

# THE VALUATION OF EARLY-STAGE INVESTMENTS IN NEW ZEALAND



June 2011

Research Report

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# FOREWORD

While the early stage company investment market in New Zealand is still in a fledgling state, it has made significant progress in the last 10 years. Angel investors and venture capital funds have provided equity funding to early stage New Zealand businesses of approximately \$900 million since 2004.

Kiwi angel investors have been investing at world-class rates since 2006, with the annual number of deals increasing steadily from 30 to 103 in 2010 and the capital invested from NZ\$22 million to NZ\$53 million over the same period. This investment rate compares favorably to the most active regions of similar population in the US (including the Boston metropolitan area, arguably the leading area of angel investment in the US outside of Silicon Valley) and elsewhere. Since large exits take nearly a decade to mature, it is too early to measure returns, but most funded companies are surviving and many are doing quite well. It is my opinion that Kiwi angels will be rewarded nicely over the next five years or so.

Databases on investment in startup ventures are rare anywhere in the world, especially for angel investors. It is quite difficult to ascertain typical terms and conditions for angel deals. This is the first of a series of planned reports on this sector. NZVIF is to be commended for capturing angel and venture capital investment data and for this initial report on the Valuation of Early Stage Investments.

For comparison purposes, seed/startup stage pre-money valuations paid by venture capitalists in the US have averaged just over US\$2 million for the past decade, but, since venture capitalists typically invest at somewhat later stages than do angels, we would expect typical seed/startup angel deals to be priced somewhat lower. In an informal survey of angel leaders in the US I conducted in the summer of 2010, the mid-point pre-money valuation of pre-revenue companies was US\$1.5 million with most groups reporting pricing of US\$1.25 million to \$1.75 million. These groups also reported that valuations have fallen over the last few years during the global financial crisis. As an additional data point, I have been investing in seed and startup ventures for over 30 years and have not seen a significant change in pricing over that period. The first time I invested in a startup deal with a pre-money valuation below US\$1 million was in 2009. It seems to cost less to start companies today than at any period in recent history.

The data presented in this report shows that Kiwi angel and other early stage company investors have reported median pre-money valuations of startup companies of \$1.8 million (excluding Biotech and Capital Goods) since 2006. There does not seem to be a trend of decreasing pricing in recent years. I interpret this data to suggest that valuations for early stage companies in New Zealand may be a bit high. Furthermore, I was surprised by the range in seed and startup pricing in New Zealand over the past five years. A few seed and startup deals done at quite high valuations seem to be skewing the data.

One additional observation of the New Zealand angel ecosystem in particular: nearly 40% of Kiwi angel deals are currently being funded as convertible debt, that is, loans that convert to equity based on defined conversion triggers. Some of these securities convert at a fixed valuation and some at a discount to the pricing of round funded by subsequent investors. I have no problem with debt that converts to equity at a reasonable valuation defined in the convertible loan documentation, but I urge angels in New Zealand to refrain from funding future deals with convertible debt in which the valuation at conversion is defined by a valuation set at a subsequent investment round. It is my opinion such deals under-value seed capital and will eventually reduce returns for angels funding those earlier investment rounds.

My bottom line is that I find that Kiwi angels are very active investors and are generally funding deals at reasonable valuations. Furthermore, I applaud NZVIF for beginning to collate, interpret and disseminate this valuable information to the early stage company investment community.

Bill Payne  
June 15, 2011

# EXECUTIVE SUMMARY

The early stage company investment market in New Zealand is still in a fledgling state but has made significant progress in the last 10 years. This market is currently categorised by approximately 8 professional venture capital funds and 19 angel networks<sup>1</sup> and angel funds<sup>2</sup>. The majority of these groups made their first investment within the last 10 years and are responsible for providing equity funding to early stage New Zealand businesses of approximately \$900 million since 2004. These two groups are responsible for the majority of valuations of early stage businesses included in this research report.

Separately, the Young Company Finance Index (YCFI)<sup>3</sup> also shows that approximately \$475 million has been invested into seed and early-stage companies between 2004 and 2010. The YCFI records investment by angel networks and angel funds, venture capital funds as well as investment arranged by NZTE Escalator brokers and so represents the more “formal” part of New Zealand’s early-stage investment market. In addition to this, a significant amount of other angel investment is made each year by individuals and organisations (including a universally recognised group known as the 3 F’s – Friends, Family and Fools). While there is no available data yet that can tell us how much of this “other” angel investment is going on, anecdotal evidence from other countries suggests that these more informal sources of angel investment could at least equal or exceed the investment from the formal angel sources noted above.

At this point in time there also exists very little comprehensive data on the valuations that investors have ascribed to seed and early-stage companies in New Zealand. While the exceptional Trade Me exit<sup>4</sup> undoubtedly captured investors’ imaginations, the market by and large lacks observable data on the investee company failure rates, the investment returns being achieved for this type of investment, the amount of capital required to fund investee companies through to an exit, the likely holding period for these investments, or the required rate of return investors should be aiming for (given all of the above) when investing into early stage New Zealand companies.

This research report sets out to address that gap in valuation information, and is the first in what will become a regular series. This report is generalist in nature, given the small datasets and, in particular, the lack of significant data on “exits” from investee companies. Subsequent reports will look to provide more insight into the issues raised in this analysis as the dataset is added to.

The report uses data collected from funding rounds invested into 186 companies between early 2004 and December 2010. These companies have been selected from NZVIF’s current portfolio, transactions publicised in YCFI, together with other New Zealand early stage transactions that have been identified by NZVIF. The research is being conducted to:

- Provide empirical valuation data to the early stage investment market that summarises actual valuations being paid for investment into early stage companies.
- Better understand if early stage investors are correctly pricing the opportunities they invest into.
- Better understand the returns that are being generated from early stage company investing.

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<sup>1</sup> Refer to Definitions section

<sup>2</sup> Refer to Definitions section

<sup>3</sup> Young Company Finance Index - Issue 10 March 2011

<sup>4</sup> Trade Me was sold to Fairfax Group in June 2005 for \$750 million

- Provide a catalyst for further research and debate on issues surrounding the pricing and returns of early stage investments in New Zealand.

