Informational Asymmetry Between Informed and Retail Investors While Investing in the Indian IPO Market

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Abstract

Do retail investors make investment decisions in the primary markets based on personal decisions (mainly gut feeling) ? by taking clues from institutional investors ? or by seeking help of ratings given by credit-rating agencies ? - these are the common questions about retail investors investing in primary markets. Primary markets give a lot of opportunities to retail investors to purchase stocks at lower rates considering the future prospects of the companies. Underpricing of the IPOs and market efficiency play a crucial role in the primary markets as suggested by asymmetric information models. The true value of a share is determined by many factors, which are considered in various proportions to assess the demand in the market. The book building process, adopted throughout the world, helps in identifying the strength of the value of a share, but still, in many ways, to a researcher, finding the true value of a share is an art and not an absolute science. The study aimed at understanding the decision making capabilities of the retail investors based on the information available to them. The study mainly examines how and why information asymmetry exists between the informed and retail investors and whether the winner's curse exists in the Indian stock markets. A sample of 177 IPOs were considered for the study, with the time period of the study being from 2008-12. Stepwise regression analysis, correlation, and Granger's causality tests were conducted. The study found conclusive evidence to support asymmetric behavioural theories. The study revealed that retail investors took clues from institutional investors before investing in the primary markets, but they did not conduct any market research, nor did they consider credit ratings as an important component before entering the primary markets.

Keywords: retail investors, primary markets, IPOs, stepwise regression, Granger causality

JEL Classification: G1, G2, C1

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The economic reforms of 1990 paved the way for growth and integration of global markets with Indian markets. Industrial de-licensing, tariff reduction, deregulation of capital and financial markets, and fiscal reforms lead to a flurry of activity in several sectors, mainly the IT sector, services sector, auto sector, consumer goods sector, consumer durables sector, and the telecommunications sector. Today, the stock markets closely follow economic trends and are aligned to the global economic and financial market performance. Capital market reforms eased the norms for equity issues and increased the opportunities for the corporate sector to raise equity capital at market prices. The markets readily provided the necessary funds for the industry, which strengthened the IPO market in India. Globalization, advancements in information technology, and regulatory controls have brought in phenomenal changes in dissemination of information.

From 1991, there was a steady but phenomenal growth in the Indian GDP. The GDP growth was between 5.1% and 6.1% in the year 1991, which steadily increased to 8% in 2003. With global recession impacting other nations throughout the world, the Indian GDP found its bottom at around 6% in 2012-13. As can be observed from the

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Figure 1. FII Investments in India for the Period from 1992-2013
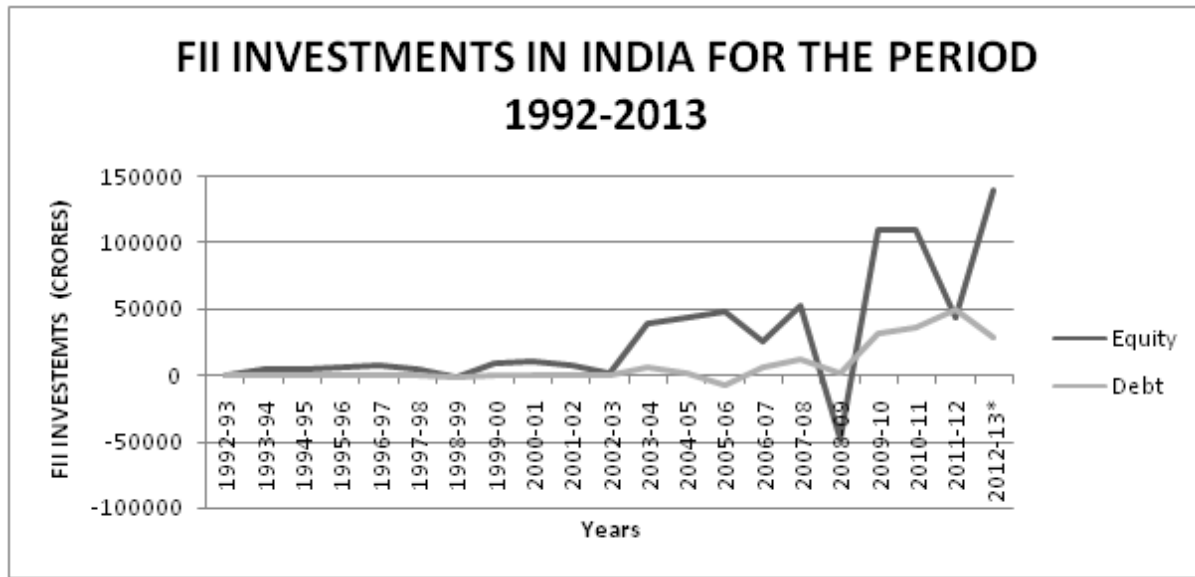
Source: Compiled from FII investment details statistics available at www.sebi.gov.in

Figure 1, a healthy economic performance accompanied by sophisticated capital markets drew a lot of foreign institutional investments (FIIs) towards Indian markets. A mere INR 13 crore in investments by FIIs in 1992-93, swelled up to INR 1, 68,367 crores as on March 31, 2013. With a huge amount of money in the capital markets, the stock market surpassed all the past resistance levels with the BSE Sensex index, which is considered as the barometer of the Indian economy, crossing 10,000 points by February 2006, the 12,000 mark by April 2006, and the 21,000 mark by June 7, 2010. As on July 25, 2013, the BSE Sensex was trading at 20,040 points (SEBI, 2013).

