

## **Venture Capital in Canada: a Maturing Industry, with Distinctive Features and New Challenges**

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## INTRODUCTION

Venture capital (VC) is a form of private equity investment in early-stage businesses that are considered to have significantly high growth potential. It aims to generate income from appreciation of illiquid holdings and capital gains after disposal. VC shares agency and moral hazard problems with other forms of investment in private capital markets: unlike public markets where regulations ensure data disclosure, in private capital markets suppliers of capital must obtain their own information through due diligence and ongoing monitoring. VC investment is thus costlier and riskier than investment in public markets but also potentially much more lucrative. VC investments typically require patient investors who provide value-added advice and oversight to the recipient firm in the form of management, financial, and marketing know-how. Conventional financial institutions providing debt financing in the private capital market manage their risks with credit scoring applications and requirements for collateral. They are not able to make knowledgeable, hands-on investments to build technology-based businesses that create value primarily from intangible assets.

VC plays a disproportionately important role in driving industrial innovation through its selective and knowledgeable support of innovation in smaller companies, which enjoy comparative advantages in technology venturing due to their superior potential for coordinating marketing, design, and R&D activities. In the US between 1983 and 1992, venture capital accounted for 8% of industrial innovation (Kortum and Lerner, 2000), although until the late 1990's venture capital represented less than .2% of US GDP. Private and public pension funds, endowment funds, foundations, corporations, wealthy individuals, foreign investors, governments, and professional venture investors are suppliers of venture capital.

The United States' venture capital industry is a key component in the U.S. innovation system, responsible for the development of tens of dozens of world-class technology companies. It is generally regarded as the most efficient and effective venture capital industry in the world, the model to emulate. This is especially so in Canada due to the close relationship between Canada and the U.S. Canada is very sensitive to developments in the U.S. innovation system because of Canadian geographic, cultural, and economic proximity to the United States. The United States and Canada have the world's largest bilateral trade relationship. The two countries are each other's largest trading partners. Canada has a large trade surplus in goods exported to the U.S., and a large deficit in services imported from the U.S. The U.S. is by far the largest source of foreign investment in Canada, accounting for 64% of direct investment in the country, and half of Canadian foreign direct investment abroad is in the U.S. Canadian firms are constantly exposed to U.S. firms as customers, suppliers, or competitors. However, the U.S. innovation system is so dynamic and resource-rich that for Canada to try to stay in the same league has been likened to the problem of "catching up with the Jetsons," that futuristic cartoon family with its endless supply of wondrous technological gadgets.

It is a long and complex undertaking to develop an effective venture capital industry. In the case of Canada, the VC industry emerged slowly in the 1960s and 1970s, accelerated in the 1980s and expanded spectacularly in the late 1990s. The amount of venture capital under management in Canada has increased nearly forty-fold since 1981. Growth has been especially vigorous in this

industry in the second half of the 1990s, driving an unprecedented technology venturing boom in Canada.

The Canadian venture capital industry has an unusual structural feature: funds are concentrated in vehicles dominated by “passive and semi-public investors.” This is a major difference between Canada and the U.S. and Europe, where most venture funds are institutionally-backed limited partnerships managed by professional VC managers. This structural feature is attributable to modifications in the Canadian tax regime introduced in the 1980 to encourage small retail investment in labour-sponsored venture funds. At the same time, the Canadian tax regime has imposed relatively high capital gains taxes on other kinds of venture capital investors. Historically, Canadian taxes and other factors appear to have reduced the incentives for active technology venturing in Canada, resulting in relatively greater conservatism on the part of Canadian venture investors compared to their U.S. counterpart. However, recent modifications of Canadian tax regulations have made the Canadian VC investment environment more like the American one.

The development of a venture capital industry can be conceptualized as a process of emergence and maturation. Maturity is measurable in terms of the industry’s size, diversity, competence, and relative economic intensity (Cetindamar and Jacobsson, 1999). Relative economic intensity of venture capital activity is one indicator of the industry’s maturity. In the case of Canada, the conventional reference point is the United States. The U.S. population is approximately nine times larger than Canada’s, and the U.S. economy is approximately thirteen times the size of Canada’s. The Canadian VC industry should therefore be between one-ninth and one-thirteenth the size of the U.S. venture capital industry. In recent years, taking into account the exchange rate of the Canadian dollar, Canadian venture capital activity ranged from 4% to 8% of its US counterpart.<sup>1</sup> As for diversity, the venture capital industry should have enough breadth to encompass a range of industries, technologies, and sizes of deals. At the same time, the industry should be internally differentiated enough to possess firms with deep specializations in early stage investments in particular industries or technologies. Industry competence refers to the industry’s ability to obtain and assess information; the extension of the VC industry to industries, technologies, or regions that are not part of its original specialization pattern; and its depth of experience, including its ability to syndicate (Cetindamar and Jacobsson, 1999).

Many aspects of the Canadian VC industry are well documented, and quite detailed information about the industry is available through the Canadian Venture Capital Association and the firm Macdonald & Associates. However, a number of knowledge gaps exist concerning the behavior of this industry. The present chapter examines the Canadian venture capital industry, describes its features, explains its distinguishing aspects, and discusses the issues facing it. The chapter is organized as follows. The next section describes the place of venture financing issues in the Canadian innovation agenda, provides an overview of issues regarding SMEs and their financial needs in Canada, and reviews the state of knowledge about availability of financing for “knowledge-based” or potential fast-growth firms. The following section analyses the Canadian venture capital industry in terms of industry structure, characteristics, and tendencies. The third

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<sup>1</sup> The U.S. venture capital industry and Silicon Valley are the usual benchmarks against which innovation in Canada is compared, although the U.K. economy is more venture capital-intensive than the U.S. and Massachusetts is more a more venture-capital intensive region than California.

section explores three sets of issues currently affecting the development of venture capital in Canada: the fiscal and regulatory framework in which the industry operates, the investment gaps at the seed and startup stages, and the availability of exits.

### **SMEs' Capital Needs in Canada**

Compared to its major trading partners, Canada's economic performance gives cause for concern. Canadian productivity has fallen in relative terms, and Canada's overall position on the influential World Competitiveness Scorecard has declined to 9th place in 2001 from 6th place in 1997. The many absolute improvements in Canadian competitiveness are overshadowed by loss of relative competitiveness across a range of indices (Porter and Martin, 2000). In general, Canada's improvement in competitive performance in the 1990s is attributable primarily to improvement in macroeconomic factors, with bottlenecks and disconnects remaining in the microeconomic foundations of competitiveness (*ibid.*). This section reviews the known financial needs of Canadian SMEs, describes the investment needs that drive demand for venture capital, and examines available evidence about demand for venture capital among Canadian firms.

Against the background of declining relative competitiveness, national innovation policy-making in Canada has become more vigorous and more ambitious than it has been for decades. Many public and private actors are now actively promoting innovation-based competitiveness in Canada, advocating increased spending and adjustment of institutional arrangements to this end. Never before has an "innovation agenda" or the notion of an "innovation system" or "innovation clusters" enjoyed such a wide degree of interest and support within levels of government, the private sector, and the education sector as they currently do. Recent expressions are the House of Commons Standing Committee on Industry, Science and Technology's report on an *Innovation Agenda for the 21<sup>st</sup> Century* (Government of Canada, 2001), and speeches by senior Canadian politicians. Financial issues are frequent items in the Canadian innovation agenda. In his response to the January, 2001 Speech from the Throne, Prime Minister of Canada Jean Chrétien announced a five-part plan to increase the country's innovation-based competitiveness: "at least double" federal investment in R&D by 2010; build excellence in Canadian universities; improve Canada's ability to commercialize research discoveries and technology; improve Canadian access to collaborative international research; and extend broadband internet access everywhere in Canada by 2004 (Chrétien, 2001). The Minister of Finance, Paul Martin, has called for Canada to adopt explicit innovation-related goals: that Canada have five percent of global e-commerce trade by 2003, and that Canada move from fifteenth to fifth in ranking of OECD countries' GERD/GDP ratios, putting it in the same league as the United States and requiring expenditure of an additional one percent of GDP on R&D. Creating economic value from increased R&D spending requires innovation in the Canadian financial infrastructure – here the attention turns to venture capital. It is proposed that Canada strive to rank among the top three countries in the level of new venture capital investments per capita and to match the United States in dollar value per capita of initial public offerings (IPOs). In 1999, the dollar value per capita of IPOs by Canadian companies in Canada was half that raised by U.S. companies in the United States (Martin, 2000).

Canada has about one million firms, of which only .2% have 500 or more employees. About 75% of Canadian firms have fewer than five employees and about 22% have between 5 and 50

employees. In Canada as elsewhere, smaller firms account for the largest proportional increase in employment. Small firms created more than three-quarters of the net employment increase observed among all firms (Statistics Canada, 2000). In 1997 businesses with fewer than 5 employees accounted for 26% of the gross increase in employment, but represented less than 9% of total employment. Businesses with less than 50 employees created 57% of the gross increase in employment but represented only 32% of total paid employment. Looking forward at 2001, the Canadian small business sector expected to create jobs at an average rate of 4.5% (Bruce, 2000).

