Value Creation in Venture Capital

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A Comparison of Exit Values across Canadian Provinces and US States

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Executive Summary

The primary objective of this study is to calculate the amount of value that is created by venture-capital backed companies, and to compare these valuations across jurisdictions. Our measure of value creation is the value of companies at the time of an initial public offering, or at the time of an acquisition. Since venture capitalists and other early investors have an opportunity to liquidate their investments at this time, this is commonly referred to as the "exit value."

By focusing on exit values we are looking at "output" measures of venture capital performance rather than "input" measures, like total investment. Exit values are a fundamental measure of venture capital activity. They quantify what is arguably the most important outcome of venture capital investments, namely the value of the companies they finance. As such, exit values allow us to compare the performance of venture capital markets across different jurisdictions (i.e. Canadian provinces and US states).

The principal finding of this study is that Canada in general and British Columbia in particular perform surprisingly well (compared to US jurisdictions) using exit values as a performance measure once differences on aggregate size or in inputs are accounted for. Specifically, Canada has higher exit values per dollar of GDP, per dollar of R&D spending, and per dollar of venture capital investment. Within Canada, British Columbia and Alberta are the strongest performers on these measures. Canada does have smaller average exit values (i.e. successful ventures tend to be smaller at exit than in the United States), which might be viewed as a negative point. However, on the positive side, Canada also has relatively more exits and a shorter average time to exit than the United States.

This study focuses on the period 1997 to 2004. 509 exits of Canadian venture capital backed companies generated a total exit value of US$30 billion, compared to 3047 companies generating US$381 billion in the US. The exit value of a typical Canadian

company was lower, with an average (median) of US$59 million (US$20 million), compared to US$192 million (US$92 million) in the US. However, exits occurred faster in Canada, with the average (median) time from founding to exit being 76 (50) months, compared to 85 (61) months in the US.

So far, these results confirm the common notion that, in absolute terms, the Canadian market is much smaller than the US. However, the main finding of this study is that once we account for apparent differences between these two economies, the Canadian market performs surprisingly well. If we compare total exit values against GDP, we find that Canada outperforms the US by 3%. When compared against the amount of venture capital investment, Canada outperforms the US by 15%. Comparing the performance of the two countries' venture capital markets against the amount of R&D spending, Canada generates more exit value for every dollar spent on R&D. Canada generates 79% more exit value per dollar spent on R&D. This figure increases to 125% for private sector R&D.

The two countries experienced a similar boom and bust cycle over the period 1997-2004, with clear signs of recovery in 2004. One important difference between the two countries is that information and communication technology account for almost three quarters of all the exit value created in the US, compared to about half in Canada. Canada generated relatively more exit value in sectors such as energy and sustainable technology.

This study also compares the performance of the individual Canadian provinces against US states. California generates the highest total exit value, reflecting both its size and venture capital intensity, followed by Massachusetts, Texas and New York. Possibly a surprising result is that Ontario ranks fifth, with a total exit value of US$14 billion. Within Canada the order of exit values reflects the relative size of the provinces. After Ontario, Quebec has next largest venture capital exit value with US$5 billion, followed surprisingly closely by British Columbia with US$4.2 billion, and Alberta with US$3.7 billion. Ontario has the highest average and median exit value. The western provinces of

Alberta and British Columbia have the fastest times to exit, not only in Canada, but also when compared to the US states.

If we compare each jurisdiction's performance relative to its GDP, we find that California and Massachusetts continue to have the highest exit value creation rates. Measured against R&D spending they continue to do well. However, if compared against the amount of venture capital investment, their performance is markedly weaker.

British Columbia and Alberta are the two most profitable jurisdictions across all of Canada and the US, when evaluated against R&D spending. They also continue to perform very well when compared against the level of venture capital investments. These findings reinforce our central theme that smaller venture capital market may sometimes be the most efficient ones.

We also examine the generation of exit values across different sectors. Information and communication technology dominates most US states. In Canada this is also true for British Columbia, and to a lesser extent for Ontario. In Alberta, energy is the dominant sector. Quebec has a more varied structure, where information and communication technology, life sciences, and other sectors (such as manufacturing) all make significant contributions to the total exit value.

We believe that this study is the first to provide a systematic comparison of exit values across Canadian and US jurisdictions. One important innovation is our data collection method, which allows us to obtain acquisition values. Indeed, we were able to track down an acquisition value for 73.8% of all identified acquisitions, and 85.8% of all acquisitions by public acquirers. A second innovation is our emphasis on exit values in the first place. Most prior studies that compare venture capital markets focus on the inputs in this market, namely the amount of investments made. This study argues that exit values are the key to evaluating the relative performance of venture capital markets.

Table of Contents

1. Background and objectives

Venture capital is widely considered to be an important contributing force to economic growth. Venture capitalists finance entrepreneurial companies that commercialize innovations, and that play a crucial role in promoting competition and economic renewal. The value created by venture capital backed companies benefits investors, entrepreneurs, employees, customers, governments (e.g. through tax revenues) and the economy at large. The most direct measure for this value creation process is the value of the entrepreneurial companies themselves. This value is naturally measured at the time that venture capitalists exit their investments. Successful exits normally occur either at or shortly after an initial public offering (IPO), or at the time that an entrepreneurial company is acquired by another firm. In this study we set out to examine the value created by venture capital backed companies, measured at the time of exit.

Our primary objective is to compare exit values of venture capital backed companies across different Canadian provinces and US states. Exit values play a fundamental role for the venture capital market. Put simply, exit values measure how much money is created in the venture capital process. Formally, exit values measure the total amount of value that is created for the shareholders of venture capital backed companies. This includes not only the value harvested by venture capitalists themselves, but also the value gained by all other shareholders, such as the entrepreneurs, employees with stock options, and other equity investors (e.g., angel investors).

A comparison of exit values can reveal important economic patterns concerning how the various provinces compare with each other in terms of their entrepreneurial economic activity. More exits and higher values are indicators of a more active entrepreneurial environment. Looking at total exit value incorporates both the number of exits and the size of exits. Naturally, different jurisdictions can have different exit values because of differences in their relative size. We therefore consider a number of benchmarks against which we can compare the exit values of the different provinces and states.

The calculations of total exit values are of economic interest by themselves. But in addition, our analysis compares the relative importance of IPOs versus acquisitions as exit channels for venture capital backed enterprises, and examines how exit values vary by year and across industries.

A systematic compilation of exit values is a breakthrough in the literature on venture capital activity. We are not aware of any prior systematic study that attempts to measure and compare exit values across provinces and states. Our study also makes several important contributions to the measurement methodology of exit values. In particular, we use a number of new data collection methods to provide more comprehensive coverage of acquisition events than has previously been achieved.

2. Methodology

2.1. Existing studies of returns in venture capital

In the US, the National Venture Capital Association (NVCA, www.nvca.org) regularly publishes rates of returns for the US venture capitalists. Many industry observers consider these returns unreliable, since they are based on a relatively small sample of venture capital firms, and are self-reported. There appears to be systematic under-reporting of underperforming investments, as well as by underperforming venture capital funds. Recently, Sand Hill Econometrics (www.sandhillecon.com) tried to address these problems by constructing an index for the venture capital industry that successfully corrects for some of these biases.

A small academic literature attempts to provide estimates of the returns in venture capital. Kaplan and Schoar (2005) use US data from a sample, collected by Venture Economics, for the period 1980 to 2001. Based on the cash flows of the venture capital firms, they calculate a mean return of 17% (median of 11%). Jones and Rhodes-Kropf (2002) use US data from a sample collected by Venture Economics, for the period 1980 to 1999, and find a mean return of 19.25% (median of 9.13%). Ljungqvist and Richardson (2003) use proprietary US data from an anonymous large limited partner, covering the period 1981-1993, and find a mean return of 19.81 % (median of 18.66%). Gompers and Lerner (1997), using proprietary US data from Warburg Pincus, find a return of 30.5%, and provide various estimates of excess returns. Brander, Amit and Antweiler (2002) use a sample of Canadian venture capital investments, collected by Macdonald & Associates, for the period 1992 to 1997. They find an average return of 24.5%, and an investment-weighted return of 16.3%. All of these studies estimate the return to the venture capital investor and are therefore "gross" returns rather than "net" returns.[1]

[1] These studies typically calculate the gross returns to the venture capital firm. These gross returns should not be compared directly with standard financial returns to passive instruments (such as bonds) as various costs would need to be deducted first. To identify returns to limited partners or net returns it would be necessary, in particular, to take out carried interest and management fees but this information is rarely disclosed.

Several studies also consider the returns to venture-capital backed companies. Cochrane (2003) uses US data from a sample collected by VentureOne for the period 1987 to 2000. He constructs maximum likelihood estimates for an asset return model that accounts for selection bias from un-exited companies. He estimates a 15% return, and after accounting for market return and risk, he finds an excess return of -7%. Cumming and MacIntosh (2003) use a survey-based sample, collected by Venture Economics for the US and the Canadian Venture Capital Association for Canada, covering the period 1992-1995. They estimate a 5.6% return for the US and a -3.2% return for Canada.

While this literature has made several important contributions, for our purposes it also has several shortcomings. First, these studies are based on incomplete and often rather small samples rather than on data sets that capture something close to the entire population of venture capital investments. This raises a significant possibility of "selection bias" in the sense that the included observations might differ from the rest of the population. In particular, as data reporting is voluntary, it is likely to be biased towards underreporting of poor returns. Second, none of these studies focuses on inter-provincial/state differences of venture capital performance.[2]

2.2. Methodological preliminaries

For this study we had no access to any proprietary returns data from venture capitalists, firms receiving venture capital, or related organizations. Moreover, there is no source of reliable and complete data on the amount of investments obtained by the entire population of all venture capital backed companies in Canada and the US. We therefore refrain from attempting to calculate rates of return, which would be based on incomplete and potentially biased self-reported data. Instead, we focus solely on an estimation of the value of realized exit events. While this constitutes a compromise, our approach has several important advantages. It does not require data on the amount and timing of

[2] The only prior study that focuses on inter-provincial comparison was undertaken by Greenstone Venture Partners, with the participation of Ed Egan. This was essentially a sample-based pilot study, the results of which prompted this much more extensive population-level study.

investments. (Return calculations require timing information both from venture capitalists and possibly from other investors.) It is less affected by the reporting bias that affects prior studies of venture capital activity as we use publicly available data to identify exits. And it allows us to consider a much larger set of companies. Indeed, we believe that we come close to having complete coverage of the population of exit events, and are certain that we have more comprehensive coverage than any previous study on either Canadian or US venture capital exits.

Any study of venture capital exits faces two types of data availability problems. First, there is a *disclosure problem*. This is not a problem for IPOs, since all IPOs are publicly disclosed. For an exit value we use a company's market capitalization, valued at the IPO offer price. Acquired private companies, however, are under no legal obligation to disclose acquisition values. The acquiring firm may or may not be required to disclose the transaction. If the acquiring firm is private, it has no legal obligation to disclose. If the acquiring firm is public (i.e., listed on a stock market), security laws prescribe that acquisitions must be disclosed, unless they are below certain thresholds (that may vary across countries and that typically depend on the acquirers' own asset values and the transaction size). Apart from legal disclosure, there is also voluntary disclosure. Indeed, many public companies report all of their acquisitions, even if they fall below the legal thresholds. Likewise, some private acquirers make voluntary disclosures. Most venture capital investors are under no legal obligation to disclose exit data, and they typically choose not to voluntarily disclose such data either. The one notable exception is Canadian labor-sponsored venture capital funds that fall under a unique legal requirement to disclose their investment and exit data.

Second, there is the *data collection problem*. This may seem surprising, but many of the commercial data sets fail to collect a significant amount of publicly disclosed data. Moreover, different commercial datasets have different data omissions, even if provided by the same data provider. We suspect that the main reason for these omissions are that companies do not need to report their publicly disclosed data directly to the data

providers, and that data providers have insufficient interest in gathering all of this data by themselves at their own expense.

For this study we do not make use of any data that is not publicly disclosed by companies. However, we develop a variety of new techniques for gathering data that is publicly disclosed, even if not collected by the commercial data providers. The use of some proprietary web-crawling algorithms is an important component of this data gathering technique. Moreover, we combine data from several commercial databases, to provide cross-validation and ensure a more comprehensive collection of exit values. Our study focuses on the time period 1997 to 2004. For this period, publicly disclosed data is readily available on the Internet.

2.3. Data definitions

Exit values matter because they measure the amount of value created by venture capital backed companies. It is natural to measure exit values at the time that venture capitalists are able to liquidate their investments. Unfortunately, there is no systematic data on exactly when venture capitalists exit their investments. We therefore use the following approach. We consider IPOs and acquisitions by public acquirers as our two exit events.[3] Acquisitions by a private acquirer may or may not represent an exit event for venture capitalists. If the acquisition is paid for in cash, we consider it an exit event. However, if the acquisition is paid for in stock, then the venture capitalist trades one illiquid stock for another, and we do not consider this a liquidity event.

If a company fails, it may be liquidated. It is possible that a small amount of money is reported as an exit value, such as through a sale of assets. Since these amounts are very small, and since venture capitalists rarely obtain any of these proceeds – they typically are used to pay off more senior claim holders, such as bank debt – we exclude them from

[3] Strictly speaking, venture capitalists can not exit at the time of the IPO, and typically must continue to hold their stock at least through the so-called 'lock-up period' and possibly beyond. Since we do not have any data on when venture capitalists exit, we focus on the IPO.

our exit value calculation. This means that our exit values pertain to successful venture-capital backed companies. We also do not consider as exit events company buybacks or secondary sales of venture capital shares, since these exit methods are also normally only associated with unsuccessful companies. Note that including unsuccessful companies would hardly affect our estimates of total exit values, although it would significantly reduce average exit values.

In the US, an IPO always represents a meaningful liquidity event. For Canadian companies, the measurement of exit value presents one additional challenge. In Canada, there have been a number of junior stock exchanges, which were eventually amalgamated into the TSX Venture Exchange. The TSX-VN (or its predecessor exchanges) gives companies an opportunity to go public at a much earlier stage than any US stock exchange. However, an IPO on the TSX-VN does not necessarily represent a meaningful liquidity event for venture capitalists. This is in part because the exchange has very low liquidity, thus depriving venture capitalists of any real opportunity to sell much of their stock. We therefore adopt the following approach for recognizing a Canadian IPO. A listing on the TSX-VN alone is not treated as an IPO. Instead, to recognize a Canadian IPO, one of three possible conditions must be met.[4] First, if the company upgrades to a major exchange (TSX, NASDAQ, NYSE, etc….), we count the subsequent offering as the exit event. Second, if there is direct evidence that venture capitalists were able to exit their investments through the TSX-VN listing, we count this as an exit event. This requires an explicit mention of a liquidity event in press reports, public statements of the company, or public statements of the venture capital firm. Third, if the offering size exceeds $1 million, we treat this as an exit event.[5] This threshold eliminates the small offerings that are typical of illiquid junior market stocks. Companies that are able to raise more than $1 million typically have significantly more liquidity than firms that fall below that threshold.

[4] If more than one of the above three criteria are satisfied, we count the first exit event as the relevant one.
[5] The offering can be a primary offering on the TSX-VN, or any secondary offering, if all previous offerings were below the $1 million threshold. Using $1 million as a threshold value is somewhat arbitrary, but not important to our findings. In unreported calculations we also considered using different thresholds, but found that this did not materially affect our main findings.

A common occurrence in Canada is that companies first list on the TSX-VN and subsequently get acquired. The acquisition typically represents the real liquidity event for venture capitalists. Our methodology allows us to recognize this, since it does not record the listing on the TSX-VN, unless it satisfies the above-mentioned criteria.

The Canadian market has a few additional peculiarities that are worth mentioning. A common method for going public is by a so-called “reverse takeover.” This means that a private company acquires a company that is listed already on the stock market, but effectively is only an empty shell company. The shell company typically has no assets and earnings, and may even have been de-listed by the exchange. By acquiring the shell company, the private company buys itself a public listing. Reverse takeovers are common practice in Canada, and are publicly described as such. We can therefore readily identify these transactions as reverse takeovers, and treat them as IPOs. At first, this transaction might appear as an acquisition, since there is a public company that acquires a private company. However, this is a regulatory artifact, since the public company has no operational entity. We therefore treat reverse takeovers as public listings. Whether we then count the IPO as an exit event depends on the same criteria as above. Specifically, we consider it an exit event, unless it occurs on a junior exchange, and the company raises less than CAN$1 million.

A related Canadian peculiarity concerns “capital pool companies.” These are specially regulated companies that can make a small initial public offering (less than $500,000) to set up a publicly-traded company. By regulation, this entity cannot have any operational assets at the time of the IPO. The capital pool company can then acquire operational assets, and become a regular publicly traded operational company. This transaction is thus a reverse takeover, and we treat it accordingly.

Finally, another unique feature of the Canadian market is income trusts. A company can issue an instrument that resembles preferred equity on the stock exchange. This promises a fixed dividend to income trust holders. However, these preferred shares are fundamentally different from common shares and, unlike in a typical venture capital

setting, they are not convertible. Moreover, if a company issues an income trust, this does not provide any liquidity to the common shareholders. For this reason we do not count the issuance of an income trust as an exit event.

For the comparisons across jurisdictions we use the location of the company. This means that we focus on the value created by venture capital companies. Our analysis does not make a distinction between local investors and investors that come from different jurisdictions.

All of our measurements are in US dollars. Canadian dollars are converted into US dollars using Bank of Canada published monthly exchange rates.

We consider a company venture capital backed if we can identify at least one venture capital investment in the company. In addition, we require that the venture capital investment occurred prior to the exit event. This implies that we exclude all private investments into public companies (PIPEs). Estimating the exit value of PIPEs seems inappropriate, since by definition these are already liquid investments. For Canadian companies, our definition of PIPEs is based on the same three criteria for recognizing IPOs as exit events. This means that if a company lists on the TSX Venture Exchange, but does not satisfy any of our three criteria for a liquid exit it remains a candidate for venture capital investments. If a venture capitalist invests after the initial TSX Venture listing, but before any of the three criteria are satisfied, we do not treat that venture capital investment as a PIPE deal.

We exclude all private equity deals that are either explicitly mezzanine financing or leverage buyout financing (LBOs), or deals that come from funds that explicitly claim only to invest in mezzanine or buyout deals. If a corporation has an organized venture capital fund, we recognize this as venture capital. However, if a corporation makes private equity investments on an ad-hoc basis, we do not consider it a venture capital investment. These criteria provide a conservative perspective on exit values. In Canada, we exclude some well-known large exits, such as 360 Networks and Yellow Pages

(which we classify as mezzanine financing) and Le Groupe Videotron (which we classify as corporate investment).

2.4. Construction of benchmarks

To compare exit values across jurisdictions, we naturally want to account for the different sizes of the local economies. We use a variety of benchmark measures that capture their relative sizes. Our first benchmark considers aggregate economic activity, as captured by Gross Domestic Product (GDP) as measured at the state or provincial level. Our second benchmark is based on the R&D investments across jurisdictions and we consider both the total level of R&D, as well as the level of private R&D. We can measure both of these benchmarks at the level of the individual jurisdictions. The economic significance of these two benchmarks is very intuitive. We want to measure the value creation of venture capital relative to some standard measures of the size of the local economy. The GDP measure is a broad standard measure, whereas our two measures of R&D provide a more focused benchmark that is relevant for venture capital activity and for innovation more broadly.

Our third benchmark uses published data on the size of the local venture capital markets. Unfortunately, our data sources do not allow us to obtain the total amount of investment that individual companies receive. Nonetheless we have access to aggregate information about the level of venture capital investment in each jurisdiction. At this point, it should also be noted that venture capital backed companies obtain funding not only from venture capitalists, but also from other sources, such as angels and corporations. Comparing the total exit value to the amount of reported venture capital in each jurisdiction, however, provides an approximate idea of how much value is generated by venture capital backed companies, relative to the amount of money that is invested. Specifically we compare our exit values against the benchmark of the total venture capital investments made within the province/state. For this we use a moving 5-year average.[6] Comparing exit values to

[6] A 5-year horizon approximates the relevant investment period for the majority of our companies.

investment levels is important, because, in an indirect manner, it accomplishes similar goals to rate of return calculations. In particular, at the aggregate level of each jurisdiction, it allows us to compare the total returns (total exit value) against some measure of investments (namely the total venture capital invested). Naturally, this benchmark is not a precise measure of rates of return, since it cannot take account of the timing of individual investments, nor can it match investments and exits at the level of individual companies. Still, at an aggregate level it provides a useful approximation that allows us to present some new and meaningful comparison of jurisdictions.

Our fourth benchmark compares exit values against overall stock market performance. Our data covers the highly volatile period commonly referred to as the "dotcom boom and bust." During this period, investor returns from investing in the stock market varied dramatically, as reflected in the wide swings of the NASDAQ index. Moreover, while some of the exit values, especially in 2000, were remarkably high, many of their prices subsequently fell, often by a large amount. Our exit values are thus affected by this boom and bust cycle. We control for this in two related manners. First, we divide exit values by the index value of the NASDAQ at the time of the exit event. This naturally deflates the high returns of the dotcom boom. The thought experiment is essentially that we compare exit values against some measure of alternative returns available to investors at the time of exit. Using the NASDAQ index implicitly assumes that all investors consider the NASDAQ as their alternative investment opportunity.

Recent research in finance has demonstrated an important "home bias," where investors allocate significantly larger amounts of investment to their home market. It may therefore be more appropriate to use different benchmarks for US and Canadian investors, to recognize differences in their perceived alternative investments. Our second approach is to divide all US exit values by the NASDAQ index, and all Canadian exit values by the TSX index (which is widely recognized to be the main index for Canadian stock market investors). To make the US and Canadian exit values comparable, we start the two indices simultaneously at 1, at the beginning of our sample period.

2.5. Data sources

Our data comes from multiple sources, and involves a significant amount of integration and cross-validation. In this section we describe our data sources and briefly outline some of our integration methods.

The data for US venture capital backed companies comes from Thomson Financial's (www.thomson.com/financial) Venture Economics database (VE henceforth). This is a commercially sold database that has a broad coverage of US venture capital investments. Lerner (1995) and Kaplan, Sensoy and Strömberg (2003) discuss the strengths and weaknesses of this dataset.

The data for US IPOs comes from two main sources: VE and Thomson Financial's Global New Issues database (GNI henceforth). GNI is the leading US database on IPOs, and has been widely used for academic research. Even though VE and GNI are offered by the same company (Thomson Financial), there is a considerable amount of non-overlapping information in these two databases. We compile information from both databases. In the few instances where we find contradictory information across the two databases, we use the information from GNI, which is widely considered to be the most reliable database for US IPOs.