Initial public offering (IPO) markets or the primary markets throughout the world provide a common platform for companies to raise capital from investors by presenting themselves in a professional manner and in a true sense, displaying openly and transparently, their performance in the past and predicting their future prospects. The savings patterns among Indian households have changed dramatically, with more savings shifting from conventional fixed deposit schemes to other investment options available in the primary and secondary markets. This shift of the investors from a risk-free environment to financial markets without proper awareness with respect to the risks and the corresponding returns is believed to have created the 'winner's curse'. Rock (1986) hypothesized that asymmetry exists in the information available among participants in the primary markets. Due to this asymmetry, few investors are found to be better informed than others with respect to future performance of the companies. It is believed that the gap that exists between informed investors and uninformed investors in the primary markets is large, owing to the worries of uninformed investors who are mainly the retail investors.

According to the informational asymmetry model as proposed by Rock (1986), the IPO market comprises of two types of investors: a) the informed investors, who are willing to set aside some costs in research before making investment decisions, and b) the uninformed investors, who are always found to make the wrong decisions by not willing to commit resources to acquire information before entering into the primary markets. According to the hypothesis, investors guarantee allocation of the full amount of overpriced shares when compared to a limited number of shares in underpriced issues, if any at all. Thus, at the end of all investments, uninformed investors always end up holding a disproportionate portion of overpriced IPOs. This, in turn, impacts the average returns on the portfolio of IPOs which the uninformed investor holds. Thus, according to the hypothesis, uninformed investors' returns in the IPO market depend not only on the after-market price, but also on the probability of receiving an allocation of underpriced issues. Ibbotson, Sindelar, and Ritter (1988) found the first day IPO returns to be 16.3% during the period from 1960- 1987. Welch (1989) further strengthened the concept of underpricing by observing average initial returns of upto 22% in the IPO markets on the first day. According to the asymmetric

information model of Rock, uninformed investors would be entitled to participate in the market only if IPOs are offered at discounts from their expected after-market prices. Thus, firms are forced to underprice their IPOs in order to compensate uninformed investors for this adverse selection. For informed investors, the excess returns that are earned from underpriced IPOs should be enough to compensate for the costs of acquiring information. Levis (1990) suggested underpricing by considering the companies issues shares at "offer for sale at a fixed price". The companies going by this method can always be at a disadvantage in terms of the lost proceeds, if the company underestimates the market value of the new issue. Thus, the model creates a synoptic relationship between a company, the informed investors, and the uninformed investors. According to Rock's hypothesis, the construct of this relationship is more skewed towards companies and informed investors, leaving the uninformed investors to face risks.

The winner's curse model (Beatty & Ritter, 1986; Carter & Manaster, 1990 ; Rock, 1986) and signaling-based models (Allen & Faulhaber, 1989 ; Grinblatt & Hwang, 1989 ; Welch, 1989) are the prominent models which have tried to explain IPO underpricing and the relationship between informed and uninformed investors' decision making capabilities. Though these above - mentioned models have tried to explain the reasons for underpricing and the relationship between investors, investing decisions made by uninformed investors (retail investors) are still considered a 'mystery' (Ibbotson & Jaffe, 1975). Subscription level for any company's IPO determines the extent of interest shown by the investing community. If an IPO is oversubscribed by informed investors such as qualified institutional investors and non-institutional investors, uninformed investors such as retail investors can definitely consider subscribing to such an IPO as institutional investors have more information about the upcoming IPOs.

In addition to the subscription data, rating given by credit rating agencies is also considered as a clue by an uninformed investor to make investing decisions. In India, credit rating agencies do address the issue of information asymmetry in the financial markets by providing need based timely information. With time, as regulatory measures ensured equal weightage for participation and allocation of stocks to retail investors, there was immediate requirement for research based independent agencies, which would take the responsibility of providing information regarding the quality, capability, and creditworthiness of the borrowers and investments. CAREs Ratings, Fitch Ratings, Standard & Poor's, and Moody's are considered to be the major credit rating agencies operating internationally. In India, the first credit rating agency that was formed was The Credit Rating Information Services of India (CRISIL Ltd.) in 1987. Apart from CRISIL, few more prominent credit rating agencies in India are Investment Information and Credit Rating Agency of India (ICRA) and Credit Analysis and Research Ltd. (CARE). The credit rating agencies are governed by Securities and Exchange Board of India (Credit Rating Agencies) Regulations, 1999. The agencies analyze companies' IPOs with respect to their past performance, future prospects considering demand and growth, nature and basis of competition, their exposure to change as per government policies, and so forth. Thus, both qualitative and quantitative analysis is employed before rating a company's IPO. Thus, to an uninformed investor, credit ratings can be beneficial, considering them not having time and access to company information.

This paper is an attempt to understand if the winner's curse exists in the Indian primary markets ; understanding the level of symmetry with respect to awareness and information availability would help us to draw conclusions on its implications for Indian primary markets.

Literature Review

The literature provides the genesis and possible explanation to winner's curse in IPO markets. Rock (1986) first emphasized on winner's curse in IPO markets when he classified investors into informed and uninformed investors depending on the quality of information available. Beatty and Ritter (1986) further analyzed Rock's (1986) model to examine the relationship between underpricing and degree of uncertainty in pricing of the issues. The authors observed that any issue would be oversubscribed if there is more uncertainty in the expected value of the company's issue, which leads to adverse selection. Thus, greater risk has to be compensated by providing

greater yield through fixing of a lower offering price. Allen and Faulhaber (1989) examined the relationship between motives of company and pricing of the issues, that is, the company confident of its investment projects would fix a lower price as a reliable sign of the quality and confidence in recovery of the cost of underpricing through successive placements at more favourable prices. Levis (1990) examined the winner's curse in IPO markets considering the interest costs and underpricing of the IPOs. The author believed that the companies can always be at a disadvantage, in term of lost proceeds, if the company underestimates the market value of the new issue. It was also observed that only publicly available information would not be sufficient in judicious selection of the IPO issues, which is in a way disadvantageous to uninformed investors. Avramov, Chordia, Jostova, and Philipov (2009) examined whether firms with low credit risk realized higher returns than firms with high credit risk. This credit risk effect in the cross-section of stock returns is a puzzle because investors appear to pay a premium for bearing credit risk. The study also used the characteristic based model of Daniel, Grinblatt, Titman, and Wermers (1997). The paper concluded that the negative relation between credit risk and returns is statistically and economically significant only during periods of credit rating downgrades. Ashbaugh- Skaifea, Collins, and LaFondc (2006) examined the relationship between a company's credit worthiness and its corporate governance policies with credit ratings. The study found conclusive evidence that weak governance, lower credit ratings, and lack of feel for fulfilling financial obligations would have a negative impact on a company's long term future.

