

## VENTURE CAPITAL BACKED IPO'S IN INDIA: A LISTING DAY PERFROMANCE

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### ABSTRACT

*Underpricing of IPOs is a universal phenomenon irrespective of developed or developing countries. Underpricing represents the listing day performance of the IPOs and money left on the table. Underpricing is the difference between the listing day closing price and the IPOs offer price. Initial return used as a proxy of underpricing in the literature. IPOs had given high positive initial return whether it is from the developed countries or developing countries. Venture capital backed IPOs found significantly less underpriced from the non-venture capital backed IPOs in the previous studies. Here, the objective of this paper is to measure degree of underpricing of the venture capital backed IPOs in Indian context. The sample of venture capital backed IPOs is taken from the Venture intelligence database and further required data is collected from the IPOs red herring prospectus and BSE India website. Results shows that the level of underpricing in terms of initial return, market adjusted excess return and their annualized value found significantly different from zero at 1 percent level of significance.*

**Keywords:** Initial return, India, IPOs, Performance, Underpricing, Venture Capital.

### I. INTRODUCTION

Venture capitalists go for the public offer as a route to exit from their investment for getting higher returns. Exit through IPO offers immense opportunities for the investee firms and for the venture capitalists to reinvest the IPO proceeds in new ventures. Venture capital is the higher risk investment due to investment in the young technological start-ups. Venture capitalists made a valuable contribution in the success of these start-up ventures along with the contribution in the economic growth (Bessler and Seim, 2012). As a movement of startups has started and several ventures backed by risk capital showed their preference for going public. Underpricing of initial public offerings is a worldwide phenomenon in the global capital markets. However, the level of underpricing differs accordingly to the time and country-to-country. Over the period, various theoretical explanations of IPOs underpricing has given. These theories classified into four categories namely Institutional explanation, Ownership and Control theory, Behavioral theory and lastly Information Asymmetry theory (Ijungqvist, 2004; Mogilevsky and Murgulov, 2012). Among these theories, asymmetry of information has

widely accepted the explanation of the underpricing. In the study of Barry et al. (1990) and Megginson and Weiss (1991), venture capital backed IPOs were found a reduced degree of underpricing than the other IPOs due to the decreased asymmetry of information. As examined in different studies in the literature the degree of underpricing depends on the several factors likely firm related, IPO issue related, capital market related and industry related factors.

Firm related factors consist of the size of the firm, size of the board, return on assets and age of the IPO issuing firm. In the previous studies, size of the firm is negatively associated with the degree of underpricing. It shows that higher the size of the firm tends to reduce the level of underpricing and lower the size of the firm tends to increase the level of underpricing. Return on assets, the age of the firm and board size of the firm also negatively associated with the degree of underpricing in the literature. Higher the return over the assets and higher age of the firm signals about the experiences and expertise of the firm that gets IPO less underpriced.

IPO issue related variables comprise of the size of the issue, a number of times issue subscribed, offer price of the issue. Size of the public issue and offer price negatively affected the degree of underpricing. Higher issue size and offer price indicate the future prospect and past performance of the issuing firm. On the other hand, subscription ratio of the issue is positively associated with the degree of underpricing. If issue subscription ratio is more IPO tend to be underpriced more and vice-versa.

Capital market-related variable includes time taken by the issue for a listing of the IPO and underwriter's reputation that has an impact on the degree of underpricing of the venture capital backed IPOs. The difference found in the degree of underpricing between the developed and developing a capital market where venture backed IPOs goes for listing. In the developed capital market requires less time for the listing of IPOs whereas in the developing capital market seeks more time for the listing of the IPOs. Underpricing of the venture backed IPOs positively related with the listing time of the issue. If the issue takes more time to lists on the exchange then higher will be the degree of underpricing and vice-versa. Underwriter's reputation be associated either positively or negatively with the degree of underpricing of venture backed IPOs.

Industry related variable is that whether the venture backed IPO is from the technological sector or from the other else. As discussed in the literature technological venture backed IPOs gets underpricing more than the other IPOs. Due to the higher risk factor in the technology based venture IPOs underprice more.

