INVESTOR SENTIMENT AND IPO PRICING: MARKET: EVIDENCE FROM INDIA

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Abstract

The present paper aims at understanding the variability in IPO volume and initial return in Indian capital market. In order to see whether the IPOs were timed with the favourable market or not the market was divided into the hot and cold market, defined on the basis of the monthly IPO volume. Then the relationship between market type and total proceeds was established with the help of a multivariate regression model with the idea that any timing attempt should be reflected in the activity of issuance of equity. The result based on multivariate regression suggest that Market timers, identified as firms that go public when the market is hot, tried to maximize the total proceeds at the time of IPO. The hot-market effect is remarkably robust; it is significant for both firm and industry-level characteristics.

Keywords: Initial Public Offerings, Emerging Market, India, Market Timing.

1. INTRODUCTION

An Initial Public Offerings (IPO) is the first sale of a company's shares to the public and the listing of the shares on a stock exchange. It is one of the ways of raising cash. Cash is a soul of a company, especially in today's competitive environment where companies need to grow to survive, is an enabler for a company's success. Companies need cash to carry out activities to sustain and beat the competition. Activities like growing of market share, growing of customer base, increase in R&D spending in order to find new products or new uses for existing products, an increase of manufacturing capacity, marketing and distribution etc. have forced companies to constantly search for cash. The recent trend shows that IPO has become one of the popular and dependable methods of raising cash. But the trend was found to be very inconsistent. The volatility was also found in terms of return generated by the IPO stocks.

The volatility in volume and returns can affect the confidence of investors. Hence a study on the variability in the volume of IPOs across years and variability in initial return generated by the investors was needed. The inconsistency in volume is studied from the perspective of market timing attempt by the issuers. Years, where the volume of IPOs was very high, were termed as 'Hot market' period whereas years, where the volume was low, were termed as 'Cold market' period. Market timing has attracted many researchers ever since Ritter (1984)

documented the concept of "Hot market" and "Cold market" for the sample of US firms. According to Ritter (1984), the hot market is that phase of the market which is perceived to be favourable by issuers and entrepreneurs, whereas the cold market is that phase of the market which is perceived to be unfavourable.

The overall research question of the present study is whether Indian firms timed their issue with a favourable market condition or not? There is a dearth of empirical studies conducted to examine the market timing approach. Even in the already sparse empirical literature, most existing studies are in the context of developed countries, and evidence in the context of emerging countries is rare and far in between. Authors have not come across any research study done in the context of Indian firms on the theme of this paper. The present study adds to the existing sparse empirical literature by investigating the above issues in the context of a sample of firms drawn from the emerging market of India. Finally, the India specific focus of this study makes it especially useful for the ever increasing pool of investors interested in the Indian Primary market. Growing interest of investors in the Indian primary market is evidenced by the recent buoyancy in the IPO activity of the Indian companies (Table 1). While the success of the Indian primary market in the recent years is a positive signal, efforts need to be done to sustain the positive trends in the future also.

The findings of this study will be particularly helpful in understanding the IPOs of Indian firms. Though the similar studies were done in the context of developed economies provide some insight on the issue, yet extrapolating the results of those studies directly onto Indian scene may not be correct.

The remaining paper is organized as follows. Section 2 presents a discussion on literature and Section 3 presents the methodology. Section 4 discusses the results and Section 5 concludes the article.

2. LITERATURE REVIEW

The literature on market timing witnesses many approaches to explain the cyclical nature of IPO volumes. Most of the studies examined the relationship between the volume of IPOs and other macroeconomic variables. This approach basically talks about the cycles of IPO volume and sees the macro environment such as technological shock, investors' optimism, investors' expectation and another macroeconomic variable as a key factor for swings in the cycle. Ibbotson and Jaffe (1975) were the first one to document the "hot issue" market. Following them, a large number of academic studies investigated cyclical nature of IPO market (Ibbotson, & Jaffe, 1975; Ritter, 1984; Ibbotson, Sindelar, & Ritter, 1988, 1994; Lowry, & Schwert, 2002; Ghosh, 2005 etc.).

Ibbotson and Jaffe (1975) observed a pattern in the US market where he found high initial returns to be associated with a high volume of new listings from 1960 to 1970. Ritter (1998) supported them and confirmed the same observation for US IPOs between 1960 and 1982. Afterwards, Lowry and Schwert (2002) found a high autocorrelation between IPO volume and average initial returns. While studies like Loughran et al. (1994) and Brailsford et al. (2004) asserted general economic variables such as stock index and general business indicators to be determining factors for the listing activity, McKenzie (2007) argued past level of listing activity to be the one.