Gill (2005) examined the reliability of rating assigned by ICRA on the basis of actual default rate experience on long-term debt across five sectors for the period from 1995-2002. The default statistics were examined sector-wise, period-wise, and company/institution-wise. Simple metrics like default rates by rating grades and rating prior to default were used to analyze whether low ratings (i.e., speculative-grade ratings) were assigned by ICRA to defaulting credits well in advance of default rate. The said paper concluded that excessive reliance on credit ratings is not preferable because of the inherent doubts regarding the governance of the rating agencies.

Thus, the examined studies reveal the presence of the winner's curse in primary markets of several countries, but its relevance in Indian context was found to be less explored.

Problem Statement

From the literature review, it is evident that IPOs are the main sources of capital for the companies and are an opportunity for investors to allocate their savings with an intention of diversifying the portfolio and obtaining an above average rate of return as compared to other traditional avenues. Informational asymmetry is considered to be the reason for the winner's curse, which might also be evident in the Indian stock markets. This area is still not explored in the Indian stock markets. Over the years, there is still disgruntlement on the pricing of the IPO issues, which to a large extent has been the reason for disinterest among retail investors. It should be examined that if informational asymmetry exists in the Indian stock markets, especially with respect to primary markets, then retail investors' decisions would be based on the interests shown by the qualified institutional investors (QIIs) and non institutional investors (NII), which, in turn, would lead the way to adverse selection. Credit rating agencies also provide research based opinions in the form of credit ratings. Is this information beneficial and used by investors in making decisions is the question that needs to be answered. It was thus felt necessary to understand the dynamics between credit ratings, subscriptions by QIIs and NIIs on the decision making of uninformed investors, who are mainly the retail investors.

Objectives of the Study

(1) To examine the relationship between the ratings given by credit rating agencies and the subscription/interest showed by retail investors in the IPO markets.

(2) To analyze the relationship between qualified institutional investors and non-institutional investors with the retail investors.

(3) To examine the winner's curse in the Indian primary markets.

Hypotheses

⮱ **H01:** Credit ratings of IPOs do not have any impact on the decisions of uninformed investors/retail investors.

⮱ **H02:** The informed investors' (qualified institutional investors and non - institutional investors) decisions do not provide any clue for decision making of the uninformed investors (retail investors).

⮱ **H03 :** Winners curse does not exist in the Indian stock market.

Methodology

For the empirical analysis of the winner's curse, we required data on the allocation details for each of the IPO issued between the period from 2008-2012 (for a period of 5 years). Obtaining the data on subscription and allocation in most instances was very difficult. The period considered can be recognized as the dry period in terms of IPO issues (Ibbotson). An exhaustive sample of IPO issues of 177 companies was considered for the study. The list of the companies considered for the study is shown in the appendix Table-A1 to Table-A3. The data was collected from secondary sources of information. Mainly, the data was collected from website www.chittorgarh.com, which is a comprehensive IPO website in India. Subscription details of QIIs, NIIs, and retail investors were obtained from the website. The credit ratings given were collected from National Stock Exchange website (nseindia.com) and from chittorgarh.com. The daily shares prices of each company were collected for 1 year from the date of the issue to understand whether the shares were overpriced or underpriced during the day of issue and also to understand the performance of the stocks over various time intervals (medium to long term performance).

For the sample of 177 companies, the following information was collected :

(1) Issue date of the IPO,
(2) Issue price of the IPO,
(3) Issue type: Only IPO issues issued through the book building process were considered for the study,
(4) Issue size (in Crore ₹),
(5) Credit rating provided for the IPO issue,
(6) Subscription details by qualified institutional investors,
(7) Subscription details by non-institutional investors,
(8) Subscription details by retail investors.

Descriptive statistics were conducted for the data collected to understand the distribution of the sample. Mean and standard deviation were calculated for the parameters considered for the study. The arithmetic mean, or simply the mean or average, is the central tendency of a collection of numbers taken as the sum of the numbers divided by the size of the collection. The formula for the same is as shown below :

$$\bar{x} \quad \frac{1}{n}\sum_{i\ 1}^{n} x_i$$

where,
    X bar represents the mean of the sample,
    x_i represents each sample value and $'n'$ represents the sample size.
    Standard deviation (represented by the symbol sigma σ) shows how much variation or "dispersion" exists from

$$s = \sqrt{\frac{1}{N-1} \sum_{i=1}^{N} (x_i - \bar{x})^2}$$

the average (mean or expected value). A low standard deviation indicates that the data points tend to be very close to the mean; high standard deviation indicates that the data points are spread out over a large range of values. The formula for which is as shown above.

where,

'σ' represents standard deviation of the distribution,

x bar represents the mean of the sample,

x_i represents each sample value and N represents the sample size.

