How Useful is Venture Capital? Evidence from Capital Pool Companies

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Abstract

Although many articles affirm the pivotal role of venture capitalists in financing emerging companies, the real importance of these investors' roles is more difficult to illustrate. Our original approach consists in analyzing performance and the success rates of companies that finance their growth directly on the stock market, without passing through the traditional intermediary steps of private venture capital financing. This direct access to public financing is made possible by the Capital Pool Company program, launched in Canada in the late 1980s. Similar to American Blind Pools, Capital Pool Companies have spawned more than half of the new issues on Canadian stock markets between 1995 and 2001. Analysis of close to 450 issuers resulting from this program demonstrates that a direct entry on the stock market cannot be considered a valid substitute for the conventional financing steps, which include venture capital. Our results support the hypothesis that the venture capital industry indeed plays a fundamental role in high growth companies, owing to its screening, monitoring and financing capacities.

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1 Executive summary

Venture capital investors play a vital role in financing small businesses. Yet venture capitalists are much more than merely traditional financial intermediaries. Venture capitalists have a crucial function: screening out ex ante unprofitable projects. In addition, they play an active and interventionist role in monitoring management and in firm decision-making. Overall, venture capitalists' actions significantly increase companies' survival rate. Venture capitalists also make a pivotal contribution to the timing, pricing and monitoring of the shares of initial public offerings of young companies.

Several approaches have been applied to demonstrate the importance of venture capital: some authors have estimated the size of venture capital investments, others the impact of venture capital on technological innovation, while recent works have examined the impact of venture capital investors on the monitoring of new issues. Although it is the most common, the first method but is hindered by three challenges. First, it is difficult to measure venture capital investments because statistics generally group different phases of investment and diverse stakeholders under the term venture capital. Second, data on private financing is not easily accessible. Third, these measures do not provide an answer to the basic question: whether venture capital is instrumental to business development.

To our knowledge, no studies have determined whether the role of venture capital is essential or secondary. According to Gomper and Lerner (2001, p. 164): *Many policy makers have a perception that venture capital organizations have had much to do with the rising leadership of U.S. firms in high-technology industries (...). But demonstrating a causal relationship between the presence of venture capital investment and innovation or job growth is a challenging empirical problem.* The actual importance of venture capital therefore remains undetermined. To better understand this problem, we will use an original approach underpinned by analysis of performance of young companies that finance their growth directly on the stock market, without the use of venture capital. This direct access to public financing constitutes the very essence of

the Capital Pool Company program, launched in Canada in the late 1980s. This program follows the introduction of the Blind Pools program in Alberta in 1986, a program that was quickly modified to become the Capital Pool Company program, whose regulation is more constraining than that of Blind Pools. The hypothesis underlying the program is that it is possible to grow companies without the use of venture capital, be it institutional or private. Our general hypothesis is as follows: if venture capitalists indeed play an essential role in developing young companies, the success rate of companies that avoid this step by using the Capital Pool Company program will be low, and the program will fail, for the following reasons: 1) Unprofitable projects will be financed, in the absence of a rigorous selection process; promoters and brokers associated with the creation process of Capital Pool Companies will probably have a lesser incentive to select projects judiciously compared with venture capitalists, 2) Performance of financed companies will be abnormally poor because strategic orientations would be more poorly defined than those of companies funded by venture capital organizations, and their operating procedures would be less professional, 3) Performance will be impaired by a higher degree of agency conflicts between shareholders and executives in the absence of the control function played by venture capitalists.

Our study shows that the Capital Pool Company program allows companies that are mostly nonviable to enter the stock market. These companies do not seem to possess the necessary elements to develop using public financial resources that, in principle, justify listing on the stock market. On average, the vast majority of companies issuing from the Capital Pool Company program are not profitable, and their stock returns adjusted for variations in the index are strongly negative. The absence of growth following injection of funds demonstrates that the lack of financing was probably not the principal problem these companies faced. This observation, based on the results of the analysis of performance of companies whose listing on the exchange was made possible by this program, has two implications. First, venture capital appears to play a crucial role in the development of emerging companies. Launching an initial public offering without completing this step generally leads to failure. Second, in terms of public policy, it seems that development of mechanisms intended to facilitate the entry of emerging companies on the stock market requires serious reexamination. The Canadian experience indicates that entry on the market at a precocious stage of development is generally not a valid option for growth financing.

Government intervention and regulatory mechanisms should therefore encourage the supply of private capital before the initial public offering rather than easing access conditions to the stock market.

2 Introduction

Venture capital investors play a pivotal role in financing small businesses. Gompers and Lerner (2001, p. 145) assert that *Venture capital has developed as an important intermediary in financial markets, providing capital to firms that might otherwise have difficulty attracting financing. These firms are typically small and young, (...) typically possess few tangible assets and operate in markets that change very rapidly. Venture capital organizations finance these high-risk, potentially high reward projects, purchasing equity or equity-linked stakes while the firms are still privately held.* But venture capitalists (VCs) also act as more than mere traditional financial intermediaries. Berger and Udell (1998, p. 2) explain that *Financial Intermediaries play a critical role in the private markets as information producers who can assess small business quality and address information problems through the activities of screening, contracting and monitoring.*

VCs have an important function: screening out ex ante unprofitable projects. As Kaplan and Stromberg (2002) demonstrate, before investing, VCs devote considerable time and effort to evaluating and screening the investment opportunity. VCs also play an active and interventionist role in monitoring management and in firm decision-making. Dodlzer (2001) use evidence from surveys of founders and CEOs to describe the most valuable functions of VCs, which are providing advice and introductions for financing, together with help in establishing and reviewing the company's strategic focus. Using a hand-collected data set on Silicon Valley startups, Hellman and Puri (2001) find that venture capital is related to the quicker adoption of a variety of professionalization measures, such as human resource policies, the adoption of stock options, the hiring of a marketing vice-president, and the replacement of the founder by an outsider as a CEO. Baker and Gompers (1999) affirm that before an initial public offering (IPO), equity investments by VCs reduce CEO ownership by about half. VCs narrow this difference by granting options, reducing secondary sales and lowering the dilution by primary shares. The authors conclude that the patterns of ownership represent a tradeoff by VCs between the benefits of incentives and the agency costs of control. Overall, VCs' actions translate into a significant

increase in companies' survival rate (Birmingham *et al.*, 2002). For example, according to the European Private Equity & Venture Capital Association¹, *the responses of the venture-backed companies prove that venture capital investment is crucial to the existence, feasibility and success in the seed/start-up and expansion stages.*

Several approaches have been used to demonstrate the importance of venture capital: some authors have estimated the size of venture capital investments, others the impact of venture capital on technological innovation, while recent researches have examined the impact of VCs on the monitoring of new issues. While the most common, the first method is hindered by three challenges. First, it is difficult to measure venture capital investments because statistics generally group different phases of investment and diverse stakeholders under the term venture capital. Wright and Robbie (1998) suggest that the term private equity capitalist is more appropriate than venture capitalist. They maintain that the venture capital market encompasses several players, notably mutual funds, VCs, angels, LBO associations and banks. Gompers and Lerner (2001) differentiate venture capital organizations that are publicly traded closed-end funds from limited partnerships and Small Business Investment Companies. Second, data on private financing is difficult to obtain. According to Berger and Udell (1998, p. 4), the lack of detailed micro data on small businesses and the funds they raise in private equity and debt markets is likely a major reason why – until very recently – small business finance has been one of the most underresearched areas in finance. Third, these measures do not provide an answer to the basic question: whether venture capital is instrumental to business development. Kortum and Lerner (2000) examine the influence of venture capital on patented inventions in the United States across twenty industries over three decades. They found that venture capital is associated with a substantial increase in patenting. Hellmann and Puri (2000) show that venture capital is associated with a significant reduction in time to bring a product to market, especially for the firms that are the first movers in their market, introducing new products or services for which a close substitute is not yet offered in the market. Gompers and Lerner (2001, p. 159) report that the proportion of all initial public offerings that are backed by venture capitalists rose from under 10% in the 1980s to about 31% in the 1990s-and a remarkable 56% in 1999. VCs also

¹ Survey of the Economic and Social "Impact of Venture Capital in Europe", 2002, http://www.evca.com/images/attachments/tmpl_9_art_37_att_333.pdf

play a crucial role in the timing, pricing and monitoring of initial public offering shares of growth companies. Using a sample of 350 privately held venture-backed biotechnology firms between 1978 and 1992, Lerner (1994) demonstrated that venture-backed companies go public when equity valuations are high, and employ private financings when values are lower. Using a sample of 934 venture-backed IPOs from 1972-1992 and 3,407 nonventure-backed IPOs from 1975-1992, Brav and Gompers (1997) show that the long-term return of venture-backed IPOs outperform non-venture-backed IPOs. Botazzi and Da Rin (2002) contend that European venture capital has a limited effect on the ability of some of Europe's most innovative and successful companies to raise equity capital, grow and create jobs. They conclude that the European venture capital industry should assess both its growth and its maturation. Morsfield and Tan (2003) examine whether VCs provide value-added monitoring by constraining IPO-related earning management in their portfolio firms. They find evidence that abnormal discretionary accruals are significantly lower and that the long-run returns are significantly higher for VC-backed IPO firms.

