An Impact Brief
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Canadian Venture Capital Sufficiency

Does Canada Have Enough Venture Capital Funding?

IMPACT CENTRE
SCIENCE TO SOCIETY

NARWHAL PROJECT

UNIVERSITY OF TORONTO

Contents

Summary

"Although Canada ranks third in the world for the amount of VC invested annually, we place last in the world at turning this investment into Unicorns."

In Canada, access to venture capital (VC) is cited as a persistent barrier to the creation of world-class firms, prompting the development of programs and funds to overcome it. Policy is operating under the assumption that availability of VC funding is as much a problem today as it was years ago. But what is the current state of VC funds in Canada? Is there a gap? If so, why?

To help us answer these questions, we took a closer look at: the availability of VC funding in Canada in international comparison; the sources and availability of funds by VC stage within Canada; the structure of the Canadian VC system; and the sources of VC flowing into Canada's leading tech companies.

Contrary to popular belief, Canada performs exceptionally well globally, ranking among the top countries in the world for availability of capital in both absolute and relative terms. Internationally, Canada ranks third in absolute VC dollars invested, behind the United States and China, but far ahead of more populous countries such as the United Kingdom, France, Germany, and South Korea. Canada also ranks third on a gross domestic product-basis in VC invested per year, lagging only the United States and Israel on this measure.

For a long time, it has been thought that investments from international sources have propped up overall VC funds in Canada, particularly at later stages of growth. But the evidence suggests that this may hold true for earliest rounds of investing as well. In fact, there were 22% more Series A investments made by foreign firms than by Canadian VCs in Canada and more than twice as many foreign firms investing in Canada than Canadian firms making investments. This implies sufficiency of capital for Series A rounds and potentially even later rounds. If so many foreign firms are willing to invest in Canada then, effectively, Canadian companies are not constrained by a small local financial market.

The data also helped uncover a major issue with Canadian investors who are less likely to put forward competitive and significant sums of money. Among the companies we analyzed, only 18% financed were exclusively supported by VC firms based in Canada, and nearly 30% had no Canadian investors. In addition, businesses with no Canadian investors received 2.7 times as much money as those with Canadian investors only.

When it comes to leading Canadian technology companies, businesses that relied exclusively on US and other foreign funding in their Series A round eventually raised more money than Canadian-financed firms and were positioned better to become Unicorns.

Perhaps one of the main factors shaping our perception of capital in Canada is the lack of

results on the scaling front. Canada ranks last among Unicorn-creating Organisation for Economic Co-operation and Development (OECD) countries. Although Canada ranks third in the world for the amount of VC invested annually, we place last in the world at turning this investment into Unicorns. The situation is very troubling: even if we were to create four times as many Unicorns, we would still be in last place.

The structure of the Canadian VC system also poses some challenges:

1. We have too many VC firms with too little capital, potentially causing competition for deals and smaller investments, which are far less than the companies need to grow fully.
2. With smaller investments, these companies have less capital to support losses and important business functions (e.g. marketing and sales) that would help them grow faster.

Certainly, there is some disconnect between data and the general VC insufficiency narrative commonly heard in Canada. Our current report puts forward evidence that there is, in fact, sufficient capital for Canadian companies, especially when international flows of monies are considered. Overall, we believe that significantly more effort should be focused on exploring the underlying causes of the capital (in)sufficiency problem. Only then will we be equipped to design and deliver meaningful solutions that get at the underlying "disease", rather than the symptoms alone.

Introduction

Canadian technology companies have been citing a lack of venture capital funds as a significant barrier to growth for many years. A number of recent government planning documents have also mentioned access to capital as an ongoing hurdle in the creation of world-class firms, justifying the inclusion of capital considerations in policy formulations.