Hoffmann-Burchardi (2001) observed that a hot issue market typically arises from clustering of IPOs and activities in a few industries. Helwege and Liang (2001) supported them by showing that the IPOs in hot and cold periods came from similar industries and have similar characteristics. Allen and Faulhaber (1998) explained the phenomenon with the help of signalling theory. As per them, hot issue period is the consequences of technological and productivity shock.

Contrary to Ibbotson and Jaffe (1975) and Ritter (1984), Ghosh (2005) found no relationship between IPO volume and initial return for Indian IPOs. In contrast with Hoffmann-Burchardi (2001) and Helwege and Liang (2001) he found no significant influence of Industry affiliation on the IPOs during the boom period.

A number of studies examined market timing through a different approach. Instead of macro factors, they examined firm-level information. Using firm-level information they tried to find a link between a firm's position in the market and their issuing activities. Jain and Kini (1994) investigated the post IPO performance of a sample of 682 US firms that went public between 1976 and 1988. They found that the operating performance of US firms in the post IPO period deteriorated significantly. They explored whether market timing could explain this deterioration or not. They evaluated market timing by measuring ratios like M/B, P/E and EPS that can capture investors' expectation and optimism about firms' future growth. They found that all ratios declined significantly after IPO which indicated that firms went public when the investor expectation was at a peak. However, the firms could not maintain the level of expectation in post IPO period and hence underperform badly. On the same line, Cook et al. (2003) examined 6,080 US IPOs between 1980 and 2002 and showed that IPOs during hot issue markets perform more poorly than IPOs during cold markets. They found that IPOs trade at higher valuations and their offer sizes are larger during hot issue markets and that these firms are less likely to survive. They conclude that investor sentiment is a more important feature of IPO markets and therefore could be a key factor in IPO cycles.

Helwege and Liang (2004) examined the quality of 3,698 US IPO firms in hot and cold markets. They found both hot and neutral market IPOs tend to underperform while cold market IPOs tend to outperform. They argued that aggregate IPO volume is determined largely by investor optimism. This Investor Optimism Hypothesis says that an increase in the level of investor optimism causes the market paying more for firms than they deserve. Thus, a large number of firms find it optimal to go public during the period of high sentiment and those periods become hot periods for IPOs. In other words, the IPO market is inefficient such that during periods of high sentiment, investors may overvalue firms, inducing firms to enter that market at the same time so that IPO volume is high, while during periods of low sentiment, investors may undervalue firms, causing firms to delay the market entry so that IPO volume is low.

Derrien (2005) developed a model in which bullish noise trader sentiment during hot markets leads to overpriced IPO shares relative to their long-run intrinsic value. Using a sample of 62 IPOs on the French stock exchange for the hot period of 1999 till 2001, he empirically shows that the long-run stock price performance of IPO shares is negatively impacted by investor sentiment.

Brau and Fawcett (2006) conducted a survey of 336 US-listed firms wherein the CEOs of these companies were asked to indicate the factors that influenced the timing of their IPOs. They found that the overall stock market condition was the single most determinants of timing the issue. A survey on general corporate practices by US firms by Graham and Harvey (2001) also revealed that market timing is a primary concern of CFOs and it plays a very important role in their financing decisions.

Baker and Wurgler (2002) captured market timing attempt by calculating market to book ratio of US public firms that went for further issuance of equity between 1968 and 1999 and asserted that US firms are more likely to issue equity when their market values are high relative to book value. They concluded that the issuers of US firms time their issue with high market valuations.

Instead of defining market timing in terms of variables reflecting market conditions and internal conditions, a few studies like Myers and Majluf

(1984), Korajczyk, et al. (1992) and Jenter (2004) defined a market timing aspect in terms of information asymmetry between issuers and potential investors. As per them, firms in their respective sample area went for equity issuance when they found a degree of information asymmetry between the two parties to be lowest (no or very low adverse selection cost) i.e. the equity issues were timed with the prevailing information level with the investors.

