Follow the Leader: the Role of Founder-Outside Investor Alignment in Early Stage Funding

Diego Amaya, Michael Brolley and Brian F. Smith*

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*Contact: Lazaridis School of Business and Economics, Wilfrid Laurier University, 75 University Avenue W, Waterloo, ON Canada N2L 3C5. 519 884-0710 ext. 2953 bsmith@wlu.ca

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Abstract

Because of the privacy of the data and the reliance on potentially biased surveys, there is limited substantive research on investor returns in early stage companies. In this paper, we examine a special type of venture exchange financing known as a Capital Pool Company (CPC) IPO that allows founders to invest their own funds and to raise money from outside investors to establish tiny public companies. Using a large sample of such IPOs, we study early stage shareholder returns for different types of investors and find that returns are highest when the interests of founders and outside shareholders are most aligned. Significant factors that proxy for alignment include founder's willingness to invest in the IPO, presence of a lockup period and speed of capital deployment.

1. Introduction

Studies of investor performance in early-stage companies encounter a continual challenge in entrepreneurial finance due to the private nature of the data on shareholdings and returns to investors. Most companies never go public, and those that do, go public years following their inception, which leaves researchers with mainly survey data to estimate effective investor returns and to understand how founder's characteristics affect such returns. Furthermore, the few studies that do have actual return data on private companies are also open to inherent selection bias because only private companies which have been acquired, liquidated or recently financed can be used to measure returns. This leaves unknown the investor returns of early-stage companies that have had neither an exit (acquired or liquidated) nor recent follow-on financing. Our study circumvents these problems by examining a set of companies that are essentially founded as public entities.

Given the nature of our data, we are able to measure the returns to founders and outside investors from the time of the company's inception. The data also allows us to examine different agency problems faced by outside investors participating at different stages of the company. In particular, we can relate the characteristics of the founders and the company's initial capital formation to the investors' long-term performance.

Our data comprises a comprehensive sample of companies that were formed as tiny public entitles on the Toronto Stock Exchange (TSX) Venture Exchange. The Venture Exchange has a Capital Pool Company (CPC) program that permits companies to be established by a group of founders who make a small initial investment of their own capital, and subsequently raise a second small amount of funds from public investors through an IPO. With a pool of funds and no operating assets, CPCs are shell companies whose sole objective is to search for and acquire operating assets

in what is known as a qualifying transaction (QT) within a two-year window post-IPO.[1] To complete a qualifying transaction, these companies normally conduct a seasoned offering of shares that is much larger than the IPO. Founders must invest a minimum amount of capital in the company before the IPO, but cannot begin to sell their shares until the completion of a QT; thereafter, they may sell the remainder of their shares over the 18 months following the QT. The focus of our study is on actual post-IPO returns that individual investors can obtain through this investment vehicle.

The market for early-stage companies is characterized by a low supply of good projects relative to the large supply of bad ones (Brealey, Leland, and Pyle, 1977). This property leaves investors in this market exposed to severe adverse selection problems due to the lack of information about the quality of the project to be financed. CPC companies constitute an interesting setting to study how the degree of adverse selection faced by investors evolves through different initial stages of a company and whether investors are compensated for bearing these risks.

Pre-QT CPC shareholders participate in the financial resource acquisition stage of the company. As such, they are exposed to not only the underlying quality of the project, but also to CPC founders' ability to find and secure the QT. Post-QT CPC shareholders participate in the venture stage, which is characterized by a decrease in information asymmetry given that the project has been secured, but the quality of the project remains uncertain. The difference in the severity of the adverse selection problem implies that outside investors should expect different returns, conditional on how well their interests align with those of insiders.

We find that CPCs experience strong positive performance from IPO to the end of the month following QT— on average, the stock price doubles during this time. This rewards both the

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[1] Shell companies have traditionally been created not by IPO but by being created with a business plan that fails to materialize or after selling their operations and assets following bankruptcy (Floros and Sapp, 2011).

founders and the outside shareholders who participate in the IPO, which shows a strong alignment of founder and outside shareholder interests during the financial resource acquisition stage. Here, the founders' lock-up provisions in the pre-QT period ensure that insiders share a common interest with pre-QT outsiders: securing the QT. However, the post-QT performance is abysmal, with an average -41% long-term cumulative return. This is not surprising, as it is in the interest of both founders and outside pre-QT CPC shareholders to issue overpriced stock to complete the transaction.[2] By overpaying for stock, shareholders who provide the financing to complete the QT, on average subsequently experience losses.

Given the low performance experienced by post-QT investors, we seek to understand which factors relate to the post-IPO performance of these issues. This information is important in situations when alignment is low, as investors are more likely to employ observable signals to help separate high-quality start-ups from other companies in the market. A cross-sectional analysis of CPC performance reveals that several aspects about founder characteristics play an important role in this performance. First, we find that returns are positively related to the proportion of founder's capital to total funding, which goes in line with the theoretical results of Brealey, Leland and Pyle (1970) about project quality signals coming from entrepreneur's willingness to invest in the project. Second, we observe that timely execution of the investment, as measured by the speed in which the QT is made, is also positively related with the post-IPO return. Third, companies in which institutions are part of the founding group experience higher returns, illustrating the benefit from higher capabilities and skills brought by organizations.

We also investigate whether the characteristics that explain the long-term performance of CPC relate to those that explain the founder's ability to find and secure the QT. We find that only

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[2] The overpricing could also be explained in part by the risk borne by the principals and CPC shareholders that a QT will not happen. However, as documented in this study, we find that QTs occur in about 90% of all cases.

the entrepreneur's willingness to invest in the project relates to the probability of securing a QT. This result suggests that entrepreneurial abilities to "scout" and identify future potential are disjoint from those required to "coach" and enhance future performance.

We examine the post-IPO long-term returns for CPCs, observing that these returns are highly skewed. The industry-adjusted post-IPO long-term cumulative returns have a median (mean) return of -85% (0%).[3] Over 80% of CPCs have a negative industry-adjusted post-IPO cumulative return and the top 1% of CPCs have cumulative returns which generate between 11 and 213-times original investment. The highly right skewed return distributions of CPCs are consistent with the survey evidence on return distribution of angel investments and seed funds,[4] suggesting that our sample is representative of other early-stage companies studied in the literature.

To determine whether the negative return following the QT is a unique feature to CPCs, we also examine the post-IPO long-term performance of similarly tiny (<$2 million) non-CPCs. We find that these non-CPCs perform as poorly as our sample of CPCs from time of QT to exit. The poor long-term performance of CPCs and other small IPOs on the Venture Exchange is consistent with previous studies of penny stock performance. For example, Bradley et al. (2006) report that the average return of U.S. penny stocks over the three years post-IPO is -21.7%, which is significantly lower than the 44.4% observed for ordinary IPOs during the same period. In this way, our results may shed some light on the relative performance of pre-IPO investors in early-stage companies.

The remainder of the paper is as follows. Section 2 provides a detailed background on the

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[3] Brau et al. (2012) report that long-term post-IPO performance is weakest when companies conduct acquisitions in the first year following IPO. Given that CPCs are set up to acquire assets, this research suggests weak long-term performance for these securities.

[4] For example, see Capizzi (2015) and Wiltbank and Boeker (2007), Pohlmeyer and Rosenthal (2016), and Gompers et al. (2016).

Capital Pool Company Program and situates it in the sphere of similar investment vehicles in Canada and the United States. Section 2 also describes the data set and filters used. Section 3 examines how founder-outside investor alignment affects the short and long-term returns on these investment vehicles and on small (<$2 million) non-CPC IPOs. Section 4 concludes.

2. Background and Data

2.1   The Capital Pool Company Program

Pandes and Robinson (2014) document that the first use of blind pool offerings in Canada occurred in Alberta in 1986, as a means to finance struggling resource companies in a period of falling oil prices. The inaugural year was marred by scandal, as 10% of blind pool offerings ended with company founders convicted of fraudulent behavior. In response, the Alberta Securities Commission (ASC) developed a set of rules for such financings under the newly titled Capital Pool Company (CPC) program, deployed in October of 1986. The Commission's goal was to create a means to help small early-stage companies raise funds and gain the benefits of a listing on a public exchange, while protecting investors from fraud. The resulting CPC issues were listed on the Alberta Stock Exchange. British Columbia and Manitoba launched similar programs in 1995 and 1998 respectively on their provincial junior exchanges. In 2001, these junior exchanges were acquired by the Toronto Stock Exchange to form the Canadian Venture Exchange and all CPCs thereafter were issued by the Venture Exchange. In 2002, the Ontario and Quebec regulators allowed the CPC program to operate within their provinces.

