



Government
of Canada

Gouvernement
du Canada

Initial Public Offerings: Status, Flaws and Dysfunctions



Research Paper prepared for the Small Business Policy Branch
Industry Canada as part of
the Small and Medium-sized Enterprise (SME) Financing Data Initiative

by

Cécile Carpentier

Maher Kooli

Jean-Marc Suret

CIRANO and Université Laval

April 2003

Canada 

For additional copies of this publication, please contact:

Publishing and Depository Services
Public Works and Government Services Canada
Ottawa ON K1A 0S5

Tel. (toll-free): 1 800 635-7943 (Canada and U.S.)
Tel. (local): (613) 941-5995
TTY: 1 800 465-7735
Fax (toll-free): 1 800 565-7757 (Canada and U.S.)
Fax (local): (613) 954-5779
Email: publications@pwgsc.gc.ca

This publication is available upon request in accessible formats. Contact:

Multimedia and Editorial Services Section
Communications and Marketing Branch
Industry Canada
Room 252D, West Tower
235 Queen Street
Ottawa ON K1A 0H5

Tel.: (613) 948-1554
Fax: (613) 947-7155
Email: multimedia.production@ic.gc.ca

This publication is also available electronically on the World Wide Web at the following address:
<http://strategis.ic.gc.ca/epic/internet/insbrp-rppe.nsf/en/rd01419e.html>

Permission to Reproduce

Except as otherwise specifically noted, the information in this publication may be reproduced, in part or in whole and by any means, without charge or further permission from Industry Canada, provided that due diligence is exercised in ensuring the accuracy of the information reproduced; that Industry Canada is identified as the source institution; and that the reproduction is not represented as an official version of the information reproduced, nor as having been made in affiliation with, or with the endorsement of, Industry Canada.

For permission to reproduce the information in this publication for commercial redistribution, please email:
copyright.droitdauteur@pwgsc.gc.ca

Cat. No. Iu188-18/2006E-PDF
ISBN 0-662-43172-3
53234E

Aussi offert en français sous le titre *Les émissions initiales au Canada : bilan, anomalies et dysfonctions.*

SUMMARY

Access to public financing is a key factor in the development and growth of businesses. This stage enables a business to benefit from a permanent source of capital and reduce its equity costs. This is especially important in a knowledge economy where the intangible nature of major assets limits the use of debt financing. The development of a method of exit for venture capital investors and a dynamic stock market are other arguments favouring the stimulation of primary offerings. The primary issues market is thus essential for businesses mature enough to make use of it, but also for more junior businesses because it helps to improve early-stage financing conditions. Over the past two decades, various initiatives have been launched by governments and self-regulating agencies to facilitate public financing of new businesses in Canada. The Quebec Stock Saving Plan, stimulation of the venture capital supply, the gradual relaxing of minimum standards for stock market listings and the Capital Pool Companies program all flow from this desire to facilitate the public financing of growth businesses.

Despite the importance of this type of financing for businesses and the efforts made to develop it, there are very few recent studies on the various forms of access to public financing in Canada, and what research there is, is limited to share offerings followed by listings on the Toronto Stock Exchange. This makes it difficult to gauge the outcomes of the various initiatives and redirect public policy in this area. To partly fill this gap, this study offers a complete picture of primary offerings in Canada by operating companies and CPCs from 1991 to 2000, based on the identification and analysis of 1,891 share issues. The short- and medium-term behaviour of the securities and issuing costs are evaluated for traditional issues. We also draw a comparison with the activity in this area in the United States and attempt to establish the connection between venture capital and primary issues.

In the first part of the paper, we show that primary issues are proportionally fewer in Canada than in the United States and that the capital raised is appreciably less after standardization by GDP. Canada is a market of very small issues. However, including issues arising from privatization and demutualization in figures can partially obscure this phenomenon, as such issues account for a major percentage of the total gross proceeds raised in the 1990s. Issues by subsidiaries of already listed companies also account for major amounts, further reducing the measurable issuing activity of completely new businesses. Paradoxically, big corporations do not seem to make frequent use of the primary issues market.

The gap between primary issues in Canada and those in the US is even more pronounced in the field of technology. And it is even wider than first appears in that the main Canadian technology stock offerings are by subsidiaries (Bell, AT&T) and not by new companies.

We go on to review a number of possible explanations for the deficiency in Canadian primary issues, including high costs, medium-term performance and regulation.

The second part of the study looks at direct and indirect issuing expenses, including initial underpricing. Size being equal, direct issuing costs are lower in Canada than the general rule in the United States. However, primary issue costs seem to be very high for small businesses, which may have a significant impact on their competitiveness.

The performance of primary issues in Canada is disappointing. In this respect, it is no different from issues in other developed markets. However, the medium-term return on small issues is about -50% over the first five years following the offering, and the five-year survival rate is around 60%, for issues from the early 1990s. It seems plausible to associate the mediocre performance of IPOs in Canada with the fact that they are made by small companies that often have very short track records. These companies have not been able to develop and build up a competitive edge, which is the key factor for creating wealth and increasing value. In many cases, these issues are too small to command a sufficiently liquid market and adequate coverage by financial analysts.

In the final part of this paper, we get into the implications of these observations in terms of government action and market regulation. The operation of the primary issues market seems to be hampered by a number of major problems, the main one being the low survival and growth rate of small businesses making initial public offerings. We estimate that 5.9% of small issues lead to a business that can claim big business status within five to ten years. The policy of stimulating the listing of small businesses should be re-evaluated. The emphasis should be on mechanisms that would allow IPOs to be deferred until businesses have had a reasonable chance to ensure they can survive. Stress should be placed on developing a capital supply prior to the issue.

The arguments in favour of lightening the regulatory burden for small issues should also be reviewed in the light of these findings. The success rates of primary issues are similar to those of venture capital. However, this form of financing is handled by experts, which is not the case with primary issues, which are bought by institutional but also individual investors. There would seem to be no justification for relaxing the conditions for primary issues. Lastly, small primary issues in all likelihood have a negative effect on the market. They perform poorly and hamper liquidity.

Primary issues nonetheless remain few in number compared with those in the US, which may seem paradoxical given the efforts made by the different governments to increase the venture capital supply. It may be that the fragmentation of this supply is one of the factors accounting for the relative rarity of IPOs involving venture capital firms. The role of government in the area of venture capital supply needs to be revisited.

TABLE OF CONTENTS

SUMMARY	I
1.1 INTRODUCTION.....	3
1.1.1 <i>Problems with measurements and definitions</i>	<i>3</i>
1.1.2 <i>Canadian research on primary issues.....</i>	<i>7</i>
1.1.3 <i>Summary of major studies conducted worldwide.....</i>	<i>8</i>
1.2 CANADIAN STOCK ISSUES	10
1.2.1 <i>Overview by class of issues</i>	<i>10</i>
1.2.2 <i>Main features.....</i>	<i>11</i>
1.2.3 <i>“Hot” issuing periods.....</i>	<i>15</i>
[Legend: Number, GP].....	<i>17</i>
1.2.4 <i>Creation and disappearance of Canadian businesses.....</i>	<i>17</i>
1.2.5 <i>Technology offerings.....</i>	<i>18</i>
1.3 SHARE OFFERINGS IN CANADA AND THE US	20
1.3.1 <i>Problems with measuring US activity</i>	<i>20</i>
1.3.2 <i>General comparisons</i>	<i>20</i>
1.3.3 <i>Technology stock offerings.....</i>	<i>21</i>
1.4 CONCLUSION	24
2. COSTS OF STOCK OFFERINGS	25
2.1 OVERVIEW AND LITERATURE REVIEW	25
2.2 DIRECT AND TANGIBLE COSTS	25
2.2.1 <i>Components.....</i>	<i>25</i>
2.2.2 <i>Measurement problems</i>	<i>25</i>
2.2.3 <i>Statistical analysis of direct costs.....</i>	<i>26</i>
2.2.4 <i>Effects of size, sector and broker.....</i>	<i>28</i>
2.3 INITIAL UNDERPRICING.....	28
2.3.1 <i>Overall measurement</i>	<i>28</i>
2.3.2 <i>Effect of size and other characteristics</i>	<i>29</i>
2.4 CONCLUSION	31
3. MEDIUM-TERM PERFORMANCE	33
3.1 SURVIVAL AND GROWTH.....	33
3.2 MEASUREMENT PROBLEMS.....	36
3.3 MEDIUM- AND LONG-TERM PERFORMANCE OF ISSUES.....	36
3.4 ISSUE SUCCESS FACTORS.....	38
3.4.1 <i>Size</i>	<i>38</i>
3.4.2 <i>Issuing periods</i>	<i>38</i>
3.4.3 <i>Technology sector</i>	<i>39</i>
3.5 FOREIGN EXPERIENCES.....	39
3.6 CONCLUSION AND POLICY IMPLICATIONS.....	41
4. IMPLICATIONS FOR REGULATION AND INTERVENTION.....	43
4.1 THE LOWERING OF MARKET LISTING STANDARDS.....	43
4.1.1 <i>Process of change.....</i>	<i>43</i>
4.1.2 <i>Issue performance and lowering of standards</i>	<i>44</i>
4.1.3 <i>Monitoring by analysts.....</i>	<i>44</i>
4.2 VENTURE CAPITAL AND PRIMARY ISSUES.....	46
4.2.1 <i>Paradox.....</i>	<i>46</i>
4.2.2 <i>Pre-IPO financing.....</i>	<i>47</i>
4.2.3 <i>Venture capital fragmentation.....</i>	<i>48</i>
4.3 INSTITUTIONAL INVESTORS	48
4.4 BROKERAGE	49
4.5 CONCLUSION	51

INTRODUCTION

Access to public financing is a key factor in the development and growth of businesses. This stage enables a business to benefit from a permanent source of capital to finance its expansion. Moreover, by eliminating the risk associated with its securities' lack of liquidity, a business that takes advantage of this type of financing reduces its equity costs. This is especially important in a knowledge economy where the intangible nature of major assets limits the use of debt financing. The development of a method of exit for venture capital investors and a dynamic stock market are other arguments favouring the stimulation of primary issues. As Riding (1998) emphasizes, an efficient IPO mechanism offers the prospect of a profitable exit for early-stage investors and therefore encourages risk taking. The primary issues market is thus essential for businesses mature enough to make use of it, but also for more junior ones because it helps to improve early-stage financing conditions. Over the past two decades, various initiatives have been launched by governments and self-regulating agencies to promote public financing for new businesses in Canada. The Quebec Stock Saving Plan, stimulation of the venture capital supply, the gradual relaxing of minimum standards for stock market listings and the Capital Pool Companies¹ program all flow from this desire to facilitate the public financing of growth businesses.

Despite the importance of this type of financing for businesses and the efforts made to develop it, there are very few recent studies on the various forms of access to public financing in Canada, and what research there is, is limited to share offerings followed by listings on the Toronto Stock Exchange. This makes it difficult to gauge the outcomes of the various initiatives and redirect public policy in this area. To partly fill this gap, this study offers a complete picture of primary issues in Canada by operating companies and CPCs from 1991 to 2000, based on the identification and analysis of 1,891 share issues. The short- and medium-term behaviour of the securities and the issuing costs are evaluated for traditional issues. We draw a comparison with the activity in this area in the US and attempt to establish the connection between venture capital and primary issues. This work is consistent with the priorities of the federal government, which feels it should have “more and better statistics on and analysis of small and medium-sized business financing to provide a better understanding of their needs”² and thus better develop the Canadian financial system.

The main thrusts, which are covered in separate parts of the study, are as follows.

Part I comprises an overview, followed by a breakdown of the topic, along with a comparative analysis of Canadian and US issues, mainly in the technology sector, and observations about measurement and tracking problems.

¹ Created initially as “junior capital pools,” these firms became “venture capital pools” and then “capital pool companies” when the program was approved by the CDNX and are now authorized in Quebec as “sociétés de capital de démarrage” (SCDs). We use the acronym CPC to identify them, although the regulations governing successive versions of this program have changed with time and jurisdictions.

² Finance Canada: *Reforming Canada's Financial Services Sector - A Framework for the Future*, 2001: <http://www.fin.gc.ca/finserv/docs/finserv4e.html>

Part 2 looks at direct and indirect issuing costs, including initial underpricing. Here again, comparative data are presented.

Part 3 contains a medium-term analysis of the performance of issues.

Finally, in Part 4, we get into the implications of our observations in terms of government action and market regulation, as the study reveals major dysfunctions in the primary issues market for small businesses, especially in the technology sector. Share offerings under CPC programs are listed and briefly discussed, although we stop short of an in-depth analysis, as these issues are part of a very special world that is particularly hard to analyze given the lack of reliable data.

1. OVERVIEW AND COMPARISONS

1.1 Introduction

Before going into an in-depth look at Canadian primary offerings (initial public offerings, or IPOs), it is necessary to define a few terms and look at certain problems involving definitions and measurements. A number of studies have been conducted in Canada in recent years. They are reviewed, then the main conclusions of US and international studies are examined.

1.1.1 Problems with measurements and definitions

An IPO is a process whereby a company raises capital by issuing shares to investors and subsequently becoming listed on a stock exchange. This is the most conventional way of making the shift from private company to open or public company. There are other ways, such as reverse takeovers or mergers with already listed companies, but these are not discussed here. Primary issues involve complex procedures that are adjusted as necessary along the way, potentially affecting amounts, prices and the issues themselves. Some are withdrawn, but remain on the official lists. Name and status changes are very common, especially for CPCs and small issues. Various sources will therefore often report different data, which explains the lack of exhaustive studies.³ In conducting our study, data were systematically checked, but in a number of cases it was impossible to obtain all of the information about share issues or track the shares issued. Some of our analyses thus deal with subsets of the starting sample, which results in bias, especially for the period preceding the introduction of SEDAR.

The presence of CPCs and the very limited size of many conventional issues lead to some difficult problems in terms of international comparisons. Most US databases list only issues of shares priced at or over \$5, likely as a result of US regulations. The 1996 *National Securities Market Improvement Act* (NSMIA) distinguishes between “covered securities” and securities that are “not covered securities.” The former come under the SEC. These are conventional issues that lead to the listing of the securities on national markets like the NYSE or NASDAQ. Securities that are “not covered securities” come under the states and are governed by Rules 504 and 505 of Regulation D as well as Rule 147 for intrastate offerings. Offerings of this type can, however, involve amounts of up to US\$20 million. American studies are based solely on offerings under the SEC. It is, however, possible to identify a large percentage of US issues of shares priced between \$1 and \$5. We did this for some years.

It is virtually impossible to identify US issues of shares valued at under \$1, which come under state regulations and specific programs like SCOR (Small Capital Offering Regulation). In Canada, more than three out of four offerings fall within this category. The Canadian primary issues market is thus largely comparable to the local US issues market and comparisons have to take that into account.

³ This phenomenon is not limited to Canada. American writers have a great deal of difficulty producing consistent figures. Figures for US issues differ appreciably in Ritter (1998), Ritter (2003) and Ritter and Welch (2002). For 1996, for example, the 1998 article reports 845 IPOs, while the 2003 article reports 666 (Table 5) and the 2002, 621 (Table 1).

Moreover, even though they are officially listed as IPOs, some issues are hard to view as primary share issues in the conventional sense, as they stem from demutualizations or privatizations, or are conducted by big business subsidiaries created for the purpose. We also look at foreign issues of shares in Canada and Canadian issues abroad. We end with a brief description of the Capital Pool Company program, which accounts for nearly half of all primary issues in recent years.

What is an IPO?

The official list of IPOs in Canada is published by the *Financial Post*.⁴ However, this list covers offerings by mutual funds, trust companies and subsidiaries as well as independent operating companies. Offerings arising from demutualizations or floated by subsidiaries of existing companies are also listed. These offerings use various investment vehicles. It is thus advisable to define the IPOs warranting in-depth analysis.⁵

For the purposes of this study, IPOs are operations leading directly to an increase in the equity capital of an operating company or CPC. Mutual fund issues are therefore not included, since the funds they raise are used to acquire securities already issued. For the same reason, we leave out trust company offerings. This exclusion has major effects on the total amounts listed, as trust companies alone raised nearly \$20 billion between 1991 and 2000. Land trusts (REITs) are also excluded, along with some rare venture capital company offerings.

Included in the study are offerings by subsidiaries, which often involve significant amounts. Since a subsidiary is majority owned by an already listed company, such offerings are not initial offerings for the group. This applies, for example, to Bell Canada International, 74% owned by BCE and responsible for one of the biggest share issues of the period (\$466 million in 1997). These transactions have been included, since they are not dealt with separately in studies conducted in other countries. However, these offerings may behave very differently from other issues.

While almost all studies show that primary offerings have an abnormally negative performance in the medium term, Cusatis *et al.* (1993) highlight a strongly positive pattern in the case of offerings by subsidiaries. The accumulated yield over market after three years is 33.6%, whereas this figure tends to be very negative for offerings as a whole. The relatively major weight of offerings by subsidiaries in Canada may skew the results of empirical analyses by lowering the negative performance of securities in IPOs.

