Stock Performance of IPOs in India: An Empirical Analysis Based on Market Timing

Sunaina Dhanda and Shveta Singh[*]

Ph.D. Research Scholar, Haryana School of Business, Guru Jambheshwar University of Science & Technology, Hisar, Haryana, India.
[*]Professor, Haryana School of Business, Guru Jambheshwar University of Science & Technology, Hisar, Haryana, India.

Abstract

Problem– The purpose of this study is to see if market timing predicts the reporting of stock performance after the issue. Furthermore, this study examines the behaviour of issuers' companies performance in the light of varied market timings. *Approach*– This study focuses on 769 BSE-listed initial public offerings that took place amidApril 1, 2012, to March 31, 2022. It evaluates market timing using moving averages. Using multiple regression analysis, the research further investigates the impact of market timing on thestock performance of IPO companies in India.
*Finding*s – This study finds that there is a significant presence of market timing in India but, the underperformance of Indian issuers is not accredited to market timing. The long run performance of companies is also indiffereent towards different market timing.*Conclusion*– The findings of this study will assist the potential investors, analysts and stakeholders about performance of public issuers in India. A decreased stock performance during the post-issue year depicts that market timing cannot be attributed with the company's performance.The findings of this study hold implications to the regulators as well to keep an eye on issuers' stock performance.

Keywords– India, market timing, initial public offerings, stock performance, hot market.

Introduction

An initial public offering (IPO) is one of the most significant corporate events for an organization. It is the time when a private enterprise goes public for the first time to raise capital by issuing it to the general public. It is the most popular method of raising funds and meeting the capital requirements. Indian IPOs and primary market are in the limelight since long especially after the revolutionary reforms launched in 1991. The Indian IPO market has gone through a number of stages on its way to becoming the world's largest primary market. Since 1991, with the establishment of Securities Exchange Board of India (SEBI), the Indian IPO market has gone through a large number of reforms. However, the recent narrative regarding Indian IPO pricing and the need to implement additional regulations illustrated the existing market's inefficiencies. One such consideration is market timing. It is the practice of issuers to issue shares during favourable market conditions. The issuers attempt to take advantage of the possibility to expedite the listing process by relying on increased levels of positive market sentiment. "Market

timing" as defined by Wadhwa and Syamala (2018) is "selling equity when it is overvalued and repurchasing equity when it is undervalued". The basic motivation of the issuers to time their issues is to benefit from momentary price volatility in the shares until the price converges to their intrinsic value. Market timing theory states that issuers time their issues either to issue equity during high market valuations or to act opportunistically to sell equity at high prices to overly optimistic investors. Thus, issuers prefer to enter the market when the markets are rising and demand for capital is at its peak, owing to higher growth prospects in the future.

In India, academic research has extensively documented all major aspects of the anomalies related to public issues, i.e. underpricing and underperformance of public issues. However, studies on "hot" and "cold" market cycles are scanty. The only research that can be counted is that of Wadhwa and Syamala (2017) and Jain and Kanjilal (2017). These studies focused on market timing in an economic context or pseudo market timing only; the issuers' perspective from a performance point of view is still absent. Issuers hitting the market during a hot market phase are characterized as market timers, who try to drive their way out of favourable market sentiments (Alti, 2006).In this competitive corporate environment, issuers have to demonstrate their worth. Failure of a public issue is extremely difficult for issuers to afford; asIPOs have been a priority segment and it have a significant impact on the company's overall development.

However, the underperformance of Indian IPOs has recently raised some eyebrows. The debate over detailed disclosure and greater transparency in support of the issue's pricing has gained traction, with SEBI issuing new and stringent guidelines for IPOs in India. It is not something new about the Indian primary market. Research work toodebates that under-pricing directly contributes to the post-issue underperformance of issuers. Since underpricing is an oddity that gives investors higher listing day profits, issuers purposefully left a significant amount on the table to attract investors' attention. However, this underpricing, which is done at the cost of companies' financial performance to attract investors, does not go well in the future, and their performance decreases significantly, thus crashing investor'sinterest and confidence. If the figures are to be believed, about 61% of public issuers since 2008 in Indian market have had a 99% fall in share prices (Burugula&Mirchandani, 2018).

