

Role of Venture Capital in “Start-ups” Moment – an analysis of Valuation Models

Pramod Kumar Sinha*

Abstract

Of late, venture capital funding has come very handy particularly to the entrepreneurs with talent and business skills. There has been an emerging trend in the growth of venture capital finance in the recent past. This has assumed more significance as the bankers, the traditional financiers, have become more risk averse in view of the increased level of non-performing assets. Venture capital fund have gained preference to many as an alternative funding including MSME sector. They are expanding their reach into the new areas like clean energy, healthcare, pharmaceuticals, retail etc. besides traditional activities like IT sector and others. However, there are few critical issues involved in VC financing which hamper the efficient growth of VC funds in India. Among others, the valuation aspect of a venture capital projects assumes critical importance as it directly affects the cost aspects to an entrepreneur and ROI to the venture capital funding organization. Therefore, there is a need to analyze various valuation models per-se used to evaluate a venture capital payment and suggest the suitable model keeping in view the interests of both the parties.

Therefore, this paper is an attempt to evaluate and make an in-depth analysis to compare various methods of venture capital financing valuation considering the models being adopted in other developing countries and also to suggest the feasible and an appropriate model for valuation of venture capital finance. The paper examines the financial implications of different models being used to evaluate the venture capital finance. These models are not uniform. They are unregulated and arbitrary in nature. The models popularly being used in Indian context have been analyzed and compared with the different valuation models followed and practiced in other developed countries. Thus the study also reveals the shortcomings of the valuation models being followed by Indian Venture Capital Funding organizations in general to indicate financing and cost aspects of such models. The study concludes the need to look into whether different and appropriate models can be used at different stages of venture capital financing as followed in other developed and developing countries. This study may be useful for venture capital finance organizations and more, so the entrepreneurs availing venture capital financing.

Key words: Venture capital, MSME sector, Cost, Feasible, Valuation models.

Introduction

Venture capital funding is altogether a different kind of financing strategy for extending finance by the financial institutions and funding sources to the entrepreneurs starting the ventures in view of enormous risks involved in such projects. The concept of venture capital finance was started in late seventies in the developing countries. The VC industry has grown dramatically over the past thirty years. In 1980 the amount of VC investments in the US was \$610 million, according to Price water house Coopers Moneytree. By 1990 this figure had increased to \$2.3 billion. After peaking at over 100 billion during the so-called “dot.com bubble,” by 2010 the amount invested was around \$30 billion. In March 2017, the

total venture capital investment at the global level was 39.4 billion dollars. According to Preqin, over 200 new VC funds have been created each year on average since 2000, raising over 50 billion from institutional investors. While the US still dominates (21.5 billion), Europe and Asia now attract about half of the total investment flows. In India, the Union Budget for 2014-15 has earmarked worth Rs.10,000 crore for start-ups. According to Finance Minister, it will be “equity, quasi-equity, soft loan and other risk capital for start-ups.” This is a welcome step. However, angel investors and venture capitalists (VCs) have contributed significantly in the start-up ventures in India so far Venture capital is an investment in the form of shares or a later stock option in potentially high-risk businesses. The beneficiary

*SCOPE, New Delhi, Research Scholar, GLA University Mathura India

companies are usually small or medium-sized firms, requiring seed or early-stage funding. The VC firms basically focuses innovative and development of technology or products and services with high growth potential. As per the reports the annual returns are ranging from 25-75% which a VC financing firm expects on such investments. According to data available, it is observed that in between 1999 and June 2017, 933 venture capital fund entities provided 6,118 rounds of funding to nearly 3,900 enterprises. A Venture capital entrepreneur looks for different stages of a start-up lifecycle viz,

1. In the initial development stage as 'seed capital' for converting an idea into a commercially viable entity.
2. Implementation or 'start-up capital' when all is ready to commence production.
3. Additional capital to overcome manufacturing teething problems.
4. Establishment capital to facilitate rapid expansion of an established company.

The total Venture investment companies operating in India including foreign funds have shown emerging trends as presented in the following table 1.