None of the studies above have determined whether the role of venture capital is essential or secondary. According to Gompers and Lerner (2001, p. 164): *Many policy makers have a perception that venture capital organizations have had much to do with the rising leadership of U.S. firms in high-technology industries (...). But demonstrating a causal relationship between the presence of venture capital investment and innovation or job growth is a challenging empirical problem.* The real importance of risk capital therefore remains undetermined. To attempt to answer this question, we will apply an original approach based on analysis of young companies that finance their growth directly on the stock market, without the use of venture capital. This direct access to public financing is the very essence of Capital Pool Company (CPC) program, launched in Canada in the late 1980s. Indeed, according to Policy 2.4 of the TSX Venture Exchange,² the goal of the CPC program is to provide businesses with an opportunity to obtain financing earlier in their development than might be possible with an IPO. This program follows the introduction of the Blind Pools program in Alberta in 1986, a program that was quickly modified to become the CPC Program, whose regulation is more constraining than Blind Pools. The CPC program mainly differs from the Blind Pools program as follows: CPC

² <u>http://www.tsx.com/en/productsAndServices/listings/cdnx/resources/resourcePolicies.html.</u>

promoters must specify the industry in which they plan to invest the funds, the maximum amounts and the price of CPC shares are regulated,³ the CPC promoter's shares must be held in escrow to limit the risk of abuse by promoters⁴ and the CPC program cannot be used when an agreement in principle⁵ is established between the promoters and the company that is subject to the qualifying transaction.

The hypothesis that underlies this program is that it is possible to grow companies without the use of venture capital, be it institutional or private. Our general hypothesis is the following: if VCs indeed play an essential role in developing young companies, the success rate of companies that avoid this step by using the CPC program will be low, and the program will fail, for the following reasons: 1) Unprofitable projects will be financed, in the absence of a rigorous selection process; promoters and brokers associated with the CPC creation process will probably have a lesser incentive to select projects judiciously than would venture capitalists, 2) Performance of financed companies will be abnormally poor because strategic orientations would be more poorly defined than those of companies backed by venture capital organizations, and their operating procedures would be less professional, 3) Performance will be impaired by a greater degree of agency conflicts between shareholders and executives in the absence of the control function played by VCs.

In this paper, we empirically test three nonexclusive propositions:

Proposition 1: Operating performance of companies financed by the CPC program, which are not financed by venture capital or private placement, is abnormally poor.

Proposition 2: Stock market performance of companies financed by the CPC program, which are not financed by venture capital or private placement, is abnormally poor.

Proposition 3: The success rate of companies financed by the CPC program, which are not financed by venture capital or private placement, is abnormally low.

³ In certain American states such as Colorado and Utah, shares originating from the Blind Pool program may be traded only over the counter (Dolan and Giffen, 1988, p.22).

⁴ The rules of escrow are intended to limit the possibilities of promoters' very short-term gains and to ensure a better correspondence of their interest with those of subsequent investors.

⁵ In general, an agreement in principle stipulates the main conditions on which the parties agree or plan to agree, and specifies the asset items or the company that must be acquired, the parties to the qualifying

The data for this study was derived from a unique database composed of companies that concluded their IPO as part of the CPC program between 1995 and 2000. The CPC program is described in Part 3, followed by a presentation of the data, hypotheses and methodology (Part 4). We then analyze operating performance and growth (Part 5), stock market performance (Part 6) of companies listed on the stock market because of this program, and their success rate (Part 7). In addition to evaluating the role of VCs, the study supplies the first in-depth evaluation of the CPC program⁶.

3. The Capital Pool Company Program

3.1 Description of the program

The first Junior Capital Pool program was launched in Alberta in November 1986, a joint effort by the Alberta Securities Commission and the Alberta Stock Exchange. This program was an adaptation of the American Blind Pool program. In 1997 the British Columbia Securities Commission and the Vancouver Stock Exchange adopted a similar program, the Venture Capital Pool program. The CPC program of the CDNX, which took effect on March 1, 2000, replaces the two previous programs following the merger of the Vancouver and Alberta stock Exchanges in November 1999; it results from a collaboration between the Alberta, Saskatchewan, Manitoba⁷ and British Columbia securities commissions and the CDNX. In Ontario, the program has been in force on the TSX Venture Exchange since June 15, 2002, and in Quebec since November 12, 2002. Figure 1 shows that the CPC program is a two-stage process. The first stage involves the completion of the IPO and the listing of the CPC on the exchange. The CPC is a listed corporation with no assets or business plan, no operating history, no assets except cash, and has the sole goal of finding and acquiring assets or companies as takeover targets. The second stage involves an agreement in principle relative to a transaction. Once the transaction, called a qualifying transaction (QT), is complete, the new entity must satisfy the exchange minimum

transaction, the consideration due for the significant assets or the calculation method of the consideration payable. The conditions to the formal agreement must be met to complete the transaction.

⁶ The few existing studies of CPC (Dolen and Giffen, 1998; Hopkins and Robinson, 1994, Robinson, 1997, 1993) uniquely use summary indicators of success such as the number of CPCs created or the frequency of qualifying transactions, and cover the startup period of the program exclusively.

⁷ The Winnipeg Exchange joined the TSX Venture Exchange in November. A similar program, the Keystone Company Program, existed previously.

listing requirements for the particular industry sector and the resulting issuer may be listed for regular trading either in Tier 1 or Tier 2.⁸ The empirical analysis in our study concerns the second stage exclusively.



Source: Doyle $(2002)^9$

3.2 Stage one: CPC listing on the exchange

The characteristics of the CPC^{10} during the study period are detailed below. We outline the differences between the current and the former version of the program when useful.

1. The directors and officers of the CPC must contribute at least \$100,000 to the seed share subscriptions and obtain control over the CPC. The amount of seed capital must be no greater than \$500,000. The minimum price of seed shares is the greater of \$0.05 and 50% of the price at which the IPO shares are sold. The minimum issue price of the IPO shares is \$0.10, the

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

⁸ Since January 15, 2003, if the proposed Qualifying Transaction is not a non arm's length QT, the CPC will not be required to obtain shareholder approval of the QT.

⁹ http://www.reseaucapital.com/Conferences/Rentree_02/Louis_Doyle_TSX.pdf

¹⁰ Initially created under the name junior capital pools, these corporations became venture capital pools and then capital pool companies when the program was adopted by the CDNX. We will designate them under the acronym CPC, although the regulatory framework for the successive versions of this program have evolved over the years and for different jurisdictions.

maximum is \$0.30 and a single class of common shares is allowed for seed capital and IPOs. The gross proceeds from the IPO must be equal to or greater than \$200,000 and must not exceed \$500,000 (\$300,000 before 1999). The CPC must hold at least 1,000,000 of its issued and outstanding common shares in the public float upon completion of the IPO. One purchaser may not directly or indirectly purchase more than 2% of the IPO shares. Upon completion of the IPO, the CPC must have a minimum of 300 shareholders¹¹.

2. The maximum aggregate gross proceeds that the CPC may raise from the issuance of IPO shares and seed capital shares must not exceed $$700,000^{12}$.

3. The CPC is a newly created company that has no assets, other than cash, and has not commenced commercial operations. The CPC uses this pool of funds to identify and evaluate assets or businesses. When acquired, these assets or businesses qualify the resulting issuer for listing as a regular Tier 1 or Tier 2 Issuer on the exchange.

4. The directors and senior officers of the CPC must collectively have a public company, appropriate experience, qualifications and history necessary to identify and evaluate assets or businesses with a view to completing a QT.

5. All seed shares must be escrowed.

The CPC enables the senior officers and directors to seek a business opportunity, and to react promptly when a target is identified. TSX Policy 2.4 restricts the business permitted to be undertaken by the CPC to the identification and evaluation of assets or businesses with a view to completing the QT. The proceeds realized from the sale of all securities issued by the CPC may be used solely for the business permitted, and authorized expenses are strictly defined. Options may be granted to the agent, and incentive stock options may be granted to a director or officer of the CPC, or to a technical consultant¹³. A CPC prospectus must provide full disclosure of all material facts relating to the securities offered, especially when the purpose of the offering is to provide the CPC with a minimum of funds with which to identify and evaluate businesses and assets with a view to completing a QT.