Pandes and Robinson (2014) suggest that regulations of the CPC program were designed to align the interests of founders with those of outside investors, using some of the mechanisms employed by venture capitalists; for example, CPCs require principals to invest at least $100,000

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of their own capital in the company, albeit at a price per share as low as one-half of the price per share of the IPO offering to outside shareholders. Founders are required to hold their shares in escrow, only to be released at intervals during an 18-month to 3-year period following the completion of the qualifying transaction. The timed release is 25% of escrowed shares following the QT and 25% at the end of every 6 months for the following 18 months. The CPC is also required to initiate a QT within two years, of the IPO, applying pressure to the company to deploy capital, rather than dissipate capital in an extended search process.

The IPO offering is very small—averaging several hundred thousand dollars—as its purpose is to cover the search and negotiation costs for the QT. The tiny size of the IPO combined with the discounted price at which founders acquire shares prior to the IPO means that the interests of founders are not highly diluted. Carpentier and Suret (2006) document that the directors and officers of these CPCs following the IPO (but before the QT) hold, on average, 65% of the voting shares of the companies. In contrast, the QT normally requires much more funding, which is generally obtained either through a seasoned offering to new, outside investors, or, through a reverse-takeover offer of a much larger private company. The much larger size of this round of funding and the expiry of the lockup provisions generally means the founders lose their dominant voting interest in the company following the QT.

Not all rules of the TSX Venture Exchange help align the interests of founders and outside shareholders. The Exchange requires that at least 300 individuals must subscribe to the offering, with each shareholder's subscription capped to 2% of the offering. At an average offering size of half-million dollars, individual outside investors can buy no more than $10,000 in CPC equity. While these IPO subscription caps promote liquidity, they create an atomistic base of shareholders who have little individual incentive to undertake extensive initial screening and post-IPO

monitoring. Consistent with this lack of external shareholder influence, Brav and Gompers (1997) show that IPOs backed by individual investors underperform those in which institutional investors participate. Furthermore, in the CPC program, outside shareholders do not have the right to veto the qualifying transaction.

The CPC program shares a common foundation with Special Purpose Acquisition Corporations (SPACs) in the United States: they are both shell companies who seek to acquire operating assets. SPACs, however, differ from CPCs in some key areas. CPC IPOs only raise a small amount of cash to cover search costs, while SPAC IPOs raise a pool of cash sufficient to buy the target. Kolb and Tykvová (2016) identify 236 SPAC IPOs on U.S. markets from 2003 to 2015 and report that the mean (median) total asset size is $335 ($144) million—more than a hundredfold larger than CPCs. If the acquisition is not successful, the SPAC will return cash to shareholders. Cumming, Hab and Schweizer (2014) and Rodrigues and Stegemoller (2014) note that raising cash upfront creates a special dynamic for a SPAC IPO: by raising a large amount of cash at time of their IPO, SPACs do not need to rely on a seasoned offering to finance their acquisitions. Moreover, shareholders may veto the qualifying transaction.

The goal of CPCs is also similar to that of search funds, through which a group of investors fund an entrepreneur (normally an MBA graduate of an Ivy League school) to locate and acquire a privately held company (Pohlmeyer and Rosenthal, 2016). Search funds differ from CPCs in that they are normally backed by a small number (usually about 15) of wealthy investors and these investors have the right of first refusal to participate in a second round of funding at the time when an acquisition transpires.

2.2   Data and filters

We collect our sample of Capital Pool Company IPOs from the *Financial Post New Issues* database for the period January 2001 through December 2012. We choose to conclude the sample in 2012 to ensure a sufficient period over which to measure post-IPO performance. We also identify all other equity IPOs of similarly small sizes in the same period to help isolate the impact of the founder-outside alignment effects we attribute to CPCs from the more general phenomenon of weak penny stock performance. To correspond with the size of CPC IPOs, we select non-CPC IPOs in which the gross proceeds are under $2 million.

The *Financial Post New Issues* database provides details on each IPO: underwriting commission, original listing exchange, and pricing of the issue. Using SEDAR and the TSX and TSX Venture monthly e-Reviews, we track the history of the company and its common stock following the IPO.[5] In the case of CPC IPOs, we identify the date of the qualifying transaction, and the industry in which the company thereafter operated. We also identify events that may affect CPC listings: acquisitions including reverse takeovers, stock splits, reverse splits, delisting and change-of-listing.

Table 1 provides descriptive statistics on the sample of 1022 CPC IPOs and 168 non-CPC IPOs whose gross proceeds do not exceed $2 million. The CPC IPOs are very small issues. The mean (median) size of all gross issues is $492,000 ($300,000). The mean (median) underwriting commission for CPC IPOs is 9.74% (10%) of gross proceeds. [6] The preponderance of underwriting fees at the 10% level for these small issues is reminiscent of the very common 7% underwriting

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[5] SEDAR is the acronym for the System for Electronic Document Analysis and Retrieval. SEDAR is a database of all corporate filings of companies listed on Canadian exchanges.

[6] Given the fixed nature of underwriting costs, the smallest IPOs tend to have the highest underwriting costs on a percentage basis. Garner and Marshall (2014) report total underwriting compensation increases from 10% to 19% of proceeds as offer size declines from $16 to $1 million. Berger and Udell (1998) suggest that the minimum viable asset size for an IPO is about $10 million.

spread identified by Chen and Ritter (2000) with U.S. IPOs during the 1990s. In addition to underwriting commissions, an investigation of nearly 100 CPCs finds an underwriting overallotment generally equal to 10% of the issue. Because we find that the value of CPCs tends to double from the time of IPO, the implied total cost of underwriting, including the overallotment option, is approximately 20% of the issue, similar to the figure for underwriting fees reported by Garner and Marshall (2014) from their sample of small U.S. IPOs (between $1 and $2 million).

We also note that only a quarter of the CPCs and non-CPC IPOs in our sample are underwritten by the top 20% of Canadian underwriters; in contrast, the same group of underwriters handles over 95% of all dollar-value underwriting in Canada. Our results suggest that underwriting tiny, new issues is concentrated among correspondingly small underwriters.

All but 12% of CPCs lead to a qualifying transaction following an IPO. Consistent with the findings of Pandes and Robinson (2014), this result suggests that almost all CPCs achieve their major purpose as a financing vehicle to find, negotiate, and acquire operating assets. Almost all CPCs change their name at the time of the QT, to reflect the nature of the operating assets acquired. The average time from IPO to QT is approximately two years, consistent with the mandated time limit to complete the QT.

Table 1 presents more information on the fate of these companies post-IPO. By June 30, 2016, shares in nearly half of CPC IPOs and 60% of non-CPC IPOs either are renamed or are acquired in a share exchange by other companies listed on the TSX Venture Exchange. In 91 CPC IPOs, investors end up holding shares of a company listed on the Toronto Stock Exchange. Given that the TSX is a senior exchange, we expect this to be a positive outcome for investors. 83 CPC IPOs end up on NEX. The NEX is a trading platform for companies that do not meet the TSX Venture listing requirements. In 101 cases, CPC IPOs result in shares that are halted or suspended

from trading, while in 180 cases, the shares are permanently delisted.[7] In only 63 cases are investments in CPCs ultimately acquired for cash.

While both CPCs following QTs and non-CPC IPOs are concentrated in the resource sector, CPCs include a broader spectrum of industries. Following a QT, 45% of CPC IPOs operate in the materials (mainly mining) industries, versus nearly 90% of non-CPC IPOs. The next largest sectors in which CPCs operate are energy, information technology and industrials, respectively.

Figure 1 shows the annual number of CPC and small non-CPC IPOs. The rise in the number of IPOs until 2007 and subsequent decline is consistent with the boom and bust in commodities before and after the financial crisis. The number of new CPC issues dropped from a peak of 200 in 2007 to approximately 50 in 2009.

Table 2 shows the survival rate of all companies in our sample, from year-to-year and cumulatively. At the beginning of the second year (following CPC IPOs), we identify 1022 companies. During that year, two companies are delisted. After year three, the sample size reduces further because our data ends in the middle of 2016 and thus we do not have four full years of data for companies that went public in 2012. By the start of the 16th year post-IPO, only 4 companies remain in our CPC sample. These are the CPC companies that went public in 2001 and survived until the start of 2016. Cumulative survival rates of CPCs are comparable to non-CPCs: nearly half of both types of investments remain listed in some form—as shares of the original company, exchanged in a recapitalization or acquired by a bidding company through a share exchange. Peters (2010) reports this slow rate of exit as a characteristic of early-stage private companies.

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[7] The halts for these stocks are "Exchange halts" implemented by the listing exchange due to an ongoing review of the company or business issues such as non-payment of fees (i.e., not short-term trading halts). Suspensions arise because companies do not meet listing requirements.

2.3   Characteristics of Founder Groups

We now look at different attributes of founder groups behind CPCs transactions. Panel A of Table 3 provides information on the composition and experience of founder groups leading the CPC IPOs. Over 70% of the founder groups are comprised entirely of individuals while just 6.8% include only institutional investors. Thus, despite our expectation that they have fewer resources than institutions, individual investor teams have founded most of the CPCs. It is also interesting to observe that less than half of the CPCs have groups of founders with prior experience with CPCs. There are even fewer founder teams that have experience in achieving a qualifying transaction. Overall, this is not a market dominated by serial entrepreneurs.