Most of the studies on market timing estimated hot issue market by establishing relationship between high volume and high initial return and asserted that the market timing effort should be reflected in the degree of positive correlation between the two, i.e. more is the number of IPOs followed by high initial return more is the possibility that issuers time their issue. While this gives a strong indication of the possibility of market timing effort yet it might not explain the effort completely. I am convinced by the fact that a lot of companies wait for a right opportunity. But what motivated me to explore this issue further was to examine if a firm's internal status was responsible for market timing effort or not.

Therefore, I not only try to evaluate the whole market as a measure and motivation for timing the issue but also the position of the firm with respect to market as a motivation for timing the issue. I made an attempt to study if issuers actually timed their issue when the financial status of their firms was at peak or not.

3. METHODOLOGY

3.1. Sample and data

The sample for the study was derived from 542 firms that went public between 2002 and 2012. The annual trend in the number of IPOs and capital raised by Indian firms through IPOs are shown in Table 1. The year 2005-06 received the maximum number of IPOs in our sample followed by an equivalent optimism by investors and issuers in following two years. The peaking up of the boom was followed up by burst during 2008-09 wherein all major stock markets suffered huge losses.

Table1. Annual trend in the number of IPOs and resources mobilized through IPOs

Years	No. of Issues	Rate of change (%)	Amount (Rs. Crore)	Rate of change (%)
1992-93	528	169.39	6,252	229.40
1993-94	770	45.83	13,443	115.02
1994-95	1,336	73.51	12,928	-3.83
1995-96	1,407	5.31	11,663	-9.78
1996-97	697	-50.46	11,388	-2.36
1997-98	62	-91.10	3,061	-73.12
1998-99	32	-48.39	7,911	158.44
1999-2000	65	103.13	7,673	-3.01
2000-01	119	83.08	6,518	-15.05
2001-02	19	-84.03	6,423	-1.46
2002-03	14	-26.32	5,732	-10.76
2003-04	34	142.86	22,131	286.10
2004-05	34	0.00	25,526	15.34
2005-06	102	200.00	23,676	-7.25
2006-07	85	-16.67	24,993	5.56
2007-08	91	7.06	53,219	112.94
2008-09	22	-75.82	3,534	-93.36
2009-10	30	36.36	24,004	579.23

I have compiled firm-level data from Prowess, a database provided by the Centre for Monitoring the Indian Economy (CMIE). I have dropped those firms for which data were not available for all the time windows. The methodology required data from one year before IPO to two years after the IPO. Therefore, firms that went public after 2012 were also not included in the sample as for them the data for the next two years would not be available. The final sample of this study consisted of 306 firms.

3.2. Method

A hot and cold market is defined on the basis of the monthly IPO volume (Alti, 2006; Cook et al., 2003). Information on month wise IPO was extracted from CMIE Prowess. To smooth out seasonal variation, 6-month centred moving an average of the number of IPOs for each month was calculated. The monthly moving average IPO volume was then detrended. Hot

(cold) months are then defined as those that are above (below) the mean in the distribution of the detrended monthly moving average IPO volume across all the months in the sample (Alti, 2006). A dummy variable HOT takes the value of one if the firm goes public in a hot month, and zero otherwise. The variable HOT is the main focus of this study in measuring firms' market timing attempts.

The detrended monthly moving average IPO volume from 1997 to 2007 is plotted in Figure 1. The horizontal line is the mean at 3.96. As the figure illustrates, hot and cold months differ substantially in terms of the number of IPOs. In the main sample of 306 IPOs, 254 occur in hot months (83% of the sample), and 52 IPOs (17% of the sample) take place in cold months.

To assess whether issues were timed with the market or not, following regression model is estimated:

$$Y_t = \propto + \beta_1 HOT + \beta_2 \frac{M}{B}_t + \beta_3 PBDIT/TA_{t-1} + \beta_4 Size_{t-1} + \beta_5 Intang_{t-1} + \beta_6 \frac{D}{E} + \beta_7 Sgrw_{t-1}\varepsilon_t \qquad (1)$$

where *t* is the IPO year, and the regression is run in the cross-section of IPOs. Above, the dependent variable Y_t is *ProceedsT/At*. The dummy variable *HOT* captures the market timing effect, if any, by the firm belonging to the hot market rather than the cold market. The control variables include the market-to-book ratio, profitability, size, tangibility of assets and lagged leverage. Previous research identifies these

factors as the main determinants of financing policy (Titman, & Wessels (1988), Rajan, & Zingales (1995)). All firm characteristics are lagged one year, with the exception of the market too-book ratio, which can only be observed in the IPO year for the first time. To further control for heterogeneity in industry characteristics, the regressions include industry fixed effects.