A recurrent theme in debates about Canadian economic performance is the adequacy of financial services for Canadian SMEs. The SME loan market is growing at greater than 7% annually and many non-bank actors have entered the market. The seven major Canadian banks authorized \$70.9 billion in credit to small and medium businesses in 2000.<sup>2</sup> It is estimated that banks provide about half of all SME debt financing in Canada. The rest comes from non-bank sources such as credit unions, trust companies, specialized finance companies, credit card companies, life insurance firms, and public agencies.

Are financial services adequate? The general financial needs of SMEs are quite different from the financial needs of technology-based firms serviced by formal and informal venture investors. Mature firms with tangible assets appear to be adequately served by conventional debt financing institutions, while “knowledge-based” firms and other riskier groups such as infant firms, youth entrepreneurs, aboriginal entrepreneurs, or rural entrepreneurs often face difficulties in accessing startup and working capital.

This generalization is supported by recent surveys of SMEs by national trade associations and banks. A survey of more than 22,000 Canadian Federation of Independent Business (CFIB) members in the second half of 2000 found that 29% of respondents considered that “availability of financing” was the most important issue facing them. However, more important to members than financing was a variety of regulatory, tax, and labor issues: the “total tax burden” (83% of respondents), employment insurance (64%), government regulation and the paper burden (62%), government debt (61%), workers’ compensation (47%), shortage of qualified labor (46%), and cost of local government (42%) (CFIB 2001). A recent CFIB-sponsored study of members’ experiences with financial institutions found that 84% of respondents declared themselves “very satisfied” or “somewhat satisfied” with services provided by financial institutions, major sources of dissatisfaction being service charges and branch closings (Bruce 2001). Respondents reported that about one in ten loan applications was rejected. However, about twenty-one percent of firms reported inability to secure adequate debt financing. Of these, the two largest groups were “less established” firms and “young high performing” firms (i.e. those less than ten years of age or with growth rates of 20% or more in the past three years). In Canada, new firms have a mortality rate of about 80% over a ten-year period (Baldwin et al., 1997). Only about one percent of the smallest firms (<5 employees) grow into the next size (Gorman and King, 1998). Institutions providing conventional debt financing are aware of these risks and manage them by using increasingly sophisticated credit-scoring techniques and by requiring guarantees. A survey conducted in 2000 for the Business Development Bank of Canada found evidence of declining

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<sup>2</sup> The Canadian Bankers Association defines small or medium business as ones with an authorized credit limit of less than one million dollars.

access to financial services by SMEs: 36% of respondents indicated that it is “somewhat or much more difficult” to obtain business financing today than five years ago.

Access to financing varies by the stage in the business lifecycle, and Canadian start-ups are known to experience difficulty in obtaining bank loans (Riding, 1998). Start-up firms have to provide personal guarantees, co-signatures or fixed asset collateral to obtain loans. Once the firm has reached the growth stage and has a track record, access to debt financing is easier, although performance, fixed asset collateral, and personal guarantees are still required. Startups “do not expect much support when intangibles have to be financed, unless hard assets are pledged as guarantees” (Angus Reid, 2000). Mature SMEs have an easier time; conventional financial institutions have targeted this group as preferred clients.

Entrepreneurial ventures can be divided into three types: “life-style” ventures with a five-year revenue projection of less than \$10 million, middle-market-ventures with a five-year project of \$10-\$50 million, and high-potential ventures with a five-year revenue project over \$50 million (Wetzel, 1997). The first category comprises more than 90% of all startups and is of no interest to venture investors. The second and especially the third categories of firms are the targets of venture investors.

Potential “gazelle” or fast-growth firms make up a very small fraction of the total population of small firms, ranging from 16% to zero in about 50 counties in Québec studied by Julien and Lachance (2001). Fast-growth firms occur in every industry (Schreyer, 2000). For example, small manufacturing firms that double their employment in five years may be considered as high-growth or “gazelle” firms (Julien and Lachance, 2001). Canada’s top ten fastest-growing technology firms in 2001 had truly astonishing five-year growth rates ranging from 73,068% (Stratos Global of Toronto) to 5018% (Bridges.com of Kelowna, British Columbia). In 2001, 47 Canadian companies placed among Deloitte Touche’s top 500 fastest-growing technology companies. They had average five-year growth rates of more than 6000 percent (Deloitte Touche, 2001).

Fast-growth firms may have distinguishing characteristics that can be detected ex ante by external service and resource providers (Fischer, Reuber, and Carter, 1999). The two most important sources of capital for fast-growing SMEs in Canada are public equity and venture capital (Baldwin and Johnson, 1996). Some types of “knowledge-based” firms, especially new technology-based firms, are potential fast-growth firms and are likely to require equity investment (CLMCP, 1995a).

SIC codes provide only an approximately indication of knowledge-intensity; reliable benchmarks for knowledge-intensity based on R&D ratios and indicators of human capital are not available. Venture capitalists define knowledge-based industries in terms of sectors that are known to use knowledge intensively: biotechnology, medicine and health, computers, communications, electronics and instrumentation, energy, environmental technology, and some areas of industrial equipment. Secor (1998) proposes a four-part typology of knowledge-based firms: science-based, high-tech craft, integrators, and technology users. Science-based firms are firms that commercialize products originating in scientific discoveries in research labs; examples are health biotechnology and new materials firms. High-tech craft firms produce state-of-the-art products

requiring very highly skilled workers: examples are software and medical equipment. Integrators such as IT services or telecommunications companies assemble and deliver complex product and services. Technology users such as food processors or financial services use new technologies to improve the production and delivery of a mature product or service.

Knowledge-based firms do not have identical financial requirements. High-tech craft firms and science-based firms have more complex financial needs than integrators and technology users, which “are often larger firms with financial needs and risks that can be addressed by financial institutions with more conventional products” (Secor, 1998: 16). Science-based and high-tech craft are smaller, more innovative, have a longer product development cycle and are therefore riskier than integrators and technology users (Secor, 1998).

Few reliable estimates are available regarding the number of middle-market and high-potential startups in knowledge-based industries or their requirements for capital in Canada. Secor (1998) estimates that there are about 500 large knowledge-based firms (with loans above \$5 million) in Canada, 8000 small knowledge-based firms (with loans between \$25,000 and \$1 million), and 7000 early stage knowledge-based small firms with little business credit.

The new technology commercialization process is conventionally divided into five stages: research, seed, start-up, early growth, and expansion. Firms’ financial needs vary according to stage of growth, and appropriate combinations of equity, debt, and (if the technology begins in a lab) public or private research support funding are necessary as the firm moves through its life cycle (see Chart 1).

No objective assessment is available about the adequacy of the supply of research funding in Canada in domains that might yield economic benefit, or the appropriateness or effectiveness of the conditions under which this funding is made available with respect to the public policy goal of stimulating knowledge-based economic development. However, it is suspected that the supply of technology venturing opportunities in Canada could be increased by increasing investment in university research in advanced areas of science and engineering.

Entrepreneurs have claimed for two decades that there exists a shortage of venture capital in Canada, and venture investors have claimed a shortage of interesting deals. The official view since the mid-1980s has generally been that the supply of venture capital in Canada is more or less sufficient, although supply may lag demand. Everyone agrees that the performance of the industry is determined by its structure and experience. In recent years the industry has maintained about one year’s supply of investible capital. However, today the Canadian VC industry faces an unprecedented illiquidity challenge that will require increases in the supply of capital for later-stage investments. The following section provides an overview of the Canadian VC industry, focusing on the formal venture capital market. The informal market is examined in a subsequent section.

## **AN OVERVIEW OF THE CANADIAN VENTURE CAPITAL INDUSTRY**

Canadian venture investments have soared since the middle of the 1990s. Between 1994 and the end of 2000, venture capital under management in Canada more than tripled, rising from about

CDN\$ 5B in 1994 to nearly CDN\$ 19B in 2000 (see Chart 2). Annual VC investments increased by 350% between 1997 and 2000, rising from \$1.8B in 1997 to \$6.3B in 2000. That year about 1400 rounds of financing (deals) involved nearly 2600 separate investments (see Chart 3). The \$6 billion dollars of venture capital invested in Canada in 2000 represents about 4% of the credit extended to the small firm sector by all financial service providers.

The precise number of players in the Canadian VC industry is unknown. An early study of venture investing in Canada (Poapst and Crane, 1971) identified about 150 venture capital organizations, funds, venture managers, investment consultants, dealers, and holding companies claiming to be active in venture investing. The number of professionals in the industry increased from 89 to 160 between 1983 and 1986 (Macdonald, 1987). The Macdonald & Associates database of the Canadian venture capital industry currently identifies about 600 professional investment firms and advisors, said to represent 90% of the players in the industry. The Canadian Venture Capital Association, established in 1974, has about 100 full members (i.e. with funds to invest).