Table: 1 Venture Capital Funds and Foreign Venture Capital Funds

As on 31 st March	2011	2012	2013	2014	2015	2016	2017
Venture Capital Funds	184	207	211	207	201	200	198
Foreign Venture Capital Investors	153	175	182	192	204	215	218
Total	337	382	393	399	405	415	416

Source: SEBI Annual Report. 2017

This can be noticed that the growth of foreign venture capital funds is much higher as compared to domestic venture funds. These funds are registered with the Securities & Exchange Board of India (SEBI).

Venture capitalism in India began in 1986 with the diversification of banking activities where banks were required to diversify some of their functions and start other financial services. In 1988, the Indian government formalized venture capital by issuing a set of guidelines. Initially, venture capital or VC were promoted by as subsidiaries by all India financial institutions like, IDBI, ICICI, IFC and selected public sector banks. However, a turning point came when the well-established start-ups undertaken by Indian firms in the Silicon Valley. It was a convincing point for foreign investors about wider scope for economic development and growth in India.. Over the years, more and more private investors from India and abroad have entered the Indian venture capital market.

In the early stages, venture capital investments were mainly in the manufacturing sector. However, with changing trends and increased liberalization, companies in consumer services and consumer retail space emerged as top contenders for VC funding, attracting almost 50%

of total VC investments. Other key industries included IT and IT-related services, software development, telecommunications, electronics, biotechnology and pharmaceuticals, banking and finance/insurance, public sector disinvestment, media and entertainment, and education.

In recent years, agriculture activities have emerged as a new field that is attracting venture capital. There are studies which suggest that in future, for every Rs 100 increase in GDP, Rs 41 will be spent on food. At the recently held Global AgInvesting Conference, data released indicated that agro businesses would provide better returns of about 11%, compared to 3-5% yield from bonds and equities. Agriculture could well become the new Mecca for venture capital investments. Leading VC firms such as Venture Dairy, Anterra Capital (a spin-off of Rabobank's proprietary venture capital investment team), SAEF (Small Enterprise Assistance Funds) and Rabo Equity Advisors' India Agribusiness Fund have already entered this market.

The following table 2 presents the financial assistance provided by venture capital firms in India during the period 2013-14 to 2016-17.

Table :2 Total Investment by venture capital funds.*(value Rs. in crore)*

Region	FY 2013-2014		FY 2014-2015		FY 2015-2016		FY 2016-17	
	Volume	Value	Volume	Value	Volume	Value	Volume	Value
South	171 (36)	1,889 (22)	166 (39)	2,748 (25)	233 (35)	3,618 (26)	263 (33)	7,078 (36)
West	152 (32)	3,411 (41)	144 (33)	3,997 (37)	198 (30)	6,019 (43)	245 (31)	5,851 (29)
North	110 (23)	2,438 (29)	81 (19)	3,124 (29)	158 (24)	3,156 (23)	219 (27)	3,791 (19)
Other	43 (9)	683 (8)	37 (9)	1,024 (9)	73 (11)	1,142 (8)	72 (9)	3,269 (16)
Total	476 (100)	8,422 (100)	428 (100)	10,893 (100)	662 (100)	13,935 (100)	799 (100)	19,989 (100)

*Source: Venture Intelligence Report: 2017**(Figures in brackets indicate annual growth)*

According to the KPMG report on venture capital investments in India as at the end of December 2017, the following are the highlights.

- Overall Global VC investment remains strong at \$39.4 billion in Q3'17, holding strong with the number of mega-deals making up the top 10 list this quarter.
- Global median deal size at every stage remained high. Median Series D+ deal pre-money valuation surges to \$260 million in 2017 to date.
- Corporate venture capital investment as a percentage of deal count remained high at 17.7 percent and is expected to stay strong through Q4'17 into 2018.
- Global first-time venture financings were well off last year's pace, declining from 5,142 deals and \$17

billion in funds in 2016 to 2,736 deals and \$9.7 billion so far in 2017.