Individual securities

A number of investment vehicles are used for IPOs. The most widely used is the common share, but various other types are in general use and dealt with here as follows.

- Issues of restricted voting shares provide limited or no voting privileges. These have been included with issues of common shares, as they do not differ in terms of residual equity.

⁴ *Financial Post, Record of New Issues*, Toronto, 1991-2000.

⁵ It is also important to have our definitions match the ones generally used in US studies, to make comparison possible. The offerings excluded here are also excluded by Ritter (1998).

Preferred share issues offer holders the right to receive a fixed dividend before any dividends are paid on common shares, and preferred shareholders are also entitled to a portion of the company's residual assets if it is wound up. IPOs of preferred shares are highly infrequent and accounted for in this study as a separate item in the "other" category.

- Flow-through shares issued by oil, gas and mineral exploration companies allow for certain tax deductions for qualifying exploration and development costs that can "flow through" from the company to shareholders. These offerings are grouped in the "other" category with units and warrants. The warrants included in units give the bearer the right to acquire a fixed number of further securities at a set price for a fixed period of time. Offerings of limited partnership units represent interests in a partnership consisting of a general partner, who manages the partnership, and limited partners, who provide the investment capital. The liability of the limited partners is limited to the value of their initial investment, provided they do not become involved in management. Limited partnerships generally invest in a specific industry sector (like real estate or oil and gas) and often bring some tax benefits that can "flow through" from the partnership to the limited partners. They have not been included with IPOs, and are also left out of the US studies.
- Trust unit offerings represent interests in the net assets and net income of a trust. These trusts are set up to invest in real property (real estate investment trusts), royalties from oil or gas production (royalty trusts) or the income generated from one or more businesses (income trusts). Since the proceeds of these issues do not directly increase the companies' capital, we do not consider them IPOs. The same goes for investments made by mutual funds. The treatment given these various classes of securities is recapped in Appendix 1.

Demutualizations

Demutualization is a process by which eligible mutual insurance company policyholders become shareholders in a company with common shares.⁶ In 1999 and 2000, the following five mutual life insurance companies were demutualized and appear in our lists:

Name	Issue Date	Gross Proceeds (\$)
Canada Life Financial Corp.	04-11-99	523,250,000
Clarica Life Insurance Company	21-07-99	951,377,366
Industrial-Alliance Life Insurance Company	10-02-00	339,806,250
Manulife Financial Corporation	30-09-99	1,566,381,088
Sun Life Financial Services of Canada	27-03-00	1,166,773,675

We have considered these companies separately in our analysis since, although seemingly initial public offerings, they actually involve an exchange of interests in a mutual company for shares, without any net capital contribution. The gross proceeds of demutualization issues are very high

⁶ <http://www.sunlife.com/slcorp/genericpage/>

compared with average proceeds from conventional IPOs and have to be dealt with properly to avoid distortions.

Privatizations

Offerings arising from privatizations also have a major influence on the data, in that they are large in size, yet do not provide any new capital for the privatized corporations. Privatization involves a transfer of activities from the federal, provincial or municipal public sector to the private sector. Canadian governments began to privatize their corporations in the mid-1980s, and in 1995 the federal government floated an initial public offering to privatize the shares of the national railway. According to Levac and Wooldridge (1997, p. 29),⁷ to obtain a higher selling price that included a premium for acquiring control of the enterprise, most privatizations in Canada have taken the form of direct buyouts by existing private businesses rather than IPOs. We were able to identify only five offerings arising from privatization between 1991 and 2000, for total gross proceeds of \$4,690.01 million. These were:

Name	Issue Date	Gross Proceeds (\$)
Petro-Canada	1991-06-25	546,062,192
Cameco Corporation	1991-07-11	120,000,000
Nova Scotia Power Inc.	1992-07-29	851,346,660
Canadian National Railway	1995-11-28	2,262,600,000
Manitoba Telecom Svc	1997-01-07	910,000,000

We have kept these privatizations separate for the purposes of our analysis, as they did not yield any new capital for the corporations.

For purposes of this study, the amounts included in gross proceeds from share offerings represent the total raised through the offerings, regardless of the country of residence of the buyer. Offerings conducted totally in the US by Canadian businesses are merely recorded, whereas offerings conducted simultaneously in both countries are included in the sample. Securities sold in Canada through issues by US companies are also included.

Offerings under the Capital Pool Company program

A large number of Canadian primary issues come under the CPC program. These issues differ substantially from the traditional IPO. The first CPC program, then known as the Junior Capital Pool, was launched in Alberta in November 1986 by the Alberta Securities Commission and Stock Exchange. In 1997, the British Columbia Securities Commission and Vancouver Stock Exchange launched a similar program, known as the Venture Capital Pool. The current CNDX program was started on March 1, 2000 to replace the two earlier ones following the merger of the Vancouver and Alberta stock exchanges in November 1999. It is the product of a joint effort by the Alberta, Saskatchewan, Manitoba⁸ and British Columbia securities commissions and the

⁷ <http://www.bankofcanada.ca/publications/review/r973a.pdf>

⁸ The Winnipeg Stock Exchange joined the CNDX in November 2000. It had previously been running a similar scheme called the Keystone Company program.

CDNX.⁹ The program was then taken up by Ontario and Quebec, undergoing changes each time. According to CDNX Policy 2-4,¹⁰ the objective of the CPC program is to provide businesses with an instrument for speedier financing than the traditional IPO route.

This program allows for the creation of a shell company (capital pool) with a stock exchange listing without any operating track record or assets other than cash, for the sole purpose of identifying and acquiring small private companies. Once this “qualifying transaction” has been completed, the new entity can be listed on the exchange under the regular rules. The CPC offerings therefore correspond to the shell company’s listing on the stock exchange. There are various restrictions on these offerings, including the following for the period that interests us:

- The amounts raised must be not less than \$200,000 and not more than \$500,000; the minimum price per share is \$0.15;¹¹ directors and senior officers must contribute \$100,000 to \$500,000 in start-up capital; this start-up capital plus the amount raised through the IPO cannot exceed \$700,000; this money must be used exclusively to identify and complete a transaction that will result in a listing on an exchange;
- The only business permitted to be undertaken by the shell company is the identification and evaluation of assets or businesses with a view to completing a transaction. It cannot own assets other than cash;
- The directors must possess expertise in managing publicly held businesses, this being considered the prime asset of the capital pool.

Offerings under the CPC program are included in this study, but analyzed separately due to their very special characteristics. Their medium-term performance is not examined, owing to the major distortions resulting from the “qualifying transactions.”¹²

1.1.2 Canadian research on primary issues

Canadian studies on primary issues are relatively scarce and tend to focus on the problem of initial underpricing, as shown by Jog and Riding (1987), Suret *et al.* (1990), Jog and Srivastava (1994) and Jog (1997). According to Jog and Riding (1987), short-term performance following the initial listing of a security was 11.5% in the period 1971-1983. Suret *et al.* (1990) place average underpricing at 12% for 86 Ontario primary issues in the period 1979-1985, though underpricing was not seen in 63 issues eligible for the Quebec Stock Saving Plan (RÉAQ) during this period, probably as a result of associated tax benefits. Jog and Srivastava calculate average underpricing of 5.67% for the period 1984-1992. Jog extends the study by Jog and Srivastava

http://www.osc.gov.on.ca/en/Regulation/Rulemaking/Policies/pol_41-601_20020412_np.pdf

⁹ A CPC can be initiated by residents of another province, but the CPC shares cannot initially be acquired by anyone who is not a resident of one of these four provinces.

¹⁰ <http://www.cdnx.com/listing/corpfinanceppmanual/defaultpolicies.htm>.

¹¹ The CDNX Capital Pool raised the maximum issue size from the \$300,000 set by the two earlier programs to \$500,000, and the minimum issue price from \$0.10 to \$0.15.

¹² Inasmuch as the CPCs have no commercial activity of their own, it would be more appropriate for the issue conducted on completion of the “qualifying transaction” to be an IPO.

(1994) to cover offerings in 1993-1994, noting average underpricing of 7.89%. He stresses that underpricing of primary issues in Canada seems to be declining. Between 1971 and 1983, 62% of primary issues were underpriced, compared with 47% for the period 1984-1992. According to Jog and Srivastava and Jog, there is no need for concern by Canadian decision-makers about the phenomenon of underpricing of primary issues or its potential impact on companies' plans to make public offerings. However, these studies look only at offerings listed on the Toronto Stock Exchange.

Falk and Thornton (1992) place adjusted average initial underpricing at 19% for primary issues on the Toronto Stock Exchange between 1983 and 1988, 25% for those listed on the Montreal Exchange and 307% for issues listed on the Alberta Stock Exchange, including a number of CPCs. The major differences between offerings in the various jurisdictions justify the broader analysis being carried out here. The report prepared by Groupe SECOR Inc. for the Task Force on the Future of the Canadian Financial Services Sector (SECOR, 1998) does not point to any problem with the operation of the primary issues market in Canada.

However, the report does stress a structural lacuna relating to equity capital for amounts under \$1 million.¹³ MacIntosh (1994) shows the significant costs of IPOs, especially for small issues, and produces some evidence that Canadian companies use primary issues less readily than US companies. Admittedly, the studies cited deal mainly with the 1970s and 1980s. Here again, a study of recent activity is needed.

1.1.3 Summary of major studies conducted worldwide

A review of the countless studies conducted in the US on various aspects of primary issues is beyond the compass of this study and so we will limit ourselves to highlighting the main findings. Syntheses do exist, for example by Ritter (1998) and Ritter and Welch (2002) for the US market and by Jenkinson and Ljungqvist (2001) for other markets.¹⁴ The main findings of the research on IPOs can be organized into four major topics. The first is the issuing activity itself, especially its cyclical nature. The second is the cost of issues, especially the initial underpricing, which is a major factor. The second part of this study looks at this phenomenon and reviews earlier research. The third topic is medium-term performance and, more recently, the survival of new issues. Studies on this topic are discussed in the third part of this paper. Lastly, an emerging component deals with issuing mechanisms.

Issuing activity

Primary issue activity in the various markets is highly cyclical, with “hot” periods succeeding “cold.” In hot periods, offerings abound and prices are relatively high, but there is severe initial underpricing as well, keeping investor demand strong. Medium-term underperformance, it seems, is also more serious in these periods. The most plausible explanation for this situation raises

¹³ This study seems to be limited to big business and significantly underestimates the number of primary technology issues in Canada.

¹⁴ A list of several hundred references on this topic, with information and data sources, is available at <http://www.iporesources.org/>

questions about the thinking of investors who, in times of stock exchange euphoria, take a special interest in primary issues.

Business managers apparently use financing strategies that are strongly influenced by market fluctuations. They tend to issue shares when they have seen upward movement in the market. In general, however, IPOs have become much more frequent since the early 1980s. Fama and French (2002) note that the pace of new business listings in the US rose from 140 in the late 1970s to nearly 600 in the late 1980s.

Studies of issuing activity also highlight the growing share of issues by technology companies, which represented 25% of IPOs in the early 1990s, compared with 37% after 1995 and 72% during the Internet bubble. According to Ritter and Welch, the percentage was 29% in 2001.

The significant increase in the proportion of IPOs by money-losing companies was another striking feature of the 1990s, rising from 19% in the 1980s to 79% in 1999-2000. It still stood at 49% in 2001.

Fama and French (2002) ascribe the major drop in survival rates to the lower quality of new listings. Because of poor performance, the likelihood of survival after 10 years has risen from 14.4% to 40.2% of primary issues [*sic* – TR]. These values, however, are derived solely from issues followed by listings on major markets (NYSE, NASDAQ, AMEX) and the writers acknowledge that this limitation skews their results. Although the sample is limited to relatively large issues by Canadian standards, there is clearly a strong connection between size, profitability and survival rate. Issues by small businesses have less chance of surviving and companies in this category are much less profitable on average than the big companies.

Finally, multinational studies of issuing activity help us to more effectively situate primary issue activity in Canada. Ljungqvist and Wilhelm (2002) counted 2,861 IPOs in 15 European countries, or 260 a year, for 15 markets, including the main European ones. On average, a primary issue can raise \$131 million in Germany, \$74 million in France and \$93 million in the United Kingdom. The period 1995-1999 saw an average of 585 US IPOs at issue prices above \$1 and 404 large issues (at \$5 and over) per year. The average amount raised through each of these issues was \$84 million. The US IPO market alone is twice the size of the market for all 15 countries of the European Union.

Issuing mechanisms

According to a number of researchers, including Loughran *et al.* (1994) and Chowdhry and Sherman (1996), the mechanisms used to value and distribute securities in primary issues affects the stock exchange listing process. The most widespread approach in the US and Canada is book building, in which the lead broker gathers information on the buying intentions of potential institutional and individual investors during “road shows” and establishes a demand curve based on a number of criteria. Biais and Faugeron (2000) and Sherman (2001) emphasize that book building is preferable to the auction approach. They are of the view that book building can be

seen as a dynamic auction conducted by brokers, with the advantage that the brokers can freely allocate securities to reward investors who reveal their buying plans. Cornelli and Goldreich (2001) also stress that preference is given to institutional investors¹⁵ that are ready to buy and hold securities in their portfolios for the long term.

The issuing price of shares is set so that there is apparent surplus demand and distribution is left to the underwriter's discretion. The book building mechanism is often used for large firm-commitment issues. Kutsuna and Smith (2000) stress that, since book building was introduced in Japan in 1997, Japanese issuing firms have preferred this approach to the auction approach introduced in 1989.

Ljungqvist *et al.* (2001) also confirm that the international introduction in the 1990s of book building as a system for valuing and allocating securities has done much to improve efficiency in primary issue markets. However, Ritter (1998) points out that book building has not escaped criticism. Loughran *et al.* (1994) emphasize that brokers prefer book building, but express doubt as to whether this mechanism is in the best interests of the issuing company.

1.2 Canadian stock issues

1.2.1 Overview by class of issues

Table 1 shows issuing activity for all sectors in Canada, including the companies that listed through the CPC program. The data cover a 10-year period from 1991 to 2000, for which we identified a total of 1,891 Canadian issues, including 10 issues of shares arising from the demutualization of insurance companies or privatization of public corporations.

There were 1,023 traditional offerings¹⁶ for total gross proceeds of nearly \$32.03 billion. These traditional offerings include issues of common shares and other issues, including issues of units, preferred shares and flow-through shares. However, common share issues were the most common (775), raising more capital (\$29 billion) than the remaining 248 issues (\$3 billion).

The CPCs created between 1991 and 2000 accounted for 868 issues for total gross proceeds of \$223 million. The number of offerings under the CPC program exceeded the number of initial public offerings of common shares. Because of CPC program terms and conditions, both the total amount issued and the average (\$257 K) are clearly much lower than the amounts involved in traditional primary issues (\$31 million). The Canadian market is characterized by very large numbers of new small businesses. On average, primary issues raise \$131 million in Germany, \$74 million in France and \$93 million in the UK.

¹⁵ Jog (1997) states that issuers agree that institutional investors play a major role in initial share movements but continue holding the shares for longer than private investors. As shown by Boehmer *et al.* (2002), however, the institutions get a proportionately larger share of the "good" issues, with higher long-term yields. There is probably a connection between this longer holding period and the advantage they seem to enjoy in initial share allocation.

¹⁶ By "traditional offerings," we mean ones not associated with the CPC program.

In Canada, the average amount initially raised through an IPO is \$17 million taking all issues together and \$31 million if CPC issues are excluded. Canadian primary issues are thus more numerous, but their gross proceeds trail those in other countries: on average, there are 189 IPOs a year in Canada, compared with 47 in France, 80 in the UK and 43 in Germany. In the US, the average amount raised through conventional offerings (\$5 and over) is around C\$82 million during the period in question.

Canada is clearly a small issue market. If demutualizations and privatizations are excluded, average gross proceeds rise to \$2.5 million. This value is further increased by a few offerings by subsidiaries.

Table 1: Annual distribution of issues under the CPC program, of common shares outside this program and of other classes of securities, including share units, preferred shares and flow-through shares, for 1991-2000. Issues of fixed-income securities are excluded, along with issues by mutual funds, trusts and limited partnerships. Gross proceeds (GP) are expressed in millions of dollars.

