's science and technology advantage.

Canada has a strong science and technology infrastructure. Government and academic institutions play a key role in research and development. Strategic research priorities include environmental science and technologies; natural resources and energy; health and related life science and technologies; and information and communication technologies. Various programs to support businesses, and research partnerships exist.

An integrated approach, streamlining different federal programs that provide support through the life cycle of the firm, from seed to exit is also in preparation. To improve the efficiency and impact of business assistance programs, for instance, the government has announced that programs and activities of existing organizations would be aligned to increase commercialization outcomes. Accordingly, the *National Research Council of Canada*, the *Natural Sciences and Engineering Research Council of Canada*, and the *Business Development Bank of Canada* will implement a plan to work more effectively together to support the commercialization of research in Canada.

Table of Contents

EXECUTIVE SUMMARY	3
PREFACE	7
INTRODUCTION	9
THE INVESTMENT POLICY MODEL.....	9
A CANADIAN POLICY MAPPING	11
OUTLINE.....	12
THE CANADIAN MARKET FOR RISK CAPITAL	14
MARKET CAPITALIZATION AND LIQUIDITY.....	14
FUNDS RAISED BY SOURCE	14
INVESTMENT BY STAGE AND DEAL SIZE.....	16
INVESTMENT BY SECTOR	18
INVESTMENT BY REGION.....	19
EXIT AND MARKET RETURNS.....	22
INFORMAL INVESTORS	24
ASSESSING THE FUNDING GAPS.....	24
HISTORICAL VIEW ON POLICY PRIORITIES AND RISK CAPITAL PERFORMANCE	25
<i>Phase 1: Early growth (1980s-mid-1990s)</i>	25
<i>Phase 2: Expansion (1995-2001)</i>	26
<i>Phase 3: Market decline and recovery (2001-present)</i>	26
MAPPING OF CANADIAN RISK CAPITAL POLICY AREAS	28
PRIORITISED POLICY AREAS	29
<i>Investment Opportunities</i>	29
<i>Investment Incentives</i>	29
<i>Investment Capital</i>	30
EXPLAINING THE RISK CAPITAL POLICY INSTRUMENTS	31
INVESTMENT CAPITAL.....	32
<i>Government Equity Programs</i>	32
<i>Investment regulations</i>	35
<i>Exit Opportunities</i>	36
INVESTMENT INCENTIVES	37
<i>Taxation</i>	37
INVESTMENT OPPORTUNITIES.....	39
<i>Business Angel and other Investor Networks</i>	39
<i>Investment Readiness</i>	41
<i>Commercialisation of R&D and Knowledge Intensive Sectors</i>	42
ANNEX	45
LIST OF INTERVIEWEES.....	45

LIST OF FIGURES:

Figure 1. VC market capitalization and liquidity, 1995-2006	14
Figure 2. Funds raised by source.....	15
Figure 3. New vs. Follow-on Investments, 1999-2006	16
Figure 4. Investment by stage and the number of companies financed,.....	16
Figure 5. Distribution of average deal size by domestic and foreign investors, (2004-2006).....	17

Figure 6. Investment by sector.....	19
Figure 7. Investment by region, 2001-2006.....	19
Figure 8. Investment by Province/State, Canada and the United States, 2006	20

LIST OF TABLES:

Table 1. Exit Trends, 1999-2006.....	22
Table 2. 10-year Horizon Returns, Canada, US and EU.....	22
Table 3. Distribution of informal investment by size, 2001	24
Table 4: Mapping of the Canadian Risk Capital Policy Areas, 2007.....	28
Table 5. BDC investment by stage, 2006	33

LIST OF BOXES:

Box 1: Defining Private Equity, Buy-Out and Risk Capital	12
Box 2. The Timeline of Canadian Venture Capital Market	25
Box 3. Business Development Bank of Canada (BDC)	32
Box 4. Provincial Equity and Quasi-Equity Programs	33
Box 5. Labour-sponsored venture capital corporations (LSVCCs)	37
Box 6. Provincial tax measures.....	38
Box 7. Investment readiness and Business networks.....	41
Box 8. Research partnerships and networks.....	43
Box 9. Science and Technology Support	Fejl! Bogmærke er ikke defineret.

PREFACE

In October 2006, the *International Consortium on Entrepreneurship* (ICE) agreed to investigate and compare risk capital activities, policies and data throughout the seven ICE member countries.¹

Based on national mappings of policies and data, the overall ICE risk capital project aims at comparing policies enhancing risk capital activities across countries and further exploring data and definitions applied by policymakers, professional association surveys and risk capital researchers in the ICE countries (see Box 1 for more details).

Box 1: The ICE Risk Capital Policy and Data Project

In order to improve the understanding of risk capital markets, government policies in the field and existing data and definitions of risk capital across countries, the *International Consortium on Entrepreneurship* (ICE) has initiated a risk capital project. This project sets out to compare risk capital policies and data across seven ICE countries including Canada, Denmark, Finland, the Netherlands, Norway, Sweden and the U.S.

A Policy and Data Track

The ICE risk capital project is divided into a policy and data track. The policy track is organised by the Danish FORA and strives at enhancing the understanding of the relationship between risk capital activities and public policy priorities in the field. A policy study will be conducted in each ICE country. The data track is being conducted by the OECD and aims at mapping and comparing existing data and definitions of risk capital terms across regions. As a result, an overview of existing risk capital definitions comparing similarities and differences will be provided including stages, investors types and so on.

The ICE Risk Capital Policy and Data Handbook

The final output of both tracks will be consolidated into an ICE Risk Capital Policy and Data Handbook towards spring 2008. It will provide an overview of risk capital policies based on the Investment Policy Model and guidelines for further work with risk capital data and definitions.

capital policy studies are soon to follow in the remaining ICE countries.

The policy mappings are based on the Investment Policy Model developed by the *International Consortium for Entrepreneurship*. The investment model suggests a number of policy categories, which are viewed as imperative for the development of risk capital markets. Each policy category lists a number of specific policy areas in which the government could play a role. For instance by improving framework conditions for risk capital through public co-investment schemes, loans and equity guarantees, tax policy or strengthening human and social capital among investors.

Although the national reports do underline some domestic policy issues, it is the view of the ICE countries, that actual policy recommendations should be based on comparisons between risk capital policy efforts in a number of countries rather than on single country study alone.

Once an additional number of risk capital policy studies have been carried out in more ICE countries, some prime cases, good practices and less successful policy experience will be

¹ The member countries in the *International Consortium on Entrepreneurship* (ICE) include policy makers and researchers from Canada, Denmark, Finland, Norway, Netherlands, Sweden and the United States.

highlighted, compared and discussed. These findings will be presented in the final ICE Risk Capital Policy and Data Handbook towards the spring 2008.

As a result, the single national report does not evaluate the concrete policy initiatives implemented by the government, nor does it provide concrete policy recommendations to the involved public organisations.

This Canadian policy report has been prepared for the country members of the *International Consortium on Entrepreneurship* by Günseli Baygan-Robinett, PhD. The Canadian report will be presented to the ICE members at the ICE meeting on 21-22 November 2007 in Paris.

Anders Hoffmann
Creative Director, FORA

Glenda Napier
Policy Advisor, FORA

September 2007

INTRODUCTION²

Access to risk capital (investment in seed, start-up and expansion stages) through well-functioning capital markets is fundamental for the development of vibrant entrepreneurial climates.

However, numerous studies have shown that capital markets continuously fail to provide sufficient sources of high-risk capital to young investment-seeking entrepreneurial firms (Sohl 2003; HM Treasury 2003; Harding et al 2003; Vaekstfonden 2004). This shortage of risk capital is often referred to as the 'financing gap'.

Since the early 1980s and onwards, governments have been involved in fuelling risk capital activities aimed at improving the overall framework conditions for entrepreneurship. While governments have addressed the financing gap by introducing a variety of public policies and programmes, the question is to what extent these policies have addressed the risk capital market efficiently.

For instance, if demand (entrepreneur) side issues predominate, any policy effort aimed at improving the supply (investor) side could distort the market and vice versa. Demand and supply side issues could also vary across countries and yet similar public policy instruments are being used.

As with the other ICE risk capital policy studies, the objective of this report is to investigate the relationship between the risk capital activities and the government's policy priorities in the area. In addition, it aims at providing an overview of past and current risk capital policy programmes implemented in Canada.

The Investment Policy Model

Risk capital activities vary between countries, and different governments have applied different policies to fuel investment in high-risk entrepreneurial firms.

This report explores the Canadian framework conditions for risk capital and the government's policy priorities in the area by using the analytical framework introduced in the Investment Policy Model. This model has been developed by ICE and lists the policy areas through which governments can intervene in the risk capital market.

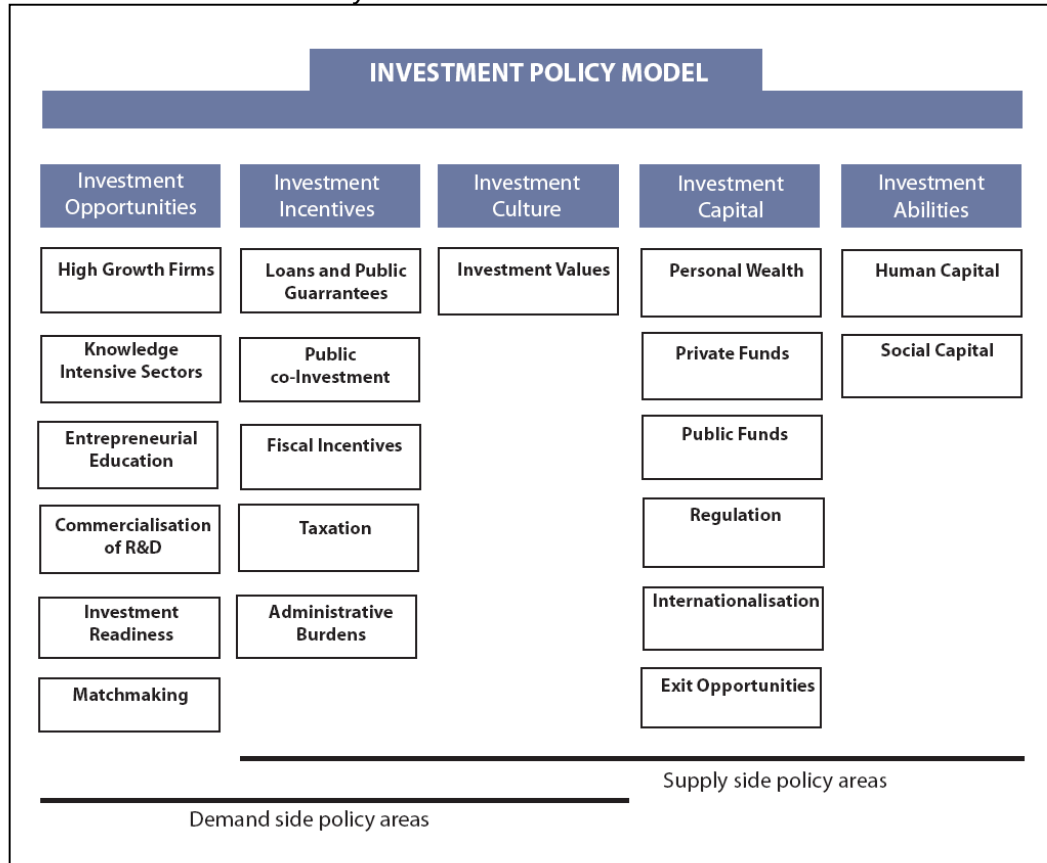
According to the Investment Policy Model, a country's risk capital activity can be influenced through five types of policy categories (and 20 sub-policy areas) including:

- Investment Opportunities (High Growth Firms, Knowledge Intensive Sectors, Entrepreneurial Education, Commercialisation of R&D, Investment Readiness, Matchmaking)
- Investment Incentives (Loans and Public Guarantees, Public Co-Investment, Fiscal Incentives, Taxation, Administrative Burdens)
- Investment Culture (Investment Values)
- Investment Capital (Personal Wealth, Private Funds, Public Funds, Regulation, Internationalisation, Exit Opportunities)
- Investment Abilities (Human Capital, Social Capital).

² The **Introduction Section** is common to all National Policy Reports and written by **Glenda Napier**.

In order to understand this project's analytical framework, a further explanation of the Investment Policy Model's policy categories is required.

Table 1: The Investment Policy Model*



* Note: The Investment Policy Model does not provide a complete overview of the total set of policy areas directed towards entrepreneurship. It focuses on the set of policies merely related to the development of risk capital activities, which are organised around five policy categories including investment opportunities, incentives, culture, capital and abilities.

Source: FORA 2006

According to the Investment Policy Model, governments can target and influence the demand for and supply of risk capital through the following five policy categories:

1. Investment Opportunities targets only the demand side of the model – the entrepreneurs requiring capital for their ventures. This policy category includes policy areas aiming at strengthening the demand for capital. This includes enhancing a firm's growth potential, knowledge insensitivity, commercialisation of R&D, entrepreneurial education, investment readiness of investment-seeking firms and strengthening matchmaking opportunities between entrepreneurs and investors. This way, governments can fortify the demand side by making it more investment-ready and hence more attractive for investors.
2. Investment Incentives can influence both the demand and supply side. The category represents the benefits as well as costs associated with making an investment. Areas that increase the average return on investments like public guarantee and public co-investment schemes and fiscal initiatives represent the benefits. The costs are

represented by taxation and administrative burdens. Both factors could reduce the return on a given investment and thereby reduce the incentives to invest.