Not only this, sometimes these public issuers vanish from the market after raising money from the market. The weak issuers are only placed in the public issue due to favourable market timing. Getting the opportunity, the issuers hit the platform and then vanished during post-issue. Companies prefer to be listed during a favourable market because they know the positive market influence may help them sail through the issue. Whether they have strong financials or not, the investors' herding will automatically push them. Investors wilfully provide funds to public issuers and get their returns, but the non-performance of corporates during the post-issue period continues to reduce. The focus onlevel of under-pricing and long-run performance of the issuers besides their timing in market, inducted the base for our study in following manner: introduction, literature review,methodology, results and discussions and at the end- conclusion. Particularly, the concentration of study is on those who are meant to contribute to capital formation in the economy, rather underperforming.

Literature review and hypothesis development

Market timing: hot and cold market

Public issues are one of the major events having great importance in the life of a company. The available literature on public issues reveals that there is something fishy about performance of public issues (Ritter, 1991). The paper identifies that issuers use windows of opportunity to ensure the success of their issues. Market timing is one such opportunity, which probably any issuer would not let go. It is an art of timing the issue so as to ensure its successful listing. However, the performance of all the issuers who schedule their issues for favourable times is a source of concern. Various existing studies (Ritter, 1991; Loughran and Ritter, 1995; Baker and Wurgler, 2000; Lowry, 2003) have revealed that market timing determines the time of the issue. They have Ritter (1991) and Loughran and Ritter (1995) used the indirect methodology to test the relevance of market timing to the upcoming issuers and then the influence of post-issuer stock performance on the issuers in the context of IPOs and seasoned equity offerings, whereas Pagano et al. (1998), Brav et al. (2000), Lowry (2003) used the direct method. The results presented in Ritter (1991), Loughran and Ritter (1995) and Pagano et al. (1998) disclose that the ability of market returns and

valuations to predict corporate events drives the market timing of the issuers, whereas Lowry (2003) concluded that the inverse relationship between post-issue returns and IPO volume is due to equity overvaluation. Research findings based in emerging markets present the varied perspectives of market timing and find a conclusive role of market timing on public issue of the corporate sector. Following the existing world literature, Mukherjee and Mahakud (2012), Jain and Kanjilal (2017) and Wadhwa and Syamala (2017, 2018) are a few research studies in India that focused on the issuer's timing. To assess the essence of market timing in the Indian setting, these research used a combination of market timing and pseudo-market timing. Jain and Kanjilal (2017) discuss market position as predictors of market timing in terms of IPO volume and initial returns. Wadhwa and Syamala (2017, 2018) looked at market timing and pseudo-market timing tendencies in India during various stages of market reform.Because of the existing research, the current study hypothesizes that:

H1. Market timing is widely practised in India.

Stock performance

After a public offering, the stocks of the issuers trade in the secondary market. The performance of shares in the secondary market reflects the inherited performance of the company. In line with prior research studies, the present study evaluates the stock performance of IPOs for two time horizons: the listing day returns on the basis of daily stock prices and long-run returns on the basis of monthly stock prices for a post-issue period of six years. The phenomenon is not only confined to India but is found all across the world. The increased market sentiment during hot market timing favourably influences the issuers' everyday functioning and financial reporting. It directly affected the financial reports, creditibiltyandgrowthof the issuers. Literature (Ritter, 1991; Loughran and Ritter, 1995; Baker and Wurgler, 2000 and Lowry, 2003) on the capital structure of issuers belonging to market timing confirms the influence of market timing on the financial statements of the company. The currentIPOliterature, in lane with, McConaughy and Mishra (1996) and Coakley et al. (2008), voices the considerable decline of their pre-issue performances than thepost-issue ones. Henceforth, the paper tries to evaluate the impact of firms' decisions to go public during a particular time as studied by market timing on their stock performance. For this, the current study hypothesizes that:

H2. In India, market timing has no major impact on issue-year earnings performance.