The report entitled *The Scale-up Gap: A Blueprint for ICT Firm Growth*, which was submitted to Innovation, Science and Economic Development Canada (ISED) in 2016 by Snowy Cloud Inc. and SLOAN Consults, highlighted weak capital as a persistent issue among young businesses:

> *All participants identified the scaling stage as "the gap" or "valley of death" that most companies cannot grow beyond. "The gap" is when a company is trying to grow from $2 million in revenue to $10 million in revenue and/or is increasing their headcount from 10 to over 25 people.*
>
> *Access to financing has improved, however early stage access to private seed funding and later stage access to credit facilities remains a challenge.*

In a 2017 report (*Unlocking Innovation to Drive Scale and Growth*), the Advisory Council on Economic Growth also identified insufficient risk capital as a challenge for fast-growing Canadian companies:

> *There is evidence that young Canadian firms would benefit from bigger injections of expansion capital. In a survey, more than twice as many fast-growing companies in Canada cited insufficient access to risk capital as their greatest concern in comparison with high-growth firms in the United States. The average later-stage venture deal (B or C rounds) is 41 percent smaller than such deals south of the border. (p. 6)*

To inquire further into individual industry challenges, the Canadian government created the Economic Strategy Tables as a model for collaboration between the public and private sectors. In the report on *The Innovation and Competitiveness Imperative: Seizing Opportunities for Growth*, the subgroup for Health and Biosciences described a major implication when capital is limited: "Limited access to capital leads many Canadian firms to exit the market through mergers or acquisitions rather than accrue value domestically" (p. 4).

The capital challenge has spurred the establishment of federal and provincial programs that spark investment in research and young startups (e.g. Centres of Excellence for Commercialization and Research, Canada Accelerator and Incubator Program), create vehicles to invest directly in companies (e.g. MaRS Investment Accelerator Fund, Business Development Bank of Canada), and fund venture capitalists so that they can reinvest into Canadian businesses. The federal government has also created a series of major programs (e.g. Strategic Innovation Fund, Innovation Superclusters Initiative, Venture Capital Catalyst Initiative) that should also help solve the problem, even if some initiatives contribute only indirectly.

Clearly, the entire policy apparatus is operating under the assumption that availability of venture capital (VC) is as much a problem today as it was years ago. But what is the current state of VC funds in Canada? Is there a gap? If so, why?

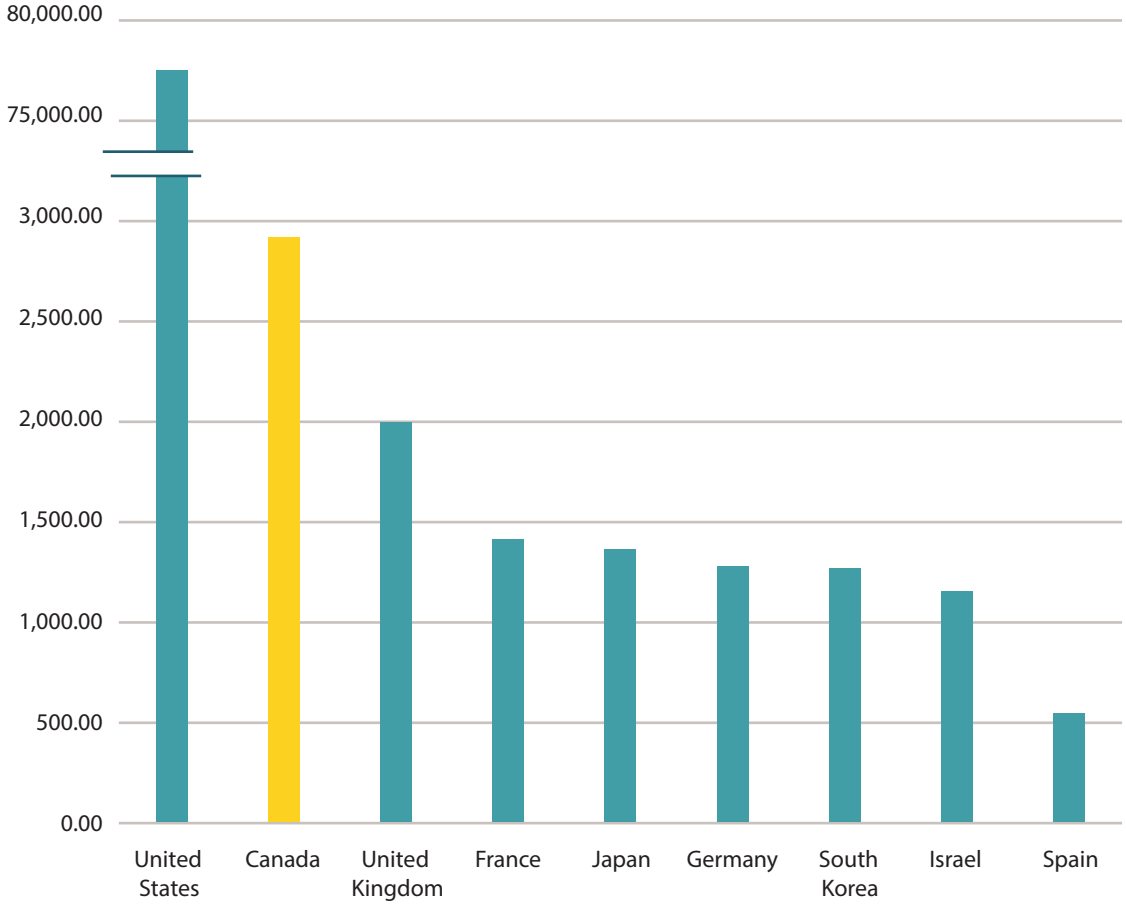
To help us answer these questions, we took a closer look at: the availability of VC funding in Canada in international context; the sources and availability of funds by VC stage within Canada; the structure of the Canadian VC system; and the sources of VC flowing into Canada's leading tech companies. All of these will be explored in the following sections.