Year	CPC		Common Shares		Other Offerings		Total Offerings	
	Number	GP M\$	Number	GP M\$	Number	GP \$	Number	GP \$
1991	7	1.38	34	417.16	18	187.92	59	606.46
1992	18	4.23	32	636.77	11	73.8	61	714.8
1993	61	12.53	118	3078.06	29	674.14	208	3764.73
1994	100	24.44	84	2525.58	35	1015.87	219	3565.89
1995	89	21.81	67	626.9	22	65.08	178	713.79
1996	101	25.34	111	2481.41	28	136.52	240	2643.27
1997	143	36.05	136	4564.87	47	526.49	326	5127.41
1998	123	30.98	69	1665.76	24	406.92	216	2103.66
1999	98	27.64	58	1372.85	12	19.47	168	1419.96
2000	128	38.92	56	2240.85	22	80.42	206	2360.19
Demutualizations	-	-	5	4547.59	-	-	5	4547.59
Privatizations	-	-	5	4690.01	-	-	5	4690.01
1991-2000	868	223.31	775	28847.81	248	3186.63	1891	32257.76

Sources: Data from the *Financial Post*, *Records of New Issues* and Robinson (for 1991-1994). Issues denoted as withdrawn by the *Financial Post* are excluded. Robinson's data (1997, p. 684) were used for 1991 and 1992. He identified 6 JCP issues in 1991 for \$1.226 million and 17 in 1992 for \$3.812 million. We have added *Dominion Oil Investment* in 1991 and *Trego Energy* in 1992. From 1995 on, the *Financial Post* published annual reports of issues under the CPC program. We have also included *Sourcesmith Industries* in the common shares class, even though the *Financial Post* lists it as a CPC issue, since the final prospectus of 2/11/2000 is silent about this program and describes an already operational company.

1.2.2 Main features

Geographic features

Table 2 provides a breakdown of primary issues by province of incorporation. Over 90% of the issues were by companies incorporated in one of the four provinces of Ontario, British Columbia,

Alberta and Quebec. Most primary issue activity was centred in those four provinces, which in July 2001 accounted for over 85% of Canada's population.

Sixty issues (3%) originated in eight other provinces [and territories? – TR]. Finally, there were 71 issues by foreign companies, mainly American, accounting for 4% of the total.¹⁷

Most issues associated with a CPC program were from Alberta (57%), the province where the program originated, and British Columbia (24%).

¹⁷ 48 of the 59 traditional IPOs were by companies headquartered in the United States and the 11 others were by companies in Bermuda (1), Indonesia (1), Israel (1), Mexico (1), Hong Kong (2), Ghana (1) and Europe (4).

Table 2: Distribution of initial public offerings in Canada, 1991-2000, by province of issuing company's head office.

Traditional Canadian IPOs, by province

Province	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	Total
AB	4	4	52	28	17	30	52	23	10	12	232
BC	28	22	34	27	26	39	46	24	22	22	290
F	7	2	2	8	9	13	9	5	4		59
ON	11	9	39	46	26	38	50	28	29	23	299
OTH	4	3	1	3	3	1	7	4	2	5	33
QC		4	19	7	9	18	20	9	6	18	110
Total	54	44	147	119	90	139	184	93	73	80	1023

Canadian IPOs under Capital Pool Company programs, by province

Province	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	Total
AB	7	11	51	64	55	65	86	65	30	58	492
BC		3	5	17	16	15	31	22	47	55	211
F			1	4	2		4			1	12
ON		3	3	11	10	14	16	27	11	5	100
OTH		1	1	2	4	1	5	3	4	6	27
QC				2	2	6	1	6	6	3	26
Total	7	18	61	100	89	101	143	123	98	128	868

Total Canadian IPOs, by province

Province	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	Total
AB	11	15	103	92	72	95	138	88	40	70	724
BC	28	25	39	44	42	54	77	46	69	77	501
F	7	2	3	12	11	13	13	5	4	1	71
ON	11	12	42	57	36	52	66	55	40	28	399
OTH	4	4	2	5	7	2	12	7	6	11	60
QC	0	4	19	9	11	24	21	15	12	21	136
Total	61	62	208	219	179	240	327	216	171	208	1891

Sources: *Financial Post*, *Report of New Issues*, *Cancorp Financials*, www.sedar.com and www.cdn.com. Province of incorporation of issuing company: QC: Quebec, ON: Ontario, AB: Alberta, BC: British Columbia, OTH: Nova Scotia, Manitoba, Saskatchewan, New Brunswick, Newfoundland, Northwest Territories, Prince Edward Island, Yukon, F: Issues by companies headquartered outside Canada.

Distribution of traditional IPOs under OTH: Manitoba (11 issues), Nova Scotia (2), Saskatchewan (7), New Brunswick (5), Newfoundland (2), Northwest Territories (2), Prince Edward Island (1), Yukon (3).

Distribution of IPOs associated with CPC programs under OTH: Manitoba (9 issues), Nova Scotia (2), Saskatchewan (9), New Brunswick (3), Newfoundland (3), Northwest Territories, Prince Edward Island, Yukon (1).

Issue size

Table 3 shows the breakdown of initial public offerings in 1991-2000 by size. Issues with gross proceeds of \$5 million or less account for 61% of all issues, but total only \$812 million, or less than 3% of the total. More than 67% of the total capital raised was from issues with gross proceeds of over \$100 million, demutualizations and privatizations. Most of the funds raised through primary issues in Canada over the 10-year period thus came from 59 very large issues, or 6% of total offerings. This makes comparison with the situation in the US difficult. Fewer than 20 Canadian issues a year (184 in all) raised more than the US\$20 million threshold and are thus comparable to issues of SEC-covered securities under the NSMIA (1996). All others (90%) could have met regional regulations and been included in “not covered securities” within the meaning of the NSMIA. The Canadian IPO market is therefore basically comparable to the US market for local offerings.

Table 3: Distribution of initial public offerings, both traditional and associated with the CPC program, by gross proceeds (GP), 1991-2000.

Absolute values	Total non-CPC		CPC		Total	
	GP (\$ millions)	#	GP (\$ millions)	#	GP (\$ millions)	#
1 and under		349	186.89	868	223.31	1217
1 to 5		274	625.31	-	-	274
5 to 10		66	479.61	-	-	66
10 to 50		223	5465.28	-	-	223
50 to 100		52	3699.52	-	-	52
100 and above		49	12340.23	-	-	49
Demutualizations		5	4547.59			5
Privatizations		5	4690.01			5
Total		1023	32034.44	868	223.31	1891
Relative values						
GP (\$ millions)	# %	GP %	# %	GP %	# %	GP %
1 and under	34.12	0.58	100	100	64.36	1.27
1 to 5	26.78	1.95			14.49	1.94
5 to 10	6.45	1.50			3.49	1.49
10 to 50	21.80	17.06			11.79	16.94
50 to 100	5.08	11.55			2.75	11.47
100 and above	4.79	38.52			2.59	38.26
Demutualizations	0.49	14.20	0	0	0.26	14.10
Privatizations	0.49	14.64	0	0	0.26	14.54
Total	100	100	100	100	100	100

Sources: Data from the *Financial Post, Records of New Issues* and Robinson (1997).

Sectoral characteristics

Table 4 shows that 41% of the traditional issues in Canada are by resource companies (mining and oil and gas) basically concentrated in two provinces. Over half (51%) of the issues in British Columbia are by mining companies. This province accounted for 58% of all issues by mining companies in Canada in 1991-2000. Alberta accounts for 79% of oil and gas issues and these offerings represent more than half of all offerings by Alberta companies.

Ontario accounts for over 55% of issues by financial services companies, more than half of consumer goods issues and 39% of technology issues. In Quebec, 35% of the issues are by technology firms and 26% come from the manufacturing and pharmaceutical sectors.

In short, most issuing companies in British Columbia and Alberta are small resource companies. Conversely, many Ontario issues are by very large financial services concerns. Company characteristics thus vary widely from province to province.

Table 4: Breakdown of traditional issues by sector and province of head office, 1991-2000

Sector	AB	CB	F	ON	OTH	QC	Total
05 Agriculture and Fishing	2	1		1			4
10 Mining	20	148	13	48	8	20	257
11 Oil and Gas	126	20	7	3	2	2	160
15 Real Estate (construction)	4	2	1	2			9
22 Consumer Goods	7	6	1	23	2	4	43
25 Technology	31	55	18	96	6	38	244
26 Manufacturing, etc.	16	18	4	32	2	17	89
28 Pharmaceuticals	7	6	3	12	2	12	42
40 Telecomm. and Media	2	5	2	10	5	5	29
50 Commerce	1	7		19	2	5	34
60 Financial, Insurance, Real Estate Services	6	6	5	26	1	3	47
70 Services	4	11	1	16		2	34
71 Transportation, Electric Power, Gas, Sanitation	4	2		7	2	2	17
99 Unclassified	2	3	4	4	1		14
Total	232	290	59	299	33	110	1023

Data were taken from the *Financial Post* and exclude CPC issues. Technology offerings exclude biotechnology, which is included under Pharmaceuticals.

1.2.3 “Hot” issuing periods

The number of primary common share issues varies greatly from year to year, as shown in Figure 1. Activity was low in 1991 and 1992 from the standpoint of numbers of issues and gross proceeds and can thus be described as “cold,” compared with the “hot” issue market of 1993-1994. This pattern was repeated in the years that followed.

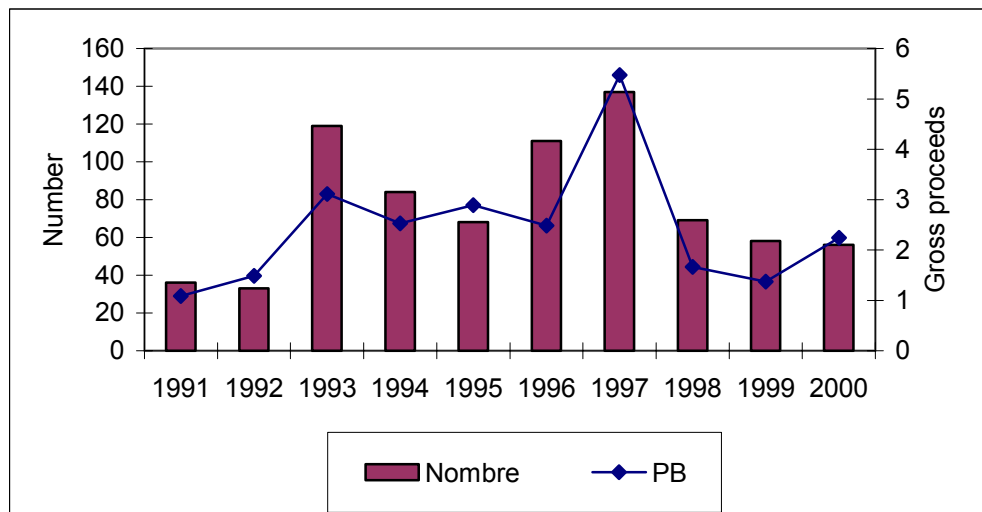
Figure 1 shows Canadian primary issues occurring in waves that crested in 1993-1994 and 1996-1997, 1997 being the record year for this activity. The concentration of primary issues in

certain periods is consistent with the window of opportunity hypothesis advanced by Ritter (1991): companies choose to become listed when markets are “hot,” in order to maximize the proceeds of offerings.

Figure 2 shows the differences in US primary issue activity. For example, 1996 saw heavy issue activity, in contrast with 1991 and 1998,¹⁸ and 1999 was a “hot” year in the US market, due in large part to the arrival on the stock market of various dot.coms, while the Canadian issues market remained relatively quiet.

Some phenomena analyzed below, such as initial underpricing and long-term under-performance, seem to be tied directly to the cyclical nature of the primary issues market.

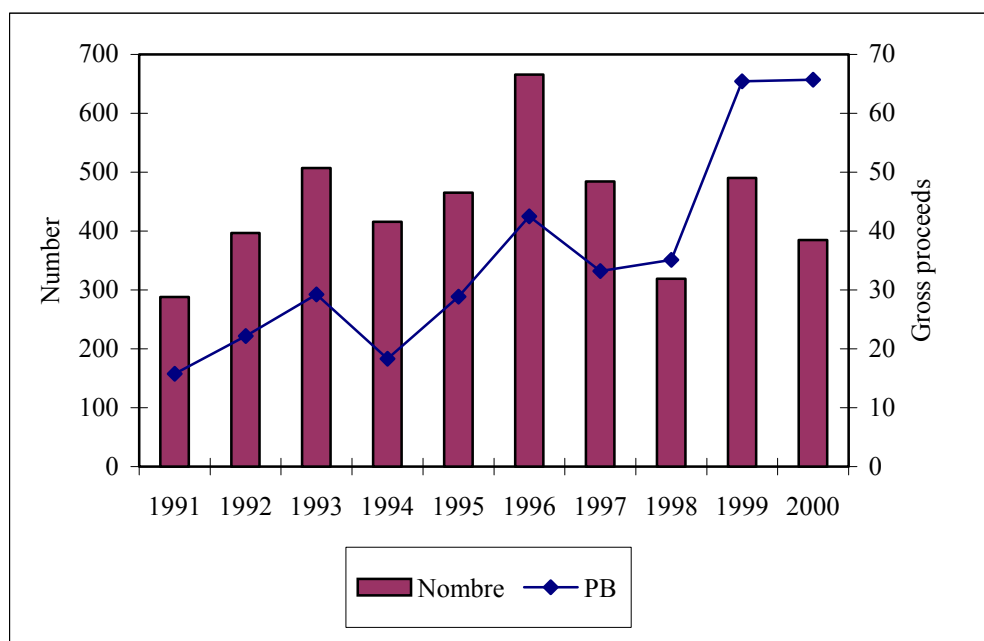
Figure 1: Annual distribution of Canadian initial public offerings of common shares, with gross proceeds in CAN\$ billions.



[Legend: Number, GP]

¹⁸ These primary issues seem to have been mainly in specific sectors, such as fashion in 1996 and 1997. The primary issue by the Gucci fashion house was behind a number of other primary issues by fashion houses like Donna Karen (June 1996) and Ralph Lauren (June 1997).

Figure 2: Annual distribution of initial public offerings of common shares by US companies, with gross proceeds in US\$ billions.



[Legend: Number, GP]

1.2.4 Creation and disappearance of Canadian businesses

From 1991 to 2000, the number of companies listed on Canadian stock exchanges declined by 5% overall, from 4,342 to 4,124,¹⁹ despite 1,891 initial public offerings. In all, in this period, 1,218 issues raised capital of \$1 million or less, mainly in association with the CPC program (868 issues). The net loss of 195 companies over this period reveals a high “mortality rate” possibly resulting from mergers, reprivatizations or delistings.²⁰ Each year saw the disappearance of almost as many public corporations as were created.

This observation is consistent with the findings of Fama and French (2002), which highlight the frequent disappearance of the securities of newly listed US “small” businesses. Since Canadian issues are distinctly smaller than similar offerings in the US, it is not surprising that their survival rate is well under the US rate. The scope of this study does not allow us to arrive at any

¹⁹ Sources: Montreal Stock Exchange: Monthly Review, 2000; Statistics, Research and Market Information (1991), *Toronto Stock Exchange Review*, *Alberta Stock Exchange Review*, *Vancouver Stock Exchange Review* and *CDNX Monthly Review*. [ftp://ftp.cdnx.com/Publications/CDNXReviews/](http://ftp.cdnx.com/Publications/CDNXReviews/).

²⁰ In December 1998 alone, 25 securities were delisted from the Toronto Stock Exchange (*TSE Review*, *December 1998*) and 4 were delisted from the Montreal Stock Exchange.

conclusions concerning the 10-year survival rate, but the fact that more companies are going under than coming up suggests an extremely low survival rate.

1.2.5 Technology offerings

These companies are in the CIS 25 technology sub-group when their main sectoral code is on the list in Appendix 2. The only problem industry for classification purposes is biotechnology, where the same code covers drug manufacturers and companies geared mainly to R&D. To be consistent with practice, we have not included these companies under sub-sector 25, but under sub-sector 28, “pharmaceuticals.”

Table 5 shows primary issues activity by technology firms varying year over year. Activity was heaviest in terms of numbers of issues in 1995, 1996 and 2000. The proportion of initial public offerings by technology companies was highest in 2000, with over 44% of total issues and nearly 50% of gross proceeds from issues. Ontario is very active in the area of technology offerings (39%), followed by British Columbia (22%) and Quebec (16%).

Table 5: Annual distribution by province of traditional primary issues activity in technology sectors in Canada, 1991-2000

Province	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	Total
AB		1	2	1	3	5	12	3	2	2	31
BC	3	2	3	2	9	14	6	2	4	10	55
F		1		3	2	4	3	3	2		18
ON		4	15	9	9	20	12	10	7	10	96
OTH				1			3			2	6
QC		1	6	1	1	7	5	5	2	10	38
Technology sector total	3	9	26	17	24	50	41	23	17	34	244
Technology sector GP (\$ millions)	2.1	172.6	620.9	272.3	373.1	759.7	2187.1	538.2	422	1852.5	7200.5
Total for all sectors	54	44	147	119	90	139	184	93	73	80	1023
GP for all sectors (\$ millions)	1271.1	1561.9	3752.20	3541.5	2954.2	2617.9	6001.4	2072.7	4433.3	3827.9	32034.4
% of technology companies	5.56	20.45	17.69	14.29	26.67	35.97	22.28	24.73	23.29	42.50	23.85
% GP of technology companies	0.17	11.05	16.55	7.69	12.63	29.02	36.44	25.97	9.52	48.39	22.48

Sources: *Financial Post*, *Report of New Issues*, *Cancorp Financials*, www.sedar.com and www.cdnx.com. Province of incorporation of issuing companies: QC: Quebec, ON: Ontario, AB: Alberta, BC: British Columbia, OTH: Nova Scotia, Manitoba, Saskatchewan, New Brunswick, Newfoundland, Northwest Territories, Prince Edward Island, Yukon, F: Foreign companies. When companies have federal charters, the province of incorporation is determined by head office location.