The dataset shows that the median, seed, start-up, and early expansion pre-money valuations were \$1.08m, \$2.4m and \$7.45m respectively. There is, however, substantial variance across industry sectors. The Software and Services industry sector has the lowest median pre-money valuation at seed stage, at \$500,000; rising to \$1.85 million median pre-money valuation at start-up stage. The Biotech, Capital Goods, and Energy sectors have median pre-money valuations of \$2.5m Seed, \$3.9m Start-up and \$10.7m early expansion. Stripping out the distorting effect of these sectors from the data has a substantial effect on the median pre-money valuations on the balance of the dataset.

Across 2004 and 2010, the median, pre-money valuations (excluding Biotech, Capital Goods and Energy) are \$522,000 for Seed Stage companies, \$1.8m for Start-ups and \$6.26m for Early Expansion companies. The averages (again, excluding the Biotech, Capital Goods and Energy sectors) being \$716,000, \$2.7m and \$13.8m respectively. We note here that median values in this context are the preferred method for reporting this data.

While having collated valuation information of this scale is useful, we note that there is a very real limit to the degree to which we can draw hard and fast insights from the data at this stage. Not least, there is simply not enough data yet relating to “exit” values (i.e. realisations of investment returns for shareholders through some form of sale of a company’s shares or its assets) to enable us to analyse the critical links between initial investment valuations, the valuations (upwards and downwards) of a company as it progresses through various stages of development, and the ultimate value of that company in terms of the final investment returns earned by investors. As the dataset is added to over time, NZVIF will be able to provide increasingly better data, including “exit” data, which will help give us a more precise understanding of these important areas.

There are four central observations though that we would like to highlight in this first report.

**1. We do not have an accurate picture as yet of the relationships between initial early-stage company valuations and the investment returns ultimately being achieved by investors on exit.**

Of the 186 companies in the dataset only 16 exits have occurred.

Of these 16 exits, eight were through trade or private sale, 5 through liquidation and three were written off from an investor portfolio perspective (although this does not always mean that the company has ceased to exist). Due to this very limited exit information (both successful and unsuccessful), it is not clear yet whether early stage investors in New Zealand are investing at valuations which properly take account of the significant underlying risks associated with early-stage company investment. This will clearly be a key area of focus as this dataset matures and more exits occur.

The pre-money valuation uplift between investment rounds represents a current view of a company’s progress made and outlook going forward. History shows us that a higher valuation in subsequent investment rounds is not necessarily an indication of the future outcomes for a business. Public and private capital markets are full of so called “market darlings” who have increased their valuations across investment rounds, only to see them diminish in the future for a variety of reasons including:

- Technology failure or obsolescence
- The arrival of better/stronger competitors
- Inability to fund rapid growth
- Inability to scale the business
- Management disagreements and break-ups

This report shows valuation uplifts across the dataset occurring at each stage of investment. Pre-money valuations are 3.5 times higher at start-up stage than in seed stage, 3.5 times higher in early expansion than start-up and 4.3 times higher in expansion over early expansion. These valuation uplifts are a natural consequence of a company's progress through the various stages of its lifecycle and reflect the attainment of commercial milestones and successes along the way. What we can't see at this stage; however, is the effect that these valuation uplifts will have on the final investment returns achieved by investors.

Another point on a similar theme is the existence and frequency of down rounds (a round of financing that is raised at a lower firm valuation than the previous round, including exits at a price less than the previous funding round). Of 255 funding rounds, only 36 were down rounds. This figure is low compared to comparable data in international markets and suggests a reluctance by New Zealand investors to mark valuations down in all but the direst of situations.

It may also be explained by a high frequency of earlier investors leading later investment rounds. Where there are not new investors coming in and setting the price for a subsequent round, early investors will generally avoid a down round and simply do a side-ways round – raising more money at the same pricing as the previous round. It will be interesting to see how this figure evolves over time as greater numbers of companies in the dataset return to the market for follow-on investments and further data from unsuccessful or struggling ventures is provided.

2. **The amount of time it takes for investors to realise returns from an investment is of critical importance to the calculation of their final investment return - and this is particularly so for angel and venture type investment.**

Worldwide, there is much ongoing discussion about the length of time that early stage investments are now taking to reach a liquidity event, the relative absence of IPO's as an exit option, and the implications of this to angel and venture investment market. Within the US venture capital market, time to exit has increased substantially since 2000. Back then it took on average approximately 2.6 years to get a liquidity event. Today, the average, according to the US National Venture Capital Association, is 8.7 years.

This research paper shows the current average holding period (from initial investment to exit) to date, across the dataset, is 4.1 years. This number, in no small part, reflects the fact that a high percentage of seed and start-up company failures tend to occur in the first few years after an investment is made. As has been noted by one experienced US angel investor, "Lemons rot faster than plums ripen."<sup>5</sup> So this 4.1 year figure is of little value in terms of really understanding what the average investment holding period is likely to be for early-stage New Zealand companies.

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<sup>5</sup> Luis Villalobos, Founder of Tech Coast Angels, California, US

The length of the investment holding period has a very significant impact on the investment returns achieved, and so this will be a very important aspect to follow in this dataset over time. Similarly, a better understanding of holding periods will be important to the setting of investor expectations around the liquidity of their investments and the duration and nature of their probable involvement with investee companies.

**3. Generally, investee companies are raising funding frequently and in small amounts. This suggests a drip-fed funding approach to see companies past milestones but which leaves many underfunded.**

On average, time between funding rounds is decreasing as companies move to later funding rounds. While the average months between funding rounds 1 and 2 was 16.3 months for the dataset, this decreases to 11 months between round 4 and 5.

The data shows that the amounts of capital raised is not increasing in later funding rounds, which suggests that many companies are drip feeding capital into their businesses rather than raising ever larger sums. This seems at odds with the capital raising profile that one might expect to see for companies in growth mode, where larger sums would be sequentially required in order to fund ever greater growth. It may be that this is largely a function of New Zealand's constrained early stage capital market. Historically, the early-stage capital market in New Zealand has been such that companies have not generally had access to large (or even moderately large) amounts of capital from angel or venture capital sources. The common practice for New Zealand early-stage companies, therefore, is to raise funds to get them past near-term milestones (which are often focused on areas such as sales and product development) rather than seeking to fund the whole business for a more extended (e.g. two or three year) period.

One of the side effects of this is that we have relatively high numbers of underfunded companies where, at best, success has to be deferred while follow-on funding is found.