The structure of the Canadian venture capital industry is unusual: it is far more institutionally heterogeneous than its U.S. or European counterparts, “where all venture capital funds are institutionally-backed limited partnerships with professional venture capital managers” (Macdonald & Associates 1998: 5), and it contains an uncommon class of venture capital investment vehicles sponsored by organized labour. Excluding informal investors, six types of players are active in the Canadian venture capital market: private independent venture funds, labor-sponsored venture capital corporations (LSVCCs), corporate funds, institutional investors, government funds, and hybrid funds.

Private independent venture funds originated the Canadian venture capital industry in the 1950s and predominated until the late 1970s. By 1980 they shared the market with corporate venture groups. They are professionally managed funds that raise capital (typically from \$20 million to \$200 million) from pension funds, insurance companies, and other investors, and they are generally structured as limited partnerships with a ten-year lifespan (Macdonald & Associates 1998). Prominent Canadian examples are Hargan Ventures, McLean Watson Capital, MM Venture Partners, Fulcrum Partners, Telsoft, XDL Invest, and Ventures West Management. Private independent funds were responsible for nearly \$2B of the \$10B of venture capital under management in 1998 (Macdonald & Associates, 1999).

Government funds accounted for as much as a third of the venture capital market in the 1980s but their saliency has since declined. The main government venture funds are operated by the Business Development Bank of Canada’s Venture Capital Division, Innovatech (a fund established to invest in young technology in the Montreal area), the Export Development Corporation which provides complementary debt financing but not venture financing, the venture investment arm of Hydro Quebec (a crown corporation), and certain government-backed investment corporations such as the Community Futures Development Corporations (CFDC), a group of specialized public investment companies in Saskatchewan, and the three or four regional development agencies such as the Atlantic Canada Opportunities Agency, which provide equity financing as a last resort as well as advising, training, and mentoring assistance. Several government venture funds such as the Innovation Ontario Corporation, Discovery

Enterprise Inc. in British Columbia, and the Alberta Opportunity Company have suspended activities or exited from venture investing. Government funds represented about 9% of the \$10B of venture capital under management in 1998 (Macdonald & Associates, 1999).

Corporate funds. Corporate groups with venture capital activities in Canada include BCE Capital (Bell Canada – telephone services), Hollinger Capital (publishing), and the Dow Chemical Venture Capital Group. A prominent example of corporate venturing in Canada is Newbridge Networks's venture arm, Celtic House International. Corporate funds accounted for 17% of the \$10B in venture funds under management in 1998 (Macdonald & Associates, 1999). Large technology-based firms may have corporate venturing programs or venture capital subsidiaries that are not widely visible in the venture capital industry. These firms operate as strategic investors that are not necessarily seeking rapid accumulation of capital but instead access to innovation, exposure to new markets, inside knowledge of a firm that might be regarded as a possible acquisition, protection of market share, development of a new product line, or other strategic objectives. Equity-based alliances and partnerships are a form of quasi-venture investing that is not well documented in Canada.

Institutional investors include subsidiaries or operating divisions of commercial banks, investment banks, life insurance companies, and pension funds. Since the late 1980s, this class of investors has been comprised primarily of financial institutions. In the late 1990s, some institutional investors began to make direct VC investments. Most of the major Canadian banks and financial institutions now have venture capital arms or divisions. Examples are Royal Bank Capital, TD Capital, Investissement Desjardins, RoyNat (Scotiabank), the CIBC Innovation Fund, and HSBC Capital. Financial institutional investors represented approximately 20% of commitments to the Canadian venture capital market in 2000.

The participation of Canadian trustee pension funds in the private equities market may be a looming policy issue in Canada. Canadian pension funds control a huge pool of capital. However, this capital has not flowed into venture investments to an extent comparable with the United States. In the U.S., pension funds commit 5% to 8% of their assets to venture capital. The current rate is around 1% in Canada. The Pension Investment Association of Canada's 135 members control about a half-trillion dollars in assets, of which about 1.5% is in VC investments. The historical rate has been much lower: about .2% of total pension fund assets from 1985 until the mid-1990s, according to CLBC (1999: 29). Canadian pension funds with VC investments include the Ontario Municipal Employees Retirement System (OMERS), the Ontario Teachers' Pension Fund, and the Caisse de dépôt. Investment in venture capital by Canadian pension funds at the same per-capita rate as U.S. pension funds would increase the pool of venture capital in Canada by \$14 billion.

Ironically, Canadian pension funds helped to develop the VC market in Canada in the 1980s, after regulatory reforms broadened their investment powers. Canadian pension funds increased their investments in the institutional venture capital market, mainly through involvement in funds managed as limited partnerships. In 1985, pension funds contributed only \$20 million to venture capital in Canada. In the following three years, they contributed \$486 million. In 1989 the pension funds began an abrupt withdrawal from the VC market and by 1990 they were back to \$20 million. In following years their involvement in private capital markets remained at reduced

levels. This period is sometimes recalled by VC oldtimers as the “nuclear winter” of Canadian institutional investing in venture capital. What happened and why did Canadian pension funds leave the VC market? CLBC interviews with pension fund managers found three sets of reasons: the recession of the late 1980s, the risk-adjusted substandard performance of pooled assets compared to rates obtained in the United States, and the difficulties in dealing with VC funds, some of which were attributable to fees and the complexities of monitoring, and others attributable to the lack of preparedness of pension funds to make illiquid investments (CLBC, 1999). The pattern of venture investments made by these funds during their market-making foray in 1986-1988 tended toward comparatively safe later-stage deals with little involvement in technology (ibid.).

A survey of Canadian pension fund managers in 1997-1998 identified 14 barriers to pension fund investing in the “new economy,” including venture capital investing. Among these are: venture investing is too management-intensive and costly; there are too few experienced managers for specialized investing; failures are too glaring; risk-adjusted returns are unreliable; governing fiduciaries are unfamiliar with the complexities of private capital markets; critical market and performance information is lacking; small and medium size pension funds (< \$1 billion) cannot afford such diversification; institutional memory of past negative experience with private capital markets; inconsistency of high-risk investing with fiduciary responsibilities toward pension plan members; valuation procedures are incompatible with those used for traditional asset valuation; lack of venture pool managers’ familiarity with the needs of pension funds; and lack of investment opportunities of sufficient quality to warrant participation (CLBC, 1999).

Since 1997, Canadian pension funds have begun to return to the VC market, primarily through investments by large experienced public sector funds. Institutional investors (including pension funds) provided fully half the venture capital invested in the first nine months of 2001. It remains to be seen whether this is the beginning of consistent venture investment on the part of pension funds, latency in their investment dynamic, or discovery of a particular comfort zone within the set of venture investment opportunities.

Labor-sponsored venture capital corporations (LSVCCs), also called Labour-Sponsored Investment Funds (LSIFs), are the most unusual feature of the Canadian VC industry. Similar in some respects to tax-subsidized employee share ownership plans in the United States and Europe, these funds have taken on an importance in Canada unequalled in other countries. LSVCCs are capitalized by small retail investors responding to the advantageous tax incentives offered by provincial and Federal governments. Typically, the investor receives a tax credit of up to 30% on an investment limited to five thousand dollars. The investment must be held for eight years or, in Quebec, until age 65. Depending on the province, investors may also receive tax credits related to retirement savings plans, so that a \$5,000 investment can be purchased for less than half this amount. LSVCCs are also attractive because through investments in these vehicles, investors can increase the amount of foreign content held in their retirement savings plans. LSVCCs are regulated as to the amount of equity they can hold in any individual company. They are also required to maintain relatively large cash reserves.

LSVCCs originated in Quebec in 1983 and spread to other provinces through enabling federal legislation introduced in 1985. The original impetus for establishment of LSVCCs was related to

the Québec and federal governments' political dealings with Québec nationalist forces (Swift, 1998). However, LSVCCs turned out to be useful vehicles to restore the flow of capital to SMEs when pension funds reduced their commitments to venture investing. Canada now has around 25 labor-sponsored funds. Prominent examples of LSVCCs are the Fonds de Solidarité des Travailleurs du Québec (the Québec Workers' Solidarity Fund, the first LSVCC), the Canadian Medical Discoveries Fund, the Working Ventures Canadian Fund, the Working Opportunities Fund, and the Triax Growth Fund. Some funds are limited to investments in a specific province or region, and others are national in scope. LSVCCs have accumulated impressive amounts of capital – the Fonds des Travailleurs had a whopping \$3.3B under management in 2000. Collectively, LSVCCs were responsible for fully half the \$10B of venture capital under management in Canada in 1998 (Macdonald & Associates, 1999).