Figure 1. Time series of de-trended monthly moving average IPO volume.
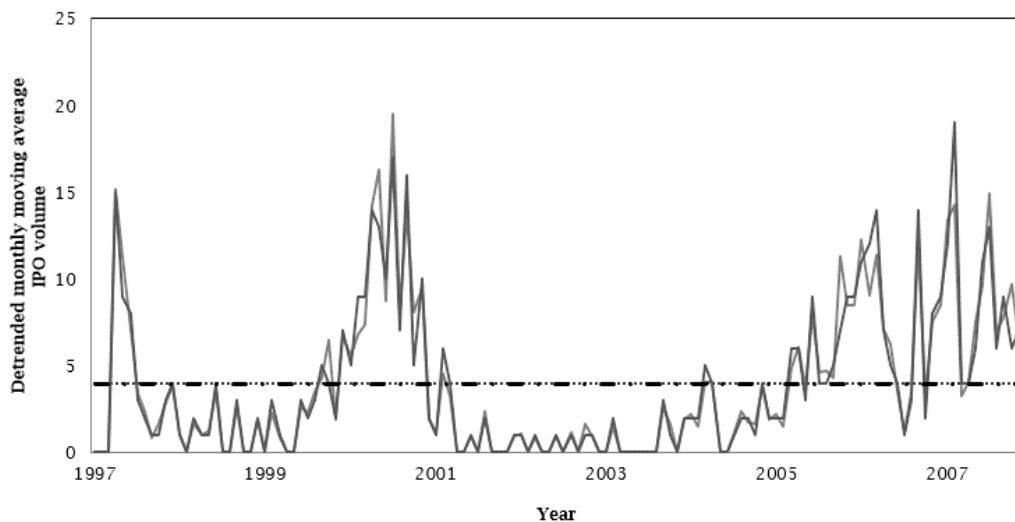

4. RESULTS AND DISCUSSIONS

4.1. Trend and pattern of Indian IPOs

Public issues are mobilised through both debt and equity issues. Figure 2 shows that the percentage of resource mobilization through equity issues has been larger as compared to debt issue in the nineties, the only exception being the year 1998-1999 when 84.66% of the resources were mobilised through debt issues. The other two years when debt issue mobilization was

more than equity was, 2001-02 and 2002-03 when the share of debt accounted for 83.12% and 82% of the total resource mobilization. In the later years, the resource mobilization by debt issues is nearly negligible. In the year 2005-06, 2006-07 and 2008-09, the resource mobilization through equity issue was 100%, which has been the highest ever in the history of the Indian capital market. During 2007-08, the share of equity in resource mobilization through public issues was 98.12% and the share of debt was 1.88%.

**Figure 2.** Resources mobilized through debt and equity (public issue)
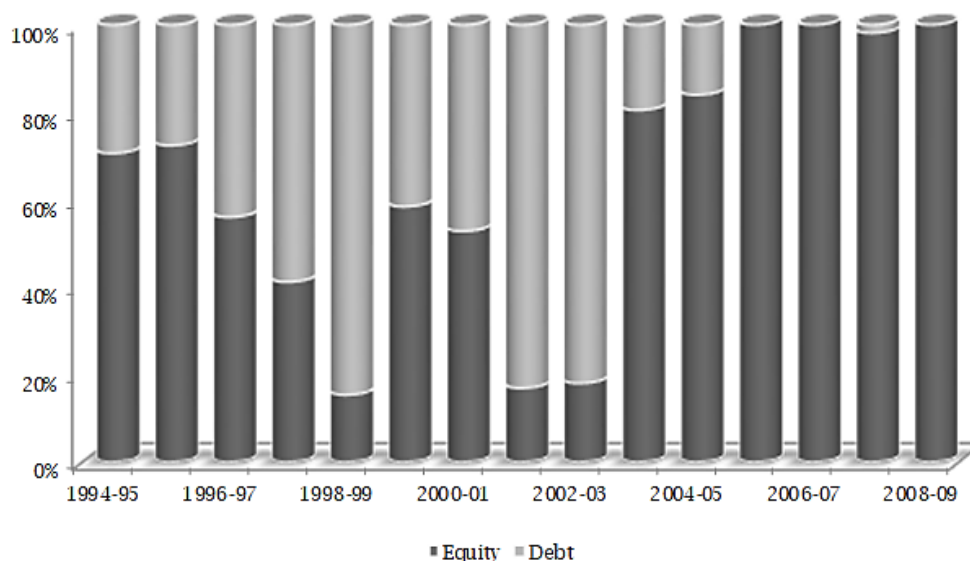
Source: Prime database.