The data for US acquisitions comes from VE, as well as from Thomson Financial's Mergers and Acquisitions database (TFMA henceforth). TFMA contains information on all disclosed mergers and acquisitions, where either the acquiring or the target company is listed on a US exchange. It has been widely used for academic research. Again, we find that even though these two databases are offered by the same company, there is a considerable amount of non-overlapping information in these two databases, so that we compile information from both databases. In case of contradictions, we use the information from TFMA.

All our data for Canadian companies is obtained from publicly available data. To identify Canadian venture capital backed companies we compiled lists of Canadian venture capital firms and their funds from published sources. These include the Canadian Venture Capital Association (CVCA) (www.cvca.ca), Réseau Capital (www.reseaucapital.com), Pratt's Guide, and a large number of associations, forums, networks and websites. Based on these lists of venture capitalists, we obtain the names of venture capital backed companies in a variety of ways. We use both current and past websites of those venture capital firms. Historic websites can be accessed through the so-called "Way-back machine," which contains an archive of web pages (www.archive.org). In addition to this, we use some proprietary web-crawling algorithms to extract other publicly available data about venture capital backed companies, such as from press reports and other public disclosures. As venture capitalists often invest in syndicates, and as an investment announcement will usually mention all syndicate members, we can be relatively certain that we have a near-comprehensive coverage of Canadian venture capital funds.

The data for IPOs of Canadian venture capital backed companies comes from several sources. We extract all available information from the System for Electronic Document Analysis and Retrieval (SEDAR) for Canadian listings (www.sedar.com) and the US Securities and Exchange Commission (SEC) for Canadian companies listing in the US (www.sec.gov). We focus on filings of IPO prospectuses, and identify all completed IPOs. We also cross-check our data with information from GNI (for US-listed Canadian companies) and FP Advisor (www.fpinfomart.ca). In addition we use some proprietary web-crawling algorithms to extract other publicly available data on IPOs, such as press reports and other public disclosures.

The data for Canadian acquisitions comes from several sources. We obtain all relevant information available in SEDAR and SEC. We focus on the annual reports, which contain information on M&A activities of publicly-listed firms. We also use the TFMA database, mostly to confirm acquisitions of Canadian targets by US buyers. Again, we use our proprietary web-crawling algorithms to extract further publicly available data on mergers and acquisitions, from press reports and other public disclosures. The importance

of these events to industry participants means that news is often available from multiple independent sources. Another important source of legal filings is the Strategis database (http://strategis.ic.gc.ca), which is maintained by Industry Canada. We extract information from the "Certificates of Amalgamation," which contains information for all mergers and acquisitions where at least one of the two parties is federally incorporated. We extract information from the "Certificates of Discontinuance," which contains information for all mergers and acquisitions where the acquired party is federally incorporated, and discontinuing its registration of incorporation. This allows us to identify acquisitions where the buyer is taking the target company outside of Canada. Finally, we use the "Certificates of Amendments" to trace name changes that either signal an acquisition itself, or allow us to trace subsequent acquisitions, including reverse takeovers.

We obtain data on GDP and R&D from the OECD, using SourceOECD (www.titania.sourceoecd.org), as well as from their original sources at the US Bureau of Economic Analysis, the National Science Foundation, and Statistics Canada.

We obtain data about US aggregate venture capital investments from a NVCA approved data source, namely the Price Waterhouse Moneytree survey (www.pwcmoneytree.com). For Canada, we use the data published by the CVCA.[7] For the US, the aggregate investment data can be considered reasonably accurate. However, a question remains concerning the validity of the aggregate investment data on Canadian venture capital. Our understanding from talking to industry sources is that there is a concern that the available data not only underestimate the total amount of venture capital investments, but that there is also unequal coverage across provinces, with greater underreporting for the western provinces. For the purpose of this analysis, we made a determination that the aggregate statistics for Alberta cannot be considered sufficiently reliable to warrant their inclusion. We also caution that the estimates for British Columbia appear somewhat low, and that the coverage for some of the smaller provinces also appears incomplete.

[7] For the initial three years of the sample we do not have a full preceding five year history of venture investment for the Canadian provinces, so we use the appropriate shorter moving average.

Our method of matching data across datasets is based on name-matching. This involves both computer-based matched algorithms, as well as a considerable amount of human-based verification and cross-checking. We are also careful to track company name changes. This information is available in VE for US venture capital backed companies and in Strategis for federally incorporated Canadian venture capital backed companies.

Overall, we believe that we have virtually complete coverage of all exits by IPO. As far as acquisitions are concerned we believe that this study contains the most comprehensive coverage of exits by acquisitions available to date. In particular, we believe that our coverage of acquisitions by publicly-listed buyers is close to complete. The percentage of such deals where the acquisition value remains undisclosed is also fairly low. Out of 370 Canadian M&As, we found 273 exit values. 241 of them were for public acquirers and the remainder for private acquirers. Of the remaining 97 companies, 8 companies were acquired by foreign public companies which did not file to either SEDAR or the SEC. 32 companies were acquired by public companies that did file either with SEDAR or the SEC, but that did not disclosed their acquisition value, presumably because it fell below the legal disclosure threshold. Finally, 57 companies were acquired by private companies, and no additional information was undisclosed. In this case we are also unable to ascertain whether the transaction used stock or cash. If some of the transactions used stock, then they would not qualify as an exit event under our exit criteria. The disclosure rate for public acquirers is 241 out of 281, or 85.8%. The overall disclosure rate, for both private and public companies is 273 out of 370, or 73.8%.

The area where our coverage remains somewhat incomplete is acquisitions by privately-held buyers. Such acquisitions remain difficult to trace, especially since they frequently involve no disclosure of the acquisition value. However, since most of these transactions are widely believed to be relatively small, and only rarely include acquisitions for cash, it is reasonable to believe that this omission is unlikely to significantly affect our measurement of exit values.

We also make an attempt to determine the speed with which exits occur. Our data does not allow us to always determine the exact timing of when the first venture-capital investment was made. We therefore focus on the time between the founding of the company and the exit as a more dependable measure of the speed with which companies exit. For the US, we obtain this data from VE. For Canada, we can only obtain this data for federally incorporated companies, which amount to 140 out of our 509 exits. As a consequence, our data on the time between founding and exit requires two caveats. First, our estimates are based on limited data. Second, our measure is not a precise measure of the investment duration for the venture capitalists. In general, the founding data does not correspond to the investment date. Moreover, venture capitalists may hold on to their investments beyond the first liquidity opportunity, which is our measure of exit.

2.6. Industry Classification

Classifying industries is an inherently difficult task, and different data sources use different classification systems. For the purpose of this study we use a number of classification methods that, albeit imperfect, still provide a coherent picture of how exit values vary by industry.

We focus on three sectors that are of particular importance to the venture capital industry: Information and Communication Technology (ICT henceforth), Life Sciences (LS henceforth), and Energy and Sustainable Technology (EST henceforth). No precise consensus definition exists for any of these sectors.

For US companies, VE uses several proprietary industry classification systems. We use their so-called “Industry Sub Group 2” data. This industry classification system is geared towards venture capital investments. We are therefore able to provide a simple mapping from this classification system to our four industry classes (ICT, LS, EST and “Other”). Appendix I provides an explanation for this mapping.

For Canadian companies, our data collection method requires that we categorize companies manually. As a conceptual basis for this manual classification system, we assign each company a North American Industry Classification (NAIC) code. NAIC codes actually provide a much more detailed industry classification than necessary for this study. Appendix I provides a definition of how we allocate NAIC codes to our four industry categories. Our definition of ICT is very similar to that used by the British Columbia Technology Industries Association (BCTIA), and is also fairly similar to the definition proposed by the American Engineering Association (AEA). The AEA's classification is slightly narrower, and indeed the AEA acknowledges that its definition may be too narrow. For example, it excludes semiconductor machinery. Our definition is slightly more inclusive, incorporating closely related industries, including semiconductor machinery. A well known problem is that NAIC codes are not well suited for tracking biotechnology companies. We include the usual categories that are used by biotechnology companies, and also try to be reasonably broad, such as by including health sciences. We are not aware of a precise definition for the EST sector. We therefore use a pragmatic approach of including all energy companies, as well as utilities and waste processing. This means that our data includes both sustainable and non-sustainable technologies. However, there is no credible classification mapping that separates sustainable from non-sustainable production methods for these technology sectors.

3. Analysis of exit values: Canada versus the US

We begin our analysis with a comparison of the aggregate statistics of Canada versus the US. Table 1 summarizes the main results. All values are expressed in US dollars.

The total exit value for the period 1997 to 2004 was just under $30 billion for Canada, compared with $381 billion in the US. This suggests that in value terms, the Canadian market is approximately 8% relative to the US. As Canadian GDP was approximately 8% of US GDP over this period (using market exchange rates), we can see that venture-backed exit values are of comparable overall importance in the two countries. The total number of exits in Canada represents 17%, relative to the US. The difference between 8% and 17% is readily explained by the different sizes of typical exits. The average value of a Canadian exit amounts to $59 million, compared with $192 million in the US, showing that US exits are more than three times as large as in Canada. The distribution of venture capital returns is right skewed, so that the median exit value is lower than the average exit value. Table 1 shows that the median exit value in the US is more than four times as large as in Canada.

One may ask to what extent these differences are driven by stronger IPO or stronger acquisition markets. Table 1 shows that the US dominates total, average and median values not only for IPOs, but also for M&As. The differences between the US and Canada are slightly less pronounced for M&As than for IPOs, but the gap between the two markets remains large.

So far, our results are consistent with the common perception that Canada slightly lags the US in terms of the strengths of its venture capital market, at least as far as median and average values are concerned. Some of the other results in Table 1, however, shed some additional light on this comparison. For instance, exits tend to occur faster in Canada relative to the US. Our estimated average (median) time between founding and exit is 76 (50) months for Canada, compared with 85 (61) in the US.

Table 1: Comparing Exit Values: Canada versus US

	Canada	USA	Canada / US
All Exits			
Total Value of Exits (US$b)	29.7	381.4	8%
Number of Exits	509	3,047	17%
Average Value of Exits (US$m)	58.9	191.6	31%
Median Value of Exits (US$m)	20.5	92.4	22%
Average Time Founding to Exit (Months)	76	85	90%
Median Time Founding to Exit (Months)	50	61	82%
IPO			
Total Value of Exits (US$b)	15.2	35.9	6%
Number of Exits	139	746	19%
Average Value of Exits (US$m)	111.9	333.2	34%
Median Value of Exits (US$m)	49.9	224.9	22%
Average Time Founding to Exit (Months)	80	85	93%
Median Time Founding to Exit (Months)	67	62	107%
M&A			
Total Value of Exits (US$b)	14.51	145.45	10%
Number of Exits	370	2301	16%
Average Value of Exits (US$m)	39.3	113.5	35%
Median Value of Exits (US$m)	15.2	46.7	32%
Average Time Founding to Exit (Months)	74	85	87%
Median Time Founding to Exit (Months)	48	61	79%
Benchmarks			
Total Value per $1000 GDP	4.99	4.83	103%
Total Value per $1000 GERD	333.04	186.4	179%
Total Value per $1000 BERD	579.89	257.53	225%
Total Value per $1 VC Invested (5 yr avg.)	2.07	1.8	115%
Total Value (NASDAQ Normalized)	15.1	193.3	8%
Total Value (Domestic Index Normalized)	20.0	193.3	10%
Sector Breakdown			
EST / Total Value of Exits	15%	2%	N/A
ICT / Total Value of Exits	50%	74%	N/A
Life Sciences / Total Value of Exits	8%	13%	N/A
Other / Total Value of Exits	27%	11%	N/A

The most important insight from Table 1 is that the differences between the US and Canada disappear or are reversed once we benchmark exit values against measures of the relative size of the two economies. If we compare the total exit values relative to the sizes of the two economies, as measured by GDP, we find that Canada's exit values are very similar to those of the US. Our estimates suggest that relative to its GDP, Canada actually generates slightly (3%) more exit value than the US. If we compare total exit values against the amount of R&D spending (as measured by GERD) we find an even stronger result. For every R&D dollar spent, Canada generates 79% more exit value than the US. One might suspect that this result could be driven by large public R&D spending in the US. However, if we compare Canada with the US using private sector R&D (as measured by BERD), we find that Canada outperforms the US by even more, generating more than twice as much exit value for every private dollar spent on R&D.

If we compare the total exit values against the amount of investment in the venture capital industry, we note that Canada continues to outperform, although by the smaller margin of 15%. Because the Canadian data is likely to underestimate the total amount of venture capital investment, it is possible that the total exit values across the two countries are in fact even more similar than suggested by the estimates of Table 1. If we normalize exit values against the NASDAQ index, the comparison of exit values between Canada and the US is essentially unaffected, with Canadian exit values at 8% relative to the US. If we normalize exit values against the domestic stock market index (NASDAQ for the US and TSX for Canada), the Canadian market performs slightly better, about 10% of the US value.

Finally, it is interesting to note that Canadian and US venture capitalists invest in slightly different sectors. It is true that information and communication technology is the leading sector in both countries, but in the US they account for almost three quarters of the total exit value, compared with about half the exit value in Canada. The life sciences sector is relatively more important in the US, while energy and sustainable technology is of greater importance in Canada. Finally, "Other" sectors (mainly manufacturing and services) are much more important in Canada than in the US.

4. Analysis of exit values: Comparing Canadian Provinces and US states

Our data allows us to compare the total exit values of Canadian provinces and US states. In the appendix we provide a comprehensive listing of this comparison. Table A1 reports total exit values for the period 1997 - 2004. Table A2 provides data on a large number of exit value statistics. This table contains all of the Canadian provinces, and the US states that had a total exit value exceeding US$1 billion.

Before we begin with the analysis of comparing exit performance across jurisdictions, we present some data on the most successful companies in our data set. Specifically, Table 2 presents a list of the five largest exits for the four leading Canadian provinces, as well as California and Massachusetts.

4.1 Basic exit statistics

Chart 1A shows the top ten jurisdictions ranked by total exit value. Several points are worth noting. First the chart clearly demonstrates that California is an outlier in terms of exit values. Indeed, California accounts for approximately 44% of the total exit value in the United States. Massachusetts, Texas and New York are the next largest states in exit value. This conforms to the received wisdom about relative rankings in the venture capital industry. The fact that Ontario is fifth, however, might be considered a surprise. Indeed it suggests that the strength of the Canadian venture capital industry is frequently underestimated.

Chart 1B compares the exit values of the four leading Canadian provinces, namely (in alphabetical order) Alberta, British Columbia, Ontario, and Quebec. With almost US$14 billion, Ontario clearly has the largest total exit value, followed by Quebec with US$5 billion. British Columbia is third with US$4.2 billion, followed by Alberta with US$3.7 billion.

Table 2: Top five exits for selected provinces and states

Company Name	Year	Exit Value (US$m)	Exit Type	Sector*
British Columbia				
Abatis Systems	2000	656	Acquisition	ICT
Creo Inc.	1999	488	IPO	ICT
Xantrex Technology Inc.	2004	375	IPO	EST
ALI Technologies Inc.	2002	347	Acquisition	ICT
MacDonald Dettwiler & Assoc.	2000	327	IPO	ICT
Ontario				
Electrovaya Inc.	2000	1,110	IPO	Other
Solect Technology Group Inc.	2000	1,088	Acquisition	ICT
724 Solutions Inc.	2000	912	IPO	ICT
Balisoft Technologies	2000	656	Acquisition	ICT
Delano Technology Corporation	2000	603	IPO	ICT
Quebec				
Sabex	2004	565	Acquisition	Life Sci.
Saputo Group Inc.	1997	469	IPO	Other
Rona Inc.	2002	412	IPO	Other
Mega Bloks Inc.	2002	251	IPO	Other
Adaltis Inc.	2004	224	IPO	Life Sci.
Alberta				
OPTI Canada Inc.	2004	1,238	IPO	EST
Fairborne Energy Limited	2004	431	RTO	EST
Western Oil Sands	2000	374	IPO	EST
A-Channel Inc.	2004	218	Acquisition	Other
180 Connect Inc.	2004	189	IPO	ICT
California				
eToys	1999	2,068	IPO	ICT
SiByte, Inc.	2000	2,068	Acquisition	ICT
Bookham Technology	2000	1,803	IPO	ICT
Turnstone Systems Inc.	2000	1,749	IPO	ICT
Inktomi Corporation	1998	1,684	IPO	ICT
Massachusetts				
CoreTek Inc.	2000	1,915	Acquisition	ICT
Spring Tide Networks Inc.	2000	1,347	Acquisition	ICT
Viant Corporation	1999	984	IPO	ICT
MatrixOne Inc.	2000	955	IPO	ICT
Nexabit Networks Inc	1999	896	Acquisition	ICT

The chart also shows the values for the rest of Canada (ROC), which amounts to another US$2.8 billion, and breaks down the relative contribution of IPOs and acquisitions. In Ontario and Quebec acquisitions account for more than half, in Alberta they account for less than half, and in British Columbia they account for almost exactly half of the exit value.

Chart 1C considers five selected US states that are of particular relevance to British Columbia, and Canada at large. Each of these states was chosen for a specific reason. Connecticut is the state that is most similar to British Columbia, in terms of its total exit value. Washington State and Oregon are the two states that are geographically closest to British Columbia in the Pacific Northwest. Texas is widely recognized as a leading cluster for information and communication technology. North Carolina, and especially its research triangle, is widely thought to be a leading biotechnology cluster. Chart 1C shows wide disparities in the total exit values, with Texas being the largest of our comparison states, and Oregon being the smallest.

Chart 1A: Total Value of Exits – Top 10 Jurisdictions

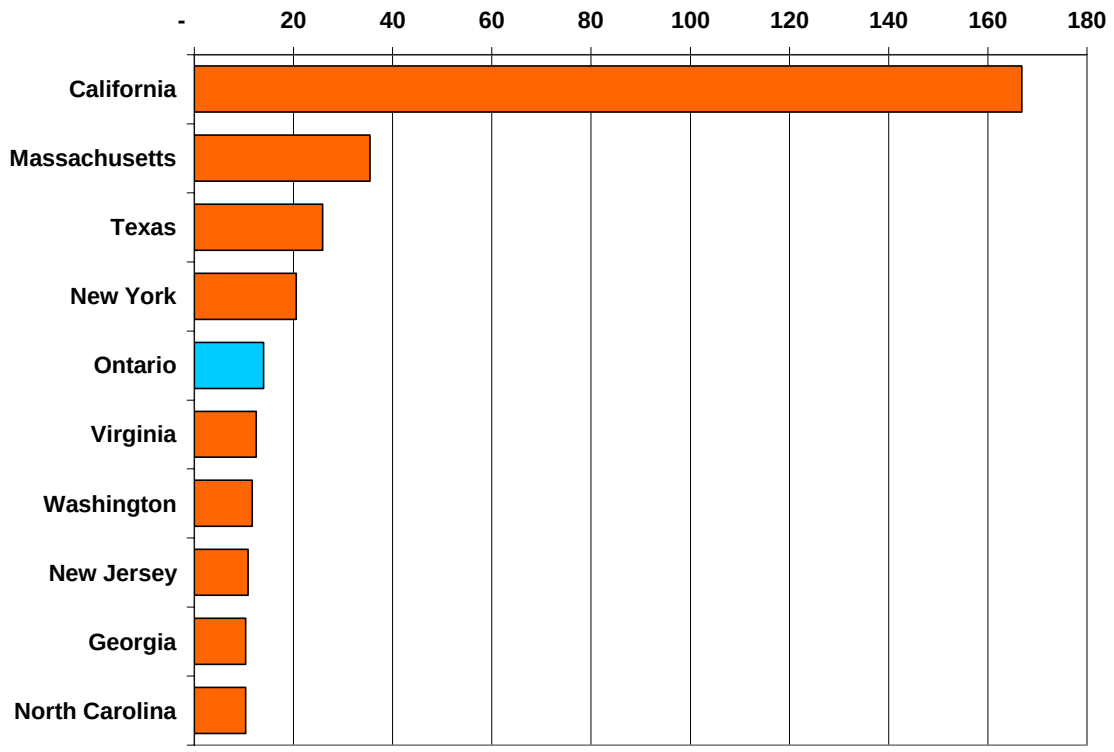


Chart 1B: Total Value of Exits – Canadian Provinces

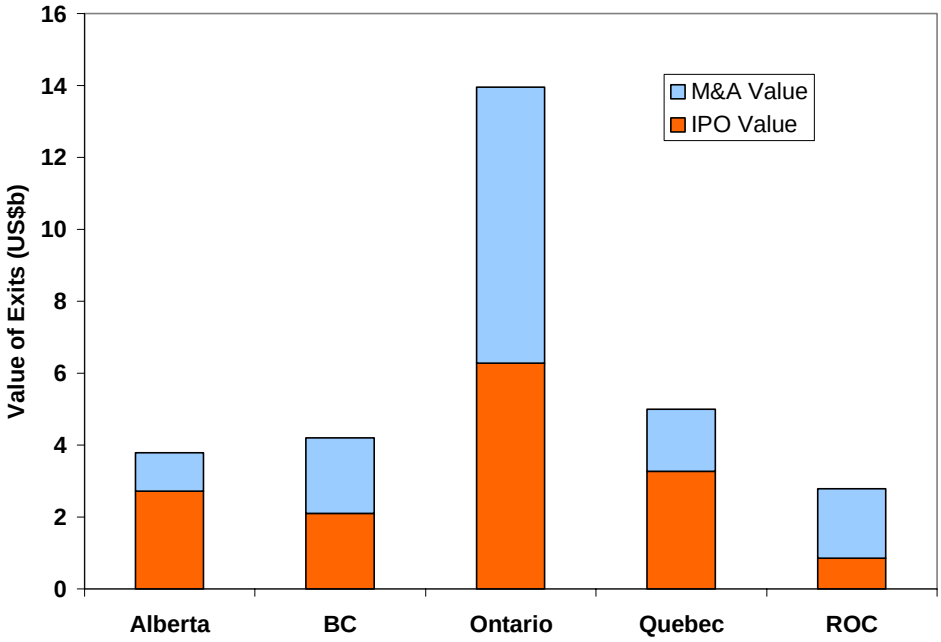
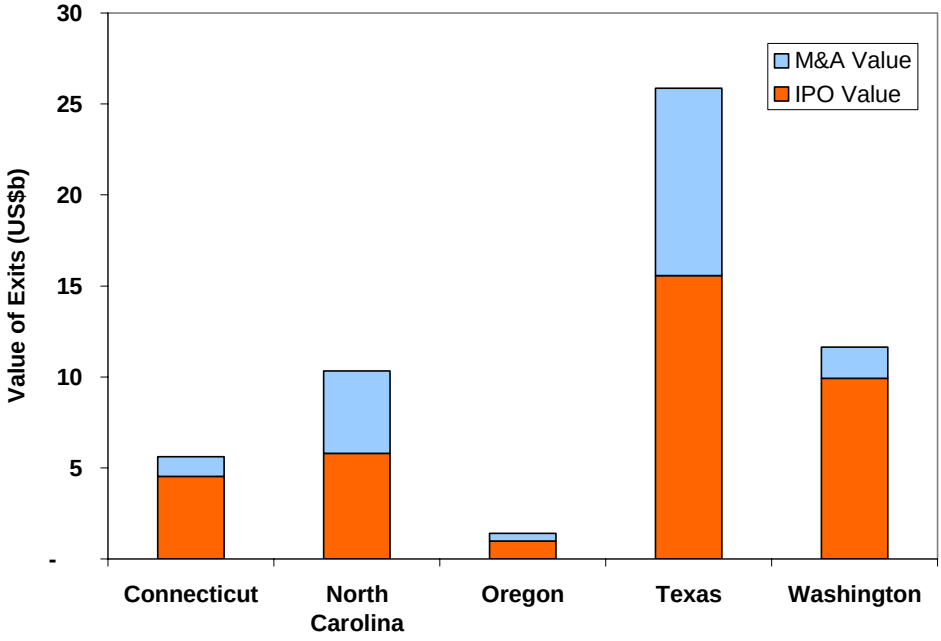


Chart 1C: Total Value of Exits – US Comparison States



Charts 2A, B and C perform a similar analysis for the total number of exits. Chart 2A shows that California is an extreme outlier, with over 1200 exits over the sample. The relative ranking of other US states is approximately similar than in chart 1A. Ontario is ranked third, with 223 exits, and Quebec sixth with 118 exits. Chart 2B shows that the relative ranking among Canadian provinces is the same as in Chart 1B. Chart 2C shows that the relative ranking is also preserved for our US comparison states.