LSVCCs have investment mandates that are guided by economic and social goals that do not always converge. They are intended to help maintain or create employment and to help overcome barriers to capital flow to a variety of kinds of firms including SMEs, firms in non-metropolitan regions, and technologically advanced firms. They are also intended to permit share ownership by working people, and they are in principle organized and controlled by a legitimate sponsoring labor union. The funds are required by statute to invest local capital in local firms, generally on a provincial basis, and gains realized on investments are the means by which other economic and social goals are expected to be attained (although LSVCCs do not have aggressive growth mandates like private independent venture firms). In principle, workers and unions are to be involved in enterprise-based decisions. LSVCC funds are also intended to serve as vehicles for cooperation between management and labor (CLMPC, 1995b).

These principles have been deflected in a number of cases, leading to the accusation that LSVCCs are “rent-a-union” arrangements catering primarily to the interests of financiers. In response, five major LSVCCs have signed a declaration of principles: the First Ontario Fund, the Fonds de Solidarité, the Crocus Investment Fund, the Workers Investment Fund, and the Working Opportunity Fund. These “genuine” LSVCC funds have a higher index of social investment than the other LSVCCs (Quarter et al., 2001). Between 1995 and 1998 the previously mentioned five funds delivered annual returns of 3%-8% (Swift, 1998).

Lost tax revenues attributable to investments in LSVCCs amounted to about \$130 million in Ontario in 1995 (Riding, 1998). As a matter of public policy it is not clear why fiscal advantages are accorded only to these investment vehicles among all venture capital funds (Vaillancourt, 1997).

Hybrid funds are groups that have secured at least 50% of their capital from government or funds with government incentives or as a result of government policy, such as immigrant investor funds operating as venture capital funds. For example, ACF Equity Atlantic's \$30 million fund is drawn from seven chartered banks, a credit union, the four Atlantic provinces and the Federal Government through the Atlantic Canada Opportunities Agency (ACOA), the regional development agency. A similar hybrid fund designed to provide capital to small firms, the British Columbia Focus Initiative, is privately managed with capital from two VC firms, three banks, and the provincial government acting as silent partner. Hybrid funds managed about 5% of the \$10B in venture funds under management in 1998 (Macdonald & Associates, 1999).

The structure of the Canadian venture capital industry has evolved substantially and become much more complex during the past two decades. In 1981, independent venture funds were responsible for about half the capital under management in Canada. Corporate investors accounted for about 40% and government corporations, less than 10%. Crown-related corporations expanded their percentage of total capital under management into the decade but by 1991, LSVCCs and private independent funds each accounted for about 40% of capital under management. In 1995, LSVCCs captured 80% of the capital flowing into the industry. Subsequently each of the other investor types has expanded its amount of capital under management, with recent large increases in share by foreign firms and institutional investors from outside the VC industry such as mutual and pension funds. The approximate share of the \$6.4B in venture capital investments in 2000 by each institutional type was corporate (14%), government (2%), LSVCCs (13%), private independent funds (16%), foreign funds (27%), and institutional investors (29%), of which about one-third came from newer institutional players, especially pension funds. However, in the first 9 months of 2001, foreign firms and non-VC institutional investors accounted for almost half the venture capital investments in Canada.

The heterogeneity of the Canadian venture capital industry is reflected in the forms of finance that it uses and in the size of portfolios that firms manage. Cumming (2001a) finds that in the period 1991-1998, Canadian venture capital firms did not consistently use convertible preferred equity as a form of financing as is the case in the United States. Instead, they used a mixture of forms, with common equity and debt financing the two most frequent. However, they consistently used convertible preferred equity as a form of financing in high-technology firms. Cumming (2001b) suggests that the factors affecting the selected form of finance are the size of the deal, the degree of syndication, the kind of VC firm, and especially the stage of the investee firm. Private independent venture capital funds have much smaller portfolios than LSVCCs, and this difference reflects the more active investment approaches of the private fund managers (Cumming, 20001a).

The bulk of Canadian capital under investment comes from individuals (high net worth individuals, via private independent funds, and individual retail investors, via LSVCCs), domestic corporate investors, and more recently foreign corporate investors. In 1995, individual investors contributed more than \$1.2B to the Canadian venture capital pool through contributions to LSVCCs. Pension funds left the Canadian venture capital market in the late 1980s and remained largely on the sidelines for a decade. The institutional investors “did (and still do) believe that there were simply not enough attractive opportunities in the Canadian market to justify their return to the venture capital arena” (Macdonald & Associates 1998: 10). The illiquidity issue in the Canadian venture capital industry is increasing efforts to attract greater numbers and variety of institutional investors into the market.

Some other salient characteristics of Canadian venture capital investing during the recent period may be briefly noted:

**Increase in early stage investments.** Historically, Canadian VCs invested 30% or less of their funds in startup or early development stage firms. However, the percentage of dollars disbursed in early stage investments has increased from 36% in 1997 to 47% in 2000 to 58% in the first nine months of 2001 (see Chart 4). The tendency is to make follow-on investments to companies

already in a portfolio. In terms of size of investee firms, Canadian venture investments are distributed bimodally, with the largest shares of disbursed dollars going to small firms with revenues of less than one million dollars and to larger firms with revenues greater than nine million dollars (see Chart 5).

**Increase in deal size and syndication.** The average deal size in 2000 was \$4.4 million, up from \$2.7 million in 1999. Deals larger than \$5 million captured 79% of all disbursements. Larger deals are related to an increase in syndication. In 2000, an average of 3.4 investors were involved in financing deals for start-ups involving \$5 million or more, and 4.2 were involved in other early stage deals. The largest VC deal in Canada in 2000 was a seed investment of \$115M in Ottawa-based Innovance Networks, an optical networking company. This deal required a syndicate of six large American venture capital investors. All of the fifty largest VC deals in Canada in 2000 surpassed \$20 million and required syndication (National Post Business, 2001).

**High exposure to technology.** Venture investors in Canada are showing a very strong preference for technology deals, in contrast to the situation in the late 1980s when technology accounted for around a quarter of investments and venture investors expressed disappointment over the supply of quality technology deals available (Macdonald, 1991). Knight's 1994 study of Canadian venture capitalists' investment criteria reports that "several Canadian venture-capital firms suggested that being characterized as high technology was often a negative for deals" because "many high-technology firms are single-product firms" with limited marketing and financial skills. The Canadian VC industry's exposure to technology has steadily increased since about 1990, mainstreaming by the mid-1990s. In 1997, 66% of Canadian venture capital dollars were invested in technology firms, climbing to 89% in 2000. Chart 6 shows the sectoral composition of venture capital investments in Canada between 1997 and 2000. The share of investments captured by life science firms has remained steady, manufacturing's and the miscellaneous share has shrunk, and the share taken by electronics, internet-related, computer-related, and communications and networking firms has greatly expanded. Canada's recent technology venturing boom largely revolved around firms commercializing products and services based on information and communication technologies.

**High geographic concentration.** Canadian venture capital activity is very highly concentrated in a few city regions, particularly in Central Canada (see Chart 7). Ontario captured 43% of investment dollars disbursed between 1997 and 2000, and Quebec, 26%. These disbursements are primarily located in the city-regions of Montreal, Ottawa, and Toronto-Kitchener-Waterloo. Calgary and Vancouver represent the two other main pools of venture capital in Canada. These five city regions account for over 90% of venture capital investments in Canada. Fourteen percent of Canadian VC investment dollars were invested outside the country between 1997 and 2000, generally in the United States.

**Investment criteria.** Bachher's study (2000) of investment criteria used by VCs in the U.S. and Canada finds consistent use of criteria among VCs in the aggregate. In descending order of importance, VCs consider the management team, the target market, the offering, the venture's positioning within the competitive environment, capital payback projects, and the business plan. Although there exists a great deal of heterogeneity in use of decision criteria among VCs, the

rank ordering of criteria is practically identical when VCs from California and Massachusetts and are compared with VCs from Canada and elsewhere in the U.S (ibid.).

**Positive economic impacts of venture capital.** The Business Development Bank of Canada tracks the performance of VC-backed firms and provides an annual assessment of the economic impacts of venture capital.<sup>3</sup> VC-backed firms in Canada doubled their employment to an average of 86 persons per firm, of which 95% were located in Canada (BDBC, 2000). The average compounded annual growth rate of jobs was 39% for firms receiving VC backing between 1995 and 1999. IT companies' employment grew at 60% and labor-sponsored companies at 47%. These growth rates compare very favorably to those of the Canadian economy as a whole, which produced jobs at an annual rate of 1.9%, and the top 100 companies in Canada in terms of sales, which produced jobs at an annual rate of 4% (BDBC, 2000).

Compounded growth rates for sales were 31% for all VC-backed firms in the sample, 53% for labor-sponsored firms, and 66% for IT firms. Similarly, VC backing enabled rapid export growth and significant annual increases in R&D activities (BDBC, 2000). Furthermore, VC-backed firms strongly outperformed non VC-backed firms after IPOs (BDBC, 2000).

