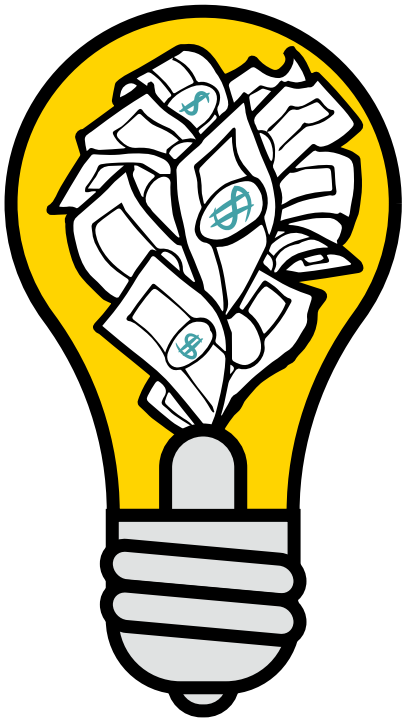
An Impact Brief
September 2016

Canada's Venture Capital Puzzle

Do we have enough funding to compete internationally?



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Is Canada Lacking Venture Capital Funding?

This report attempts to examine how much capital Canada has available per business stage and whether Canada has enough VC funding to take its startups from inception to world-class companies.

The lack of venture capital in Canada has been denounced consistently in studies and think tank reports, and by the media, entrepreneurs, and even venture capitalists themselves. Yaletown Partners completed a report on the state of venture capital in the country, stating among other things that:

> "Yaletown found there is too little capital spread too thinly across Canadian tech companies compared to the U.S., and that the lower amounts of capital available for Canadian companies hamper their competitive position and dampen their value when they either sell out or go public."
>
> SEAN SILCOFF |The Globe and Mail |July 12, 2016

The general view expressed in the press is that Canada is short-changed by the lack of venture capital; and this hurts our prospects as a world-leading innovator.

> "Despite recent successes, tech firms in Toronto and the country at large still face funding challenges that hurt their growth prospects."
>
> SHANE DINGMAN | The Globe and Mail | Feb. 14, 2016

Venture capitalists are funded by outside investors to provide capital to companies at three distinct stages. In the seed stage, small amounts of money (typically under $1 million) are used to establish a position in a market and ensure traction for an idea or product. Growth capital ranging from $5 million to $50 million is needed to accelerate growth for a business with a proven market. In the third stage of growth, amounts over $100 million are needed to create a significant international presence and to turn a company into a Unicorn or prepare it for public markets.

But while the general concensus is that Canada does not have enough venture capital, we somehow manage to rank #4 in the sale of technology companies.

CBInsights 2015 Global Tech Exits Report states that in terms of the number of exits in 2015 (on an absolute basis, not on a per population basis), Canada ranked number 4 behind the US, UK, and India and ahead of Germany, France, China, and Israel. On a per population basis, Canada ranked number 2 behind the US.

How can we have too little venture capital funding but be so successful at selling companies? The answer lies in how we are funding companies and what stages we are able to fund.

If Canada is truly underfunded in terms of venture capital, then what stage is underfunded?

- Do we lack funding to seed smaller enterprises at the startup stage?
- Is funding insufficient at the growth stage to establish solid mid-sized companies?
- Do we have enough later-stage funding to create world-leading enterprises and Unicorns?

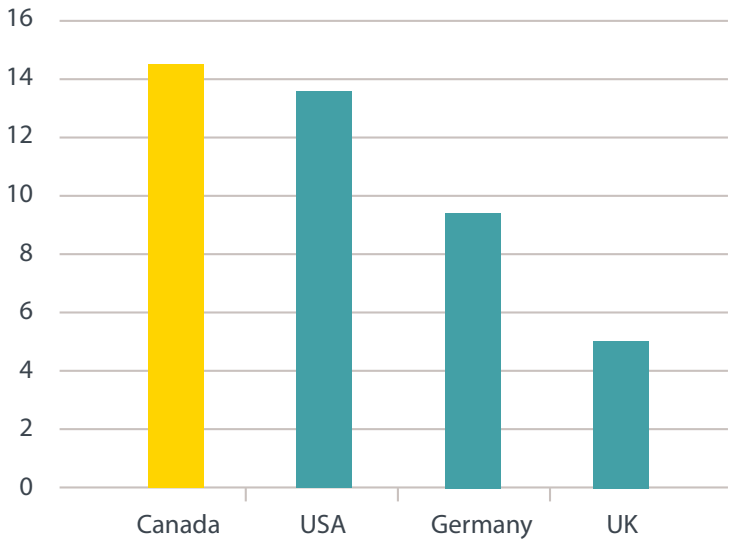
This report attempts to examine how much capital Canada has available per business stage and whether Canada has enough VC funding to take its startups from inception to world-class companies.