The annual trend in the number of IPOs and capital raised by Indian firms through IPOs are shown in Table 1 and Figure 3. The spurt in the IPO activity between 1991 and 1996 is attributable to the structural changes in the political economy of India, primarily through the economic liberalization initiatives of the Indian Government from 1991 onwards. The latter part of the period between 1991 and 1996, however, witnessed several instances of fake IPOs and fly-by-night entrepreneurs, which eroded the investors' wealth and confidence into the Indian capital market in the following period. In particular, the retail investors distanced themselves from the Indian IPO market. During 1996-97, the Securities and Exchange Board of India (SEBI), the Indian securities market regulator, introduced fresh regulations related to the IPO pricing and enforced other restrictions on the promoters and the management board of the companies that compelled them to be more responsible towards the shareholder wealth. This restricted the number of companies tapping the IPO market and created a slump in the Indian IPO market (Aggarwal, 2000; Gangadhar, & Begum, 2004; Marisetty, & Subrahmanyam, 2006,).

Figure 3. Annual trend in the number of IPOs and resources mobilized through IPOs
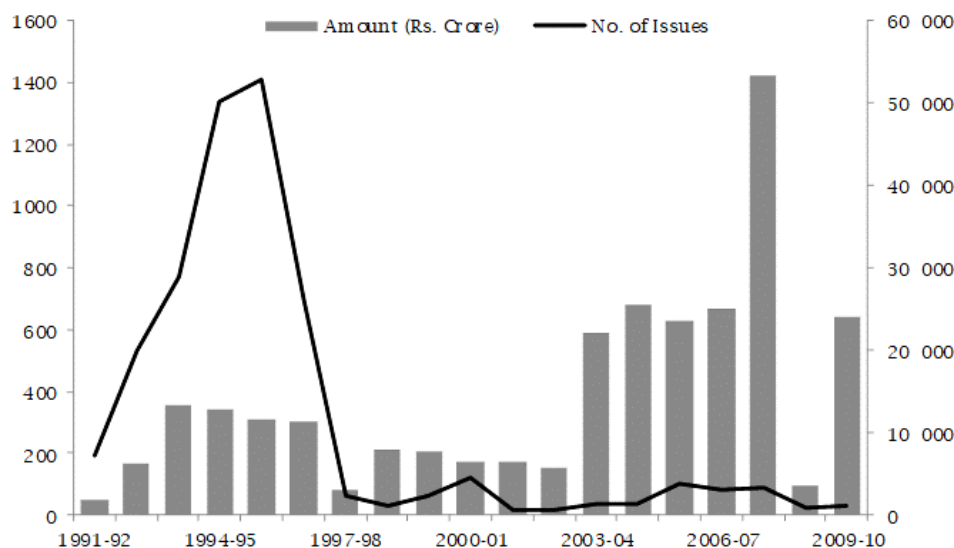
It can be seen from the figure that between 1996 and 1999, the number of IPOs and amount raised through these IPOs declined drastically. This lean period was followed by peaking up of dot-com boom during 1999-2001[1]. The excessive optimism about the dot-com companies encouraged several of them to raise money through their IPOs during 2000-01. It can be seen from the table that the number of companies going for IPOs increased to 124 during 2000. The peaking up of dot-com boom was followed up by dot-com burst during 2001-02 wherein all major stock markets suffered huge losses[2]. This drastically reduced the number of IPOs by the Indian companies between 2001 and 2002. The increased interest of international investors in the emerging markets from 2003 onwards gradually revived the IPO activity and there was a huge surge in the amount of funds being raised through their IPOs by the Indian companies till 2007. In 2006, India's IPO market made the list as one of the 10 biggest IPO markets in the world[3].