3. Investment Culture is related to a country's investment culture and tradition and is viewed as relevant for both the demand and supply side. Government can enhance a certain investment culture through supporting investment campaigns and other awareness activities.
4. Investment Capital is merely an investor category and represents the actual supply of risk capital, which can come from various sources such as private individuals, public investors, private and institutional funds. Furthermore, informal and formal types of investors can supply the capital. This policy category includes the size of the available capital and the regulatory framework affecting the supply of capital. In addition, the capital can be raised among national and international investors. Governments can influence the size of available risk capital by providing incentives for certain investor types to engage in the market or by simply providing capital themselves. Finally, exit possibilities are also included as they represent a source of capital. Promising exit opportunities affect investor's willingness to provide capital in the first place.
5. Investment Abilities refer to investors' human and social capital, including investor background and access to investor related networks and associations. Governments can influence the investor's investment abilities through training, courses and diverse networking activities.

The five policy categories can be divided into supply or demand side categories depending on their orientation towards either the entrepreneurial firms (demand side) or the investors (supply side). While some policies address only the entrepreneurial firms or the investors, others can be used to target both sides.

It can be argued that the outcome of the public intervention depends largely on the ability to target both the supply and demand side equally. For instance, without enough investment-ready entrepreneurs, investors will not invest their risk capital. On the other hand, inactive domestic investors are likely to discourage would-like-to-be entrepreneurs from realising their dream in the first place.

A balanced approach between supply and demand side policy instruments could therefore be preferred. The national policy mapping will show to what extent a government is active in one or more of the policy categories and policy areas and hence how much focus there is on the supply and demand side, respectively.

In the national policy reports, it is not given that governments should play a role in any/all of the policy areas. Furthermore, none of the policy areas are initially viewed as being more efficient than others in resolving the financing gap. Only by comparing the policy priorities from all the ICE policy mappings, the different governments' policy approaches are discussed and somehow concluded upon. This is done in the final ICE Risk Capital Policy and Data Handbook.

A Canadian Policy Mapping

This national policy study maps and discusses the Canadian government's experience with risk capital policies. It is based on risk capital policy questionnaire and interviews conducted with various stakeholders. Key challenges and country specific issues, focusing on post-2000 investment and fund raising activity are examined. Policy priorities related to risk capital are also reviewed. Policies affecting funding sources, such as taxation and the regulatory framework, are

examined, in addition to framework conditions on entrepreneurship and innovation. Other reviewed countries beside Canada include, the Netherlands, and Denmark.

The Canadian study was carried out during June and August 2007, with the participation of Small Policy Branch of Industry Canada. Policy and programs are analyzed at the federal level, and supported by provincial examples, when necessary.

This report was prepared by Günseli Baygan-Robinett, PhD. Jim Valerio and Shane Dolan from the Small Business Policy Branch of Industry Canada; and Glenda Napier from FORA provided valuable comments and insights. As did a number of interviewees (**Annex**).

Outline

The report is structured as follows. First, it shows the development of the risk capital market in Canada. Then, the results of the policy mapping are presented and the government's policy priorities related to the development of the risk capital market are discussed. Finally, each of the policy instruments identified in the policy mapping is discussed in more detail before concluding.

The market description is based on data from the Thomson Financial Associates, and supplemented with other publicly available data from academic publications.

To the extent possible, available and internationally comparable data is collected and presented as private equity covering both seed, start-up, and expansion (referred to as 'risk capital' in the text) as well as later stage (referred to as 'buy-out' in the text – NOT risk capital), a clear distinction between risk capital and buy-out data is not always obtainable (see also Box 1).

Box 1: Defining Private Equity, Buy-Out and Risk Capital

Private Equity

Normally, private equity refers to equity invested in non-quoted firms. Categories of private equity range from venture capital, growth capital, mezzanine capital and buyout. Private equity can be used for firms to expand working capital, to develop new products and technologies or to make acquisitions etc. Private equity can also be used for succession in family firms, management buy-out and buy-in of a company. This ICE project refers to private equity as covering the full range from seed to buy-out.

Buy-Out

Whereas private equity covers the whole range of capital sources, the buy-out segment refers only to the later stages of investment, which is everything after expansion. This ICE project refers to buy-out as described above and hence the opposite as risk capital.

Venture Capital

For many professional associations, venture capital is a subset of private equity and refers to equity investments made for the seed, start or expansion of a business. This type of capital is typically used to invest in new, growth high tech businesses with the potential to develop into significant economic contributors. Venture capital investments are usually high risk, but offer the potential for above average returns. Venture capital often includes managerial and technical expertise to the firm and venture capitalists usually get a say in company decisions. Venture capital is an important source of equity for start-up companies, with limited operating history, who cannot raise funds through a debt issue, and is essential for innovative, often high tech firms.

However, there is some confusion when using the term venture capital, as some professional organizations refer to venture capital as also later stage capital. Due to this uncertainty, this ICE project does not use the term venture capital, but refers to investment in seed, start-up and expansion as risk capital.

Risk Capital

Despite efforts to agree on the term venture capital, in many occasions it still differs across regions and countries. Therefore, this ICE project refers to investment in seed, start-up and expansion stages as “risk capital”.

Risk Capital Market Activities

To assess a country’s risk capital market, one should not only look at the total capital under management and invested capital, but also include the different stages of investment, capital sources and sectors etc. A mature and well-functioning capital market will be able to supply capital throughout the different stages of development from early stages including seed, start-up and expansion till later stages including buy-out.

Finally, the informal private investors such as business angels are not included in the above description. This informal segment of the risk capital market is discussed following the overview of the formal risk capital activities. Venture capital market surveys do not include the informal investment segment, and available data is merely based on varying national surveys of informal investors.

The Canadian Market for Risk Capital

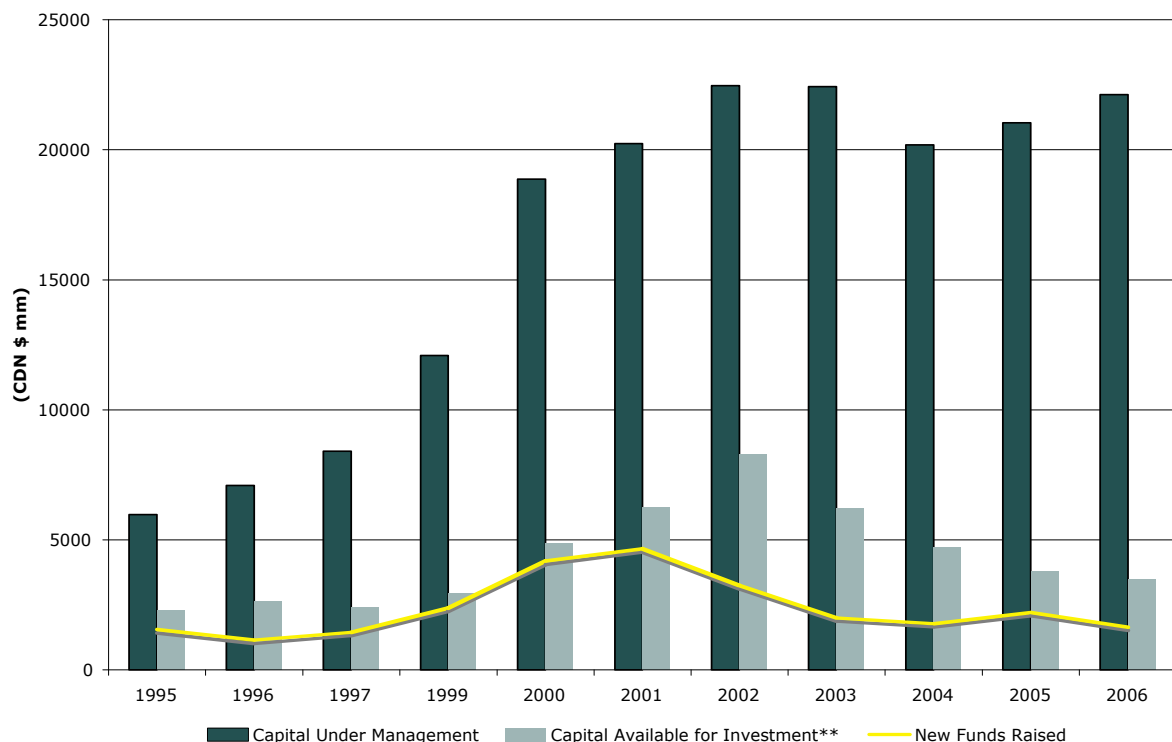
Market capitalization and liquidity

Post-2001 recovery has been slow and funds continue to face a liquidity crunch

The Canadian venture capital market experienced strong growth during the second half of the 1990s. Several new venture capital funds entered the market, and the capital under management soared to over CAD 22 billion in 2002. Venture capital markets however are highly cyclical, and the annual commitments to venture capital funds vary widely. Since 2002, both fund raising and the capital available for investment have declined, reflecting a more conservative stance following the downturn in technology markets. In 2006, the new funds raised decreased further to CAD 1.6 billion, almost back to the level in the mid-1990s (**Figure 1**).

Even in mature risk capital markets, it is not uncommon to have a period of high fundraising and investment activity followed by a period of sharp drop in new capital commitments, fund exits and consolidations. While several risk capital markets in Europe and the United States started to bounce back, the Canadian recovery has been sluggish. And the investor confidence remains low. The market weeding out, i.e., fund exits and consolidations have not fully taken place.

Figure 1. VC market capitalization and liquidity, 1995-2006



Source: Thomson Financial (2006)

Funds raised by source

Fund raising is highly skewed and dominated by retail-funds

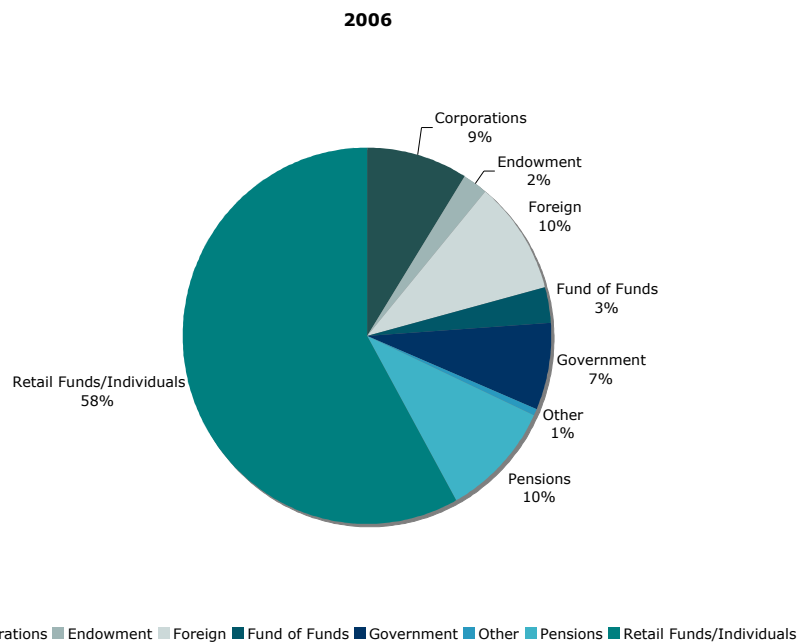
The Canadian venture capital market is heavily dependent on retail-funds and individuals, which contributed around 58% of new funds raised in 2006 (**Figure 2**). The lack of sufficient

diversification in funding sources is particularly problematic during market downturns. Funds raised from individuals and corporations tend to be cyclical, and closely trail market returns.

Investors that have longer investment horizon, such as pension funds continue to remain cautious. While investments by Canadian pension funds and other institutional investors have increased over the past decade, their share remains small, compared to leading venture capital markets, totalling around 10% in 2006. In the United States and the United Kingdom, institutional investors, in particular pension funds, are primary source of venture capital, with a share over 40% (OECD, 2004). Alternative pooling vehicles, such as “fund of funds” are underdeveloped in Canada, with 3% of domestic contributions in 2006.

While international flows play a significant role, and North American venture capital markets are increasingly integrated, Canada has difficulty in attracting new capital. Funds raised by foreign sources constituted around 10% of the total in 2006. Foreign investors, in particular US pension funds could be an important source of liquidity. Canadian venture capital funds however face stiff competition. New markets have emerged as more and more countries embrace private equity as a viable investment vehicle, e.g., China and India.

Figure 2. Funds raised by source



Source: Thomson Financial (2006)

As the Canadian market matures, the fund raising sources need to be better diversified. The importance of such diversification has become more apparent in recent years, as domestic fund raising remained dismal. Adjustments to phase out the Labour Sponsored Investment Fund (LSIF) program in Ontario contributed to the decline in fund raising. In 2006, retail funds overall raised about CAD 907 million, of which only about CAD 150 million were raised outside Quebec, compared to CAD 1.2 billion in 2005.

An increased supply of long-term funding is needed. Canadian institutional investors, i.e., pension funds, insurance companies, and endowments, need to increase their exposure to this asset class, in line with the trends in leading risk capital markets in Europe and the United States.