1.3 Share offerings in Canada and the US

1.3.1 *Problems with measuring US activity*

Tables 6 and 7 allow a comparison of common share issues in Canada and the US, with separate figures for the technology sector. The number of issues listed is misleading: official US lists exclude securities issued at under US\$5, whereas all issues are considered in Canada. Shares worth less than \$5 are viewed as highly speculative as they do not meet the minimum criteria for NASDAQ listing and are not regulated in the same way.

We have tried to adjust the US data for the years 1995-1999 by including issues of securities priced between \$1 and \$5. It is virtually impossible to get information about issues priced under \$1 in the US. Most of these issues are governed by separate regulations and no conventional prospectuses are produced.

To perform a proper comparison of issues in the two countries, it is necessary to exclude Canadian issues priced at under \$1. This leaves 419 Canadian issues at prices higher than \$1. This number does not change much when the threshold is set at \$2.²¹ The gross proceeds of issues vary little when issues at \$1 and under are excluded: the total for all issues is reduced by only \$376 million.

1.3.2 *General comparisons*

The amounts raised in Canada total C\$28.47 billion, whereas issues in the US brought in US\$356.35 billion, the equivalent of C\$404 billion if the amounts raised every year are adjusted for the average exchange rate for that year. Canadian issues therefore represent 7% of those in the US, which is far lower than the proportion of US GDP represented by Canada's GDP.²²

The number of US issues is greatly understated, as issues priced under US\$5 are not reported in Column 1 of Table 7. To obtain an idea of the number of US issues, we attempted to complete the US lists for 1995-1999. The ratio between the total number identified and the number of issues priced at over \$1 is 1.45:1 (3510 / 2424), and so the total number of initial public offerings in the US may be estimated at around 6,400. Based on these figures, the number of Canadian issues represents 6.6% of US issues – once again, far less than the Canada-US GDP ratio.

²¹ Securities pricing habits in Canada are different from those in the US, where values of \$100 to \$200 are relatively common. They are rare in Canada. We therefore considered the US\$5 threshold as equivalent to \$1 or \$2 in Canada.

²² Based on 1998 data, Canada's GDP is 10.9% of the US figure (Statistique Québec).

1.3.3 Technology stock offerings

Technology stock offerings total \$6.97 billion in Canada, or 24.45% of the overall capital raised. Technology issues in the US and their gross proceeds were identified for 1995-1999, making it possible to arrive at the comparison in Table 7.

In the US, technology issues raised US\$101 billion, or C\$144.3 billion. The \$6.97 billion raised in Canada is therefore about 4.83% of the US amount. Canada clearly lags far behind the US in terms of financing technology companies through share issues.

This situation is no different if issues by Canadian companies made completely in the US are included, since the number is too small to influence the results.²³

Public financing of technology companies is therefore very modest in Canada, compared with the situation in the US. This is paradoxical in view of the heavy activity reported by Canadian venture capital companies. In 1999, for example, the Canadian Venture Capital Association reported more than 1,200 investments in technology sectors and managed funds were in excess of \$12 billion. Canadian venture capital companies raised \$8.4 billion in 1995-1999, or 160% of the amount raised by primary issues – and this holds true for every year studied except 1997.

Table 6: Annual distribution of numbers and gross proceeds of Canadian initial public offerings of traditional common shares. “#” = number of issues per year; “GP” = gross proceeds of the issue, in C\$ millions; “Total >1” = numbers and gross proceeds of initial public offerings of common shares priced at over C\$1.

Year	Total		Technology Stock Offerings	
	#	GP	#	GP
1991	34	417.16	3	2.10
1992	32	636.77	8	172.38
1993	118	3078.06	23	604.99
1994	84	2525.58	15	263.87
1995	67	626.9	20	367.12
1996	111	2481.41	44	703.85
1997	136	4564.87	37	2182.12
1998	69	1665.76	21	519.24
1999	58	1372.85	15	418.98
2000	56	2240.85	31	1845.50
Demutualizations	5	4547.59	-	-
Privatizations	5	4690.01	-	-
Total	775	28847.81	217	7080.14
Total >1	419	28471.40	141	6971.79

²³ Issues by Canadian companies made outside Canada are basically made in the US and are relatively rare. Jog and Hitsman (2000) found 21 between 1994 and 2000, and 11 companies conducted simultaneous issues in the US and Canada. They note that using the US market confers no tangible benefit on issuing companies. Initial underpricing and post-issue price volatility are more marked in the US than in Canada.

Data from the *Financial Post, Record of New Issues*. Data exclude CPC and demutualization issues. Technology stock offerings exclude biotechnology, which is included under Pharmaceuticals. In this sector, the period 1991-2000 saw 31 initial public offerings of common shares for total gross proceeds of \$466.85 million.

Table 7: Annual distribution of numbers and gross proceeds of initial public offerings of common shares in the US. “#” = number of issues; GP = gross proceeds in US\$ billions.

Year	Total			Technology Stock Offerings ³	
	# ¹	# ²	GP ¹	#	GP
1991	288	-	15.77	-	-
1992	397	-	22.20	-	-
1993	507	-	29.26	-	-
1994	416	-	18.3	-	-
1995	465	834	28.87	308	10.66
1996	666	1142	42.48	460	24.27
1997	484	555	33.22	267	15.53
1998	319	422	35.11	168	14.67
1999	490	557	65.46	362	35.9
2000	385	-	65.68	-	-
Total	4417	3510	356.35	1565	101.03

¹ Data from Ritter (2003), available at: http://bear.cba.ufl.edu/ritter/work_papers/IPOs2002.pdf. Data exclude issues priced at US\$5 and under, ADRs, best efforts, units and Regulation A offers, REITs, partnerships and closed end funds.

² US data from the lists of Ivo Welch: <http://www.iporesources.org/>, adjusted as far as possible to include small issues of between US\$1 and \$5 based on additional research, especially at www.hoovers.com and www.ipo.com. Figures for technology stock offerings are partially based on data from *Thomson Financial*.

³ US technology stock offerings exclude biotech companies.

1.4 Conclusion

Our analyses show that primary issues are far fewer in Canada than in the US and the capital raised is appreciably less after standardization by GDP. The differences between the two countries are even greater if issues not officially listed in the US, that is, issues by small businesses equivalent to most Canadian offerings, are included. Canada seems to be a market of very small stock offerings. However, the inclusion of privatization and demutualization offerings may partially obscure this phenomenon, as these issues account for a major proportion of the total gross proceeds raised in the 1990s. Issues by subsidiaries of already listed companies also account for significant amounts, further reducing the measurable issuing activity of completely new firms. Paradoxically, big corporations do not seem to make frequent use of the primary issue market.

The gap between primary issues in Canada and those in the US is even more pronounced in the field of technology. And it is even wider than first appears in that the main Canadian technology stock offerings are by subsidiaries (Bell, AT&T) and not by new companies.

In the following sections, we look at three possible explanations. It may be that issues are rare because they are too costly: an inefficient market (Part 2) might be lowering the supply of issues. It is also possible that primary issues are scorned due to the poor performance of new securities. This would curb demand by institutional and private investors (Part 3). Lastly, it may be that acts and regulations, policies and institutional behaviours are responsible for the gap. These factors are the subject of the final part of this study.

2. COSTS OF STOCK OFFERINGS

2.1 Overview and literature review

An effective issuing system requires access by companies at reasonable cost that does not unduly inflate the expense of this financing approach. Primary issues have two main types of costs, tangible and intangible costs on the one hand and initial underpricing on the other. It is also important to have a viable primary issues market: investors in primary issues have to be able to fetch an acceptable average yield, given the risk involved.

Robinson (1997) stresses that it usually costs a company \$65,000 to \$150,000 in regulatory costs for a primary issue in Alberta. The underwriter's commission represents an additional amount that varies between 7.5% and 10% of the capital raised. In Ontario, minimum regulatory costs for a primary issue range from \$100,000 to \$150,000. Jog (1997) estimates the total average cost of an issue on the Toronto Stock Exchange at \$300,000 to \$400,000, to which must be added a commission varying from 6% to 8% of the proceeds of the issue. Higgins (1994) estimates the direct costs of 68 primary issues by companies listed on the Toronto Stock Exchange in the period 1992-1993 and notes that the average direct cost weighted by issue size is 6.74%, which suggests that direct costs have gradually declined in Canada. These studies used relatively old data and samples were often limited to issues followed by TSE listings. An analysis based on more recent data was therefore needed.

2.2 Direct and tangible costs

2.2.1 Components

The direct costs of primary issues may be broken down into two main components: the costs incurred to comply with regulations and the commission paid to the underwriter.

The costs of compliance with listing requirements relate to preparing the prospectus, hiring various professionals and paying fees. These are partly fixed costs and, for given regulations, are proportionately higher for small issues.

The underwriter's commission is a percentage of the gross proceeds. It may come with various benefits such as stock options, the cost of which cannot be estimated here.

2.2.2 Measurement problems

Average costs are less meaningful, however, as the amounts disbursed in relation to issues are not proportionate to their size: the smallest issues are proportionately much more expensive than the larger ones. This is the conclusion of Shutt and Willams (2000), who estimate the direct costs of 49 primary issues of companies listed on the Toronto Stock Exchange in the period 1998-1999. The average total cost of primary issues varying from \$1 to \$10 million was 11.7%, whereas it

was 9.3% for issues of \$10 to \$50 million, 7.7% for issues of \$50 to \$100 million, and 5.9% for issues worth between \$100 and \$200 million. Comparing direct costs in Canada and the US, Shutt and Williams (2000) show that the average direct cost weighted by issue size is 5.5% in Canada, compared with 8.7% for NASDAQ listings and 6.6% for NYSE listings. They conclude that the costs associated with primary issues are lower in Canada than in the US. However, the limited size of the sample and the fact that the analysis was limited to a single stock exchange seriously limits the conclusions that can be drawn from this analysis.

2.2.3 Statistical analysis of direct costs

An analysis was performed of 513 Canadian primary issues, including 295 CPC issues,²⁴ and 1,181 US primary issues conducted in 1997-1999. To this end, the various components of the direct costs of issues of comparable size in Canada and the US were calculated based on the issue prospectuses.²⁵ The findings are summarized in Table 8 for conventional issues and Table 9 for CPC issues.

Size being equal, the direct costs of a Canadian issue are lower than the US average. This finding is consistent with earlier studies of much more limited samples and invalidates the argument that associates the decentralized structure of securities regulation in Canada with higher issuing costs and obstacles to public financing of businesses.²⁶

We also note that, on average, the underwriter's commission in Canada is slightly lower than the US standard of 7%. Initial underpricing seems to be higher in the US, given the very high initial return on a number of US issues by Web businesses, although this trend may change and so there is a need to longer-term analysis. While lower than the US average, Canadian issuing costs remain very high, especially for small issues.

²⁴ For the details on this study and its findings, see Kooli and Suret (2003a).

²⁵ The direct costs of Canadian primary issues are from final prospectuses that were not available on the SEDAR until 1997. The direct costs of US primary issues are from final prospectuses available on the SEC site.

²⁶ These arguments are defended in various reports including Sawiak *et al.* (1996) and the letter of November 15, 2002 from H. MacKay to the Deputy Prime Minister and Finance Minister of Canada, available at http://www.fin.gc.ca/news02/data/02-094_1e.html.

Table 8: IPO costs by issue size, excluding issues under CPCs, 1997-1999

Size of Issue (US\$ millions)	Number of IPOs	Broker Compensation (%)	Other Expenses (%)	Total Direct Costs (%)	Under- pricing (%)
Canada					
1.0 – 9.9	53	8.12%*	7.86%*	15.98%*	30.61%*
10.0 – 49.9	49	6.14%*	3.31%*	9.45%*	11.30%*
50.0 – 99.9	10	6%*	2%*	8%*	10.76%*
100 and over	16	5.53%*	1.75%*	7.28%*	8.88%*
Average		6.88%*	4.9%*	11.78%*	18.95%*
Weighted average (by size)		5.35%*	1.84%*	7.19%*	5.11%*
United States					
1.0 – 9.9	119	9.29%*	8.7%*	17.99%*	9.05%*
10.0 – 49.9	532	6.93%*	3.70%*	10.63%*	26.15%*
50.0 – 99.9	300	6.88%*	2.12%*	9%*	55.57%*
100 and over	237	6.09%*	1.2%*	7.29%*	67.19%*
Average		7%*	3.3%*	10.30%*	37.5%*
Weighted average (by size)		5.79%*	1.43%*	7.22%*	38.38%*

*Significantly different from 0 at 1% significance level.

Table 9: Direct and indirect issuing costs for CPC IPOs, 1997-1999

Number of IPOs	295
Total gross proceeds (\$ millions)	\$53.47
Average gross proceeds (\$ millions)	\$180
Broker compensation (%)	10%
Other costs (%)	12.95%
Total direct cost (%)	22.95%
Initial underpricing (%)	161.52%
Total issue cost (%)	184.47%

2.2.4 Effects of size, sector and broker

Table 9 summarizes CPC issuing costs. Paradoxically, these issues, which go through a simplified review process and are designed to alleviate financing costs for small businesses, involve higher costs than small conventional issues. These costs average 22.95%, compared with 15.98% for conventional issues worth \$1 to \$10 million. This may well be accounted for by the very small size of many CPC issues, as the average gross proceeds for CPC issues are only \$180,000.

There are economies of scale in the direct costs of primary issues. These involve direct outlays on top of the intangible costs to the company, i.e. the opportunity costs to the senior officers who work on planning the issue. These direct costs, however, depend not only on the province where the listing takes place, but also on the method of subscription used. Moreover, with small issues, these costs make up a relatively minor part of total costs, which largely relate to initial underpricing.

2.3 Initial underpricing

2.3.1 Overall measurement

Underpricing, which is seen in many countries, represents an additional cost for issuing companies and a transfer of wealth to investors who are able to buy the securities at the issue price. This anomaly associated with primary issues has never been satisfactorily explained, although many theories have been advanced. As Canadian studies deal only with large issues listed on the Toronto Stock Exchange, an update based on all issues was needed.

To quantify initial underpricing, researchers generally use the initial return to the new shareholders expressed as:

$$\text{Initial return} = \frac{(P_m - P_e)}{P_e} \quad (1)$$

where: P_m is the market's closing price on the first day of trading in the primary issue securities, and P_e is the issue price. This measures the return to an investor who was able to buy the shares from the underwriter and sell them by the close of the first day of trading.

The use of stock exchange data limits the number of observations available for empirical study of this phenomenon. The final sample includes 971 Canadian primary issues for the period January 1991 to December 1998, or 878 initial public offerings of common shares (including 433 CPC issues) and 93 initial unit issues. The latter have been included because very little research has been done on them (How and Howe, 2001), yet they are a major source of financing for a number of Canadian small businesses.

The issues are organized in three subsets: traditional common share issues, CPC issues and unit issues. Table 10 provides a breakdown of initial underpricing distribution for the 971 primary issues studied and shows them as generally underpriced. The equal-weighted mean return on the first trading day was 73.65% for all issues, with median underpricing of 30%, though the level of underpricing depends on issue type. The initial return was 20.57% for common shares excluding CPC shares, but rose to 135% for issues made through that system. The results thus confirm the findings of numerous researchers in various countries,²⁷ but differ from those of Jog (1997), who put initial underpricing on Toronto Stock Exchange issues at 7.89% for the period 1984-1992. This discrepancy in findings is probably connected with our inclusion in this study of smaller issues on other Canadian stock exchanges.

Table 10: Initial underpricing of Canadian initial public offerings, 1991-1998. Sample includes 971 IPOs by companies subsequently listed on the Toronto, Montreal, Vancouver or Alberta stock exchanges.