We also examine the concentration of power within the founder group prior to the IPO. A group with many founders each with significant votes will likely find it more difficult to agree on the choice of executives and support of their strategy to lead the search and negotiate the terms of the qualifying transaction. In this way, a larger number of founders will likely increase the chance of failure of the search. On the other hand, a larger number of founders will create a larger network of leads for potential deals that will in turn increase the likelihood of a successful search. Generally, control of CPCs is very concentrated among a small group of founders. We find CPCs have an average (median) of 3.36 (3) founders each with over 10% of the votes. In addition, 226 (22.11%) of CPCs have a single founder who holds over 50% of the votes of the founder group. Following Ghoul et al (2016), to measure dispersion of control among founders we also compute the adjusted Herfindahl index of difference in voting rights between the five largest shareholders[8]:

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[8] Cont1, Cont2, Cont3, Cont4 and Cont5 are the percentage of votes held by the first, second, third, fourth and fifth largest shareholders.

$$\frac{(Cont1 - Cont2)^2 + (Cont2 - Cont3)^2 + (Cont3 - Cont4)^2 + (Cont4 - Cont5)^2}{100}$$

From Panel B in Table 3, we find that the median adjusted Herfindahl index is 2.68 indicating a sharing of power among the typical group of founders. Thus, there is a possibility that differences of opinion among the founder groups could arise that could lead to disagreement on a potential qualifying transaction.

The last attribute that we report is the founders' willingness to invest in their own project. This attribute constitutes an observable proxy for the quality of the project underlying the CPC, as founders will invest more funds if they expect a greater return. The last row in Panel B shows that the ratio of founders' capital to total capital received has an average (median) of 28% (29%).

3. Empirical Results

3.1 Returns Before and After Qualifying Transaction

Table 4 reports the cumulative returns to shareholders who invest in small public issues. For CPCs, we examine the cumulative returns: 1) from the time of IPO until the end of the month after the qualifying transaction and 2) from the month after the qualifying transaction until exit. For both CPCs and non-CPCs, we examine the returns from IPO until exit. The time of exit is set as the earliest of the day the company is acquired for cash, bankrupt, delisted or June 30, 2016.[9]

Consistent with strong founder-outside shareholder alignment from the time of IPO until the end of the month after the QT, the returns for CPCs are very large and significantly positive. The mean (median) cumulative return is 109% (32%) over an average of 2 years. In contrast, the

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[9] An alternative benchmark to compare long-term shareholder returns would be to study equally small IPOs of US companies. However, there are only 31 IPOs of this size that have complete data in SDC. Previous studies such as Bradley et al. (2006) document long-run returns for US penny stock IPOs from 1989 to 1998 and find that the average return over the three years following the IPO is -21.7%, which is significantly lower than the 44.4% observed for ordinary IPOs during the same period.

long-term CPC returns following QTs are significantly negative with a mean (median) of -41% (89%). We attribute this finding to the incentive of the founders who hold large blocks of shares to negotiate a qualifying transaction that benefits them as current shareholders at the expense of investors who subscribe to a financing associated with the QT. Thus, outside CPC shareholders who participate in the IPO and hold their shares until the QT will benefit, at the expense of shareholders who acquire the stock at the time of the QT.

Beyond the disparity between pre and post QT returns, the distribution of returns exhibits strong right skewness. For all samples, the mean is well above the median. For the full sample of CPC IPOs issued from 2001 to 2012, the mean cumulative return from IPO to exit is 25% versus a median of -87%. The mean is not significantly different from zero, whereas the median is significant and negative. In over 80% of the cases, the gross returns are negative. In a limited number of cases, however, the returns are extremely positive. The top percentile of CPC IPOs generate returns in excess of 1,100%. The maximum cumulative return is 21,392%.

To assess whether the unusually skewed distribution of these returns is a function of the founder-outside shareholder alignment associated with the capital pool structure rather than the tiny size of the issue, we compute holding period returns for non-CPC IPOs for the same time-period. For the corresponding period for small non-CPC IPOs, the mean (median) cumulative returns are -34% (-85%). The mean return for our sample of non-CPCs over the entire sample period is significant, negative, and below the corresponding mean return for the CPC sample. However, a comparison over sub-periods (2001 to 2007 and 2008 to 2012) indicates no difference in either mean or median gross cumulative return. This suggests that differences in the timing of the two sets of IPOs may have affected the results. We conduct a Mann-Whitney test, and find that the distributions of the CPC and non-CPC samples for the 2001 to 2012 period and both sub-

periods are not significantly different. Thus, the results indicate that the distributions of CPC and non-CPC post-IPO holding periods have similarly highly right skewed returns. Hence, independent of the capital pool structure, tiny IPOs have poor long-term performance.

We adjust for industry-related factors in stock returns by computing the holding period returns net of the return on investment calculated from the Cumulative Return Index for the industry of that company for the corresponding period from the TSX. Effectively, we compare post-IPO holding returns to a matched portfolio of more seasoned companies in the same industry. Net of industry effects, the significant disparity between the positive returns of CPCs pre-versus post-QT persists. As well, skewness of the individual securities is apparent (see Table 5, Figures 2a and 2b). Nearly 40% of the CPC IPO investments lead to industry-adjusted losses in excess of 100%—a result of 100% losses for the CPCs in a period of positive returns for seasoned industry counterparts.

The median for both the CPC and non-CPC post-IPO net holding returns underperform mean returns. We compute an industry-adjusted mean (median) for the sample period for all CPCs of -8% (-82%). However, we find no significant difference in the means and distributions for CPC and non-CPC net holding period returns, post-IPO. Overall, the industry-adjusted return distribution indicates a high level of skewness for very small IPOs, but no compensation in mean performance, when compared to a portfolio of more seasoned companies of the corresponding industry index.

3.2 Internal Rate of Return

Because of the different post-IPO investment holding periods for these CPCs, we also compute their internal rates of returns to evaluate performance on a consistent basis across our sample. The question arises as to how to compute the IRR on an investment in which there is no

recovery of capital when the holding period is not exactly one year. For the purposes of creating a histogram, we begin by assuming the IRR in all such cases would be -100%. This is the minimum shown in Table 6. To calculate the mean IRR for the sample of new issues while accounting for the complete loss of capital associated with some investments, we undertake a two-step procedure. First, we determine the proportion of IPOs that result in a 100% loss of capital. Nearly one-quarter of companies in our sample fall into this category. We then assume that the amount of initial cash outlay needed for remaining investments (where there is some return on capital) needs to be increased by a factor 100/75 or 1.33. That is, because of these 100% losses, for every dollar invested in projects with some payoff, there is a need to invest an extra $0.33. The larger initial capital required lowers the mean IRR of the remaining sample of investments.

Table 6 presents mean and median IRRs for our sample. We find that mean IRRs for both CPCs and non-CPCs, from IPO to exit are significantly negative. If we split our sample into pre-QT and post-QT periods, we find that mean and median IRRs are significantly positive for CPCs from time of IPO to QT, and significantly negative thereafter. Statistical tests indicate distributions of long-term returns of CPC and non-CPC IPOs are not significantly different.

The mean IRR for CPCs (IPO to exit) is -37% for the 2001 to 2012 period. It is interesting that the mean IRR is significantly negative, but the mean cumulative holding period return is positive. This suggests that the instances of very high cumulative holding period returns have longer than average post-IPO periods. For example, Desco Exploration, the CPC with the highest cumulative post-IPO return of 21,392% had a fourteen-year investment horizon, one of only a few companies in our sample to have such a long survival period. In summary, investors in the CPC IPOs lose their capital relatively quickly on many deals, but make large gains in a few cases over a long horizon.

The results are generally similar when we examine the industry-adjusted rates of return (see Table 7, and Figures 3a and 3b). The only notable difference is the median of the industry-adjusted CPC IRR from IPO to QT, which is single-digit negative, rather than single-digit positive. After adjusting for industry, the mean pre-QT CPC IRR remains large and positive, at 39%.

3.4   Cross-sectional regression of industry-adjusted IRRs

We next seek to understand which factors impact the post-IPO performance of small issues. We first include factors that are specific to CPCs like the successful completion of a QT, and the industry in which the company operates. The intuition behind the industry factor is that there could be some variation that may affect small issue performance. For example, because there are more resource deals than those in any other sector, it is likely that investors in resource CPCs will have a clearer understanding of the risks involved in such deals.

We also consider whether aspects of underwriting affect the long-term returns post-IPO. For example, a high underwriting commission may be a signal of a more difficult issue to sell. As such, we expect the returns to be lower when underwriting commissions are higher. In addition, Carter, Dark and Singh (1998) provide empirical evidence that positive underwriter reputation is a signal of a more attractive deal for investors. Issue size may also affect the post-IPO returns: a smaller issue may indicate that the principals are more efficient in their capacity to achieve a qualifying transaction. As previously discussed, the number of CPC IPOs peaked in 2007 just prior to the financial crisis. Noting the shift in CPC activity around this pivotal date, we control for the possibility that the financial crisis tempered CPC activity post-2007. We expect that, in the wake of the financial crisis, investors would require a higher return on CPC investments. Finally, we expect that level of interest in an offering should be correlated with more favorable returns. We

measure this effect by calculating the number of shares issued as a percentage of the maximum available, as set by the underwriter in the preliminary prospectus.