## **ISSUES IN THE DEVELOPMENT OF VENTURE CAPITAL IN CANADA**

Generally speaking, the Canadian VC industry is now facing two broad sets of challenges. One concerns the illiquidity of the industry, its likely near-term needs for capital, and its options for profitably liquidating its investments. The other has to do with a funding gap at the seed or zero-stage of technology venturing which is limiting the supply of bankable deals, exacerbating the highly skewed regional distribution of technology venturing opportunities, and hindering the development of new science-based industries, especially those originating in the life sciences. Both sets of issues are related to the fiscal and regulatory framework for venture investing in Canada.

### **The fiscal and regulatory framework**

In recent years, the e-business boom has drawn attention to deficiencies of the Canadian venture capital industry. The Canadian e-Business Opportunities Roundtable, a high-level advisory e-business body led by the business community, explained in a report why Canada was slower than the United States to take advantage of e-business opportunities:

The [investment] environment is less dynamic in Canada because the venture capital market here is dominated by passive and semi-public investors. Labour-sponsored funds, government funds and hybrid funds – none of which is permitted to take a large ownership stake in the companies in which it invests – make up over 60% of the Canadian venture capital pool. In contrast, only 1% of U.S. funds are under management by non-private investors (Canadian e-Business Opportunities Roundtable, 2000a).

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<sup>3</sup> The sample of respondents includes only firms that have attracted a first round of VC investment.

The Canadian e-Business Opportunities Roundtable has continued its high-profile lobbying for modernization of the fiscal and regulatory framework for venture investing in Canada, identifying the following sticking points:

**Capital gains.** The Canadian capital gains tax is almost double the U.S. rate of 20%. Moreover, in the U.S., capital gains taxes are reduced by half on shares of qualifying small business companies having undertaken IPOs if investors hold the shares for five years or more. The Canadian capital gains tax creates a disincentive for early-stage investors and an incentive for VC-backed companies to move to lower-tax environments. The Canadian e-Business Opportunities Roundtable advocates increasing the capital gains exemption to up to \$1m for “employees of qualified science and technology intensive companies” (1999). More generally, to compete with the U.S. in attracting risk investments for technology venturing, Canada cannot maintain a conspicuously higher capital gains tax. Capital gains taxes produce a very small revenue stream for Canadian governments: in 1992 capital gains revenues amounted to 0.3 percent of total revenues and 1.9 percent of personal income tax revenues (Grubel, 2000).

**Capital gains exemption for rollover investments.** U.S. venture funds may defer taxation from capital gains that are realized on exiting an investment through a rollover provision for qualified reinvestments. The Canadian e-Business Opportunities Roundtable advocates that Canadian venture capital funds be allowed to defer capital gains taxes from investment exits if the gains are reinvested in a qualified firm. The February 2000 budget introduced a rollover provision for holders of shares in CCPCs, for firms with assets of between \$2.5M before the investment and \$10M after. This provision brought some relief to individual Canadian investors but it was far from matching the comparable U.S. regulations, which sets the upper limit on investible firms at thirty times the Canadian level, sets no limits on the size to which the firm can grow, and allows investments via partnerships (Canadian e-Business Roundtable, 2000b). The Canadian government addressed these issues by introducing an improved rollover provision for capital gains in early 2001 (Sharwood, 2001). However, eligibility still requires that the investee firm conduct most of its business in Canada during its first 24 months, mitigating the utility of this rollover provision for Canadian new technology-based firms that must quickly penetrate the U.S. market, as most such firms must do. Also, it was not clear whether investee firms would remain eligible after shares were disposed of through an IPO (*ibid.*).

**Treatment of stock options.** In Canada, firms with the status of “Canadian-Controlled Private Corporation” (CCPC, a Canadian private corporation that is controlled neither by non-residents, nor by a public corporation or a combination of the two) receive tax advantages. One benefit is that employees of such companies with vested stock options do not pay capital gains tax when they exercise (purchase) their shares. They pay when the shares are sold. In other companies, capital gains taxes must be paid when employees exercise their shares. This tax provision clearly frustrates the practice of attracting and retaining valuable employees with stock options throughout the growth phase and the public offering. It also discriminates against foreign investor involvement in enterprise formation at the seed stage. The Canadian e-Business Opportunities Roundtable (1999) advocated that taxation of option benefits take place at the time of sale of redeemed shares and that registered retirement savings plans be expanded to include employee share option investments. The Federal budget of 2000 introduced some changes that

make employee stock options more attractive to non-CCPCs: employees may defer capital gains taxes on \$100,000 of benefits annually.

**Tax neutrality for foreign investors.** Foreign investors who pool their fund as part of a limited liability company in the United States for purposes of investment in a Canadian fund are considered to be doing business in Canada and are subject to capital gains taxation as if they were residents of Canada. This limits Canadian venture capital fund managers' access to U.S. pension and endowment funds. Tax neutrality for non-resident investment in Canadian technology companies would encourage flows of foreign investment into Canadian companies and venture capital funds. The Canadian e-Business Opportunities Roundtable, citing the positive example of Israel, advocates the principle of tax neutrality for non-resident investments in Canadian businesses, regardless of the investors' investment vehicle (i.e. whether the investor is an individual investor, a pool of funds registered as a limited liability company in a country covered by a tax treaty, a direct investor in a Canadian company, or an investor in a Canadian-based venture capital fund that manages the investment on his behalf) (Canadian e-Business Opportunities Roundtable, 1999, 2000b).

**Tax treatment of cross-border share-for-share mergers.** Barriers exist to cross-border, share-for-share mergers with U.S. companies, an increasingly important exit route for Canadian VC-backed technology companies. Owners of equity in Canadian companies incur tax liability when shares are swapped in mergers or sales. This is not the case under U.S. rules. In order to avoid the tax liability, Canadian entrepreneurs find it useful to incorporate in the U.S. and establish an affiliate in Canada. To reduce this impediment to business formation in Canada, the Canadian e-Business Opportunities Roundtable recommends elimination of tax liability on rollovers of shares from a Canadian privately held company to a foreign company (1999, 2000b).

**Restrictive IPO environment.** The IPO environment in Canada is less expensive but also less attractive than in the US because the Toronto Stock Exchange is comparably more restrictive in terms of listing requirements, resale restrictions, and escrow requirements for sale of shares in a company. Securities in Canada are regulated on a provincial basis, meaning that a company must list for trading in thirteen separate jurisdictions. Canada is the only G-7 country in which securities trading is regulated by subnational governments. The Canadian e-Business Opportunities Roundtable recommends that the Canadian IPO environment be made no less restrictive than the American one.

Clearly, most of the tax and regulatory issues have to do with removal of bottlenecks and impediments that make the risk/reward ratio of VC investing in Canada unfavorable compared to the United States. Others have to do with making the tax and regulatory aspects of VC investment linkages between the two countries less cumbersome. These issues have arisen in the context of significantly increased inflows of U.S. venture capital into Canada in the recent past. The investment flows were unleashed by aggressive marketing in the U.S. of Canadian investment opportunities by Canadian actors, by Canadian technology firms' deliberate selection of U.S. VC partners for later rounds of financing, and by the relative greater availability of US funds for venture investment. Canadian preference for US VC investors may be explainable by relatively higher dollar or opportunity costs of procuring capital in Canada, as suggested by Bergeron et al.'s study of Canadian biotechnology firms (2000). It certainly reflects the need of

technology firms to grow quickly in the U.S. market. The scarcity of actively managed early stage capital in Canada has allowed U.S.-based venture capitalists to induce Canadian firms with high growth potential to move their operations to the United States at an early stage. American venture capitalists then provide value by recruiting “a high profile and experienced board of directors, helping to find strong management, and making introductions to key suppliers and customers, thus facilitating the growth process and building a name for the company” (Canadian e-Business Opportunities Roundtable, 2000c).

Ironically, the Canadian venture capital industry was better prepared to weather the recent major downward movement in stock prices because of its institutional shock absorbers. Labour-sponsored venture capital funds withstand stock market movements better than other kinds of riskier equity funds in technology-based industries because they are exposed to companies that have not yet gone public. Also, the LSVCCs’ mandatory greater cash reserves have a stabilizing effect. However, the dampening of the Canadian venture capital system caused by its institutional arrangements only protects it from large market swings. Since most Canadian venture investments have yet not reached the exit stage, they are not highly exposed to the equities market.

### **Investment gaps at the seed and startup stages**

It is frequently observed that Canada suffers from a seed stage investment gap. This gap extends to the startup stage in many regions in Canada. The seed (or zero or pre-commercialization stage) requires investment for purposes of R&D, proof of concept, product development, market research, preparation of business plans, or establishing a management team. The startup investment brings the firm to a point at which it can do business by completing product development, marketing, and so forth.