¹¹ The latest version of Policy 2.4 is dated March 24, 2003; there is no longer a maximum IPO price, the maximum gross proceeds of the IPO is now \$1,900,000 and the minimum number of shareholders is 200. 12 This amount was increased to \$2,000,000 on January 15, 2003.

¹³ The total number of common shares reserved under option may not exceed 10% of the common shares to be outstanding at the closing of the IPO.

3.3 Stage two: the qualifying transaction

The CPC has 18 months from the listing date to realize a QT. The exchange, at its discretion, may extend this period to 24 months from the listing date. After that period, the exchange may suspend from trading or delist the shares of the CPC. A QT is defined as a transaction where a CPC acquires significant assets, other than cash, by way of purchase, amalgamation, merger or arrangement with another company or by other means (TSX Policy 2.4, 1.1). For the exchange to accept the QT, the CPC must either a) acquire the operating assets or a private company by issuing new shares to finance growth or, b) acquire the significant operating assets but not issue new shares, having recourse to a private placement or c) be acquired by another company, which takes control of the CPC and which becomes open as part of this operation: this is known as a Reverse Takeover (RTO).

4. Databases, research hypothesis and methodology

The focus of our study is the Resulting Issuer (RI). According to TSX Policy 2.4, the RI is the issuer that was formerly a CPC, which exists upon issuance of the Final Exchange Bulletin. The RI is generally a young, closed company, which becomes a registered issuer via a RTO of the CPC. This listing method circumvents the classical growth steps of a young company. To identify RIs it was necessary to inventory lists of CPCs created.

4.1 Databases

Due to the lack of data for the period before the implementation of SEDAR (the Canadian equivalent of EDGAR) in 1997, we restricted the analysis period to QTs registered after January 1995, and we provide only stylized facts for the complete 1990-2000 period, to assess the impact of the program on new issue activity. CPC issues were gleaned from lists published by the Financial Post¹⁴. Issues from before 1995 were supplied by Michael Robinson of the University of Calgary. QTs were identified for each CPC using the TSX site¹⁵, along with SEDAR, the Survey of Predecessor and Defunct Companies published by the Financial Post (Survey), and Lexis-Nexis. The Financial Post lists of new issues were used when the CPC issued shares and

¹⁴ *Financial Post: Record of New Issues, Cumulative Report*, 1991 to 2001. Our starting date of analysis is the date of finalization of the issue originating from the CPC program, reported in the *Financial Post (Completion date)* lists.

¹⁵ http://www.tsx.ca/

was funded by a private placement, and in some cases the financial statements of companies were analyzed to trace QT¹⁶ data. RI stock performance was calculated using total return indices from the Datastream database of Thomson Financial, beginning from the date of the QT. The tickers required for extraction of returns originate from the CanCorp Financials database in the case of still active companies and from SEDAR for the remainder. Firms that do not appear in either of these sources were researched in the Survey. Companies not listed in Datastream were researched on lists of companies traded on the over-the-counter market.¹⁷ Accounting data originated from the CanCorp Financials database.

4.2 The CPC program: stylized facts

Table 1 shows the development of this program during the 1990s: 975 issues result from capital pools, as opposed to 1.063 traditional issues¹⁸. The CPC program was responsible for more than half of the IPOs in Canada between 1995 and 2001 (789 capital pool issues, compared with 692 traditional issues). To evaluate the importance of this program, we used the data of Fenn and Liang (1998), who note that in the United States, between 1,200 to 1,500 companies are financed by venture capital each year. As the Canadian market represents one tenth of the US market, the scale of the CPC program is roughly the same as that of venture capital in the United States in terms of number of financing programs (113 CPC issues per year in Canada compared with 1,200 in the United States). Out of 682 CPC issues noted between 1995 and 2000, 521 had completed a QT on December 31, 2001 (Table 2). Most CPCs led to QTs, which is consistent with Robinson's (1997) observations in the early 1990s. Overall, the proportion of QTs concluded approaches or exceeds 90% until 1998, then decreases sharply to 73% in 1999 and less than 45% in 2000 and 2001. Consideration of transactions completed after December 31, 2002 may increase the proportion for the year 2000, but it seems that the proportion of CPCs that conclude their transaction is sharply reduced, probably owing to unfavorable market conditions. Table 2 also reports the number and proportion of CPC for which we could determine the amount of the QT. Consequently, the amount consists of the gross proceeds in the case of a secondary issue or private placement and the increase in capitalization in case of mergers or reverse takeovers. The amounts thus calculated correspond only slightly to contributions of capital. In most cases, the

¹⁶ We also identified rare cases of qualifying transactions financed through credit.

¹⁷ www.otcbb.com and www.otcjournal.com

increase in capitalization results from the appreciation of the shares exchanged. This observation was made in 475 of 589 QTs of CPCs created between 1995 and 2001, i.e. in over 80% of cases.¹⁹ In most cases, the transactions for which information is missing are private in nature and took place in 1995-1996, before SEDAR allowed access to information published by firms. In each case, the financing amount was noted. The total amount raised during 475 QTs completed by December 31, 2001 stood at \$1.29 billion, corresponding to an average amount per QT of \$2.71 million. The sample contains 88 RI with zero sales during the first fiscal year following the QT, including 51 resources companies. 69 RI had zero sales at the end of the observation period, and 56 had zero sales at the beginning and end of the period. Given that the CPC program partly serves exploration companies and technological companies without revenues, the analysis of profitability should consider this characteristic of the sample.

4.3 Benchmarks

The analysis of RI performance is complicated considerably by the absence of benchmarks. To evaluate operating performance we used the All Private Equity Funds Index (APE) of Venture Economics, which has a capitalization-weighted average of time weighted returns using periodic IRRs. Table 3 shows that this is the most conservative measure of the performance indexes of private companies. The arithmetic mean return of the APE is 15.6% for the study period, compared with 27.6% for the Venture Capital Funds Index. To assess stock market performance, we used the Nesbitt Burns small capitalization index, whose geometric mean return is 6.9% for the study period.

Converging estimates of the success rates of private equity and venture capital investments are provided for the United States by Gompers and Lerner (1999), Cochrane (2001) and Das *et al.* (2003). Gompers and Lerner report that during the 1983-1994 period, 31% of companies listed in the VentureOne database completed an IPO, whereas 29% were acquired. Cochrane analyzes 16,852 rounds of financing in 7,765 different companies, using data from Venture Economics. He estimates the proportion of exits by IPO at 21.7% and by acquisition at 20.2%, whereas out of business represents 8.9% of cases. Das *et al.*, using data related to 52,000 rounds of financing,

¹⁸ Almost 81% of capital pool issues are from Alberta and British Columbia.

situate the probability of IPOs at between 20% and 25% and that of acquisitions at between 10% and 20%. These studies reveal that the success rate of private placement or venture capital is situated at between 35% and 60% in the United States. We consider these figures to indicate success owing to the high reported rates of return. After adjustment for variations of value in the sector, Das et al. report multiple exits of 16 (IPO) and 7 (acquisition). Cochrane found an average return to IPO of 698%. These are results pertain to the United States, yet Cumming and MacIntosh (2003) show that the proportion of venture capital investment that culminates in an IPO is comparable between the United States and Canada (25% versus 26.5%). Acquisitions are less prevalent in Canada, where secondary sales are relatively frequent and largely profitable. Their average annual rate of return is 54.9%, whereas they do not generate a positive return in the United States. Consistently with Cumming and MacIntosh, Amit et al. (1998, Figure 5) situate the proportion of success in venture capital at 39%, including secondary sales whose rate of return is also high (29%). The proportion of success is thus 53.6% in the United States and 47.8% in Canada, if secondary sales are considered successful in Canada. Writeoffs represent 29.5% of cases in the United States and 20.1% in Canada. We therefore use a success rate of 40% and the failure rate of 25% as benchmarks for analysis of success rates.²⁰

4.4 Hypothesis and Methodology

Operating performance

Operating performance of RI is evaluated in relation to the rate of return of venture capital and private placement. It seems difficult to compare the accounting returns (ARR) with the internal rates of return (IRR) provided by the venture capital sector. However, Danielson and Press (2003) show that ARR is a suitable proxy for the IRR of past investments. Their model demonstrates that the firm's ARR and historical growth rate define the range in which its IRR on

¹⁹ We also note the number of qualifying transactions completed between 1995 and 2001 by CPC that were issued between 1995 and 2000, because this sample will be used in the followup to the present study, to monitor the performance of stocks over at least 12 months.