In order to understand the strength of the relationship between the parameters, correlation test was conducted. The sample correlation coefficient $\rho_{x,y}$, between two random variables X and Y with expected values μ_x and μ_y and standard deviations σ_x and σ_y is defined as :

$$\rho_{x,y} = CORRELATION(x, y) = \frac{COVARIANCE\ (x,y)}{\sigma_x\ \sigma_y} = \frac{E\ [(x-\mu_x)\ (y-\mu_y)]}{\sigma_x\ \sigma_y}$$

To find the nature of the relationship between the parameters considered, step wise regression analysis was conducted. Backward elimination technique was followed, wherein we started with all candidate variables, testing the deletion of each variable using a chosen model comparison criterion, deleting the variable (if any) that improves the model the most by being deleted, and repeating the process until no further improvement is possible. Regression analysis is a statistical tool for the investigation of relationships between variables. Though we seek to ascertain the causal effect of one variable upon another, regression does not imply causation. Thus, Granger causality tests were conducted to understand the cause and effect relationship. To estimate the quantitative effect, statistical significance of the estimated relationships was considered before eliminating the variables from the model. Thus, the regression model considered is as follows :

$$Y = \alpha + \beta_i\ X_i + \varepsilon$$

where,

Y is the "dependent" or "endogenous" variable,

X_i are the "independent," "explanatory," or "exogenous" variables,

'α' is the constant amount and 'β_i' is the coefficient of each independent variable,

ε is the 'noise' term reflecting other factors that influence the dependent variable.

Although regression analysis indicates the nature of a relationship, it does not necessarily imply causation or direction of influence. Thus, in order to understand the causal effect, Granger-causality test was conducted. Granger causality test assumes that the information relevant to the predication of the variables is solely contained in the data collected (Gujarati, 2004). The test involves estimating the following pair of regressions :

$$X_t = \sum_{i=1}^{n} \alpha_i Y_{t-i} + \sum_{i=1}^{n} \beta_j X_{t-i} + \mu_{1t} \quad \text{................................(1)}$$

$$Y_t = \sum_{i=1}^{n} \lambda_i Y_{t-i} + \sum_{i=1}^{n} \delta_j X_{t-i} + \mu_{2t} \quad \text{................................(2)}$$

where, it is assumed that disturbances μ_{1t} and μ_{2t} are uncorrelated. Thus, the equation 1 postulates that variable X is related to past values of itself as well as that of variable Y, and equation 2 postulates the similar behaviour for variable Y. From the regression analysis, we distinguished the relationships by four cases namely :

Table 1. Descriptive Statistics of IPO Issues During the Period from 2008-2012

Issue Price (in ₹)		Issue Size (in ₹ crores)		Rating		QII (No. of subscription times)		NII (No. of subscription times)		RII (No. of subscription times)	
Mean	175.2	Mean	493.3	Mean	3.4	Mean	11.6	Mean	19.2	Mean	6.7
Standard Error	15.0	Standard Error	120.7	Standard Error	0.0	Standard Error	1.8	Standard Error	2.6	Standard Error	1.1
Standard Deviation	196.4	Standard Deviation	1583.2	Standard Deviation	0.5	Standard Deviation	24.0	Standard Deviation	34.8	Standard Deviation	14.3
Kurtosis	11.7	Kurtosis	57.7	Kurtosis	2.1	Kurtosis	19.7	Kurtosis	5.9	Kurtosis	40.9
Skewness	3.1	Skewness	7.2	Skewness	-1.1	Skewness	3.9	Skewness	2.5	Skewness	5.6
Range	1300.0	Range	15194.4	Range	3.5	Range	180.7	Range	179.7	Range	132.9
Minimum	10.0	Minimum	5.1	Minimum	1.0	Minimum	0.0	Minimum	0.0	Minimum	0.1
Maximum	1310.0	Maximum	15199.4	Maximum	4.5	Maximum	180.7	Maximum	179.7	Maximum	133.0

(1) Unidirectional causality from X to Y is indicated if the estimated coefficients on the lagged X in equation-1 are statistically different from zero as a group and the set of estimated coefficients on the lagged Y in equation-2 are not statistically different from zero.

(2) Conversely, unidirectional causality from Y to X exists if the set of lagged X coefficients in equation-1 are not statistically different from zero and the set of the lagged Y coefficients in equation-2 are statistically different from zero.

(3) Feedback or bilateral causality is suggested when the sets of X and Y variable coefficients are statistically significantly different from zero in both regressions.

(4) Finally, independence is suggested when the sets of X and Y variable coefficients are not statistically significant in both the regressions.

Thus, if variable X (Granger) causes variable Y, then changes in X should precede changes in Y. Therefore, in a regression of Y on other variables (including its own past values), if we include past or lagged values of X, and it significantly improves predication of Y, then we can say that X (granger) causes Y and vice versa. Thus, to test the hypothesis, F-test was conducted for the null hypothesis that lagged X terms do not belong in the regression. If the computed F - value exceeds the critical F - value at the chosen level of significance, we reject the null hypothesis, in which case the lagged X terms belong in the regression.

Data Analysis and Interpretation

The Table 1 presents the preliminary statistics of IPO issues for the period from 2008 - 2012. We can notice that the mean issue price is around ₹ 175.18, with standard deviation of ₹196.4. The minimum issue price for the period among the 177 companies was observed to be ₹10, with a maximum price of ₹1310. The distribution was found to be leptokurtic, with fat tails towards the tail of the distribution and was observed to be positively skewed. In terms of the issue size, the mean issue size was ₹ 493.34 crores, with a standard deviation of ₹ 1583.17 crores. The minimum issue size observed was ₹ 5.05 crores, while the maximum issue size was ₹ 15,199.44 crores. In terms of quality of the companies as per the credit ratings given by the credit rating agencies, we observed that the rating of even 1 point (Comfort Commotrade Ltd.) issued an IPO, and on the extreme end, a company which was considered to be good and had bright future prospects was given a maximum of 4.5 points (Reliance Power Limited). But on an average, a rating of 3.45 points was observed among the companies, with a standard deviation of just 0.04 points.