- Funding for the VR/AR sector has already surpassed 2016 totals (\$1.56 billion) in the first three quarters of 2017, which saw \$1.645 billion dollars in VC investment. This space is on track to explode in 2018.

Overall, the global investments in venture funds remained strong. This is also happening in the Indian context that foreign venture funds have entered in an increased manner and trying to capture the venture capital finance market.

The following table 3 represents industry wise investments by venture capital firms in India during the period 201 to 2017.

Table : 3 Industry Wise Cumulative Investment by Foreign Venture Capital Funds (FVCF) in India (2013-17)

Sectors of Economy (As on 31 st March)	2013 (%)	2014 (%)	2015 (%)	2016 (%)	2017 (%)	Average growth (%)
Information technology	2787 (10)	3436 (10)	3863 (10)	3909 (9.48)	4529 (10)	4965 (11)
Telecommunications	6199 (21)	7221 (20)	6786 (17)	5587 (13.5)	7070 (15.6)	6404 (14)
Pharmaceuticals	1089 (4)	976 (2.7)	774 (2)	744 (2)	688 (1.5)	471 (1)

Biotechnology	188 (0.6)	139 (0.4)	140 (0.4)	107 (0.26)	142 (0.3)	105 (0.2)
Media/Entertainment	763 (3)	705 (2)	746 (2)	792 (2)	830 (2)	961 (2)
Services Sector	2157 (7)	1903 (5)	2355 (6)	2394 (6)	2513 (5.5)	2609 (5.9)
Industrial Products	1451 (5)	1102 (3)	1193 (3)	1506 (3.6)	1319 (3)	1298 (3)
Real Estate	3397 (12)	2987 (8)	2731 (7)	2151 (5)	1751 (4)	1156 (2.6)
Others	10863 (38)	17124 (48)	21228 (53)	23984 (58)	26421 (58)	26548 (60)
Total	28894 (100)	35593 (100)	39815 (100)	41174 (100)	45263 (100)	44516 (100)

Source: SEBI Annual Report 2017

- Figures in brackets indicate annual growth. However, the challenges in the VC financing are many in terms of risks analysis, screening of projects, due diligence and valuation etc. In this paper an attempt is made to analyse different methods of valuation of a venture project. There are number of methods to evaluate a VC project. Given the autonomy and liberty, different VC firms adopt their own investment criteria to maximize Return on Investments (ROI). The usual methods prevailing in the market are described here under. Venture capitalists comprise provide funds to these newly promoted venture firms after carefully scrutinizing the projects. Their main aim is to earn higher returns on their investments, but their methods are different from the traditional moneylenders. Apart from financing, venture capital finance funding company also take active part in the management of the company as well as provide the expertise, technologists, planners and managers and ensure that the new venture become sustainable and viable. In the recent past, the Venture capital funding institutions have been floated to induct fund at low cost, share the risk and to provide management and technology up gradation support to these enterprises. The expected ROI on VC projects are:
 - 3 times in 3 years = 44.23%, 5 times in 3 years = 71%, 7times in 3 years = 91.29%
 - 4 times in 4 years = 41.42%, 3 times in 5 years = 24.57%, 5 times in 5 years = 37.97% , 7 times in 5 years = 47.57%

- Compounded growth rate = $P(1+r)^F = F$ P= principal Amount, r= rate of return, F = Expected value at the end of the year

Since 2006, some new VCs are also operating at the SME level, such as Helion Venture Partners, Erasmic Venture Fund (Accel India Venture Fund), Seed Fund, and Upstream Ventures. While technology remains the most sought after investment fields, interest has been shifting from internet companies to other types of operations—especially ICT enabled services and bio-technology.

A few VCs also operate at the early-stage, including Erasmic Venture Fund, Seed Fund, Infinity Venture, IFI sponsored facilities such as Swiss Tech VCF, and the government schemes such as SIDBI VC and Gujarat VF. Early stage VCs seek smaller deals, typically in the US\$ 1 - 3 million range. However, they rarely go below the half million dollar mark, where there is a strong appetite for financing, but very few opportunities. Possible sources of smaller investments are represented by local public-sector facilities, business angels, business incubators funds, and isolated cases of seed VCFs, such as the micro venture schemes like Aavishkaar India Micro Venture Capital Fund (AIMVCF).