Chart 2A: Number of Exits – Top 10 Jurisdictions

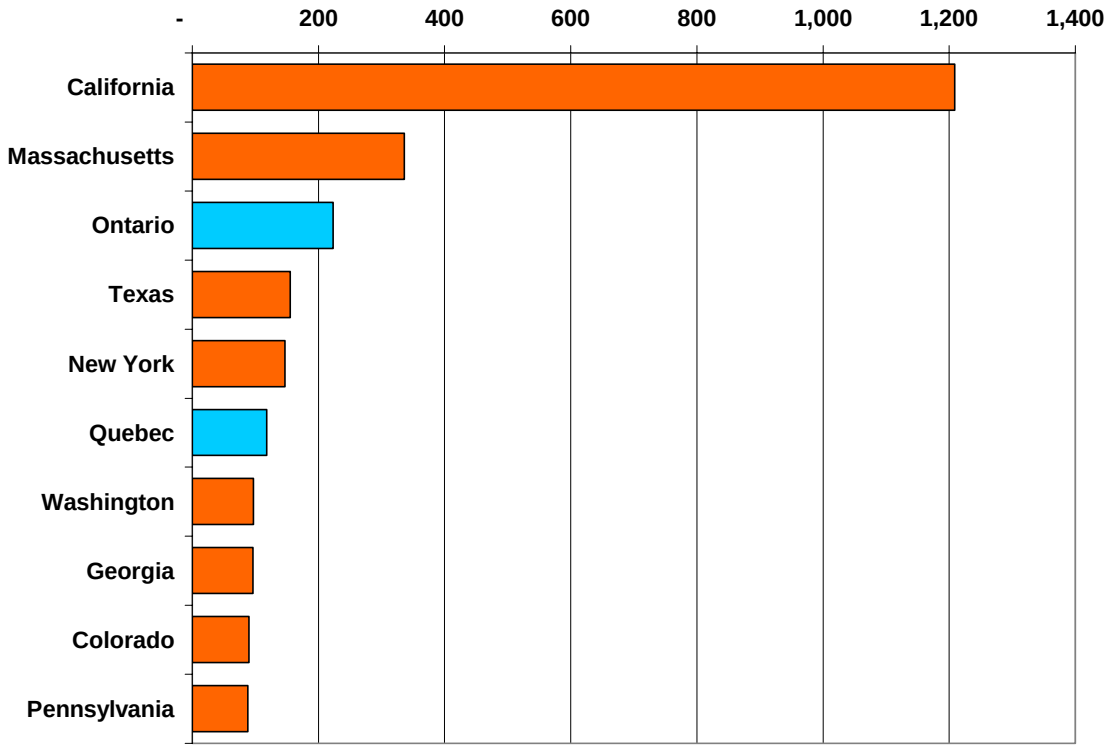


Chart 2B: Number of Exits – Canadian Provinces

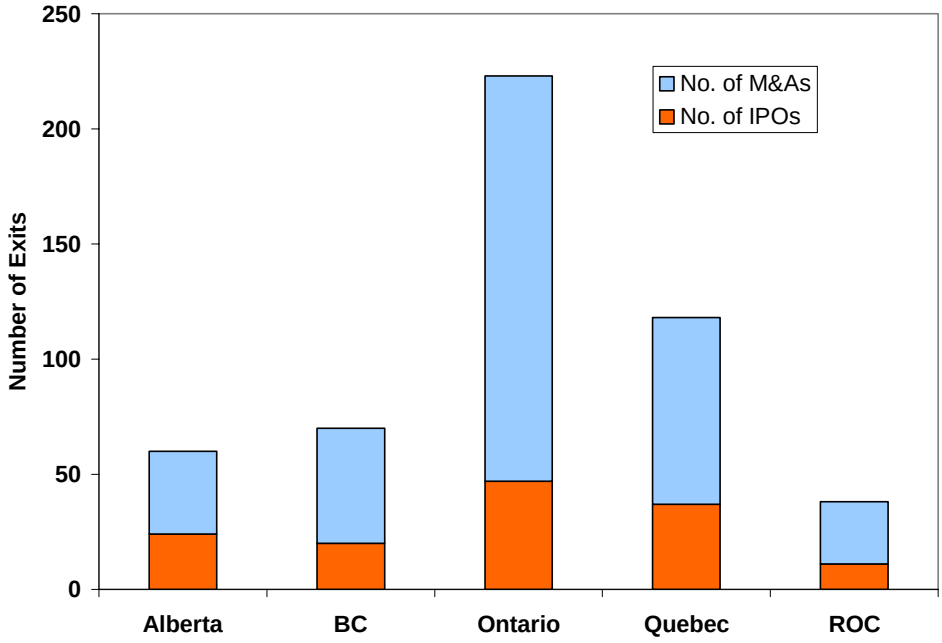
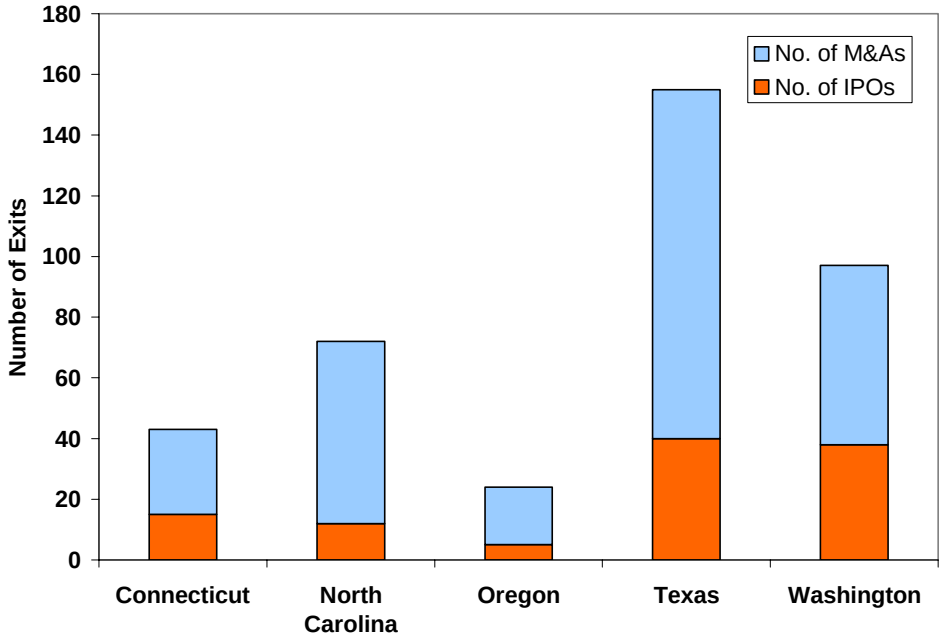


Chart 2C: Number of Exits – US Comparison States



Charts 3A, B and C focus on the average exit value. This provides a measure of how large or successful a typical venture-capital backed company is. An important methodological point to note is that, beginning with Chart 3A, all of our top ten rankings focus exclusively on those jurisdictions that had a total exit value exceeding US$1 billion. Excluding the smaller jurisdictions seems appropriate, since they are somewhat less important to an understanding of the main value drivers of the US and Canadian venture capital industry.

Possibly the most surprising result in Chart 3A is that California no longer ranks first. This may be considered particularly surprising given that California has an unusually large number of companies with more than US$1 billion of exit value (see Table 2). The result in Chart 3A suggests that in addition to these very large exits, California also has a large number of companies with only moderately successful exit values. Another interesting finding in Chart 3A is that Virginia, Maryland and the District of Columbia all rank in the top five. These three jurisdictions host many of the defense related start-ups, companies that often generate large exit values.

An important result in Chart 3A is that none of the Canadian provinces makes the top ten ranking. Indeed, Chart 3B shows that the average value in the Canadian provinces is significantly smaller than in the US. This result appears to be true across all jurisdictions, and continues to apply both for IPOs and acquisitions. This confirms that, relative to Canada, venture-capital backed companies in the US generate larger exit values. Chart 3B also suggests that the average exit value is fairly similar across Canadian provinces. In Ontario, IPOs are slightly larger. In Quebec, IPOs and acquisitions are slightly smaller.

Chart 3C shows that there are considerable differences in the average exit values across our comparison US states. In particular, we note that the cluster-focused states of Texas and North Carolina have higher average exit values, both in terms of IPOs and acquisitions. Oregon has the lowest average exit values of the comparison states.

Chart 3A: Average Value of Exits – Top 10 Jurisdictions

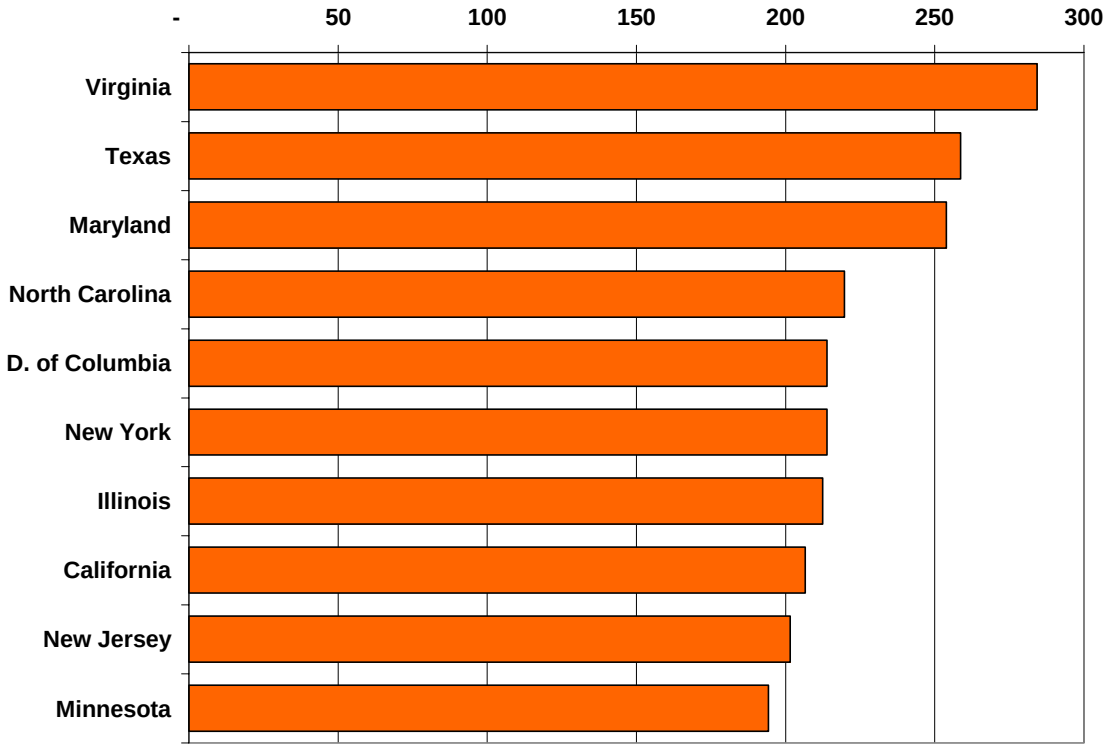


Chart 3B: Average Value of Exits – Canadian Provinces

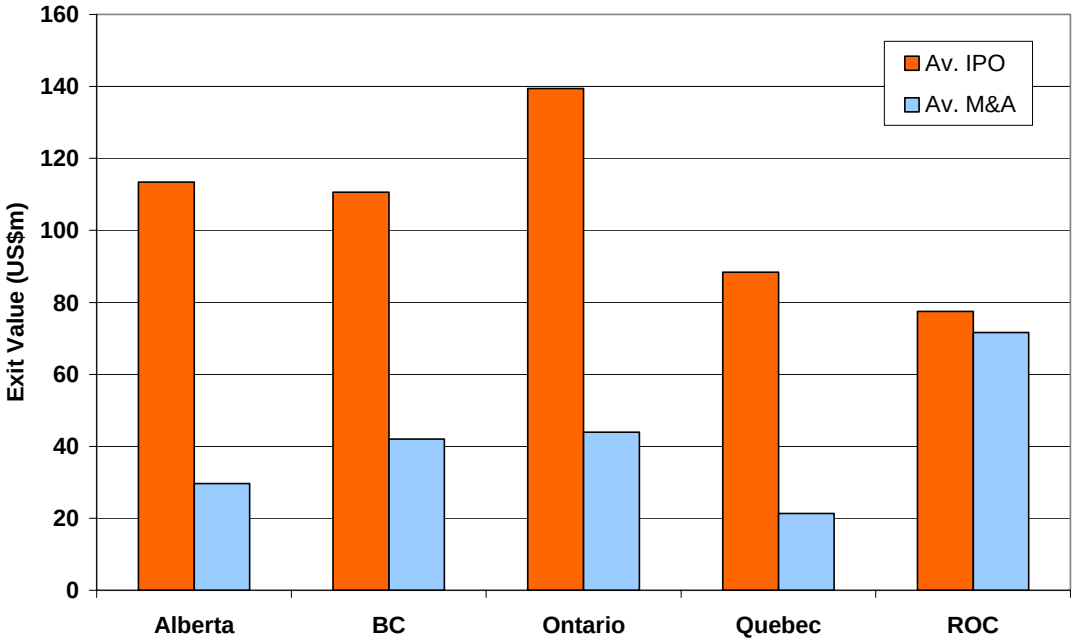
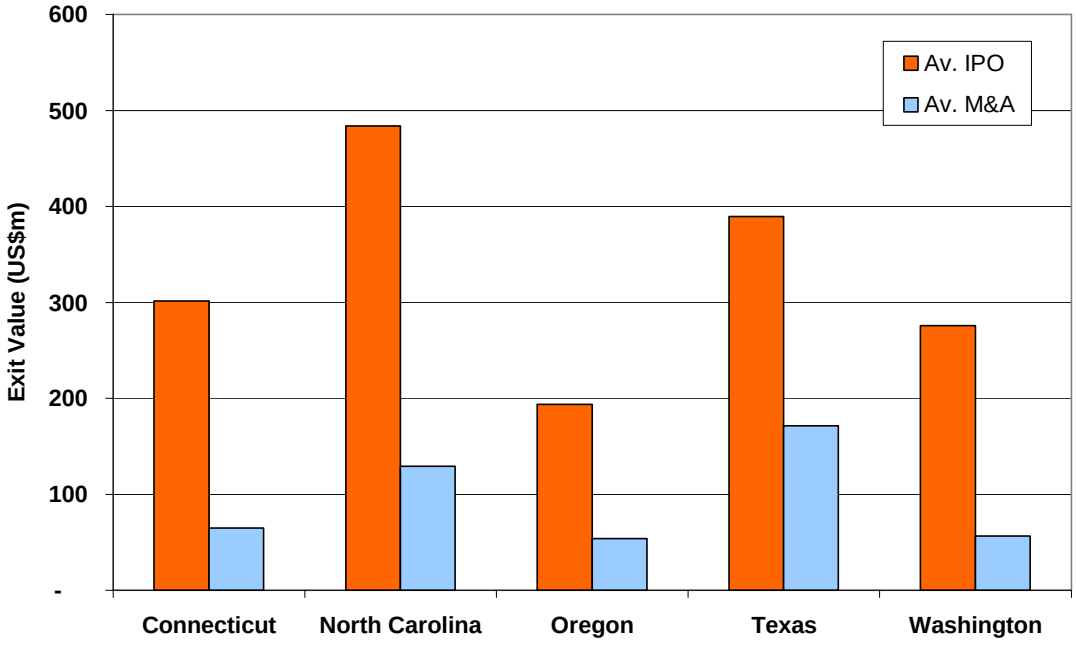


Chart 3C: Average Value of Exits – US Comparison States



Charts 4A, B and C perform a similar analysis as 3A, B and C, using the median exit value. The qualitative results are very similar, although some of the details differ. The relative ranking of some of the states changes in Chart 4A. Chart 4B shows that Alberta has a significantly lower median IPO value than the other large Canadian provinces. Chart 4C shows some minor differences in the relative ranking of the comparisons states.

Chart 4A: Median Value of Exits – Top 10 Jurisdictions

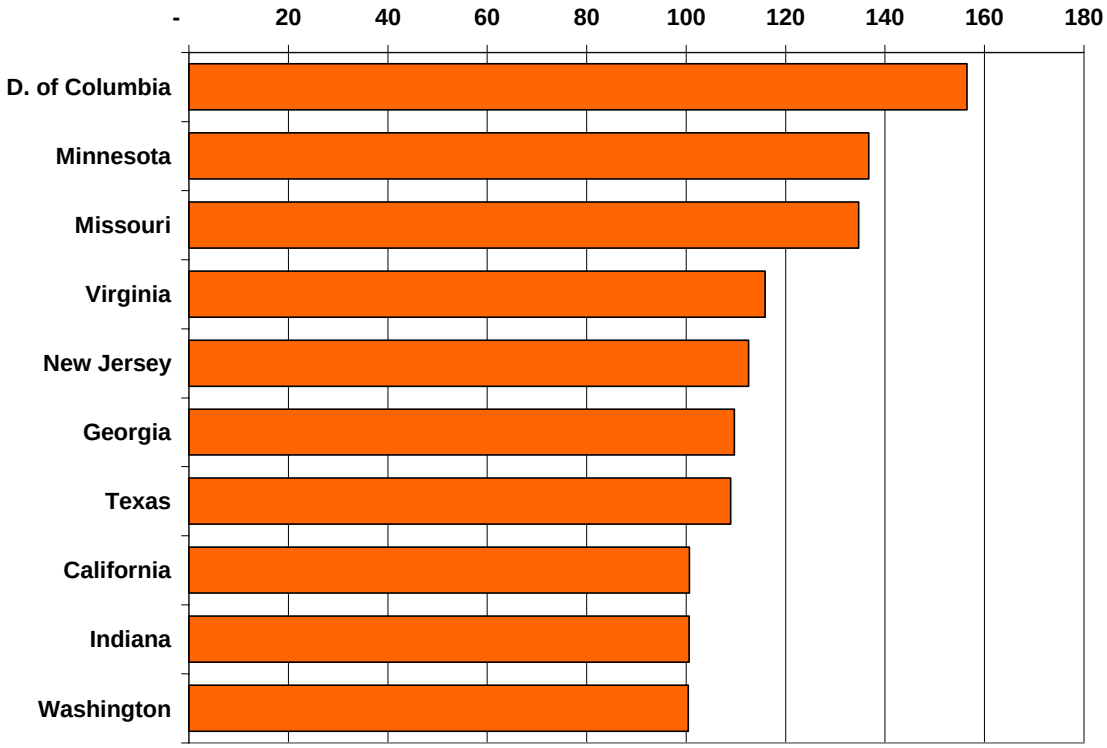


Chart 4B: Median Value of Exits – Canadian Provinces

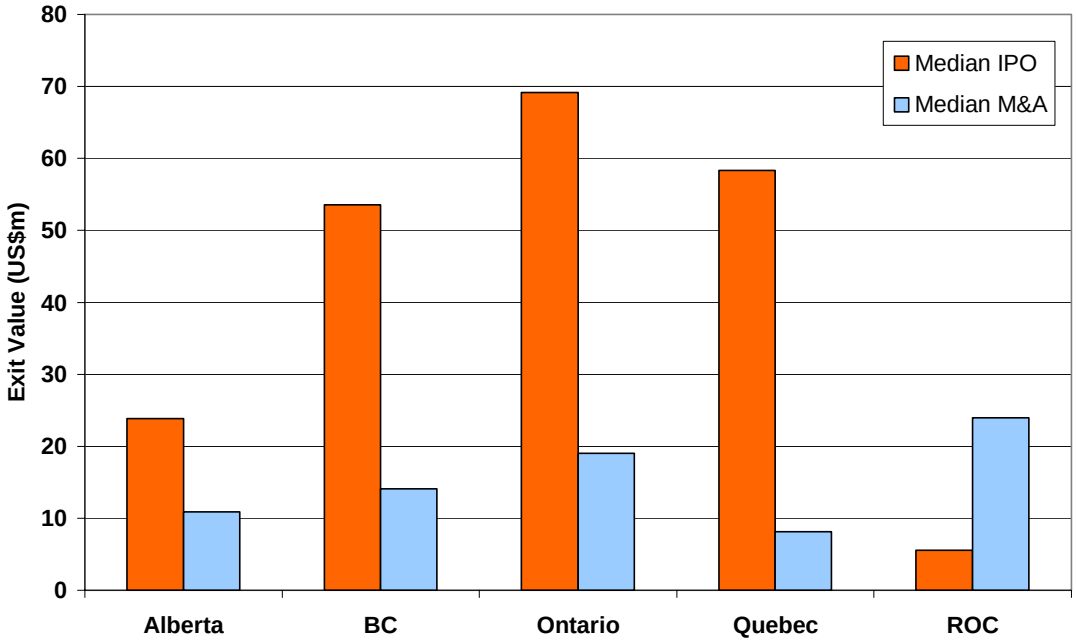
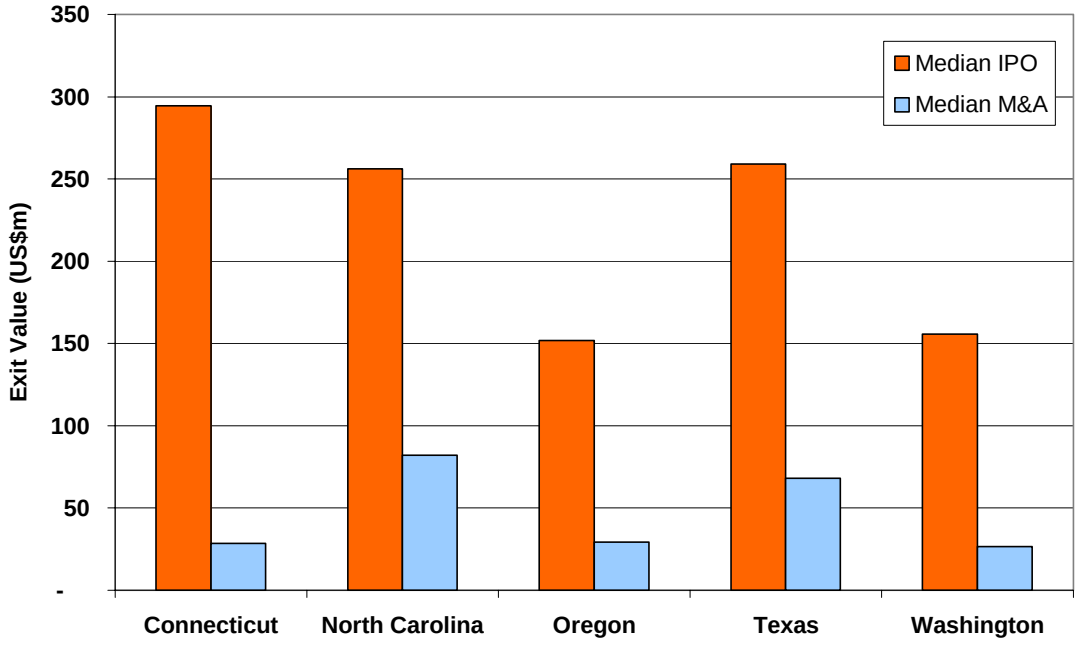


Chart 4C: Median Value of Exits – US Comparison States



Charts 5A, B and C document the average time from founding to exit. They show that Alberta and British Columbia have the lowest average time between founding and exit. Since venture capitalists care a lot about a rapid path to liquidity, this is an important result. One conjecture for this may be that venture capitalists in the western provinces make more extensive use of junior stock markets. Still, these liquidity events can be considered economically meaningful events, since our exit criterion recognizes junior market listing only if they satisfy some minimal size threshold (namely that the company raises more than CAN$1 million). Moreover, it is worthwhile noting that the faster path to liquidity applies not only to IPOs, but also to acquisitions, suggesting that junior markets are only part of the reason why Alberta and British Columbia have the fastest exits.