Although venture capitalists’ competitive advantage as investors lies in their efficiency in selecting and monitoring investments in the unique business environments of technology-based, fast-growth firms, within this context they rationally prefer projects in which monitoring and selection costs are relatively low or where the costs and risks associated with informational asymmetry are relatively less severe, leading them to “favor firms with some track records over pure start-ups” (Amit, Brander, and Zott, 1998). Investments at the seed stage are even riskier and so less favored by venture capitalists. Between 1991 and 1996, less than two percent of Canadian VC investments went to seed-stage deals (ibid.). The average size of seed investments, \$621K, was comparable to the much more frequent investments in startups (\$721K) (ibid.), but the cost of managing these investments was necessarily greater.<sup>4</sup> “Very few venture capital companies do idea-stage investments,” observes Denzil Doyle, chairman of the Ottawa-based venture fund Capital Alliance Ventures Inc. “It is just too labor-intensive. The lifting is just too darn heavy down in that end... Not enough of them finance R&D or the early stages of product development” (Doyle, 1999). In response to seed and startup funding gaps, Canadian policy actors have sought to mobilize the informal investment community and established some specialized seed investment firms and agencies.

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<sup>4</sup> The seed stage is the riskiest with an estimated risk-adjusted capital cost of 80% (Wetzel, 1997), compared to the risks posed by investments at the startup (60%), first-stage (50%), second-stage (40%), third-stage (30%), and bridge (25%) stages.

The angel capital market operates in “almost total obscurity” (Prowse, 2000) in Canada as in other countries. Little is known about the size or scope of informal investing, the types of firms that raise angel capital, or the individuals that provide it. Informal investors in Canada represent a large pool of capital, believed to be several times larger than the pool of formal venture capital. Only about 5% of individuals with the financial profile of a potential angel are active business investors (Riding, 1998). Most most angel investments go to early-stage firms. Survey research conducted by the Canadian Labour Market and Productivity Centre (CLMPC, 1995a) documents that twice as many businesses have relied on investments from angels, at some point in their development, as on any other form of external equity investment, including institutional venture capitalists.

Furthermore, no systematic empirical evidence is available regarding the extent or nature of the seed stage investment gap technology enterprises in Canada, although a recent review of reports and studies finds ample anecdotal evidence (Corkery and Brennand, 1999). A proxy measure, university patent filings (*ibid.*), does not seem adequate since it is not known how many infant technology companies in the IT and telecommunication sectors spin directly out of universities. This trajectory appears to have been central in the establishment of Canada’s newer high technology clusters in Vancouver and Kitchener-Waterloo. However, the principal entrepreneurial trajectory in Ottawa seems to be graduation from a technology-intensive university, work in a firm in the industry, and then establishment of an infant technology company.

Practically nothing is known about Canadian angel investors who are active in technology industries. The activities of these informal investors produce a critical input for venture capitalists: a technology-based firm with a product. The problems of agency and moral hazard are just as acute at the earliest stages of firm formation as they are when venture capitalists enter the picture, while the degree of uncertainty is higher. Denzil Doyle, a father of technology venturing in Canada, believes that the Canada faces a shortage of angel investors that is much more serious than any shortage in the United States. Angel activity should represent about five times VC investment, meaning that Canada should have a pool of angel capital of at least five to ten billion dollars. However there is no evidence of technology-based angel investment activity on this scale in Canada.

Corkery and Brennand (1999) identify a series of gaps that, if overcome, would improve the match between seed capital supply and demand. To overcome an information gap, measures could be taken to help investors and entrepreneurs to find each other. In this vein, highly localized facilitation of face-to-face meetings has been more productive than distribution of codified information from a data base of suppliers and seekers of seed capital. Institutions such as universities with potentially commercializable technology might overcome an identification gap by finding ways to interact with potential investors. A management expertise gap might be overcome by fostering the development or transfer of management skills for startup companies. Finally, a research gap due to under-investment in university research may result in a low supply of investment opportunities.

Others have identified a key incentive gap due to the high capital gains tax and the absence of rollover provisions in Canada, which make it unprofitable for potential technology investment angels to convert equity in one investment into equity in a new investment (Doyle, 1999). Specialized “mentor capitalist” firms such as Eagle One Ventures, Reid Eddison, Venture Coaches, Skypoint Capital Corp., and StartingStartups are however emerging in the principal Canadian technology centers to bring direct management involvement as well as personal or partners’ seed money into infant technology firms (Vardy, 2001). Research is needed on the business models that support successful seed stage venture investing in Canada.

Quite a few institutional mechanisms exist to foster seed stage investments in Canada. Three main ones are in use: 1) some mechanisms such as the federal Scientific Research and Experimental Development (SRED) tax credit or analogous provincial tax credits provide incentives for investment in R&D. 2) a certain number of seed stage investment funds, designed to foster seed stage ventures and spinouts from universities or research institutions, have been established in Canada. Examples are the University Medical Discoveries Fund, the Western and Eastern Technology Seed Investment Funds (consortia members are Ventures West, the Business Development Bank of Canada, and the Bank of Montréal), T2C2, a similar initiative in Québec, and biomedical investment funds established by a number of Canadian banks. 3) a variety of skills development and networking initiatives includes networks of experts, provision of specialized legal and support services, and support for seminars and investment-readiness exercises (see Corkery and Brennan, 1999). Perhaps the most comprehensive initiative to mobilize local informal capital is the Canada Community Investment Plan (CCIP), a blueprint for a community investment facilitation service for potential fast-growth SMEs promoted by Industry Canada through 22 pilot projects across the country. The CCIP provides a model for local leaders to determine if their community is right for a investment facilitation service (communities with economies dominated by agriculture, branch plants, or single employers are not), guidelines for organizing a group to create a facilitation service, and instructions on chartering, governing, and financing the service (CCIP, 2001). CCIP-inspired investment facilitation initiatives are one kind among a broader range of local investment financing models (LIFMs) that exist across Canada (CLMPC, 1998).

The key stumbling block in initiatives to mobilize informal capital in support of technology venturing outside the mainstream technology centers in Canada has to do with the skills and sectoral experiences of local business angels. Many communities possess high net worth entrepreneurial individuals with long business experience and the desire to invest in new ventures. However, if they made their fortunes in retailing or food processing, they cannot function as effective mentor capitalists in areas of advanced technology, even when viable opportunities exist. Johnstone (2000) describes this particular management skill bottleneck in the case of Cape Breton, a depleted local economy that generates infant firms in the software and new media sectors. These firms require capital and management mentorship in order to grow. To satisfy the capital requirements of these firms, local business angels would have to syndicate in groups of ten, which they are not eager to do. Of equal importance, entrepreneurs seek investor expertise in marketing, industry contacts, and management skills, which local investors are unable to provide (Johnstone, 2000).

As a remedy to this management skill and experience deficit in the domain of technology venturing, some outlying communities in Canada are encouraging repatriation of native sons and

daughters who are successful technology entrepreneurs in Central Canada or the United States. These repatriated individuals bring with them not just experience and investment capital but also social capital accumulated within the mainstream technology and investment communities.

## Exits

The five principal exit strategies for venture capitalists are: 1) an initial public offering (“IPO”), involving the sale of a significant portion of the firm in the public market; 2) an acquisition, in a third party purchases the entire firm; 3) a secondary sale, in which only the venture capitalist’s shares are sold to a third party; 4) a company buyback, in which the investor’s shares are repurchased by the entrepreneur; and 5) a write-off, in which the investor abandons the investment (MacIntosh, 1997).

Cumming and MacIntosh (2001) find that VC investments in Canada have longer duration than in the United States for each development stage of the investee firm and form of each exit vehicle. This evidence supports the view that “there exists lower skill level among Canadian venture capitalists, and greater institutional barriers to efficient investment duration in Canada.” Among the latter are “lower liquidity of secondary trading markets, Canadian legislation establishing LSVCCs, and onerous escrow and hold period requirements” (ibid.). These are factors that constrain the development of “smart” value-added venture capital investment activity in Canada.

In descending order of firm quality, as measured by the firm’s market/book ratio, the normal pattern of exits would be IPOs, acquisitions, secondary sales, buybacks, and write-offs (Cumming and MacIntosh, 2000). The most lucrative way to liquidate a venture capital investment is via an initial public offering (IPO). As Chart 9 shows, the return on investment of equity in firms taken through an IPO is the highest of all forms of disposition of venture investments. IPOs provided a multiple of 4.19 times the cost of the original investment in the 687 venture capital dispositions in Canada in 1997 and 1998. Acquisitions and secondary sales (sale of shares to others) provided the second most profitable group of exit routes, with multiples of 2.05 and 1.95. Company buybacks and mergers yielded relatively modest multiples of 1.27 and 1.14, respectively (Chart 8).<sup>5</sup>

IPOs are not the most frequently used means of disposing of venture investments in Canada. Of the 687 dispositions in 1997 and 1998, only about 10% were accomplished through IPOs and subsequent sale of shares. About 9% of dispositions were acquisitions of investee firms by third parties, 2% were mergers, 10% were writeoffs, and 23% were secondary sales. Nearly half were buybacks (ibid.).