An International Perspective

While we may believe that other countries have significantly more VC funds available, international investment data shows a surprising trend. Exhibit 1 ranks Canada second in VC investments (in absolute dollars) among Organisation for Economic Co-operation and Development (OECD) members—far ahead of the United Kingdom, France, Germany, and South Korea. (As a non-OECD member, China was not included in this analysis. If it were added, it would rank second.)

Exhibit 1

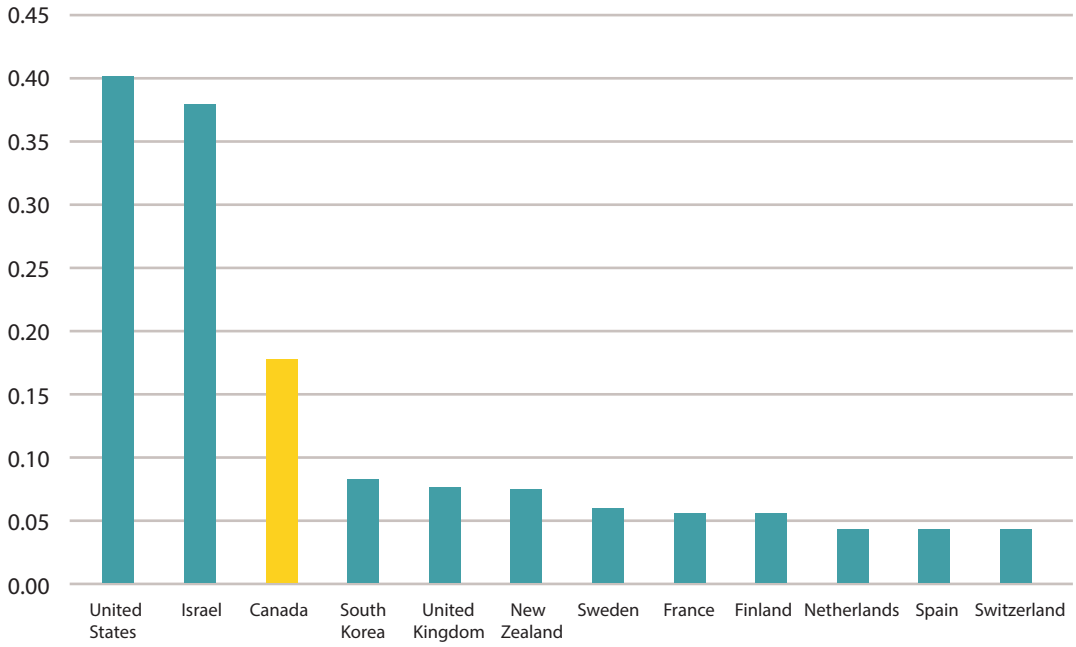
VC Investments Across OECD Countries, 2017 (in $US millions)



An alternative way to break this data down is as a percentage of gross domestic product (GDP). Although now trailing the United States and Israel, Canada still shows significant strength in the availability of venture capital; we boast, in fact, more than double the amount available in countries such as South Korea, the United Kingdom, France, and Germany (Exhibit 2).