Valuation Methods:

There are different methods to evaluate a venture project for the early stage finance and post stage finance. Some of the important methods are discussed here. According to Bill Payne (2013), seed capital evaluation is like the real estate market, the starting point for determining the valuation of seed stage ventures is comparable deals. At what valuation have similar deals at the same stage, in the same business segment and in your region been funded recently? Knowledge of local recent transactions is key to establishing the valuation of the target company. And, it is important to acknowledge that the valuation of startup ventures changes with competition (lots of capital chasing deals in a given business sector increases median valuations) and with the business cycle (angels are less likely to open their pocketbooks during a deep recession, driving down valuations).

Many a times, the early stage finance is extended by the Angel investors. Angels are the experts in the project product line with a vast experience besides they also provide initial funding to the viable VC projects. Angel investors have found four methods that are particularly useful for determining the pre-money valuation of pre-revenue companies (with customer valuation and at the cusp of first revenues). And, at the outset, early stage investors seldom find discounted cash flows based on projected financials to be particularly useful. Entrepreneur-provided financial projections are simply too imprecise for reliable analysis. These methods are described here.

Venture Capital Method

This method was developed by Professor Bill Sahlman at Harvard Business School in the 1980s. The VC Method described practices of venture capitalists in valuing early stage deals. A simplified version of the method has been described here: Venture Capital Method. This tool requires the estimation of the eventual selling price of the company (5-8 years hence), which is then divided the investors anticipated ROI to arrive at a current valuation. In this valuation

Post-money valuation = terminal value/anticipated ROI
The terminal value is how much one reasonably expect to sell a company in future and ROI is the multiple which is

expected the company will produce in future. The after tax value after a particular time is arrived and earnings after tax considered for the purpose of valuation. The earnings then are multiplied by the price/earnings ratio of similar companies. That becomes terminal value which is divided by the required ROI.

Dave Berkus Method

Long-time member of the Tech Coast Angels, Dave Berkus, describes this method in his blog at The Berkus Method: Valuing an Early Stage Investment. Dave attributes a range of dollar values to the progress startup entrepreneurs have made in their commercialization activities, the sum of which becomes the valuation of the company (pre-money valuation). The model presumes that following parameters contribute to add value to the company in pre-money valuation stage.

- a) Sound idea (Basic value, product risk)
- b) Prototype (reducing technology risk)
- c) Quality management team (reducing execution risk)
- d) Strategic relationship (reducing market risk and competitive risk)
- e) Product roll out or sales (reducing financial or product risk)

According to this method the maximum valuation possible using Dave's method is currently \$2.5 million considering that pre revenue valuation to a startup has potential to reach a revenue level of \$ 20 million within 5 years period. The model assigns 0.50 million dollar to each of the above components. Berkus is of the opinion that startup valuation must be kept at a low enough amount to allow for the external risk taken by the investor.

Scorecard Method

The Scorecard Valuation Method is perhaps the most popular among angel groups in the U.S. This method adjusts the median pre-money valuation for seed/startup deals in a particular region and in the business vertical of the target based on seven characteristics of the company. In this model a perception of similar industries is considered on the following components;

- a) Strength of the management team
- b) Size of the opportunity

- c) Product/technology
- d) Competitive environment
- e) Marketing/sales channels/partnerships
- f) Need for additional investment
- g) Other

Each component is given a weight ranging from 30 to 5 percent based on target company’s strength and a composite score is arrived at.

Risk Factor Summation Method

This method compares the 12 characteristics of the target company to what might be expected in a fundable seed/startup company and is described at the following link: Risk Factor Summation Method. This method is useful because it requires investors to consider a much broader set of characteristics of seed/startup ventures than other methods. Like the Scorecard Method, this method adjusts the median pre-money valuation for companies in similar business verticals and in the relative region based on perspective of the 12 characteristics of the target company. However, since all categories have the same weightings the method is recommended for using with at least two other methods before making a final decision on valuation.