The next list of attributes that we consider is related to characteristics of CPC's founders. As argued in Baum and Silverman (2004), social, intellectual, and human capital are key signals of start-up potential. We thus expect that the larger the start-up potential, the higher the long-term return. We employ several variables that are potentially correlated with one or more of these signals. First, companies whose founders are mostly institutions (investment vehicles such as limited partnerships and holding companies) should benefit not only from higher capabilities and skills of these organizations, but also from a more developed network. Another variable that we study is the speed with which the QT is made. Timely execution of the investment could signal the innovative capability of founders and their ability to secure a profitable venture. We also consider variables of power concentration in the group of founders, which, as argued in Section 2.3, could have a positive or negative impact on the success of the venture. The market for CPCs is characterized by informational differences between founders and outside investors. Given that the supply of good projects is low relative to the supply of bad projects in this market, outsiders could face severe adverse selection problems. In that context, Brealey, Leland and Pyle (1977) provide a theoretical model of capital structure and financial equilibrium in which a signal about the project quality comes from the entrepreneur's willingness to invest in his own project. Thus, we use the ratio between founders' capital to total capital of the CPC as a proxy for project quality, and expect returns to be higher when this ratio is higher. We include these controls in our analysis of the IRR, and perform the following OLS cross-sectional regression:

$$IRR_i = \alpha + \gamma_1 CPC_i + \gamma_2 CPC_i * No\ QT_i + \gamma_3 Energy_i + \gamma_4 Materials_i + \gamma_5 IT_i \qquad (1)$$

$$+ \gamma_6 Industrials_i + \gamma_7 Commission_i + \gamma_8 Top20\%Underwriter_i$$

$$+ \gamma_9 GrossProceeds_i + \gamma_{10} PostCrisis_i + \gamma_{11} Percentage\ of\ Shares\ Issued_i$$

$$+ \gamma_{12} Percentage\ of\ Founders\ that\ are\ Institutions_i$$

$$+ \gamma_{13} Number\ of\ Previous\ QTs_i + \gamma_{14} Time\ to\ QT \leq 2\ Years_i$$

$$+ \gamma_{15} Number\ of > 10\%\ Founders_i + \gamma_{16} One > 50\%\ Founder_i$$

$$+ \gamma_{17} Adjusted\ Herfindahl\ Index_i + \gamma_{18} \frac{Founder's\ Capital}{Total\ Capital} + \epsilon_d,$$

where the dependent variable is industry-adjusted IRRs for CPC IPOs and non-CPCs with small (<$2 million IPOs) net of internal rate of return of the Cumulative Return Index for the industry of that company for the corresponding period. The period of estimation extends from the IPO date to the earliest of the following dates: firm acquired for cash, financial distress or June 30, 2016.

Explanatory variables are defined as follows: *CPC* is a dummy variable with a value 1 where the IPO is a capital pool company and 0 otherwise. *No QT* is a dummy variable with a value of 1 where the Qualifying Transaction fails to occur and 0 otherwise. *Energy, materials, IT (information technology)* and *industrials* are dummy variables corresponding to the industry in which the company operates. *Commission* is the percentage of gross proceeds of the new issue paid to the underwriter. *Top 20% underwriter* is a dummy variable with a value of 1 where the IPO is underwritten by one of the top fifth of underwriters in Canada in the year of the IPO. *Gross Proceeds* is the natural logarithm of the total proceeds of the IPO. *Post Crisis* is a dummy variable with a value of 1 where the IPO occurs after 2007 and 0 otherwise. *Percentage of Shares Issued* is the actual number of shares issued in the IPO divided by the maximum set by the underwriter in

the preliminary prospectus. *Number of Previous QTs* is the number of qualifying transactions involving at least one member of the founder group that occurred prior to the IPO. *Time to QT ≤ 2 Years* is a dummy variable with value 1 where the time from IPO to QT is less than or equal to 24 months. *Percentage of founders that are institutions* is the percentage of founders who are investment vehicles such as limited partnerships and holding companies. *Number of Founders* is the number of founders who each hold over 10% of the votes of the founding group. *Controlling Founder* is a dummy variable with value of 1 if there is one founder who controls over 50% of the votes of the founding group. *Adjusted Herfindahl index* measures concentration of ownership among founders (as described in Section 2.3). *Founder Capital / Total Capital* is the amount of the founders' pre-IPO investment divided by the combined amount of capital invested by the founders prior to the IPO and outside investors in the IPO.

We present the results of the OLS cross-sectional regression in the second and third columns of Table 8. Not surprisingly, the results indicate that returns are lower when qualifying transactions fail. IPOs in the material sectors tend to have superior performance to those in other sectors. This stronger performance is consistent with the fact that the expertise among sponsors is likely highest in the mining sector given its high share of the Canadian venture exchange. Regarding underwriting deal effects, two aspects affect the post-IPO returns. The first one is that higher underwriting commissions are associated with lower post-IPO returns. Interestingly, we do not find evidence that underwriter reputation impacts post-IPO returns. The second one is that smaller issues are associated with higher post-IPO returns, consistent with the argument that companies raising less money are more efficient in securing a qualifying transaction. The significant positive coefficient for post-crisis indicates that returns have been higher in recent years perhaps because investors seek higher compensation for bearing risk. Consistent with our hypothesis, we find that a higher percentage of maximum shares issued correlates with a higher post-IPO return.

We also report results for two variables associated with founders' composition, experience, and financial commitment. CPCs with founders that are institutions are associated with higher long-term performance. However, CPCs with founders that have founded other QTs and achieved QTs with them, do not have any significantly different performance than other CPCs. If the QT was achieved within the regulatory deadline of two years or received a large proportion of capital from initial founders, the CPC has better long-term performance than otherwise. Finally, when the founders have a bigger financial interest in the CPC, shareholder returns tend to be higher.

None of the variables measuring concentration of votes across founders is significant in explaining post-IPO performance. We attribute this result to the fact that multiple founder groups in CPCs are highly cohesive. To the extent all founder shares are escrowed prior to the qualifying transaction and there is a deadline to qualifying transaction, they share a collective interest in achieving a qualifying transaction.

Because of the non-normality of the data, we also analyze the cross-sectional post-IPO performance by separating companies into positive and negative industry-adjusted returns. We present results for this logit regression in the fourth and fifth columns of Table 8. The results are generally consistent with our aforementioned analysis. Most of the coefficients of the variables are of the same sign and remain statistically significant. The impact on post-IPO performance remains significantly negative when the QT is not achieved, underwriting commissions are higher and IPO issue proceeds are larger. The impact on post-IPO performance remains significantly positive when CPCs occur during and after the financial crisis, and when the CPC has reached a QT by the 24th month following the IPO. However, several of the coefficients with more marginal t-statistics in the OLS regression are no longer statistically significant in the logit regression.

Given the high level of information asymmetry between entrepreneurs and investors and the rather poor performance of most early-stage companies, the results show that good quality CPCs could be identified by outside investors from some observable variables available at the time of the investment. In doing so, these investors could mitigate in part the agency risk associated with markets of these types of companies.

3.5   Likelihood of Qualifying Transactions

In this section we evaluate the scouting abilities of the founding team to find and secure a QT. To this end, we run a logit regression where the dependent variable (*D_CPC*) has a value 1 if the CPC achieves a qualifying transaction and 0 otherwise.

The explanatory variables consist of the subset of variables from equation (1) that are known at the time of the CPC IPO. Table 9 indicates that the post-crisis dummy variable is one of only two significant predictors of a qualifying transaction occurring. After 2007, the likelihood of a qualifying transaction occurring declined for new CPC issues. In wake of the financial crisis, getting financing to support the qualifying transaction was likely more difficult, and reducing the completion rate of QTs. None of the characteristics of the underwriting or of the founding group show a significant relationship with the likelihood of qualifying transaction completion. The lack of significance of any of the measures of concentration of votes among the founding group indicates that even where there are multiple founders, there is a high level of agreement that results in a qualifying transaction being achieved. On the other hand, the quality of the project, as proxied by the ratio of founders' capital to total capital, is positively related to the qualifying transaction completion, showing that the willingness of the person(s) with inside information to invest in the project might serve as a signal of the true quality of the project (Brealey, Leland, and Pyle, 1977).