Table 2. The Results of the Correlation Between the Parameters Considered for the Overall Period

	Issue Price	Issue Size	Rating	QII	NII	RII
Issue Price	1	0.16379	0.1826	0.4593	0.3929	0.0743
Issue Size	0.16379	1	0.2751	0.2365	0.2112	-0.022
Rating	0.1826	0.2751	1	0.3187	0.3318	0.034
QII	0.4593	0.2365	0.3187	1	0.6234	0.3565
NII	0.3929	0.21115	0.3318	0.6234	1	0.4757
RII	0.0743	-0.022	0.034	0.3565	0.4757	1

In order to understand the inherent belief of informed investors in the IPO issues during the period from 2008-2012, the subscription data was considered for the QIIs and NIIs. Considering the qualified institutional investors and the non-institutional investors together, the mean subscription level was found to be 6.68 times, and the standard deviation was observed to be 23.97 times as shown in the Table 1. In terms of range, a minimum of zero times, that is, no subscription to an IPO to a maximum of 180.65 times was also observed. Thus, in case of some of the IPOs, the informed investors did not subscribe these IPOs.

According to the winner's curse, due to informational asymmetry, there is thriving evidence of adverse selection. When compared to informed investors, the uninformed (retail) investors' mean subscription level was close to 11.52 times, which is much higher than the subscriptions by QIIs and NIIs ; the standard deviation was observed to be 14.25 times, which is lesser than that of informed investors/QIIs and NIIs. In terms of the range, the minimum is 0.07 times, while the maximum is 133 times. Thus, at the end of all investments, the uninformed investors always end up holding a disproportionate portion of overpriced IPOs since they are observed to lay their hands on all the IPOs.

To understand the strength of the relationship between various parameters, correlation test was conducted. The results of the correlation between the parameters considered is shown in the Table 2. A significant relationship with important implications can be formed from the results. We observed that the informed investors considered many factors before taking decisions regarding IPOs. The decisions of the informed investors were based on issue price, issue size, and ratings altogether. But, when it came to decisions by retail investors, they were found to make adverse selection by taking clues from subscriptions of the informed investors and did not pay enough attention to important parameters such as issue price, issue size, and ratings provided by the rating agencies. It was observed that on an average, retail investors chose IPOs which were priced less and which were of lesser size. They also did not give much importance to credit ratings before subscribing to IPOs.

To further understand the nature of relationship between the retail investors' decision making in terms of IPOs' subscriptions with other parameters, step-wise regression was conducted to find the model which is significant enough in explaining the nature of decisions made by retail investors and to find the parameters which played a significant role in their decision making. The results were found to be in line with the correlation analysis. The results of the regression analysis are shown in the Table 3. It can be seen that there exists a significant relationship between subscriptions done by informed investors such as QIIs and NIIs with retail investors' subscriptions to respective IPOs. Thus, the H02 can be rejected at the 5% level of significance. Furthermore, it was also observed that the issue price of the IPOs also played a decisive role in matters pertaining to purchasing stocks. Thus, we observed that information asymmetry caused the uninformed investors to take clues from informed investors while making decisions regarding subscription to IPOs. Although regression analysis indicates the nature of a relationship, it does not necessarily imply causation or direction of influence. In order to understand the cause and effect relationship between the variables, pair wise Granger Causality test was conducted. The results of the causality test are presented in the Table 4.

From the Table 4, it is clearly observed that the ratings given by the credit rating agencies were considered to be very important by QIIs and NIIs, and this relationship was observed to be statistically significant at the 5% level of significance. However, uninformed investors, mainly the retail investors, were observed to base their buying

Table 3. Regression Results of IPO Subscriptions Done by Retail Investors with Other Parameters

Regression Statistics	
Multiple R	0.534801224
R Square	0.28601235
Adjusted R Square	0.264506697
Standard Error	12.22888611
Observations	172

ANOVA

	df	SS	MS	F	Significance F
Regression	5	9944.340219	1988.868044	13.29940371	6.68E-11
Residual	166	24824.57879	149.5456554		
Total	171	34768.91901			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	15.91539416	6.449428479	2.46772163	0.01461183	3.181915215	28.6488731	3.181915215	28.64887311
Issue Price	-0.011976988	0.005432098	-2.20485513	0.028839205	-0.022701892	-0.0012521	-0.02270189	-0.00125208
Issue Size	-0.000976169	0.000624211	-1.563843566	0.119758683	-0.002208585	0.00025625	-0.00220858	0.000256248
Rating	-3.42235723	1.905509796	-1.796032347	0.07430798	-7.184515218	0.33980076	-7.18451522	0.339800757
QII	0.117772442	0.052999137	2.222157744	0.027624238	0.013133187	0.2224117	0.013133187	0.222411697
NII	0.198010871	0.035383327	5.596163091	8.88102E-08	0.128151525	0.26787022	0.128151525	0.267870217

Table 4. Granger Causality Test Results of the Significant Parameters

Pairwise Granger Causality Tests

Sample: 1 177

Lags: 2

Null Hypothesis:	Obs	F - statistic	Prob.
RATING does not Granger Cause RII	175	1.3023	0.2912
RII does not Granger Cause RATING		4.51504	**0.0222**
QII does not Granger Cause RII	175	0.4593	0.6374
RII does not Granger Cause QII		3.97361	**0.0329**
NII does not Granger Cause RII	175	0.35995	0.7016
RII does not Granger Cause NII		**0.02431**	0.976
QII does not Granger Cause RATING	175	0.34198	0.7139
RATING does not Granger Cause QII		0.3996	0.6752
NII does not Granger Cause RATING	175	0.08638	0.9175
RATING does not Granger Cause NII		**0.04559**	0.9555
NII does not Granger Cause QII	175	0.22973	0.7965
QII does not Granger Cause NII		0.09638	0.9085

decisions not based on research made available to them by credit rating agencies, but based on decisions/subscriptions made by the informed investors due to IPO issue process. Thus, H01 is rejected and we can infer that the credit ratings provided by different credit rating agencies were not considered seriously by the retail investors and hence, they remained uninformed about the future prospects of the companies. However, QIIs and NIIs did their research before investing in IPOs, and thus, they could foresee the performance of the IPO

issues and their potential capability to provide capital appreciation. Thus, winner's curse is found to exist in the primary markets in India, which is mainly created due to asymmetry between informed and uninformed investors' access to and awareness regarding information acquired by them before entering the primary markets. By combining the obtained results, the H03 is also rejected, and we can conclude that the winner's curse does exist in the Indian stock markets.