Chart 5A: Average Time Founding to Exit – Top 10 Jurisdictions

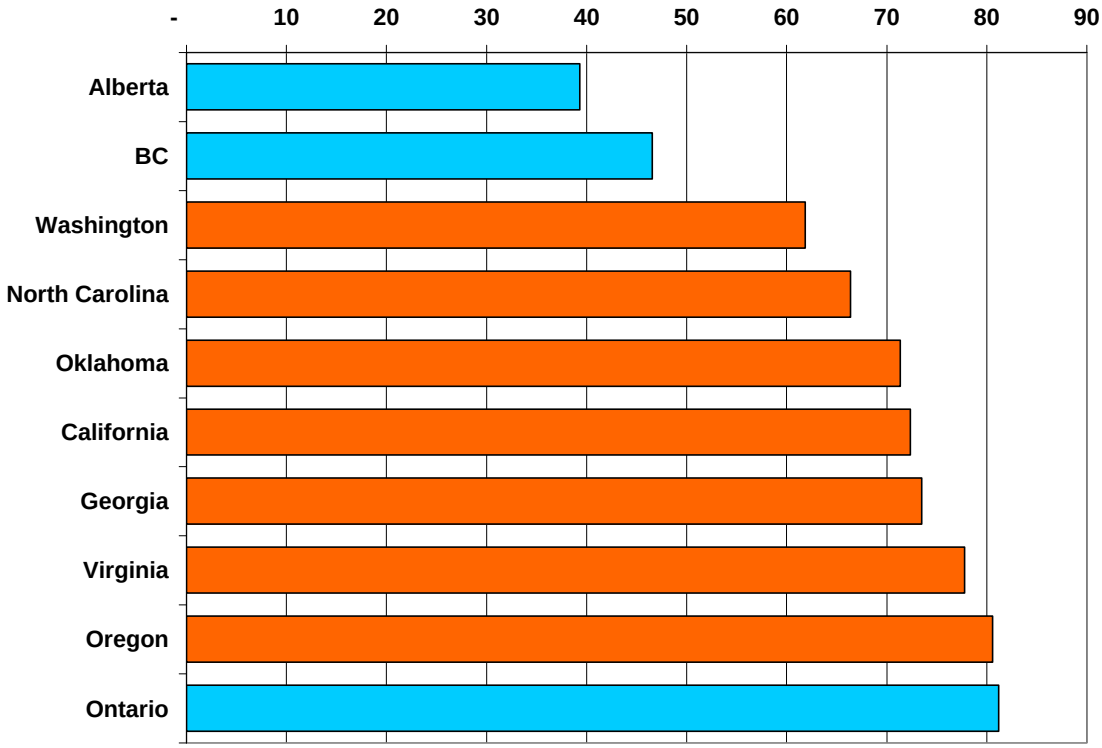


Chart 5B: Average Time Founding to Exit – Canadian Provinces

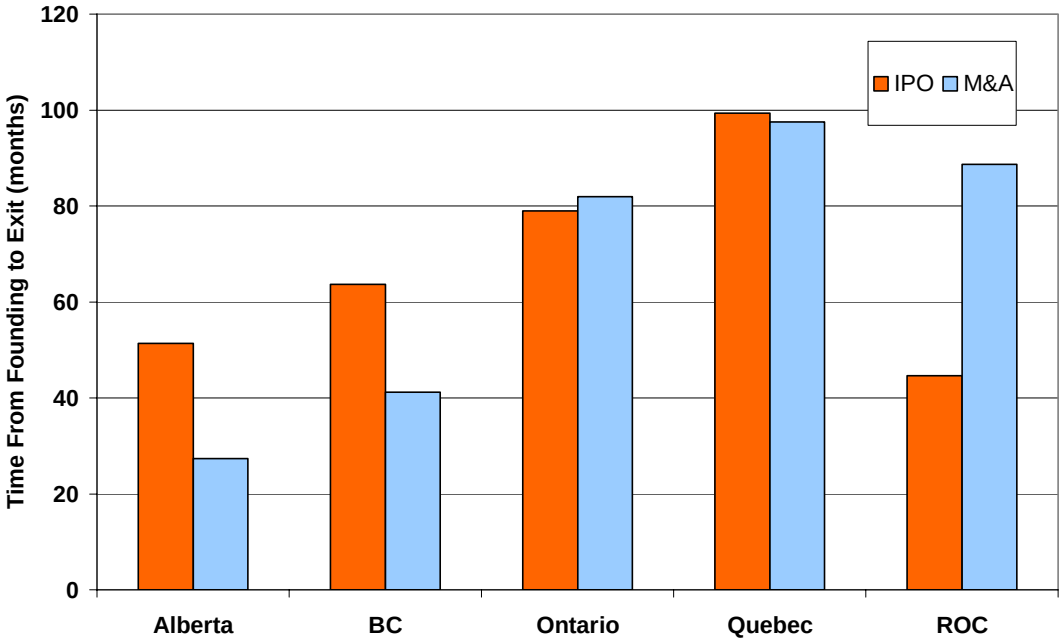
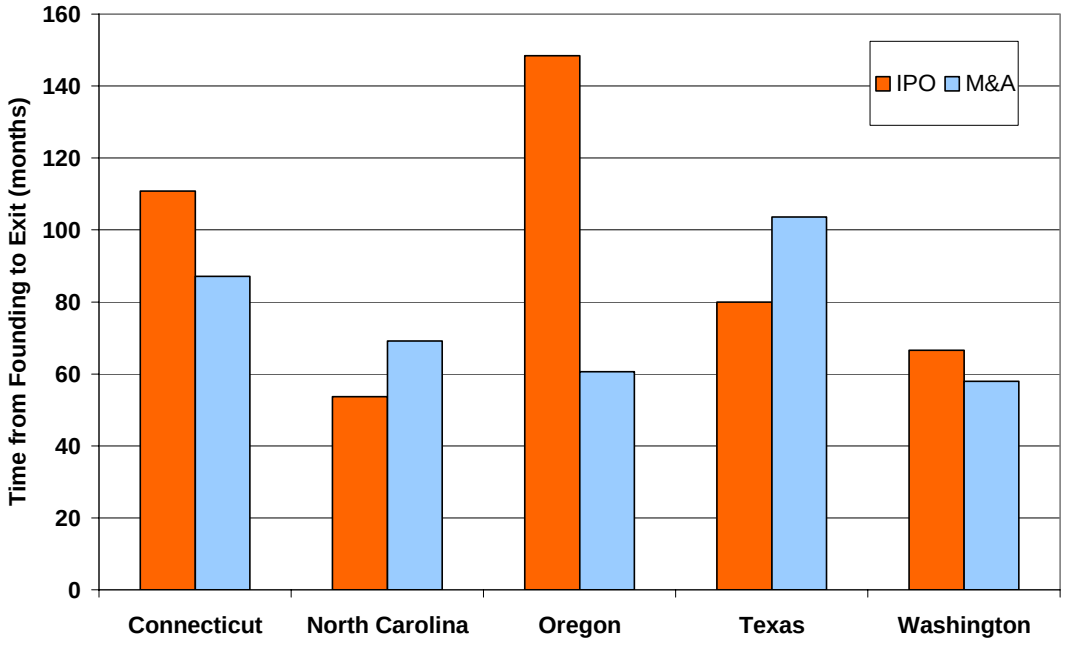


Chart 5C: Average Time Founding to Exit – US Comparison States



Charts 6A, B and C perform a similar analysis for the median time to exit. Because the distribution of exit times is right-skewed, the medians are lower than the averages. Overall, the median time to exit has a similar pattern than the average time to exit. The most notable difference is that Ontario rises to the third place, ahead of all US states.

Chart 6A: Median Time Founding to Exit – Top 10 Jurisdictions

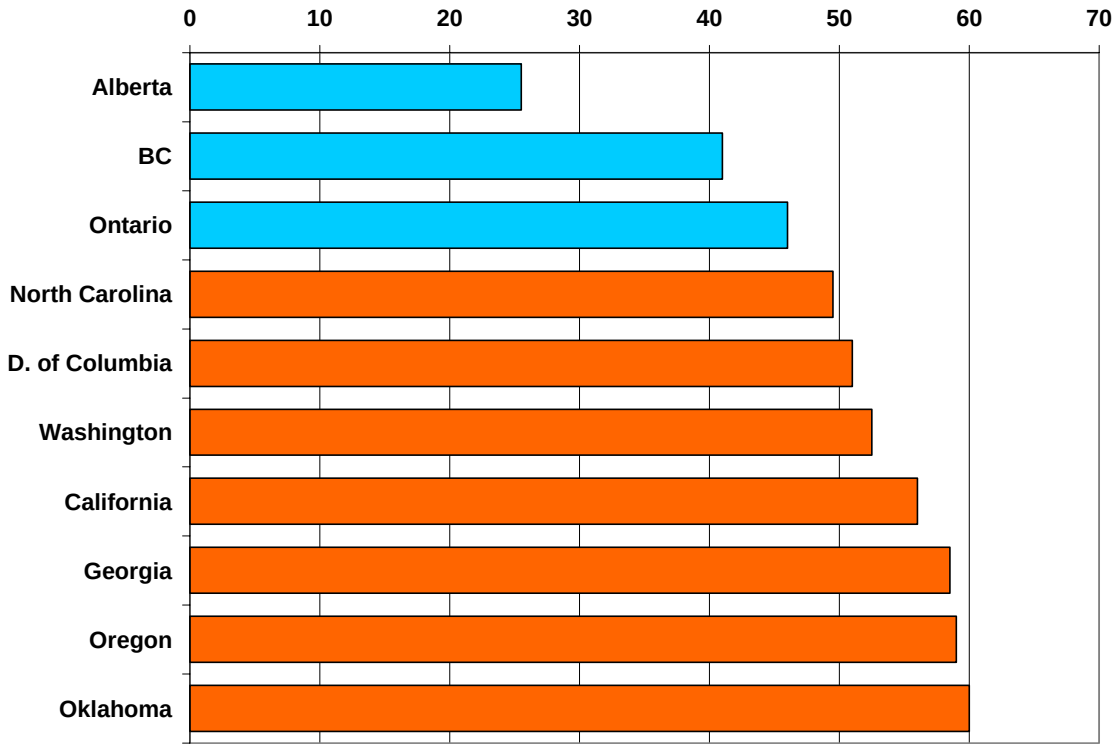


Chart 6B: Median Time Founding to Exit – Canadian Provinces

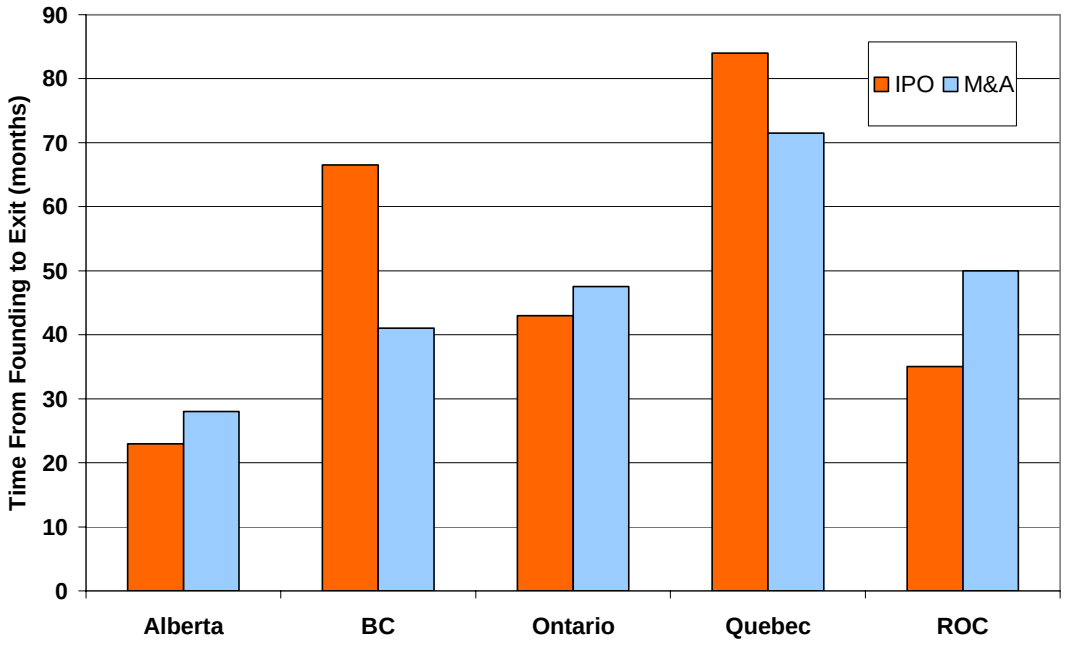
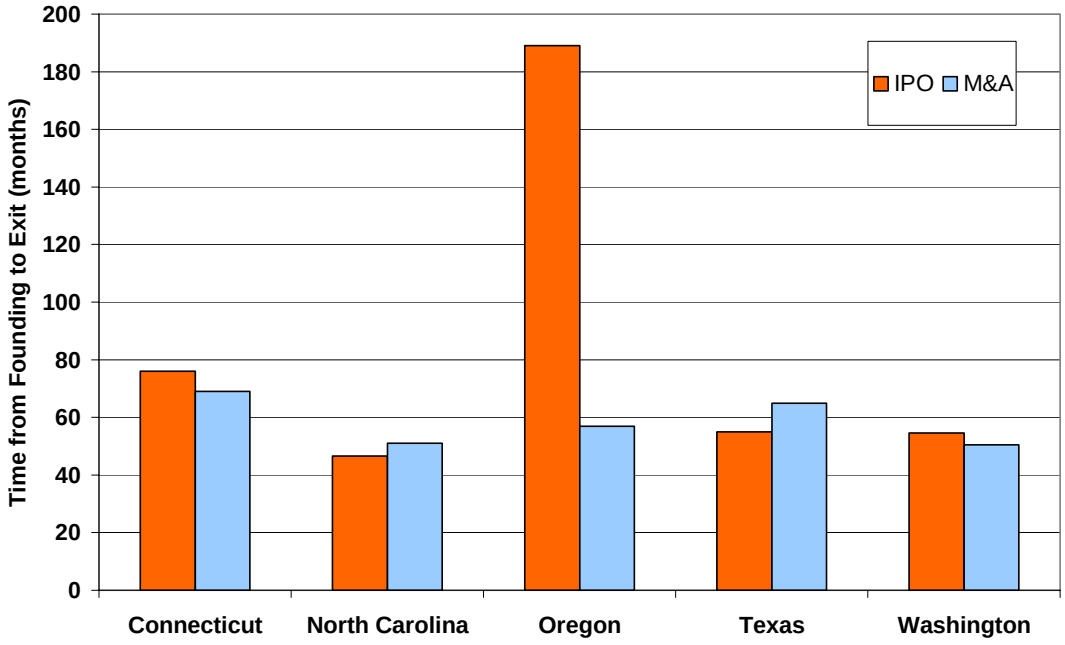


Chart 6C: Median Time Founding to Exit – US Comparison States



4.2 Benchmarked exit values

We now turn to the analysis of benchmarked exit values, to recognize the fact that different jurisdictions have different sizes and different economic structures. To account for the various ways in which jurisdictions differ from each other, we propose a variety of benchmarks for comparing exit performance.

Our first benchmark is to normalize exit values by a broad measure of the size of each jurisdiction. For this we use a measure of the gross domestic product (GDP) of each province and state. This is sometimes also called the gross state product (GSP). With this, we can calculate total exit values per $1000 GDP.

Chart 7A, B and C show that California and Massachusetts are distinct outliers with significantly higher exit values per GDP. This confirms the widely held notion that these two states constitute the leading jurisdictions for venture capital. Another interesting insight comes from comparing Chart 7A with Chart 7A. While Massachusetts is significantly behind California in terms of its total exit value, it has an almost identical exit performance once we normalize by GDP. Put differently, California may seem a much larger venture capital market than Massachusetts, but this can be fully accounted for by the fact that California has a much larger economy.

Another important insight from Chart 7A is that three of the Canadian provinces make it into the top ten. In particular Ontario ranks 7th, British Columbia 8th and Alberta 10th. This challenges the widely-held belief that the Canadian provinces are far behind US states. Chart 7B compares the exit values per GDP for the leading Canadian provinces. There is a relatively little difference between Ontario and British Columbia. Alberta is lagging only slightly on these terms, and Quebec (as well as the rest of Canada) is not far behind. Chart 7C shows the exit performance for the US comparison states. While Texas outperforms the other comparison states in terms of total exit value, this is mainly due to the size of its economy. Indeed, Chart 7C shows that Texas has a comparable per GDP exit performance to that of North Carolina and Connecticut. Another interesting result is that Washington State has a better exit performance than the other US comparisons states. Finally, Oregon has a weaker performance, one that cannot be explained away by the smaller size of its economy.