4.0   Conclusions

Our paper provides insight into the importance of founder characteristics and tools such as minimum founder capital and lockup provisions to align the interests of founders and retail investors in early-stage companies. Using the Capital Pool Corporations (CPCs) that go public on the Canadian TSX Venture Exchange, we study a large sample of early-stage companies whose seed capital is provided by a few founders and many small retail investors. These founders must invest a minimum amount of capital and are restricted from selling any of their shareholdings until the CPC completes a significant acquisition of operating assets (the "QT"). We document a striking difference between the returns of CPCs before and after the QT. On average, shareholders double their money from IPO to the end of the first month following a qualifying transaction, but thereafter experience a -40% cumulative return. We attribute this pattern of returns to the founders' strong incentive to negotiate a qualifying transaction in their own interest at the expense of investors who purchase shares in an equity raise needed to complete the qualifying transaction.

The poor long-term returns of the CPC investment vehicle may be attributable to a weakness in corporate governance of these early-stage companies when large initial outside shareholdings are prohibited by regulation. Creating an atomistic base of many small individual shareholders means management will not experience significant oversight compared to management of a corporation with large outside shareholders. It is interesting to note that although the long-run returns are on average poor for CPCs, they are no poorer than those for non-CPCs of similar tiny size. An examination of the non-CPCs indicated that they rarely have institutional shareholders and thus are mainly funded by retail investors. As such, a lack of external shareholder oversight appears characteristic of penny stocks and companies that do tiny IPOs.

The lack of large outside shareholders in CPCs and other similarly small non-CPCs and the links to weak corporate governance provide important insight towards evaluating recently-popular equity crowdfunding. Under the JOBS Act, the regulations on equity crowdfunding also limit the amount any one unaccredited retail investor can invest. [10] Such restrictions on individual investment amount leads to an atomistic base of retail shareholders who are unlikely to exert much corporate oversight over crowdfunded companies. Thus, it is very important to evaluate the extent of minimum capital and lockup requirements on founders of equity crowdfunded companies.

A cross-sectional analysis indicates that better long-term performance follows those IPOs that have lower underwriting commissions, smaller gross proceeds, a higher percentage issued of the maximum set in the preliminary prospectus by the underwriter and a higher percentage of founders who are institutions. Long-term performance is also significantly higher when the QT is achieved within the regulatory deadline of 2 years of the CPC IPO and the founders invest a significant portion of the capital. Furthermore, the long-term returns are superior in the IPOs in the aftermath of the financial crisis.

By studying post-IPO returns of CPCs, our paper also addresses a gap in the literature by providing comprehensive data on long-term returns for funding early-stage companies. Different from self-reported survey data used to study returns from angel investing, our study relies on a comprehensive sample of companies that have accessed public markets for early-stage financing. This feature of our data is particularly appealing since it provides an alternative source not subject to the inherent bias of surveys. The comprehensive data also provides a very clear picture of the extreme right-skewness inherent in early stage investment and allows us to investigate the extent

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[10] See the SEC's amendment to crowdfunding rules https://www.sec.gov/rules/final/2015/33-9974.pdf

to which diversification allows for an optimal trade-off between risk and return. Long-term returns are extremely right-skewed, with over 80% of CPCs earning negative long-term returns.

Overall, the paper provides lessons for those interested in investing in early-stage companies. First, if you want to win in this market, make sure your interests are aligned with those of the principals. In the case of CPCs, this means buying in the IPO and selling soon after the qualifying transaction. Second, form a diversified portfolio of early-stage investments. Third, consider an alternative approach to gain exposure to this asset class given the poor long-term performance of early-stage companies in this public market. For example, as Timms (2015) discusses, specialized angel funds who acquire influential blocks of private early-stage companies are growing in popularity as they offer investors both diversification and stronger oversight of management. Given the low liquidity of such funds and the potentially high management fees, angel funds should be considered as alternative vehicles to invest in this asset class.

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Table 1. Descriptive Statistics

The table provides descriptive statistics for the sample of capital pool company (CPC) IPOs and non-CPC IPOs under $2 million in proceeds through the Toronto Stock Exchange and the TSX Venture Exchange. The sample period spans January 2001 through December 2012. The data is extracted from the *Financial Post New Issues* database.

	Capital pool companies (CPC) IPOs	Non-CPC IPOs < $2 million	T-test for difference in mean	Mann-Whitney Test
Size of IPOs Proceeds in $000s				
Mean	492	810	-9.73	
25th percentile	211	540		
Median	300	746		-11.77
75th percentile	600	1000		
Underwriter Commission %:				
Mean	9.74%	8.61%	9.63	
Median	10.00%	8.00%		10.14
Minimum	4.00%	3.00%		
Maximum	10.00%	15.00%		
Top 20% Underwriter Used:				
Number (Percentage) of cases	255 (24.95%)	39 (23.21%)		
Stock Price at Issue:				
Mean	$0.16	$0.24	-6.88	
Median	$0.15	$0.20		-9.28
Minimum	$0.10	$0.10		
Maximum	$1.00	$1.00		
Qualifying Transaction followed CPC IPO:				
Number (Percentage) of cases:	899 (88%)	NA		
Number of Months from CPC IPO to Qualifying Transaction:				
Mean	25			
Median	23			
Minimum	2			
Maximum	119			

Table 1. Descriptive Statistics (Continued)

The table provides descriptive statistics for the sample of capital pool company (CPC) IPOs and non-CPC IPOs under $2 million in proceeds through the Toronto Stock Exchange and the TSX Venture Exchange. The sample period spans January 2001 through December 2012. The data is extracted from the *Financial Post New Issues* database.

	Capital pool company (CPC) IPOs	Non-CPC IPOs <$2million
Original Listing Exchange:		
TSX Venture Exchange	1022	135
Canadian Securities Exchange (an alternative trading venue for venture companies established in 2003)	0	33
Listing Exchange June 30, 2016:		
Toronto Stock Exchange	91	7
TSX Venture Exchange	462	101
NEX	83	12
Canadian Securities Exchange	32	18
Other Exchanges	10	0
Acquired for Cash	63	7
Trading Halted/Suspended	101	9
Delisted	180	14
Total	1022	168
Industry Classification (in case of CPC, only those with QT):		
Materials (Mainly Mining)	415	147
Energy	126	5
Information Technology	124	4
Industrials	101	3
Financials	77	0
Health Care	40	4
Miscellaneous	16	5
Total	899	168

Table 2. Survival Rates of Sample Companies

This table reports the percentages of Capital Pool Companies (CPCs) and non-CPCs with under $2 million IPOs that remain listed (not delisted for reasons such as bankruptcy or acquisition) over different time horizons since initial listing. The percentage cumulative surviving is computed as the product of the percentage survival rates up to and including that year.

Years since IPO	CPCs			Non-CPCs		
	Surviving in year		Cumulative Surviving	Surviving in year		
	#	%	%	#	%	% Cumulative Surviving
1	1022	100.00%	100%	168	99.40%	99%
2	1022	99.80%	100%	167	100.00%	99%
3	1020	98.33%	98%	167	99.40%	99%
4	1003	97.01%	95%	166	98.80%	98%
5	963	93.98%	89%	161	97.52%	95%
6	840	94.17%	84%	129	96.12%	92%
7	701	93.72%	79%	105	98.10%	90%
8	600	94.33%	74%	87	96.55%	87%
9	528	91.86%	68%	77	96.10%	83%
10	345	92.75%	63%	51	94.12%	78%
11	221	91.40%	58%	33	90.91%	71%
12	148	91.22%	53%	21	95.24%	68%
13	90	92.22%	49%	12	91.67%	62%
14	41	100.00%	49%	10	90.00%	56%
15	32	90.63%	44%	5	100.00%	56%
16	4	100.00%	44%	0	NA	NA

Table 3. Descriptive Statistics on CPC Founders

The table provides descriptive statistics for the founders of the sample of capital pool company (CPC) IPOs on the TSX Venture Exchange. The sample period spans January 2001 through December 2012. The data is extracted from the System for Electronic Disclosure and Reporting (SEDAR).

Panel A: Composition and Prior Experience

Composition of Founder Group	All founders are individuals	All founders are institutions	Founders include both individuals and institutions	Total
Number of Cases	717	70	235	1022
Percentage	70.2%	6.8%	23%	100%

Prior experience of founders with QTs	None of the founders have experience with QTs	Only a single QT achieved by any one of the founders	More than one past QT achieved by those in the founder group	Total
Number of Cases	710	135	177	1022
Percentage	69.5%	13.2%	17.3%	100%

Prior experience of founders with CPCs	None of the founders have prior experience with CPCs	Only a single CPC founded by any one of the founders	More than one past CPC founded by those in the founder group	Total
Number of Cases	588	154	280	1022
Percentage	57.5%	15.1%	27.4%	100%

Panel B: Ownership Characteristics

	Mean	25%	Median	75%
Adjusted Herfindahl Index	10.29	0.45	2.68	8.79
(Founders Investment)/(Total Investment)	28%	18%	29%	35%

Table 4. Long-term Shareholder Return for Small Public Issuers

The table reports the long-term shareholder return of CPCs and non-CPCs with small (<$2 million) IPOs that were issued between 2001 and 2012. Column 1 shows the results for CPCs from IPO to the month end following the qualifying transaction (QT). If there is no QT, then the period of estimation extends to the last recorded month-end price. Column 2 shows the results for CPCs from the month end following the QT until exit date. We define the exit date as the earliest of the day of acquisition of the stock for cash, financial distress or June 30, 2016. Column 3 shows the results for CPCs from IPO until exit date. Column 4 shows the results for non-CPCs from IPO to exit. * and ** indicate significance at the 5% and 1% levels, respectively for the t-test (sign test) that the sample mean (median) is not equal to zero.