	Common Shares (Non-CPC)	CPC Common Shares	Units	Total
Number	445	433	93	971
Mean	20.57%	135.41%	40.06%	73.65%
Standard deviation	0.56	1.73	1.46	1.41
T-statistic	7.65	16.21	2.63	16.2
Median	5%	100%	1%	30%

The underpricing of CPC issues already highlighted by Robinson (1997) is likely related to their very small size and low share value. The major underpricing of the shares of companies with cash and a plan as their only assets can be explained only by the gradual disclosure of information often known by the proponents from the outset. This phenomenon calls for in-depth analysis that is not our purpose here. Unit issues are also highly underpriced compared with traditional common share issues, at 40.06%. These findings are similar to those of Schultz (1993) and How and Howe (2001). Schultz (1993) points out that companies electing to issue units are relatively younger and less stable than companies issuing common shares.

2.3.2 *Effect of size and other characteristics*

Table 11 shows that initial underpricing, like the issuing operation itself, is not static. In 1993-1994, average initial underpricing and the number of primary issues increased over earlier years. In 1996, the number of primary issues rose by 107.31% over 1995 and initial underpricing

²⁷ Initial underpricing for primary issues is 23.87% in Italy according to Guidici and Paleari (1999), 13.23% in France according to Derrien and Womack (2000), 61.8% in Malaysia according to Paudyal *et al.* (1998), 14.3% in the UK according to Lévis (1993), and 15.8% in the US according to Ritter (1998).

increased as well. In 1997, average initial underpricing of common shares reached a peak of 39.30%. That year also saw a peak in activity, with companies raising \$3328.5 million.²⁸ In 1998, primary issue and initial underpricing figures declined.²⁹

The years 1993, 1994, 1996 and 1997 were periods of intense activity, while 1991, 1992, 1995 and 1998 were slow. Ibbotson and Jaffe (1975) found that periods of intense activity were typified by high issue volumes and strong initial underpricing followed by declining initial underpricing.

Table 11: Annual distribution of initial underpricing of Canadian IPOs of common shares, 1991-1998. Sample includes 971 IPOs by companies subsequently listed on the Toronto, Montreal, Vancouver or Alberta stock exchanges.

Year	Common Shares (Non-CPC)		Common CPC Shares		Total	
	Number	Initial Underpricing	Number	Initial Underpricing	Number	Initial Underpricing
1991	11	-4.85%	2	0.55%	19	8.07%
1992	25	31.72%***	8	85.42%**	38	34.92%**
1993	78	15.87%**	55	159.54%*	147	79.40%*
1994	70	17.85%*	55	127.79%*	141	64.88%*
1995	41	16.87%**	52	53.73%*	101	35.34%*
1996	85	13.25%*	68	68.41%*	162	36.24%*
1997	88	39.30%*	96	194.23%*	209	107.93%*
1998	47	13.79%*	97	165.49%*	154	111.78%*
1991-1998	445	20.57%*	433	135.41%*	971	73.64%*

²⁸ Lowry and Schwert (2000) find it puzzling that companies choose to go public when primary share issues are sharply underpriced.

²⁹ In 1998, the gross proceeds of primary issues also fell, compared with 1997 (a hot period in the issues market). This may have been due to the fact that, as more and more companies go public (as in 1997), doubts about their value fade. Accordingly, their subsequent initial returns go down (1998). [*sic* – TR.]

Table 12: Distribution by size of gross proceeds of common share IPOs, 1991-1998. Sample includes 878 IPOs of companies subsequently listed on the Toronto, Montreal, Vancouver or Alberta stock exchanges. Initial underpricing is calculated in two ways: 1 – (average closing price for first five days of trading minus issue price) / issue price; 2 – [(average closing price for first five days of trading minus issue price) / issue price] – [average TSE 300 index for first five days of trading minus TSE 300 index at time issue price was set / TSE 300 index at time issue price was set].

Size (\$ millions)	Number	Initial Underpricing 1	Initial Underpricing 2
Size < \$1M	540	119.07%* ^{P(N)}	124.11%* ^{P(N)}
\$1M ≤ Size < \$5M	101	31.03%*	32.94%*
\$5M ≤ Size < \$10M	27	11.54%***	11.22%***
\$10M ≤ Size < \$20M	65	3.6%	4.28%
Size ≥ \$20M	145	-1.36%	-0.78%
Total	878	20.57%*	22.11%*

* Significant at 1% level; ** significant at 5% level; and *** significant at 10% level. P = t-test for the difference in means of the two groups (Size < \$1M and Size ≥ \$20M), significant at 1%. (N) = Kruskal-Wallis and Mann-Whitney tests for differences in means of the two groups (Size < \$1M and Size ≥ \$20M), significant at 1%.

2.4 Conclusion

Size being equal, direct issue costs in Canada are lower than those in the US. The cost of primary issues, however, seems high for small businesses. This cost may have a significant impact on their competitiveness. In the US, collusion among brokers has been suggested as the reason for the high direct costs (remaining at 7%). The situation may be the same in Canada, where there is also a concentration of issue marketing activities.

In 1987, the federal and provincial governments amended the legislation so that banks, trust companies and foreign brokerage houses could own stock brokerage firms. This led to a wholesale restructuring of ownership in the brokerage industry. The big Canadian banks bought major brokerage houses or created their own. According to Strategis,³⁰ the Canadian stock brokerage industry came out of 2001 with 198 houses, compared with fewer than 120 in early 1990. Three major types of brokers coexist: integrated brokerage firms (71% of sales in the sector), institutional brokers (9%) and retail brokers (20%).³¹ In 2001, the seven main integrated firms, including brokerage subsidiaries of the six big Canadian banks and a major US brokerage house, generated more than 70% of industry sales. These were:

- BMO Nesbitt Burns, owned by the Bank of Montreal,
- CIBC World Markets, owned by CIBC,
- National Bank Financial, owned by the National Bank of Canada,
- RBC Dominion, owned by the Royal Bank of Canada,
- Scotia Capital, owned by the Bank of Nova Scotia,
- TD Securities, owned by the TD Bank Financial Group,
- Merrill Lynch, which had taken over a major portion of the Canadian retail brokerage market, withdrew from the retail trade, keeping only its institutional clients. The CIBC acquired Merrill Lynch's Canadian retail brokerage operations in late 2001 and its stock and mutual fund services in 2002.³²

The biggest banks have made several attempts to consolidate. In 1998,³³ these attempts resulted in new legislation on mergers of financial institutions. By late 2001, all of the big integrated brokerage firms in Canada, generating about 70% of industry revenue, belonged to banks, six of which accounted for over 90% of total bank assets.

Underpricing may reflect a lack of competition among brokers, but other factors are probably involved, such as companies' lack of experience and negotiating power, valuation and book building approaches and the role of institutional investors.

³⁰ http://www.fin.gc.ca/toce/2002/cansec_e.html

³¹ The integrated brokerage houses serve institutional and retail markets. Institutional brokerage houses work with pension funds, insurance companies, mutual funds, banks and trust companies. Retail brokerage firms offer products and services to retail investors.

³² http://www.cyberpresse.ca/reseau/economie/0111/eco_101110038598.html

³³ Cookey (2001), p. 1.

3. MEDIUM-TERM PERFORMANCE

The performance and possibly even the survival of IPO securities is a major topic of study for two sets of reasons involving issuers and investors. High primary issue costs pay off if the transaction later enables companies to secure affordable financing with subsequent issues. This will not happen if share prices fall significantly after the issue. Few investors will maintain an interest in IPOs if the corporate survival rate is low and performance mediocre. In terms of public policy, however, there is another factor to consider, and that is the survival and growth of newly listed companies. Their stock exchange listings are not free for either the issuers or the investors buying the primary issues. The lowering of standards likely has a cost for the whole market, since it reduces overall liquidity. There is reason to wonder whether the benefits in terms of corporate growth warrant these different costs.

The remainder of this part begins with a discussion of the survival and growth of companies having gone through an IPO, then goes on to analyse their stock market performance before getting into the factors conditioning this performance and foreign experiences.

3.1 Survival and growth

Table 13 provides a breakdown³⁴ of IPOs by Canadian companies in 1991-1995 based on their status in 2002. The following categories were defined after systematic research using all accessible sources (SEDAR, *Financial Post*, stock exchanges, the Internet): delisted shares, bought-back or merged shares, and shares still being bought and sold.

Delisted shares: these are shares that have been suspended or delisted, generally due to financial problems, or shares bought and sold over the counter.

Bought-back/merged shares: shares that have disappeared from the list when bought back by another company or the issuing company or in a merger or reverse takeover. As a rule, small issue shares are bought back at very low prices.

Still active shares were divided into three groups to reflect the book value of equity capital in 2001.³⁵

- Foundering shares have negative shareholders' equity. Their continued existence is in question.

³⁴ A detailed analysis of the growth of newly listed companies calls for a laborious data search that is beyond the scope of this study. This summary analysis is based solely on the status of companies listed at the end of the fiscal year ended in 2001.

³⁵ This is the book value of assets as of the latest financial statements ending between September 30, 2001 and August 31, 2002 and available from the *Cancorp Financials* database.

-
- Poorly performing shares have positive shareholders' equity, though it is below gross proceeds at issue. The book return over the period is therefore negative.
 - Companies with net assets worth more than the proceeds of the issue have a positive book return.³⁶ However, this evaluation criterion is very generous, since it does not consider assets prior to the initial public offering or the rate of return required by the shareholders.

Finally, we calculated the number of companies still being bought and sold where net assets exceeded \$10 million, among the group whose gross proceeds had been under \$5 million. In our view, these companies have gone beyond the bounds of small business to become medium-sized concerns.³⁷

Table 13 shows the very high rates of disappearance through delisting or acquisition. This phenomenon is seen in all issue categories, but the significance of buy-backs varies with issue size. Small issues are generally picked up for very minor amounts, whereas big issues are acquired largely for the purposes of consolidation, which has affected a number of sectors, including pulp and paper. In addition to the delistings, if we classify as failures issues where net assets are negative or below the gross proceeds, the rate rises to 52.94% for small issues. Some 28.10% of companies do survive and increase their yield above the gross proceeds at issue. Only nine companies in this category, however, have net assets exceeding \$10 million and can therefore be viewed as successful. The success rate of small issues is thus 5.9%. The corresponding values for the \$1 to \$5 million group are 28.42% (failure) and 17.89% (success). In this case, the redemption rate is higher (37.89%). At 40.74%, the failure rate remains very high for companies with \$5 to \$10 million share issues. It is very low, however, for issues exceeding \$100 million (0.6%).

As can be seen, very small issues have an extremely small chance of succeeding. The economic rationale behind programs to promote stock listings for very junior companies should therefore be revisited.

³⁶ Or slightly negative where the shareholders' equity was significant before the issue.

³⁷ The European Community carried out an extensive project to review and consult on the definition of SME. The final recommendation of June 25, 2002 draws the line between small and medium-sized businesses at 10 million Euros (C\$16 million) in sales or total assets. With \$10 million in equity, the company has usually crossed this line.

Table 13: Distribution of Canadian companies with IPOs in 1991-1995, based on their status in 2002, the book value of their shareholders' equity (SE) and gross proceeds (GP) at the time of issue. Excluded are privatizations, issues under the CPC program and issues by companies headquartered abroad. Relative frequency for the different size categories is shown as a percentage in brackets.

GP	Delisted	Acquired	Bought/Sold			Total
			SE<0	0<SE<GP	GP<SE	
Under \$1 M	41 (26.80)	29 (18.95)	28 (18.30)	12 (7.84)	43 (28.10)	153
\$1 to \$5 M	15 (15.79)	36 (37.89)	8 (8.42)	4 (4.21)	32 (33.68)	95
\$5 to \$10 M	8 (29.63)	11 (40.74)	2 (7.41)	1 (3.70)	5 (18.52)	27
\$10 to \$50 M	9 (8.04)	54 (48.21)	4 (3.57)	7 (6.25)	38 (33.93)	112
\$50 M or over	0 (0)	17 (48.6)	1 (0.3)	1 (0.3)	16 (45.8)	35

Sources: *Financial Post Report of New Issues*, *Cancorp Financials*, www.sedar.com, www.tsx.com and additional research on the Internet.

Generally speaking, researchers have shown that newly issued shares suffer from abnormally poor performance over the first 3 to 5 years following the offering when this performance is adjusted against a benchmark made up of comparable securities.

This situation is apparently common in many countries, and Ritter (1998) provides a summary (Table 4). Underperformance was around -32% to -34% between 1980 and 2000 in the US, except for the 1990-1994 sub-period, when it was only -7% (Ritter and Welch, 2002). Loughran and Ritter (1995) obtained similar results for 1970 and 1990 in the US, as did Levis (1993) for the UK, as well as Cai and Wei (1997) for Japan in 1971-1982. Jog (1997) examined a sample of

254 Canadian primary issues listed on the Toronto Stock Exchange in the period 1971-1992 and also noted abnormally poor performance. Recent studies, however, have been critical of the methods used so far for analyzing this phenomenon and have sometimes shown contrary results. Paudyal *et al.* (1998) examined a sample of 77 Malaysian IPOs in 1984-1995 and arrived at adjusted abnormal returns for the three years following the offerings that were positive and insignificant (12.85%). Buser and Chan (1987) reported adjusted positive returns of 11.2% in the two years following the offerings based on a sample of primary issues on the NASDAQ in 1981-1985. Kim *et al.* (1995) reported overperformance based on a sample of 169 primary issues in Korea. This finding could have something to do with the fact that the Korean issuing companies had been in business longer than, for example, the US issuing companies. Their average age at the time of issue was 19.63 years for the sample used by Kim *et al.* (1995), but only 6.46 years for the 1,526 companies in Ritter's sample (1991). Entering the stock market later, the Korean companies would have a better chance of survival. A second possible explanation has to do with a high initial underpricing in Korea and a major rise in prices during the first month following the offering. By excluding the first month from the adjusted returns calculation, the writers note that the performance of primary issues in Korea does not differ statistically from the benchmark sample. This explanation relates to measurement problems.

3.2 Measurement problems

Measuring the long-term performance of primary issues raises major problems the analysis of which is beyond the purview of this study.³⁸ Numerous methodological options are available to researchers, involving benchmark performances (weighted or unweighted indexes, control group of companies), methods used to calculate cumulative abnormal returns (based on events or years), which are the differences between observed and benchmark returns, and, especially, the methods used to simulate investment strategies. Methods that use passive strategies (BHAR, for "buy and hold average return") are very different from cumulative returns approaches. In the first case, the simulated strategy is to buy and hold part of every new issue for 3 to 5 years without rebalancing the portfolio. The cumulative returns approach assumes that the portfolio is reweighted from time to time. Since no method has proven to be clearly better than the others and, as noted by Brav *et al.* (2000), the methodology used to measure long-term performance directly affects the size and strength of the statistical test, it is recommended that a number of different methods be used simultaneously. This is what we do below.

3.3 Medium- and long-term performance of issues

Figures 3 and 4 show cumulative abnormal returns calculated on the basis of the issue price for all Canadian primary issues except CPC issues for which stock market data were obtained. The excess yields are calculated for an equal-weighted portfolio where an equal amount is invested in each issue, and then on a weighted basis where the investment reflects the issue's relative size. Figure 4 shows that calculation methods have little effect on results and so they are discussed in general terms.

³⁸ See Barber and Lyon (1997) and Kothari and Warner (1997) for a study in this regard and Kooli and Suret (2003b) for a summary.

The high initial return in the graphs (Day 1) represents the high initial return discussed in the section above. By purchasing shares directly from the broker, the investor sees a big initial return, but the value of the investment drops rapidly and, on an equal-weighted basis, an initial investment in the issuing companies results in a loss to the investor of 19.96% and 26.5% after, respectively, 36 or 60 months, compared with an investment in companies that have not issued securities for 5 years. The investor also loses by investing in issuing companies in the first year of trading, with the peak loss occurring in the 60th month. When value weighted, an initial investment in the issuing companies results in a loss to the investor of 12.32% and 20.61% after, respectively, 36 and 60 months, compared with an investment in non-issuing companies. Value weighting appreciably reduces Canadian primary issues' medium- and long-term underperformance, although it does not do away with it. This suggests that underperformance is more significant for small issues than for bigger ones.

Figure 3: Cumulative abnormal returns (CAR). Sample consists of 445 primary issues in the period from January 1991 to December 1998 listed on the Toronto, Montreal, Vancouver and Alberta exchanges (excluding JCPs). Issue price is used as the basis for calculating long-term performance. CAR VW = value-weighted returns and CAR EW = equal-weighted returns.