²⁰ While survival rates are calculated both in the United Kingdom (Survival Rates of VAT Registrated Businesses) and the United States (Small Business Administration), they cannot be used here because they are highly variable and depend on numerous fiscal, environmental and institutional factors along with the age of the firms.

http://www.sbs.gov.uk/content/statistics/survival-rates-feb-2003.pdf, http://www.sba.gov/gopher/Legislation-And-Regulations/General-Information-And-Publications/adv1.txt

past investment is likely to fall, and they observe empirically that ARR is close to IRR for a large number of firms. However, Danielson and Press note two conditions that can induce large differences between ARR and IRR: a high asset-growth rate and considerable intangibles. Even if these conditions are true in venture capital-financed firms, we assert that they are not a common characteristic of CPC and RI.

For each firm and each year, we calculate an excess ROE, which is given by the difference between the observed ROE and the APE IRR for the corresponding year. We select the lower APE IRR rather than the Venture Capital IRR, which triggers a bias against rejection of the null hypothesis. For each year t and each company i, we then calculate an excess return on equity, ROEX_{i,t}, given by:

 $ROEX_{i,t} = ROE_{i,t} - IRR_t$

Where $ROE_{i,t} = NI_{i,t} / SEbeg_{i,t}$

 $NI_{i,t}$ is the net income before extraordinary items of company i for year t

 $SEbeg_{i, t}$ is the shareholders' equity from the start of year t

*IRR*_t is the capitalization weighted average of time weighted returns for APE Funds. We also define the average excess return on equity, ROEX_i, for each company i, as:

$$ROEX_i = \frac{\sum_{t=1}^{n} ROEX_{i,t}}{n}$$

Where n is the number of years between the QT and the end of the study period

The excess accounting rates of return are used to test the following hypothesis related to operating performance (proposition 1):

H₁: The accounting rate of return of RI is equal to or greater than that of private placements.

We have calculated the distribution of the excess annual rates of return, and performed a statistical test. The hypothesis was also tested using the average rate of return of each company, calculated between the QT and the end of the study period (ROEX_i). To describe distributions of average rates of return (Table 5), we used the average return on equity (AvROE_i) obtained by dividing the sum of the earnings by the sum of the equity at the start of the period. This

calculation method limits extreme data. Analysis of profit margins is also presented, without a statistical test, however, owing to the lack of a reference base.

Stock market performance

The hypothesis related to stock market performance is tested using average excess returns, calculated after 36 or 48 months as well as between the QT and December 31, 2002. Excess returns are calculated by subtracting the returns of the small cap stock index from the monthly returns of each of the RIs. Stocks are considered independent, and we have not attempted to use complex measures to calculate long-term returns of new issues, for two main reasons. First, there are no comparable companies for pairing purposes, and second, the excess returns are such that obtaining more precise results is not useful for our analysis. The tests of the second hypothesis are thus related to the distribution of cumulative excess returns:

H2: stock market performance of RI is equal to or greater than that of the Nesbitt Burns Small Capitalization Index.

Probability of success

The conventional success indicators in the field of private placement and venture capital, such as IPOs, were inapplicable to this study because the companies investigated are already listed on an exchange. We consider that an RI is successful if it meets the following conditions: shareholders' equity greater than \$5 million at the end of the period, sales exceeding \$10 million and a positive average excess return on equity. We consider that a company whose equity reaches \$5 million can foresee entry on the TSX over the medium term, because the minimum standard for companies to attain profitability is \$7.5 million in net equity. Sales of \$10 million correspond to the limit of \$6 million used by SBA to define the small business universe²¹. We also define partial success as the failure to meet some of these conditions. In the section dedicated to stock market performance, we also estimate the success rate to verify estimates based on accounting data. We used tests for equality of proportions to test the third hypothesis, defined as follows:

H3: The success rate of RI is greater than or equal to that of venture capital and private placements

²¹ http://www.sba.gov/gopher/Financial-Assistance/Defin/

5. Operating performance and growth

5.1 Sample and estimates

The population comprises 521 RI. Several were eliminated because of their quick disappearance or lack of accounting data (Table 4). We noted the sales (revenues), net income before extraordinary items and shareholders' equity at the end of each fiscal year following the date of the QT, and up to the 2001 fiscal year. The monitoring stopped before this date if the RI is delisted, acquired, or if it became the target of a merger or an RTO, because in the latter two cases a new company is created. The assets are considered zero in the case of companies whose shares have been suspended or delisted. Equity on the acquisition date is used in the case where the company was purchased. The analysis ensues from 367 observations. This sample presents a survival bias, which must be taken into consideration during the analysis of results. 52 inactive or bankrupt issuers were not monitored, and 30 companies were transferred to the over-the-counter market, or were reprivatized. The latter cases can also be combined with the failures, in so far as the primary objective of the program is to provide companies with access to the stock market.

The growth rates of returns and average margins for each company were calculated on various horizons, because some QTs were completed in 1995 and others in 2000. We did not have sufficient historical information to measure performance over a 3- or 4-year horizon for all RIs. We therefore report the average results in the text and present the detailed results in the appendix. Overall, the RIs are highly heterogeneous and the calculation of global data is largely insignificant. To facilitate the analysis, we therefore differentiate 2 categories. The first includes companies that did not experience significant growth and whose equity is below the limit of \$5 million during the analysis period. The second category includes companies that experienced rapid growth following the QT and that exceeded the limit of \$5 million in equity between the QT and the date of the end of the observation period. For each of the years and for each category, the average amounts of sales, net income before extraordinary items and shareholders' equity are presented in tables A1 to A6 in Appendix 1. Table 5 presents the average annual rates of returns on equity and average margins for all observations followed by those of firms with non-zero sales for the fiscal year following the QT. Table 6 presents the results of the test of hypothesis 1.

5.2 Resulting issuers without growth

RIs in this category do not present significant internal growth or an acquisition strategy; they represent 73.8% of observations for which monitoring was possible (271/367). The 82 cases for which data is not accessible, owing to suspension, delisting or reprivatization are also be included in this category. On average, for the entire period, companies in this category posted a loss equal to -53.30% of their sales (Table 5). Elimination of companies with zero sales brings this value to 39.68%. The low profitability is therefore not attributable to these companies, even if their margin is evidently most often equal to $-100\%^{22}$. The medians do not differ strongly from the means, which indicate that the results are not conditioned by a subset of issues. The net income of RI with low growth is negative for each of the years of the study period. The growth of sales is weak or negative. For example, the 57 RI of QT carried out in 1997 have average sales of \$1.78 million during the first fiscal year, compared with \$1.80 million 5 years later, but 13 issuers have disappeared, most often owing to financial difficulties (Appendix 1, Panel A of Table A3). The QTs of following years are completed by companies with superior growth but higher disappearance rates, which biases the estimates. The very low profitability of sales explains the level of ROE, which is on average -34.72% (Table 5). These losses are offset by contributions of capital, which allow relative stability of equity. For the 1996 cohort, the equity ranges from \$1.1 million in the first fiscal year to \$1.6 million in the sixth, but decreases from \$1.03 million to \$0.87 million for the 1997 cohort (Panel A of Table A2 and A3). The 1998 cohort also demonstrates a decrease in equity over the 4 years studied (Panel A, Table A4). The profitability of these issuers is therefore extremely low, despite the double bias created by difficulty in accessing data. On average, average shareholder equity of RIs without growth is approximately \$1 million at the end of the 2001 fiscal year, except for RIs of CPC that completed their QTs in 1996. Average net income is consistently negative.

²² The relatively limited effect of companies without revenues is explained by the fact that the ratios reported in Table 5 are weighted. In effect, they are obtained by dividing the sum of the income by the sum of the proceeds. The effect of very small companies with zero revenues and very low income is therefore limited. In addition, we have calculated a margin and a ROE weighted by shareholders' equity. The values (not reported) are slightly less negative but are comparable. The results reported are therefore not due to more pronounced underperformance of small issuers.