	CPCs (IPO to QT)	CPCs (QT to Exit)	CPCs (IPO to Exit)	NonCPCs (IPO to Exit)	t-stat for means and MannWhitney test for Medians		
	(1)	(2)	(3)	(4)	(1) – (2)	(2) – (4)	(3) – (4)
Number of IPOs	1022	899	1022	168			
Mean	109%**	-41%**	25%	-34%**	13.78**	-0.57	1.51
Minimum	-100%	-100%	-100%	-100%			
25% Percentile	-28%	-99%	-100%	-97%			
Median	32%**	-89%**	-87%**	-85%**	20.76**	-0.76	-0.34
75% Percentile	123%	-44%	-34%	-42%			
80% Percentile	155%	-23%	-3%	-18%			
85% Percentile	220%	-2%	28%	20%			
90% Percentile	325%	34%	100%	69%			
95% Percentile	540%	141%	306%	138%			
99% Percentile	1487%	547%	1110%	626%			
Maximum	4750%	2400%	21392%	1577%			

Table 5. Industry-Adjusted Long-term Shareholder Return for Small Public Issuers

The table reports the industry-adjusted long-term shareholder return of CPCs and non-CPCs with small (<$2 million) IPOs issued from 2001 to 2012. The shareholder returns are computed net of return on investment calculated from Cumulative Return Index for the industry of that company for the corresponding period. Column 1 shows the results for CPCs from IPO to the month end following the qualifying transaction (QT). If there is no QT, then the period of estimation extends to the last recorded month-end price. Column 2 shows the results for CPCs from the month end following the QT until exit date. We define the exit date as the earliest of the day of acquisition of the stock for cash, financial distress or June 30, 2016. Column 3 shows the results for CPCs from IPO until exit date. Column 4 shows the results for non-CPCs from IPO to exit. * and ** indicate significance at the 5% and 1% levels, respectively for the t-test (sign test) that the sample mean (median) is not equal to zero.

	CPCs (IPO to QT)	CPCs (QT to Exit)	CPCs (IPO to Exit)	NonCPCs (IPO to Exit)	t-stat for means and MannWhitney test for Medians		
	(1)	(2)	(3)	(4)	(1) – (2)	(2) – (4)	(3) – (4)
Number of IPOs	1022	899	1022	168			
Mean	92%**	-63%**	-8%	-44%**	13.75**	-1.22	0.62
Minimum	-845%	-449%	-1086%	-384%			
25% Percentile	-44%	-111%	-128%	-103%			
Median	21%**	-77%**	-82%**	-71%**	20.21**	-1.31	-1.05
75% Percentile	113%	-46%	-40%	-28%			
80% Percentile	142%	-31%	-22%	-8%			
85% Percentile	206%	-11%	15%	22%			
90% Percentile	301%	26%	97%	74%			
95% Percentile	517%	102%	275%	153%			
99% Percentile	1519%	563%	1144%	627%			
Maximum	4754%	2437%	21278%	1586%			

Table 6. Internal Rate of Return for Small Public Issuers

The table reports the long-term internal rate of return (IRR) of CPCs and non-CPCs with small (<\$2 million) IPOs issued from 2001 to 2012. Column 1 shows the results for CPCs from IPO to the month end following the qualifying transaction (QT). If there is no QT, then the period of estimation extends to the last recorded month-end price. Column 2 shows the results for CPCs from the month end following the QT until exit date. We define the exit date as the earliest of the day of acquisition of the stock for cash, financial distress or June 30, 2016. Column 3 shows the results for CPCs from IPO until exit date. Column 4 shows the results for non-CPCs from IPO to exit. Because a large proportion of the IPOs result in a complete loss of capital, we make an adjustment for the calculation of mean IRRs. We first compute the IRRs of IPOs where there is some return on capital by increasing the amount of the initial cash outlay i.e. if 40% of CPC IPOs result in a complete loss of capital, the cash outlay on all other IPOs is multiplied by 100/60 or 1.67. That is, because of these 100% losses, for every dollar invested in projects with some payoff, there is a need to invest another \$0.67. * and ** indicate significance at the 5% and 1% levels, respectively for the t-test (sign test) that the sample mean (median) is not equal to zero.

	CPCs (IPO to QT) [a]	CPCs (QT to Exit)	CPCs (IPO to Exit)	NonCPCs (IPO to Exit)	t-stat for means and MannWhitney test for Medians		
	(1)	(2)	(3)	(4)	(1) – (2)	(2) – (4)	(3) – (4)
Number of IPOs	1022	899	1022	168			
Mean	62%**	-40%**	-37%**	-32%**	12.10**	-2.89**	-2.41**
Minimum	-100%	-100%	-100%	-100%			
25% Percentile	-22%	-65%	-99%	-44%			
Median	2%**	-35%**	-25%**	-25%**	21.84**	-2.6**	-2.1*
75% Percentile	43%	-13%	-9%	-11%			
80% Percentile	64%	-9%	-5%	-7%			
85% Percentile	98%	-5%	-1%	-2%			
90% Percentile	148%	2%	5%	4%			
95% Percentile	306%	12%	17%	9%			
99% Percentile	2241%	57%	44%	36%			
Maximum	2241%	232%	164%	44%			

[a] These IRRs for CPCs (IPO to QT) were winsorized at the 1% level.

Table 7. Industry-Adjusted Internal Rate of Return for Small Public Issuers

The table reports the industry-adjusted long-term internal rate of return (IRR) of CPCs and nonCPCs with small (<$2 million) IPOs issued from 2001 to 2012. The returns are computed net of internal rate of return from Cumulative Return Index for the industry of that company for the corresponding period. Column 1 shows the results for CPCs from IPO to the month end following the qualifying transaction (QT). If there is no QT, then the period of estimation extends to the last recorded month-end price. Column 2 shows the results for CPCs from the month end following the QT until exit date. We define the exit date as the earliest of the day of acquisition of the stock for cash, financial distress or June 30, 2016. Column 3 shows the results for CPCs from IPO until exit date. Column 4 shows the results for non-CPCs from IPO to exit. Because a large proportion of the IPOs result in a complete loss of capital, we make an adjustment for the calculation of mean IRRs. We first compute the IRRs of IPOs where there is some return on capital by increasing the amount of the initial cash outlay i.e. if 40% of CPC IPOs result in a complete loss of capital, the cash outlay on all other IPOs is multiplied by 100/60 or 1.67. That is, because of these 100% losses, for every dollar invested in projects with some payoff, there is a need to invest another $0.67. * and ** indicate significance at the 5% and 1% levels, respectively for the t-test (sign test) that the sample mean (median) is not equal to zero.

	CPCs (IPO to QT) [a]	CPCs (QT to Exit)	CPCs (IPO to Exit)	NonCPCs (IPO to Exit)	t-stat for means and MannWhitney test for Medians		
	(1)	(2)	(3)	(4)	(1) – (2)	(2) – (4)	(3) – (4)
Number of IPOs	1022	899	1022	168			
Mean	39%**	-42%**	-39%**	-31%**	10.37**	-3.78**	-3.03**
Minimum	-225%	-207%	-153%	-151%			
25% Percentile	-40%	-66%	-87%	-41%			
Median	-7%*	-35%**	-27%**	-24%**	16.44**	-3.3**	-2.64**
75% Percentile	34%	-17%	-10%	-10%			
80% Percentile	50%	-11%	-7%	-5%			
85% Percentile	77%	-6%	-2%	-2%			
90% Percentile	133%	-1%	5%	7%			
95% Percentile	269%	12%	17%	16%			
99% Percentile	2015%	63%	41%	34%			
Maximum	2015%	199%	155%	64%			

[a] These IRRs for CPCs (IPO to QT) were winsorized at the 1% level.