Chart 7A: Total Value of Exits per $1000 GDP – Top 10 Jurisdictions

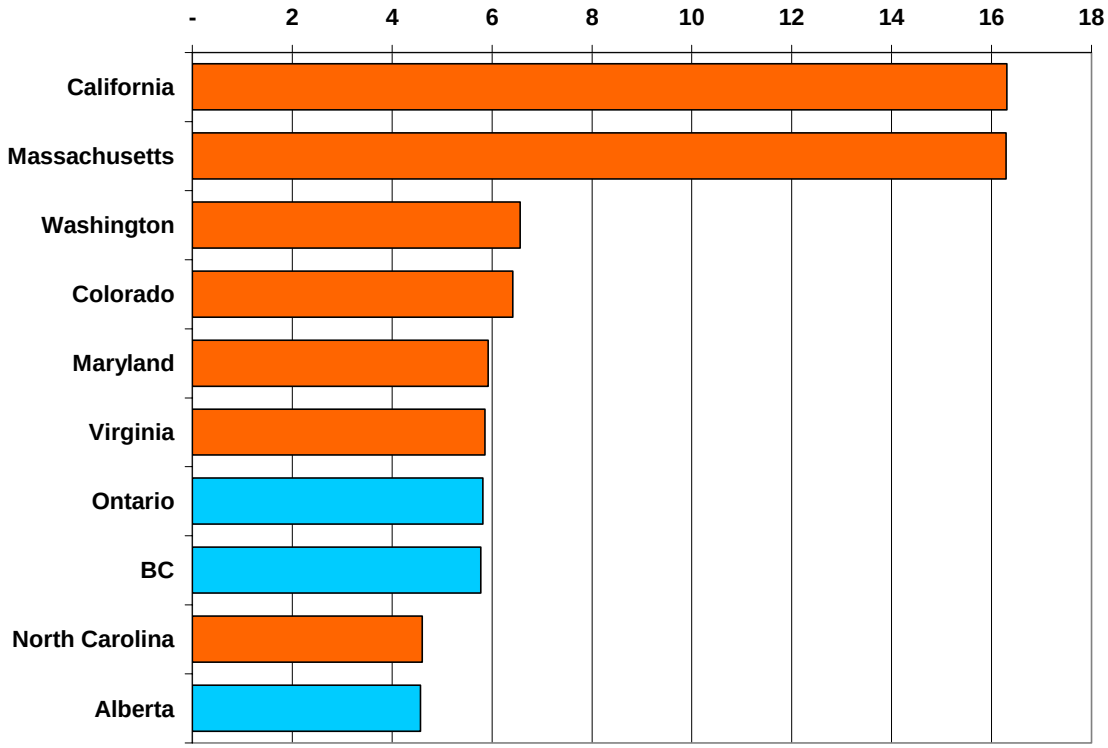


Chart 7B: Total Value of Exits per $1000 GDP – Canadian Provinces

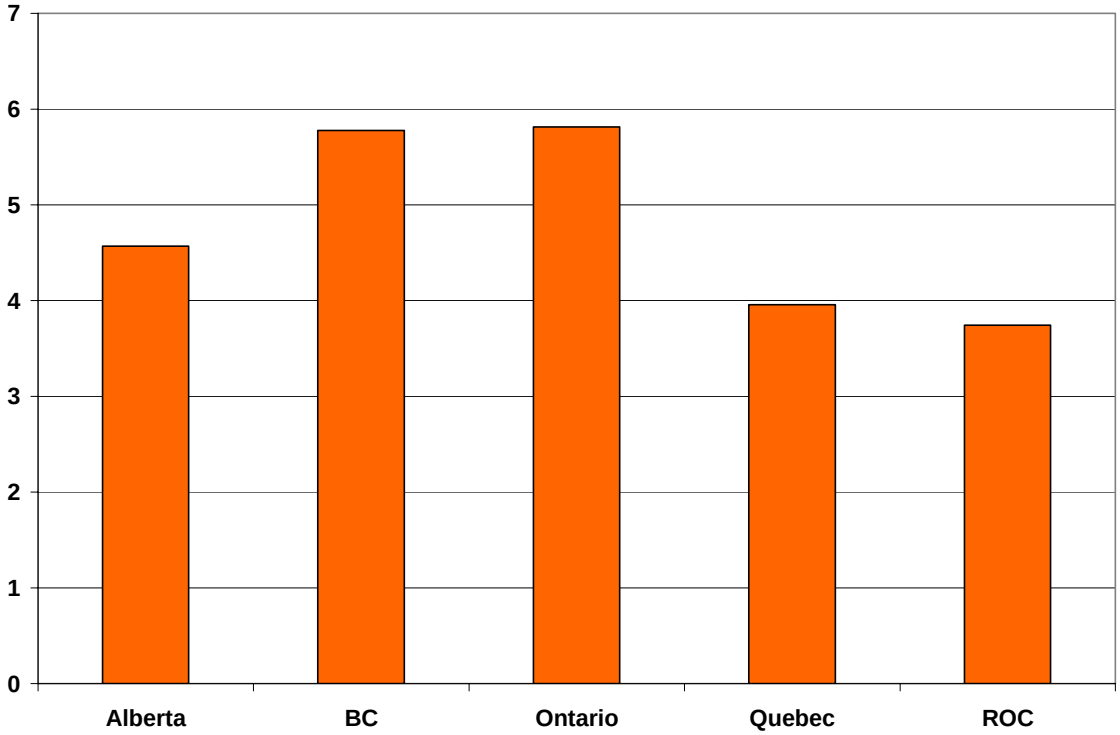
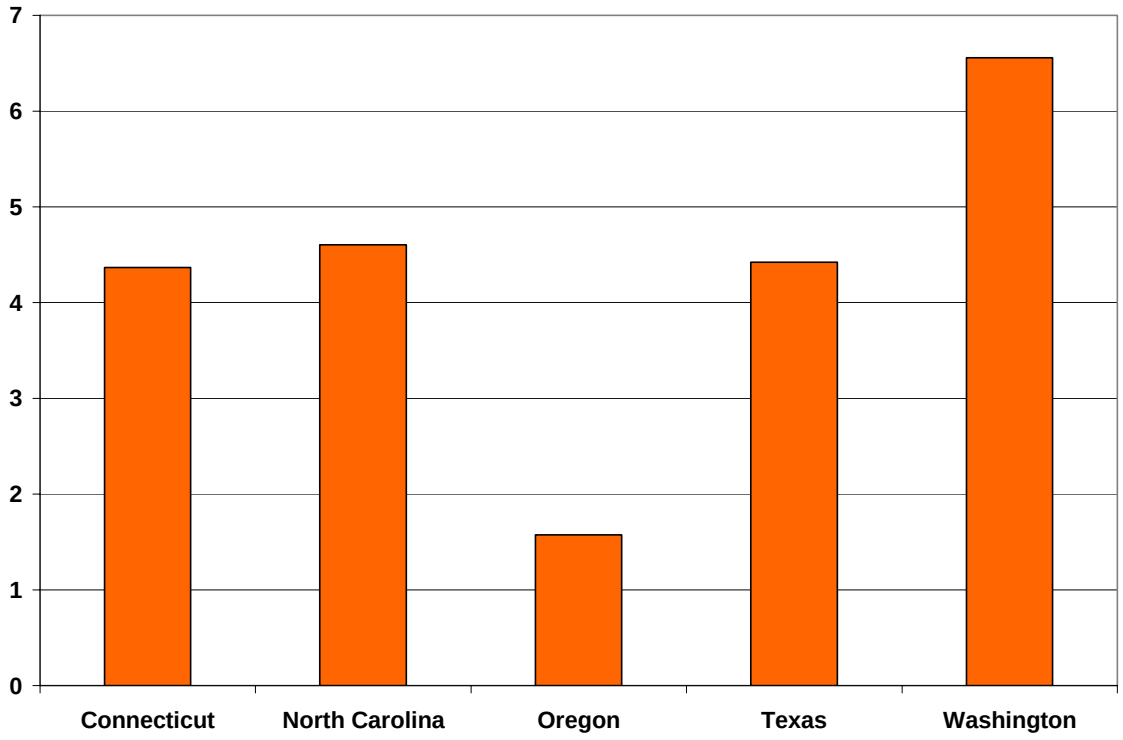


Chart 7C: Total Value of Exits per $1000 GDP – US Comparison States



The GDP benchmark controls for the overall size of the economy. But there are many sectors of the economy that have little to do with venture capital, and different jurisdictions may differ in terms of the relative importance of their research-intensive sectors. We therefore consider two benchmark measures that address the degree to which the economy of each jurisdiction is focused on research and innovation. In particular we compare the total exit value to the investments in research and development. For this we consider both total spending on R&D (measured by GERD), as well as total business spending on R&D (measured by BERD).

Chart 8A shows that British Columbia has the highest exit value per dollar spent on R&D. Moreover, Alberta ranks 3rd and Ontario 8th. This suggests that Canadian provinces, especially British Columbia, are particularly efficient in converting R&D spending into value creation by venture-capital backed companies. Put differently, when we compare exit values against a measure of the size of the research sector, we find that Canadian provinces perform very well. What is particularly remarkable about this result

is that British Columbia and Alberta (as well as Georgia) outperform the two leading venture capital jurisdictions of California and Massachusetts. It suggests that one of the main factors that can explain the success of California and Massachusetts is the large amount of research spending obtained by these two states. Once we control for the amount of money spent on R&D, we find that their performance is still very strong, but no longer an outlier. Chart 8B compares the main Canadian provinces, showing that the two Western provinces of Alberta and British Columbia are particularly efficient in terms of converting R&D dollars into exit values. Chart 8C shows that the cluster-oriented US comparisons states, North Carolina and Texas, outperform the other comparisons states on this benchmark.

Chart 8A: Total Value of Exits per $1000 GERD – Top 10 Jurisdictions

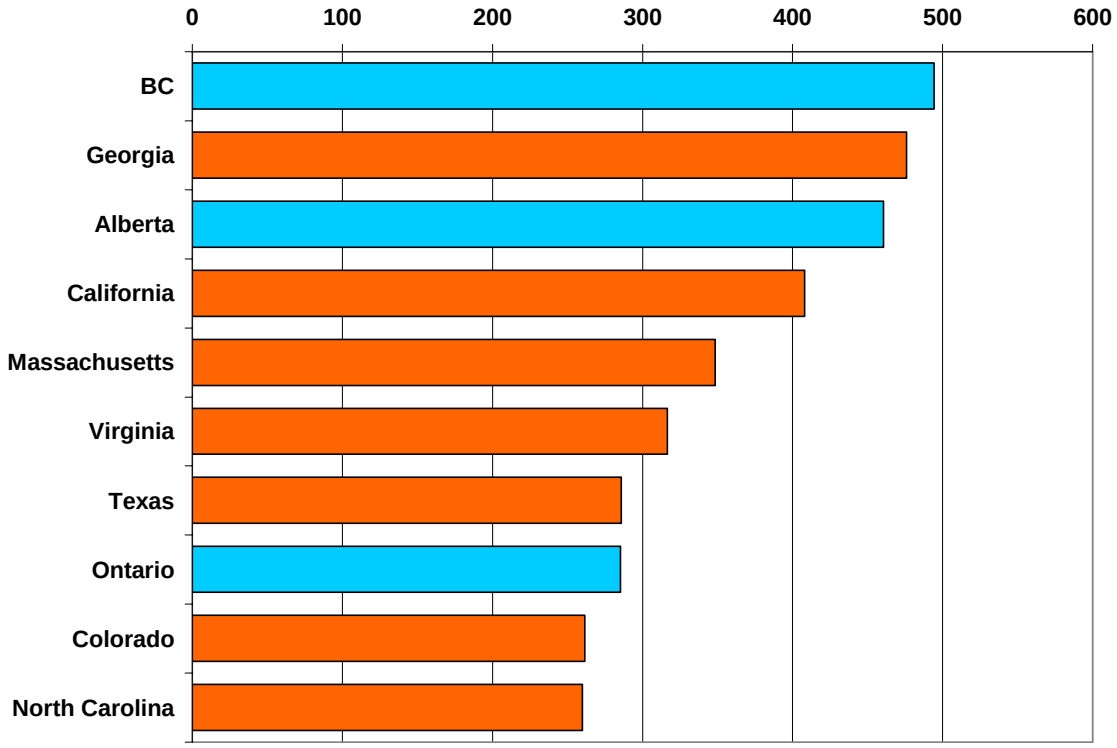


Chart 8B: Total Value of Exits per $1000 GERD – Canadian Provinces

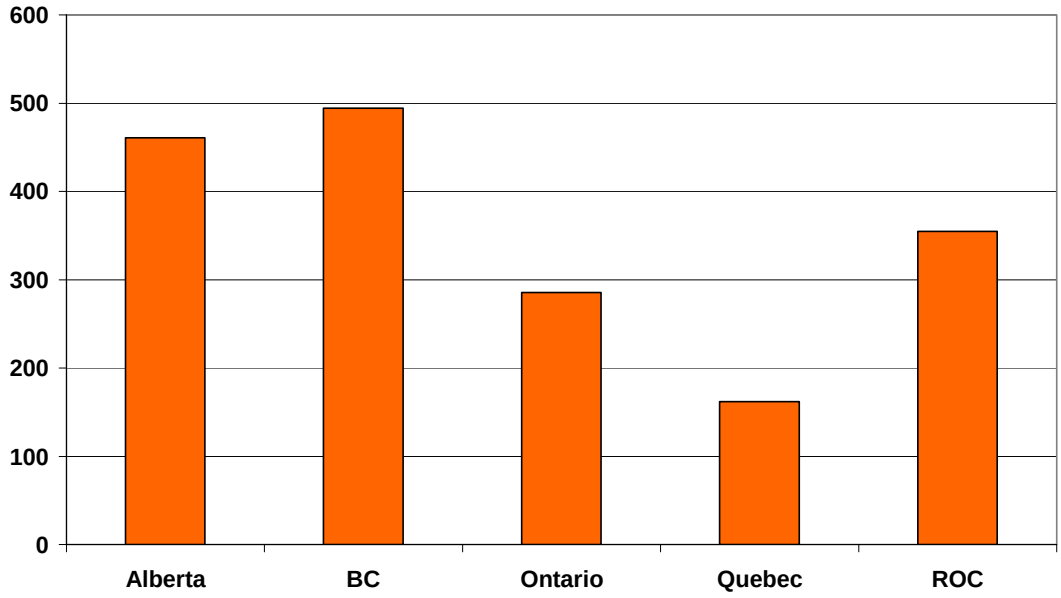
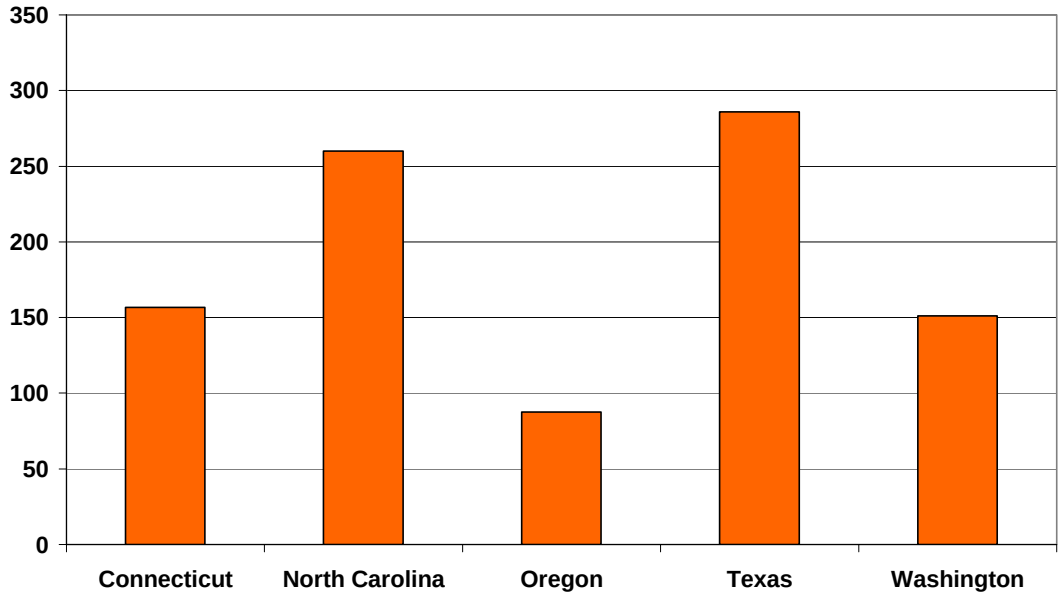


Chart 8C: Total Value of Exits per $1000 GERD – US Comparison States



Charts 9A, B and C perform a similar analysis as Charts 8A, B and C, using total private business expenditures on R&D (as measured by BERD). The overall pattern of results is very similar. Alberta now has a slightly better performance than British Columbia. The relative ranking of some US states is also slightly different. One notable result is that, in addition to Georgia, we now find that the District of Columbia, Virginia and Maryland also outperform California and Massachusetts. The main reason for this is that these states receive significant amounts of public R&D spending, especially related to the defense sector.

Chart 9A: Total Value of Exits per $1000 BERD – Top 10 Jurisdictions

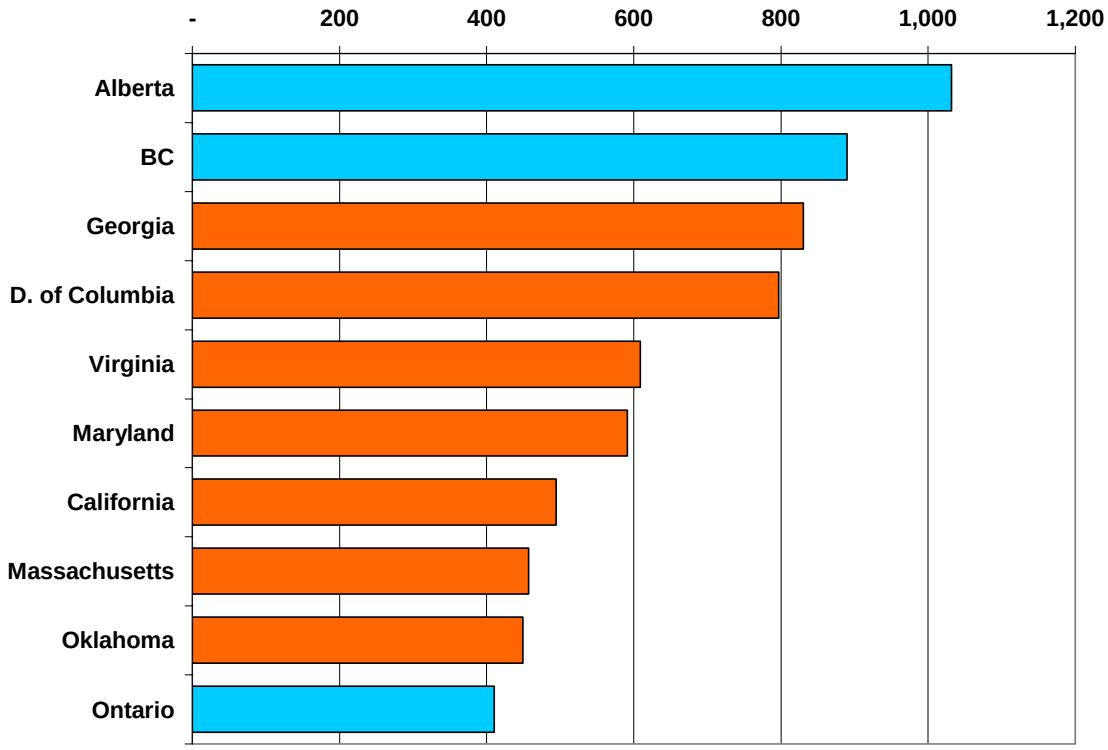


Chart 9B: Total Value of Exits per $1000 BERD – Canadian Provinces

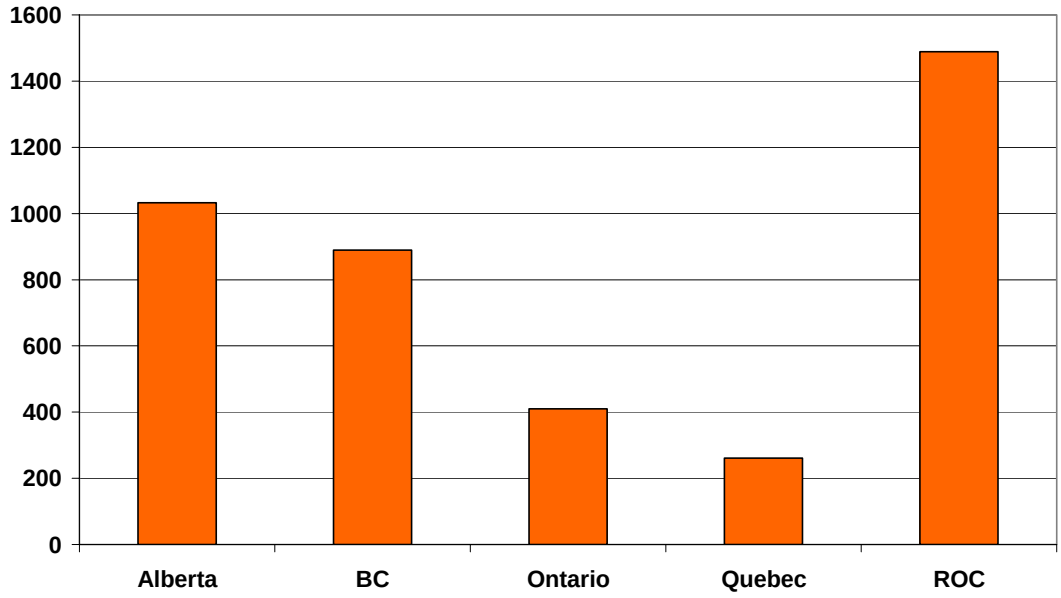
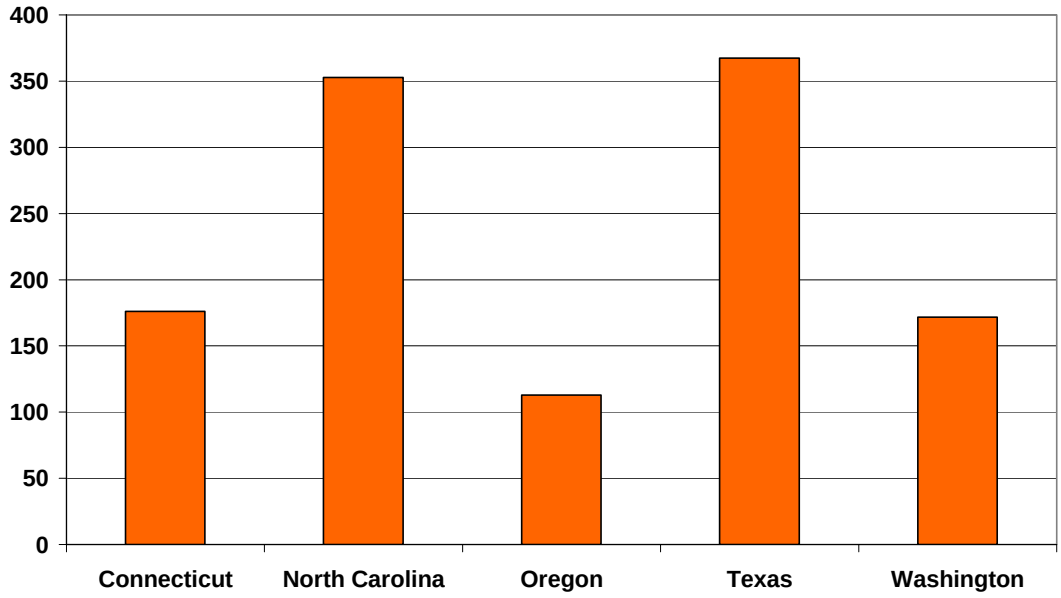


Chart 9C: Total Value of Exits per $1000 BERD – US Comparison States



Our next benchmark compares the total exit value to a 5-year moving average of venture capital investments. Chart 10A shows that three smaller states, The District of Columbia, Oklahoma and Indiana, rank at the top. We therefore should not infer too much from this particular result. The reason for this is that in a small market, it only takes one or two large exits to create such a high ratio.

The most interesting results from Chart 10A is that neither California nor Massachusetts are in the top ten. This suggests that California and Massachusetts do not necessarily constitute the most attractive venture capital markets, in terms of generating a return to venture capital investments. Another interesting finding is that British Columbia continues to perform well on this metric. Chart 10B suggests that British Columbia outperforms both Ontario and Quebec. However, it is worthwhile repeating the caveat from section 2.5, related to the quality of the underlying data. While we have a lot of confidence in the measurement of the exit value, we have less confidence in the available measures of aggregate venture capital investments in Canada. This also explains the absence of Alberta from Charts 10A and B. In addition, it is possible that there is significant underreporting of venture capital investments in some of the smaller Canadian provinces, which would explain why the rest of Canada appears to perform so well in Chart 10B. Chart 10C shows the result for our US comparison states. Again, we find that the cluster-oriented states of North Carolina and Texas perform particularly well.