In this paper, examines the listing day performance of venture capital backed IPOs in terms of initial return, market adjusted excess return and annualized initial return, annualized market adjusted excess return. Further, this paper planned as follows. Section 2 reviewed the existing available literature on national and international level. Section 3 described the methodology used for the calculation of initial return; market adjusted initial return and annualized return. Section 4 discusses the results of data analysis and outcomes. Sections 5 conclude the analysis and findings of the study.

## **II. REVIEW OF LITERATURE**

Li *et al* (2013) developed an approach to help external private equity holders determine an optimal early exit region by shedding light on when to exit rather than how to exit. Arvanitis and Stucki (2013) investigated the impact of early stage venture capital on innovation activities of Swiss start ups. As expected venture funded

start-ups show a significantly higher innovation propensity than non-funded firms. Kolympiris Christos and K. Nicholas (2013) study shows the results that LSF's tend to produce more patent whenever they situated in very close proximity to where venture capital investments occur. Cotei Carmen and Farhat Joseph (2013) examined the role of venture capital backing on informational externalities generated by IPO firms. Result show that rivals have positive valuation effect in response to venture backed IPOs and no significant reaction in response to non-venture backed IPOs. Tom *et al* (2013) studied how the presence of cross border as opposed to domestic Venture Capital investors is associated with the growth of portfolio companies. Results show that in short term companies backed by domestic venture capital show higher growth and in medium term companies backed by cross border venture capital show higher growth than companies backed by domestic venture capital and company backed by syndicated venture capital show higher growth.

Carvell *et al* (2013) used Vector Auto Regression technique and reported that analyses from impulse response function suggest that shocks to GDP have a permanent effect on Venture Capital flows while the impact of capital market valuation on Venture Capital flows is rather short lived. Nagaraja .N and Srinivas K.T (2013) analyzed the investment pattern of state level Venture Capital fund named Karnataka Information Technology Venture Capital fund (KITVEN). Moreover, concluded that KITVEN synchronized input of skill needed to setup the firms, design its market strategy and organize, manage it to add value to the firm. B. Salgar Raj Kumar (2012) concluded that there are large sectors of the economy that are ripe for Venture Capital investors like IT, Pharma, Manufacturing, Telecom, Retail, Food Processing and many more. The nation waits for the burgeoning Venture Capital business in India in spite of the existing shortcomings in the Indian infrastructure. Laddha Ankith and Mistra KK (2012) concluded that Indian Venture Capital industry is still at a nascent stage of development and further regulatory changes, research on practices and behavior are required for growth and enhancement of the industry. Aizenman Joshua and Kendall Jack (2012) showed that human capital, a better business environment, military expenditure, high computer penetration, more university graduates, and deeper financial markets are important local factors that appear to attract international Venture Capital.

Bessler Wolfgang and Seins Martin (2012) investigated the performance of Venture backed IPOs in Europe for the period from 1996-2010. In addition, empirical findings provide convincing evidence that Venture backed IPOs generate positive returns for a specific time subsequent to the IPO. Haritha M and Ravi (2012) described the role of Venture Capital in Indian economy. Venture Capital is the lifeblood of new industry in the financial market today. Venture Capital is an important source of equity for startup companies. More concentration given on the different opportunities in Non IT sector as well the investment opportunities available for venture capital that ensures better perspective for Indian Economy. Felix Santana Gomes Elisabete *et al* (2012) revealed that the size of the M&A market and the market to book ratio have a positive impact on Venture Capital activity where as the unemployment rate influences the Venture Capital market negatively. Leece David and Berry Tony *et al* (2012) confirmed the findings of other studies showing the importance for business of non-financial inputs provided by the Venture Capitalists to the investee company. Okpala (2012) based on analysis carried out the findings were revealed that venture capital is highly needed for emergence and development of SMEs in Lagos State. Bonini and Alkan (2012) showed strong and positive effects of favorable socioeconomic and investment

environment on the development of Venture Capital investment activity. Kirkulak (2008) examined initial and long run returns of Japanese IPOs in particular Venture Capital backed and non Venture Capital backed. The main research focus is on the performance of Venture Capital backed companies using two performance methods named CARs and BHARs and updated data from 1998 through 2001. Moreover, findings show that there is no statistically significant difference in the initial returns of Venture Capital backed and non Venture Capital backed companies. Results suggest that Venture Capital backed companies have high initial returns they perform significantly worse over a three year time horizon than non Venture Capital backed companies.