The market fell dramatically when the global crisis hit from mid-2008. Between January 2008 and the Sensex low in March 2009, the market declined by 60%. Much of this fall was led by foreign investors exiting the market as concerns grew over India's corporate earnings and its general economic outlook. The fall was also exacerbated by domestic investors who took money out of the market as job losses mounted and the ongoing market decline began to hurt household wealth levels. Due to this decline, many companies delayed equity-raising plans in 2008 and 2009. India's 22 IPOs in 2008-09 generated less than Rs. 4000 crores, an over 75% drop in the number of deals and a 93% decline in funds raised compared with 2007-08. Between April and July 2009, only five IPOs took place vs. 15 during the same period last year. In the first half of this year, only 6 companies filed draft offer documents with the Securities and Exchange Board of India (SEBI) for any public issues vs. over 40 in the same period last year.

The market has recovered from earlier lows, and FIIs' net investment in equity markets in 2009 turned positive beginning in April. The Sensex has risen over 75% from the beginning of the year until mid-October as investors are hopeful for reforms under the reflected Congress party and are encouraged by tentative signs that both the global and Indian economies may be bottoming out. A moderate correction in the market may be on the horizon in the next several months, but the overall trend in the next year should still be positive. Foreign and domestic investors are likely to remain cautious but should continue to re-enter the market. The main factors to watch will be corporate earnings results, the pace of the government's economic reforms, the turnaround in global markets, and global economic news.

Figure 4.1 shows that most of the IPOs are from private sectors. Public sectors contribute to 6% of total IPOs. However, the amount raised by public sectors is almost 25% of total amount rose through

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[1] The BSE Sensex, the most popular stock index in India, touched its highest value (till that point of time) 6151 on Feb14, 2000.

[2] The BSE Sensex touched a low of 2595 on Sept 21, 2001.

[3] "India among 10 largest IPO markets in 2006": E&Y report.

IPOs (see figure 4.2). Industry-wise classification of IPOs shows that the maximum numbers of IPOs are from the Information Technology sector (see Figure 5). The basic purpose of this analysis is to highlight the industry group, which has come out with the maximum number of IPOs. The data relating The Information Technology sector has accounted for 34 per cent, number of IPOs from 1991-92 to 2009-10, claiming significantly the highest number of IPOs from that sector. The second half of the post-liberalization witnessed a spurt in IPOs by banking sector companies. This was on account of the reforms introduced in the banking sector by Narsimham Committee. As can be seen from the figure, Banking and FIs contributed 13 per cent of total IPOs. Cement and construction are next with 10 per cent followed by Entertainment (9 per cent) and others (9 per cent). Healthcare sector accounted for 7 per cent of total IPOs followed by textile with 5 per cent and Finance with 5 per cent. Telecommunication sector contributed 3 per cent of total IPOs. Chemical and Power sector both contributed to 2 per cent followed by a minimum contribution of 1 per cent by the Paper and Pulp sector.
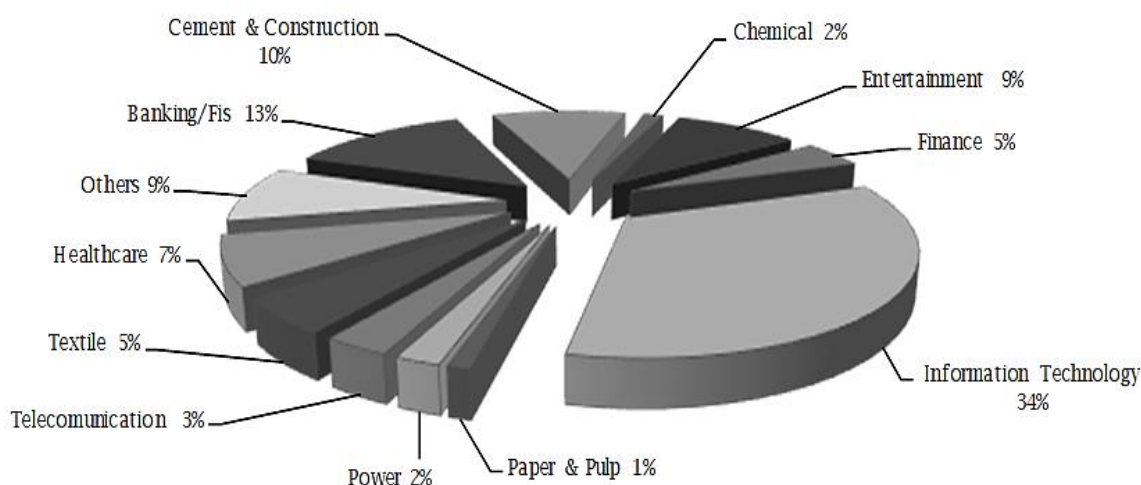
Figure 4.1. Sector-wise distribution of IPOs (number)
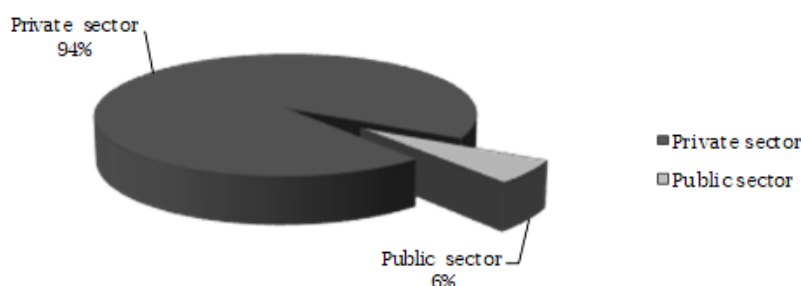
Figure 4.2. Sector-wise distribution of resources mobilized through IPOs
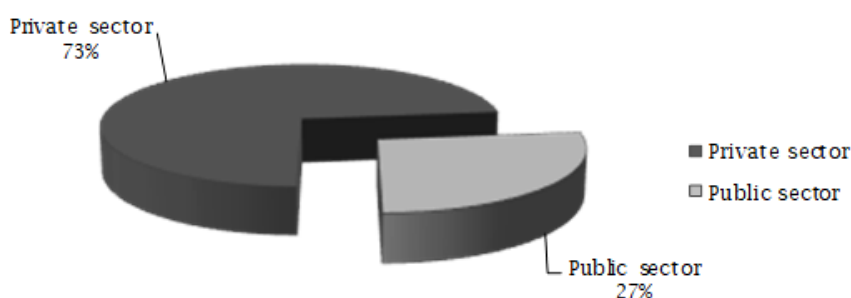
Figure 5. Industry wise distribution of IPOs