Findings

The following are the important findings of the study :

(1) Retail investors based their decisions of buying stocks in the primary markets on intensity, and not on selectivity. Retail investors did not pay much importance to research, that is, they did not make much efforts to find out the quality, capability, and creditworthiness of the companies whose IPOs they were planning to subscribe. They made decisions by not considering the research material made available by several credit rating agencies, but invested in IPOs that were being subscribed by the informed investors. Whereas, on the other hand, the informed investors took the trouble to conduct background research before entering the primary markets.

(2) Retail investors did not prefer to invest in IPOs taking into consideration the issue price and the issue size. Higher was the price and size of the IPO issues, it tend to negatively influence the subscriptions from the retail investors.

(3) Lack of inclination towards research by retail investors created informational asymmetry between informed and uninformed investors. This was also observed by studies conducted in developed countries.

(4) Retail investors were observed to make their decisions mainly based on the subscription details made available to them. We found a significant relationship between subscriptions done by informed investors and retail investors.

(5) Retail investors were found to be well aware of the informational asymmetry between them and other institutional investors, due to, may be, lack of time, lack of money for research, and lack of confidence. Thus, retail investors, in turn, depended on informed investors' decisions. This dependency behaviour and lack of awareness on entry and exit options was observed to create a portfolio of proportionately large number of overpriced issues with the retail investors. Whereas, the informed investors tried to reap the benefits by properly timing their exit and entry strategies by buying and even holding underpriced shares for longer periods of time (Deepak & Shivaprasad, 2010).

(6) Thus, when it came to decision making, uninformed investors were making their decisions without proper research and consultancy. Ratings provided by different credit rating agencies after thorough research on the companies' present and future prospects, though important for all investors, were considered seriously by the informed investors due to time and resources available to them. However, the retail investors did not consider these ratings seriously while making their investment decisions.

Implications

(1) There is a need for investor awareness programmes on the role of primary markets and their (the investors') contribution towards the primary markets. There is a requirement for need based information, which has to be completely transparent and concise so that it can be easily used by the investors.

(2) There is a need for a widespread campaign on helping investors understand the importance of credit ratings

and fundamental research before buying stocks in the primary markets, which would help retail investors to avoid having a higher proportion of overpriced stocks in their portfolio.

(3) The study has shown that the winner's curse does exist in the Indian stock markets. Hence, regulators, companies, and credit rating agencies need to provide a platform to help investors understand more about the primary markets as well as the companies participating in the primary markets so that they can make well informed decisions rather than simply aping the investments made by informed investors.

Conclusion

From the analysis, we conclude that winner's curse exists in the Indian stocks markets, and the problem of information asymmetry is to be addressed seriously by the regulatory authorities before the IPO issues are released. Awareness needs to be created - either by credit rating agencies or by the companies that are scrutinized by the regulators themselves - regarding the importance of research before investing in primary markets . Concerted efforts need to be made to create awareness regarding the methodology followed by these agencies in providing credit ratings. According to our research findings, the need of the hour is to encourage retail investors to change their investment strategies. This will only be possible through focused efforts of regulators, credit rating agencies, and companies.

Limitations of the Study and Scope for Future Research

The present study is restricted to only the Indian capital market and considers IPOs issued in BSE and NSE exchanges only. The study is only based on secondary data. Due to time and resource constraints, the IPOs of only 177 companies were considered for analysis for the time period from 2008 to 2012.

On the basis of the study, we foresaw several key areas for extending the present study in the future. Researchers can consider the following areas for research :

(1) Role of primary markets in providing better investment avenues to retail investors over a span of short term, medium term, and long term horizon.

(2) Role of credit ratings in the policy decisions of the investors.

(3) Role of regulators and lessons learnt in providing platforms to retail investors for participating in the primary markets.

(4) Are higher credit ratings better indicator for decision making?

(5) Does informational asymmetry lead to any changes in the participation pattern of the investors? A study using neural networks can be adopted for research in this area.

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Appendices

Appendix Table 1A: List of Companies Considered for the Study which Participated in the Primary Market During the Time Period from 2008-2009