### **III. RESEARCH METHODOLOGY**

This study consist of twenty-two number of venture capital backed IPOs which issued during the period of 2005-2015 and accessed from the database of Venture Intelligence. Out of these twenty-two IPOs, four IPOs are left out due to the non-availability of data. Hence, final sample remained of eighteen number of venture capital backed IPOs which consider for the further analysis. In the year 2014 and 2015, not any venture capital backed IPOs have issued accordingly the database. Here, below table 1 describes the attributes based on the year of the IPO issue and the total proceeds of the IPO issued.

**Table No. 1: Attributes of the study's sample**

<b>Year</b>	<b>Gross Proceeds (Rs. Cr.)</b>	<b>% of Total</b>	<b>Average</b>
<b>2004</b>	71.54	1.37	35.77
<b>2005</b>	468.24	8.94	117.06
<b>2006</b>	170.36	3.25	170.36
<b>2007</b>	786.24	15.01	262.08
<b>2008</b>	479.62	9.16	479.62
<b>2009</b>	45.58	0.87	45.58
<b>2010</b>	2147.30	41.00	715.77
<b>2011</b>	113.83	2.17	113.83
<b>2012</b>	35.00	0.67	35.00
<b>2013</b>	919.14	17.55	919.14

After looking the above table, it seems that in 2005, 2007, 2010, 2013 raised more proceeds from their previous year. Total gross proceeds of these years accounted 83 percent of the total proceeds that shows the hot period in the market. In the year 2005, three venture capital backed IPOs issued for the rupees of 468.24 crores which consists of near nine percent of the total proceeds of the study period. Where as in the year 2007 and 2013, issued the venture capital backed IPOs for the rupees of 786.24 crores and 919.14 crores respectively. This comprises of 15.01 percent and 17.55 percent of the total IPOs proceeds. The highest amount of venture capital backed IPOs issued in the year 2010 that present the 41 percent of the total proceeds from IPO issuing during the study period. Rest of the year 2004, 2006, 2008, 2009 and 2011, 2012 issued venture backed IPOs of the 71.54, 170.36, 479.62, 45.58, 113.83, 35 crores of rupees respectively. During these years only 17 percent of the total IPO proceeds issued which shows the cold period in the market.

### 3.1 Measures of Underpricing

Underpricing of the venture capital-backed IPOs is measured in terms of (1) initial return (IR), (2) market adjusted excess return (MAER) and (3) annualized initial return and (4) annualized market adjusted excess return.

#### 3.1.1 Initial Return

The authors in IPO literature to measure the underpricing of the IPOs have propounded various methods. A methodology used in the study of Certo et al. (2001) and Arthurs et al. (2008) is applied to calculate the underpricing of the venture capital-Backed IPOs. Initial return is used as proxy of underpricing.

The term underpricing refers to initial returns that computed as closing price of the stock on the first day of trading on the exchange minus offer price of the stock and divided by the offer price (Certo *et al.*, 2001; Arthurs *et al.*, 2008). It is measured as follows:

$$IR_i = \frac{(C P_i - O P_i)}{O P_i} \dots\dots\dots(i)$$

Where,

$IR_i$  = Initial Return (refers to Underpricing) of the firm  $i$

$Cp_i$  = Closing Price on the first day of trading of the firm  $I$

$Op_i$  = Offer Price of the IPO of the firm  $i$

#### 3.1.2 Market Adjusted Excess Return (MAER)

Underpricing measure by the initial return present true picture in case of a perfect capital market where no time gap exists between the day of IPO offer and the day of IPO listing. However, Indian capital market characterized as imperfect market in which a substantial time gap exists in between the offer day and listing day. During this time gap a significant changes could occur in the market that can influence the initial performance of the IPOs on listing day. Therefore, initial return is to be adjusted to mitigate the market changes effects.