One of the parameters to judge the success of IPOs is to observe the response of investors. And the response of the investors can be well reflected in the fact that whether the issues got oversubscribed or not. More is the oversubscription more interested investors are in the new issue. In order to observe the general response of investors towards the new issue market, year wise oversubscription rate is presented in Figure 6. The oversubscription is divided into four class: (i) less than 1.5 times, (ii) 1.5 times to 3 times,

(iii) 3 to 10 times and (iv) more than 10 times. As can be seen from the figure, 2005-06 appeared to be the best period for IPOs. Around 58 IPOs got oversubscribed by more than 10 times. And only two IPOs were subscribed by less than 1.5 times. The year 1999-00 was also amongst the best period for IPOs where 53 IPOs got oversubscribed by more than 10 times. The year 2008 witnessed the biggest ever IPO in India's history. The IPO by Reliance Power raised almost USD 3 billion and was oversubscribed by

approximately 10 times. The time period of 2001 to 2003 was a slump for the IPO market where we saw less number of IPOs. And this is the period where we had the most number of IPOs getting undersubscribed. A casual comparison of Fig.5 points to the fact that the response to IPOs and the number of IPOs are almost in correlation. However, the actual relationship can only be found on the basis of more detailed statistical analysis.

Figure 6. Responses to IPOs
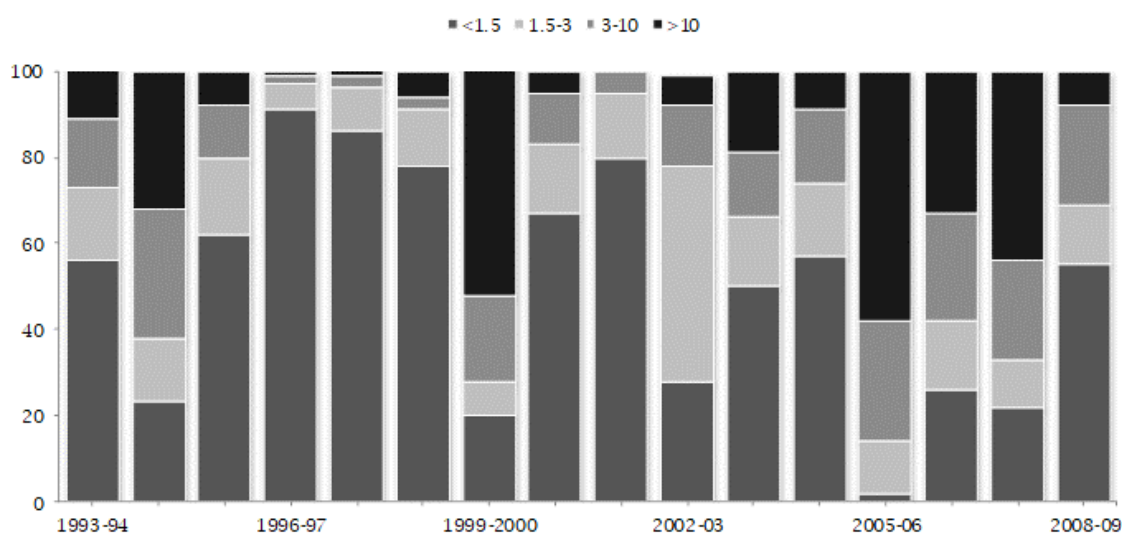
Source: Indian Securities Market, A Review, N.S.E. publication.