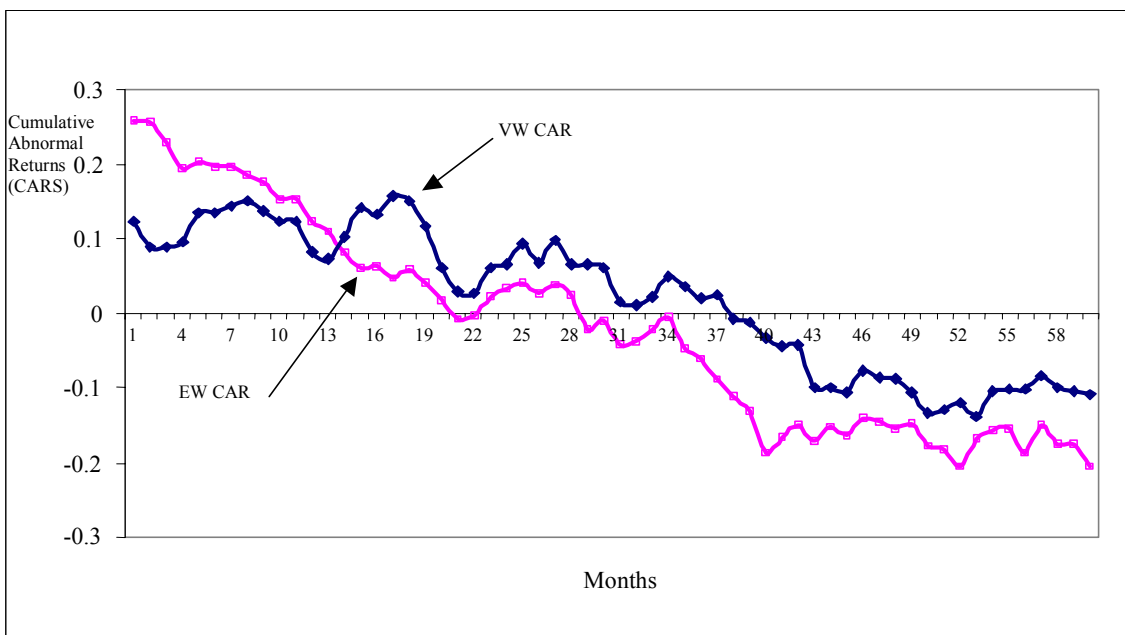
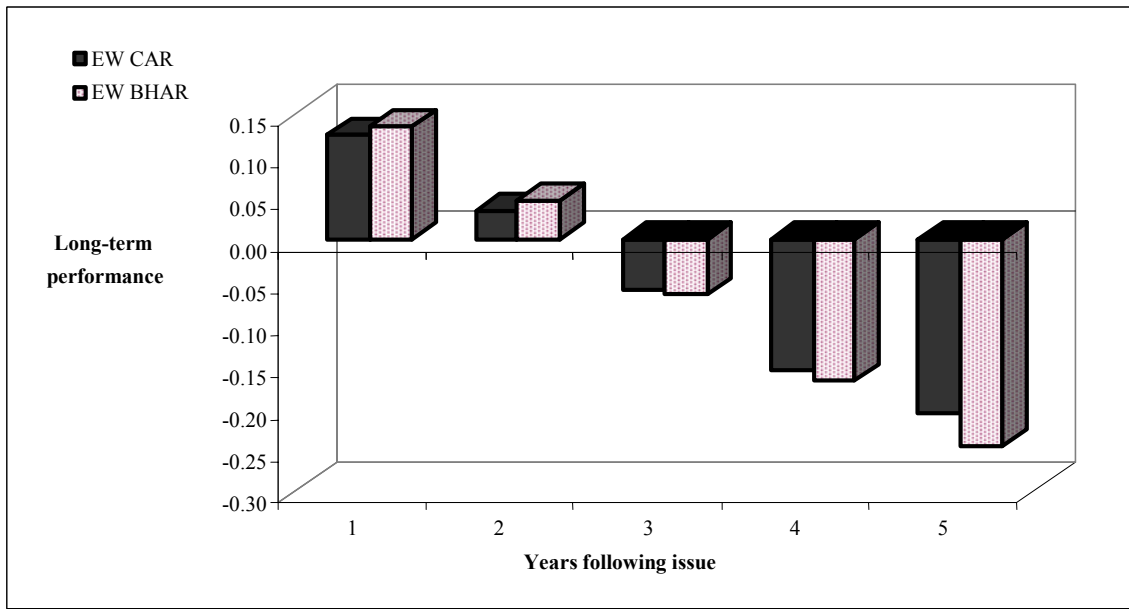


Figure 4: Cumulative Abnormal Returns (CAR) and Buy and Hold Average Returns (BHAR). Sample consists of 445 primary issues in the period from January 1991 to December 1998 listed on the Toronto, Montreal, Vancouver and Alberta exchanges. Issue price is used as the basis for calculating long-term performance. Returns are calculated on an equal-weighted (EW) basis.



3.4 Issue success factors

3.4.1 Size

When the sample is broken down on the basis of the gross proceeds of issues, it can be seen that issues with gross proceeds below \$10 million give rise to relatively bigger losses than the ones with gross proceeds above \$10 million. In the 48th and 60th months of issue, the BHARs from small issues are -42.58% and -44.86% respectively, whereas the figures for big issues are -7.9% and -3.1%. In the 5 years following their primary issue, small cap shares lose half of their value, taking market fluctuations into account. This is due to the fact that a large percentage of shares in small businesses listed on the exchange disappear. A study of the current status of issues would require in-depth analysis. Many securities are viewed as still trading even though prices are minuscule and transactions rare. As seen in section 3.1, the survival rate is positively linked to company size.

3.4.2 Issuing periods

In 1991, 1992, 1995 and 1998, the market was “hot.” In 1993, 1994, 1996 and 1997, it was “cold,” although a few issues by subsidiaries raised significant capital in Canada. This breakdown shows that underperformance is not a generalized phenomenon. At the 36th month after issue, the

BHARs are –24.06% for “hot” issues and –8.06% for “cold” issues. At the 60th month, the BHARs are –40.38% for “hot” issues and –11.47% for “cold” ones. Underperformance therefore appears to be worse when issues occur during periods of intense issuing activity.

3.4.3 Technology sector

When the sample is broken down by industry,³⁹ it becomes clear that underperformance varies considerably from sector to sector. For example, primary issues in the financial services sector see a positive adjusted return in the five years following the offering. The special characteristics of financial companies compared with industrial and commercial concerns might explain this positive performance. This group includes demutualizations, which play a major role when value weighting is used.

Issues in the mining and oil and gas sectors underperform substantially five years after issue. The *ex ante* uncertainty typical of these issues might account for this long-term underperformance.

Primary technology issues perform poorly in the first year, after marked initial underpricing (19.77%), but underperform thereafter through the fifth year of issue. This observation holds true only when performance is calculated based on the issue price. Performance measured on the basis of market price is sharply negative.

In short, Canadian primary issues yielded lower returns over the 5 years studied than a sample of similar non-issuing companies. The implications here are significant, especially for small issues. To begin with, there is the problem of sustaining investor interest in this type of investment. Secondly, there is the high cost of subsequent issues. It would seem that a major objective of primary issues, lowering financing costs, is not being achieved.

3.5 Foreign experiences

In the US, the Small Corporate Offering Registration (SCOR) program and certain forms of direct investment exempted from registering with the SEC (Regulations A and D and intrastate regulations) enable small start-ups to raise funds more easily and cheaply⁴⁰ than through conventional primary issues. The amounts raised are smaller, ranging from \$1 to \$20 million, like the vast majority of Canadian issues. Disclosure requirements are less stringent and oversight is local. These issues are not covered by the SEC under the terms of the NSMIA (1996). They can be sold by the company itself or a commission sales representative and make use of mass communications, including the Internet. The SCOR program,⁴¹ developed by the North American

³⁹ The sectoral distribution is based on the distribution under the System for Electronic Document Analysis and Retrieval (SEDAR), available at www.sedar.com.

⁴⁰ The cost of a Direct Public Offering (DPO), done without brokers, is about 10% of the cost of an IPO, according to T. Stewart Gordon, editor of *SCOR Report*, the journal of alternative financing: see <http://www.dfdpo.com/article8.htm>.

⁴¹ *The Full Disclosure Act, New Issues Act, Truth in Securities Act or Prospectus Act*. For more details about this program, log onto <http://www.nasaa.org/>.

Securities Administrators Association (NASAA) in conjunction with the American Bar Association, exists in 45 US states. Originally, it was intended to register, at the state level, share offerings exempt under SEC Rule 504 for sales of securities up to \$1 million. Issues are limited to \$1 million in each 12-month period with a minimum unit price of \$5 (\$2 in some states). Companies have to fill out a U-7 form that is simpler than the SEC's.⁴² In most states, financial statements have to be audited if the issue exceeds \$500,000 and minimum income conditions are sometimes placed on investors. To make things easier for issuing companies in a number of states, SCOR programs have been implemented on a regional basis.⁴³

At the outset, securities issued but exempted from SEC registration were not traded. To solve this problem, in 1995, the SEC authorised the Pacific Stock Exchange to publicly list shares subject to SCOR regulations and Regulation A.⁴⁴ The vast majority of companies, however, use this type of issue as a private investment, and investors hold the shares until the company is sold, is listed on an exchange, or buys back its own shares.

SB-1 and SB-2 issues stand out from other types of issues intended for small businesses in that they are like initial public offerings that have to be registered with the SEC, but are reserved for small businesses. They are issues worth \$10 million or less (SB-1) and \$25 million or less (SB-2). Companies have to register with the SEC, but the procedures have been simplified. It remains to be seen whether these pared-down procedures lead to the creation of viable companies.

Table 13 shows the annual distribution of small company issues in the US in 1984-2001. The data are from Stewart Gordon (*Dallas SCOR Report*) and the SEC.⁴⁵ Overall, there were 1,983 issues yielding total gross proceeds of US \$3.7 billion in the period covered (starting sample). Very rare in the 1980s, these issues became much more common in 1993 (166 issues, for an increase of 77% over 1992) and thereafter, peaking in 2000 (285).

Based on this initial sample, we were able to track companies that subsequently registered their shares on a national stock exchange. Inasmuch as this affords tangible evidence of corporate growth, in that the company satisfies the minimum listing criteria and needs financing in order to continue growing, the listing of a small business that has released an IPO is a sign of success. Based on this observation, the overall issue success rate is only 5.40%, however, or 107 IPOs (final sample). The annual distribution of successful issues is similar to that of the starting sample. Table 17 shows a large percentage of issues under SB-2 and Regulation A in the final sample: 80 of the 107 companies succeeded (47 issued under Regulation A and 33 under SB-2 regulations). However, no company that arranged an issue under intrastate legislation or the SB-1 in 1984-2001 later achieved listing status.

⁴² The form asks 50 questions about the company's background, the main risks facing investors, the amount needed and how the company plans to spend it.

⁴³ A region is a group of states: there are currently four regions.

⁴⁴ Provided they meet the minimum registration conditions: see <http://www2.inc.com/search/1897-print.html> or <http://www.millcapquest.com/faq.htm>. However, the SEC, under the NSMIA (1996), incorporated the Pacific Stock Exchange into the so-called national markets on January 13, 1998, and the securities it lists are now covered within the meaning of the NSMIA.

⁴⁵ <http://www.scor-report.com> and <http://www.sec.gov/>.

The sectoral breakdown of the final sample (Table 14) shows that companies in the financial, technology and service sectors were predominant, at 60.7%,⁴⁶ while the basic materials and durable goods sectors were underrepresented, at 10.3%.

Table 14: Starting sample of issues by small US companies, including direct issues, in 1984-2001, and final sample of issues subsequently listed.

Type of issue	Starting Sample		Final Sample		Success Rate
	Number	Gross Proceeds (US\$ M)	Number	Gross Proceeds (US\$ M)	
Direct issues					
SCOR	770	537.1	23	15.8	2.99%
Reg. A	566	1 479.5	47	123.9	8.30%
Reg. D-504	53	32.4	4	3.1	7.55%
Intrastate	174	437.0	0	0	0.00%
Primary issues					
SB-1	14	21.8	0	0	0.00%
SB-2	406	1 236.9	33	137.7	8.12%
Total	1983	3 744.8	107	280.5	5.40%

Data sources: SEC at <http://www.sec.gov/> and *SCOR Report* at <http://www.scor-report.com>. The success rate is the ratio of the number of successful (listed) issues under regulations to the total number of issues made under the same regulations.

US initiatives geared to achieving listings for small businesses do not appear to be successful. The rate of actual listing is very low and most companies financed in this way do not manage to grow.

3.6 Conclusion and policy implications

The performance of primary issues in Canada is disappointing. In this respect, it is no different from issues in other developed markets. However, the medium-term return on small issues is about -50% over the five years following the offering and the five-year survival rate is around 60% for issues from the early 1990s. The US has chosen to relax its regulations to facilitate access to financing for small businesses. Based on the fragmentary data we have been able to gather and review, these programs do not appear successful.

It may be that this disappointing market performance reflects poor operational performance after issue that is concealed from the investors by accounting tricks when preparing the prospectus. At least four US studies have highlighted this phenomenon and the investors' inability to detect these tricks. If this is so, it would imply a need for increased oversight by securities commissions. For now, we have no evidence of this problem in Canada. It seems more plausible to associate the mediocre performance of Canadian IPOs with the fact that they are conducted by small companies that often have very short track records. These companies have not been able to

⁴⁶ Based on the sectoral classification suggested by Stewart Gordon.

develop and build a competitive edge, which is the key factor for achieving wealth and increasing value.

4. IMPLICATIONS FOR REGULATION AND INTERVENTION

In this section, we try to explain the implications of the observations made in the earlier sections in terms of policy and regulation. The dysfunctions in the small issues market (relative rarity, high cost, poor medium-term return) are all the more paradoxical given that governments have tried very hard to stimulate the venture capital supply, for which the primary issue is a natural route. This stimulation has been such that the amounts raised every year through technology company issues are far less than are amassed by the venture capital industry. In fact, venture capital supports very few primary issues. There do not appear to be any plans in the stock brokerage industry to change issuing approaches, and the role of institutional investors is ambiguous. These different factors need careful consideration.

In 1994, MacIntosh referred to a number of institutional and regulatory barriers to the financing of innovative businesses in Canada. He said then (p. 7) that “[Canadian] small firms appear to ‘Go Public’ or sell their shares to public investors, far less often than their US counterparts.” This study shows that the situation is largely unchanged, although the CPC program has appreciably increased market listings for small companies. Yet, over the 1990s, major changes were introduced in the institutional and regulatory environment.

4.1 The lowering of market listing standards

4.1.1 *Process of change*

Over the years, and often in tandem with programs set up to promote the capitalization of small businesses, the minimum standards for stock market listing have gradually come down in Canada. The CPCs represent an extreme, where listing can be done without a track or operating record and capitalization of a few thousand dollars. CPCs enable very small firms to get listed.⁴⁷ The Quebec Stock Saving Plan had already caused an appreciable relaxation of basic listing requirements for the Montreal Stock Exchange. The TSX allows listings for technology and industrial firms with net tangible assets of \$1 million (Tier 1) or even with no tangible assets (Tier 3). By comparison, the minimum requirement for access to the least demanding tier of the West African Regional Stock Exchange is \$500,000. In other words, the minimum standards for exchange listings in Canada are similar or even lower than those for markets in developing countries.

This study shows that small business issues are costly, are significantly underpriced and, on average, provide poor medium-term returns. In a parallel study (Carpentier *et al.*, 2003), we show that companies that grow out of the CPC program are still small businesses in the usual sense

⁴⁷ Policy 2.4 states that an issuer resulting from a restructuring (after the qualifying transaction) has to meet the minimum listing requirements related to its industry sector and Tier 1 or Tier 2 as defined by Policy 2.1 minimum requirements, that is, \$5 million or \$1 million in net tangible assets respectively.

years after the qualifying transaction, with sales figures of around \$10 million. In analysing the QSSP (Suret, 1994), we highlighted the disappearance rate and very poor performance of small issues made under this program. Of 215 issues from 1979 to 1990 in the “development” component of this program, 34 have remained closed, 15 were apparently trading in late December 1993 at levels above their issue price adjusted for index fluctuations, and 9 had been redeemed in similar circumstances. The success rate was thus 15/215 or about 7%. This rate is very similar to the one reported in this study for small Canadian issues (\$1 million or less) or locally regulated US ones.

4.1.2 Issue performance and lowering of standards

The QSSP – Development, CPC and, in the US, SCOR programs and the lowering of minimum stock market listing standards have the common aim of making it easier for companies to gain faster and cheaper access to public financing. However, these various programs are apparently not very successful in developing profitable businesses that would provide investors with a decent rate of return. In economic terms, and despite the importance of small businesses, there is reason to wonder whether these incentives lead to a less than optimal allocation of funds. When investors lose about 50% of their outlay in 5 years, the answer seems obvious. The various Canadian and US studies show a generally bleak future for small firms with stock exchange listings. The European experience, where the new market’s index lost 84% of its value between December 1999 and December 2002, shows that this phenomenon is not limited to North America. A mere stock listing will not ensure a company’s growth. An analysis of the minimum conditions for potentially successful issues is beyond the compass of this study, but one should be undertaken. It seems clear that the lowering of standards and the market listing situation are not effective ways of promoting the development of growth companies. The fact that only 5% of IPOs for amounts of less than \$1 million do not [sic-TR] manage to achieve enough growth after 5 or 10 years for the company to move beyond SME status should prompt authorities to limit, rather than facilitate, the market listing of small businesses.