Market adjusted excess return (MAER) is calculated as follows.

$$MAER_i = \frac{(C P_i - O P_i)}{O P_i} - \frac{(M1 - M0)}{M0} \times 100 \dots\dots\dots(ii)$$

Where,

$MAER_i$  = Market Adjusted Excess Return of the firm  $i$

CP = Closing Price on the first day of trading of the firm *i*

OP = Offer Price of the IPO of the firm *i*

M1 = Market Index on first day of IPO trading

M0 = Market Index on the day of offer of IPO

Further, this market adjusted excess return used as the measure of the underpricing of venture capital backed IPOs.

### 3.1.3 Annualized IR

Venture capital-backed IPOs got listed on the exchange on different time intervals. Therefore, initial return is to be annualized by multiplying the initial return with the annualizing factor calculated as follows (Shelly, 2010).

$$\text{Annualizing Factor} = \frac{365}{\text{After Market Trading Lead Time}} \dots\dots\dots(\text{iii})$$

$$\text{Annualized IR} = (\text{I R}) \times (\text{Annualizing Factor}) \dots\dots\dots(\text{iv})$$

### 3.1.4 Annualized MAER

Due to the varied time of IPO listing market adjusted excess return is annualized by multiplying the MAER with annualizing factor (as calculated in equation iii) as follows (Shelly, 2010).

$$\text{Annualized MAER} = (\text{MAER}) \times (\text{Annualizing Factor}) \dots\dots\dots(\text{v})$$

## IV. RESULTS AND ANALYSIS

Here, in this section, secondary data of the sample is analyzed by applying financial techniques and statistics tools and presented the outcomes of the analysis. Firstly, underpricing of venture capital backed IPOs measured by examining the initial listing performance of the sample. Underpricing is the term used for the difference between the IPO price on the day when IPO got listed on the exchange and the IPOs offered price when IPO is issued.

### 4.1 Initial listing Performance of Venture Capital Backed IPOs

Initial return is measured as the proxy of underpricing of the venture capital IPOs (Handa and Singh, 2015). It is the difference between the issue price and the listing price of the IPO issued by the venture capitalists (Certo *et al.*, 2001; Arthurs *et al.*, 2008). Venture capital backed IPOs observed less underpriced than the non-venture backed IPOs in the previous studies. Before addressing the issues of the underpricing of venture backed IPOs, the normality of the data has been checked by applying the theory driven statistical method of Shapiro-Wilk test

and further statistical value of Shapiro-Wilk test confirmed by observing the descriptive value of Skewness and Kurtosis (Razali and Wah, 2011; Zylstra, 1994). Next table 2 depicts the statistical and descriptive values of Shapiro-Wilk test and Skewness and Kurtosis.

**Table No. 2: Normality Statistics of the Variables**

Variable	<i>p</i> -value	Skewness Value	Kurtosis Value
<b>IR</b>	0.074*	1.192	1.415
<b>MAER</b>	0.571*	0.501	0.394
<b>Annualized IR</b>	0.077*	1.049	1.156
<b>Annualized MAER</b>	0.558*	0.148	0.689

\* Non-significantly different from the normal distribution at 5 percent level.

The above table shows the statistical and descriptive value about the normal distribution of the data of variables represents the different aspect of the underpricing of the venture backed IPOs. Initial return (IR) and market adjusted excess return (MAER) finds statistically non-significant different from the normal distribution with the *p*-value 0.074 and 0.571 respectively at five percent level of significance (Field, 2009). Subsequently, the annualized value of IR and MAER also found non-significantly different from the normal distribution with the *p*-value 0.077 and 0.558 respectively at five percent level of significance (Field, 2009). It is concluded from the *p*-values that data is probably normally distributed (Field, 2009). In addition to these *p*-values, the skewness values for all four variables lie between the 0.148 and 1.192, while kurtosis values lie between the 0.394 and 1.415. Skewness and kurtosis values ranged between  $\pm 2$  from zero indicates that data is normally distributed (Obeidat, 2016). After fulfilment of the normality assumption, data is further operationalized for the analysis purpose.