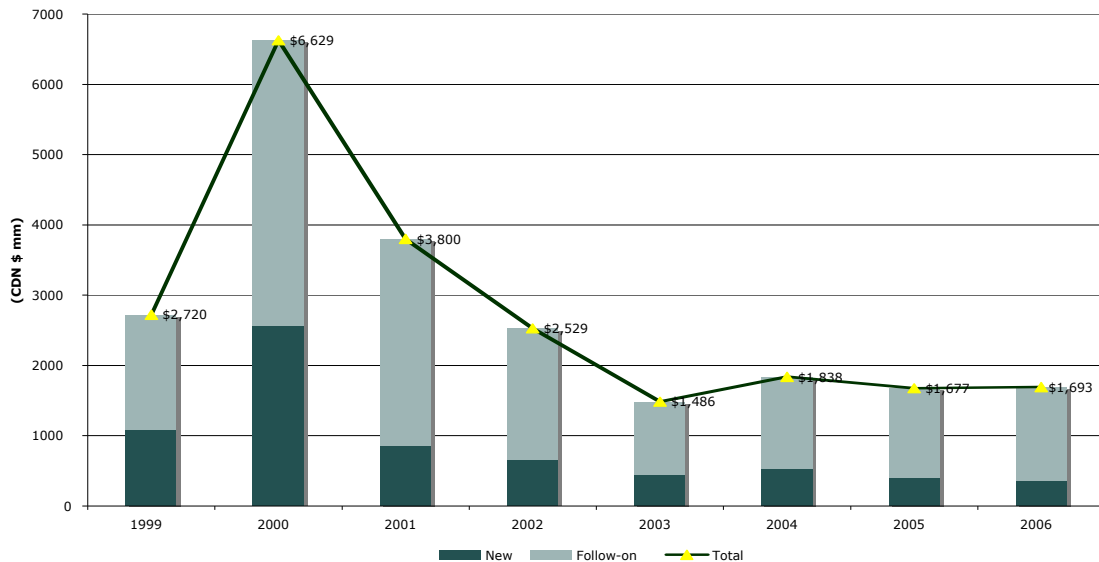
Without their contribution, it will not be possible to sustain a viable venture capital market. Besides, Canadian funds need to demonstrate their comparative advantage more vigorously to attract domestic, as well as international capital.

Investment by stage and deal size

Investment levels have been stabilized, after a period of sharp decline between 2000 and 2003, while new investments and the number of companies financed continued to decline in 2006.

Venture capital investments almost tripled and peaked at CAD 6.6 billion in 2000. The downturn, following the turmoil in technology markets has been severe. Since 2003, investment levels have stabilized, averaging around CAD 1.6 billion. New investments however, were disproportionately affected and continued to decline in 2006 (Figure 3).

Figure 3. New vs. Follow-on Investments, 1999-2006

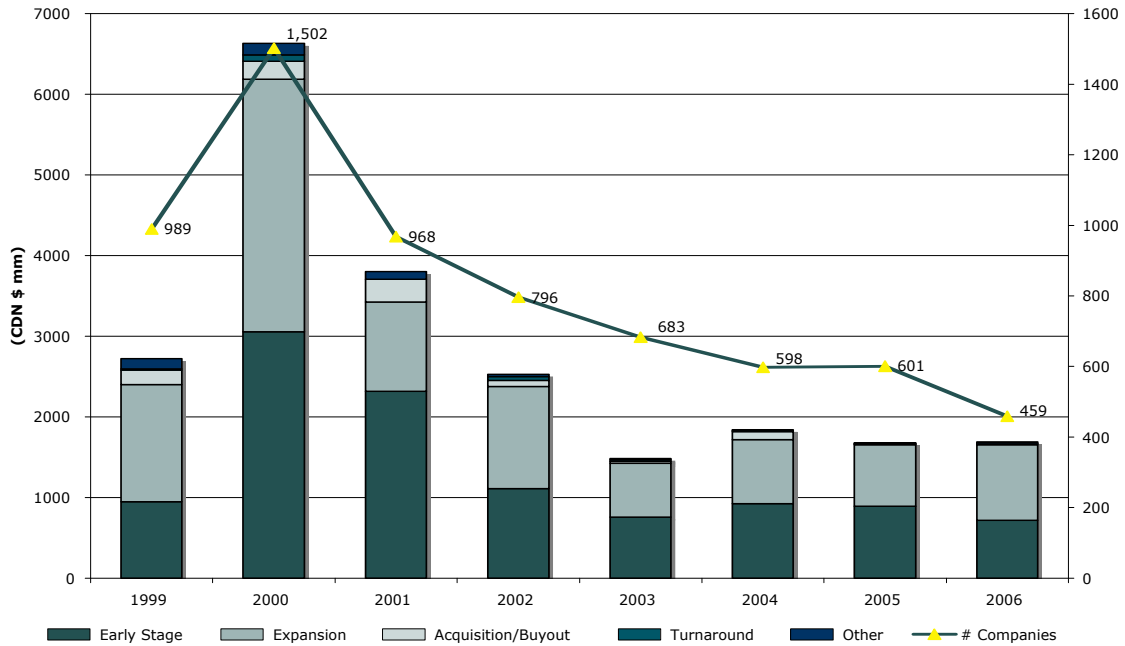


Source: Thompson Financial (2007)

Likewise, the number of companies financed dropped sharply. In 2006, 459 financings were made, and CAD 1.7 billion was invested. Early stage accounted for around 42% of total investment, expansion stage accounted for 55% of investments, and the share of other later stage investments were negligible (Figure 4).

Figure 4. Investment by stage and the number of companies financed,

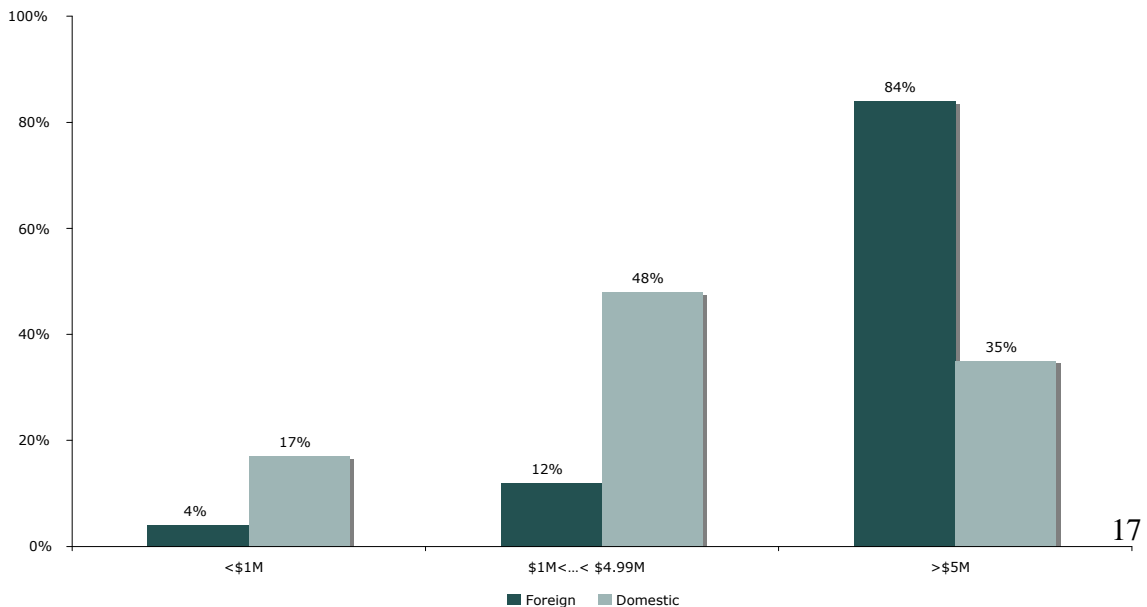
1999-2006



Source: Thomson Financial (2007)

Deal sizes have risen over the years. In 2006, the average deal size reached around CAD 4 million. Most Canadian venture capitalists find the fixed costs too high to invest in firms that require less than CAD 1 million in risk capital. Between 2004 and 2006, on average 17% of the deals were under CAD 1 million, while deals between CAD 1 million and CAD 4.99 million represented 48% of the total. Larger deals are also on the rise, due to increased syndication, in particular with foreign funds. Foreign investors in general prefer deals above CAD 5 million, which represented 84% of the deals that they undertook between 2004 and 2006 (Figure 5).

Figure 5. Distribution of average deal size by domestic and foreign investors, (2004-2006)
Source: Thomson Financial (2007)



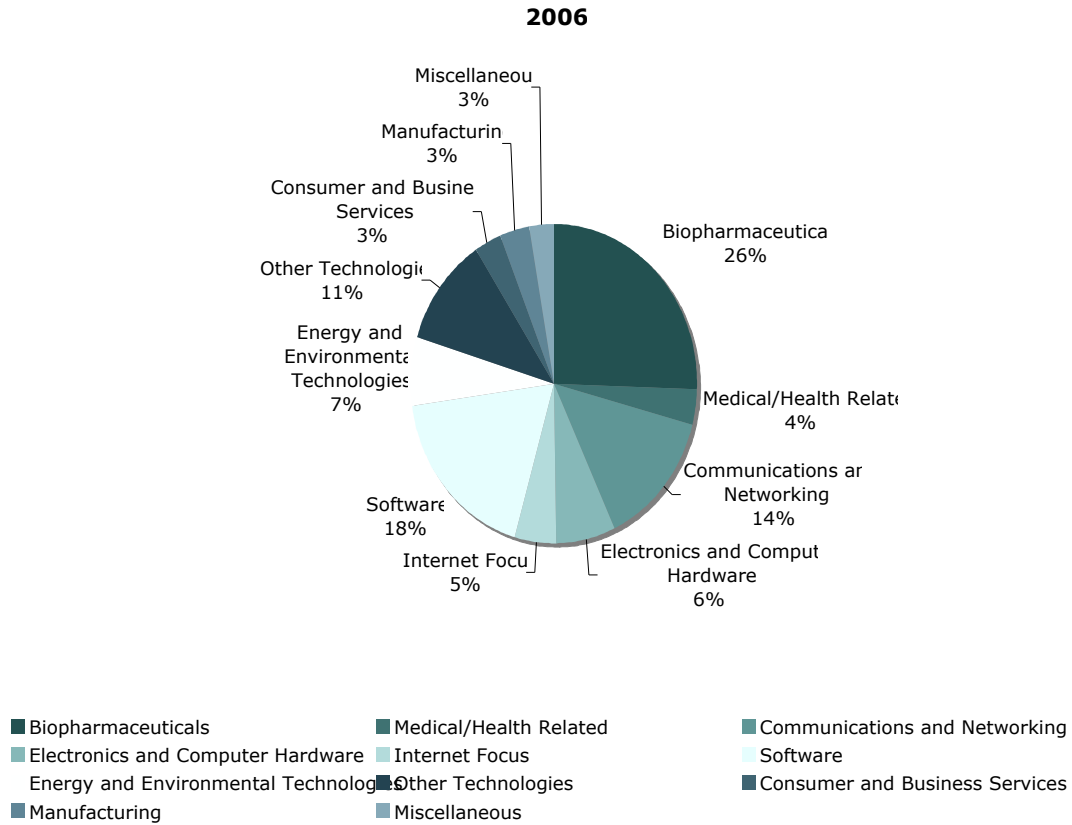
Although the number of companies being financed has fallen in recent years, the Canadian risk capital market continues to serve a high number of companies relative to its size. For instance, in 2002, only 2 500 firms were venture-backed in the United States, even as venture capital investments were about USD 21 billion on total (Baygan, 2003c). In addition, the US deal sizes are comparatively larger, ranging between CAD 10 to 13 million (Thomson Financial, 2007). A typical US firm, thus receives three to four times more financing than its Canadian counterpart. Canadian VC funds also claim to have difficulty in providing multi-round financing to prospective firms, given a challenging fund raising environment in recent years.

Investment by sector

Technology orientation continues, as new research areas emerge in life sciences, clean energy and environment.

The Canadian venture capital industry shifted its focus from traditional industries to supporting high-technology sectors in the 1990s. Concentration on technology intensive sectors continued even after the downturn, when the distribution of investments moved from communications and networking toward biotechnology and health-related sectors. In 2006, biopharmaceuticals constituted 26% of investments, followed by software (18%), and communications and networking (14%). Energy and environmental technologies, received 7% of investments (**Figure 6**).

Figure 6. Investment by sector



Source: Thompson Financial (2007)

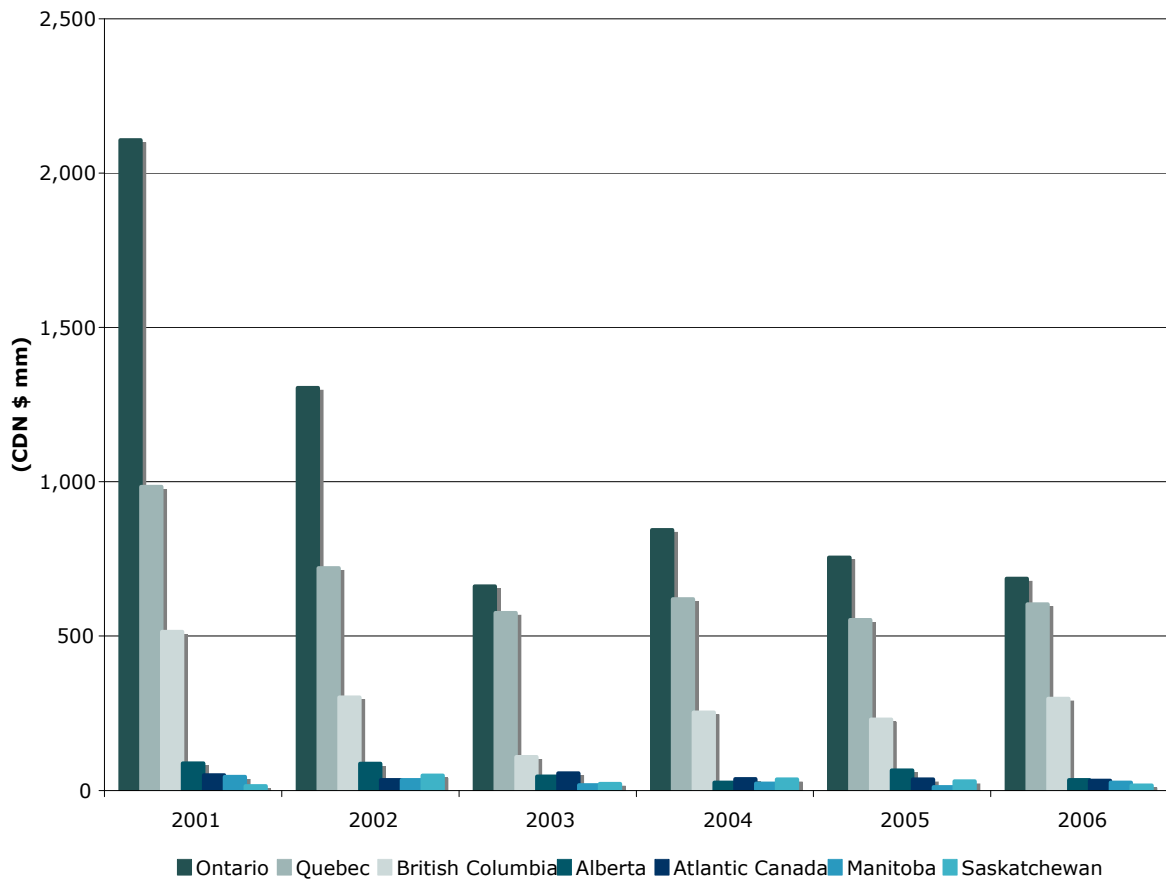
The current investment trends are expected to continue, as more and more Canadian funds gain expertise in early stage high-technology investments. There is also increased opportunities to undertake syndicated deals with US and other foreign funds.