There is no perfect methodology for establishing the pre-money valuation of pre-revenue seed/startup ventures. Therefore investors are advised to use multiple methods to arrive at a final valuation and they can follow any of the four models. In practice it can be found that some methods will be more applicable to specific ventures than others. Depending on the nature of the projects the VC may choose to change the ranking, characteristics or weightings of activities described in a given method to better fit a target company. Sometime, it may happen that using three methods, as an example, will give three answers: At times, it may be observed that all methods

give similar results, widely different results, or that one method yields an outlier.

In addition to seed finance evaluation methods as described above, there are other methods for long term valuation. However it is important that before evaluating a company, one must have an initial understanding of it. All the valuation methods and approaches are based on a careful consideration of both hard facts and soft factors. The valuation methods involve thorough risk assessment of factors which include:

- Management
- Market
- Science and technology
- Financials / funding phase

It may also be noticed that to evaluate the value of a company as accurately and as objectively as possible, a mixture of different assessment/valuation methods can be used. All methods are specifically suited for the evaluation of technology companies, with high growth potential and start-up companies of all types. It is difficult to comment as which kind of valuation method is appropriate, Venture capital financing company assesses each funding company according to the type of industry and kind of financing phases and plans. Some of the commonly used methods are described here.

Discounted Cash flow (DCF)

The discounted cash flow method takes free cash flows generated in the future by a specific project / company and discounts them to derive a present value (i.e. today’s value).

The discounting value usually used is the weighted average cost of capital (WACC) and is symbolized as the ‘r’ in the following formula:

$$DCF = \frac{CF_1}{(1+r)^1} + \frac{CF_{21}}{(1+r)^2} + \dots + \frac{CF_n}{(1+r)^n}$$

DCF = Calculated DCF value

CF = Cash Flow

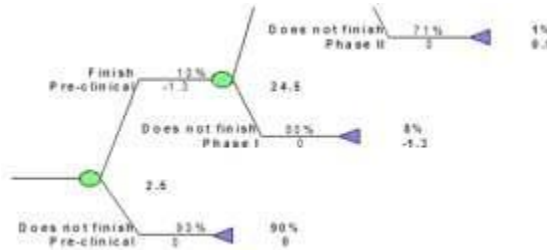
r = Discount rate (WACC: Weighted average cost of capital)

DCF calculations are used to estimate the present value of potential investments based on future cash flows. When DCF calculations produce values that are higher than the initial investment, this usually indicates that the investment may be worthwhile and should be considered. In this case the discount rate is often compared with the other firms working in the industry. The past performance of such units is an indicator.

Risk adjusted NPV

The risk adjusted net present value (NPV) method employs the same principle as the DCF method, except that each future cash flow is risk adjusted to the probability of it actually occurring.

The probability of the cash flow occurring is also known as the 'success rate'.



Risk adjusted NPV is a common method of valuing compounds or products in the pharmaceutical and biotech industry, for example. The success rates of a particular compound/drug can be estimated, by comparing the probability that the compound/drug will pass the various development phases (i.e. phases I, II or III) often undertaken in the drug development process. This can also be used for other companies where probabilities of success rate can be estimated at different growth stages. This approach is also known as rNPV, eNPV (e=estimated/expected)

Market comparables method

The market comparables method attempts to estimate a valuation based on the market capitalization of comparable listed companies. The market comparables method is a simple calculation using different key ratios like earning, sales, R&D investments, to estimate the value of a company.

Comparable Transaction method

The comparable transaction method attempts to value an entire company by comparing a similar sized private company in a similar field, and using different key ratios. The price for a similar company can either come from an M&A transaction or a financing round. The comparable transaction method is a simple calculation estimating the

value of a target company based on comparable investments or M&A deals.

Decision Tree analysis

Decision trees are used to forecast future outcomes by assigning a certain probability to a particular decision. The name decision tree analysis comes from the 'tree' like shape the analysis creates where each 'branch' is a particular decision that can be undertaken. Decision trees are used to give a graphical representation of options, strategies or decisions that can be undertaken to reach a particular goal or "decision".