Exhibit 2

VC Investments as Percentage Share of GDP Across OECD Countries, 2017



Clearly, Canada has significant VC "wealth" in both absolute and relative dollars: we rank among the top countries in the world in terms of the availability of capital. But it is not only a question of *how much*, but also of *when*. Is the capital available to companies when truly needed? We set out to test that next.

Capital Sufficiency in Early Financing Stages: Series A Rounds

The Canadian Venture Capital and Private Equity Association's (CVCA) website lists 77 Canadian VC member firms in the CVCA directory that collectively invested C$3.7 billion in 610 deals in 2018, for an average investment of C$6.1 million per deal. However, this data alone is not sufficient to tell the full story of the Canadian VC industry as it does not identify who is investing and at what stage. The timeline of when funds are injected into a fledgling company is a critical element in fundraising. If money is constrained at earlier stages but available at later stages, then perhaps we do have a sufficiency problem in that firms cannot get off the ground in an efficient manner. In fact, for a long time, it has been thought that there is more capital at later growth stages due to foreign investment.

To test this claim, we looked at the earliest rounds of VC financing that a young company typically passes through (i.e. Series A rounds), using CB Insights' data from 2018 for our analysis. Although their database does not show the amount invested by VC by round, it provides information about the total dollars invested per round. All amounts given are in US$. With the data available, CB Insights identifies 257 investor rounds (a round is one investment by one VC in one company) in 76 individual Canadian companies. The total investment across all businesses was US$789 million. The breakdown in the source of funding was as follows:

Exhibit 3
Number of Series A Investment Rounds in 76 Canadian Companies By Location of VC Firm, 2018

VC Firm Location	Number of Rounds
Canada	100
United States	86
Other international	36
Angel	35

Interestingly, American VC firms invested in almost as many rounds in Canada as did Canadian VCs. When put together, the number of rounds executed by US and other foreign firms outpaced Canadian VCs by 22%. In fact, in terms of the number of VCs investing, there were more American and more than twice as many other international firms investing in Canada than Canadian firms receiving investments.

Exhibit 4
Locations of VC Firms Making Series A Investments in 76 Canadian Companies, 2018

VC Firm Location	Number of VC Firms
Canada	54
United States	74
Other international	35
Angel	25

What this implies is that there is no shortage of capital available for Series A rounds, and given the existence in the market of foreign investors, then there is no shortage in later rounds. If so many foreign firms are willing to invest in Canadian companies then, effectively, Canadian firms are not constrained by a small local market.

To gain insight into how companies manage various sources of funds, we divided the 76 companies into three pools: (1) those with only Canadian investors, (2) those with both Canadian and international investors (both United States and/or other foreign), and (3) those with only United States and/or other foreign investors. We excluded angels from this analysis as their amounts are typically smaller, and it is not always easy to determine country of origin.

Exhibit 5

VC Sources by Location for 76 Canadian Companies Receiving Series A Investments, 2018

VC Firm Location	Number of Companies	Average Investment per Company (in US$ millions)
Canada only	14	4.4
Canada and international (United States and/or other foreign country)	40	8.9
United States and/or other foreign only	22	11.9

This data paints a different picture of the Canadian investor landscape than is normally seen:

- Only 18% of the companies financed were exclusively invested in by Canadians, and 29% of the companies had no Canadian investors.
- Firms with Canadian investors receive less capital. In fact, companies with no Canadian investors received 2.7 times as much money as those with only Canadian investors.