Investment by region

Venture capital activity is geographically concentrated in three Provinces: Ontario, Quebec and British Columbia.

As in other countries, Canadian venture capital activity has been clustered within a few provinces. Between 2001 and 2006, Ontario, Quebec and British Columbia have attracted the highest levels of venture capital (**Figure 7**). These regions also account for most of Canadian population and economic activity. Since 2001, investment levels have declined in all provinces. The gap between Ontario and Quebec has also narrowed. Legislative changes on some retail funds in Ontario negatively affected the investment and fund-raising environment in that province.

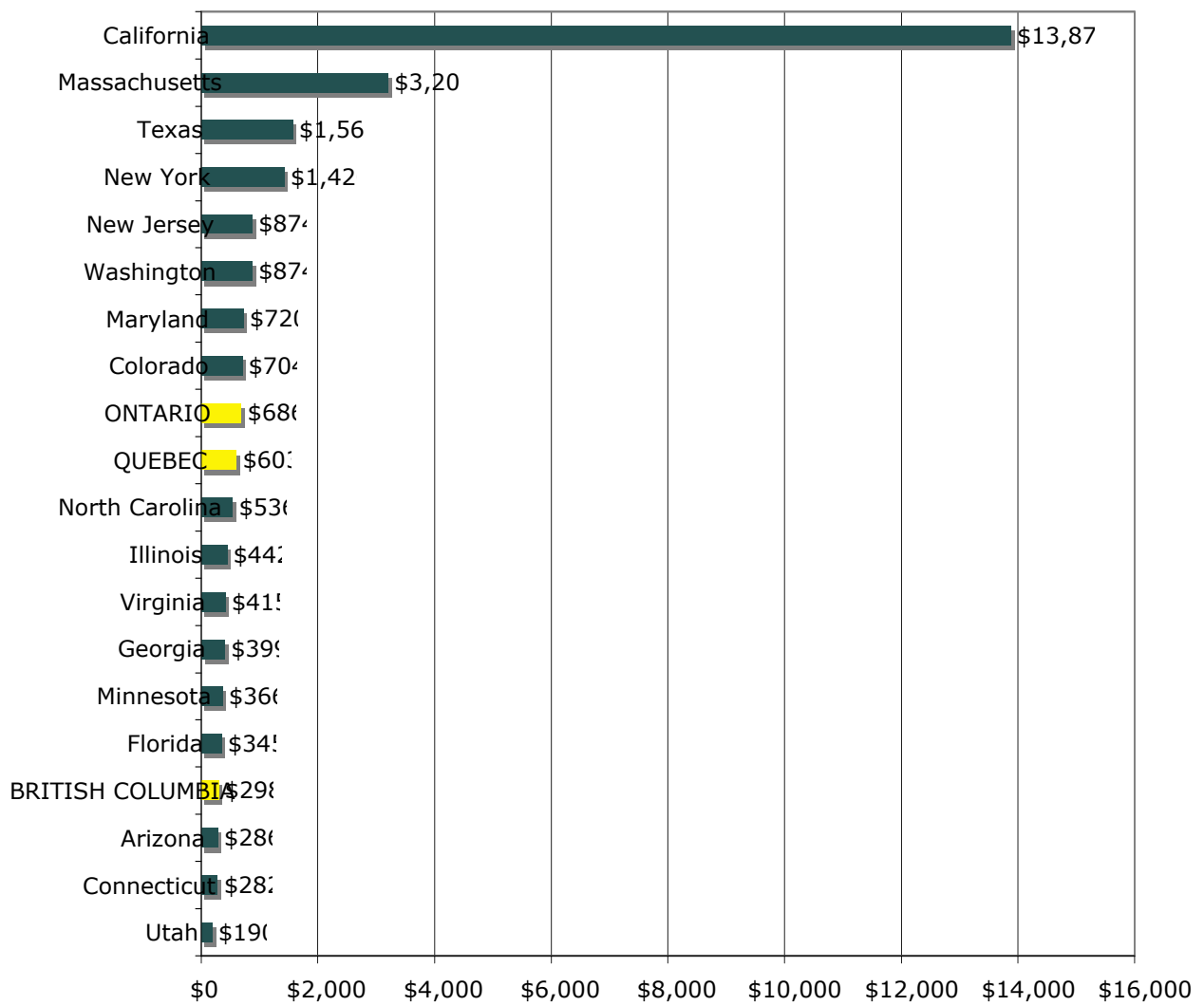
Figure 7. Investment by region, 2001-2006



Source: Thomson Financial (2007)

Regions based on high-technology manufacturing and services attract a larger share of venture capital in the United States, as well. In 2006, California alone received around CAD 14 billion of venture financing, followed by Massachusetts, CAD 3 billion and, Texas, CAD 1.4 billion. In comparison, Ontario received CAD 686 million, ranking close to Maryland and Colorado (**Figure 8**).

Figure 8. Investment by Province/State, Canada and the United States, 2006
(CDN \$ MM)



Source: Thomson Financial (2007)

Exit and market returns

Limited exit venues and poor fund returns continue to dampen down the fund raising cycle.

The time and form of exit are critical for investor incentives and in determining the fund cycle. Investors will be willing to contribute only if their risk is adequately rewarded. The preferred exit mechanisms for portfolio firms are initial public offerings (IPOs) and mergers and acquisitions (M&As).

Market capitalization and liquidity in the Canadian Venture Exchange remain low. The downturn in international financial markets in mid-2000 further strained the prospects of portfolio firms to complete a successful public offering. The number of venture-backed IPOs declined swiftly from 23 in 2000 to 3 in 2003. While the market slightly recovered in 2004, the number of venture-backed IPO exits is few, and the average transaction size remains small (**Table 1**).

M&A activity has been more sustainable. After 2000, venture-backed M&A exits jumped in number and remained stable (**Table 1**). M&As have become a viable exit alternative to an IPO. Between 1999 and 2004, 69% of all disclosed venture capital backed M&A exits were in the information technology sector, while 17% involved Life Sciences companies. In 2004, 46% of acquirers involved in venture-backed M&A exits were foreign, 70% were based in the United States (Macdonald and Associates, 2005).

Table 1. Exit Trends, 1999-2006

	1999	2000	2001	2002	2003	2004	2005	2006
IPO (# of exits)	18	23	8	3	2	15	9	6
Avg. transaction size (CDN \$ MM)	\$22	\$64	\$19	\$14	\$35	\$50	\$67	\$20
M&A (# of exits)	17	27	43	34	30	43	46	32
Avg. transaction size (CDN \$ MM)	\$36	\$71	\$13	\$77	\$24	\$54	\$47	\$73

Canadian market performance continues to be dismal, and overall returns are low. This is in part due to an unfavourable timing of entry of new funds to the market. A large number of funds were established in the late 1990s. The occurrence of high value exits has also been limited.

The 10 yr. horizon return in Canada is -3%, compared to 27.6% in the United States, and 6.5% in Europe. However, there are strong performing domestic funds, driven mainly by first quartile funds (19.2%), and private independents (23.3%) (**Table 2**).

Table 2. 10-year Horizon Returns, Canada, US and EU

	All funds	First Quartile
VC_US	27.60%	76.60%
VC_EU	6.50%	38.10%
VC_Canada	-3.00%	19.20%
Retail	-1.40%	n.a.
OC	-3.60%	n.a.
PI	-3.90%	23.30%

Other	n.a.	14.50%
S&P 500		8.20%
TSX		8.10%

Note: All returns as of 06/30/05

Source: Duruflé, (2006), Thomson Financial (2006)

The US venture capital market on the other hand is mature, and more efficient. It has consistently maintained good returns (**Table 2**). Money is directed to performing fund managers with good track records. And non-performing managers exit the market. Research has also shown that best performing US funds enter emerging sectors early, concentrate on winners, and are quick to walk away from non-performing investments. Fund managers also focus on company building, and engineer large exits. In addition, US funds rely on experienced partners with broad and deep industry knowledge and far reaching networks (Duruflé, 2006).

Canadian funds tend to concentrate on early stages, and invest much smaller amounts. In recent years, US funds have started to play an important role in the Canadian market, financing larger rounds with a more aggressive exit strategy. In return, Canadian funds have not been able to seize the full benefits from increasingly integrated North American market. With the exception of top-performing funds, the Canadian market is dominated by small, retail and private independent funds with domestic focus.

The growing presence of foreign investors in venture capital deals would eventually alter exit trends. Having an international outlook, these funds could facilitate larger exits in, as well as, outside Canada, e.g., NASDAQ in the United States, AIM in the United Kingdom, etc. Likewise, they could back large M&As more easily. As domestic venture capital funds mature, larger exits would also become more of a norm, which would boost the market returns in due course.

Informal investors

There is a nascent business angel market. Links between informal investors and government support programs and private venture capital funds have yet to develop.

Globally, business angels are an important source of risk capital. However, it is difficult to establish the size of the angel market due to its informal nature. Available information indicates that angel funding is comparable to early stage financing provided by venture capital funds. For example, in the United Kingdom, there are an estimated 20 000 to 40 000 business angels, who invest around GBP 500 million to GBP 1 billion a year in 3000 to 6000 businesses, putting them at par with private fund investment in early-stage deals (Mason and Harrison, 2000). Likewise, the *Small Business Administration* estimates 250 000 angels in the United States, committing USD 20 billion each year to over 30 000 private companies (SBA, 2002).

The *SME Data Financing Data Initiative* has provided a valuable first step to estimate the size of the angel market in Canada. Based on a survey of a representative sample of small business owners and their tendency to invest on other firms, the number of investments was estimated to be a little over 100, 000 in 2001. The average amount invested was CAD 111 000. Almost 30% of the respondents reported investing less than CAD 25 000, while a little fewer than 18% made large investments, exceeding CAD 250 000 (**Table 3**). Total investment by informal investors, based on the survey response, was about CAD 11.4 billion. However, around 41% of the investments, CAD 4.9 billion, was directed to businesses owned or operated by family and friends, or so-called “love money”. The business owners with in the sampling frame who invested at arm’s length in firms in which the investor did not act as operator accounted only for CAD 3.1 billion, representing the lower bound of angel investment in 2001 (Riding, 2005).

Table 3. Distribution of informal investment by size, 2001

	<CAD 25 000	CAD 25 000- CAD 49 000	CAD 50 000- CAD 99 999	CAD 100 000- CAD 249 000	> CAD 250 000
% of respondents	29.8	13.4	18.6	20.5	17.7

Source: Riding, 2005

While the survey estimates need to be evaluated with caution, it seems to indicate sizable informal investment activity, especially given the financing troubles faced by the venture capital industry as a whole. While the ***National Angel Organization*** facilitates peer-to-peer network, ties with the formal end of the market, especially with venture capital funds that specialize early stage and expansion financing could be strengthened.

The angel community remains geographically dispersed. Structured angel groups, “angel syndicates”, investing as a pool or as “side funds” to larger venture capital funds have been quite instrumental to strengthen the angel market in the United States. New co-investment schemes among angels and with other venture funds could help Canadian industry beyond the current liquidity shortages. Stronger links between angel investors and government S&T support programs, technology incubators, etc. would also improve deal flow and fill perceived funding gaps, prevalent during the pre-commercialization phase of new technologies and products.

Assessing the funding gaps

Firms seeking funds in the CAD 250 thousand and CAD 1 million range, or CAD 5 million and above, might be facing funding difficulties

The financing constraints faced by young firms with rapid growth potential could be different from the general SME population. These firms could benefit from a continuum of financing options

provided by public support programs, business angels, and private venture capital funds. Most industry participants agree that enough private equity financing is available at the aggregate level. However, many small innovative firms that have not reached the post commercialization phase claim to experience financing difficulties. Most private funds in Canada are small, and few have the capacity to offer successive rounds of financing to carry portfolio firms to exit effectively. While syndicated deals among domestic and foreign funds are on the rise, there is a general concern that firms in the expansion and growth stage might be under funded.

In general, government programs do not finance later-stage (i.e., expansion) companies and its role would be limited in filling funding gaps of this sort. Restructuring of the venture capital industry, through fund consolidations, and exits etc. could better serve the needs of expanding firms. A broader support structure might also be needed to ensure that high growth firms have access to skilled labour, new technologies and international markets, as well as capital to reach their growth potential. While the share of technology-based SMEs has increased in the Canadian economy over the years, only a few have grown to be market leaders. The reasons behind the scarcity of large high-technology firms in the Canadian industrial structure, in spite of the broad innovation and skill base, need to be further examined.