Chart 10A: Value of Exits by Preceding 5 Yr. Avg. VC Inv. – Top 10 Jurisdictions

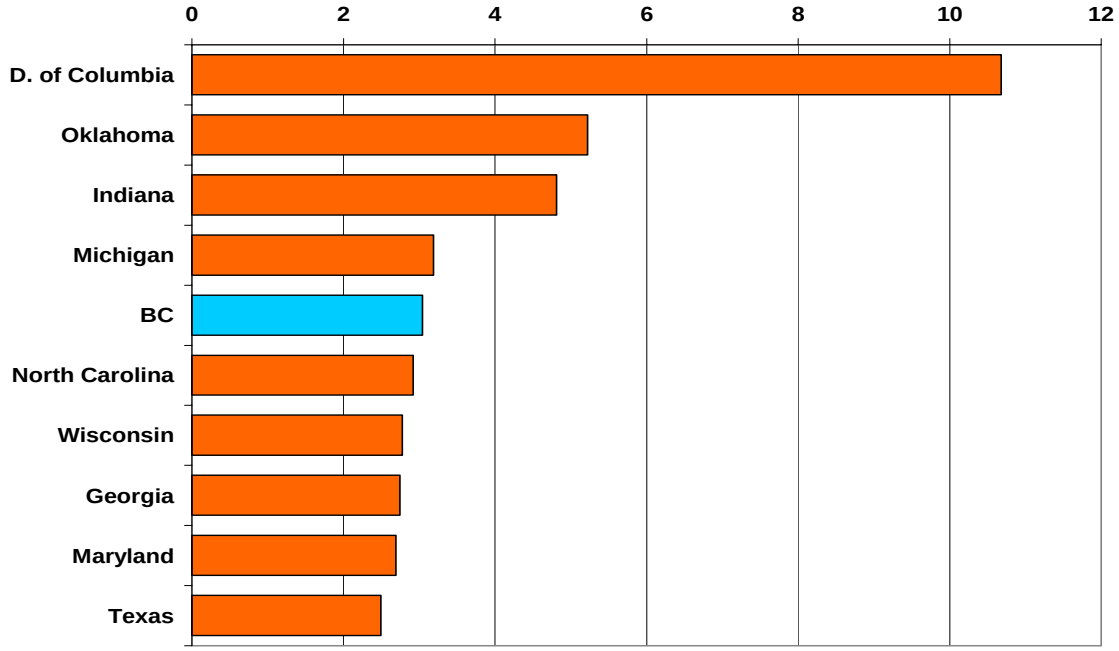


Chart excludes Alberta and the District of Columbia

Chart 10B: Value of Exits by Preceding 5 Yr. Avg. VC Inv. – Canadian Provinces

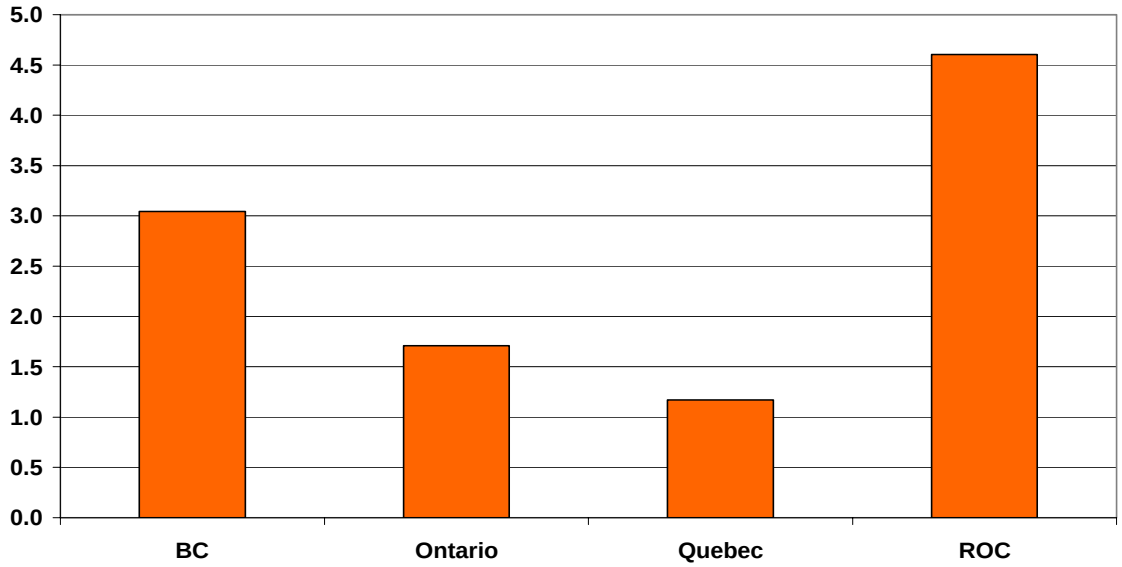
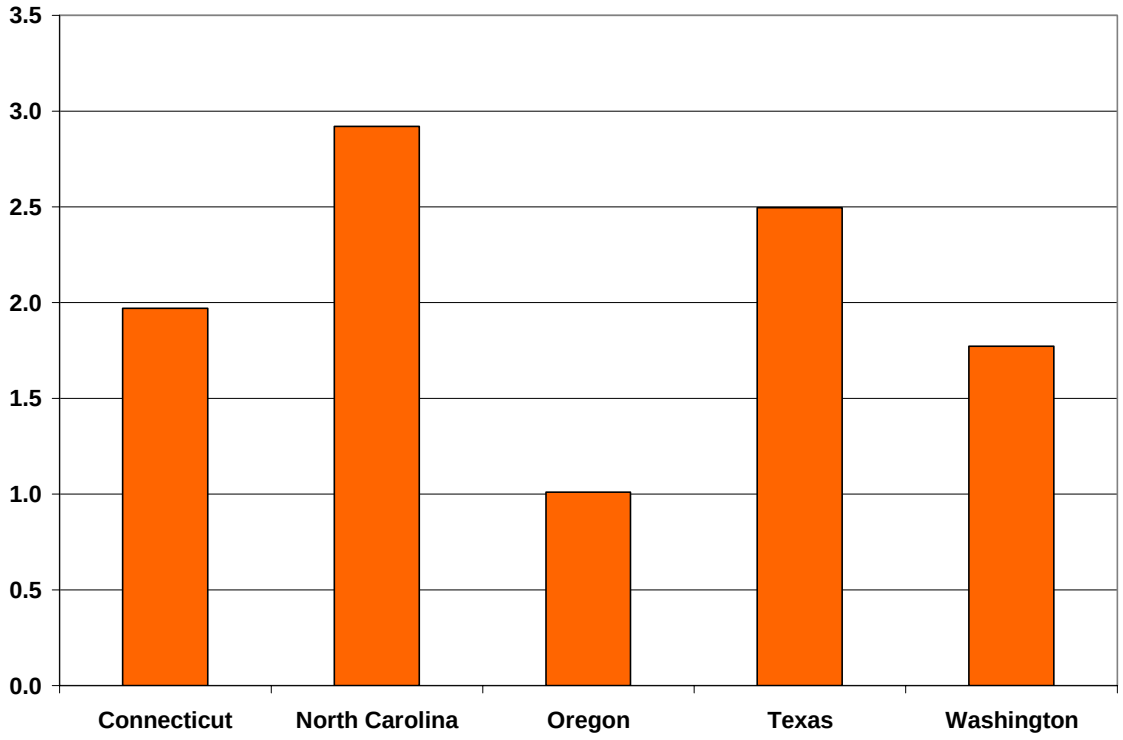


Chart excludes Alberta

Chart 10C: Value of Exits by Preceding 5 Yr. Avg. VC Inv. – US Comparison States



Our final benchmark takes a slightly different approach for measuring exit values. One notable feature of our sample is that it includes the so-called dotcom boom and bust. Our measurement of exit values is therefore influenced by the performance of the stock market at the time of exit. To account for any possible distortion that this may create in our comparison of jurisdictions, we consider a measure of exit performance that accounts for the timing of the exit events. Specifically we divide each exit value by the index value of the NASDAQ at the time of exit. Essentially, this allows us to deflate the high exit values that occurred at the peak of the dotcom bubble. Chart 11A, B and C show the results. Comparing this with Charts 1A, B and C, we notice that the normalization hardly affects the relative ranking of jurisdictions. Chart 11D compares the Canadian provinces using the TSX index as an alternative to the NASDAQ index. The results are very similar to Chart 11B.

Chart 11A: Value of Exits NASDAQ Comp. Normalized – Top 10 Jurisdictions

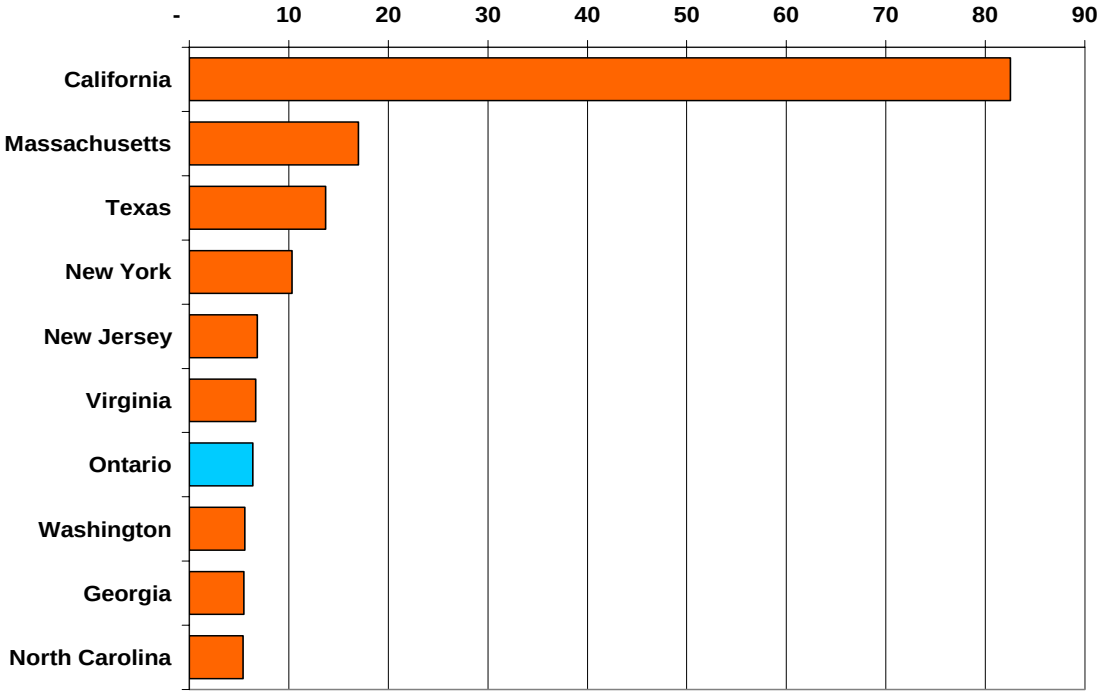


Chart 11B: Value of Exits NASDAQ Comp. Index Normalized – Can. Provinces

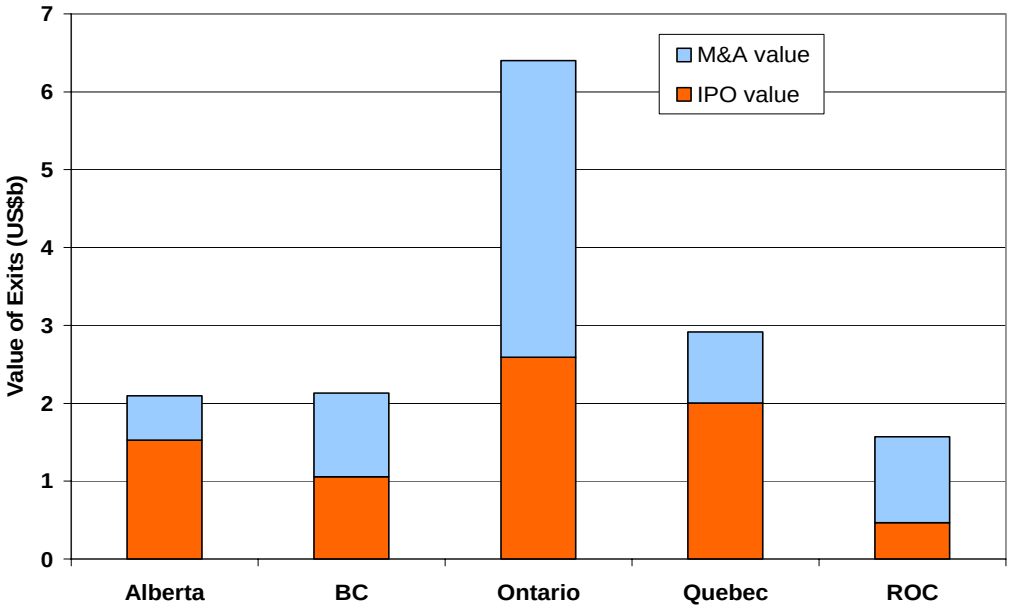


Chart 11C: Value of Exits NASDAQ Comp. Index Normalized – US States

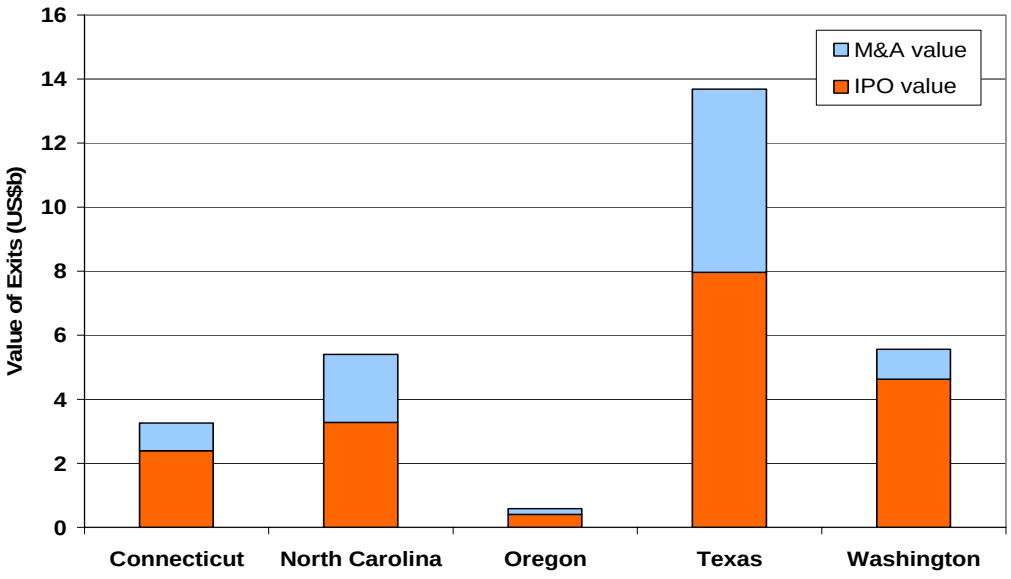
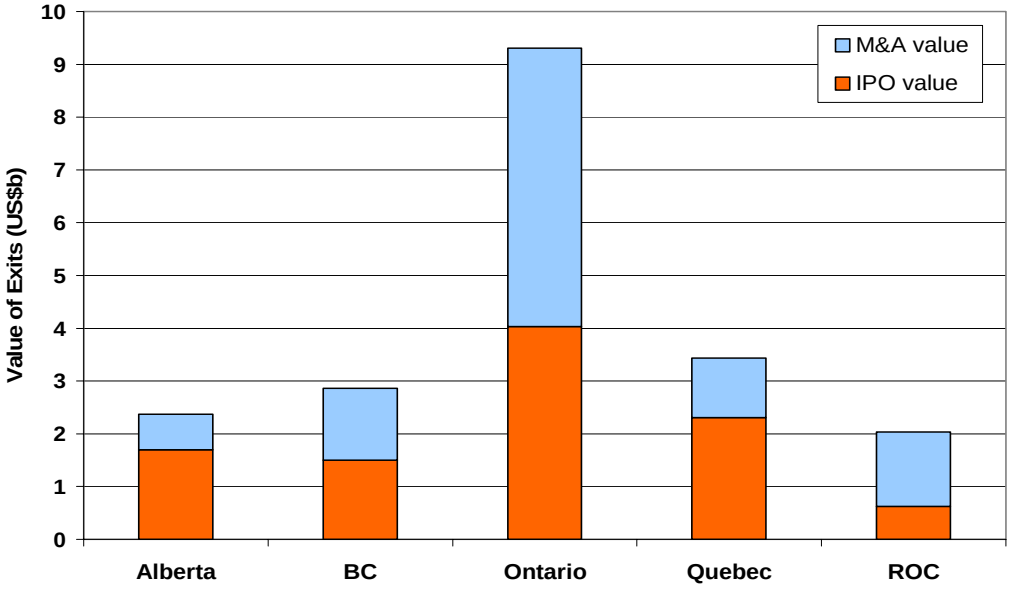


Chart 11D: Value of Exits TSX Composite Index Normalized – Can. Provinces



4.3. Sector comparisons

In this section we examine how exit values differ across different sectors. We focus on Information and Communications Technology (ICT), Life Sciences, Energy and Sustainable Technology (EST), and "Other" sectors (mainly manufacturing and services). Table A3 in the appendix contains a more detailed breakdown of the four sectors, for all Canadian provinces, and the US states with more than US$1 billion in exit value.

Charts 12A and B show the relative contributions of each of these sectors to the total exit value. Chart 12A shows that there are considerable differences across the various Canadian provinces in terms of their sector focus. EST accounts for the majority of exit values in Alberta. ICT accounts for the majority of exit values in British Columbia. Quebec is particularly unique, in that the majority of its investments are classified as "Other." Life Sciences and ICT are also important in Quebec. Chart 12B shows that the US comparison states resemble each other in terms of their sector compositions. ICT is the dominant sector for all of the five provinces. One surprising result is that in North Carolina, which is widely known for its life sciences, ICT continues to be the largest contributor to exit values.

Charts 13A and B show the percentage that each of these sectors contributes to the total exit value. They show a similar pattern of results as Charts 12A and B.

Chart 12A: Composition of Total Value of Exits – Canadian Provinces

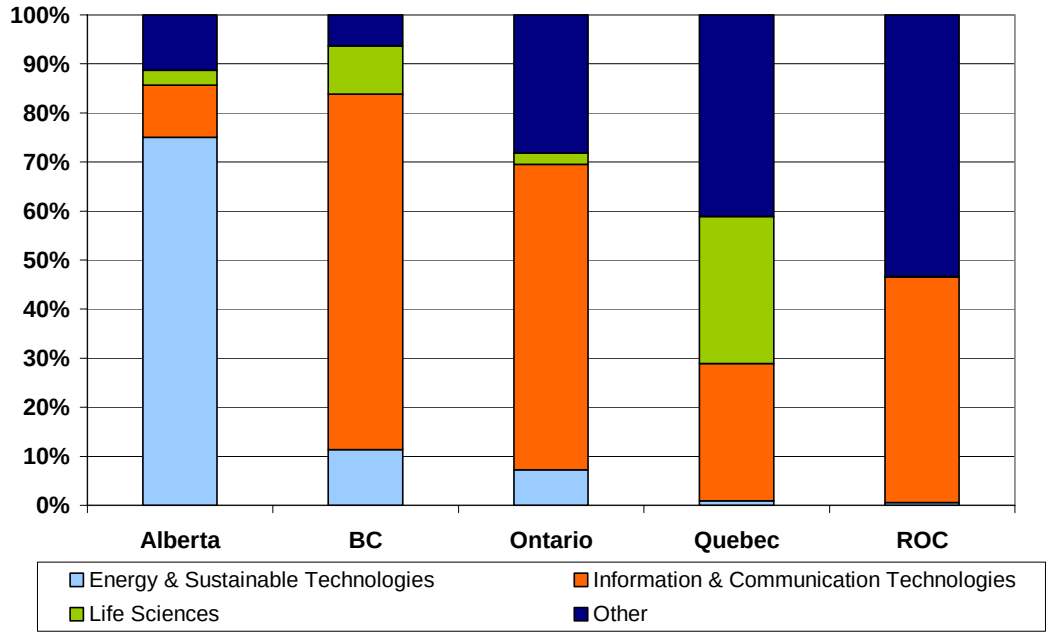


Chart 12B: Composition of Total Value of Exits – US Comparison States

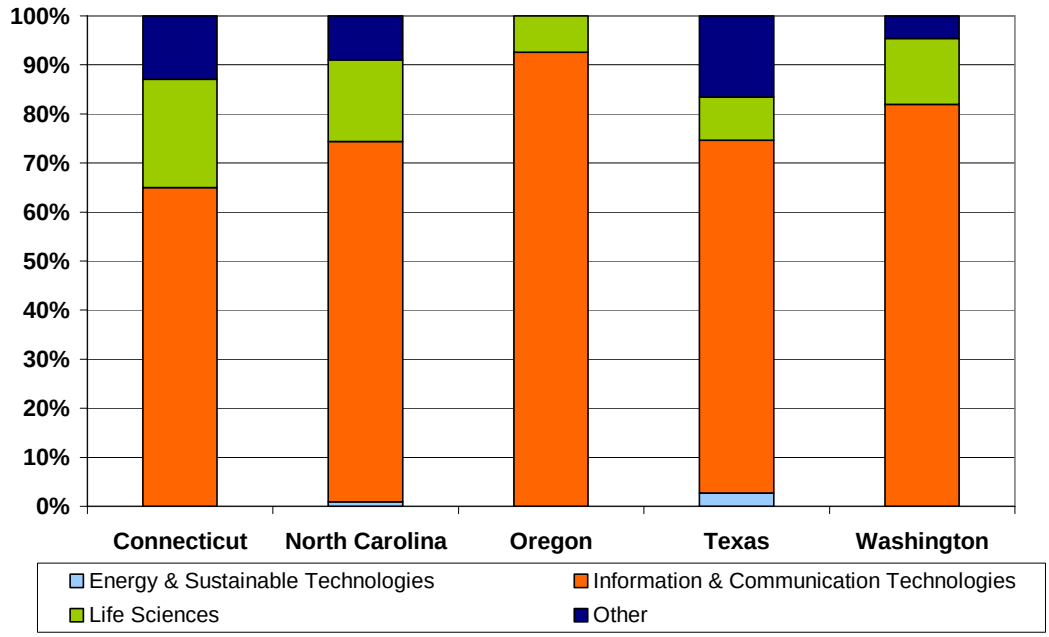


Chart 13A: Total Value of Exits by Sectors – Canadian Provinces

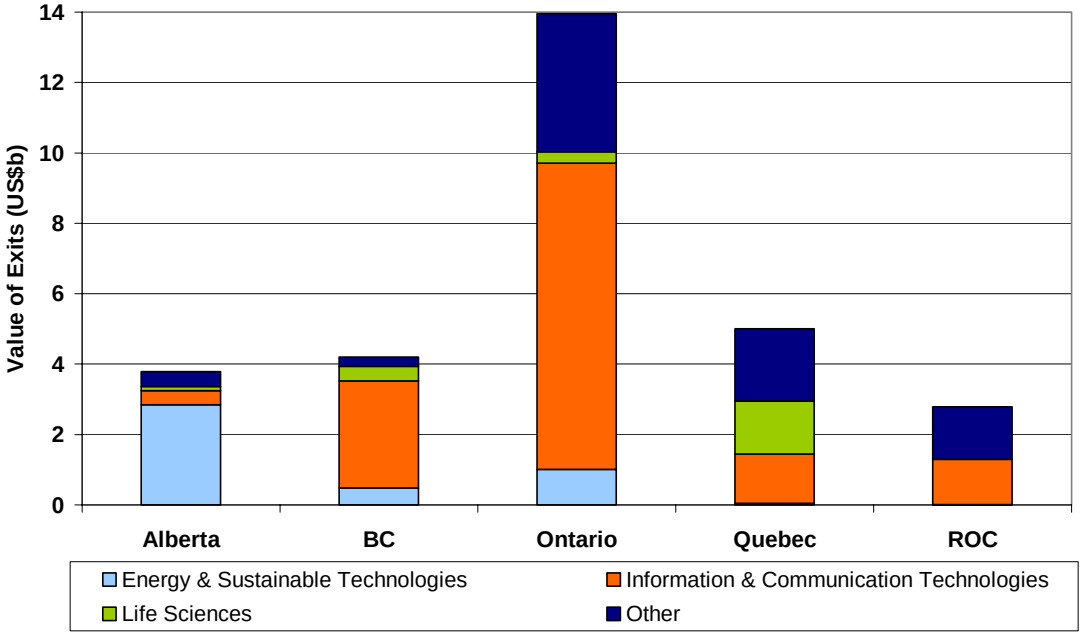
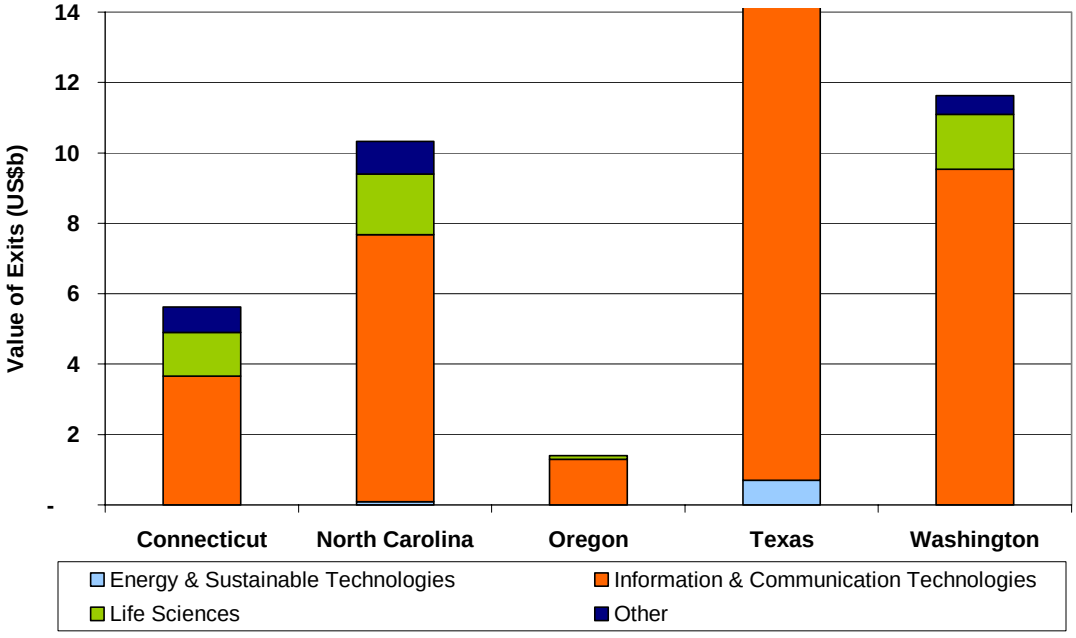