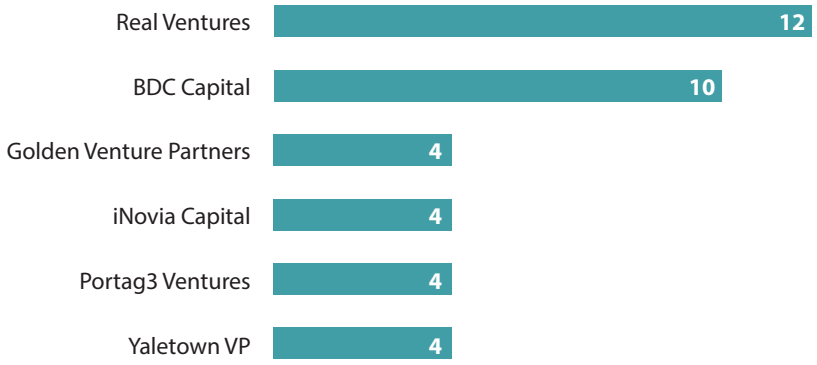
Given that the amounts injected by foreign firms are well in excess of the amounts invested by Canadian firms, the flow of funds across international borders is expected to make up for any shortage of capital in Canada. The fact that businesses with Canadian investors attract less in capital may be brought about by their inability to raise money from international VCs (e.g. they may not be as attractive to foreign VCs from an investment perspective)—but this is an explanation that pushes capital sufficiency to the background.

Regardless of explanation, why are Canadian VCs not investing as much per company as foreign VCs? Is there a fundamental gap in the structure of Canadian VC funds? Do Canada's smaller fund sizes, combined with the need for risk diversification, cause VCs to invest less money per company?

To test these questions, we looked at the number of companies that each Canadian VC firm invests in. As Exhibit 6 shows, 38 Canadian deals were executed by six VC firms. Certainly, the Business Development Bank of Canada (BDC) would not face a significant problem in increasing the size of their deals as they operate an evergreen fund that does not have the same restrictions that most VCs face. With 12 deals, Real Ventures is also not constrained as they could easily increase funding per company and decrease the number of deals from 12 to perhaps 8 without significantly changing the risk profile of their portfolio. While BDC and Real Ventures may be exceptions, the other VCs in this dataset have made fewer investments and may face tighter constraints, preventing them from increasing their deal sizes.

Exhibit 6

Number of Investments by Canadian VC Investors in 76 Canadian Companies, 2018



These findings point to a structural issue in Canada's VC funding system that leads to smaller investments; this lends some credence to the claim that VC money is restricted in Canada. But the overall amount of VC funding available to Canadians—especially when international sources are considered—suggests that this is due not to the amount of money available in the system but perhaps to the fact that we have significant fragmentation (i.e. too many VC firms without a critical mass of funds). While the number of Canada's VC firms is well below 100, the US' National Venture Capital Association (NVCA) boasts 1,000 active VC firms (13 times more than Canada) that collectively invest 27 times as much money. The US has proportionately more capital per firm.

Who is Backing Canada's Leading Companies?

With a preliminary picture of Canada's VC environment developed in earlier sections, we also took a closer look at Canada's "leading" firms and their sources of VC. The Snowy Cloud and SLOAN Consults report suggests that the "top companies" are not experiencing significant challenges when raising capital:

> *All of the interviewees acknowledged that the top companies are getting the financing they need at the time they need it. However, this represents less than 2% of the companies that are in the ecosystem. These are the 'gazelles' and they grow at 40%+ sustained over a three to five year period.*

To investigate this further, we used the Impact Centre's Narwhal List as the basis for the analysis. The Narwhal List ranks Canada's tech companies by a metric dubbed "financial velocity", which measures the speed at which a company acquires and consumes capital to fuel its growth. It is defined simply as the amount of capital a company has raised divided by the number of years it has been in existence:

Financial velocity = capital raised / years in existence

We used the CB Insights and Crunchbase databases for our background data. As with our study of investments in 2018, these databases do not show the amount invested by VC by round, but rather the total dollars invested per round. All amounts are in $US. These databases identify 197 investor rounds in 50 individual companies that are also on the Narwhal List (a round is equivalent to one investment by one VC in one company). The total invested in these Narwhals across rounds is US$5.2 billion. Since we are looking at only Series A rounds, the total invested in these rounds was US$1.1 billion. The breakdown in the source of funding across Series A rounds is shown in Exhibit 7. As with the results for the broader market, the US investors outnumber Canadian investors in Narwhals.