5.3 Resulting issuers with growth.

96 RI exceeded the limit of \$5 million in shareholders' equity before December 31, 2001 (Panel B of tables A1 to A6 in Appendix 1). At the end of the study period, shareholders' equity of companies in this category ranges from \$10 to \$18 million, except for the 1996 issues, where one company (Dundee Realty Corp) reached equity of \$462 million, which pushes the average equity of companies in the group to \$48 million. At the end of the study period, average sales range from \$12 million to \$30 million, depending on the cohort, with the exception here again of 1996. Overall, these companies are not profitable. The average margin for all years is -26.28%, with a median of -4.55% (Table 5). When companies without revenues are excluded, the average ROE is -6.62%, compared with an annual ROE of -7.62% for all observations analyzed. This average result does not exclude a few successes that may have enabled the issuers to be listed on the TSX²³. However, as profitability is negative for more than half of the 96 companies in this category, their relatively strong growth can be explained solely by a series of market transactions, which generally involved exchanges of shares.

5.4 Test of hypothesis 1

Table 6 reports the excess accounting returns of RIs compared with the APE IRR, along with statistical tests. On average, the abnormal return is –40% for the complete sample (Panel A). Danielson and Press (2003) show that it is possible for a firm's ARR and IRR to differ substantially when there is a high asset-growth rate. This is why we also restrict the sample to companies without growth (Panel B, Table 6). The abnormal rate of return of companies without growth is -45%. It rises to -46% if we calculate the abnormal returns company by company, and is significantly different from 0. P values allow us to reject hypothesis 1 in favor of the following alternative hypothesis: the operating performance of RIs is significantly inferior to that of firms funded by venture capital and private placements. Panels C and D of Table 6 illustrate that the conclusions remain valid for companies whose sales are non-zero during the first fiscal year following the QT. The very negative operating results of RIs are therefore not attributable to resource companies or technological firms without revenues.

²³ These companies are analyzed in Note 27.

6 Stock market performance

Measurement of long-term performance of IPO²⁴ poses methodological problems, notably in the case of very small issues²⁵. We therefore use a simple indicator based on the performance of issues adjusted for variations of a benchmark index composed of small capitalization stocks. This section of the study concerns only the RIs whose stocks are traded between the date of the QT and the end of 2002. The disappearance of numerous stocks generated an inevitable survival bias, the scope of which we have attempted to limit by taking into account, whenever possible, acquisitions or delistings.

6.1 Sample and data

Of the 521 companies that completed a QT before December 31, 2001²⁶, we were unable to trace the date of the QT for 37, and returns were not available for 33 other companies. The final sample therefore comprises 451 observations. The missing data is attributable to two factors. A large proportion of RIs disappear quickly, and leave no trace in the various databases, including those dedicated to inactive stocks. Other companies underwent a series of market transactions that render the monitoring of their performance impossible, particularly if the company was ultimately delisted. In general, RIs for which returns are not available disappear quickly, remain very small in size, are acquired several times or are privatized. Their stock is rarely traded and their lifespan is short. These stocks are "forgotten." However, stocks that were traded for a relatively long period and at a sufficient volume before being delisted or acquired are included in the databases. The omission of "forgotten" CPCs created a bias in favor of RIs because we omit stocks whose performance is largely mediocre. Of the 451 issues for which returns are accessible, 59 were delisted before December 31, 2002: 22 disappeared following financial difficulties, 10 are traded only over the counter, and 27 are acquired or merged; the purchase price was available in only 13 cases. To avoid exacerbating the survival bias, we applied the following rules in the

²⁴ Although the issues that take place during QTs are categorized by the *Financial Post* as subsequent issues, they are in fact the initial issues of operating companies acquired or integrated during these transactions, and we consider them as such.

²⁵ See Kooli and Suret (2003) for an analysis of these problems and for a presentation of the methods used in empirical studies. Pairing with medium-sized companies that did not undertake issues is frequently employed, but is inapplicable here owing to the very small size of the companies.

²⁶ The analysis of performance of resulting issuers was restricted to QT prior to December 31, 2001; to obtain at least 12 monthly returns.

case of mergers or acquisition: when the acquisition price is available, the final return is calculated between the last closing price before the merger and the acquisition price. The returns following the acquisition are those of the index, and the subsequent abnormal returns are zero. The returns are thus calculated between the date of the QT and the date of the merger. The abnormal returns following the delisting date are also zero in the case of financial difficulties or the transition to over the counter, in both cases the return for the month of delisting is -100%, and the return is calculated between the date of the QT and the delisting date.

6.2 Performance following the qualifying transaction

Returns after the QT are inferior to that of the benchmark index in over 80% of the cases (Panel A, Table 7). On average, the excess average monthly return is –8.08%, which corresponds to an annual geometric mean rate of –63.62%. After three years, the excess cumulative returns of a portfolio equally weighted with the shares of all RIs is –85.04% (Panel B, Table 7). After four years, these returns reach -89.73% (Panel C, Table 7). This result is also valid for the subset of RIs that transfer from the TSX Venture to the TSX²⁷. The calculation of P values allows us to reject hypothesis H2: the stock market performance rate of RI is statistically inferior to that of the benchmark index.

The mediocre stock market profitability of stocks issued during QTs should be placed in a broader perspective of medium-term performance of initial issues, and is not specific to this program. Jenkinson and Ljungqvist (2001, Table 2.2) recapitulate the studies conducted around the world, and found a generalized underperformance of -30% during the 5 years following the

²⁷ The TSX Venture Exchange provided us with a list of 107 codes of stocks resulting from a CPC program that were listed on the TSX between 1995 and 2000. These codes correspond to 84 different companies. The returns of 62 stocks were available on *Datastream*. The 22 remaining stocks are distributed as follows: 12 companies acquired or privatized too quickly for the database to keep track, 2 in financial difficulty, 4 companies suspended and returns of 4 stocks were not accessible for unknown reasons. We were therefore able to track 62 stocks of RIs listed on the TSX. This number is comparable with the figure we calculated by grouping RIs that did not experience growth that increased their equity to above \$5 million and sales above \$10 million, equal to 44 companies (Table 8). The average return, calculated at December 31, 2002, of 52 stocks transferred before December 31, 2001 (to yield at least 12 monthly returns), after adjustment for fluctuations of the small capitalization stocks index, is -10.11% annually. This calculation takes into account the 12 stocks acquired during the period whose returns are accessible. Firm movement from the Venture Exchange to the TSX therefore cannot be considered an indicator of the success of the program.

issue. In Canada, Kooli and Suret (2003) estimate underperformance at approximately -25% for 5 years, on a set of 450 conventional issues. Nonetheless, when the sample is limited to issues of relatively large size followed by listing on the TSX, this underperformance disappears (L'Her *et al.*, 2003). Underperformance of RIs of CPC is therefore an extreme situation: whereas the performance of conventional issues is inferior to that of the index by roughly 25% to 30% during a 3- to 5-year period, stocks issued by RIs underperform by 85% to 90% during a 3- to 4-year period.

7. Success rate

The venture capital industry generally considers a success to be an IPO or the acquisition of a financed company, regardless of the investment horizon. We began by adopting a similar perspective: a company that has developed and attained profitability is considered successful. Panel A of Table 8 presents a breakdown of the observations according to the success criteria that combine growth and accounting returns. Inactive or delisted RIs are considered failures. Issuers without growth and negative ROEX_i are also placed in this category. RI without growth mostly post ROE inferior to those of the benchmark index. Companies that experience growth are distributed into three categories: temporary growth, growth of assets without increases in sales and real growth.

Temporary growth: after attaining \$5 million following the QT, shareholders' equity of 26 RI is sharply reduced and no longer amounts to \$5 million at the end of 2001. In one case only, the average excess ROE is positive. In several cases, this pattern of growth followed by shrinkage is linked to the burst of the high tech bubble. Some RIs took advantage of this situation to issue warrants or shares at high prices, or to undertake acquisitions involving exchanges of shares. It is therefore difficult to consider such cases as successes.

Growth of equity without growth of revenues: growth of assets may result from exchanges of shares, at artificially high prices, without being associated with growth of sales. Of the 96 growing RIs, 26 had sales below \$10 million in 2001. The growth of these companies was thus transmitted neither to the sales nor to profitability. The average excess ROE is positive in only 6 cases.

Growth of assets and revenues: the 44 RI in this category fall outside of the small business category, but in certain cases the situation is surely provisional; only 17 present a positive average ROE, and the excess ROE is positive in only 8 cases. These 8 issues can be considered successes. The others are categorized as partial successes: they attain sufficient size to no longer be considered small businesses, but did not achieve profitability.

Panel B of Table 8 recapitulates the situations. Eight RIs, i.e. 1.8% of the sample, can be considered successes based on the dual criterion of exceeding the limits of small businesses and profitability. Seven other companies have a positive excess ROE, but their growth was partial or temporary. In addition, 27 RIs have positive excess returns, without having attained the specified limits for equity. Nonetheless, some companies in our sample did not have time to develop sufficiently, because they completed their QTs in 1999 or 2000. Panel C of Table 8 allows us to estimate the success rates based solely on the average excess ROE and on the average ROE. The percentage of RIs for which the ROE exceeds the benchmark IRR is 9.4%. 91 RIs show a positive accounting rate of return, which represents 20.3% of the sample.