Financing gaps could also exist at early stages in the life cycle of the firm. Most venture funds avoid transactions less than CAD 1 million, given that such transactions require high due diligence relative to the size of the deal and more mentoring and managerial advice. Seed stage funding could be better served by private investors and publicly funded equity schemes. Angel investors however are hard to identify and access, making it difficult to verify funding gaps and determine the extent of government support. The investment data and deal sizes also point out high concentration on seed and other early stage financing by venture capital funds.

Historical View on Policy Priorities and Risk Capital Performance

Phase 1: Early growth (1980s-mid-1990s)

The origins of the Canadian venture capital industry can be traced back to late 1970s and early 1980s, when the first labour-sponsored venture capital corporations (LSVCCs) were created during this time. While there was a core group of active investors, such as banks, corporations and institutional investors, the industry collapsed after the 1987 stock market crash, and had not recovered until the mid-1990s (**Box 2**).

Box 2. The Timeline of Canadian Venture Capital Market

1970s and 1980s: Banks, corporations, institutional and private groups built the foundation of the venture capital industry. In 1983, the Fond de solidarité des travailleurs du Québec (FTQ), the first labour-sponsored venture capital corporations (LSVCCs), was created. However, the supply of capital remained volatile.

Late 1980s: The Canadian venture capital industry practically disappeared after the 1987 stock market crash. Banks, corporate and institutional investors either left the venture capital market or greatly reduced their participation for the next several years. Credit crunch led some private groups to switch to the LSVCC structure for fund raising.

Early 1990s: New LSVCCs were established, which led to steady growth in available funds. Capital under management doubled, reaching \$7 billion in 1996.

Mid-1990s: The sources of venture funds diversified through the modification of LSVCC tax benefits, the liberalization of rules for institutional and foreign investors, and the introduction of government equity funds through the Business Development Bank of Canada (BDC).

Late 1990s and Early 2000s: Driven by the growth of high technology and information technology firms, the Canadian venture capital industry experienced remarkable growth. Investments became more innovation-oriented, targeted at previously neglected market segments, such as small deals and seed financing.

2001–2003: The technology bubble burst and difficult market conditions produced a global downturn in venture capital markets. Investment and fund raising shrank to pre-1996 levels

2004- present: Both fund raising and investment have been stabilized. But, market recovery has been sluggish and not picked up, in contrast to some European markets and the United States.

Source: Industry Canada, 2004

Phase 2: Expansion (1995-2001)

Canadian venture capital market realized phenomenal growth between 1995 and 2001. The share of LSVCCs started to decline, as new funds entered the market. Foreign investors, particularly from the United States, had become major players; jump starting investments in several high-technology sectors.

The Canadian government also played an important role. In the late 1990s, the government undertook a series of initiatives to strengthen the technology sector and increase funding for early-stage innovative firms. LSVCCs tax benefits were modified, rules for institutional and foreign investors were liberalized, and government equity funds were introduced. The Business Development Bank of Canada (BDC) introduced a number of innovative programs to leverage private funding. The Canada Community Investment Plan (CCIP) was launched to increase the flow of “investment ready” small firms and link them with potential angel investors. Provincial governments introduced range of programs to support business environment and access to risk capital.

However, these have had limited success in creating a vibrant venture capital market as yet. The timing of these initiatives is one reason.

Phase 3: Market decline and recovery (2001-present)

Shortly after the Canadian risk capital market started to take off in the early 2000, international financial markets collapsed, following the investment bust in Internet and telecommunications sectors. Fund raising and the investment levels shrank drastically. Since 2004, both fund raising and investment have stabilized. But market recovery has been sluggish, in contrast to some European markets and the United States. As of 2006, the investment levels remained low, around CAD 1.7 billion, and new funds raised declined to CAD 1.6 billion. Foreign funds, particularly US funds, continue to be active, and contributing to bigger deals, and exit values. New investment opportunities are also emerging. As the latest wave of research and development in areas ranging from biotechnology to clean technologies offer opportunities for commercialization in coming years.

On the policy front, the federal government has been considering further regulatory and tax changes to unlock new capital sources for venture capital funds and to revitalize the venture capital market. Budget 2007 announced additional tax measures, addressing longstanding concerns of the venture capital sector. In principle, an agreement has been reached on changes to the Canada-US tax treaty, including treaty recognition of limited liability companies and the

elimination of source-country withholding tax on interest. Another important change is the removal of non-resident tax clearing requirements, "section 116 certificates", for shares that are listed on any stock exchange in any OECD country with which Canada has a tax treaty.

Poor performance of the venture capital market, however continue to deter institutional investors. Industry valuation practices are also seen as inconsistent. The *Canadian Venture Capital and Private Equity Association* has recently introduced new accounting principles and industry standards for valuation. The collection and dissemination of such information are important steps forward. Sound performance benchmarks will help build trust and establish private equity as a viable alternative asset class. While the role of government may be limited, a multi-stakeholder dialogue with industry participants, federal and provincial governments could be encouraged. To better target the needs of small firms, preparing for a public offering, and improve valuations, the *Capital Pool Company Program* has also been established.

Canada has a strong science and technology infrastructure. Government and academic institutions play a key role in research and development. Strategic research priorities include environmental science and technologies; natural resources and energy; health and related life science and technologies; and information and communication technologies. Various programs to support businesses, and research partnerships exist.

To improve the efficiency and impact of business assistance programs, for instance, the government has announced that programs and activities of existing organizations would be aligned to increase commercialization outcomes. Accordingly, the *National Research Council of Canada*, the *Natural Sciences and Engineering Research Council of Canada*, and the *Business Development Bank of Canada* will implement a plan to work more effectively together to support the commercialization of research in Canada.

Mapping of Canadian Risk Capital Policy Areas

Based on the Investment Policy Model, this chapter summarises the results of the Canadian risk capital policy mapping carried out in the summer of 2007. The results from the Canadian policy mapping will be compared with other ICE countries. And cross-country comparisons will be presented in the forthcoming ICE Risk Capital Policy and Data Handbook in spring 2008 (Napier, 2007).

The policy questionnaire filled out by the Small Business Policy Branch of Industry Canada highlights a broad range of policy instruments, targeting either the supply of or demand for risk capital. The policy instruments cover 20 policy areas, as identified in the Investment Policy Model (Table 4).

Table 4: Mapping of the Canadian Risk Capital Policy Areas, 2007

INVESTMENT POLICY MODEL				
	3+ policy instruments	1-2 policy instrument	0 policy instrument	
Investment Opportunities	Investment Incentives	Investment Culture	Investment Capital	Investment Abilities
<u>High Growth Firms</u>	<u>Loans and Public Guarantees</u>	<u>Investment Values</u>	<u>Personal Wealth</u>	<u>Human Capital</u>
<u>Knowledge Intensive Sectors</u>	<u>Public co-investment</u>		<u>Private Funds</u>	<u>Social Capital</u>
<u>Entrepreneurial Education</u>	<u>Fiscal Incentives</u>		<u>Public Funds</u>	
<u>Commercialization of R&D</u>	<u>Taxation</u>		<u>Regulation</u>	
<u>Investment Readiness</u>	<u>Administrative Burdens</u>		<u>Internationalisation</u>	
<u>Matchmaking</u>			<u>Exit Opportunities</u>	

Demand side policy areas
 Supply side policy areas

Note: The Investment Policy Model does not provide a complete overview of the total set of policy areas directed towards entrepreneurship. It focuses on the set of policies merely related to the development of risk capital activities, which are organised around five policy categories including investment opportunities, incentives, culture, capital and abilities.

Source: ICE Risk Capital Policy Mapping, 2007.

Prioritised Policy Areas

The review of government policy and programs highlights three priority policy areas³: Investment Opportunities, Investment Incentives and Investment Capital⁴. Each policy area in return has a broad range of policy instruments, affecting directly or indirectly the business environment and availability of risk capital.

Investment Opportunities

Government of Canada economic and industrial policies⁵ are designed to ensure a competitive marketplace to foster entrepreneurship and innovation (Investment Opportunities)⁶. A number of specific programs are put in place to assist Canadian small businesses to innovate and compete internationally, e.g., The National Research Council of Canada's Industrial Research Assistance Program (IRAP), Sustainable Development Technologies Canada (SDTC), Scientific Research and Experimental Development (SR&ED), Regional Development Agencies, etc.

The federal government has recently identified four priority areas where Canada can build global research and commercial leadership:

- Environmental science and technologies,
- Natural resources and energy,
- Health and related life sciences and technologies, and
- Information and communications technologies.

Federal funding agencies coordinate their efforts to support these research priorities. Canadian government has also policy commitments and a number of programs to commercialize publicly funded research through private sector partnerships and has committed to developing new approaches to transfer knowledge and technologies from universities, research hospitals, and government laboratories to the private sector. Government programs in this area include: Industry Canada's "Networks of Centres of Excellence", the National Sciences and Engineering Council of Canada's "Intellectual Property Mobilisation Program (IPM)", the National Sciences and Engineering Council of Canada's "Idea to Innovation", etc.

There are also programs supporting specific regions, e.g., Atlantic Canada Opportunities Agency's "Atlantic Innovation Fund", Industry Canada's "Northern Ontario Development Program", etc. Technical and advisory services are also offered to help businesses to develop their business plan and facilitate access to alternative sources of capital.

In 2007, to facilitate the flow of information across different agencies, the Canadian government has made the policy commitment to "improve the efficiency and impact of its business assistance by aligning the programs and activities of existing organizations to increase commercialisation outcomes". In the first instance, the National Research Council of Canada, the Natural Sciences and Engineering Research Council of Canada, and the Business Development Bank of Canada will implement a plan to work more effectively together to support the commercialisation of research in Canada (Industry Canada, 2007).

Investment Incentives

A range of tax incentives and co-investment schemes (Investment Incentives) are in place at the federal and provincial level to enlarge the capital pool and diversify the sources of risk capital (Investment capital). Some of the key risk capital co-investment programs include: the Business

³ This section is based on the ICE Policy Questionnaire, filled by the Small Business Policy Branch of Industry Canada.

⁴ There are no specific policy or programs for Investment Culture and Investment Abilities at the federal level.

⁵ See Policy Review section for policy and program details. A table with links to various programs are also provided in the Annex.

⁶ The Investment Policy Model ranks governments' policy priorities in the risk capital area as high, middle or low according to a number of policy instruments in a given policy area (Napier, 2007).

Development Bank of Canada (BDC), the Atlantic Canada Opportunities Agency, Western Economic Diversification's "Loan and Investment" program, etc.

There are no major *guarantee programs* in the federal government for equity investment. However, the Canada Small Business Financing Program is a loan-loss sharing program for SMEs. The program seeks to increase the availability of loans for starting, expanding, modernising small businesses, most of which, with revenues less than CAD 5 million, are eligible to apply.

Taxation is an important policy tool used by the Canadian government to encourage research and development as well as risk capital investments. Businesses of all sizes and all sectors are eligible for tax incentives to conduct research and development, under the Scientific Research and Experimental Development (SR&ED) program. The government also has a number of tax measures to encourage risk capital investments, including:

- Individuals that invest in designated "Labour Sponsored Venture Capital Corporations" receive an income tax credit;
- Tax on capital gain can be deferred where the proceeds of a small business investment are re-invested in another small business within 120 days;
- There is a tax exemption on up to CAD 750 thousand of capital gains realised on the disposition of qualified small business corporation shares.

In Budget 2007, significant developments are announced that will facilitate access by Canadian entrepreneurs to venture capital from the United States. Most notably, an agreement has been reached on changes to the Canada and U.S. tax treaty, including treaty recognition of limited liability companies and the elimination of source-country withholding tax on interest. Another important change is the removal of non-resident tax clearing requirements ("section 116 certificates" for shares that are listed on any stock exchange in any OECD country, with which Canada has a tax treaty, addressing longstanding concerns of the venture capital sector (Industry Canada, 2007).

Investment Capital

To have a sustainable venture capital activity, a diversified capital base is needed. Policies and programs can be targeted at domestic as well as international risk capital sources, such as individuals, private and public funds, institutional investors, to stimulate the supply of venture capital.

In addition to the tax measures for individuals and international investors, discussed in the Investment Incentives, Canada has recently made other changes in its tax laws to remove impediments to pension funds investing in venture capital funds. These include:

- Adding flexibility to rules surrounding "qualified limited partnerships (2001 and 2003); and
- Repealing the 30% foreign property limit for tax-exempt pension funds (2005).

The Business Development Bank of Canada makes direct venture capital investments, often with co-investors. In 2006, the BDC established the Go-Capital Fund, in partnership with institutional and other partners in Quebec. There are also equity programs for specific sectors, e.g., Sustainable Technology Development Canada finances and supports the development and demonstration of clean technologies. To facilitate the internationalisation of small businesses, Export Development Canada provides equity investments in Canadian SMEs. There are also regional development organisations that partner with the private sector to establish or invest in private equity funds, including: Canada Economic Development for Quebec Regions, Atlantic Canada Opportunity Agency, and Western Economic Diversification.

EXPLAINING THE RISK CAPITAL POLICY INSTRUMENTS

The role of the entrepreneurial firm in the innovative process and the type of financing innovative companies need at various stages of their life cycle have been a dynamic but contentious area for policy development. In spite of various initiatives, disparities on entrepreneurship and access to venture capital persist across countries. Public policy and programs in this area should take into account both supply and demand side issues. Governments can provide framework conditions to stimulate private investors, as well as, taking a more active role in increasing the supply of risk capital to fill the perceived “funding gaps”. They can also reduce barriers to entrepreneurship, strengthen R&D infrastructure and networks to facilitate diffusion of new technologies and ideas.