Seed Stage Funding

One way of determining whether we have enough venture capital funding for seed-stage investments is to examine the number of companies funded per year in several major countries. If we are funding a sufficient number of companies overall, then by extension, we must have enough seed capital funding available, whether it is through government programs, angels or venture capitalists.

Fig. 1 shows, for four leading OECD countries, the number of VC-backed companies funded per 1 million population in 2015.

Figure 1. Number VC deals per 1 million population



Data obtained from reports issued by Canada's Venture Capital & Private Equity Association, The National Venture Capital Association (US), British Private Equity and Venture Capital Association, and the German Private Equity and Venture Capital Association. Please note that country-specific definitions of venture capital may impact comparability.

Data consistent with that featured in Figure 1 could not be obtained for Israel, China and India, and we were unable to include them in this review. While the absolute amount of venture capital in China and India is large, their funding of companies would rank well below Canada on a per capita basis. One outlier is Israel where a population of 8 million funded 708 companies in 2015; this equates to 88 deals per 1 million population. Israel was not included in Fig. 1 because only 15% of their high-tech capital comes from venture capital.

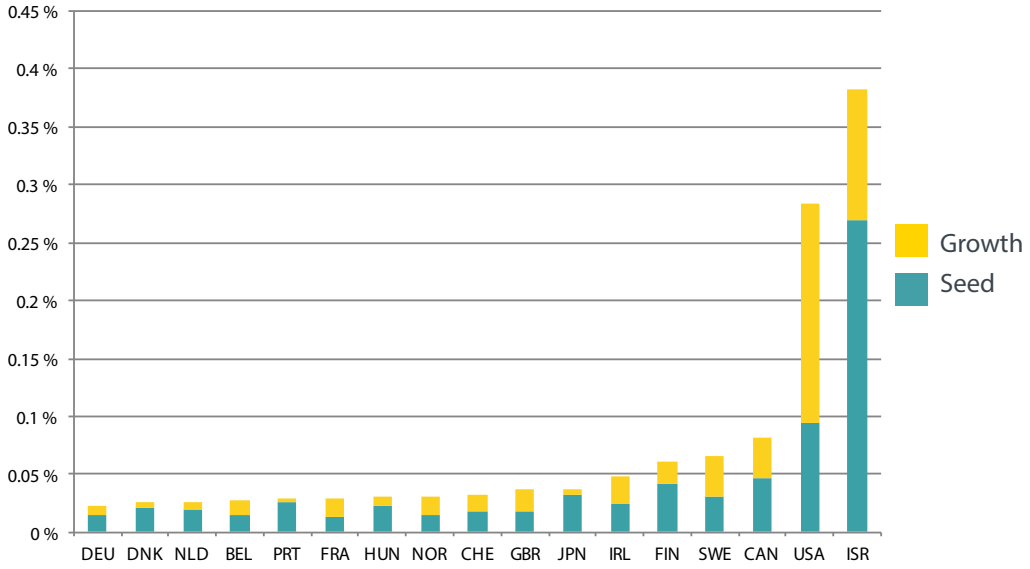
The data demonstrates that although Canada may not have as much funding in absolute terms as the United States (US), we actually fund more companies per 1 million population than the US, Germany and the United Kingdom (UK).

Growth Stage Funding?

Statistics on how much venture capital is available per country around the world is difficult to obtain. Published reports on VC funding frequently show inconsistent amounts for every country with differences that are too large to reconcile. The most authoritative source on VC funding is the annual report published by the OECD.

The last data available from the OECD shows that Canada (in 2014) was actually third among OECD countries in terms of venture capital as a percentage of GDP. (Refer to Fig. 2.)