Panel D of Table 8 recapitulates the success rates in terms of stock market performance. The proportion of RIs whose rate of return is higher than that of the small capitalization index is 18.6% when all the observations are considered (84/451). This rate is higher than that estimated for success and partial success based on accounting data, which is linked to the choice of a less rigorous benchmark stock market index (Nestbitt Burns), which does not take into account the high level of risk and the lack of liquidity of most of the RIs²⁸. The criteria used here is largely inferior to the rates of return reported by the APE and Venture Capital Funds indexes for success situations. In the group of RIs that completed their transaction before December 1999, the success rate after three years is 23.5%. The corresponding figure related to performance measured for 4 years for the entire population is 24.2%. Lastly, 3 stocks show excess returns of between 5% and 10% monthly. This number is comparable to that of the 14 resulting issuers, that have a positive ROEX_i and real or partial growth. These cases consist mostly of QTs completed in 2000, for which the history of returns is very short, along with resulting issuers of large QTs.

The proportion of success of RIs ranges from 3.4% to 20%, depending on the rigor of the benchmark indices. A simple test of equality of proportions allows us to reject the hypothesis that this rate is equal to 40%, a figure established based on recent studies for private placement and venture capital, at a threshold below .001²⁹. RIs assigned to the "success" and "partial success" categories share one characteristic: their shareholders' equity is situated well above the average for all RIs, beginning from the QT. Forty-two RIs with a positive ROEX have average equity of \$2.76 million at the end of the first fiscal year. The 14 RI that reach the limit of \$5 million in equity with a positive $ROEX_i$ have equity of \$5.5 million at the end of the first fiscal year. On average, for all RIs for which data is available, the median equity at the end of the first fiscal year is \$903,000 and the average equity is \$2.3 million. RIs therefore succeed when the QT and the operations that immediately follow are on a comparable scale with those of conventional IPOs in Canada. Carpentier et al. (2003) show in effect that of 1023 conventional issues for the period 1991-2000, 623, or 60.9%, raised less than \$5 million, and 689 raised less than \$10 million. The "success" and "partial success" group includes several real estate or related companies whose equity at the end of the first fiscal year totals in the tens of millions. These companies could have used conventional means to enter the exchange. This category also includes cases that seemingly constitute real successes: Peyto Exploration (RI of the CPC Desco Resources Ltd) is the clearest example; growth is associated in this case with discoveries in the petroleum industry. Such situations are nonetheless exceptional in the CPC universe.

²⁸ The calculation of excess monthly stock market returns using quarterly or annual internal rates of return of Venture Economics is imperfect. Nonetheless, we use this source to estimate approximate success rates. The results, not reported, do not modify the conclusions.

²⁹ Das *et al.* estimate a probability of success based on a sample of 23,208 enterprises. In such cases, the limits of the interval of confidence approach the proportion of 40%, which is reported is 0.40 ± 1.96 [(0.4 x 0.6) / 23 208]¹/₂ = 0.40 ± 0.0064 .

8. Conclusions and discussions

Companies listed on the exchange through the Canadian Capital Pool Company program are generally not profitable. Their accounting rates of return are much lower than the internal rates of return observed in the venture capital and private placement sectors for the corresponding years. Their success rate is roughly 10%, which is also largely inferior to those reported by recent studies of private placement. The low rate of return is not explained by the absence of revenues during QTs. Stock market performance following QTs is also markedly inferior to that observed in the private placement sector and for venture capital during the same period in the United States, and for initial issues in Canada.

Derived from the analysis of accounting performance of resulting issuers of Capital Pool Companies, the above finding has two major implications. First, our results are consistent with the hypothesis that venture capital plays a crucial role in the development of emerging businesses. Undertaking an initial public offering without embarking on the venture capital or private placement stages generally leads to failure, particularly because the screening, monitoring and certification activities are apparently lacking among resulting issuers. Second, in terms of public policy, it seems that the development of mechanisms to facilitate entry on the Exchange of emerging companies requires serious reexamination. The Canadian experience indicates that entry on the exchange at a precocious stage of development is generally synonymous with failure. Government intervention and regulatory mechanisms should therefore encourage the supply of private capital before the initial public offering rather than easing access conditions to the stock market. Furthermore, our results demonstrate that the promoters and brokers involved in the creation of Capital Pool Companies and the qualifying transactions are not as concerned with judiciously selecting projects as are venture capitalists and private investors. The fact that investments in capital pools are limited, for most investors, to a few thousand dollars during the period analyzed probably explains this lesser concern for analysis of ventures. Moreover, this underperformance is partly foreseeable, because investors that undertake these placements lack both the competencies and the resources of venture capitalists.

The results should be analyzed prudently for two reasons. First, the study concerns the program as it existed in the years 1995 to 2000. Major changes were made in 2002, notably regarding the

maximum amount that could be raised by capital pool companies. It is therefore possible that the performance of this program has changed, in that resulting issuers may be larger. Second, one can claim that the analysis period of performance is relatively short given the nature of the investments under study. Although they are reporting issuers, resulting issuers are mainly financed by private placement. However, Ljungqvist and Richardson (2003) show that private placement funds do not generate positive internal rates of return before 10 years on average. It is therefore possible that the performance of resulting issuers improves over time. However, given their operating performance, most issuers will probably disappear within the next 10 years.

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Table 1: Annual distribution of completed initial issues originating from the Capital Pool Company program (CPC), common shares not associated with this program (common shares), and other categories of securities (other issues, including units comprising shares, preferred shares and flow-through shares) not associated with this program, from 1991 to 2001 in Canada. Fixed income securities issues are omitted. Gross proceeds (GP) are expressed in million of Canadian dollars (M\$). The seed capital (under TSX Policy 2.4) is omitted.

X	СР	C	Commo	on shares	Other	issues	Т	otal
Year	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	3,078.06	29	674.14	208	3,764.73
1994	100	24.44	84	2,525.58	35	1,015.87	219	3,565.89
1995	89	21.81	67	626.9	22	65.08	178	713.79
1996	101	25.34	111	2,481.41	28	136.52	240	2,643.27
1997	143	36.05	136	4,564.87	47	526.49	326	5,127.41
1998	123	30.98	69	1,665.76	24	406.92	216	2,103.66
1999	98	27.64	58	1,372.85	12	19.47	168	1,419.96
2000	128	38.92	56	2,240.85	22	80.42	206	2,360.19
2001	107	36.53	20	800.78	20	1,235.44	147	2,072.75
Demutualization	-	-	5	4,547.59	-	-	5	4,547.59
Privatization	-	-	5	4,690.01	-	-	5	4,690.01
1991-2001	975	259.85	795	29,648.59	268	4,422.07	2,038	34,330.51

Sources: Financial Post (Records of new issues) and Robinson (for the years 1991 to 1994).

Table 2: Annual distribution of number of completed initial public offerings originating from Capital Pool Company program (CPC) between 1995 and 2001, CPCs that concluded a qualifying transaction (QT) before December 31, 2002 and data related to the availability of characteristics of these transactions. The success rate is the ratio of the number of companies that carried out a QT to the number of CPCs created during a given year.

Year	Number of CPCs	CPCs that conclude QTs	Success rate	Number of QTs whose details**	Total amount of detailed** transactions
	(1)	(2)	(2) / (1) in %	were noted	In million \$
1995	89	82	92.13	48	153.67
1996	101	93	92.08	73	120.16
1997	143	125	87.41	115	231.76
1998	123	113	91.87	93	240.04
1999	98	72	73.47	65	223.57
2000	128	56	43.75	47	169.14
2001	107	48	44.86	34	147.09
1995-2001	789	589	74.65	475	1,285.43
1995-2000*	682	521	76.28	433	1,107.59

* Total CPCs that undertook an IPO between 1995 and 2000 and whose QTs took place before December 31, 2001. This sample will be used in the followup to the present study. ** All transactions for which amounts raised during the qualifying transaction are available.