SL.NO	ISSUER COMPANY	DATE OF IPO ISSUE	SL.NO	ISSUER COMPANY	DATE OF IPO ISSUE
1	Future Capital Holdings Ltd IPO	Jan 11, 2008	29	Nu Tek India Limited IPO	Jul 29, 2008
2	Reliance Power Limited IPO	Jan 15, 2008	30	Austral Coke & Projects Ltd IPO	Aug 07, 2008
3	J Kumar Infraprojects Limited IPO	Jan 18, 2008	31	Resurgere Mines & Minerals India Ltd IPO	Aug 11, 2008
4	Cords Cable Industries Limited IPO	Jan 21, 2008	32	20 Microns Limited IPO	Sep 08, 2008
5	OnMobile Global Limited IPO	Jan 24, 2008	33	Chemcel Bio-tech Limited IPO	Sep 09, 2008
6	KNR Constructions Limited IPO	Jan 24, 2008	34	Alkali Metals Limited IPO	Oct 07, 2008
7	Bang Overseas Limited IPO	Jan 28, 2008	35	Edserv Softsystems Limited IPO	Feb 05, 2009
8	Shriram EPC Limited IPO	Jan 29, 2008	36	Rishabhdev Technocable Ltd IPO	Jun 04, 2009
9	IRB Infrastructure Developers Ltd IPO	Jan 31, 2008	37	Mahindra Holidays and Resorts India Ltd IPO	Jun 23, 2009
10	Tulsi Extrusions Limited IPO	Feb 01, 2008	38	Excel Infoways Limited IPO	Jul 14, 2009
11	GSS America Infotech Ltd IPO	Feb 11, 2008	39	Raj Oil Mills Limited IPO	Jul 20, 2009
12	V-Guard Industries Limited IPO	Feb 18, 2008	40	Adani Power Limited IPO	Jul 28, 2009
13	Rural Electrification Corporation Ltd. IPO	Feb 19, 2008	41	NHPC Limited IPO	Aug 07, 2009
14	Gammon Infrastructure Projects Ltd IPO	Mar 10, 2008	42	Jindal Cotex Limited IPO	Aug 27, 2009
15	Titagarh Wagons Limited IPO	Mar 24, 2008	43	Globus Spirits Limited IPO	Aug 31, 2009
16	Kiri Dyes and Chemicals Limited IPO	Mar 25, 2008	44	Oil India Limited IPO	Sep 07, 2009
17	Aishwarya Telecom Limited IPO	Apr 15, 2008	45	Pipavav Shipyard Limited IPO	Sep 16, 2009
18	Gokul Refoils and Solvent Limited IPO	May 08, 2008	46	Euro Multivision Limited IPO	Sep 22, 2009
19	Anu's Laboratories Limited IPO	May 12, 2008	47	Thinksoft Global Services Ltd IPO	Sep 22, 2009
20	Niraj Cement Structurals Ltd IPO	May 26, 2008	48	Indiabulls Power Limited IPO	Oct 12, 2009
21	Bafna Pharmaceuticals Limited IPO	May 27, 2008	49	Den Networks Limited IPO	Oct 28, 2009
22	Avon Weighing Systems Limited IPO	Jun 09, 2008	50	Astec LifeSciences Limited IPO	Oct 29, 2009
23	Sejal Architectural Glass Ltd IPO	Jun 09, 2008	51	Cox and Kings (India) Limited IPO	Nov 18, 2009
24	First Winner Industries Limited IPO	Jun 09, 2008	52	MBL Infrastructures Ltd IPO	Nov 27, 2009
25	KSK Energy Ventures Ltd IPO	Jun 23, 2008	53	JSW Energy Limited IPO	Dec 07, 2009
26	Somi Conveyor Beltings Limited IPO	Jun 24, 2008	54	Godrej Properties Limited IPO	Dec 09, 2009
27	Birla Cotsyn (India) Limited IPO	Jun 30, 2008	55	D B Corp Limited IPO	Dec 11, 2009
28	Vishal Information Technologies Ltd IPO	Jul 21, 2008			

Source: www. chittorgarh.com

Appendix Table 2A: List of Companies Considered for the Study which Participated in the Primary Market During the year 2010

SL.NO	ISSUER COMPANY	DATE OF IPO ISSUE	SL.NO	ISSUER COMPANY	DATE OF IPO ISSUE
56	Jubilant Foodworks Ltd IPO	Jan 18, 2010	87	Gujarat Pipavav Port Ltd (GPPL) IPO	Aug 23, 2010
57	Aqua Logistics Ltd IPO	Jan 25, 2010	88	Indosolar Ltd IPO	Sep 13, 2010
58	Thangamayil Jewellery Limited IPO	Jan 27, 2010	89	Career Point Infosystems Ltd IPO	Sep 16, 2010
59	Syncom Healthcare Limited IPO	Jan 27, 2010	90	Eros International Media Ltd IPO	Sep 17, 2010
60	Vascon Engineers Limited IPO	Jan 27, 2010	91	Microsec Financial Services Ltd IPO	Sep 17, 2010
61	D B Realty Limited IPO	Jan 29, 2010	92	Electrosteel Integrated Ltd IPO	Sep 21, 2010
62	Emmbi Polyarns Limited IPO	Feb 01, 2010	93	Ramky Infrastructure Ltd IPO	Sep 21, 2010
63	ARSS Infrastructure Projects Ltd IPO	Feb 08, 2010	94	Orient Green Power Company Ltd IPO	Sep 21, 2010
64	Hathway Cable & Datacom Ltd IPO	Feb 09, 2010	95	Cantabil Retail India Ltd IPO	Sep 22, 2010
65	Texmo Pipes & Products Ltd IPO	Feb 16, 2010	96	VA Tech Wabag Ltd IPO	Sep 22, 2010
66	Man Infraconstruction Ltd IPO	Feb 18, 2010	97	Gallantt Ispat Ltd IPO	Sep 22, 2010
67	United Bank of India IPO	Feb 23, 2010	98	Tecpro Systems Ltd IPO	Sep 23, 2010
68	Pradip Overseas Limited IPO	Mar 11, 2010	99	Ashoka Buildcon Ltd IPO	Sep 24, 2010
69	IL&FS Transportation Networks Ltd IPO	Mar 11, 2010	100	Sea TV Network Ltd IPO	Sep 27, 2010
70	Persistent Systems Limited IPO	Mar 17, 2010	101	Bedmutha Industries Ltd IPO	Sep 28, 2010
71	Shree Ganesh Jewellery House Ltd IPO	Mar 19, 2010	102	Commercial Engineers & Body Builders Co Ltd IPO	Sep 30, 2010
72	Goenka Diamond & Jewels Ltd IPO	Mar 23, 2010	103	BS Transcomm Ltd IPO	Oct 06, 2010
73	Intrasoft Technologies Limited IPO	Mar 23, 2010	104	Oberoi Realty Ltd IPO	Oct 06, 2010
74	Talwalkars Better value Fitness Ltd IPO	Apr 21, 2010	105	Prestige Estates Projects Ltd IPO	Oct 12, 2010
75	Nitesh Estates Limited IPO	Apr 23, 2010	106	Gyscoal Alloys Ltd IPO	Oct 13, 2010
76	Tarapur Transformers Limited IPO	Apr 26, 2010	107	Coal India Limited IPO	Oct 18, 2010
77	Mandhana Industries Limited IPO	Apr 27, 2010	108	Gravita India Ltd IPO	Nov 01, 2010
78	SJVN Ltd (Satluj Jal Vidyut Nigam Ltd) IPO	Apr 29, 2010	109	RPP Infra Projects Ltd IPO	Nov 18, 2010
79	Parabolic Drugs Limited IPO	Jun 14, 2010	110	Claris Lifesciences Limited IPO	Nov 24, 2010
80	Aster Silicates Ltd IPO	Jun 24, 2010	111	MOIL Limited IPO	Nov 26, 2010
81	Technofab Engineering Ltd IPO	Jun 29, 2010	112	Ravi Kumar Distilleries Ltd IPO	Dec 08, 2010
82	Hindustan Media Ventures Ltd IPO	Jul 05, 2010	113	A2Z Maintenance & Engineering Services Ltd IPO	Dec 08, 2010
83	Midfield Industries Ltd IPO	Jul 19, 2010	114	Punjab & Sind Bank IPO	Dec 13, 2010
84	SKS Microfinance Ltd IPO	Jul 28, 2010	115	Shekhawati Poly-Yarn Ltd IPO	Dec 27, 2010
85	Bajaj Corp Limited IPO	Aug 02, 2010	116	C Mahendra Exports Ltd IPO	Dec 31, 2010
86	Prakash Steelage Ltd IPO	Aug 05, 2010			