**Table 8. Cross-Sectional Regression of Industry Adjusted IRRs IPO to Exit**

The second and third columns of the table reports results of a cross-sectional OLS regression of IRRs for CPC IPOs and small (<$2 million) non-CPCs IPOs net of IRR of the Cumulative Return Index for the industry of that company. The period of estimation is from the IPO date to the earliest of the date of acquisition, financial distress and June 30, 2016. For the logit regression shown in the fourth and fifth columns, the dependent variable has a value of 1 if the industry-adjusted IRRs of CPC IPOs is positive and 0 otherwise. Explanatory variables are as follows: *Capital Pool Company* is a dummy variable with a value 1 where the IPO is a CPC and 0 otherwise. *CPC without Qualifying Transaction* is a dummy variable with a value 1 where the Qualifying Transaction fails to occur and 0 otherwise. *Energy, materials, information technology* and *industrials* are dummy variables corresponding to the industry in which the company operates. *Commission percentage* is the underwriter's fee as a percentage of gross proceeds of the new issue. *Top 20% underwriter* is a dummy variable with a value of 1 where the IPO is underwritten by one of the top fifth of underwriters in Canada in the year of the IPO. *Ln of Gross Proceeds* is the natural logarithm of the total proceeds of the IPO. *Post Financial Crisis* is a dummy variable with value 1 where the IPO occurs after 2007 and 0 otherwise. *Percentage of Shares Issued* is the number of shares issued in the IPO divided by the maximum number of shares to be issued as set by the underwriter in the preliminary prospectus. *Percentage of founders that are institutions* is the percentage of founders is the percentage of founders who are investment vehicles such as limited partnerships and holding companies. For the t-statistics, one and two asterisks indicate significance at the 5% and 1% levels, respectively. A # means that the posterior odds ratio indicates that the odds against the null hypothesis of the mean equaling zero are greater than 20:1.

Variables	OLS Regression		Logit Regression	
	Coefficient	t-statistic	Coefficient	z-statistic
Intercept	0.41	1.19	7.10	2.33*#
Capital Pool Company (CPC)	0.01	0.11	-0.40	-0.89
CPC without Qualifying Transaction	-0.39	-8.27**	-2.30	-3.56**#
Energy	-0.08	-1.86	-0.73	-1.93
Materials	0.09	2.45*	-0.29	-1.05
Information Technology	-0.03	-0.64	0.08	0.23
Industrials	-0.11	-2.37*	-0.62	-1.47
Commission Percentage	-0.05	-4.43**#	-0.21	-2.37*
Top 20% Underwriter	-0.00	-0.13	-0.30	-1.39
Ln of Gross Proceeds	-0.04	-1.72	-0.63	-3.04**#
Post Financial Crisis	0.06	2.71**	0.78	4.25**#
Percentage of Shares Issued	0.16	2.38*	1.27	1.74
Number of Previous QTs	0.01	1.72	-0.07	-1.06
Time to QT ≤ 2 years	0.05	2.01*	0.57	2.90**
% of Founders that are Institutions	0.10	2.40*	-0.18	-0.52
Number of >10% Founders	-0.01	-1.09	-0.04	-0.57
One Founder > 50% Votes	-0.04	-0.99	-0.36	-1.02
Adjusted Herfindahl Index	-0.00	-1.05	-0.00	-0.33
Founders' Capital to Total Capital	0.24	2.30*	1.49	1.87
Number of Observations	1190		1190	
Adjusted R-squared	0.178			
Pseudo R-squared			0.104	

## Table 9. Logit Regression of Qualifying Transactions

The table reports results of a cross-sectional logit regression that estimates the likelihood of a qualifying transaction for CPC IPOs. The dependent variable has a value of 1 if a qualifying transaction occurs. Explanatory variables are as follows: *Commission percentage* is the percentage of gross proceeds of the new issue paid to the underwriter. *Top 20% underwriter* is a dummy variable with a value of 1 where the IPO is underwritten by one of the top fifth of underwriters in Canada in the year of the IPO. *Ln of Gross Proceeds* is the natural logarithm of the total proceeds of the IPO. *Post Financial Crisis* is a dummy variable with a value of 1 where the IPO occurs after 2007 and 0 otherwise. *Percentage of Shares Issued* is the number of shares issued in the IPO divided by the maximum number of shares to be issued as set by the underwriter in the preliminary prospectus. *Number of Previous QTs* is the number of qualifying transactions involving at least one member of the founder group that occurred prior to the IPO. *Time to QT ≤ 2 Years* is a dummy variable with value 1 where the time from IPO to QT is less than or equal to 24 months. *Percentage of founders that are institutions* is the percentage of founders who are investment vehicles such as limited partnerships and holding companies. For the t-statistics, one and two asterisks indicate significance at the 5% and 1% levels, respectively. A # means that the posterior odds ratio indicates that the odds against the null hypothesis of the mean equaling zero are greater than 20:1.