**4. A portfolio approach to early stage investing is crucial in order to maximise the chances of generating appropriate investment returns but we are only just beginning to see increased uptake of this approach in the New Zealand market.**

Under a modern angel investment portfolio approach, the pre-money valuation paid for an individual company impacts on the risk associated with the whole portfolio. Each investment, therefore, needs to have a potential return that will offset the risk from investment into the other portfolio companies. This is an approach that professional venture capital funds take.

From NZVIF's own observations across the early stage investment market in New Zealand, we see that this portfolio approach is the exception rather than the rule currently for New Zealand angel investors. It is still common for our angels to invest in one or maybe two early stage companies, have a poor investment outcome with those and then give up on this type of investing altogether.

Looking at how other international angel markets have developed, we expect that more and more New Zealand angels will seek to take a portfolio approach to their investments. The growth of existing, and the development of new, angel networks and funds in New Zealand will play an important role in this by providing investors with regular and diverse deal flow.

# INTRODUCTION

Historically, early stage angel investment in particular in New Zealand has been characterised by individual investors leading individual deals, many of whom are making early stage investments for the first time. Over the last 4 years in particular, we have seen greatly increased levels of angel investment through organised angel networks and angel funds. The YCFI data shows that syndication of angel investment deals has increased from 27% of all deals in 2004, to 47% of all deals by 2010.

The source of capital is only one of many hurdles and challenges a new company faces at these embryonic and early stages in its life cycle. The evidence shows that it is a hard (and potentially long) road for the company to evolve into a profitable and successful going concern. NZVIF's Seed Co-Investment Fund, for instance, models an approximate 50% failure rate on its overall portfolio of up to 100 companies<sup>6</sup>, which is in line with international best practice in this area. A balanced approach to early stage company valuation is, therefore, essential to protect and reward the founder's investment, be it intellectual, sweat equity or otherwise, with the requirement of the investor to achieve a level of return that is commensurate to the level of risk they are taking.

Valuing these early stage companies is challenging given their highly uncertain nature and can definitely be viewed as an art rather than a science. Unsubstantiated revenue and profit prospects and the tendency for parties on either side of the transaction to have good reason to argue the number up or down according to their viewpoint ensures that this will inevitably be the case.

Consider a firm that has a unique business concept, significant growth opportunities, and no real positive cash flow to show the profit potential of the venture. Valuing such high growth, high-uncertainty firms is a major challenge faced by angel and venture capital investors around the world.

Valuing a company too low means possible over-dilution of the founder's ownership stake, or even, if investors and the founder don't agree on pricing, lead to the company not being financed at all. Raising money at too high a valuation may mean that investors do not have an ownership interest that properly reflects the investment risks that they are taking. It also increases the risks of subsequent "down rounds", and will definitely have a negative impact on the investment returns that investors ultimately achieve. Again, it may also lead to the company not being financed at all if the entrepreneur is not willing to accept a lower valuation than they would like.

Most New Zealand angel investors have yet to develop a structured portfolio approach to angel investment as is common in more established overseas' markets. In the US, the Ewing Marion Kauffman Foundation and the Angel Capital Education Foundation conducted the largest study on the financial returns of angel investors in North America. The research, conducted by Professor Rob Wiltbank at Willamette University (Wiltbank Study), allows the conclusion to be drawn that an angel investor needs a portfolio of more than 10 early stage company investments to ensure success and that 15 would be preferable to maximize return expectations.<sup>7</sup> Are New Zealand angels, therefore, paying a premium for the one (or small handful) of deals they are typically investing in at present?

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<sup>6</sup> SCIF portfolio as at 1 June 2011 stands at 59 investee companies – the target profile for the portfolio is approximately 100 – 120 companies

<sup>7</sup> Wiltbank, R & Boeker, W, "Returns to Angel Investors" (2007), Kaufmann Foundation, Angel Capital Education Foundation



Given the relative infancy of early stage investment market in New Zealand, the stakes to create a sustainable angel and venture investment model are high. Our view is that the value proposition of the angel/venture capital industry in New Zealand toward its two clients - investors and entrepreneurs – must remain robust and workable for both and develop in a disciplined way. Entrepreneurs must receive sufficient funding and expertise to grow their ventures, while investors must receive sufficient returns to justify investing in such an illiquid and high risk asset class.

The ongoing collection and analysis of valuation and return data represented in this report will, over time, make an invaluable contribution to the market's understanding of, and approach to, this fundamentally important value proposition.

# VALUATION DATA ANALYSIS

This preliminary research paper is the first of a series to be completed by NZVIF analysing valuations paid by investors of early stage businesses in New Zealand, investment holding periods and the investment returns achieved.

NZVIF has collated a dataset representing 255 investment rounds relating to 186 early-stage companies. These companies have been selected from NZVIF's current investment portfolio, transactions publicised in YCFI, together with other early stage company transactions that have been identified by NZVIF.

The research is being conducted to:

- Provide empirical valuation data to the early stage investment market that summarises actual valuations being paid for investment into early stage companies.
- Better understand if early stage investors are overpaying for the opportunities they invest into.
- Better understand the returns that are being generated from early stage investing.
- Provide a catalyst for further research and debate on issues surrounding the pricing and returns of early stage investments in New Zealand.

Initial findings on the following areas are presented below:

1. Analysis of Pre-Money Valuations - by Industry.
2. Analysis of Pre-money Valuations – by Time.
3. Valuation Uplift.
4. Time between funding rounds.
5. Down Rounds.
6. Exits.
7. Holding Periods.

## 1. Analysis of Pre-Money Valuations - By Industry

Detailed in Table 1 are the median and average pre-money valuations of investments made by industry group and stage of investment. The data consists of 255 complete investment rounds made between 2004 and 2010.