**Table No. 3 Listing Day Performance of Venture Capital Backed IPOs**

Characteristics	IR	MAER	Annualized IR	Annualized MAER
<b>Mean</b>	27.53* (3.827)	24.44* (3.680)	508.00* (3.870)	450.00* (3.753)
<b>Maximum</b>	104.04	100.34	1808.31	1744.00
<b>Minimum</b>	-13.67	-6.19	-356.40	-161.38
<b>Positive Returns (%)</b>	83.33	77.78	83.33	77.78
<b>Negative Returns (%)</b>	16.67	22.22	16.67	22.22

\*Significantly different from zero at 1 percent level of significance.

Note: t statistics in parentheses

Being a pervasive and an inevitable nature underpricing of IPOs in the capital market, venture capital backed IPOs are also not remain unaffected by the presence of the underpricing on the first day of listing on the stock exchange. It is evident in the literature that underpricing is prevailing in all the initial public offerings respective of its origin and time. Underpricing of venture capital backed IPOs examined in the table no. 3 in the form of initial return, market adjusted excess return, and annualized initial return, and annualized market adjusted excess return. Initial return is presented as the measure of underpricing of venture backed IPOs and market adjusted excess return is measured to examine the effect of changes in market conditions on the initial returns. Both of the initial return and market adjusted excess return annualized because of the issuing of IPOs on the different time duration.

Table 3 reports the significant initial return with the mean value of 27.53 on the first day of the trading of venture backed IPOs at 1 percent level of significance. It means the significant level of underpricing exists in these IPOs with the maximum of 104.04 and minimum of -13.67 value of initial return. Out of the total number of IPOs 83.33 percent IPOs underpriced or given positive returns whereas 16.67 percent IPOs exhibited negative returns. A number of days between the issue of IPOs and listing day have an impact on the level of underpricing which is observed from the mean value of the market adjusted excess return. During this period, IPOs issue and firm related vital information could be available to the investor. Market adjusted excess return is significantly less underpriced than the initial return at 1 percent level of significance. Investors would have earned 508 percent and 450 percent annualized initial return and market adjusted excess return respectively.

Consequently, the results of the initial return of venture capital backed IPOs discussed previously are consistent with venture capitalists certification hypothesis that venture capitalist reduce the asymmetric level of information and ex-ante uncertainty which signals about the quality of the issue to the investor (Kumar, 2004; Megginson & Weiss, 1991). This reduced level of ex-ante uncertainty, and asymmetry of information decreases the level of underpricing of venture backed IPOs in comparison to the non-venture backed IPOs. Non-venture backed IPOs were highly underpriced showed in several studies like 153 percent, 295 percent, 127 percent, and some studies present 70 percent, 72 percent 99 percent degree of underpricing whereas venture backed IPOs shows 27.53 percent and after adjusting the market changes 24.44 percent level of underpricing in context of India.

## **V. CONCLUSION**

Underpricing is the extensively studied event in the IPOs literature. In this study examined the degree of underpricing of the unique sample of venture capital backed IPOs taken from the database of Venture Intelligence. Results shows that the level of underpricing found positively in the venture capital backed IPOs. There were not much difference in the level of initial return and market adjusted excess return. Their annualized return is also found positively and significant at 1 percent level of significance. Time gap between the day of IPOs issue and the day of IPOs listing make possible the availability of the firm and issue related information in

the hand of investors that causes reduced level of information resulted in less underpricing of the IPOs on the listing day. Therefore venture capital backed IPOs found less underpriced in comparison to the non-venture capital backed IPOs. Results are in the support of the certification role of the venture capitalists and underwriters reputation and are consistent with the findings of the Megginson and Weiss (1991), Barry et al. (1990).

The present study measures only the level of underpricing of venture capital backed IPOs. Further, research should focus on the some explanatory variables that have capacity to influence the degree of underpricing. Along with the significant role of venture capitalists, certification and the underwriter's reputation in the reduced level of underpricing of venture capital backed IPOs, there are some other factors that could influence the degree of underpricing of the IPOs.

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