| Variables	Coefficient	z-statistic
Intercept	-3.85	-1.11
Commission Percentage	-0.12	-0.87
Top 20% Underwriter	0.14	0.61
Total Proceeds (logarithm)	0.57	2.42*
Post Financial Crisis	-1.37	-6.09**#
Percentage of Shares Issued	0.38	0.64
Number of Previous QTs	-0.05	-1.00
% of Founders that are Institutions	-0.18	-0.83
Number of >10% Founders	-0.13	-1.62
One Founder > 50% Votes	0.53	1.35
Adjusted Herfindahl Index	-0.01	-1.67
Founders' Capital to Total Capital	2.64	2.58**
Number of Observations	1022	
Pseudo R-squared	0.087	
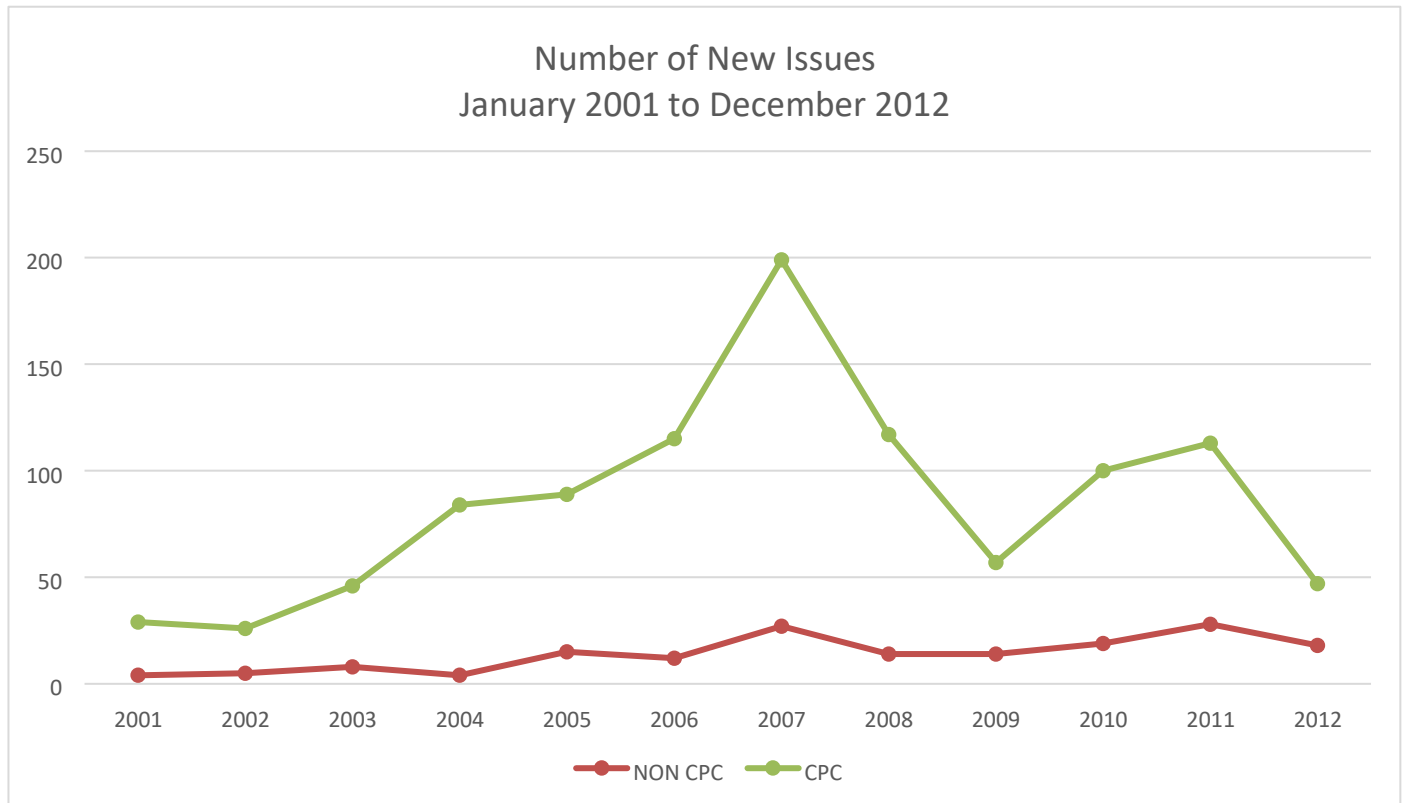
Figure 1. Time Series of Small New Issues: Capital Pool Companies (CPCs) and Non-CPCs
The figure reports the number of Capital Pool Company (CPC) IPOs and Non-CPC IPOs in each calendar year from January 2001 to December 2012. The data is extracted from the Financial Post New Issues database.
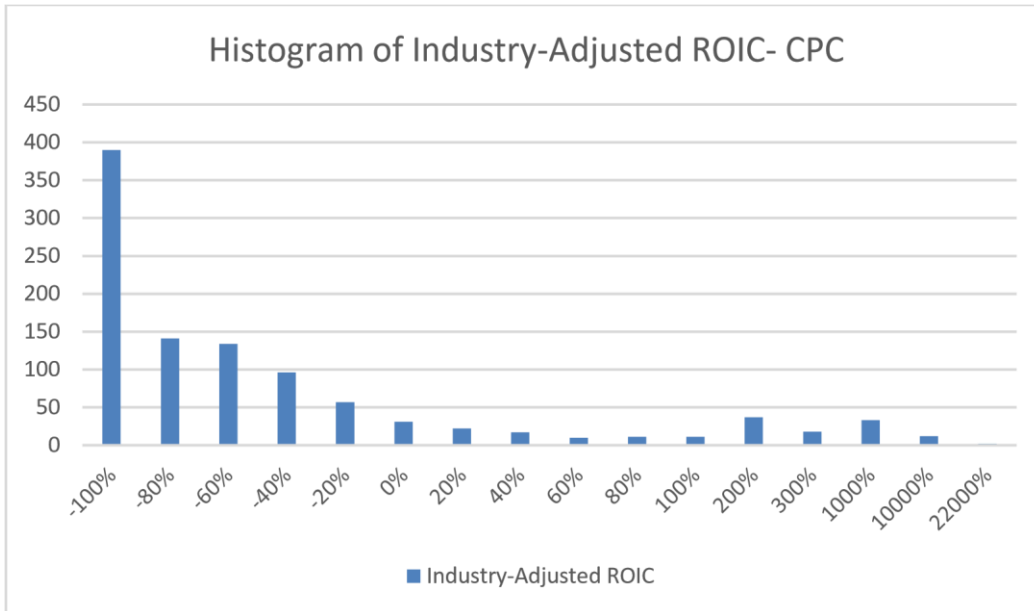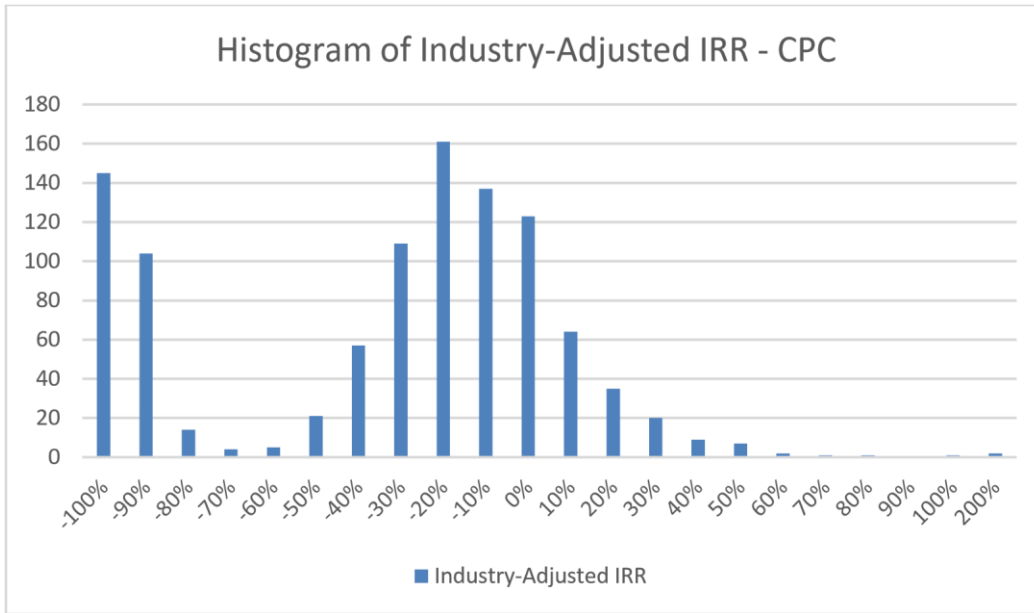
Figure 2a. Histogram of Industry-Adjusted Return on Invested Capital for Small New Issues: Capital Pool Companies (CPCs)
The figure reports the non-cumulative distributions of Industry-Adjusted Return on Invested Capital of Capital Pool Companies (CPC).
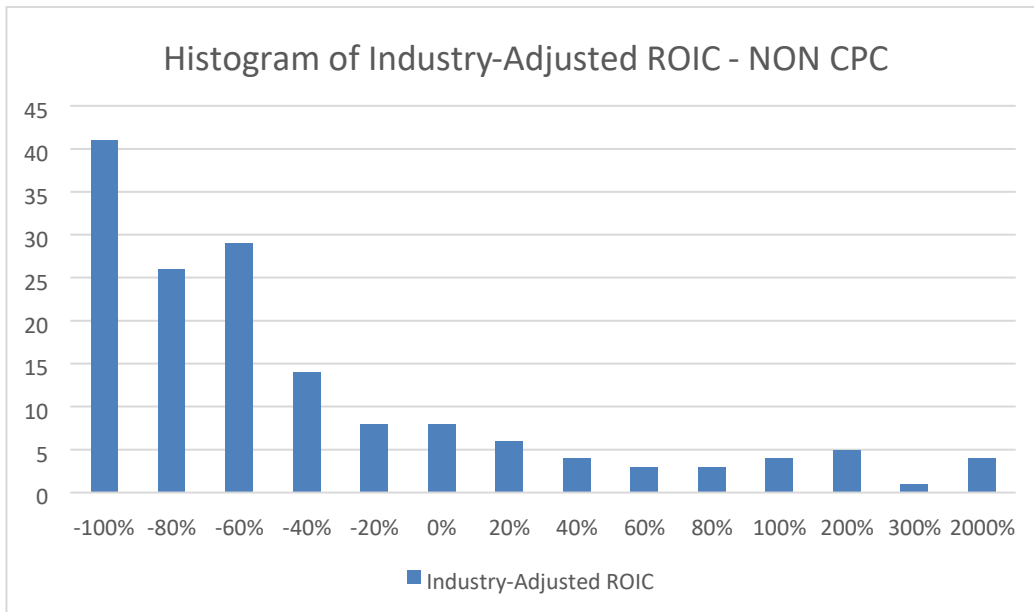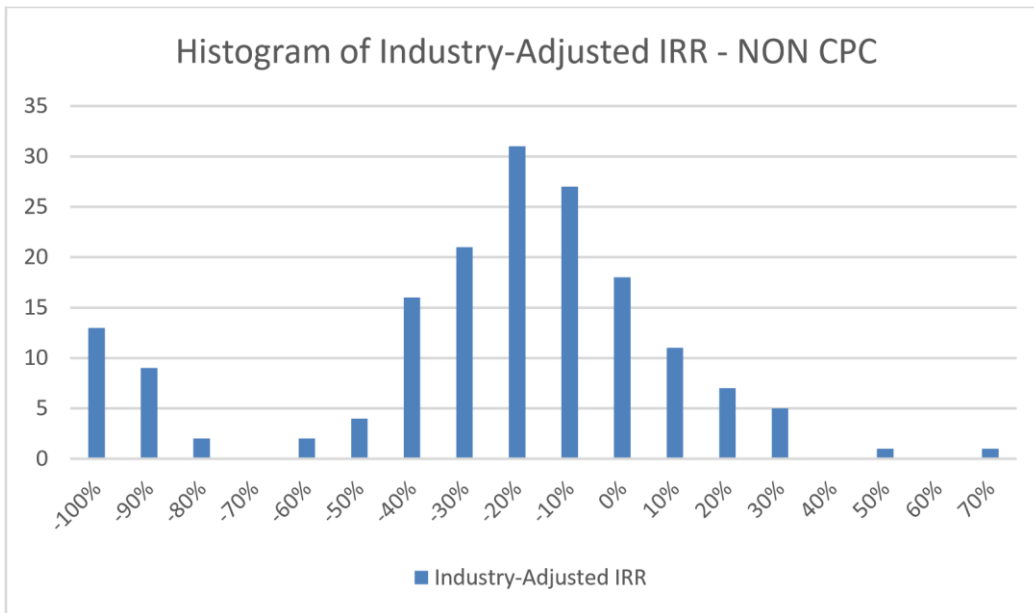

Figure 2b. Histogram of Industry-Adjusted Return on Invested Capital for Small New Issues: Non Capital Pool Companies (CPCs)
The figure reports the Histogram of Industry-Adjusted Return on Invested Capital of Non Capital Pool Companies (CPC).

Figure 3a. Histogram of Industry Adjusted IRR for Small New Issues: Capital Pool Companies (CPCs) The figure reports the Histogram of Industry-Adjusted IRR of Capital Pool Companies (CPCs).

Figure 3b. Histogram of Industry Adjusted IRR for Small New Issues: Non Capital Pool Companies (CPCs) The figure reports the Histogram of Industry-Adjusted IRR of Capital Pool Companies (CPC).