Exhibit 7
VC Sources for 50 Narwhals

VC Firm Location	Number of Rounds
Canada	67
United States	73
Other international	24
Angel	33

When it comes to Canadian VCs, Exhibit 8 shows that BDC and Real Ventures are strong leaders among Canadian tech companies. Exhibit 9 breaks down the investors by class, revealing that government VCs in Canada (including OMERS) are the strongest backers of Narwhals.

Exhibit 8
Number of Investments by Narwhal Investors

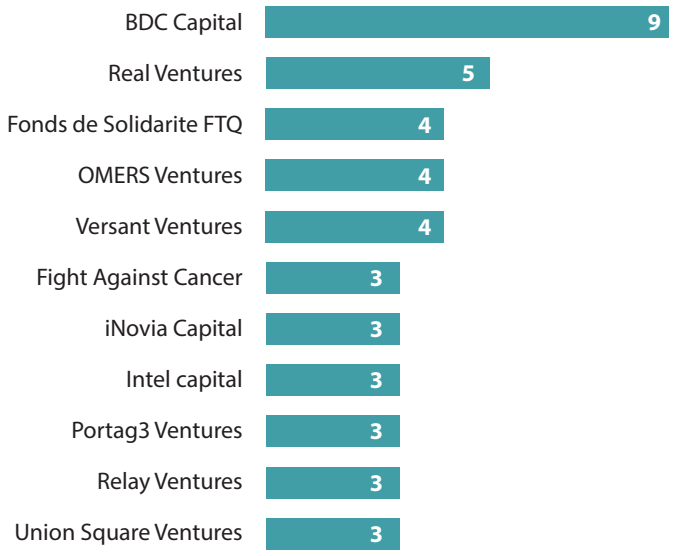


Exhibit 9
Narwhal Investor Classes

VC Firm	Number of Investments
Canadian Government	16
Canadian VCs	12
US VCs	10

As with our previous analysis, we divided the Narwhals into three pools for Series A investments: (1) those with only Canadian investors, (2) those with both Canadian and international investors (US and/or other foreign), and (3) those with only US and/or other foreign investors. We excluded angels from this analysis as their amounts are typically smaller, and it is not always easy to determine country of origin.

Exhibit 10
Narwhal Investor Sources for Series A Rounds

VC Firm Location	Number of Companies	Average Investment per Company (in US$ millions)
Canada only	5	19.2
Canada and international (United States and/or other foreign country)	23	21.2
United States and/or other foreign only	15	33.3

This data reflects a similar trend found for the larger population in 2018:

- Only 10% of the Narwhal companies financed were exclusively invested in by Canadians (compared with 18% in the population in 2018). In fact, 30% of the Narwhals had no Canadian investors (versus 29% in the larger population).
- Those with no Canadian investors received 73% more capital than those with just Canadian investors.

Total Funding Available

With the financial velocities readily available, we can also look at how velocity data connects to the total funding received by VC country of origin (Exhibit 11). The companies that received exclusively US and/or other foreign funding in their Series A round raised in total more money than Canadian-financed firms and had a higher financial velocity. It is instructive to note that it takes a financial velocity of about 20 to become a Unicorn (refer to previous Impact Brief, *The Narwhal List 2019–January 2019*), and the companies financed with funds coming from outside of Canada are nearing that potential. Clearly, successful Canadian companies have sufficient access to funds as they grow, but the funds are derived primarily from venture capitalists outside of Canada.

Exhibit 11
Narwhal Financial Velocity by VC Firm Location

VC Firm Location	Total Funding (in $US millions)	Average Financial Velocity (in $US millions per year)
Canada only	83.5	15.2
Canada and international (United States and/or other foreign country)	100.8	12.2
United States and/or other foreign only	128.9	20.3

Disconnect Between Data and Current Perceptions

Our current report has put forward evidence that there is, in fact, sufficient capital for Canadian companies in Series A rounds and even in later rounds (although the latter appears to be largely foreign capital, as in the case of foreign-financed Narwhals).

Given the evidence, where is the current disconnect between data and policy narratives? We believe that some of the issues originate in opinion-based research, little research into the underlying causes of the capital sufficiency problem, and our general lacklustre results in scaling companies.