Table 1: Pre-Money Valuations by Industry

Industry	Median Pre-Money Value						Average Pre-Money Value		
	Seed	No. of Deals	Start Up	No. of Deals	Early Expansion	No. of Deals	Seed	Start Up	Early Expansion
Capital Goods	2,699,823	3	4,240,785	14	13,675,823	4	3,384,385	6,510,212	12,022,793
Commercial Services & Supplies	-	-	500,000	4	400,000	1	-	803,333	400,000
Consumer Durables & Apparel	-	-	4,101,481	4	-	-	-	5,675,741	-
Energy	-	-	8,146,442	1	-	1	-	8,146,442	-
Food, Beverage & Tobacco	-	-	1,750,000	2	3,682,755	4	-	1,750,000	3,656,074
Health Care Equipment & Services	1,200,980	3	3,607,165	6	21,035,057	4	1,230,327	4,328,222	26,862,858
Materials	571,936	2	6,400,000	1	-	-	571,936	6,400,000	-
Media	-	-	1,500,001	4	-	-	-	1,583,334	-
Pharma, Biotech & Life Sciences	2,543,750	21	3,919,658	28	10,738,882	17	3,090,927	9,350,561	18,196,752
Semiconductors & Equipment	-	-	2,600,000	1	-	-	-	2,600,000	-
Software & Services	500,000	13	1,855,006	55	6,825,000	22	522,254	2,525,899	14,621,051
Technology Hardware & Equipment	1,233,627	4	1,999,996	16	6,682,041	4	1,037,378	2,395,565	6,511,930
Telecommunication Services	-	-	865,059	1	-	-	-	865,059	-
<b>All industries</b>	<b>1,081,395</b>	<b>46</b>	<b>2,405,863</b>	<b>137</b>	<b>7,450,860</b>	<b>57</b>	<b>1,974,702</b>	<b>4,486,855</b>	<b>14,773,528</b>

The following observations can be made from the data:

- Median values tend to be lower than average values. This is because some high transaction values skew average values upwards. In many cases median values may be more relevant than average values.
- The median seed, start-up, and early expansion valuations were \$1.08m, \$2.4m and \$7.45m respectively, however, there is substantial variance across the various industry sectors.
- Software and Services has the lowest median pre-money value at seed stage of \$500k. This represents 46% of the median value for all industries. By start-up stage, Software and Services, had increased to \$1.85m (77% of the median for all industries) indicating a significant upward movement in value.
- Software and Services may have a lower pre-money seed valuation compared to other sectors due to its low capital intensity and associated lower barriers to entry. Investors may be pricing lower valuations to account for the increased risk that the investment won't progress to later stages.
- As expected Biotech (Pharmaceuticals, Biotechnology and Life Sciences), Capital Goods and Energy attracted the largest pre-money valuations. This is due to the highly capital intensive nature of these industries and associated risk/reward profile.

## 2. Analysis of Pre-Money Valuations – By Time

The table and graphs below track changes in pre-money valuations for all industries (except Biotech and Capital Goods) between 2004 and 2010. We have excluded Biotech and Capital Goods due to their higher valuations and distorting effect on the rest of the data.

The data shows a clear upward trend in average pre-money valuations for start-ups between 2004 – 2010. While the median values for start-ups have remained flat to slightly down from 2004 and 2010, average values have increased more aggressively.

This is primarily due to an increase in higher value early stage deals being completed from 2007 – 2010, and is demonstrated in Figure 1 and Figure 2 below.

The data shows, however, that these seed stage deals were made predominantly by venture capital funds (which tend to invest in higher value investment opportunities), and the relatively small sample size for seed deals may also account for the variation in pre-money valuations between years.

### Effect of Exit Price on Early Stage Valuation

The eventual required sale price of a company is affected by the required return by a portfolio investor.

Given the large number of investment failures, a portfolio investor targets returns on each asset high enough to offset the inevitable non-performing assets in their portfolio. Over-valuing an asset at the initial stages makes achieving satisfactory returns even more difficult.

According to the Wiltbank Study 75% of angel investors Return on Investment (ROI) is made on only 7% of their deals. This implies that angel investors really do need to look for, and occasionally get, "smash hits". One of the key dangers of over-valuing is that a "smash hit" will be turned into a "good investment". This has a negative effect on overall portfolio returns.

In the following example Investor A invests \$500,000 in a company with a pre-money valuation of \$2,000,000. Investor B invests \$500,000 in the same company but with a pre-money valuation of \$4,000,000.

As shown in the table below, the company would have to be sold at double the value for Investor B to achieve the same result as Investor A.

Required Return Multiple	Company Exit Required For Investor A	Company Exit Required For Investor B
1x	\$2,500,000	\$4,500,000
5x	\$12,500,000	\$22,500,000
10x	\$25,000,000	\$45,000,000

It also needs to be kept in mind that the above example does not take into account the effects of dilution of an angel investors shareholding over time. If, as is common, the investors shareholding has been diluted prior to an actual exit, the sale price of the company will need to be even higher in order to generate the level of returns required.

Table 2 also shows very high median pre-money valuations for Early Expansion deals during 2007 and 2008. These high values are generally consistent with the asset price bubble peaking in these years. The data shows a downwards revision of values in 2009 and 2010 following the global financial crisis. The data suggests that later stage opportunities show a higher correlation to general economic conditions than seed and start-up stage opportunities.

*Table 2: Pre-Money Valuations by Time (excludes biotech and capital goods)*

Year	Median Pre-Money Value			Average Pre-Money Value		
	Seed	Start Up	Early Expansion	Seed	Start Up	Early Expansion
2004	240,000	2,037,781	-	240,000	2,816,946	-
2005	-	2,199,718	4,200,000	-	2,214,201	12,139,121
2006	1,213,533	2,355,007	5,767,662	1,107,763	2,303,014	9,456,995
2007	930,000	1,321,084	10,159,142	814,444	2,258,445	19,024,665
2008	534,436	1,818,628	11,955,092	534,436	2,601,134	13,972,205
2009	500,000	2,425,826	5,649,278	503,864	3,103,862	17,605,283
2010	500,000	1,626,250	5,999,990	565,000	3,370,414	7,656,547
<b>Total</b>	<b>522,160</b>	<b>1,805,825</b>	<b>6,262,540</b>	<b>716,985</b>	<b>2,735,719</b>	<b>13,755,176</b>

Table 3 below then shows the number of investment rounds in each year that contributed to the median and average pre-money valuation data in Table 2.