Index name	All private equity*	Venture Capital*	Nesbitt Burns**
Year			
1995	31.60	54.50	13.88
1996	26.50	40.90	28.66
1997	30.90	26.90	6.97
1998	6.50	11.00	-17.90
1999	54.50	120.30	20.29
2000	9.00	19.10	7.31
2001	-18.40	-24.90	3.44
2002	-15.50	-27.20	-0.91
Geometric mean	13.19	20.34	6.88
Arithmetic mean	15.64	27.58	7.72

Table 3: IRR and Time weighted Index for All Private Equity Funds, Venture capital Funds and Small Capitalization (Nestbitt Burns)

* Capitalization weighted average of time weighted returns using periodic IRRs ** Capitalization weighted average of time weighted rate of return

Annual returns are calculated from 31/12/n-1 to 31/12/n.

Sources: Thomson Financial Venture Economics 2003 and Nesbitt Burns

Table 4: Selection procedure for final sample used to study performance and growth of resulting issuers from Capital Pool Company program (CPC), 1995-2000

CPCs created between 1995 and 2000, that completed a QT by December 2001	521
Date of QT not available	<u>(37)</u>
CPC whose QT date is available	484
QT completed in 2001, data not available at observation date	(32)
Companies not listed in CanCorp Financials database	<u>(3)</u>
CPCs inventoried in database	449
Cases for which accounting data is not available in <i>CanCorp Financials</i> database	
Company inactive and bankrunt	(25)
Company active but no data is available, because the company was	(27)
reprivatized or transferred to the over-the-counter market	(30)
CPCs studied	367

Table 5: Distribution of average return on equity $(AvROE_i)$ and average net margins $(AvNM_i)$ of resulting issuers of Capital Pool Companies that completed qualifying transactions between 1995 and 2000, sorted by growth category. Total 1 covers the entire sample, Total 2 refers to the sample restricted to companies whose sales for the fiscal year following the qualifying transaction is not zero.

Year of QT		Categ Weak	Category 1 Weak growth		gory 2 growth
		Mean	Median	Mean	Median
	#	5	5	8	8
1995	AvROE _i	-34.01%	-29.25%	-8.75%	-4.89%
	AvNM _i	-48.90%	-39.54%	-36.87%	-6.54%
	#	19	19	21	21
1996	AvROE _i	-30.75%	-28.51%	-18.37%	-15.07%
	AvNM _i	-54.10%	-39.44%	-43.71%	-46.44%
	#	57	57	18	18
1997	AvROE _i	-36.89%	-27.02%	-7.37%	-4.71%
	AvNM _i	-58.15%	-70.74%	-16.81%	-2.47%
	#	77	77	24	24
1998	AvROE _i	-29.47%	-21.08%	3.74%	4.69%
	AvNM _i	-50.30%	-42.50%	-7.37% -16.81% 24 3.74% -8.51% 19 -5.33%	4.71%
	#	62	62	19	19
1999	AvROE _i	-34.91%	-31.47%	-5.33%	-4.74
	AvNM _i	-48.74%	-42.82%	$\begin{array}{r} -36.87\% \\ \hline 21 \\ -18.37\% \\ \hline 21 \\ -18.37\% \\ \hline 43.71\% \\ \hline 18 \\ -7.37\% \\ \hline -16.81\% \\ \hline 24 \\ \hline 3.74\% \\ \hline -8.51\% \\ \hline 19 \\ \hline -5.33\% \\ \hline -24.72\% \\ \hline 6 \\ \hline -22.02\% \\ \hline -55.58\% \\ \hline 96 \\ \hline -7.62\% \\ \hline -26.28\% \\ \hline 76 \\ \hline -6.62\% \\ \hline 14.57\% \\ \end{array}$	-10.66%
	#	51	51	6	6
2000	AvROE _i	-41.54%	-32.76%	-22.02%	-14.13%
	AvNM _i	-58.06%	-82.4%	-55.58%	-71.70%
	#	271	271	96	96
Iotal I: Entire sample	AvROE _i	-34.72%	-27.81%	-7.62%	-3.87%
Sumpro	AvNM _i	-53.30%	-53.16%	-26.28%	-4.55%
T (10)	#	203	203	Mean 8 -8.75% -36.87% 21 -18.37% -43.71% 18 -7.37% -16.81% 24 3.74% -8.51% 19 -5.33% -24.72% 6 -22.02% -55.58% 96 -7.62% -26.28% 76 -6.62%	76
I otal 2: Non- zero revenues	AvROE _i	-33.62%	-25.34%	-6.62%	-2.31%
2010 10 101000	AvNM _i	-39.68%	-30.10%	-14.57%	-2.81%

With

$$AvROE_{i} = \frac{\sum_{t=1}^{n} NI_{t}}{\sum_{t=1}^{n} SEbeg_{t}} and AvROE_{i} = -100\% if AvROE_{i} < -100\%$$
$$AvROE_{i} = -100\% if \sum_{t=1}^{n} NI_{t} < 0 and \sum_{t=1}^{n} SEbeg_{t} < 0$$

$$AvNM_{i} = \frac{\sum_{t=1}^{n} NI_{t}}{\sum_{t=1}^{n} Sales_{t}} and AvNM_{i} = -100\% \quad if \quad AvNM < -100\%$$
$$AvNM_{i} = -100\% \quad if \quad \sum_{t=1}^{n} NI < 0 \quad and \quad \sum_{t=1}^{n} Sales_{t} = 0$$

Table 6: Average returns on equity of companies that completed a qualifying transaction (QT) between 1995 and 2000. The normal return is that of the All Private Equity Funds index of Thomson Financial. Panel A presents the results corresponding to the ROEX_{i,t}. Panel B presents the ROEX_i. Panel C presents the results corresponding to $ROEX_{i,t}$ for the sample restricted to companies with non-zero sales during the first fiscal year following the QT. Panel D presents the ROEX_i for the sample restricted to companies with non-zero sales during the first fiscal year following the QT.

	Complete sample	Companies without growth
Panel A: ROEX _{i,t} complete sample		
Number	1361	954
Mean in %	-39.53	-44.55
Median in %	-37.41	-42.19
Standard deviation in %	47.47	48.16
Student's t test	-30.72	-28.57
P value	< 0.0001	< 0.0001
Panel B: ROEX _i complete sample		
Number	367	271
Mean in %	-40.50	-45.75
Median in %	-37.65	-44.12
Standard deviation in %	35.62	37.13
Student's t test	-21.77	-20.29
P value	< 0.0001	< 0.0001
Panel C: ROEX _{i,t} sample restricted to	companies with non-zer	o sales
Number	1003	685
Mean in %	-35.67	-40.94
Median in %	-32.56	-38.54
Standard deviation in %	48.76	50.28
Student's t test	-23.15	-21.31
P value	< 0.0001	< 0.0001
Panel D: ROEX _i sample restricted to	companies with non-zero	sales
Number	279	203
Mean in %	-37.42	-42.94
Median in %	-31.36	-40.29
Standard deviation in %	37.35	39.67
Student's t Test	-16.73	-15.42
P value	< 0.0001	< 0.0001

Table 7: Distribution of excess monthly returns between the date of the qualifying transaction (QT) and December 31, 2002. The benchmark index is the Nesbitt Burns small capitalization stock index. The means are equally weighted³⁰.

the densing date, if it comes earner, for 451 stocks of resulting issuers.							
	< 0	from 0 to 5%	> 5%	Total			
Number	367	81	3	451			
Mean in %	-10.38	1.73	7.68	-8.08			
Median in %	-3.92	1.43	8.36	-2.93			
Standard deviation in %	22.74	1.38	1.54	21.07			
Minimum in %	-100	0	5.92	-100			
Maximum in %	-0.02	4.93	8.78	8.78			
P value	< 0.0001	< 0.0001	0.0131	< 0.0001			

Panel A Monthly abnormal return from the date of the qualifying transaction at 31/12/2002 or at the delisting date, if it comes earlier, for 451 stocks of resulting issuers.

Panel B Monthly abnormal return from the date of the qualifying transaction to the 36^{th} month for qualifying transactions before $1/1/2000^*$.

	< 0	from 0 to 5%	> 5%	Total
Number	251	83	4	338
Mean in %	-7.51	1.45	7.17	-5.14
Median in %	-3.25	1.19	7.47	-2.09
Standard deviation in %	19.10	1.27	1.47	16.96
Minimum in %	-100	0	5.22	-100
Maximum in %	-0.06	4.91	8.52	8.52
P value	< 0.0001	< 0.0001	0.023	< 0.0001

Panel C Monthly abnormal return from the date of the qualifying transaction to 48th month for QTs prior to 1/1/1999*.