4.1.3 Monitoring by analysts

Minimum listing standards to achieve success should be reviewed in light of the following factors.

- The idea of adequate available capitalization. The float is the outcome of issue size and the distribution of shares among investors. Capitalization standards cannot be lowered unless the shares going to institutions are limited. There should be a study of listing standards based on available rather than total capital.
- Coverage by analysts. The interest of financial analysts in a stock is a major success factor for issues in the medium term. Chen *et al.* (2002) show that the level of coverage of shares by analysts affects their value, the effect often varying with types of analysts. Those with

the big national stock brokerage houses have more effect on share values than the ones working for regional firms. Analysts with the least clout are from companies that are not involved in brokerage. Sayrak and Dhiensiri (2003) show that, in the US, coverage of a share by analysts generally starts when there is a positive yield of around 3%. These findings are consistent with the assumption that financial analysts provide investors with valid information and help to close the information gap between companies and the market. Sayrak and Dhiensiri note that the effect of stock coverage is greater for NASDAQ shares than for NYSE shares. This reflects the fact that information asymmetry is probably greater for NASDAQ issues. Analytical activity thus becomes more important in their case.

In the US, the key role of analysts in primary issues is acknowledged by NASDAQ (2001): “An effective investor relation (IR) program can reinforce a company’s strengths, strategy and key executives – and it is vital to helping a company achieve its goal of maximizing shareholder value.... The foundation of most IR programs is built on contact with sell-side analysts. They are the key link to the buy-side, provide research, recommending stocks and overseeing transactions.” Das *et al.* (2002) are of the view that the results of their study of IPO coverage “are consistent with a market of powerful analysts, whose coverage on firms determines investor’s demand and interest in IPO stocks.” These authors show that, after a year, 73% of IPOs in 1985-1995 were being followed by analysts, and this figure rises to 83% after three years. Speed and intensity of coverage are directly linked to issue size and the prestige of the capital underwriters. There is also a positive relationship between coverage and medium- and long-term share performance.

Interest on the part of analysts therefore seems to be a major condition for IPO success. Yet even in the US, where issues and issuing companies are much bigger, a large percentage of primary issues is not monitored on a regular basis. It is therefore more than likely that the vast majority of IPOs in Canada go unnoticed by analysts.

This would need to be verified in Canada, but L’Her and Suret (1996) report that in 1995, only 203 Canadian stocks were being actively covered by more than five financial analysts. The number of stocks being tracked was 458. It is therefore highly unlikely that new issues are followed closely by Canadian analysts.

Lack of coverage by analysts, insufficient available capital and a poor profit picture leave little hope for new Canadian issues. The policies that lowered the standards and stimulated new issues can certainly be termed dangerous. They do not lead to an optimal distribution of savings, they cause transfers of wealth to middlemen, and they culminate in only rare successes. Given the conditions under which small issues are made in Canada, such offerings are more of a problem than a solution to financing difficulties.

4.2 Venture capital and primary issues

4.2.1 Paradox

Public financing for technology companies is very modest in Canada, compared with the US. This is paradoxical considering the intense activity reported by venture capital firms. In 1999, for example, the Canadian Venture Capital Association reported over 1,200 investments in technology and managed funds in excess of \$12 billion. In Canada, venture capital has become a much more important source of financing for growing companies than public financing, as shown in Table 16. Over the period 1992-2000, there was more than twice the amount of backing by venture capital than capital from initial public offerings by technology concerns.

Some results suggest that venture capital firms have little involvement in financing through primary issues. Cumming and McIntosh (2000), using CVCA data, found 33 primary issues connected with venture capital firms in Canada in 1992-1995, or 4.5% of the 662 issues made in that period. This percentage is consistent with our estimates, which put the percentage of issues involving venture capital at about 10% for 1991-1999 (excluding CPC issues).

However, issues initiated by venture capital companies have focussed on technology firms. They were involved in 33 of the 86 technology issues in the period 1992-1995, or 38%. Venture capital companies seem to be having a modest effect on primary issue activity overall, but they are responsible for a significant percentage of technology issues. There is a major disproportion between the overall activity of venture capital companies in Canada and the average of eight technology issues they can be credited with every year. Moreover, the exit methods of venture capital investors differ in two major ways: buy-backs by issuers are far more numerous (as a percentage) in Canada than in the US, and delistings are commoner in the US. There is a similarity, however, in the proportions of primary issues (see Table 15).

Table 15: Exit methods of venture capitalists in the US and Canada

Exit Methods	US	Canada
Write-offs	29.5%	20.1%
IPOs	26.8%	26.9%
Acquisitions	26.8%	11.9%
Sales	8%	9%
Buy-backs	5.3%	30.6%
Other	3.6%	1.5%

Source: Based on Cumming and MacIntosh (2002).

Table 16: Distribution of annual financing by IPOs of common and other shares by technology companies and annual distribution of funds managed by venture capital investors in Canada.

Year	Annual IPO Financing by Technology Companies (\$ billions)	Annual Total Funds Invested by Venture Capitalists (\$ billions)
1992	0.17	0.3
1993	0.62	0.42
1994	0.27	0.46
1995	0.37	0.67
1996	0.76	1.09
1997	2.19*	1.82
1998	0.54	1.66
1999	0.42	2.72
2000	1.85	6.63
Total	7.20	15.77

* 1997 was highly influenced by a few issues, especially by subsidiaries like Bell Canada International and AT&T Canada for \$640 million and Microcell and Telesystem for \$307.6 million. Source of data on annual amounts invested by venture capital investors, 1992-1997:⁴⁸ SECOR, 1998, p. 13, (diagram 5), and for 1998-2000: Web site of the Canadian Venture Capital Association at http://www.cvca.ca/statistical_review/index.html. Annual amount of public financing for technology companies: *Financial Post, Report of New Issues*.

4.2.2 Pre-IPO financing

Pension funds are not big investors in growth companies in Canada. In 1999, only 5.6% of new venture capital generated in Canada came from pension funds investing in venture funds. In 2000, this figure rose to 11%, only to dip back to 3% in 2001. In the US, by contrast, 40% of all new capital commitments came from pension funds in 2000.⁴⁹ SECOR (1998, p. 11) echoes this observation for the 1990s as a whole, stating that although pension funds, insurance companies and foundations are the main venture capital sources in the United States, these institutional investors have actually abandoned the venture capital market in Canada over the past 10 years.

It may be that, as a matter of tradition, Canadian pension funds are choosing not to favour this category of assets, or that regulations are curbing this type of investment. It is also likely that these institutions lack qualified staff to gauge the profitability of this type of project. Perhaps the funds are concerned about insufficient liquidity, as the preferred exit method of venture capital investors is the buy-back of the company by its executives. Finally, the pension funds may simply be shut out of the Canadian venture capital market by an overabundance of venture capital from

⁴⁸ Note that in Canada, labour-sponsored funds are included in the definition of venture capital even though some of these funds' investments do not behave like venture capital.

⁴⁹ According to the findings of the latest Round Table on the Potential of Canadian E-Business: <http://benefice-net.branchez-vous.com/nouvelles/02-03/06-176501.html>.

government sources in particular. As SECOR shows (1998, diagram 1), the government's involvement in supplying venture capital has risen steadily since the early 1990s. Cumming and MacIntosh (2002) show that certain policies may be directly responsible for defects in the way venture capital works in Canada. They highlight the generally negative effect of labour-sponsored funds on the capital supply, owing to a crowding-out effect on private funds.

4.2.3 *Venture capital fragmentation*

Venture capital in Canada is broadly influenced by labour-sponsored funds, the portfolios of which are far from typical of venture capital investments. Some of these funds have achieved significant size, but they have adopted a regionalized structure that fragments their resources. Funds other than labour-sponsored funds are generally small. The profile of respondents to the annual survey of the Canadian Venture Capital Association indicates that they had an average of 27 investments in 1999. Cumming (2003) analyses 214 Canadian funds and reckons that each labour-sponsored fund has an average of 32 investments. This means that Canadian funds are basically small. Successive rounds of financing may prove difficult and funds with limited resources may be reluctant to back rounds of financing preceding IPOs. This situation may offer an explanation for hasty company listings and the rarity of "venture-backed" IPOs.

Considering that this major support to the venture capital supply is not bringing a significant number of viable firms to the stock market or financing the money-raising rounds preliminary to IPOs, intervention policies in this area, including tax credits to labour-sponsored funds, need to be re-examined.

4.3 Institutional investors

Basically, existing primary issues procedures seem to enable brokers to allocate a major proportion of issues to institutional investors. In the US, institutional investors get a disproportionate share of "good" issues. The advantage afforded to institutional investors is viewed as essential and often defended by brokers as a way of keeping these buyers, which absorb large percentages of new issues. Boehmer *et al.* (2002) estimate this proportion as 77% of available shares.

Admittedly, the sale of a major proportion of these issues to institutional investors helps the broker, which unloads the issue quickly. This practice would be necessary if the non-institutional investors were reluctant to pick up shares in IPOs. But the average price hike in early negotiating sessions contradicts this assumption. There is also a great deal of empirical evidence that IPOs are oversubscribed and individual investors have problems obtaining securities at the offering price. Moreover, the concentration of shares in the hands of institutionals could have the following negative effects:

- A significant loss of liquidity for small cap securities;
- Lack of interest by analysts and brokers due to low transaction levels;

-
- Major price fluctuations as blocks of shares are sold.

4.4 Brokerage

A number of researchers, including Loughran *et al.* (1994) and Chowdhry and Sherman (1996), argue that the mechanisms used for valuing and distributing the shares of a primary issue influence the stock market listing process. The most widespread practice in the US and Canada is called book building, in which the lead broker gathers information about the buying plans of potential (institutional and individual) investors⁵⁰ during “road-shows” and establishes a demand curve based on a number of criteria.

Cornelli and Goldreich (2001) stress the preference for institutional investors⁵¹ that are prepared to buy and hold the shares over the long term. The issue price is set so as to create the impression that there is surplus demand and the distribution of the shares is left to the underwriter’s discretion.

The second mechanism, the fixed price offer, used in the UK, Singapore and Finland, is based on setting a fixed issue price even before demand for the share is determined. If there is surplus demand, shares are rationed on a prorated basis or by drawing lots. In other countries, rationing reflects the size of the orders received. To reduce the likelihood of a failed primary issue, a low issue price is often set, which might also explain the high average initial returns (Loughran *et al.*, 1994).

In Israel, IPOs use the “dutch auction” system, where the issue price is set after the buy orders are collected to reflect supply and demand and the shares are allocated to all successful bidders. In the US, “open” IPOs use the same system on the Internet and claim that it is more efficient than book building. In France, a sales approach that combines book building and auctions, which could also be termed a book building hybrid, is used to set the issue price and distribute the shares. The release involves making a quantity of shares publicly available at a minimum price with the near certainty, especially in bullish periods, of obtaining a higher rate that is close to market price.

Table 17 shows the initial underpricing of IPOs by mechanism and country. Auction sales seem to result in far lower underpricing than the other methods of setting prices. Conversely, the advent of book building in a market where it did not exist can produce, as in Hong Kong’s case, an increase in brokerage fees that were previously very low (2.5%) (Butler and Huang, 2002). To the extent that they are done by Internet, primary issues help to create auctions that might allow for wider distribution of shares and a more objective valuation process. Primary issues by auction are

⁵⁰ These buying plans may take the form of a quantity of shares at a maximum or minimum price.

⁵¹ Jog (1997), conducting a survey of a number of issuers, says they agree on the fact that institutional investors not only play a major role in the initial sale of their shares but hold on to the shares they buy: private investors will sell their shares shortly after buying them, which strengthens the importance issuing companies attach to the potential influence of the brokers.

still unusual. They have been used in Israel (Kandel, Sarig and Wohl, 1999) and, more recently, in the US, especially by Hambrecht. This initiative has not garnered much enthusiasm among the competition, though the technology developed by Hambrecht for auctioning primary issues is attracting more and more interest.⁵² In particular, it is used for auctioning fixed-income securities, in amounts of around \$5 billion. At any rate, the book building technique is becoming generalized worldwide except in the rare countries where it is prohibited.

In order to establish issuing systems less geared to brokers' needs and interests, it is first necessary to achieve genuine competition among the firms in this field. The Canadian market is doing the opposite.

Table 17: Average initial returns of IPOs in France, Japan and Taiwan by mechanism for valuing and distributing shares

Mechanism	Period	Average Number of Shares	Average Initial Return
France:			
Fixed price	1992-1998	24	8.9%
Auction	1992-1998	99	9.7%
Book building	1992-1998	135	16.9%
Japan:			
Fixed price	1970-1988	441	32.5%
Auction	1989-1997	733	14.1%
Book building	1997-2000	368	43.7%
Taiwan:			
Fixed price	1986-1995	241	34.6%
Auction	1995-1998	52	7.8%

Sources: France – Derrien and Womack (2000, Table 1); Japan – Loughran *et al.* (1994), Pettway and Kaneko (1996), Hamao *et al.* (2000), and Kaneko and Pettway (2001); Taiwan – Lin & Sheu (1997)⁵³ and Liaw *et al.* (2000, Table VII).⁵³

⁵² For an analysis of reactions, see:

<http://www0.mercurycenter.com/sytech/news/indepth/docs/dutch062600.htm>.

⁵³ Quoted in Loughran *et al.* (1994), updated September 2002.

4.5 Conclusion

Our study highlights a number of major problems in the operation of the primary issues market. In our view, the main one is the low survival rate of small businesses involved in initial public offerings. We estimate that 5.9% of small issues lead to a business that can claim big business status within 5 to 10 years. The policy of stimulating small firms' stock exchange listings should be re-evaluated. The emphasis should be on mechanisms that would allow IPOs to be deferred until businesses have had a reasonable chance to ensure they can survive. Stress should be placed on developing a supply of capital prior to the issue.

The arguments in favour of lightening the regulatory burden for small issues should be reviewed in the light of these findings as well. The success rates of primary issues are similar to those of venture capital. However, this form of financing is handled by experts, which is not the case with primary issues that are bought in part by institutional investors. Lastly, small primary issues in all likelihood have a negative effect on the market. They perform poorly and hamper market liquidity.

Primary issues remain few in number compared with the situation in the US, which may seem paradoxical given the efforts made by the different governments to increase the venture capital supply. It may be that the fragmentation of this supply is one of the factors accounting for the relative rarity of IPOs involving venture capital firms. The role of government in the area of venture capital supply should be revisited. However, the main points of comparison should be issue size and medium-term success. The vast majority of Canadian issues are very small, and a very small percentage of these can be seen as successful.

Bibliography

- Barber, B., and J. Lyon, "Detecting Long-Run Abnormal Stock Returns: The Empirical Power And Specification Of Test Statistics." *Journal of Financial Economics* 43, 341-372, 1997.
- Biais, B., and A. Faugeron, "IPO Auctions: English, Dutch, French And Internet." University of Toulouse, Working Paper, 2000.
- Boehmer, B., E. Boehmer and R.P. Fische. "Do Institutions Receive Favorable Allocations In IPOs With Better Long Run Returns?" SSRN Working Paper, 2002.
- Brav, A., C. Geczy and P. Gompers, "Is The Abnormal Return Following Equity Issuance Anomalous?" *Journal of Financial Economics* 56, 209-249, 2000.
- Buser, S., and K. Chan, "NASDAQ/NMS Qualification stand, Ohio registration experience and the price performance of initial public offerings." Ohio Department of Commerce and National Association of Securities Dealers Inc., Columbus, 1987.
- Butler, A., and W. P. Huang, "On The Uniformity Of Investment Banking Spreads: The Seven Percent Solution Is Not Unique." SSRN Working Paper, 2002.
- Cai, J., and K. Wei, "The Investment And Operating Performance Of Japanese IPOs." *Pacific-Basin Finance Journal* 5, 389-417, 1997.
- Carpentier. C., M. Kooli and J.M. Suret, "Les sociétés de capital de démarrage." Working paper produced by the CVMQ [Quebec Securities Commission], 2003.
- Chowdhry, B., and A. Sherman, "The Winner's Curse and International Methods of Allocating Initial Public Offerings." *Pacific-Basin Finance Journal* 4: 15-30, 1996.
- Chen, C.R., K-C. Chan and T.L. Steiner, "Are All Securities Analysts Equal?" *Journal of Financial Research* 25(3), 2002, 415-30.
- Cornelli, F., and D. Goldreich, "Bookbuilding And Strategic Allocation." *Journal of Finance*, Forthcoming 2001.
- Cumming, D.J., "The Determinants Of Venture Capital Portfolio Size: Empirical Evidence." SSRN Working Paper, 2003.