In 1999, 92 IPOs were completed in Canada, of which 24 were in the Technology & Media sector and 7 in the Life Sciences sector. In 2000 Canada had 101 completed IPOs, of which 35 in Technology & Media and 11 in the Life Sciences sector (PWC, 2001, 2000). The number of

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<sup>5</sup> In a comparison of Canadian and U.S. venture capital investments, Cumming and MacIntosh find much higher average annual rates of return in the U.S. on investments using IPOs, acquisitions, and buybacks as exits. Canadian venture capital investments have a higher rate of return than their U.S. analogues when exiting via secondary sales.

advanced technology IPOs was six or seven per year in 1999 and 2000. The number of dot-com IPOs in Canada was very low – one in 1999 and five in 2000. IPO activity declined to the lowest point in a decade in 2001. Many Canadian VC firms have postponed IPOs for their technology-based holdings.

The Canadian Venture Exchange (CDNX) was created from the amalgamation of the Alberta and Vancouver Stock Exchanges in 1999 and in May 2001 was acquired by the Toronto Stock Exchange as a national junior exchange to provide access to small amounts of risk capital from angels and small investors. Technology, mining, and oil and gas securities are traded on the CDNX. In 2000 this exchange raised about \$2B in capital. About a third of new listings on the TSE are graduates of the CDNX. The main problem in Canada with establishment of a national junior venture exchange is the cost of listing in up to thirteen separate jurisdictions. The cost of raising a million dollars can therefore be as high as \$100,000 (Volker, 2001).

It seems possible that exits in the United States may become increasingly attractive to Canadian VC investors and entrepreneurs. Direct issuing costs on the TSE (fees and commissions) are lower than on the NASDAQ or NYSE. Indirect costs due to underpricing are also lower. It is complex and costly to go public simultaneously in both countries. In 1999 and 2000 only two Canadian companies listed exclusively on NASDAQ, and eight listed simultaneously on NASDAQ and the Toronto Stock Exchange (TSE). However the increasing involvement of U.S. venture capital in Canada will increase the availability of opportunities for successful IPOs in the U.S. for Canadian companies.

With the decline in opportunities to exit via an IPO, investors must face the problem of how to liquidate their investments. For holders of technology shares, acquisition looks like an attractive option. Most of the acquirers are foreign companies, raising the issue of what are the longer-term benefits to Canada if pathways to growing indigenous multinational firms are blocked. Increased involvement of pension funds in the market for Canadian technology equities would be good news for many.

## **CONCLUSIONS**

During the 1990s the pool of venture capital under management in Canada more than quadrupled from less than \$3 billion to more than \$12 billion, increasing again by about 50% in the boom year 2000. The Canadian venture capital industry underwent a process of deep maturation during the 1990s. The industry accumulated critical experience and competencies with respect to technology investing, syndication, internationalization of investment flows, specialty management within several kinds of investment firms, and extension of VC investment capability to a half-dozen Canadian city regions. The result is an institutionally heterogeneous industry that is currently managing close to \$20 billion in venture investments.

In every country, the VC industry is very sensitive to fiscal and regulatory arrangements. In the mid 1980s, Canadian governments induced a significant infusion of venture capital investment with the introduction of legislation establishing LSVCCs and the tax incentives that make them attractive vehicles to retail investors. LSVCCs have economic and social development mandates that make them invest differently from other kinds of VC firms. To develop in Canada the kind

of knowledgeable, proactive “best-in-class” VC investment capability found in the United States, the Canadian tax system will have to offer analogous kinds of incentives for involvement in risky ventures that produce significant capital appreciation. The Canadian federal government has taken several steps since 1999 to make capital gains tax less of an inhibitor of venture investing. In general it appears that the policy system has taken notice of the importance of venture investing, but the modernization of aspects of the financial infrastructure that are embedded in Canadian intergovernmental relations does not lend itself to rapid solutions.

The involvement of Canadian pensions funds in venture investing remains a looming issue. Pension funds have significantly increased their contribution to venture capital in Canada during the 1990s but the rate of pension participation in venture financing is still low, compared to the United States. To accommodate the fiduciary needs and responsibilities of pension funds, U.S. VCs and pension fund managers developed best practices, third-party pools, private placement databases providing market information, and “a human resources component producing diverse investment specialists, intermediaries, market experts (known as gatekeepers) who act solely on behalf of fiduciary interests, and deal-making agents” (Falconer, 2000). These are areas in which Canada can learn from the United States’ experience in developing a VC industry.

The Canadian venture capital industry has experienced a significant internationalization through syndication or strategic alliances with foreign, primarily American, VCs. Although Canada exports capital, most of the international flows are inbound. Very little is known about the dynamics or implications of these international venture capital flows on formation and growth of Canadian firms. This is certainly an emerging theme of practical and theoretical significance.

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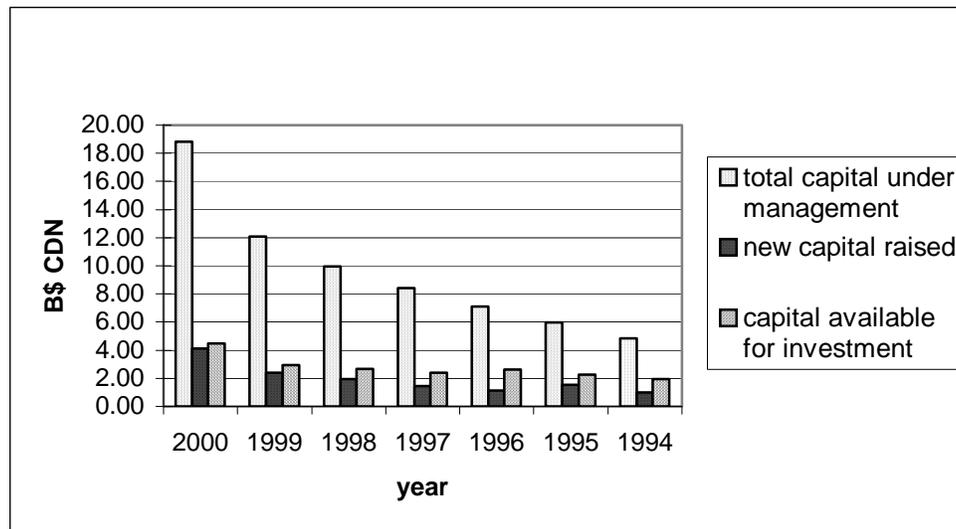
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Figure 8.1 Financing needs throughout the technology venturing process

Stage of growth	Research	Seed	startup	Early growth	expansion
equity	Public or private grants	Founder capital/love money	Founder capital/Love money	mezzanine	mezzanine
		Zero-stage investment	First stage Venture capital	Venture capital	IPO
debt	contracts	Working capital	Working capital	Working capital	
			Export financing	Export financing	Export financing
	Tax credit financing	Tax credit financing	Tax credit financing	Tax credit financing	
				Growth capital	Growth capital

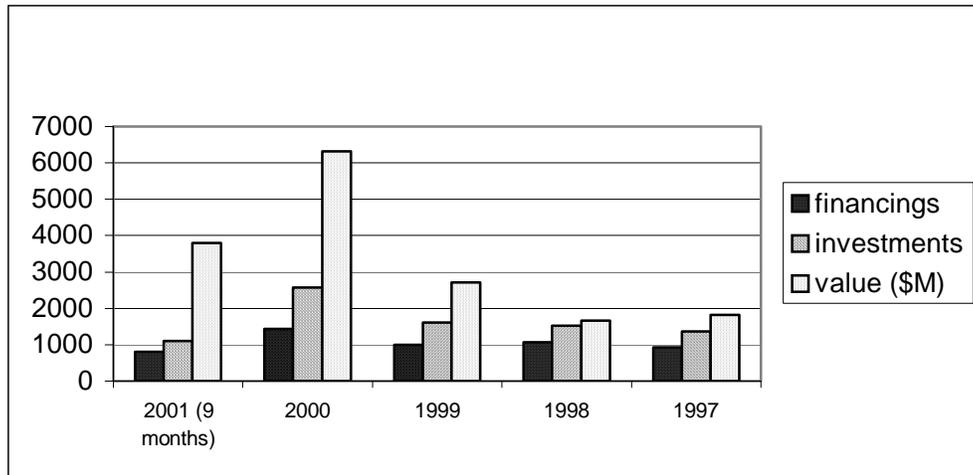
Source: adapted from Secor (1998)

Figure 8.2 Venture capital in Canada, 1994-2000



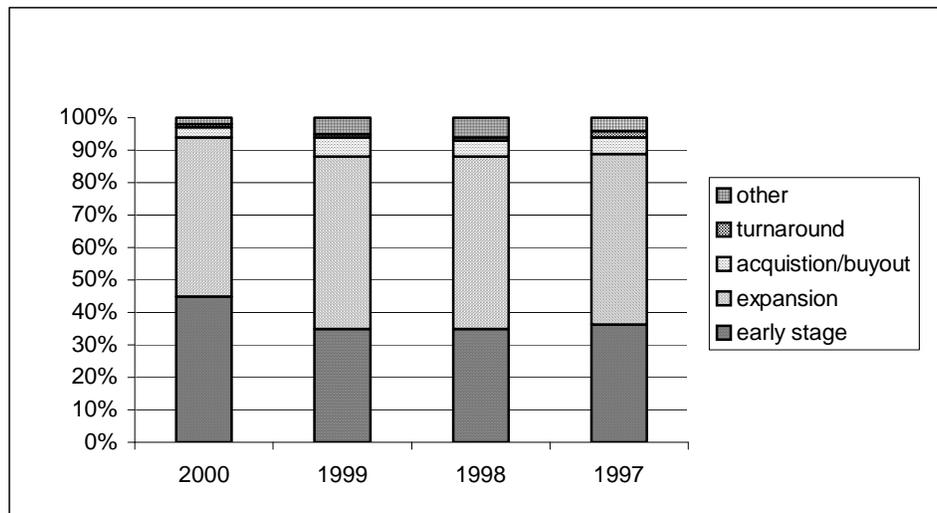
Source: compiled from publications of the Canadian Venture Capital Association and Macdonald and Associates.