Source: www.chittorgarh.com

Appendix Table 3A: List of Companies Considered for the Study which Participated in the Primary Market During the Time Period from 2011-12

SL.NO	ISSUER COMPANY	DATE OF IPO ISSUE	SL.NO	ISSUER COMPANY	DATE OF IPO ISSUE
117	Midvalley Entertainment Ltd IPO	Jan 10, 2011	147	Tijaria Polypipes Ltd IPO	Sep 27, 2011
118	Omkar Speciality Chemicals Ltd IPO	Jan 24, 2011	148	M and B Switchgears Ltd IPO	Sep 28, 2011
119	Sudar Garments Ltd IPO	Feb 21, 2011	149	Onelife Capital Advisors Ltd IPO	Sep 28, 2011
120	Acropetal Technologies Ltd IPO	Feb 21, 2011	150	Taksheel Solutions Ltd IPO	Sep 29, 2011
121	Fineotex Chemical Ltd IPO	Feb 23, 2011	151	Flexituff International Ltd IPO	Sep 29, 2011
122	Lovable Lingeries Ltd IPO	Mar 08, 2011	152	Indo Thai Securities Limited IPO	Sep 30, 2011
123	PTC India Financial Services Ltd IPO	Mar 16, 2011	153	Multi Commodity Exchange of India Ltd IPO	Feb 22, 2012
124	Shilpi Cable Technologies Ltd IPO	Mar 22, 2011	154	BCB Finance Ltd IPO	Feb 23, 2012
125	Muthoot Finance Ltd IPO	Apr 18, 2011	155	Olympic Cards Ltd IPO	Mar 09, 2012
126	Paramount Printpackaging Ltd IPO	Apr 20, 2011	156	National Buildings Construction Corporation Ltd IPO	Mar 22, 2012
127	Future Ventures India Ltd IPO	Apr 25, 2011	157	MT Educare Limited IPO	Mar 27, 2012
128	Innoventive Industries Ltd IPO	Apr 26, 2011	158	Tribhovandas Bhimji Zaveri Ltd IPO	Apr 24, 2012
129	Servalakshmi Paper Ltd IPO	Apr 27, 2011	159	Monarch Health Services Ltd IPO	May 12, 2012
130	Vaswani Industries Ltd IPO	Apr 29, 2011	160	Speciality Restaurants Ltd IPO	May 16, 2012
131	Sanghvi Forging & Engineering Ltd IPO	May 04, 2011	161	Max Alert Systems Ltd IPO	Jun 28, 2012
132	Aanjaneya Lifecare Ltd IPO	May 09, 2011	162	VKS Projects Ltd IPO	Jun 29, 2012
133	VMS Industries Ltd IPO	May 30, 2011	163	Sangam Advisors Ltd IPO	Jul 24, 2012
134	Timbor Home Limited IPO	May 30, 2011	164	Jupiter Infomedia Ltd IPO	Jul 30, 2012
135	Birla Pacific Medspa Ltd IPO	Jun 20, 2011	165	Jointeca Education Solutions Ltd IPO	Aug 16, 2012
136	Rushil Decor Ltd IPO	Jun 20, 2011	166	SRG Housing Finance Ltd IPO	Aug 22, 2012
137	Readymade Steel India Ltd IPO	Jun 27, 2011	167	Thejo Engineering Ltd IPO	Sep 04, 2012
138	Bharatiya Global Infomedia Ltd IPO	Jul 11, 2011	168	Comfort Commotrade Ltd IPO	Sep 05, 2012
139	Inventure Growth & Securities Ltd IPO	Jul 20, 2011	169	Anshu's Clothing Limited IPO	Sep 26, 2012
140	Tree House Education & Accessories Ltd IPO	Aug 10, 2011	170	RCL Retail Limited IPO	Sep 27, 2012
141	Brooks Laboratories Ltd IPO	Aug 16, 2011	171	Bronze infra-tech Ltd IPO	Oct 19, 2012
142	SRS Limited IPO	Aug 23, 2011	172	Tara Jewels Limited IPO	Nov 21, 2012
143	TD Power Systems Ltd IPO	Aug 24, 2011	173	Veto Switchgears and Cables Ltd IPO	Dec 03, 2012
144	PG Electroplast Limited IPO	Sep 07, 2011	174	Credit Analysis & Research Ltd IPO	Dec 07, 2012
145	Prakash Constrowell Ltd IPO	Sep 19, 2011	175	PC Jeweller Ltd IPO	Dec 10, 2012
146	RDB Rasayans Ltd IPO	Sep 21, 2011	176	Bharti Infratel Limited IPO	Dec 11, 2012
			177	Eco Friendly Food Processing Park Ltd IPO	Dec 27, 2012

Source: www.chittorgarh.com