The workings of venture capital markets, however are complex, and depend on several interrelated factors. A well-diversified supply base, consisting of individuals, institutional investors, as well as government funds, is needed to mitigate cyclical fluctuations that venture capital markets experience periodically. Sustainable market returns are key to attract these investors. Skilled and experienced fund managers, along with alternative exit mechanisms, can improve fund performances, and establish risk capital as a viable asset class. On the demand side, a critical mass of high growth firms, and a steady flow of quality deals are needed to maintain market growth.

The following policy and programs are discussed in detail based on the Investment Policy Model findings. These areas are highlighted as high or medium priority for Canadian government: Investment Opportunities, Investment Incentives and Investment Capital.

- **Direct investment programs:** public-private equity programs, and quasi-equity financing, etc.
- **Indirect measures oriented towards suppliers of venture capital:** investor regulations, tax credits, exits on secondary stock markets, business angel networks, etc.
- **Programs targeted at the demand for venture capital:** science and technology programs, intellectual property and R&D assistance for SMEs, commercialization and diffusion of new technologies, SME business support, etc.

Several of these policy and programs are carried out by the federal government, notably by the Department of Finance, Industry Canada, and the Department of Foreign Affairs and International Trade (DFAIT). Provincial governments also play a significant role in supporting business growth and the venture capital industry. The analysis thus is supplemented by examples from Provinces as needed.

Investment Capital

Government Equity Programs

The Business Development Bank of Canada (BDC) has a leading role and should continue to pump-prime private venture financing, acting as a buffer during market downturns.

Government equity funds have been used to jump-start the venture capital markets around the world. These funds are important vehicles to facilitate risk sharing between the public and private sector and to reduce imbalances that might arise in terms of financing stages, sectors, and regions, e.g., the *Small Business Investment Company* (SBIC) program in the United States, *YOZMA* in Israel. Government programs not only channel substantial amounts of risk capital to young firms, but also help to train future fund managers and develop a risk capital investment culture.

The Government of Canada has played a key role in promoting a healthy domestic venture capital industry. The *Business Development Bank of Canada* (BDC) is the primary institution that provides a range of equity and non-equity programs at the federal level. BDC was relaunched in 1995 and transformed from being a “lender of last resort” to a “complementary” lender. It operates on a commercial basis, and provides various financial services to leverage private sector funding. The current structure of BDC is better suited to meet the changing financing needs of small firms, and alleviate perceived funding gaps (**Box 3**).

Box 3. Business Development Bank of Canada (BDC)

The **Business Development Bank of Canada** (BDC) runs a range of equity and quasi-equity funds on a commercial basis, complementing financial services provided by the private sector.

The **BDC Venture Capital Fund** invests in private and publicly listed companies at various stages of development, ranging from seed to growth, firm acquisition, expansion to turnaround financing. The size of investment varies from CAD 500 thousand to CAD 5 million, in exchange of equity participation of between 15% to 49%, or unsecured convertible debt financing, either as a sole investor or a syndicate partner. The average transaction is between CAD 1.5 million and CAD 2 million. BDC participates on the Board of Directors of the firm, and provides management support. The BDC has in plans to start a fund-of funds, targeting at small and medium sized pension funds. It has approved a CAD 50 million commitment, partnering with other institutional investors. **Seed Capital Funds** finances young companies in developing technology sectors during the pre-start up phase. The funds have private partners and independently managed.

BDC Technology Seed Investments (TSI) Group — The BDC TSI Group provides financing for the creation of innovative technology businesses with high growth potential. The BDC's financing is often paired with other financial, management or commercial development resources. □

Subordinated financing incorporates elements of debt financing and venture capital. Firms that have little and no collateral backing and do not want to dilute their ownership structure, usually seeks this type of financing. The loan size ranges between CAD 100 thousand and CAD 1 million, and repayment is based on a combination of interest payments and royalties to a company's cash flow. There are other quasi-equity loans in amounts up to CAD 250 thousand.

There are also **non-equity assistance** programs for star-ups, like the young entrepreneur financing program and the micro business loan program, which combine term loans with management support.

The BDC also offers a range of business counselling and mentoring services, e.g., growth potential assessment, strategic planning, quality control, export market evaluation, and e-business solutions. To increase local visibility and improve access to its services, the BDC has lately expanded its branch network. The BDC's venture capital commitments represent a small fraction, around 7% of the total investment in 2006. However, the stage break down shows the important role that BDC plays in early stage financing, representing a quarter of investments in the start-up stage, and almost one-fifth of investments in seed stage (**Table 5**).

Table 5. BDC investment by stage, 2006

	BDC		Total VC		% of BDC
	Amount authorized		Amount invested		In total invested
	(\$ millions)	(%)	(\$ millions)	(%)	(%)
Seed	9.5	8	51.4	3	18.5
Start-up	49.2	43	197.3	12	24.9
Other early stage	37.1	32	472.9	28	7.8
Later stage	19.3	17	971.9	57	2.0
Total	115.0	100	1693.5	100	6.8

Source: Business Development Bank of Canada 2007; Thomson Financial Canada 2007.

In 2006, the BDC established the *Go-Capital Fund*, in cooperation with institutional and other partners in Quebec. BDC has been further exploring ways to expand the fund-of-funds concept in Canada to encourage pension fund participation in the Canadian VC market. Funds-of-funds have been essential for fund raising from institutional investors, in particular from pension funds in the United States.

Export Development Canada (EDC) offers financing support, expertise and networks to broaden international trade opportunities for small and medium sized Canadian companies and their international customers. Support schemes are tailored to the individual financing needs of companies, and aim to diversify their investor base and enhance their capital structures. In addition to traditional support schemes, such as loans to promote export business, or foreign direct investment, **EDC Equity Investments** provide private equity and venture capital by investing directly in domestic and foreign companies. EDC also partners with professionally managed venture capital funds, which in turn invest in Canadian companies to facilitate export growth.

Provincial governments back a number of regional venture capital funds (**Box 4**). The Province of Quebec has the Quebec **Innovatech Venture Capital Fund**, providing risk capital to start-up companies, with first round of investments ranging from CAD 250 thousand to CAD 2.5 million. The funds aim to enhance technology development, and contribute to job creation and economic growth in the region. They also provide important leverage advantages with banks and other financial institutions. Other regional development organizations that partner with the private sector to establish or invest in private equity funds besides the Canada Economic Development for Quebec Regions, include: Atlantic Canada Opportunity Agency; and Western Economic Diversification

Box 4. Provincial Equity and Quasi-Equity Programs

Canada Economic Development for Quebec Regions (CED) promotes long-term economic development in Quebec by supporting SME competitiveness and innovation potential. The incubators back SME start-ups; technology transfer and commercialization through repayable contributions (e.g. Valotech, the Technoregion Fund). Some of its core risk capital programming includes regional strategic initiatives, the Program for Export Market Development, and the IDEA-SME program. □

The **Atlantic Canada Opportunities Agency (ACOA)** provides contributions to Community Business

Development Corporations and other organizations to foster business creation and development. The **Seed Capital Program** provides loans to start, expand or improve a small business, as well as acquire business skills training. A maximum of \$20,000 is available per applicant in the form of a repayable, unsecured personal loan with flexible interest and repayment terms. A maximum of \$2,000 is available per applicant for specialized training and business counseling.

The ACOA also provides funding to 52 Regional Economic Development Organizations (REDOs) located throughout Atlantic Canada. The role of these organizations is to develop and drive economic development at the local level in partnership with other federal, provincial and municipal governments, economic development organizations and various stakeholders.

Western Economic Diversification Canada (WD) has a broad mandate to develop and diversify the economy of Western Canada. Its core risk-capital programming includes *the Western Economic Partnership Agreements* (WEPAs), the WD Loan Fund program, the First Jobs in Science and Technology Program and the International Trade Personnel Program.

The **Federal Economic Development Initiative for Northern Ontario** (FedNor) promotes economic growth, diversification and job creation in Northern Ontario. FedNor works with community partners and other organizations to improve small business' access to capital, information and markets. Its core risk capital-related programming includes *the Community Futures Program*, which funds Community Futures Development Corporations (CFDCs). CFDCs are non-profit corporations financed by Industry Canada and by federal regional development agencies. CFDCs provide local SMEs with loans, loan guarantees or equity investments. □

The Government of **British Columbia** launched the new **B.C. Renaissance Capital Fund** (BCRCF) as a public-private partnership. The government's contribution to this fund is limited to CAD 90 million and cannot exceed 20 percent of the total amount of the fund. General partners are required to raise the remaining 80 percent of the fund from institutional investors. The fund size will be a total of CAD 450 million, substantially improving the access to risk capital in the Province. The BCRCF will target investments in the biotechnology, IT, new media and clean technology sectors.

To diversify BC's investment pool, the government has taken other initiatives, such as increasing retail venture capital investments through **Venture Capital Corporation Funds** (VCC). VCCs invest funds in a number of start-up and expanding small businesses. They are professionally managed by venture capitalists or angel investors. A **Clean Energy Fund** with a capital of CAN 25 million has also been recently announced to give BC a head start in the emerging field of clean technologies.

Some of the provincial funds have broader mandates, directed at correcting geographical imbalances in venture financing. They support social goals, such as job creation, as well as commercial ones. Their contribution to economic activity and regional development, however has been mixed. Venture capital investments tend to be concentrated in regional clusters, within existing areas of economic activity. There are externalities of such clustering, since these areas tend to be well-endowed with highly-skilled labour force, legal and technical services, as well as technology transfer opportunities from universities and research centres. Such supporting infrastructure is crucial for starting up technology intensive firms, and for them to reach their growth potential.

Regional disparities persist over time, raising questions about the success of such initiatives to spread venture capital financing evenly across regions. While government funds could be channelled to companies outside the traditional sectors and resource based industries, such as oil and gas, that have difficulty attracting private investors, it might be too costly to sustain such programs. Alternative assistance programs might be more worthwhile than equity financing.

Over time, even the successful initiatives could outlive their original purpose. Thus, it is essential to evaluate and when needed redirect public programs. A transparent evaluation scheme would help to phase out government's stake and focus funds on pump-priming private financing.

Investment regulations

Institutional investors continue to overlook venture capital as a viable asset class, while they tend to invest in larger deals in the buy-out segment.

Government policies play a key role in inducing private equity investments. Until the late 1970s, individuals accounted for the largest share of funds raised in the United States, and the contributions of institutional investors were limited. The clarification of the Employee Retirement Income Security Act's (ERISA) "prudent man" rule in 1978, allowed pension funds to allocate part of their resources to risky investments. Currently, around 7% of such assets are allocated to private equity in the United States (Baygan, 2003c). The trend in most countries is to loosen quantitative restrictions on institutional investors. Reviews are underway to establish long-term funding requirements for pension fund assets in the United Kingdom. Investment ceilings have also been revised in Denmark and Sweden.

The Canadian government introduced a number of measures to encourage institutional investment. The rules for establishing Qualified Limited Partnerships (QLP) were modified to facilitate their use by tax-exempt domestic and foreign investors in 2001 and 2003. The 30% foreign property limit for tax-exempt pension funds was repealed in 2005. The foreign property limit restricted the ability of pension funds to diversify their portfolios internationally. Non-residents investing through partnerships with Canadian managers were also not subject to tax.

In spite of recent policy measures and their sizable asset holdings, Canadian institutional investors continue to shy away from this asset class, which constitutes less than 2% of their assets. A closer look at the institutional allocations to private equity highlights significant differences in attitudes. Canadian public sector pension funds allocate around 2.8% of assets to private equity, corporate pension funds have much lower exposure, with 1.3% of assets. Unlike in the United States, where endowments and foundations have substantial private equity contributions, in Canada, they are mostly absent from this asset class, with 1% of their assets allocated to private equity. Life insurers are deterred by capital adequacy rules, and tend to invest in mezzanine investments (Macdonald & Associates, 2004).

Relative capacity of funds is an important factor. As expected, there is a positive correlation with fund sizes, and the share of private equity allocations. Structural barriers appear to be compounded for small and medium sized institutions, as they often lack in-house expertise and resources to undertake private equity investments. Both in the United States, and Canada institutional funds larger than CAD 5 billion participate in risky asset classes, without affecting their portfolio allocations. The funds with assets less than CAD 1 billion, have private equity exposure in the United States, whereas in Canada smaller funds, e.g., endowments and foundation, are mostly shut out off the market.

Some larger investors, i.e., public and corporate sector pension funds that invested in this asset class in the 1980s experienced poor returns and conflicts with investment professionals. That negative view about the market prevails among some participants even today. In addition, risk adjusted returns from private equity continue to trail other financial indices. The private equity asset class is viewed strictly in a Canadian context, and lack sufficient diversification by market segments --buyout, mezzanine, and venture capital.

In recent years, institutional investors have increased their exposure, notably to the buy-out segment of the market. However, many small and medium-sized institutional investors are too risk averse or unfamiliar with early stage, risk capital financing. Lack of in-house expertise and a risk capital investment culture are also limiting factors. While new legislation allows the creation of pooled investment vehicles, like *funds-of-funds*, to combine resources and venture investment know-how to make riskier investments, such funds have not flourished as expected. Poor performance of the Canadian venture capital market overall continue to deter institutional investors. Industry valuation practices are also seen as inconsistent. Along this line, the *Canadian*

Venture Capital and Private Equity Association has recently introduced new accounting principles and industry standards for valuation. The collection and dissemination of such information are important steps forward. Sound performance benchmarks will help build trust and establish private equity as a viable alternative asset class.

For private independent funds to flourish, the involvement of institutional investors is paramount. The Canadian venture capital market cannot weather the cyclical fluctuations and break out from the current fund raising crunch without the presence of investors with long-term investment horizon. A multi-stakeholder dialogue with industry participants, federal and provincial governments should be encouraged.