Chart 13B: Total Value of Exits by Sectors – US Comparison States



Charts 14A and B show the median exit value for each of the four sectors. One interesting finding is that EST attracts the highest exit values in the two western provinces of Alberta and British Columbia, while ICT dominates for the two eastern provinces of Ontario and Quebec. In the US, ICT and life sciences generate the largest median exit values. Oregon, in fact, does not even have any exits outside of these two sectors.

Chart 14A: Median Value of Exits by Sectors – Canadian Provinces

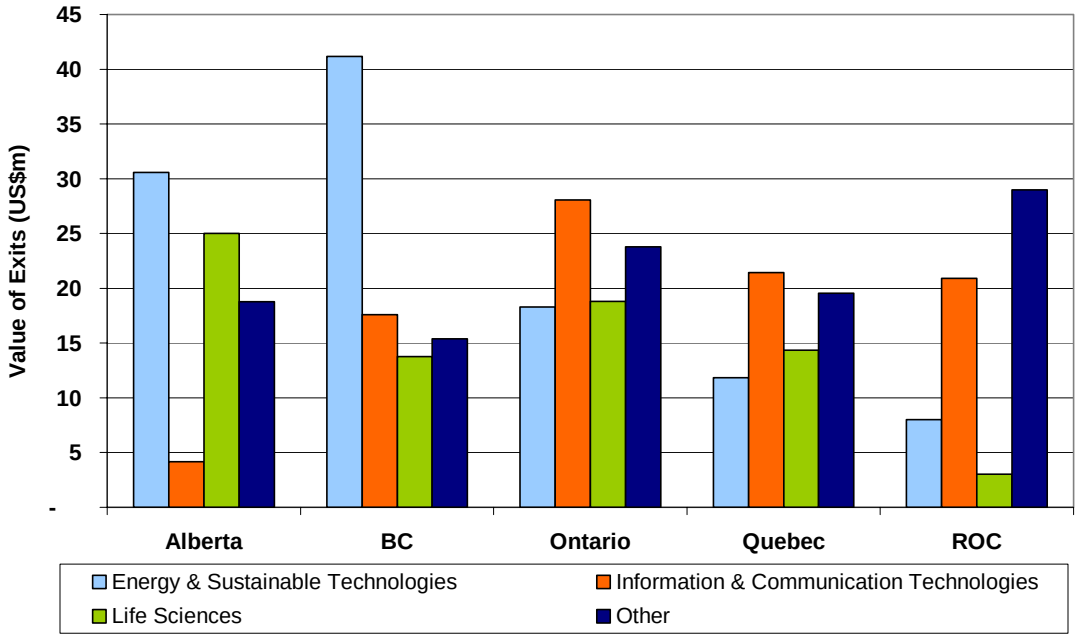
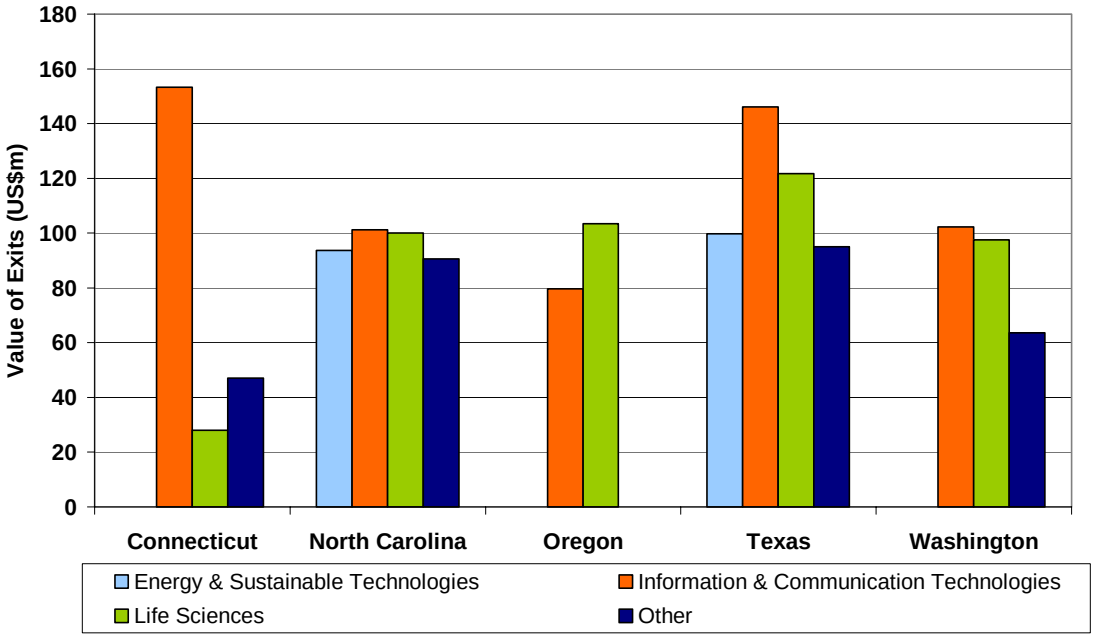


Chart 14B: Median Value of Exits by Sectors – US Comparison States



4.4. Time trends

Our data allows us to examine how exit values change over time. We briefly examine some of the broad trends that can be observed over the period 1997 to 2004. Charts 15A and B show the evolution of total exit values for Canada and the US respectively. We immediately note that exit values move in tandem with stock markets. We find that exit values peaked in 2000 in Canada. In the US, exit value peaked in both 1999 and 2000. Another interesting trend is that exit values made a significant comeback in 2004, both in Canada and the US. Indeed, while the period 2001 to 2003 witnessed lower exit values than before the dotcom bubble, 2004 shows a significant recovery, with exit values that exceed those from the period before 1999.

Chart 15A: Total Value of Exits by Year – Canada

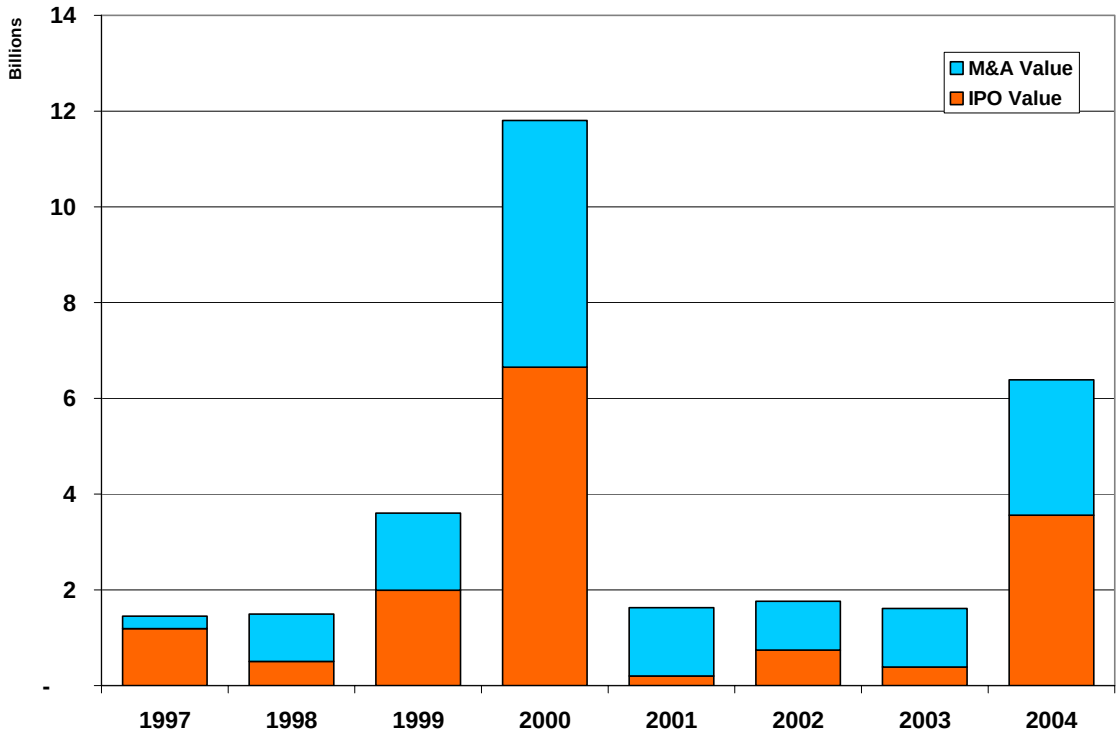
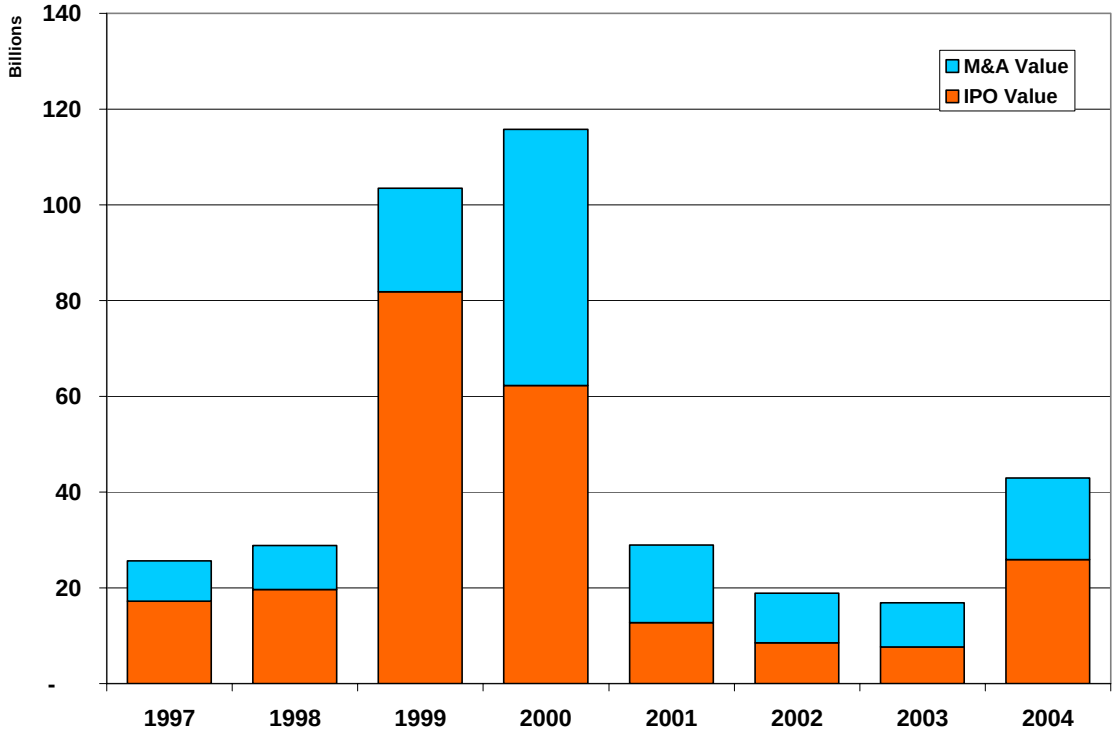


Chart 15B: Total Value of Exits by Year – US



Charts 16A and B examine the time trends of the median exit value for Canada and the US respectively. The Canadian data for median exit values has a very similar pattern than the total exit value. The same can be said for the median exit values of acquisitions in the US. However, an interesting result is that the median IPO value in the US remained high, even throughout the period 2001 to 2003. While there were significantly fewer companies that went public during this period, those few companies that did manage to go public retained high exit values.

Chart 16A: Median Value of Exits by Year – Canada

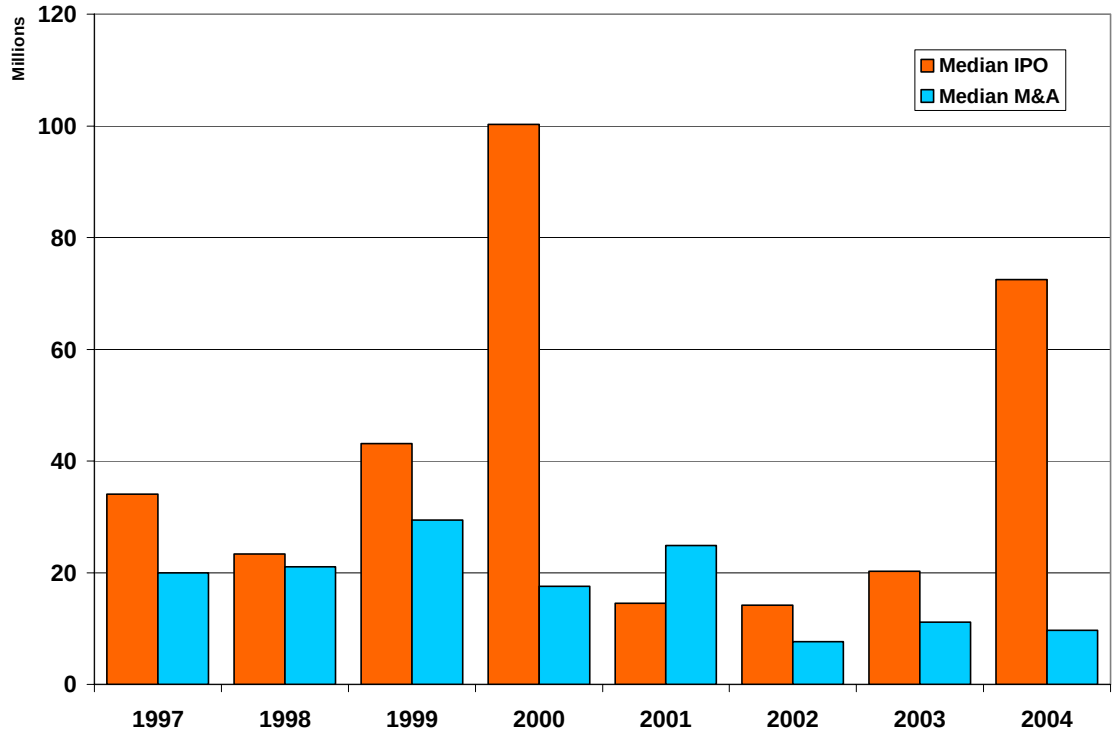
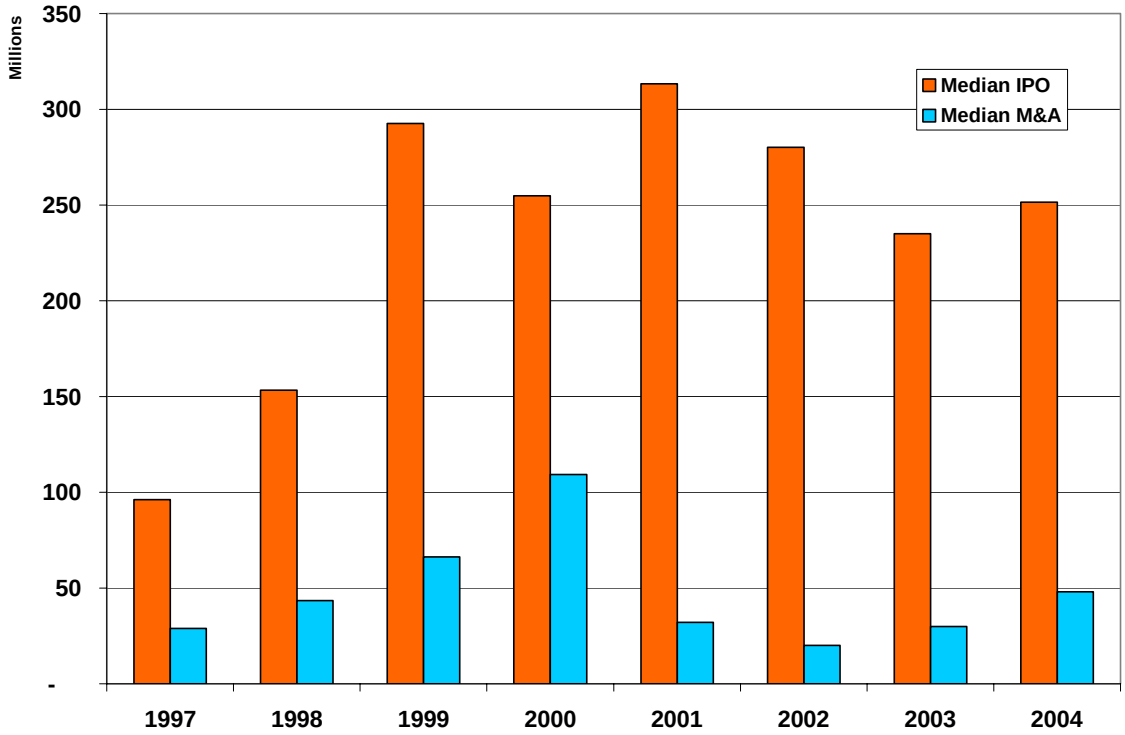


Chart 16B: Median Value of Exits by Year – US



Charts 17A and B examine the time trends of the median time to exit. An interesting trend is that at the height of the dotcom bubble, companies were particularly young at the time of exit. However, as the bubble burst, the median age of companies rose dramatically. This trend is apparent not only for the US, but also for Canada.