Figure 2. Venture Capital Funding as a Percentage of GDP

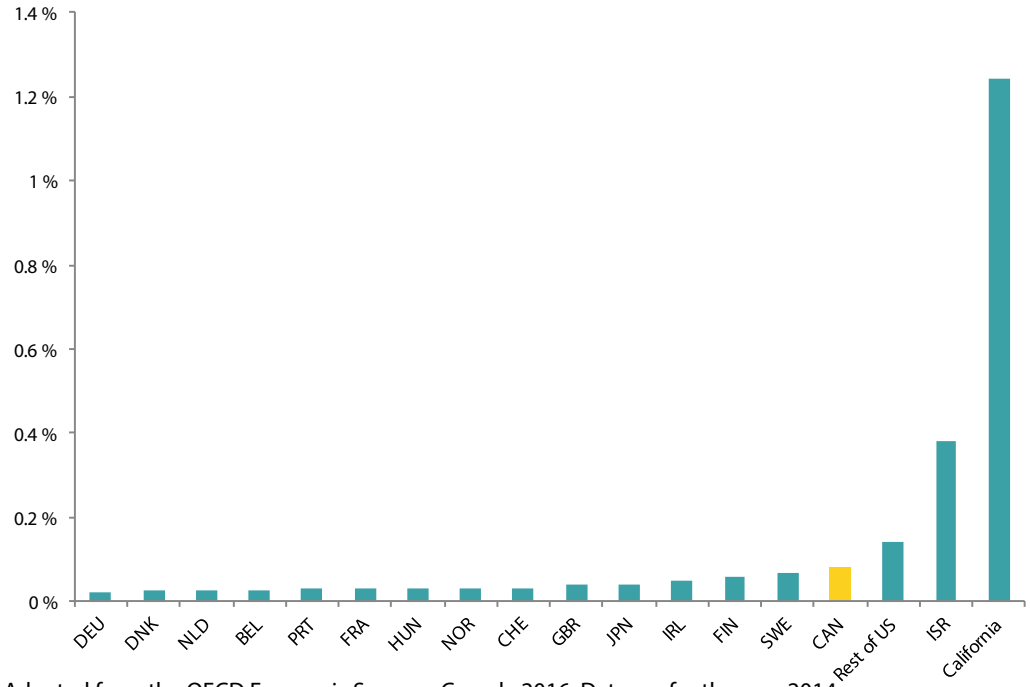


Adapted from the OECD Economic Surveys: Canada 2016. Data are for the year 2014. The chart does not include OECD countries with very low levels of VC funding. Data for 2015 was not available. This may skew results for several countries such as Germany and the UK, which saw increased VC investment in 2015.

While we surpass almost all other OECD countries (including all European members), we are compared most often to the US, which had almost 3.5 times as much VC funding available as percentage of GDP. Silicon Valley is a special place in the US, an area that while small in pulls in the largest share of the funding (46% of total available in 2015).

Let's look at what happens when we take California as a separate jurisdiction and compare VC funding as a percentage of GDP with California as a separate entity. (Refer to Fig. 3.)

Figure 3. Venture Capital Funding as a Percentage of GDP



Adapted from the OECD Economic Surveys: Canada 2016. Data are for the year 2014.

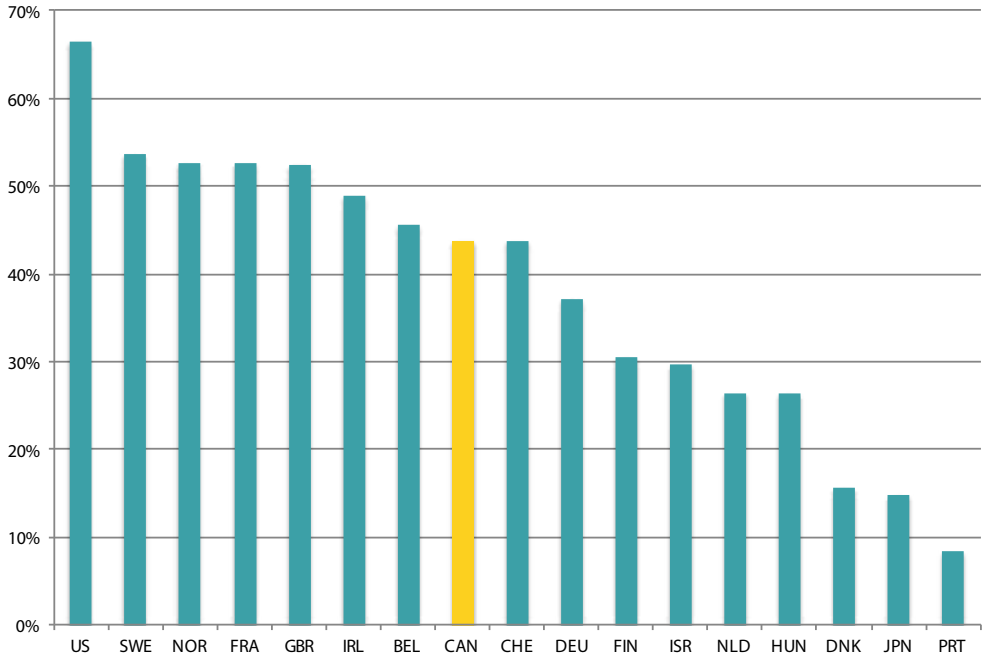
When we look at the statistics using this lens, California has 15 times as much VC funding as Canada as a percentage of GDP, but the rest of the US only has 73% more VC than Canada does on a percentage of GDP basis.