*Table 3: Pre-Money Valuations by Count of Rounds, incl. First and Follow-on (excludes biotech and capital goods)*

Year	Seed			Start Up			Early Expansion			Total Rounds
	Total	1 <sup>st</sup> Round	Follow-on	Total	1 <sup>st</sup> Round	Follow-on	Total	1 <sup>st</sup> Round	Follow-on	
2004	1	1	-	8	4	4	-	-	-	9
2005	-	-	-	5	4	1	3	2	1	8
2006	6	2	4	11	3	8	4	1	3	21
2007	3	3	-	16	9	7	4	2	2	23
2008	1	1	-	18	4	14	6	1	5	25
2009	5	4	1	13	5	8	11	-	11	29
2010	6	6	-	23	11	12	7	2	5	36
<b>Total</b>	<b>22</b>	<b>17</b>	<b>5</b>	<b>94</b>	<b>40</b>	<b>54</b>	<b>35</b>	<b>8</b>	<b>27</b>	<b>151</b>

Figure 1: Median Pre-Money Valuation by Seed/Start-Up (excludes biotech and capital goods)

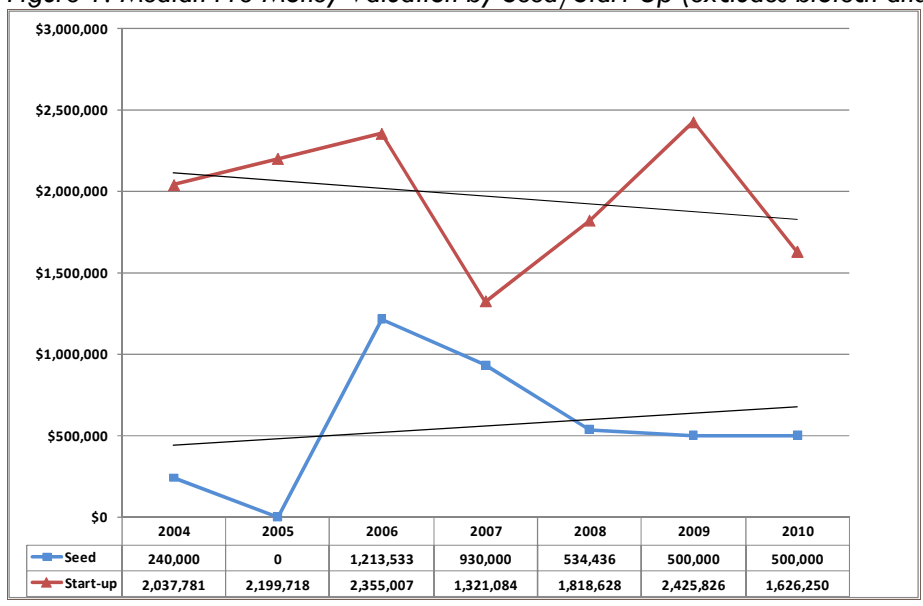


Figure 2 shows the minimum lower quartile, median, upper quartile and maximum pre-money valuations at the start-up stage over time. It also highlights the maximum pre-money valuations of between \$9.0m and \$12.0m paid for start-up companies since 2007. While only one of the four firms that provided these maximum valuations has experienced a subsequent down round, questions arise as to the validity of such high pre-money valuations at the start-up stage, and may indicate that a number of these investments were overpriced.

Another factor to bear in mind, however, is that investments may well have re-pricing mechanisms (such as share price ratchets or anti-dilution rights) included in the investment terms. As such, headline investment figures are not necessary set in stone and may, over time, be subject to these contractual re-pricing mechanisms. We can't, therefore, just assume that a high headline valuation figure necessarily means that an investment was overpriced.

Figure 2: Box Plot by Start-Up (excludes biotech and capital goods)

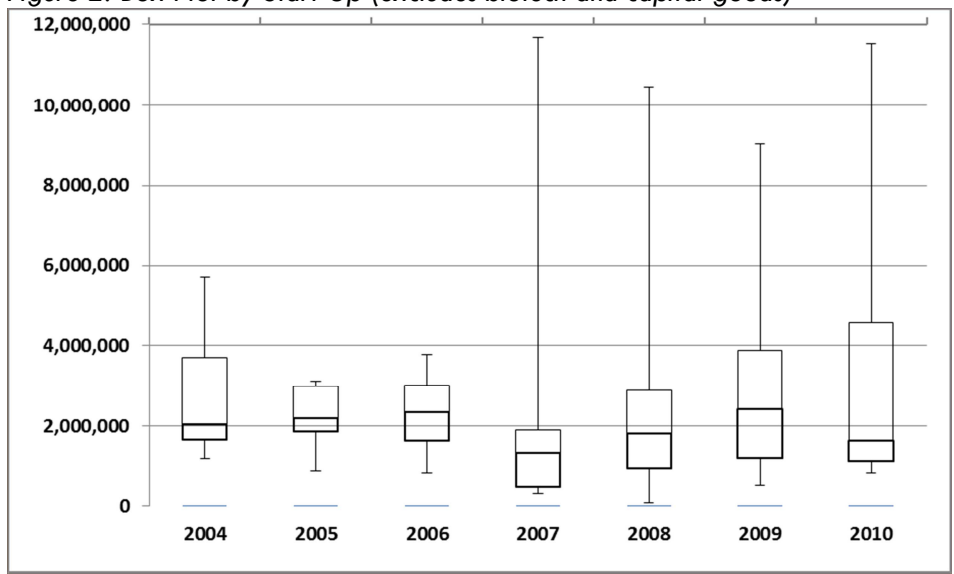
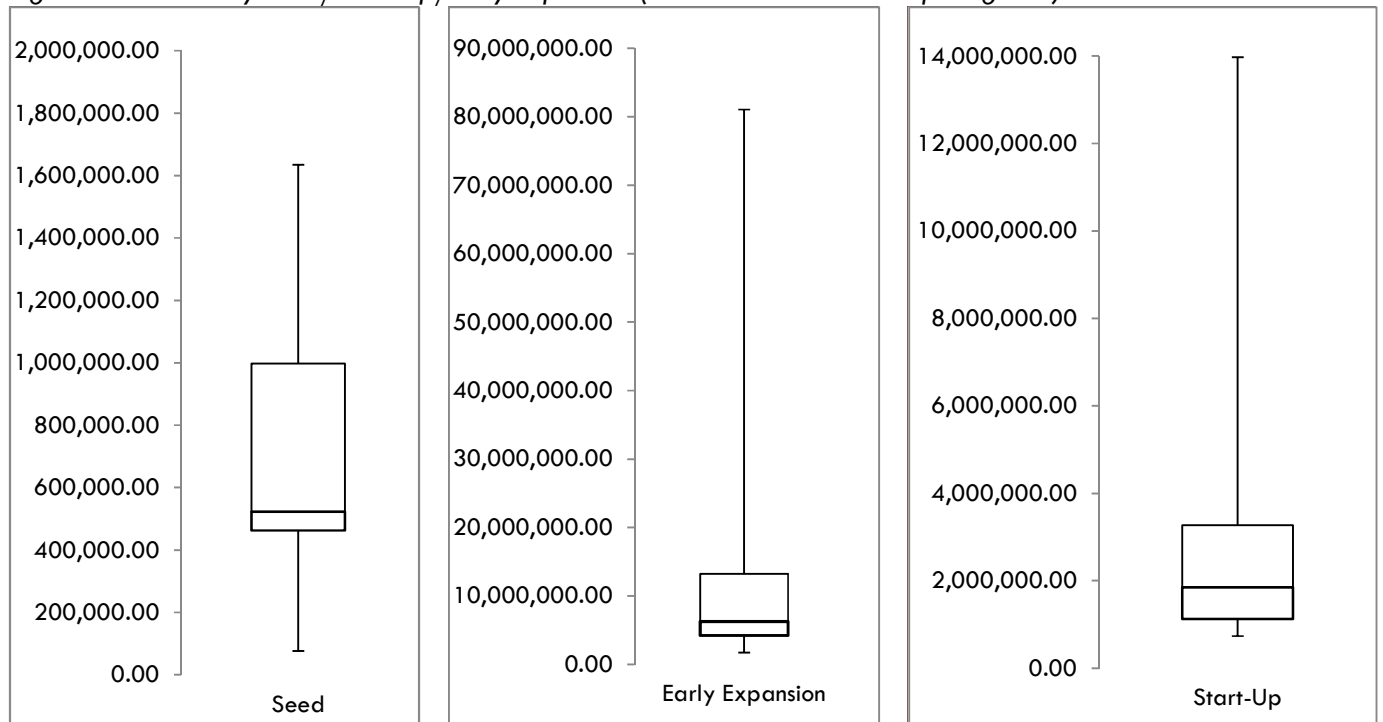