4.2. Do hot markets reflect timing attempts?

Table 2 shows the result of the regression. The results confirm that the tendency of hot-market firms to issue more equity is a genuine timing effect. The relationship between HOT and total proceeds is positive and significant for both the models.

Table 2. Relationship between market timing and total proceeds of the firms

Variable	Model 1
HOT	0.31**
	(0.109)
Size	-0.001***
	(0.000)
PBDIT/TA	1.922***
	(0.390)
Sgrw	0.001**
	(0.000)
Intang	-0.638*
	(0.702)
D/E	-0.046**
	(0.029)
M/B	0.031**
	(0.012)
Constant	0.403**
	(0.210)
Obs	306
Adjusted R²	0.46

*Notes: The sign ***, ** and * indicate significant at 1%, 5% and 10% respectively.*

Various firm characteristics are significant determinants of equity issuance activity. The relationship between Size and total proceeds is negative and significant indicating that bigger size

firms tend to raise lesser proceeds from IPO. The result goes well with the signalling explanation of underpricing. The relationship between *PBDIT/TA* and total proceeds is positive overall. The relationship between *Sgrw* and total proceeds is positive and significant. Asset risk (*Intang*) appears to be negatively related to issuance activity. The relationship is negative and significant in the model. The relationship between leverage and total proceeds is negative. The relationship between the market-to-book ratio (*M/B*) and total proceeds is significant in the model. The relationship is positive suggesting more is the overvaluation more is the total proceeds.

Most of the studies on market timing estimated hot issue market by establishing relationship between high volume and high initial return and asserted that the market timing effort should be reflected in the degree of positive correlation between the two, i.e. more is the number of IPOs followed by high initial return more is the possibility that issuers time their issue. While this gives a strong indication of the possibility of market timing effort yet it might not explain the effort completely. The results of this illustrated the fact that the companies did wait for the right timing.

5. CONCLUSION

The initial discussion of this paper focuses on the development of new issue market in the world. The discussion was made that how the constant search of cash made companies innovate new ideas to raise cash and IPO was one of them. Though the structure

of IPO was very crude at that time and the stock market was in the process of development, yet the process gave a base to modern IPOs.

The trend in the number of IPOs per year and the annual amount raised through IPOs indicated that most of the IPOs were from private sector companies. The industry wise trend in IPOs showed that most of the IPOs were launched by IT sector companies followed by banking sector companies. The response for IPOs shows the investor sentiments and optimism towards the new issue market. Therefore, the trend in response to IPOs is also shown in the study. It was observed that year 199-2000 and year 2005-06 was best in terms of investors' response whereas the period from 2001 to 2003 was worst in terms of investors' optimism.

In order to see whether the IPOs were timed with the favourable market or not the market was divided into the hot and cold market, defined on the basis of the monthly IPO volume. Then the relationship between market type and total proceeds was established with the help of a multivariate regression model with the idea that any timing attempt should be reflected in the activity of issuance of equity. The result based on multivariate regression suggest that Market timers, identified as firms that go public when the market is hot, tried to maximize the total proceeds at the time of IPO. The hot-market effect is remarkably robust; it is significant for both firm and industry-level characteristics. The future scope of this study can be increased by looking at considerably longer duration. In future, more sophisticated statistical techniques can be used to capture the market timing approach by the issuers.

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