When we compare ourselves to the entire US and include California, we are including a jurisdiction that, like Israel, can be considered a statistical outlier. If both Israel and California are eliminated from the analysis, Canada is on par with the rest of the world in the availability of venture capital, behind only one player, the mainstream US.

But this conclusion fails if we only fund seed-stage investments. To determine if there is enough VC funding for the growth stage, we must look at the percentage of funding for growth and later-stage investments.

Adapted from the OECD Economic Surveys: Canada 2016. Data are for the year 2014.

Figure 4. Percentage of Growth and Later-stage Funding by Country



Statistics in Fig. 4 show that as a percentage of funding, we find ourselves in middle of the pack, behind the UK and ahead of Germany in terms of the percentage of funding allocated to growth and later stages. If we compare favourably in terms of total capital and are at about the average in terms of its allocation between seed and growth stage funding then we can only conclude that we compare favourably with most of the world in funding growth-stage investments.

What we can see in Fig. 4 again is that the US is an outlier, with a much higher percentage of funding applied to the growth and later stages than any other OECD country.

Another way to look at this issue is to look at venture funds and how they invest. Table 1 includes list of several of Canada's leading VC firms and the size of a recently raised fund.

Table 1. Recent Canadian Venture Capital Funds Raised

Fund	Recent Raise (Millions)
Georgian Partners	$485
OMERS	260
iNova	175
BDC	150
Relay Ventures	150
Real Ventures	75
Version One	35

With funding of this magnitude, each fund has the capacity to invest in approximately 10 to 20 different companies over a series of years. Each investee company should be able to receive about $10 million per VC. By syndicating with several funds, a firm can raise an estimated $30 million over several years. This would be enough to create a healthy mid-sized company, which could be later sold for $150 million to $300 million. This is not enough to become a Unicorn, but enough for a mid-sized success.

Later-stage Funding

If Canada has enough seed capital to remain competitive with most other countries, and we compare favourably in terms of growth-stage capital, then how do we do in terms of later-stage investments, and particularly those needed to create Unicorns?

By definition, Unicorns are private VC-backed companies with a valuation over $1 billion. As of the end of July this year, CB Insights reported 168 Unicorns around the world, including the largest, Uber, with a valuation of $62.5 billion and 59 others with a valuation of $1 billion.

What does it take to get to a valuation of $1 billion?

In the case of Kik Interactive, one of two Canadian firms on the list, it took a VC investment of $116 million. For Hootsuite, the other Canadian firm on the list, it took an investment of $230 million. This is also approximately the average amount needed for this group of companies to reach Unicorn status.

Table 2. Number of Unicorns Per Country (July 2016)

Country	Number of Unicorns
United States	96
China	34
India	7
Germany	5
United Kingdom	5
Singapore	3
South Korea	3
Israel	2
Canada	2
Other Countries	12

If we compare ourselves to Germany and the UK we appear to be holding our own in terms of Unicorn creation on a per capita basis. And in terms of population size, we compare favourably with most other countries on the list.

But there are two puzzles. The first is Israel. With so much venture capital available, Israel has only created two Unicorns. The other outlier is the US, which has created 96, significantly more than would be expected based on country size or total VC investment. California itself is responsible for about two thirds of these unicorns.

Why does the US have so many Unicorns?