-
- Cumming, D.J., and J.G. MacIntosh, "The Rationale Underlying Reincorporation and Implications for Canadian Corporations." *International Review of Law and Economics* 22(3): 277-330, 2002.
- Cumming, D.J., and J.G. MacIntosh, "Crowding-Out Private Equity: The Canadian Evidence." SSRN Working Paper, 2002.
- Cusatis, P.J., J.A. Miles and J.R. Woolridge. "Restructuring Through Spin-Off: The Stock Market Evidence." *Journal of Financial Economics* 33: 293-311, 1993.
- Das, S., R-J. Guo and H. Zhang, "Initiation Of Analyst Coverage and Long Term Performance of Initial Public Offerings." SSRN Working Paper, 2002.
- Derrien, F., and K.L. Womack, "Auctions Versus Book-Building and the Control of Underpricing in Hot IPO Markets." *Review of Financial Studies* 16, 31-61, 2003.
- Derrien, F., and K.L. Womack, "Auctions Versus Book-Building and the Control of Underpricing in Hot Markets." Dartmouth Working Paper, 2000.
- Fama, E.F., and K.R. French, "New Lists And Seasoned Firms: Fundamentals And Survival Rates," SSRN Working Paper, 2002.
- Falk, H., and D. Thornton, "The Canadian Market For Initial Public Offering: Evidence from the Toronto, Montreal and Alberta Stock Exchanges." Unpublished Working Paper, 1992.
- Guidici, G., and S. Paleari, "Underpricing, Price Stabilization and Long Run Performance in Initial Public Offerings: A Study on the Italian Stock Market Between 1985 and 1998." SSRN Working Paper, 1999.
- Hamao, Y., F. Packer and J.R. Ritter, "Institutional Affiliation And The Role Of Venture Capital: Evidence From Initial Public Offering In Japan." *Pacific Basin Finance Journal* 8(5): 529-58, October 2000.
- Higgins, J., "Canada and U.S. Cost Comparisons of IPOs." *The Conference Board of Canada*, 1994.
- How, J., and J. Howe, "Warrants in Initial Public Offerings: Empirical Evidence." *The Journal of Business* 74(3): 433-57, 2001.

Ibbotson, R. G., and J. F. Jaffe, "Hot Issue Markets." *Journal of Finance*, 1027-42, September 1975. (Condensed version in *The CFA Digest*, Spring 1976).

Jenkinson, T., and A. Ljungqvist, "Going Public: The Theories And Evidence On How Companies Raise Equity Finance." (2nd Edition), Oxford University Press, 2001.

Jog, V., "The Climate For Canadian Initial Public Offerings", Financing Growth in Canada, P. Halpern, ed., University of Calgary Press, 357-401, 1997.

Jog, V., and A. Srivastava, "Underpricing in Canadian IPOs 1971-1992 - An Update." *FINECO* 4(1): 81-87, 1st quarter 1994.

Jog, V., and A. Riding, "Underpricing In Canadian IPOs." *Financial Analysts Journal*, 45-55, 1987.

Jog, V., and J. Hitsman, "Canadian IPO: TSE Versus NASDAQ." Carleton University, Working Paper, 2000.

Kandel, S., O. Sarig and A Wohl, "The Demand For Stocks: An Analysis Of IPO Auctions." *The Review of Financial Studies* 12(2):227-247, Summer 1999.

Kaneko, T., and R.H. Pettway, "Auctions Versus Book-Building Underwriting of Japanese IPOs: OTC Mothers and NASDAQ-Japan Issues." Financial Research Institute Working Paper, University of Missouri-Columbia, 2001.

Kim, J., I. Krinsky, and J. Lee, "The Aftermarket Performance of Initial Public Offerings in Korea." *Pacific-Basin Finance Journal* 3, 429-448, 1995.

Kooli, M., and J.-M. Suret, "How Cost Effective Are Canadian IPO Markets?" *Canadian Investment Review*, Forthcoming 2003a.

Kooli, M., and J.-M. Suret, "The Aftermarket Performance of Initial Public Offerings in Canada." *Journal of Multinational Financial Management*, Forthcoming 2003b.

Kothari, S., and J. Warner, "Measuring Long-Horizon Security Price Performance." *Journal of Financial Economics* 43, 301-339, 1997.

-
- Kutsuna, K., and R. Smith, "How IPO Pricing Method Affects Under Pricing and Issue Cost: Evidence on Japan's Change from Auction Method Pricing to Book-Building." SSRN Working Paper, 2000.
- Levac and Wooldridge, "The Fiscal Impact of Privatization in Canada." Bank of Canada Review, 1997.
<http://www.bankofcanada.ca/publications/review/r973a.pdf>
- Levis, M., "The Long-Run Performance of Initial Public Offerings: The UK Experience 1980-1988." *Financial Management* 22, 28-41, 1993.
- L'Her, J. F., and J. M. Suret, "Liberalization, Political Risk and Stock Market Returns in Emerging Markets." *The Journal of International Finance* 4(2), 135-148, 1996. (Special edition on Emerging Markets).
- Ljungqvist, A., and W. Wilhelm, "IPO Allocations: Discriminatory or Discretionary?" *Journal of Financial Economics* 65(2): 167-201, 2002.
- Ljungqvist, A., T. Jenkinson and W. J. Wilhelm, "Global Integration in Primary Equity Markets: The Role of U.S. Banks and U.S. Investors." *Review of Financial Studies*, Forthcoming.
- Loughran, T., J. Ritter and K. Rydqvist, "Initial Public Offering: International Insights." *Pacific-Basin Finance Journal* 2, 165-199, June 1994.
- Loughran, T., and J. Ritter, "The New Issues Puzzle." *Journal of Finance* 50, 23-51, 1995.
- Lowry, M., and G. Schwert, "IPO Market Cycles: An Explanatory Investigation." SSRN Working Paper, 2000.
- MacIntosh, J.-G., "Legal and Institutional Barriers to Financing Innovative Enterprise in Canada." Monograph prepared for the Government and Competitiveness Project, School of Policy Studies, Queen's University, Kingston, Canada, Discussion Paper 94-10, 1994.
- Paudyal, K., B. Saadouni and R. Briston, "Privatisation Initial Public Offerings in Malaysia: Initial Premium and Long-Term Performance." *Pacific-Basin Finance Journal* 6, 427-451, 1998.
- Pettway, R., and T. Kaneko, "The Effects of Removing Price Limits and Introducing Auctions Upon Short-Term IPO Returns: The Case Of Japanese IPOs." *Pacific-Basin Finance Journal*, 241-258, July 1996.

-
- Riding, A., "Financing Entrepreneurial Firms: Legal and Regulatory Issues." Research paper produced for the Task Force on the Future of the Canadian Financial Services Sector, 1998, http://finservtaskforce.fin.gc.ca/research/pdf/rr9_e.pdf
- Ritter, J., "Some Facts About the 2002 IPO Market." Working Paper, 2003. http://bear.cba.ufl.edu/ritter/work_papers/IPOs2002.pdf
- Ritter, J., "Initial Public Offerings", *Contemporary Finance Digest* 2(1): 5-30, Spring 1998. http://bear.cba.ufl.edu/ritter/work_papers/IPOs2002.pdf
- Ritter, J., and I. Welch, "A Review of IPO Activity, Pricing and Allocations." NBER Working Paper, February 2002.
- Ritter, J., "Initial Public Offerings." *Contemporary Finance Digest* 2(1): 5-30, 1998.
- Ritter, J., "The Long-Run Performance of Initial Public Offerings." *Journal of Finance* 46, 3-27, 1991.
- Robinson, M., "Raising Equity Capital for Small and Medium Sized Enterprises Using Canada's Public Equity Markets." *Financing Growth in Canada*, P. Halpern, ed., University of Calgary Press, 593-636, 1997.
- Schultz, P., "Unit Initial Public Offerings - A Form of Staged Financing." *Journal of Financial Economics* 15, 187-212, 1993.
- Sayrak, A., and N. Dhiensiri, "The Value Effect of Analyst Coverage Initiations." University of Pittsburgh, Working Paper, 2003.
- Sawiak, G. V., W. J. Braithwaite and P. Olasker, "Report to the Standing Senate Committee on Banking, Trade and Commerce on the Transaction Costs of a Decentralized System of Securities Regulation." April 1996.
- SECOR Inc, "Financing Knowledge-Based Small Business." Research paper produced for the Task Force on the Future of the Canadian Financial Services Sector, 53 pp., 1998.
- Sherman, A., "Global Trends in IPO Methods: Book-Building Versus Auctions." Notre-Dame University, Working Paper, 2001.

Shutt, T., and H. Williams, "Going to Market: *The Cost of IPOs in Canada and the United States.*" *The Conference Board of Canada*, March 2000.

http://tse.com/cgi-bin/uni_framset.cgi?content%3Dnews/news_rel/news_418.html

Suret, J.-M., E. Cormier and B. Lemay, "*Le RÉAQ et la sous-évaluation initiale du prix des titres.*" *Canadian Journal of Administrative Sciences* 7(3): 47-56, 1990.

Venture Economics, Press Release, May 1, 2000.

<http://www.ventureeconomics.com>

Appendix 1: Main Classes of Securities

CATEGORIES OF SECURITIES

<u>Types of Organization</u>	<u>Shares</u> <i>(common shares, ordinary shares, class A, class B, subvoting shares)</i>	<u>Units</u>	<u>Capital Shares</u>	<u>Preferred Shares</u>	<u>Flow-through Shares</u>
Operating company	X	X			X
Subsidiary	X	X		X	
Limited partnership					
Trust		X	X		
Venture capital	X	X	X	X	
Mutual fund	X		X		

IPOs: Common shares

IPOs: Other shares

Also categorized as “other shares”:

- Warrants
- Instalment receipts
- ADR or ADS: American depository receipt or share

Non-IPO

Appendix 2: List of Technology Sectors

8734-02	LABORATORIES-TESTING	8734
8733-04	MEDICAL RESEARCH	8733
8732-03	PRODUCT DEVELOPMENT & MARKETING	8732
8731-05	HUMAN FACTORS-RESEARCH & DEVELOPMENT	8731
8711-47	ENGINEERS-AUTOMATION	8711
8711-11	ENGINEERS-CONSULTING	8711
8399-11	MEDICAL MANAGEMENT SERVICE	8399
8243-01	COMPUTER TRAINING	8243
8099-16	BLOOD BANKS & CENTERS	8099
8082-01	HOME HEALTH SERVICE	8082
8071-07	LABORATORIES-BIOLOGICAL	8071
8071-04	LABORATORIES-CLINICAL	8071
8071-01	LABORATORIES-MEDICAL	8071
7819-09	MOTION PICTURE SPECIAL EFFECTS	7819
7629-31	CELLULAR TELEPHONES-SERVICE & REPAIR	7629
7389-04	RADIO PAGING & SIGNALING-COMMON CARRIER	7389
7382-04	SECURITY SYSTS-COMMUNICATIONS/COMPUTER	7382
7379-03	WORD PROCESSING SYSTEM - CONSULTANT/DESIGN	7379
7378-01	COMPUTERS-SERVICE & REPAIR	7378
7377-01	COMPUTERS-RENTING & LEASING	7377
7376-98	COMPUTER FACILITIES MANAGEMENT	7376
7375-05	ONLINE SERVICES	7375
7374-01	DATA PROCESSING SERVICE	7374
7373-01	ENGINEERS-SYSTEMS	7373
7372-98	PREPACKAGED SOFTWARE	7372
7372-01	COMPUTER SOFTWARE-MANUFACTURERS	7372
7371-02	COMPUTER PROGRAMMING SERVICES	7371
7371-01	COMPUTER SERVICES	7371
5999-02	CELLULAR TELEPHONES-EQUIPMENT & SUPLS	5999
5912-07	PHARMACEUTICAL CONSULTANTS	5912
5912-05	PHARMACIES	5912
5735-01	RECORDS TAPES & COMPACT DISCS-RETAIL	5735
5734-01	COMPUTER SOFTWARE	5734
5084-42	PRINTING EQUIPMENT (WHOLESALE)	5084
5065-04	RADIO COMMUNICATION EQUIP & SYSTEMS-WHOL	5065
5064-38	TELEPHONE ANSWERING SYSTS/EQUIP (WHOL)	5064
5063-49	SEMICONDUCTOR-MFRS' EQUIP/SUPLS (WHOL)	5063
5049-06	LABORATORY EQUIPMENT & SUPPLIES (WHOL)	5049
5049-05	SCIENTIFIC APPARATUS & INSTRUMENTS-WHOL	5049
5047-19	DENTAL EQUIPMENT & SUPPLIES-WHOLESALE	5047
5047-12	HOSPITAL EQUIPMENT & SUPPLIES (WHOL)	5047
5047-04	PHYSICIANS & SURGEONS EQUIP & SUPLS-WHOL	5047

5045-02	COMPUTERS-SUPPLIES & PARTS-WHOLESALE	5045
5043-01	AUDIO-VISUAL EQUIPMENT & SUPLS (WHOL)	5043
4911-01	ELECTRIC COMPANIES	4911
4899-01	COMMUNICATIONS SERVICES-COMMON CARRIERS	4899
4822-03	ELECTRONIC MAIL SERVICE	4822
4813-01	DATA COMMUNICATION SERVICE	4813
4812-01	PAGING & SIGNALING SVC-COMMON CARRIER	4812
3851-98	OPHTHALMIC GOODS-MANUFACTURERS	3851
3851-03	OPTICAL GOODS-MANUFACTURERS	3851
3845-02	LASERS-MEDICAL-MANUFACTURERS	3845
3842-11	FIRST AID SUPPLIES-MANUFACTURERS	3842
3841-98	SURGICAL/MED INSTRUMENTS/APPARATUS (MFR)	3841
3841-05	PHYSICIANS/SURGEONS EQUIP-SPEC DESIGNED	3841
3841-04	PHYSICIANS & SURGEONS EQUIP & SUPLS-MFRS	3841
3841-03	HOSPITAL EQUIPMENT & SUPPLIES-MFRS	3841
3829-08	TESTING APPARATUS-MANUFACTURERS	3829
3829	MEASURING/CONTROLLING DEVICES NEC (MFRS)	3829
3826-98	LABORATORY ANALYTICAL INSTRUMENTS (MFRS)	3826
3826	LABORATORY ANALYTICAL INSTRUMENTS (MFRS)	3826
3825-01	RECORDING INSTRUMENTS IND/SCIENTFC-MFRS	3825
3823	INSTRUMENTS FOR MEASURING (MFRS)	3823
3821-01	LABORATORY EQUIPMENT & SUPPLIES-MFRS	3821
3812	SEARCH, DETECTION SYSTEMS AND INSTRUMENTS	3812
3769	GUIDESD MISSILE / SPACE VEHICLES PARTS	3769
3764	GUIDED MISSILES / SPACE VEHICLE PROPULSION UNITS	3764
3761	GUIDES MISSILES, SPACE VEHICLES	3761
3728	AIRCRAFT PARTS / AUXILIARY EQUIPMENT	3728
3724	AIRCRAFT ENGINES AND ENGINES PARTS	3724
3721	AIRCRAFT	3721
3699-02	ELECTRIC EQUIPMENT-MANUFACTURERS	3699
3695	MAGNETIC/OPTICAL RECORDING MEDIA (MFRS)	3695
3679-01	ELECTRONIC EQUIPMENT & SUPPLIES-MFRS	3679
3679	ELECTRONIC COMPONENTS, NEC-MFRS	3679
3674	SEMICONDUCTORS & RELATED DEVICES (MFRS)	3674
3672	PRINTED CIRCUITS BOARDS (MFRS)	3672
3669	COMMUNICATIONS EQUIPMENT NEC (MFRS)	3669
3663	RADIO/TV BROADCASTING/COMM EQUIP (MFRS)	3663
3661	TELEPHONE & TELEGRAPH APPARATUS (MFRS)	3661
3643	CURRENT-CARRYING WIRING DEVICES (MFRS)	3643
3625-98	RELAYS & INDUSTRIAL CONTROLS (MFRS)	3625
3625	RELAYS & INDUSTRIAL CONTROLS (MFRS)	3625
3579	OFFICE MACHINES NEC (MANUFACTURERS)	3579
3577	COMPUTER PERIPHERALS (MANUFACTURERS)	3577
3575	COMPUTER TERMINALS (MANUFACTURERS)	3575
3572	COMPUTER STORAGE DEVICES (MANUFACTURERS)	3572

3571-01	COMPUTERS-ELECTRONIC-MANUFACTURERS	3571
3571	COMPUTERS-ELECTRONIC-MANUFACTURERS	3571
3496	FABRICATED WIRE PRODUCTS-MISC (MFRS)	3496
1799-35	COMPUTER ROOMS-INSTALLATION & EQUIPMENT	1799
1731-07	TELECOMMUNICATIONS CONTRACTORS	1731
1623-09	FIBER OPTICS	1623

Source: E&B Data Inc., Montreal.