Opinion-based Research

Much of the background research done to identify Canada's capital challenges is carried out through opinion-based research, which involves asking industry leaders and related members about the problems experienced "on the ground". This, for instance, was the method used to identify challenges in a number of reports mentioned in the introductory section.

While opinions solicited through techniques such as surveys and in-depth interviews can substantially enrich a study and perhaps provide insights that stand-alone data could not, good practice usually entails questioning sources and corroborating findings through multiple sources of evidence. When an industry member states that there is a capital shortage, is there really a capital shortage or could that industry member face specific challenges obtaining capital or even have a company or technology that is not attractive to investors? Companies that have been successful at raising capital are not likely to identify a capital shortage as a problem but those that face challenges may prioritize and highlight it as a critical hurdle. When opinions go unchallenged, especially if they align well with a familiar narrative, we may fall into the trap of developing government programs to solve problems that may not necessarily exist.

Little Research into the Underlying Causes of the Capital Sufficiency Problem

There have not been any significant attempts to understand the underlying reasons for the issues being identified or the opinions expressed on capital challenges. For instance, if Canada actually has a capital sufficiency problem, then why? What factors have contributed to the current state of affairs? Do we have indicators in place to tell us the extent of the problem and whether the policies and programs we have in place are putting us back on track? The answers to these questions are critical if we wish to stop addressing symptoms and instead implement solutions that get at the underlying "disease" in a meaningful way.

Lacklustre Results in Scaling Companies

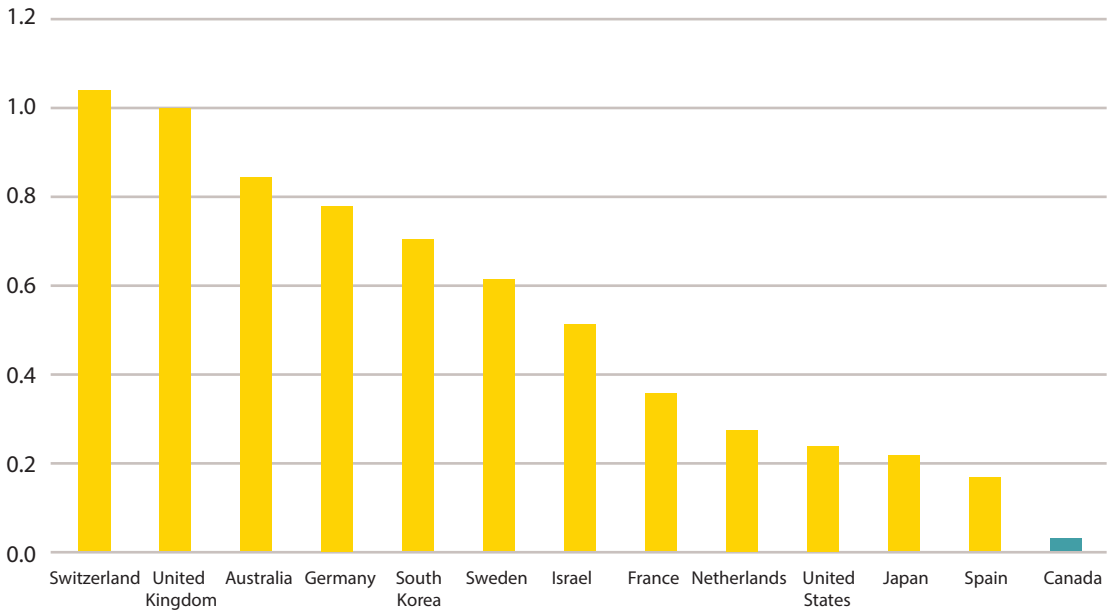
Perhaps one of the main factors shaping our perception of capital is the lack of results on the scaling front. Canada has only one Unicorn, Kik Interactive that attained Unicorn status in 2015. Exhibit 12 lists the number of Unicorns created by nation, putting Canada well behind countries such as Australia, South Africa, Sweden, and Switzerland.