It is because of the size of their VC funds. The following Table shows a recent fund raised for each of several leading US-based VC funds.

Table 3. Recent American Venture Capital Funds Raised

Fund	Recent Raise (Millions)
NEA	$3,000
Accel	2,000
Bessemer	1,600
Andreessen Horowitz	1,500
Sequoia	1,450
Kleiner Perkins	1,400
Khosla	1,000

The average fund raised by these American funds is about 10 times the size of the funds raised by Canadian firms. An efficient use of this funding would mean investing in perhaps 30 to 40 different companies for an average per company of about $50 million. This is 5 times the size of the average that a Canadian fund can invest in companies (barring exchange rate considerations). If three VC funds were put together to syndicate a deal, this would amount to about $150 million available for a company, which is enough to create a Unicorn.

Why does Israel have so few Unicorns compared to their position in terms of VC funding as a whole?

It is because of the average size of their funds, which are closer in size to those found in Canada. In 2015, Israel raised $1.1 billion of VC funding in ten funds (equivalent to $110 million per fund). This is slightly above Israel's average fund size, which has hovered at $78 million since 2000.

Where do firms outside the US and China secure enough money to become Unicorns?

Each country has at least one firm (OMERS or now Georgian Partners in the case of Canada) that has enough capital to fund a portion of the amount that a Unicorn needs. But there are not enough of them to syndicate deals to fully fund a Unicorn in any one country. Most of the required funding for Unicorns throughout the world comes from US VC firms. Only the US and China have enough money locally in sufficiently large funds to create a large number of Unicorns.

Conclusions

Available data suggests that for seed- and growth-stage VC deals, Canada compares favourably with most other countries in the OECD. And since we don't have enough capital to fund Unicorns, we end up selling venture-backed companies before they reach this stage and thus we end up 4th in the world at selling technology companies.

However, if we want to have the capacity to create Unicorns locally and not rely on external funding, then we need to do one of two things.

1. We could increase the proportion of funding available to later-stage deals away from seed and earlier-stage companies. We could do that either through reallocation of funding from seed to later stages, or we could do it by raising more dollars in the aggregate and allocating it entirely to later-stage funding. We would also need to create significant funds that have enough horsepower to invest larger amounts in select companies.

2. Privately funded Unicorns are a relatively recent phenomenon. Only recently have US VC funds been large enough to fund later-stage deals entirely in private markets. One result of this trend has been technology companies going public at a much more advanced stage that they used to. When such large funding amounts were not available, companies had to rely on public markets, going public at lower valuations than Unicorns now command. Perhaps when combined with government incentives, Canada could establish a vibrant market for later-stage deals in public markets.

In addition to determining whether we have sufficient levels of funding available, we need to determine whether we have enough experience to be effective at managing larger funds (should we be able to raise them). We must also better understand whether we are investing in companies at the right time and in the right amounts to create Unicorns. These issues shall be the focus of future Impact Briefs.

Methodology

This study was not intended to be academically rigorous; nor was it intended to be all encompassing about the topic of venture capital. It was designed only to add to the conversation on innovation and highlight areas worthy of future research by looking at aggregate funding available from publicly available sources. We plan to complete further research on this subject in the future.

About the Impact Centre

Science to Society

We believe that science is the foundation for a better quality of life. Our vision is to be a place where you can connect with exceptional research, talent, training, innovative companies, and government to create products and services that benefit society.

Advancing Industry Innovation

We leverage the expertise and resources of universities to create real products and solutions for our clients. Our core competencies are in the natural sciences and engineering.

We catalyze university research to create long-term impact for our industry clients. We accelerate research to market!

Enabling Student Startups

The Impact Centre nurtures the creation and growth of student-led startups that are developing innovative products and services rooted in the natural sciences and engineering.

We provide training to help graduate students, recent graduates, and researchers transform their discoveries into real products and services that benefit society.

Training Innovators and Entrepreneurs

The Impact Centre offers research and industry-relevant training for professionals and students at all levels. We deliver speeches, workshops, undergraduate courses, and coordinate internship placements.

Our initiatives help professionals, undergraduate students, graduate students and postdoctoral fellows develop career skills to enable them to be successful innovators and leaders.

Studying Innovation

The Impact Centre explores questions at the intersection of science, business, policy, and society. We conduct 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 the market and how their collective innovations add up to create a larger socioeconomic impact.

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