Figure 3 below shows the minimum, lower quartile, median, upper quartile and maximum pre-money valuations for seed, start-up and Early Expansion between 2004 – 2010.

Figure 3: Box Plot by Seed/Start-Up/Early Expansion (excludes biotech and capital goods)



### 3. Valuation Uplift

Existing US based research shows that the risk associated with early stage investments decreases steadily as the venture reaches higher stages of development. Correspondingly, the investor's required rate of return has been found to decline as an investment moves through the different stages. Table 4 presents a summary of the uplift in pre-money valuations of the New Zealand dataset between stages.

Table 4: Change in Value between Stages (excludes biotech and capital goods)

Stage	Median Pre-Money (\$)	Uplift (x)	Average Pre-Money (\$)	Uplift (x)
Seed	522,160	-	716,985	-
Start Up	1,805,825	3.5x	2,735,719	3.8x
Early Expansion	6,262,640	3.5x	13,755,176	5.0x
Expansion	27,072,048	4.3x	38,675,477	2.8x

#### Diminishing Returns

The effect of time on an investment's returns is often underestimated. The example below shows two investors, both investing \$100,000 in a start up venture. Investor A received a 3x multiple (\$300,000) after 4 years, while Investor B received the same 3x multiple in 7 years.

Investor B's Internal Rate of Return (per annum, compounding return) of 15.8% is substantially below that of Investor A at 27.8% and does not adequately compensate for the risk taken.

For Investor B to achieve the equivalent returns as Investor A on an IRR basis, Investor B would need to achieve nearly 6x (\$580,000) return on capital.

	Investment	Holding Period	Multiple	IRR	Required Multiple	IRR
Investor A	\$100,000	4 years	3x	24.6%	3x	24.6%
Investor B	\$100,000	7 years	3x	14.7%	5.8x	24.6%

The data shows that based on median values, pre-money valuations are 3.5 times higher in start-up than seed stage, 3.5 times higher in early expansion than start-up, and 4.3 times higher in expansion than early expansion.



## 4. Time Between Funding Rounds

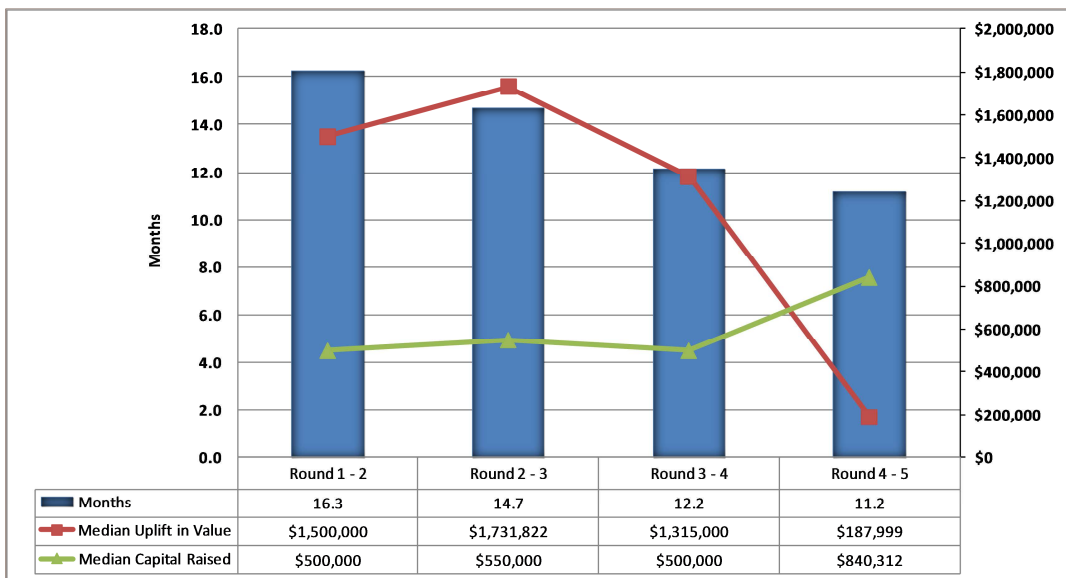
Figure 4 shows the average time between each funding round for companies in the dataset, or how quickly on average companies are burning through cash.