	< 0	from 0 to 5%	> 5%	Total
Number	185	66	3	254
Mean in %	-7.00	1.47	7.82	-4.63
Median in %	-3.00	1.23	8.07	-1.85
Standard deviation in %	18.68	1.3	0.85	16.43
Minimum in %	-100	0	6.88	-100
Maximum in %	-0.06	4.91	8.52	8.52
P value	< 0.0001	< 0.0001	0.033	< 0.0001

*Abnormal returns of stocks delisted following an acquisition are zero between the delisting date and the 36th or 48th month following the qualifying transaction; returns of stocks delisted owing to financial difficulties are zero between the delisting date and the 36th or the 48th month after the qualifying transaction.

³⁰ The means that appear here are equally weighted. Given the differences in the growth rate between companies issuing from CPCs, capitalization weighting may modify the results slightly. This weighting was not introduced here owing to difficulties in accessing the data. The average return presented here is therefore that of a theoretical investor that would have acquired an equivalent amount during each of the QTs inventoried.

Panel A: Operating performance and growth, details	Number	%	Category
Companies listed in database	449	100	-
Inactive or delisted companies	82	18.2	Failure
Companies without growth (271)	271	60.4	
$ROEX_i < 0$	244	54.3	Failure
$ROEX_i > 0$	27	6	Partial success
Companies with growth (96)			
Temporary growth (26)			
$ROEX_i < 0$	25	5.6	Failure
$ROEX_i > 0$	1	0.2	Partial success
Partial growth, sales $<$ \$10 million (26)			
ROEX _i <0	20	4.5	Failure
$ROEX_i > 0$	6	1.3	Partial success
Real growth (44)			
ROEX _i <0	36	8	Partial success
$ROEX_i > 0$	8	1.8	Success
Panel B: Success rates, according to growth and excess account	ting return criteria	ı	
	U		
Real growth and $ROEX_i > 0$	8	1.8	Success
Partial or temporary growth and $ROEX_i > 0$	7	1.6	Success
No growth and $ROEX_i > 0$	27	6	Partial success
Total	42	9.4	
Panel C: Success rates, according to the abnormal accounting r	ate of return criter	ria	
$ROEX_i > 0$	42	9.4	Success
ROE _i >0	91	20.3	Partial success
Failure	381	84.9	
Total	449	100	
Panel D: Success, according to the adjusted stock market perfo	rmance criteria		
	number	%	
Entire period			
Abnormal positive return	84	18.6	Success
Abnormal negative return	367	81.4	Failure
Total	451	100	
For 36 months			
Abnormal positive return	87	23.5	Success
Abnormal negative return	251	76.5	Failure
Total	371	100	
For 48 months			
Abnormal positive return	69	24.2	Success
Abnormal negative return	185	75.8	Failure
Total	287	100	

Table 8: Success rate of Resulting Issuers, according to various criteria

$$ROE_i = \frac{\sum_{t=1}^{n} ROE_{i,t}}{n}$$

Appendix 1: Detailed presentation of principal characteristics of resulting issuers of capital pool companies, following the year of the qualifying transaction (Tables A1 to A6)

Table A1: Annual distribution of sales (*Sales*_{*i*,*t*}), equity at the end of the period ($SE_{i,t}$) and net income before extraordinary items ($NI_{i,t}$) of resulting issuers of capital pool companies that completed their qualifying transaction in 1995. Amounts are in \$K.

Panel A: Companies liste	d in categor	y 1 - weak	growth				
Year following the	1	2	3	4	5	6	7
qualifying transaction							
Number of companies	5	5	5	5	5	5	5
Average annual sales	145	325	730	825	1,154	1,197	1,141
Average net income	-347	-625	-695	-604	-98	-282	-319
Average equity	387	1,104	408	205	798	608	533
Panel B: Companies liste	d in category	y 2 - signif	icant extern	al growth			
Year following the	1	2	3	4	5	6	7
qualifying transaction							
Number of companies	8	8	8	7	7	7	6
Average annual sales	382	1,227	6,123	12,605	13,218	14,998	12,173
Average net income	-402	-1,032	-954	-1,031	482	-2,269	-4,022
Average equity	3.238	9.873	26.838	24,079	25.499	25.488	13.719

Table A2: Annual distribution of sales (*Sales*_{*i*,*t*}), equity at end of period ($SE_{i,t}$) and net income before extraordinary items ($NI_{i,t}$) of resulting issuers of capital pool companies that completed their qualifying transaction in 1996. Amounts are in SK

Panel A: Companies in category 1 weak growth									
Year following the	1	2	3	4	5	6			
qualifying transaction									
Number of companies	19	19	19	19	17	15			
Average annual sales in									
\$K	1,018	1,362	1,300	1,500	2,714	4,198			
Average net income	-177	-337	-496	-240	-429	-406			
Average equity in \$K	1,110	957	541	901	1,342	1,608			
Panel B: companies in cate	egory 2 sig	nificant ext	ernal growt	h					
Year following	1	2	3	4	5	6			
qualifying transaction									
Number of companies	21	21	21	21	18	17			
Average sales, in \$K	2,881	9,745	17,110	26,327	38,444	39,456			
Average net income	-247	-942	-3,238	-373	333	-1,730			
Average equity, in \$K	4,286	15,820	32,465	34,356	45,755	48,873			

Table A3: Annual distribution of sales (Sales_{i,t}), equity at end of period ($SE_{i,t}$) and net income before extraordinary items $(NI_{i,t})$ of resulting issuers of capital pool companies that completed their qualifying transaction in 1997. Amounts are in \$K

Panel A: Companies in category 3 - weak growth						
Year following	1	2	3	4	5	
qualifying transaction						
Number of companies	57	57	56	53	44	
Average sales, in \$K	1,775	2,403	3,072	2,790	1,802	
Average net income	-388	-904	-1,558	-2,396	-346	
Average equity, in \$K	1,032	720	808	-158	870	

Panel A.	Companies	in category	3 - weak grow	vth
I AIICI A.	Companies.		J - WCAK 210W	1 U II

Panel B: Companies in category 2 - significant external growth					
Year following	1	2	3	4	5
qualifying transaction					
Number of companies	18	17	17	15	13
Average sales, in \$K	6,167	17,936	23,603	38,286	28,416
Average net income	-88	-700	-1,280	-1,873	-1,422
Average equity, in \$K	8,995	12,672	16,216	18,066	16,203

Table A4: Annual distribution of sales (Sales_{i,t}), equity at end of period $(SE_{i,t})$ and net income before extraordinary items $(NI_{i,t})$ of resulting issuers of capital pool companies that completed their qualifying transaction in 1998. Amounts are in \$K.

Panel A: Companies in category 1 - weak growth

I allel A. Companies in ca	legury I - we	ak gi uwui		
Year following	1	2	3	4
qualifying transaction				
Number of companies	77	73	67	64
Average sales, in \$K	1,401	2,420	3,888	2,690
Average net income	-247	-437	-510	-598
Average equity, in \$K	1,050	1,147	1,168	953

Panel B: Companies in category - 2 significant external growth				
Year following	1	2	3	4
qualifying transaction				
Number of companies	24	24	23	21
Average sales, in \$K	3,383	8,270	17,809	30,050
Average net income	104	469	430	642
Average equity, in \$K	4,881	9,709	17,644	17,092

Table A5: Annual distribution of sales $(Sales_{i,t})$, equity at end of period $(SE_{i,t})$ and net income before extraordinary items $(NI_{i,t})$ of resulting issuers of capital pool companies that completed their qualifying transaction in 1999. Amounts are in K.

Panel A: Companies in category 3 - weak growth					
Year following	1	2	3		
qualifying transaction					
Number of companies	62	55	48		
Average sales, in \$K	1,470	1,586	2,369		
Average net income	-926	-654	-938		
Average equity, in \$K	855	1,257	1,194		

Panel B: Companies in category 2 - significant external growth					
Year following	1	2	3		
qualifying transaction					
Number of companies	19	19	16		
Average sales, in \$K	3,994	13,147	25,387		
Average net income	-237	-476	-2914		
Average equity, in \$K	5,685	13,469	13,499		

Table A6: Annual distribution of sales ($Sales_{i,t}$), equity at end of period ($SE_{i,t}$) and net income before extraordinary items ($NI_{i,t}$) of resulting issuers of capital pool companies that completed their qualifying transaction in 2000. Amounts are in \$K.

Panel A: Companies in category 3 - weak growth

	<u> </u>	
Year following	1	2
qualifying transaction		
Number of companies	51	46
Average sales, in \$K	1,218	1,393
Average net income	-575	-864
Average equity, in \$K	1,042	463

Panel B: Companies in category 2 - significant external growth

Year following	1	2
qualifying transaction		
Number of companies	6	6
Average sales, in \$K	3,377	6,042
Average net income	-911	-3,362
Average equity, in \$K	13,050	10,245