Exit Opportunities

The global downturn in financial markets and high-technology sectors since mid-2000 reduced the number of public offerings and other exits. The limited market size and depth of CDNX further exacerbated this problem.

Alternative exit mechanisms are essential in ensuring a well-functioning venture capital market. Early stage investments generally require a higher target rate of return, and thus require more aggressive exit strategies. Secondary stock markets with less stringent exit requirements and lower costs compared to first-tier markets have been the preferred exit mechanism for many high growth firms in the 1990s. While the robustness of IPOs in many countries led to an unprecedented growth in venture capital fund raising and investment, the burst of the technology bubble in mid-2000 greatly lowered market capitalization and turnover (OECD, 2004).

In Canada, as in many other countries, only a small fraction of recent exits has been through IPOs. Mergers and acquisitions (M&As) are more frequently used. Canadian high-technology firms, particularly in the early growth expansion phase are targeted by US firms. This has raised some protectionist concerns. Whether or not Canadian firms are acquired too early, before reaching their growth potential; and move their technology and human capital to the south of the border, remain debatable.

In 2000, the Canadian government played an important advocacy role in facilitating consolidation across the four main stock exchanges in Canada. The Montreal Exchange, the Toronto Stock Exchange, the Alberta Stock Exchange and the Vancouver Stock Exchange were restructured. The trading of senior securities was consolidated on the Toronto Stock Exchange, and the Canadian Venture Exchange (CDNX) was created for trading of junior securities. In 2001, the CDNX merged and became a wholly owned subsidiary of the TSE, connecting the primary and secondary markets. To better target the needs of small firms, preparing for a public offering, the *Capital Pool Company Program* has been established:

TSX Venture Exchange *Capital Pool Company Program* (CPC) provides an alternative to the traditional Initial Public Offering (IPO), with a two-step introduction to the capital markets. The CPC program connects investors and entrepreneurs in a unique way. First, seasoned directors and officers form a “Capital Pool Company” with no assets or commercial operations, and list it on TSX Venture to raise a pool of capital. The CPC then uses these funds to seek investment opportunities in a high growth business. Once the CPC acquire an operating company that meets Exchange listing requirements, its shares continue trading as a regular listing on the Exchange. CPC program thus offers entrepreneurs and experienced private investors a way to connect and lead them towards a successful public listing.

In addition, an increasing number of Canadian firms are listing or cross listing on exchanges that are relatively more liquid, e.g., NASDAQ in the United States, and more recently AIM in the United Kingdom.

Investment Incentives

Taxation

A wide range of tax incentives has been targeted to venture capital investors, both at the federal and provincial level. The impact of these generous measures however is not clear-cut.

Countries differ widely in their use of tax measures to encourage individual and corporate investors. Some countries strive to maintain neutrality in their fiscal system and provide no specific measures e.g., Denmark, the Netherlands. Others use tax measures heavily. In recent years, several adjustments have been made accordingly to capital gains tax rates, corporate tax rates, tax treatment of venture capital investment vehicles such as limited partnerships, investments made by foreign or institutional investors, and tax credits for LSVCCs in Canada.

Front-end incentives or tax credits for entities investing in small companies and qualified venture funds are common in Canada. Individuals and corporate investors receive various forms of tax relief for such risky investments. The most generous of such initiatives are those associated with the LSVCCs (**Box 5**). Similar front-end incentives are also used in the United Kingdom, e.g., the *Enterprise Investment Scheme, the Venture Capital Trust Scheme*, etc., as well as in the United States, e.g., the *Certified Capital Companies*.

Box 5. Labour-sponsored venture capital corporations (LSVCCs)

LSVCCs are private equity funds supported by provincial and federal tax credits. They are unique to Canada given their funding structure. These funds are sponsored by labor unions and capitalized by individual shareholders who receive tax incentives in exchange for long-term capital commitments to SMEs whose shares are not publicly traded, e.g., Canadians get a 15 percent tax credit on the first CAD 3500 invested in shares of federally registered LSVCCs. Shares issued before May 7, 1996, must be held for five years and shares issued after May 6, 1996, must be held for eight years for the holder to avoid repaying the tax credits when redeeming them. □

LSVCCs range from large, diversified funds to smaller, more-specific funds, and have played a critical role during the early development phase of Canadian venture capital market. However, LSVCCs' ongoing presence in terms of both funds raised and total investments has been subject to several criticisms from private sector.

In 2005, there were 125 LSVCCs in Canada, including 16 federal funds. One estimate places the cost in foregone taxes of LSVCC program between 1992 and 2002 at CAD 3 billion. In spite of sizeable tax subsidies that these funds receive, some LSVCCs have poor returns and their performance is questionable (Cumming, 2007). While not all LSVCCs are the same, their investment obligations and fund structure are believed to be distortionary. Most LSVCCs, for example, divest only a small fraction of funds relative to their asset base. They combine commercial and social development goals. And their investments focus disproportionately on traditional sectors. There is also concern that LSVCCs might hinder the development of private independent funds, as they crowd out funding sources. The guidelines of LSVCC programs at the federal level need to be revisited to mitigate the concerns raised in the industry. In addition to being costly, these front-end incentives could attract venture investments primarily for tax shelter purposes.

Provincial governments also offer numerous front-end tax incentives for investors, e.g., the *Employee Share Ownership Program, Equity Capital Program* and LSVCCs in British Columbia, the *Ontario Investment and Employee Ownership Program, the Community Small Business Investment Fund program* and the *Ontario Labour Sponsored Investment Fund* program in Ontario (**Box 6**). The impact of these programs on overall venture capital activity in these

provinces, however is difficult to determine, as total costs of these indirect measures are not available. Tax schemes at provincial level should also be re-evaluated to determine if capital is being channelled efficiently.

Box 6. Provincial tax measures

The governments of **British Columbia, Ontario and Quebec** offer a varying range of tax incentives to improve small businesses' access to risk capital.

British Columbia

Venture Capital Programs in British Columbia extends a 30 percent refundable tax credit to investors to encourage investments in small businesses in the region.

Employee Share Ownership Program promotes investment by employees in their company by providing them with a 20 percent provincial income tax credit. In particular, retiring business owners can use this plan to transfer ownership of their company to employees by selling their shares directly to their employees.

Through **Equity Capital Program**, investors can earn tax credits by buying equity shares in registered VC corporations (VCCs), which in turn invest in equity shares of qualified SMEs.□

The Community Venture Capital Program offers a 30 percent refundable tax credit to investors who invest in a community VC corporation (CVCC) that invests in SMEs located outside Victoria and Vancouver.□The tax credit incentive to investors, both individual and corporate, is equal to 30 percent of the investment. Individuals may deduct the lesser of the tax credit or \$60 000 from their B.C. provincial income tax payable for that taxation year. There is no annual limit on the tax credit that corporations can deduct, but any excess tax credit over tax payable is not refundable.

Labour Sponsored Funds Program provides a tax credit incentive to B.C. residents who acquire shares in provincially registered LSVCCs that invest in B.C. businesses. □B.C. provides a 15 percent provincial tax credit for investments in provincially registered LSVCCs, but does not provide a tax credit for federally registered LSVCCs selling their shares in B.C. Currently, two provincially registered LSVCCs are operating in B.C., collectively holding \$500 million in assets and investing \$300 million in more than 80 B.C. companies.

Ontario

Ontario Investment and Employee Ownership Program has three parts: indirect investment in small and medium-sized businesses through a Labor-Sponsored Investment Fund (LSIF) by an Ontario resident or qualifying trust;□ direct investment by employees in their employer's firm through an Employee Ownership Labor-Sponsored Venture Capital Corporation; and□indirect investment in small local businesses through a Community Small Business Investment Fund.

Employee Ownership Labor-Sponsored Venture Capital Corporations provides a tax credit for individuals who establish an Employee Ownership Labor-Sponsored Venture Capital Corporation to buy their employer's company.□ Eligible investors receive a 20 percent Ontario tax credit on the first \$3500 invested and 30 percent on the next \$11 500 invested annually. Total tax credits are limited to a lifetime investment of \$150 000. There is no matching federal tax credit.

The **Community Small Business Investment Fund** program provides a tax credit for individual investors and corporations to receive a tax credit of up to 15% on an investment, ranging from CAD 25 thousand to CAD 500 thousand, in an eligible Community Small Business Investment Fund corporation.

Labour-Sponsored Investment Funds program provides a tax credit for individuals purchasing shares in a labour-sponsored investment fund.□ This program provides a 15 percent provincial tax credit on the first \$5000 invested in shares of provincially registered LSIFs and a further 5 percent tax credit for LSIFs that qualify as Research Oriented Investment Funds (ROIFs). This program is being phased out.

Labour-Sponsored Venture Capital Funds (LSVCFs) provides a tax credit incentive to Ontario residents who buy shares in provincially registered LSVCFs that invest in Ontario businesses.□

Quebec

LSVCCs program provides a tax credit incentive to Quebec residents who buy shares in provincially registered LSVCCs that invest in Quebec businesses.

The government of **British Columbia** also extends the front-end tax incentives to informal investors. The **Eligible Business Corporation** (EBC) tax credits target angels and other early stage investors through the **Equity Capital Program**. The Province provides a 30% refundable tax credit to investors who invest in eligible small businesses under the program. This allows a small business to accept equity capital directly from investors without having to set up a Venture Capital Corporation. The **National Angel Organization** currently lobbies similar tax breaks for business angels at the federal level.

Several countries also provide *back-end tax incentives* for small firms and business angels, which provide capital gains tax relief on profits from venture capital investments, e.g., lower capital gains tax rates for certified firms in Spain, capital gains tax exemption for foreign venture capital investors in Israel, etc. In Canada, capital gains taxes are also reduced to an average rate of 22.7 per cent, ranging from 19.5 per cent in Alberta to 24.3 per cent in Newfoundland and Labrador (Industry Canada, 2004). In addition, Canadian government provides *tax deferrals* for businesses and individuals to encourage rollover of capital gains into small firms or funds. This is a two-part measure:

- Tax on capital gain can be deferred where the proceeds of a small business investment are re-invested in another small business within 120 days, and
- There is a tax exemption on up to CAD 750 thousand of capital gains realized on the disposition of qualified small business corporation shares.

Budget 2007 announced additional tax measures, addressing longstanding concerns of the venture capital sector. In principle, an agreement has been reached on changes to the Canada-US tax treaty, including treaty recognition of limited liability companies and the elimination of source-country withholding tax on interest. Another important change is the removal of non-resident tax clearing requirements, "section 116 certificates", for shares that are listed on any stock exchange in any OECD country with which Canada has a tax treaty.

In Ontario, new Labour-Sponsored Investment Fund (LSIF) registrations were suspended in 2004, and in 2005 the provincial government announced that the LSIFs and corresponding tax credits would be phased out in 2009 and 2010.

The Canadian venture capital market heavily relies on LSVCCs, and alternative sources of funds are limited. Recent tax measures both at the federal and provincial level would help to diversify funding sources, by encouraging foreign investors, in particular US pension funds. While phasing out tax credits to LSIFs has contributed to the ongoing fund raising and investment crunch in Ontario, it would be for the benefit of the region in the long run. It is important to note that front-end tax schemes are costly, and their efficiency is not proven. More emphasis could be given to co-investment schemes, such as funds with public-private partnerships that are deemed to be more effective in targeting market failures.

Investment Opportunities

Business Angel and other Investor Networks

There is a nascent business angel market. But, networking opportunities within and across provinces are limited.

Business angels are important source of risk capital. These informal investors usually invest small amounts in early-stage companies within geographic proximity, complementing the venture capital industry. The angel market however is quite inefficient. Information flows between informal investors and potential entrepreneurs are usually limited. In recent years, several public as well as private networks have been created to organize the angel market and bridge this information gap.

The United Kingdom provided one of the earliest cases of government support to the creation of business angel networks. In 1999, the UK government assisted the creation of the *National Business Angel Network Limited* (NBAN), supported by the UK Small Business Service, and sponsored by major banks and financial firms. NBAN is also affiliated with *Business Links* and local enterprise agencies, which help to match businesses seeking finance and potential investors (Baygan, 2003b). Along with the United Kingdom, the United States has the most advanced web of informal investor networks. The Small Business Administration (SBA) initiated the *Angel Capital Network* or *ACE-net*, which linked individual investors, SBICs and venture capitalists with small firms through an Internet database. In 2001, *ACE-Net* was privatized and the government role successfully phased out (Baygan, 2003c).

In Canada, the *Canadian Community Investment Plan* (CCIP), which ran from 1995 to 2002, included networking initiatives. Through CCIP, an internet-based service was created, providing business support services for small firms, as well as matching qualified firms with local, regional and national sources of capital. This was backed by 22 community-based projects. The decentralized approach to linking firms and investors at the local level was a success. The program was ended in 2002.

While currently there is no single public program designed to support business angel and/or other investor networks, most of the business support and commercialization policies have a networking dimension.

The **Canada Business Services Centres** provide an extensive directory of Canadian financial providers, information on different types of financing and advice on how to secure financing. The search engine helps businesses locate traditional or alternative sources of financing. **Steps to Growth Capital** is a self-study guide to help Canadian business access growth capital. □ It allows businesses to test their investment readiness, provides information on workshops and forums. At the provincial level, there are also quite a few non-profit networking organizations, connecting businesses, and academic institutions, as well as investors. For example, in **Alberta**, while the provincial government does not have a program directly providing venture capital to businesses, it works as a facilitator between investors and businesses. In particular, the *Research and Technology Commercialization Division* sponsors venture forums, in which companies that seek risk capital can directly link with venture capitalists to present their proposals.