The blue columns (months between funding rounds) show that on average companies survive 16.3 months on the first funding round, decreasing to 11 months between round 4 and 5. Figure 4 shows the median uplift in value between funding rounds for these companies. The median uplift in value is relatively constant across time - between \$1.3 and \$1.5 million - with the exclusion of rounds 4-5 which sharply falls to \$187,999. This could be indicative of the quality of companies in this part of the dataset. Out of the six deals that were involved in 4th and 5th rounds, four had been involved in down rounds in either the current or previous rounds.

Also included is the median amount of capital raised between funding rounds. As companies progress it would be expected that each round size would progressively increase as the risk associated with the investment decreases. As a company grows and performs, the capital requirements should get longer.

The data, however, seems to be demonstrating larger capital requirements during earlier funding rounds, reducing in later rounds. More capital has been raised in rounds 1 and 2 than in rounds 3–5. It appears investments are being drip fed, rather than raising full funding rounds sufficient to allow the company to progress to the next level of development.

Figure 4: Time (Months) between Funding Rounds/Value Uplift between Funding Rounds



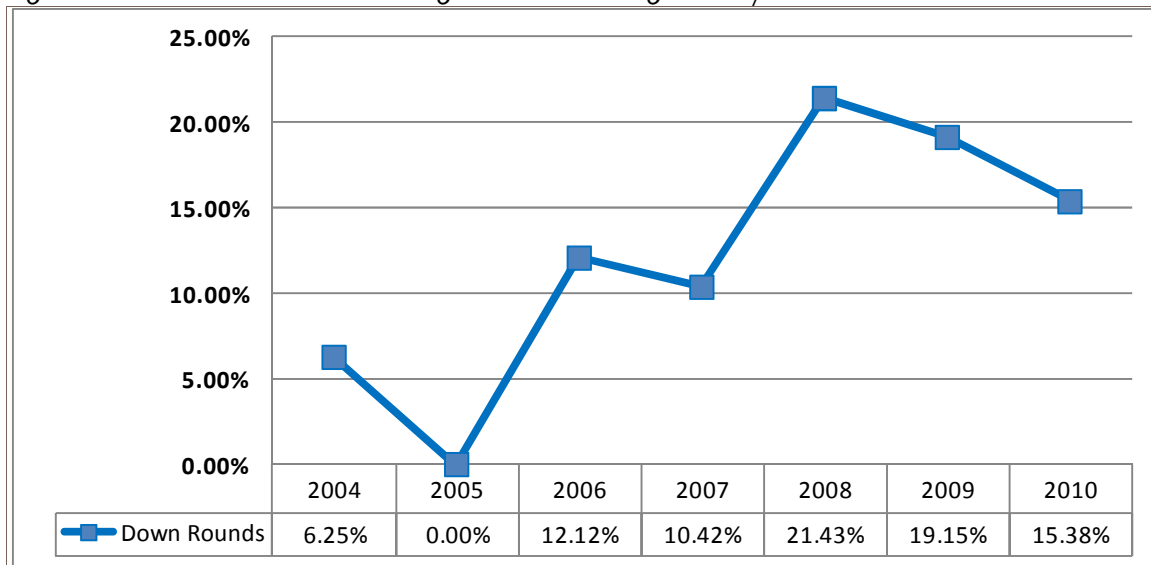
## 5. Down Rounds

Analysis was undertaken on the prevalence of down rounds over time. Of 255 funding rounds looked at, 36 were down rounds. Down rounds are defined as a round of financing that is raised at a lower firm valuation than the previous round, including exits at a price less than the previous funding.

Down rounds can be highly disruptive and cause significant damage not just to ownership stakes, but to overall company morale, and the relationship between investors and founders. Down rounds can be a consequence of overpricing earlier rounds, a company failing to meet performance expectations or, as perhaps is more recently the case, a wholesale fall in asset values. Down rounds or flat rounds in the US VC industry reached as high as 50% during several quarters of 2009.

Figure 5 shows an increase in the amount of down rounds over time, with a peak in 2008 and 2009. The results shown in the graph may understate the true level of down rounds as data collected to date in the study may show a bias toward more successful ventures and funding rounds. Accordingly, we may see that down rounds increase as a percentage of transactions over the next few years as companies in the dataset return to the market for follow-on investments and further data from unsuccessful or struggling ventures is provided.

Figure 5: Down Rounds as a Percentage of Total Funding Rounds/Exits



## 6. Exits

The dataset represented in this report contains 16 exits. Eight of these exits were through trade or private sales, five through liquidation and three as write-offs. It should be noted that a write-off in this context does not necessarily indicate that the company failed outright. One of these companies is performing well, one is considered to be “living dead” but has not been liquidated, the other on hold with a small possibility of resurrection. Conversely a trade sale or private sale does not necessarily indicate a successful investment return for the investor – in all cases at least some capital was returned to investors, but not always equal to or more than the amounts invested.

The lack of exit data means there is insufficient information available to allow any useful conclusions to be drawn on the relationship between valuations being paid by early stage company investors and eventual investment returns. The same holds true for whether pre-money valuations are over- or under-priced as a result of the lack of information. Over time NZVIF will build on this data to allow a more accurate picture to emerge.

Due to the limited exit data in the dataset, a separate list of 13 New Zealand companies, sold over the last decade has been compiled. As this data is incomplete, and in some cases estimated, it was unable to be included in the full dataset for this research report.

Of these 13 companies, five were sold for over \$100 million, four between \$50 and \$75 million and a further four between \$12 and \$40 million. The price of three of the recorded sales was the listing price on IPO. This data represents over \$1.6 billion in total sales value with a median sale price of \$64 million. This list includes companies such as Trade Me, Rakon (IPO), Peace Software and Hyperfactory (estimated). What this data highlights though is how little data we have evidencing company (or business) sales for sums of more than \$10 million (excluding Biotech and Capital Goods), and perhaps brings a sense of reality to exit and return expectations being built into early stage company valuations.

The Wiltbank Study showed that 52% of investments made by angel investors in the US were exited at a loss. In the UK, a similar report by the British Business Angels Association in 2009 showed that 56% of investments made by angels were exited at a loss.