In India, at present, there is no uniform or institutional system for evaluating the venture capital projects and thereby deciding returns on investments to the venture capital financing company. This puts the entrepreneurs in the hardship as they have to pay very high cost at the time of exit. This also impact the valuation of a project in the initial stage. Recently, in view of the increased competition and entry of foreign venture capital funds, the valuation process has undergone certain changes and thereby lowered the cost. As the government has focus on promoting Make in India moment, there is a need to rationalize the valuation methods for venture capital financing so that good number of start-ups may emerge and contribute to the growth process of the economy. This calls for developing valuation models for evaluating

venture capital projects on the lines of foreign venture funds depending on the types and stages of financing. The ultimate object should be not to burden the entrepreneurs too much.

In the developed countries like US, V C funding firms would expect to earn at least 18 per cent on venture capital investment as their hurdle rate in such cases is around 4 to 6 per cent. Therefore, the firm can make a profit or return on investment to around 12 to 14 per cent. The hurdle rate can be defined as a minimum return on capital employed. But in case of India, where hurdle rate is much higher, around 18 per cent and therefore an investor investing in V C firms would be expecting around 36 per cent per annum on its investment so that it can retain at least 18 to 20 per cent returns on its investment. If we consider the exchange rate risk, this will go still higher in case of Indian firms.

There is another element of risks in the venture capital investments about failure of projects or the firms doing extremely poor. Therefore, the firms that are doing well are expected to increase valuation by 50 to 100x in the duration of 4 to 5 years. The business and ventures have to be entirely different from traditional one that could grow at the higher rate. This may be one of the important reasons that Indian V C firms expect a very high growth rate so that they can gain higher returns. The cost of funds to foreign V C firms is comparatively lower and their hurdle rate too. Therefore, they contribute to venture capital investments at a larger scale as compared to Indian VC funding companies.

Conclusion

Finally we can say that there is no single method which can be adopted the VC projects. It depends on nature of project, stage of valuation, time span for project valuation, probabilities of future cash flows, expected ROI and other relevant factors as to which of the method should be used and fit to evaluate the projects. A careful assessment need to be made as regards expected ROI on the projects. The moot point is a decision on ROI which a

VC funding company looks for. Though there exists a large amount of risk in VC funding, a pragmatic approach is very much needed to decide the ROI and worth of a venture. Unlike developed countries, various models can be tested and implemented keeping in view the interests of both, the venture capital fund and the venture entrepreneurs. All India financial institutions and banks sponsored venture capital funds may take a pragmatic view and devise suitable models for valuation of different VC projects. This has also been observed that PE funds are attracting towards VC financing in view of the lucrative returns. Many such instances have come to focus in the recent past. They have devised different methodologies which facilitate to VC entrepreneur to avail higher equity on account of higher valuation. This will be new challenge to the VC funding firms. Therefore, a relook is necessary.

References

1. *SEBI Reports*
2. *SIDBUI Venture capital*
3. *Venture capital association report*
4. *E & Y Annual report on Venture capital 2013*
5. *Economic Times*
6. Kaplan, S., Strömberg, P. (2009). “Leveraged buyouts and private equity”. *Journal of Economic Perspectives* 23, 121-146.
7. Masulis, R., Nahata, R. (2011). “Venture capital conflicts of interest: evidence from acquisitions of venture backed firms”. *Journal of Financial and Quantitative Analysis* 46, 395-430.
8. Samila, S., Sorenson, O. (2010). “Venture capital as a catalyst to innovation”. *Research Policy*, 39, 1348-1360.
9. Sevilir, M. (2010). “Human capital investment, new firm creation and venture capital”. *Journal of Financial Intermediation* 19, 483-508.
10. *Mcro Da Rin, Thomas, F Helliman, 2012, working paper NBER 17523*
11. *KPMG-Venture-Plus-q3-2017*
12. *Rao & Ravi, (2017), Venture capital investments in India – A Bird Eye View, ISBN:978-93-86171-72-6*