Figure 8.3 Canadian Venture Capital Activity, 1997-2001



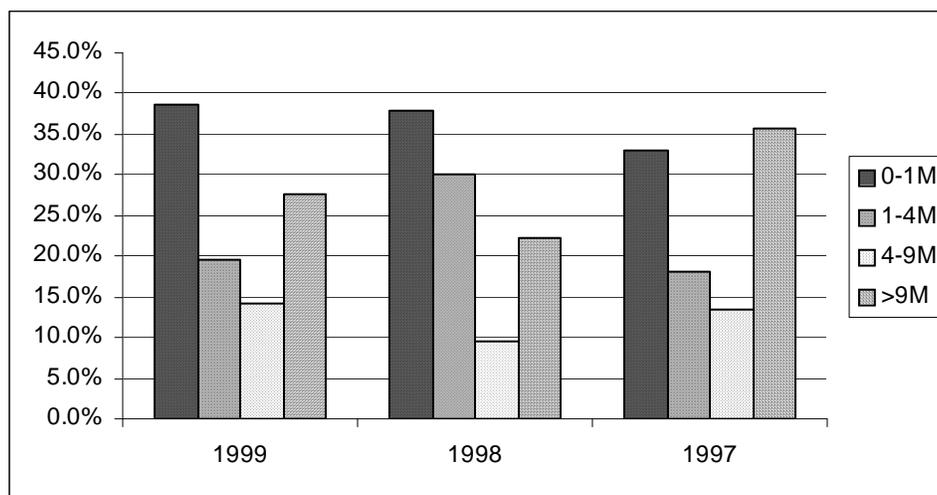
source: compiled from publications of the Canadian Venture Capital Association and Macdonald and Associates.

Figure 8.4 Venture capital investments (as percentage of dollars disbursed annually) by stage of investment



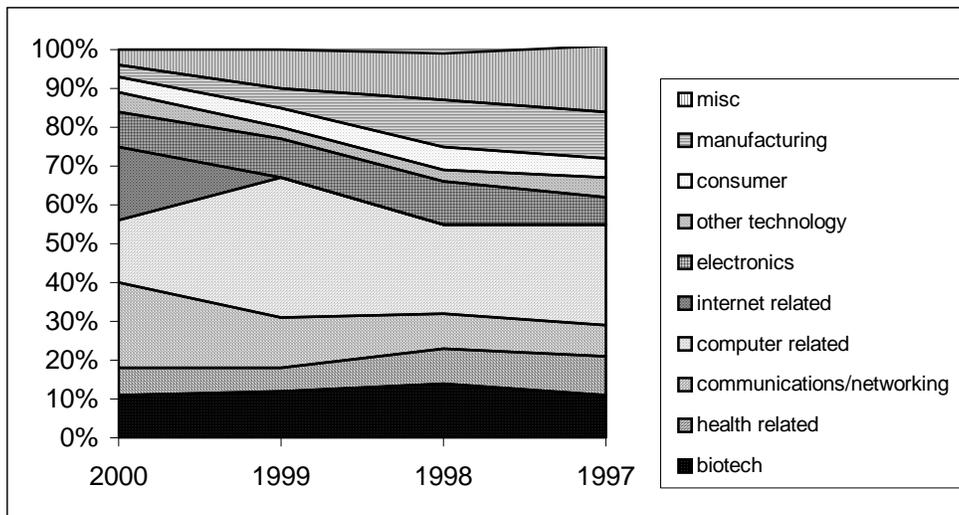
source: compiled from publications of the Canadian Venture Capital Association and Macdonald and Associates.

Figure 8.5: Venture investments (as percentage of dollars disbursed) in Canada by revenue of recipient firm in millions of dollars, average 1997-1999



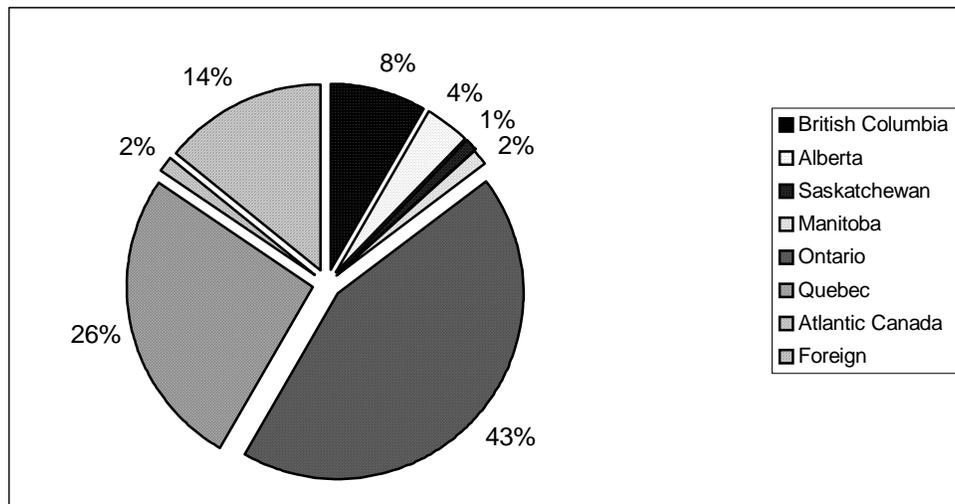
source: compiled from publications of the Canadian Venture Capital Association and Macdonald and Associates.

Figure 8.6: Sectoral composition of Canadian venture capital investments (in terms of dollars disbursed annually), 1997-2000.



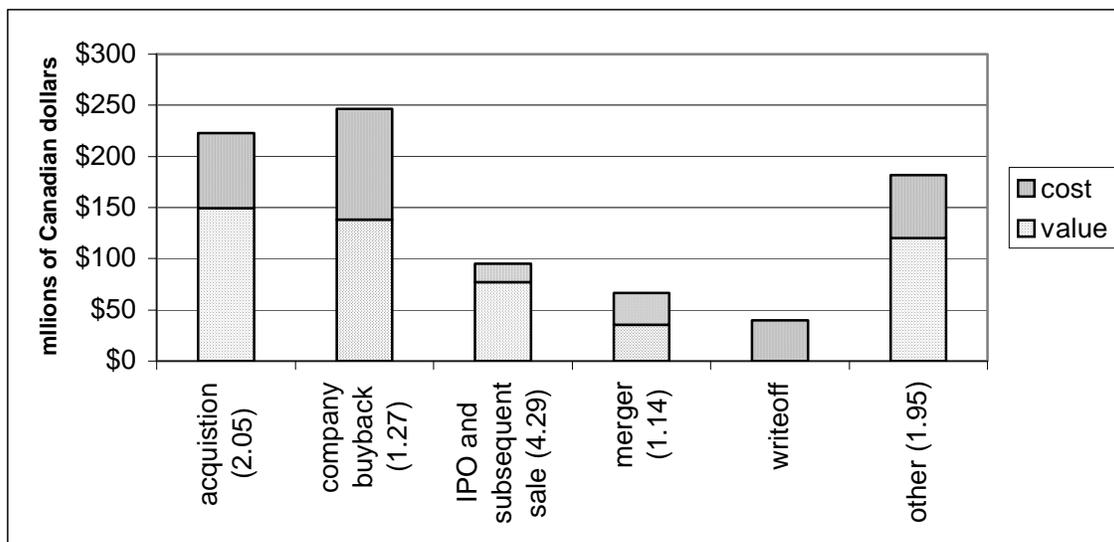
source: compiled from publications of the Canadian Venture Capital Association and Macdonald and Associates.

Figure 8.7 Regional Distribution of Venture Investments (in terms of dollars disbursed) in Canada, 1997-2000



source: compiled from publications of the Canadian Venture Capital Association and Macdonald and Associates.

Figure 8.8 Venture Investment Dispositions, Canada, average of 1997 and 1998



Numbers in parentheses show the ratio between the cost of investment and the value when liquidated. Source: calculated from publications of the Canadian Venture Capital Association and Macdonald and Associates.