## 7. Holding Periods

The average investment holding period of the New Zealand dataset is 4.1 years. This represents the average time from the first investment round until December 2010 or exit. As different investors invest in different rounds the 4.1 years average holding period may not be comparable with the average holding period in the US and UK studies noted above.

Both the US and UK study confirmed early stage investment as an asset class that can generate attractive outcomes. These reports also emphasised the overall benefit to the wider community including substantial job creation.

The limited number of failures and exits within the New Zealand dataset may indicate reluctance for investors to liquidate investments that are unlikely to become viable operations. The uncertain economic climate is arguably adding confusion to this decision, making it hard for investors to separate the “living dead” from firms with real prospects.

All things being equal, a longer term to exit decreases the return an investment will provide and rational investors will price longer holding periods into their pre-money valuation decisions.

# ACKNOWLEDGEMENTS

The New Zealand Venture Investment Fund (“NZVIF”) would like to thank the many people who provided data for the valuation project. In particular, we would like to acknowledge Symon Nausbaum who collected much of the data and who wrote the first drafts of this report. Special thanks as well to the following Venture Capital managers and angel groups who provided data on multiple investee companies - No 8 Ventures, TMT Ventures, Pioneer Capital, iGlobe Treasury, BioPacific Ventures, Endeavour Capital, ICE House, Escalator, K1W1, Pacific Channel, Otago Angels, Movac, Manawatu Investment Group, Cure Kids’ Ventures, Angellink, NZDx, TTCF, Venture Accelerator, Powerhouse, Enterprise Angels, Sparkbox, Angel HQ, Hawkes Bay Angels, Greenfields, Northland Business Angels, i-Grow.

We would also like to specifically thank Bill Payne, a US business executive, entrepreneur and angel investor, for his assistance with the preparation of this report including writing the Foreword. Since 1980 he has invested in over 50 startup ventures. He was named 2009 US angel investor of the year (Hans Severiens Award) and received a similar designation as 2010 Arch Angel of New Zealand. For more information visit [www.billpayne.com](http://www.billpayne.com).

# NEW ZEALAND VENTURE INVESTMENT FUND

## Background

NZVIF was established in 2002 as a government-owned company responsible for accelerating the development of the New Zealand private equity and venture capital market in order to stimulate investment into young technology companies. It is a cornerstone equity investor in the New Zealand early stage investment markets. While NZVIF's primary role is investing, it also plays an active role in supporting wider industry development.

## Funds

NZVIF currently has \$200 million of funds under management. It is invested through two vehicles:

- \$160 million Venture Capital Fund of Funds. NZVIF invests indirectly through privately managed venture capital funds (managed by prequalified venture capital and private equity fund managers).
- \$40 million Seed Co-investment Fund. NZVIF invests directly into portfolio companies (alongside pre-qualified private investment partners).

## Venture Capital Fund of Funds

NZVIF invests indirectly through privately managed venture capital funds (managed by pre-qualified venture capital and private equity fund managers).

### VIF Venture Capital Funds – June 2011

Capital Committed	\$109m
Number of VIF Venture Capital Funds	6
Number of companies funded	51
Amount invested through programme (VIF + Private sector)*	\$272m

*\*Includes investments, management fees and fund cost*

## Seed Co-investment Fund (SCIF)

NZVIF invests directly into portfolio companies (alongside pre-qualified private investment partners).

### Seed Co-investment Fund – June 2011

Capital Allocated	\$40m
Number of Seed Co-investment Partners	12
Number of companies funded	59
Amount committed through programme (Seed + Private sector)	\$75m

Looking ahead over the next five years, NZVIF expects to commit to invest a further \$120 million to young companies, investing between \$10 million and \$20 million each year. Over that period we expect to invest into another 90 companies bringing the total to around 200.

# DEFINITIONS

**Angel:** A wealthy individual who invests in entrepreneurial companies

**Angel fund:** A professionally managed investment vehicle that evaluates and invests in entrepreneurial companies.

**Angel network:** A group of individual Angel investors who join together to evaluate and invest in entrepreneurial companies.

**Anti-Dilution:** An investment term that protects an investor from dilution resulting from later issues of shares at a lower price than the investor originally paid.

**Down round:** A round of financing that is raised at a lower firm valuation than the previous round, including exits at a price less than the previous funding round.

**Early expansion:** An investee company is at the early expansion stage of its development if the investment provides capital to initiate or expand commercial production and marketing but where the company is normally still cash flow negative.

**Expansion:** An investee company is at the expansion stage of its development if the investment provides capital for the growth and expansion of a company, which may or may not break even or trade profitably. Capital may be used to finance increased production capacity, market or product development, or provide additional working capital.

**Exit:** Any termination of an early stage investment, including a public offering of stock, an acquisition of any kind, or simply closing the business.

**Funding round:** A round of new funding, by existing or new investors. Where investments are committed over a series of payments, each tranche is counted as a separate funding round for the purpose of this study. The exception is section 4 - time between funding rounds - where tranches are excluded.

**Pre-money valuation:** The product of the number of shares outstanding prior to the investment round and the offered per-unit share price.

**Share price ratchet:** An investment structure whereby the eventual equity allocations between investors depend on either the future performance of the company.

**Seed:** An investee company is at the seed stage of its development if the investment will enable development, testing and preparation of a product or service to the point where it is feasible to start business operations. Most likely to be pre-revenue.

**Start-up:** An investee company is at the start-up stage of its development if the investment will enable actual business operations to get underway. This includes further development of the company's product(s) and initial production and marketing. May or may not be pre-revenue.

**Syndication:** The joint funding of a company by two or more venture capital or angel investment organisations.



# NOTES TO THE DATASET

All investment data has been converted to New Zealand dollars at the underlying exchange rate on the date of the relevant transaction.

The pre-money valuation used for convertible notes did not include the effect of accrued interest or shares issued pursuant to anti-dilute provisions. Where convertible notes have no conversion price, the pre-money valuation was based off the actual number of shares issued ex-ante.

# CONTACTS

We welcome your feedback on this report, including suggestions on how it can be improved, what other analysis you would like to see us including over time and any comments on the data or observations presented in this report. Please contact Chris Twiss or Carl Jones (see contact details below) or e-mail us at [venture@nzvif.co.nz](mailto:venture@nzvif.co.nz) with any feedback or suggestions that you have.

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