Not all networks however can assemble quality investors with expertise and knowledge on angel investing. Most networks fail to go beyond being a listing service. To counter this, the Israeli government has sought foreign angels by offering tax incentives. They also initiated programs to link small firms and domestic venture capital funds with foreign-based institutions, corporations and angels to increase the visibility of Israeli portfolio firms and co-investment opportunities. Some Israeli venture capital funds have also set up branches in the United States and Europe, forming arms-length relationships with foreign formal and informal investors.

In a similar vein, to benefit from the increasing integration of the North American venture capital markets, the Department of Foreign Affairs and International Trade (DFAIT) offer the following programs:

- **DFAIT-Science and Technology Program** provides information on how to access international sources for SME financing. The program has a venture-financing arm, arranging missions to countries with significant venture capital markets. The program

also works with Canadian venture capital industry to arrange events that highlight Canadian strengths to domestic and foreign investors.

- **DFAIT-Silicon Valley Venture Capital Finance Mentoring Program and Advisory Board** provides mentoring programs and assistance for firms seeking venture capital funding in Silicon Valley through Canadian Consulate Trade office. A voluntary advisory board, with the participation of Silicon Valley venture capitalists, provides networks of potential investors and firms.

There is also the **National Angel Organization (NAO)**, a non-profit, peer-to-peer network of angel investors to share best practices and investment methods. The NAO also brings together angels and policy makers at the provincial and federal level to formulate a sound policy framework for angel investing.

The information on these networks needs to be better disseminated to entrepreneurs, as well as individual investors. Besides providing listing services, person to person contacts should be encouraged. In more advanced markets, angel networks are increasingly coordinated and some even operate as “side funds” to larger venture capital firms or business incubators. The National Angel Organization could play an important advocacy role to promote market development along this line. An umbrella angel network at the national level supported by the federal government, similar to the examples in the UK and the United States could also be of use.

Investment Readiness

A wide range of support and networking services is available for small firms at the provincial level.

Angels and venture capital investors often cite the lack of investment-ready SMEs as an impediment for investment. While the provincial and federal government offer general SME assistance programs, e.g., the Business Advisory Services and Small Business Enterprise Centers in Ontario; the Centres locaux de développement in Quebec; and The Business Link Business Service Centre, and the Alberta Innovation and Science in Alberta, etc.; these are broad in scope, and not necessarily target to improve venture capital readiness of small firms. Lately, programs that improve the mobility of highly-skilled workers, and expand technology clusters and networks have been on the rise. At the provincial level, Quebec has a few specific programs such as the Inno-centres, Valotech and the Technoregion Fund. Ontario is served by the Ottawa Centre for Research and Innovation (**Box 7**).

Box 7. Investment readiness and Business networks

In Quebec, **Inno-centers** guide businesses through the complex tasks of organizing, planning and financing an emerging enterprise. □ Inno-center finds financing and negotiates the best possible terms. It has established relationships with national and international investors and financial institutions. The centers charge fees for services and have equity participation in the venture. The program is adopted in Alberta and Ontario. **ValoTEch** provides exchange forums for individuals, businesses, and institutions, circulating information on financing, intellectual property, R&D, technology transfer, and human capital issues on

recruitment and training of qualified employees. **Techno-Region** supports businesses in Quebec through various local initiatives, e.g., matchmaking between private and public partners with a network of 100 research centers.

The **Ottawa Centre for Research and Innovation** (OCRI) is a leading non-profit organization, connecting various stakeholders--businesses, academic institutions, regional government, and individuals--to foster knowledge-based industries and economic development in the Ottawa region. OCRI provides services through a unique partnership with the City of Ottawa, where the development strategy and services are set jointly. With its membership covering 750 companies, and over 120 thousand people, OCRI has a sizeable network to facilitate information exchange, attract investment and talent to the region. Besides organizing networking events, OCRI provides services for entrepreneurs to help them start and grow their businesses, lifelong learning programs for individuals, and an online portal for accessing information and networking.

To improve the efficiency and impact of business assistance programs, the government has announced recently that programs and activities of existing organizations would be aligned to increase commercialization outcomes. Accordingly, the *National Research Council of Canada*, the *Natural Sciences and Engineering Research Council of Canada*, and the *Business Development Bank of Canada* will implement a plan to work more effectively together to support the commercialization of research in Canada.

Commercialisation of R&D and Knowledge Intensive Sectors

Science & Technology Framework

Canada has a strong innovation infrastructure, driven primarily by public and academic research. But it lags in private sector R&D.

The federal government recently published its Science and Technology (S&T) Strategy, *Mobilizing Science and Technology to Canada's Advantage* (2007), setting the policy framework to create a business environment that is conducive to innovation. Strategic research priorities include: environmental science and technologies; natural resources and energy; health and related life science and technologies; and information and communication technologies.

- ***Encouraging private sector S&T Investment***

The federal government supports business R&D through various direct and indirect initiatives, e.g., *SR&ED tax credit*, university, business and government collaborative research with *Networks of Excellence*, *Technology Partnerships Canada* and the *Industrial Research Assistance Program* (IRAP).

In 2005, the government provided CAD 1 billion in direct support for private sector S&T. The *Scientific Research and Experimental Development, SR&ED Tax Incentive* program rewards private sector R&D efforts. It is the largest of such federal programs, providing over CAD 3 billion in tax assistance to Canadian businesses in 2006.

Provincial governments also play a significant role in the national science and technology system, performing basic research, supporting university and private sector research. In 2004, Ontario, Quebec and Alberta were the largest provincial R&D investors, with a total over CAD 1.2 billion. In 2005, the contributions of the provincial and territorial governments reached to CAD 1.1 billion toward higher education research (S&T Strategy, 2007).

- ***Funding higher education research***

The Government of Canada funded CAD 2.7 billion of university R&D and related scientific activities in 2005.

There is a great deal of S&T work that is undertaken by the federal government itself. The *National Research Council of Canada* is the federal government's primary provider. Its **Industrial Research Assistance** program plays a prominent role in supporting the diffusion of S&T to SMEs.

- **Fostering National and International Networks and Scientific Partnerships**

Research collaborations between the government, private and academic sectors take many forms. In 2004-2005 **Networks of Centres of Excellence** Program managed 21 R&D networks, involving the private sector, academic and government agencies (**Box 8**).

The **National Research Council** (NRC) supports a wide range of scientific and industrial research to foster innovation and business growth in Canada. The NRC's **Industrial Research Assistance Program** (IRAP) is the longest-standing program providing technology and business assistance to SMEs. Various technology and innovation network advisors and business analysts guide small businesses at every stage of the innovation process. In 1998, with collaboration of Technology Partnership Canada (TPC), NRC-IRAP supplemented its initiatives with a financial support program, investing in projects at the pre-commercialization phase. The program offered conditionally repayable contributions, and since its inception, a total of 460 projects were approved, receiving a total investment of CAD 176 million. The TPC program was partially replaced by the Strategic Aerospace and Defence Initiative, which provides funding for aerospace and defence industries.

NRC-IRAP maintains a close network of academic institutions, government laboratories, and the private sector, facilitating information exchange and synergy building across different market participants. NRC-IRAP offers the **Technology Visits Program** and the **Innovation Insights** to promote best industry practices in innovation and peer-to-peer exchange.

While NRC-IRAP programs are oriented domestically, there are initiatives to increase international linkages, through organizing technology missions, and strategic partnerships.

Box 8. Research partnerships and networks

Networks of Centres of Excellence (NCE) consist of 25 networks, building partnerships between academia, private and the public sector. The NCE program leveraged investments around CAD 70 million in 2005-2006; over one-third came from private sector partners. CAD 150 million was available for research, technology transfer and commercialization. Through NCE networks, researchers were able to connect with private businesses; patent or license their research; launch spin-off companies and access a broad range of financing sources.

NSERC-Research Partnership Programs are designed to develop university and industry collaboration to accelerate knowledge and technology diffusion. They support university based projects, and leverage private sector financing in R&D and commercialization. In addition to financing for strategic projects, they also support research networks, collaborative R&D grants, and research partnership agreements. They also have pilot NSERC/IRAP-SME projects to establish links across universities and SMEs. **Ideas to Innovation** supports early stage of R&D, proof of concept and technology validation. **Intellectual Property Mobilisation Program** enhances the infrastructure for IP management, focusing on increasing the flow of IP to businesses.

The federal government's funding commitments in R&D and commercialization of research discoveries increased to CAD 13 billion over the period 1998 to 2005.

Canada Foundation for Innovation is a CAD 3.7 billion fund to support the modernization of research infrastructure at academic institutions, research hospitals and other non-profit research institutions. **Genome Canada** is CAD 375 million fund, to develop and implement a national

genomics strategy, including large-scale research projects, and commercializing these investments. .

Canada aims to become a leader in developing next generation of clean technologies. In 2001, the government created a CAD 550 million-investment fund, **Sustainable Development Technology Canada** (SDTC), to support the development of new technologies to tackle rising concerns on climate change, air and water quality, etc. The fund aims to bridge the financing gap between basic research and the pre-commercialization phase, by concentrating its investments on the development and demonstration stages, and attract downstream private sector investors. To date, SDTC has allocated a total of CAD 238 million to 107 projects, leveraging an additional CAD 608 million in funding from other project partners.

In 2007, the government announced the **ecoEnergy Technology Initiative**. It is a CAD 230 million-investment program for R&D and commercialization of clean-energy technologies. The focus of the program is on increasing the availability and use of renewable energy sources, as well as making conventional energy cleaner.

- **Technology transfer and other support programs**

The **Natural Sciences and Engineering Research Council of Canada** (NSERC) promotes natural sciences and engineering research, awarding scholarships, grants, and research partnerships. In particular, NSERC's research partnership programs facilitate transfer knowledge and technology from the universities to businesses. NSERC's **Idea to Innovation** program, the **Networked Training Initiative**, and the **Intellectual Property Management Program** assist academic institutions and hospitals develop the technology transfer expertise and manage their intellectual property. Funding enables the program recipients to participate more effectively in networks of technology transfer offices, and connect with other research participants, businesses, as well as complementary finance sources. While some NSERC programs precede venture capital financing, in others NSERC directly partners with venture capitalists. There are also other programs to support technology transfer and strengthen the science and technology infrastructure (**Box. 9**).

Box 9. Science and Technology Support

The **Federal Granting Councils** (the Canadian Institutes of Health Research, the Natural Sciences and Engineering Research Council, and the Social Sciences and Humanities Research Council) receive CAD 680 million annually, while CAD 170 million is allocated annually through the **National Research Council**, including CAD 60 million per year for **the Industrial Research Assistance Program**, that provides assistance to SMEs to develop and use new technologies.

There are also additional support, including CAD 225 million annually to back the indirect costs of research at universities and other institutions. CAD 300 million annually to create and sustain 2,000 Canada Research Chairs to help universities attract and retain world-class researchers in areas such as the natural sciences, engineering and health; and CAD105 million annually to create and sustain 4,000 Canada Graduate Scholarships (2,000 master's and 2,000 doctoral scholarships) at Canadian universities (Industry Canada, 2004).

Annex

List of interviewees

John Connell, *Industry Canada, Small Business Policy Branch*

Tony Glynn, *Industry Canada, Small Business Policy Branch*

Kirk Falconer, *Thomson Financial*

Darrell Pinto, *Thomson Financial*

Jeffrey Dale, *Ottawa Centre for Research and Innovation*

Dave Scollon, *Ottawa Centre for Research and Innovation*

Richard Remillard, *Canadian Venture Capital Association*

Bryan Watson, *National Angel Organization*

Dr. Cyril Gibbons, *University of Toronto Technology Transfer Office-Innovators Group*

Tony Redpath, *MaRS Discovery District Management*

Jacques Simoneau, *Business Development Bank of Canada*

References

Baygan, Günseli (2003a), "Venture Capital Policy Review: Canada", *STI Working Papers, 2003/4, OECD, Paris*.

Baygan, Günseli (2003b), "Venture Capital Policy Review: United Kingdom", *STI Working Papers, 2003/1, OECD, Paris*.

Baygan, Günseli (2003c), "Venture Capital Policy Review: United States", *STI Working Papers, 2003/12, OECD, Paris*.

Cumming, Douglas (2007), "Financing Entrepreneurs: Better Canadian Policy for Venture Capital", *C.D. Howe Institute, No. 247*.

Durufle, Gilles (2006), "The Drivers of Canadian VC Performance", Canada's Venture Capital & Private Equity Association, CVCA Report.

Industry Canada (2004), *Canadian Venture Capital Activity: An Analysis of Trends and Gaps (1996–2002)*

Industry Canada (2006), *Key Small Business Financing Statistics*.

Industry Canada (2006), *Venture Capital Monitor, Q4 2006*.

Industry Canada (2007), *Mobilizing Science and Technology to Canada's Advantage*.

Industry Canada (2007), *The ICE Questionnaire on Policies Relating to the Demand for and Supply of Risk Capital*, Small Business Policy Branch.

Macdonald & Associates (2004), *Finding the Key: Canadian Institutional Investors and Private Equity*.

Macdonald & Associates (2005), *Exit Activity in the Canadian Venture Capital Market*.

Napier, Glenda (2007), "The Danish Risk Capital Market and the Role of Government Policies", International Consortium on Entrepreneurship.

Napier, Glenda (2007), "The Dutch Risk Capital Market and the Role of Government Policies", International Consortium on Entrepreneurship.

National Angel Organization (2007), *Innovation and Productivity Tax Credit Handbook*.

OECD (2004), *Venture Capital: Trends and Policy Recommendations*.

Pinto, Darrell (2007), "VC Overview" University of Toronto.

Riding, Allen (2005), "Estimating Informal Investment in Canada", *Small Business Investment Branch, Industry Canada*.

Thomson Financial (2007), *Canada's Venture Capital Industry, 2006*.