Exhibit 12
Number of Unicorns Created by Country, as of August 20, 2019

Country	Number of Unicorns
Australia	3
Brazil	3
Canada	1
China	94
Colombia	2
Estonia	1
France	5
Germany	10
Hong Kong	2
India	19
Indonesia	4
Israel	6
Japan	3
Luxembourg	1
Malta	1
Netherlands	1
Philippines	1
Portugal	1
Singapore	2
South Africa	2
South Korea	9
Spain	1
Sweden	2
Switzerland	3
United Kingdom	20
United States	192

When we consider the total VC investment in a country (from all sources) per Unicorn created, the numbers paint another troubling picture. Exhibit 13 shows the number of Unicorns created per US$100 million of VC invested annually. Only OECD countries with more than US$250 million in annual VC investments were included in this list.
Canada ranks last among Unicorn-creating OECD countries. Although Canada is positioned second in the OECD for the amount of VC invested annually, we are in last place at turning this investment into Unicorns. This situation is very troubling: even if we were to create four times as many Unicorns, we would still be in last place.

Exhibit 13
Number of Unicorns Created per US$100 Million in VC Funding



Conclusions

Our collection of data was driven by questions about the current state of VC funds in Canada. Is there a gap? If so, why? The evidence suggests that:

1. we have sufficient venture capital in Series A rounds;
2. we have sufficient capital to turn Narwhals into Unicorns (especially when foreign sources are added to the mix);
3. Canadian-sourced capital may be spread too thinly, perhaps even with insufficient amounts invested in "better-quality" firms.

There is also a gap in the availability of capital between high- and low-growth firms. In fact, the Snowy Cloud/SLOAN Consults report suggests that companies growing at greater than 40% have no problem obtaining VC money, while it poses a significant challenge for firms growing at lower rates. This is in line with the VC experience in the field. Companies growing at less than 40% a year are not well positioned to acquire VC funds. At that level, growth rates are typically too low for a VC firm to be earning sufficient return on an investment. Therefore, if we wish to see all companies, even those with less than a 40% growth rate, get capital, then there will always be a shortage between demand and supply of funds. This shows a fundamental lack of understanding in the Canadian ecosystem. When it comes to venture capital, the financing typically emphasizes companies with a high growth rate, rather than those that grow slowly.

The structure of the Canadian VC system also poses some challenges:

1. We have too many VC firms with too little capital, potentially causing competition for deals and smaller investment, which are far less than the companies need to grow fully.
2. With smaller investments, these companies have less capital to support losses and important business functions (e.g. marketing and sales) that would help them grow faster.

Having government programs in place to increase the amount of capital "on the market" may also be part of the problem. Too much capital flooding the system makes it more likely that too many premature or even undeserving firms will get financed, causing an increase in valuations due to competition for good investments. Ultimately, this reduces returns for investors and detracts domestic and foreign VCs from injecting funds, making Canada seem a poor place to invest.[1] Perhaps this is a good time for the Canadian government to evaluate its strategy and consider how and to what extent it needs to involve itself in the venture capital business.

Considering the flow of funds across international borders, one must question whether there is any place in the world with a capital shortage given the propensity of large VC firms to go anywhere to look for potential deals. Capital sufficiency enabled by foreign investment brings us to an entirely different challenge, namely how to retain scale-ups at home and ownership of made-in-Canada ideas. If Canadian VCs wish to assist with this challenge, then they also need to consider how to overcome increasing fragmentation and build critical mass of investments in the system.

1 Readers familiar with the Labour Sponsored Investment Fund (LSIF) of the 1980s and 1990s may experience a déjà vu. It is likely that the LSIF caused negative VC investor returns from the mid-1990s to late 2010s, attracting criticism and contributing partially to the challenges that Canada is now facing trying to revive a tech community.

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We bridge the gap between the university and industry to accelerate the development of new or improved products and services based on physical technologies. We work with graduate students and researchers to help them commercialize their discoveries. We provide undergraduate education and training for students at all levels to ease their transition into future careers.

The Impact Centre conducts research on all aspects of innovation, from ideation and commercialization to government policy and broader themes such as the connection between science and international development. We study how companies of all sizes navigate the complex path between a discovery and its market and how their collective innovations add up to create a larger socioeconomic impact.

Our objective is to understand how we can improve our ability to create world-class technology companies, how governments, companies, and academia can identify and adopt best practices in technology commercialization.

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