Chart 17A: Median Time from Founding to Exit, by Exit Year – Canada

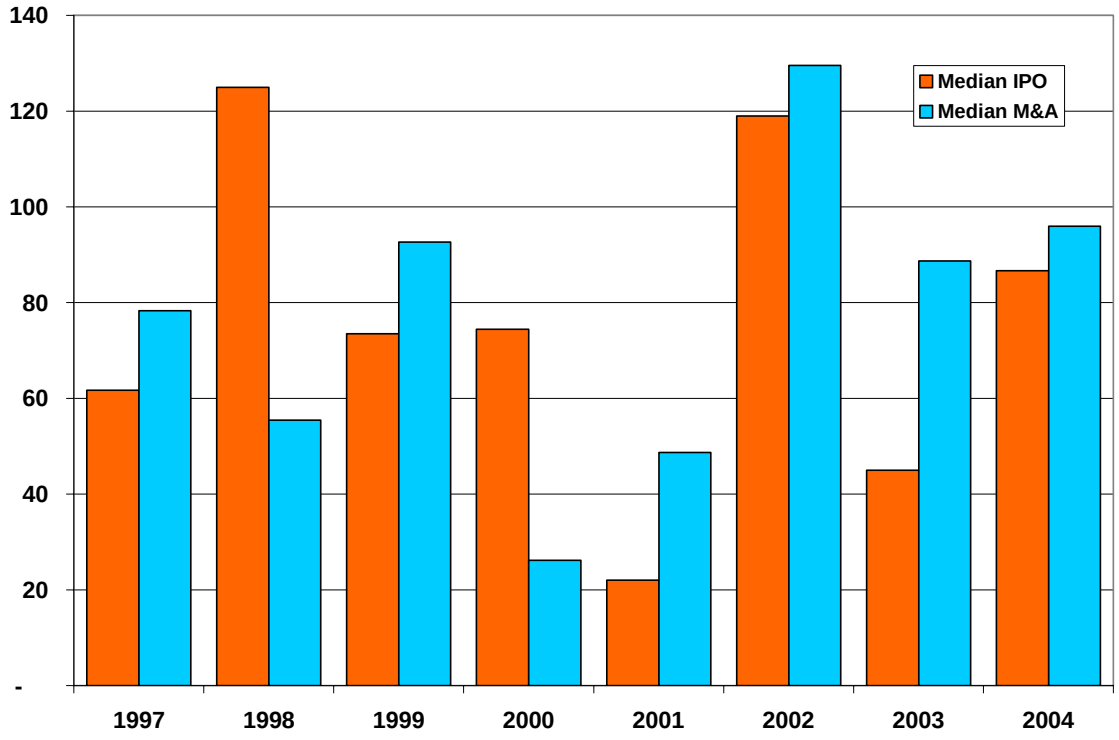
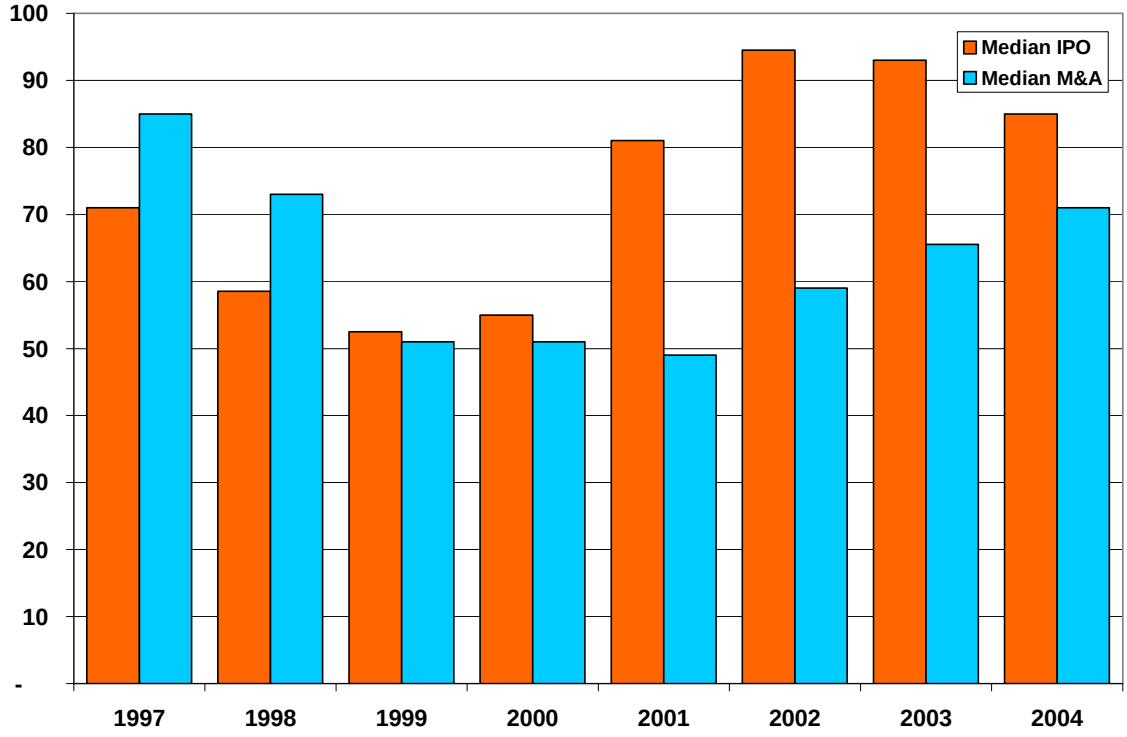


Chart 17B: Median Time from Founding to Exit, by Exit Year – US



5. Conclusion

This study is the first to compare the exit values of venture capital backed companies in Canada and the US. Our results challenge the notion that the Canadian venture capital market is significantly behind that of the US. While it is true that total and average exit values are smaller in Canada, our analysis shows that once we account for the different sizes of the two economies, the Canadian venture capital market performs surprisingly well and, if anything, better than the US.

Our analysis has several important policy implications. First, in evaluating the efficiency of a venture capital market it is important to go beyond the measurement of inputs (i.e. beyond just venture capital investments). Our analysis provides one method of measuring the most critical output in the venture capital market, namely the value created by its companies. A second important policy implication of our analysis is that in evaluating the performance of a venture capital market it is important to consider not only the successes from initial public offerings, but also from acquisitions of venture-backed enterprises. Finally our analysis suggests that any performance evaluation also needs to incorporate proper benchmarks. In addition to measuring the total value created, it is important to benchmark these values against their inputs, such as the amount of venture capital investment, or the amount of relevant R&D spending.

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Appendix I: Industry Classifications

NAIC codes for Energy and Sustainable Technology

NAIC	Description
211111	Crude Petroleum and Natural Gas Extraction
211112	Natural Gas Liquid Extraction
212111	Bituminous Coal and Lignite Surface Mining
212112	Bituminous Coal Underground Mining
212291	Uranium-Radium-Vanadium Ore Mining
213111	Drilling Oil and Gas Wells
213112	Support Activities for Oil and Gas Operations
221110	Other Clean Energy
221111	Hydroelectric Power Generation
221112	Fossil Fuel Electric Power Generation
221113	Nuclear Electric Power Generation
221119	Other Electric Power Generation
221121	Electric Bulk Power Transmission and Control
221122	Electric Power Distribution
221210	Natural Gas Distribution
221310	Water Supply and Irrigation Systems
221320	Sewage Treatment Facilities
221330	Steam and Air-Conditioning Supply
324110	Petroleum Refineries
333411	Air Purification Equipment Manufacturing
333611	Turbine and Turbine Generator Set Units Manufacturing
333612	Speed Changer, Industrial High-Speed Drive, and Gear Manufacturing
333613	Mechanical Power Transmission Equipment Manufacturing
333618	Other Engine Equipment Manufacturing
333911	Pump and Pumping Equipment Manufacturing
333912	Air and Gas Compressor Manufacturing
333913	Measuring and Dispensing Pump Manufacturing
333995	Fluid Power Cylinder and Actuator Manufacturing
333996	Fluid Power Pump and Motor Manufacturing
335311	Power, Distribution, and Specialty Transformer Manufacturing
335312	Motor and Generator Manufacturing
335911	Storage Battery Manufacturing
335912	Primary Battery Manufacturing
335931	Current-Carrying Wiring Device Manufacturing
423930	Recyclable Material Merchant Wholesalers
424710	Petroleum Bulk Stations and Terminals
424720	Petroleum and Petroleum Products Merchant Wholesalers (except Bulk Stations and Terminals)
447110	Gasoline Stations with Convenience Stores
447190	Other Gasoline Stations
454311	Heating Oil Dealers
454312	Liquefied Petroleum Gas (Bottled Gas) Dealers
454319	Other Fuel Dealers

486110	Pipeline Transportation of Crude Oil
486210	Pipeline Transportation of Natural Gas
486910	Pipeline Transportation of Refined Petroleum Products
486990	All Other Pipeline Transportation
541620	Environmental Consulting Services
562111	Solid Waste Collection
562112	Hazardous Waste Collection
562119	Other Waste Collection
562211	Hazardous Waste Treatment and Disposal
562212	Solid Waste Landfill
562213	Solid Waste Combustors and Incinerators
562219	Other Nonhazardous Waste Treatment and Disposal
562910	Remediation Services
562920	Materials Recovery Facilities
562991	Septic Tank and Related Services
562998	All Other Miscellaneous Waste Management Services
813312	Environment, Conservation and Wildlife Organizations
924110	Administration of Air and Water Resource and Solid Waste Management Programs
924120	Administration of Conservation Programs

NAIC Codes for Information and Communication Technology

NAIC	Description
333295	Semiconductor Machinery Manufacturing
334111	Electronics Computer Manufacturing
334112	Computer Storage Device Manufacturing
334113	Computer Terminal Manufacturing
334119	Other Computer Peripheral Equipment Manufacturing
334210	Telephone Apparatus Manufacturing
334220	Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing
334290	Other Communications Equipment Manufacturing
334413	Semiconductor and Related Device Manufacturing
334611	Software Reproducing
335921	Fiber Optic Cable Manufacturing
335929	Other Communication and Energy Wire Manufacturing
423430	Computer and Computer Peripheral Equipment and Software Merchant Wholesalers
443120	Computer and Software Stores
511210	Software Publishers
516110	Internet Publishing and Broadcasting
517110	Wired Telecommunications Carriers
517211	Paging
517212	Cellular and Other Wireless Telecommunications
517310	Telecommunications Resellers
517410	Satellite Telecommunications
517910	Other Telecommunications
518111	Internet Service Providers
518112	Web Search Portals
518210	Data Processing, Hosting, and Related Services
519190	All Other Information Services
541511	Custom Computer Programming Services
541512	Computer Systems Design Services
541513	Computer Facilities Management Services
541519	Other Computer Related Services
611420	Computer Training
811212	Computer and Office Machine Repair and Maintenance
811213	Communication Equipment Repair and Maintenance

NAIC Codes for Life Sciences

NAIC	Description
325221	Cellulosic Organic Fiber Manufacturing
325222	Noncellulosic Organic Fiber Manufacturing
325411	Medicinal and Botanical Manufacturing
325412	Pharmaceutical Preparation Manufacturing
325413	In-Vitro Diagnostic Substance Manufacturing
325414	Biological Product (except Diagnostic) Manufacturing
334510	Electro-medical and Electrotherapeutic Apparatus Manufacturing
339110	Medical Supplies
339112	Surgical and Medical Instrument Manufacturing
339113	Surgical Appliance and Supplies Manufacturing
339114	Dental Equipment and Supplies Manufacturing
339115	Ophthalmic Goods Manufacturing
339116	Dental Laboratories
423450	Medical, Dental, and Hospital Equipment and Supplies Merchant Wholesalers
423460	Ophthalmic Goods Merchant Wholesalers
424210	Drugs and Druggists' Sundries Merchant Wholesalers
446110	Pharmacies and Drug Stores
446130	Optical Goods Stores
541380	Testing Laboratories
621111	Offices of Physicians (except Mental Health Specialists)
621112	Offices of Physicians, Mental Health Specialists
621210	Offices of Dentists
621310	Offices of Chiropractors
621320	Offices of Optometrists
621330	Offices of Mental Health Practitioners (except Physicians)
621340	Offices of Physical, Occupational and Speech Therapists, and Audiologists
621391	Offices of Podiatrists
621399	Offices of All Other Miscellaneous Health Practitioners
621410	Family Planning Centers
621420	Outpatient Mental Health and Substance Abuse Centers
621491	HMO Medical Centers
621492	Kidney Dialysis Centers
621493	Freestanding Ambulatory Surgical and Emergency Centers
621498	All Other Outpatient Care Centers
621511	Medical Laboratories
621512	Diagnostic Imaging Centers
621610	Home Health Care Services
621910	Ambulance Services
621991	Blood and Organ Banks
621999	All Other Miscellaneous Ambulatory Health Care Services
622110	General Medical and Surgical Hospitals
622210	Psychiatric and Substance Abuse Hospitals
622310	Specialty (except Psychiatric and Substance Abuse) Hospitals
623110	Nursing Care Facilities

623210	Residential Mental Retardation Facilities
623220	Residential Mental Health and Substance Abuse Facilities
623311	Continuing Care Retirement Communities

Mapping from Thomson's Venture Economics "Industry Sub Group 2" classification to our industry classification

EST stands for "Energy and Sustainable Technology"
ICT stands for "Information and Communication Technology"

Thomson Industry Sub Group 2	Our sector definition
Agricultural, Forestry	Other
Batteries	EST
Biosensors	Life Sciences
Biotech Equipment	Life Sciences
Biotech Other	Life Sciences
Biotech Research	Life Sciences
Biotech-Animal	Life Sciences
Biotech-Human	Life Sciences
Biotech-Industrial	Life Sciences
Business Services	Other
Chemicals and Materials	Other
Comm. Other	ICT
Commer Comm.	ICT
Computer Other	ICT
Computer Peripherals	ICT
Computer Programming	ICT
Computer Services	ICT
Computer Software	ICT
Computers Hardware	ICT
Construction	Other
Consumer Products	Other
Consumer Services	Other
Consumer, Other	Other
Data Comm.	ICT
Digital Imaging and Computer Graphics	ICT
E-Commerce Technology	ICT
Electronics Equipment	Other
Electronics, Other	Other
Energy, Alternative	EST
Energy, Coal	EST
Energy, Conservation	EST
Energy, Enhanced Recovery	EST
Energy, Other	EST
Entertainment and Leisure	Other
Facsimile Trans	Other
Fiber Optics	ICT

Financial Services	Other
Food and Beverage	Other
Industrial Automation	Other
Industrial Equipment	Other
Industrial Products, Other	Other
Industrial Services	Other
Internet Communications	ICT
Internet Content	ICT
Internet Ecommerce	ICT
Internet Programming	ICT
Internet Services	ICT
Internet Software	ICT
Laser Related	ICT
Manufacturing	Other
Med/Health Products	Life Sciences
Med/Health Services	Life Sciences
Medical Diagnostics	Life Sciences
Medical Therapeutics	Life Sciences
Oil & Gas Exploration	EST
Optoelectronics	ICT
Other	Other
Pharmaceutical	Life Sciences
Pollution and Recycling	EST
Power Supplies	EST
Retailing Related	Other
Satellite Comm	ICT
Scientific Instrumentation	ICT
Semiconductors/Other Electronics	ICT
Telephone Rel.	ICT
Transportation	Other
Turnkey Integrated Systems and Solutions	Other
Utilities	EST
Wireless Communications	ICT

Appendix II: Extensive data tabulation

Table A1: Total Exit Value by Exit Type: Canadian Provinces

	IPO (US$m)	M&A (US$m)	Total (US$m)
Canadian Provinces			
Alberta	2,723	1,066	3,789
British Columbia (BC)	2,102	2,098	4,201
Manitoba	423	517	940
New Brunswick	278	598	877
Newfoundland	6	2	8
Nova Scotia	138	741	879
Ontario	6,275	7,683	13,958
Quebec	3,271	1,732	5,002
Saskatchewan	8	76	84
Canada Total	**15,224**	**14,514**	**29,737**

Table A1 (continued): Total Exit Value by Exit Type: US States

US States	IPO (US$m)	M&A (US$m)	Total (US$m)
Alabama	-	54	54
Arizona	614	450	1,064
Arkansas	-	40	40
California	104,854	62,020	166,874
Colorado	5,652	3,017	8,669
Connecticut	4,522	1,103	5,626
D. of Columbia	1,201	296	1,497
Delaware	77	-	77
Florida	5,376	2,262	7,638
Georgia	7,609	2,720	10,328
Hawaii	314	23	337
Idaho	66	43	109
Illinois	4,484	3,377	7,860
Indiana	76	942	1,018
Iowa	-	23	23
Kansas	533	95	628
Kentucky	137	734	871
Louisiana	642	34	676
Maine	49	-	49
Maryland	6,711	2,176	8,887
Massachusetts	13,166	22,265	35,432
Michigan	679	1,142	1,821
Minnesota	4,218	2,385	6,602
Mississippi	-	216	216
Missouri	739	737	1,475
Montana	202	3	206
Nebraska	267	10	277
Nevada	232	-	232
New Hampshire	469	288	757
New Jersey	5,161	5,723	10,884
New York	17,159	3,374	20,533
North Carolina	5,804	4,521	10,325
North Dakota	220	-	220
Ohio	234	1,727	1,961
Oklahoma	103	1,112	1,215
Oregon	968	432	1,400
Pennsylvania	5,929	3,048	8,977
Puerto Rico	-	75	75
Rhode Island	-	15	15
South Carolina	-	671	671
Tennessee	1,931	825	2,756
Texas	15,574	10,286	25,860
Unknown	-	207	207
Utah	252	656	908
Vermont	207	28	235
Virginia	8,741	3,769	12,511
Washington	9,935	1,694	11,629
Wisconsin	813	831	1,643
US Total	**235,920**	**145,448**	**381,367**

Table A2: Summary Statistics for Canadian Provinces and US States (above $1B)

	Total Value of Exits (US$m)	Number of Exits (Total)	Avg. Exit Value (US$m)	Median Exit Value (US$m)	Avg. Time Founding to Exits (Months)	Median Time Founding to Exit (Months)
Canadian Provinces						
Alberta	3,789	60	63	15	39	26
British Columbia	4,201	70	61	18	47	41
Manitoba	940	11	85	18	43	30
New Brunswick	877	8	110	50	95	76
Newfoundland	8	2	4	4	47	47
Nova Scotia	879	7	126	104	36	36
Ontario	13,958	223	63	25	81	46
Quebec	5,002	118	42	16	98	5,002
Saskatchewan	84	10	8	4	154	154
US States						
Arizona	1,064	19	89	52	117	89
California	166,874	1,209	207	101	72	56
Colorado	8,669	90	152	75	90	67
Connecticut	5,626	43	176	97	97	72
D. of Columbia	1,497	11	214	156	193	51
Florida	7,638	65	178	81	121	82
Georgia	10,328	96	178	110	74	59
Illinois	7,860	64	212	97	84	68
Indiana	1,018	10	145	101	99	70
Maryland	8,887	56	254	95	90	68
Massachusetts	35,432	336	159	80	87	68
Michigan	1,821	23	166	86	97	87
Minnesota	6,602	52	194	137	123	107
Missouri	1,475	14	148	135	112	95
New Jersey	10,884	80	202	113	93	76
New York	20,533	147	214	72	88	66
North Carolina	10,325	72	220	99	66	50
Ohio	1,961	34	123	87	181	84
Oklahoma	1,215	10	135	86	71	60
Oregon	1,400	24	108	97	81	59
Pennsylvania	8,977	88	147	52	96	69
Tennessee	2,756	30	138	85	120	97
Texas	25,860	155	259	109	97	63
Virginia	12,511	78	284	116	78	66
Washington	11,629	97	176	100	62	53
Wisconsin	1,643	14	137	32	153	122

Table A2 (continued)

	Ratio to GDP (Per $1k)	Ratio to GERD (Per $1k)	Ratio to BERD (Per $1k)	Ratio to VC Invest (Per $1)	Value over NSDQ (US$m)	Value over TSX (US$m)
Canadian						
Alberta	4.57	460.68	1031.89	21.99	2,098	2,373
British Columbia	5.78	494.24	889.76	3.04	2,130	2,859
Manitoba	4.93	431.29	1282.54	N/A	626	770
New Brunswick	7.92	963.98	4344.49	N/A	378	579
Newfoundland	0.10	10.96	84.01	N/A	6	6
Nova Scotia	6.47	472.66	2511.74	N/A	525	626
Ontario	5.81	285.40	410.20	1.71	6,401	9,305
Quebec	3.96	161.86	261.72	1.17	2,918	3,435
Saskatchewan	0.47	43.26	183.81	N/A	39	53
US States						
Arizona	0.82	41.95	52.56	0.74	513	N/A
California	16.31	407.99	494.48	1.89	82,505	N/A
Colorado	6.41	261.69	351.70	1.10	4,330	N/A
Connecticut	4.37	156.74	175.99	1.97	3,259	N/A
D. of Columbia	1.96	0.00	0.00	10.68	900	N/A
Florida	4.43	205.67	299.53	1.13	3,857	N/A
Georgia	2.11	475.87	830.32	2.75	5,479	N/A
Illinois	0.65	86.93	105.99	1.50	4,033	N/A
Indiana	5.92	40.29	48.73	4.81	610	N/A
Maryland	16.29	133.30	591.33	2.69	4,599	N/A
Massachusetts	0.68	348.42	456.99	1.75	16,991	N/A
Michigan	4.38	12.92	13.84	3.19	851	N/A
Minnesota	1.03	201.15	232.26	1.90	3,218	N/A
Missouri	3.84	79.23	109.64	1.40	693	N/A
New Jersey	3.33	109.24	119.28	1.67	6,833	N/A
New York	4.60	190.25	241.00	1.66	10,315	N/A
North Carolina	0.66	259.94	352.82	2.92	5,405	N/A
Ohio	1.67	32.41	41.48	1.31	1,281	N/A
Oklahoma	1.57	237.33	449.51	5.22	617	N/A
Oregon	14.56	87.60	113.04	1.01	589	N/A
Pennsylvania	2.79	116.77	144.81	1.41	4,020	N/A
Tennessee	1.90	165.58	251.20	1.73	1,586	N/A
Texas	4.42	285.90	367.27	2.50	13,686	N/A
Virginia	5.85	316.59	608.73	2.15	6,664	N/A
Washington	6.56	151.17	171.92	1.77	5,559	N/A
Wisconsin	1.14	79.06	106.16	2.78	896	N/A

Table A3: Sector Statistics for Canadian Provinces and US States (above $1B)

Total Exit Value	EST (US$m)	ICT (US$m)	Life Sciences (US$m)	Other (US$m)
Canadian Provinces				
Alberta	2,843	402	115	429
British Columbia	101	3,045	413	642
Manitoba	-	478	-	462
New Brunswick	-	299	-	577
Newfoundland	-	2	-	6
Nova Scotia	-	485	-	394
Ontario	1,006	8,698	327	3,927
Quebec	45	1,401	1,501	2,056
Saskatchewan	16	18	3	47
US States				
Arizona	159	242	185	477
California	345	132,816	22,089	11,625
Colorado	1,408	5,321	1,245	695
Connecticut	-	3,656	1,243	727
D. of Columbia	-	1,254	163	80
Florida	22	5,109	1,273	1,234
Georgia	46	8,270	1,003	1,010
Illinois	549	4,185	309	2,817
Indiana	-	50	36	932
Maryland	988	6,451	704	744
Massachusetts	232	28,360	4,239	2,601
Michigan	-	978	398	445
Minnesota	-	4,789	742	1,071
Missouri	-	168	361	947
New Jersey	5	7,173	1,749	1,958
New York	280	14,202	1,750	4,301
North Carolina	94	7,585	1,723	924
Ohio	84	1,470	262	145
Oklahoma	677	50	191	297
Oregon	-	1,297	103	-
Pennsylvania	-	4,337	2,819	1,821
Tennessee	-	443	1,556	757
Texas	703	18,603	2,274	4,281
Virginia	-	10,773	1,227	511
Washington	-	9,533	1,562	534
Wisconsin	-	4	793	846

Table A3 (continued)

Median Exit Value	EST (US$m)	ICT (US$m)	Life Sciences (US$m)	Other (US$m)
Canadian Provinces				
Alberta	31	4	25	19
British Columbia (BC)	29	18	14	23
Manitoba	-	27	-	8
New Brunswick	-	21	-	117
Newfoundland	-	2	-	6
Nova Scotia	-	105	-	32
Ontario	18	28	19	24
Quebec	12	21	14	20
Saskatchewan	8	9	3	5
US States				
Arizona	159	32	185	57
California	12	92	118	132
Colorado	704	59	93	70
Connecticut	-	153	28	47
D. of Columbia	-	156	163	80
Florida	22	113	298	49
Georgia	46	109	89	142
Illinois	275	63	80	102
Indiana	-	25	36	166
Maryland	988	45	170	177
Massachusetts	116	90	50	55
Michigan	-	40	199	86
Minnesota	-	146	57	141
Missouri	-	14	141	392
New Jersey	5	120	112	108
New York	280	50	73	116
North Carolina	94	101	100	91
Ohio	84	88	131	42
Oklahoma	338	50	95	81
Oregon	-	80	103	-
Pennsylvania	-	48	77	28
Tennessee	-	73	97	38
Texas	100	146	122	95
Virginia	-	94	262	256
Washington	-	102	98	64
Wisconsin	-	4	356	32