Methodology

Sample selection

The initial sample comprises of 769 firms that went public in India through IPOs between April 1, 2012 and March 31, 2022 (Table 1). The sample is directly derived from the CMIE Prowess database.Firstly, the study identified the nature of Indian market (hot and cold) on quartile basis for the amount raised, and then evaluated its influence on IPOs stock performance.

For studying the listing day returns, listing day closing price on the Bombay Stock Exchange (issuers) is used (Teoh *et al.*, 1998a; Ghosh, 2004;Miglani, 2011; Savitha, 2019). The study derives the listing day closing price data from the companies identified for calculating market timing. From the 769 IPOs, the study includes only 478 listed IPOs. Table 2 presents the year-wise data of listed companies.

Insert Table 1
Insert Table 2

The study further evaluates the stock performance of IPOs as long-run returns on the basis of monthly stock prices for the post-issue period of thirty months using BHAR. The study derives the data for stock performance variables on the basis of companies identified for calculating market timing and LDR. The total number of issuers considered for BHARis 476.

Variables and theirmeasurements
Dependent variables:Listing day return, buy and hold abnormal returns.
*Stock Performance:*Stock Performance is evaluated as LDR and BHAR.
Measurement of variables:
Listing Day returns are the first presentation of issuers' performance after listing. The current study focused on listing day performance (Kumar, 2007; Sahoo and Rajib, 2010). Based on daily stock prices, the study evaluates the stock performance of IPOs on listing days. According to Michaely and Shaw (1994) and Gao et al. (2015), the listing day returns are calculated as the variance between the listing day closing price and offer price. According to Krishnamurti and Kumar (2002) because businessregulatory environment varies, it would be ideal to estimate market-adjusted returns, which control market movements. Therefore, for market-adjusted returns, the closing figures of the BSE Sensex index for the corresponding data are used.

The **listing day returns** are calculated as:

$$LR_{il} = \frac{LP_i - OP_i}{OP_i} \qquad \qquad ...(1)$$

where,
LR_i- Listing day return of stock 'i',
LP_i- Listing day closing price of the stock 'i',
OP_i- Offer price for the stock 'i' as on date of issue.

Barber and Lyon (1997) calculated long-run stock performance using the buy and hold methodology also used by Ritter (1991), Loughran and Ritter (1995), Kumar (2007), Sahoo and Rajib (2010) and recently by Shette*et al.* (2016), Dhamija and Arora (2017) in India. The following formula is used to calculate buy and hold returns and buy and hold abnormal returns.

Buy and Hold Returns are calculated as:

$$BHR_{i,T} = \prod_{t=1}^{T}(1 + R_{imt}) - 1 \qquad \qquad ...(2)$$

where,
BHR_{iT} – Buy and hold returns of stock 'i' for holding period 'T',
$R_{i,mt}$ – Monthly return of stock 'i' for period 't'.
Further, **buy and hold abnormal returns**are calculated as:

$$BHAR_{i,T} = \prod_{t=1}^{T}(1 + R_{imt}) - \prod_{t=1}^{T}(1 + R_{mmt}) \qquad \qquad ...(3)$$

where,
$BHAR_{i,T}$ – Buy and hold abnormal returns of stock 'i' for holding period 'T',
R_{imt} – Monthly return of stock 'i' for period 't',
R_{mmt} – Monthly return of market index 'm' for period 't'.

Independent variable: Market timing.
Assessment of the market timing:Existing research (Ibbotson and Jaffe, 1975; Helwege and Liang, 2001; Alti, 2006) described a variety of methods for detecting hot and cold markets, including IPO numbers, volumes, underpricing, above-average offering prices and moving average. Thus,this study used the moving average approach for the issue amount raised.The following steps are followed to evaluate the market timing:
Step I: The total amunt raised from IPOs for each calendar month across the sample period is calculated.
Step II: A three-month moving average is calculated for each issue month.
Step III: The median and quartiles of the moving average are identified based on previous research.

Step IV: After sorting the three-month moving average in increasing order, the months with a number of issuers greater than the median are identified as the months contributing to the hot market period (Morgan and Abetti, 2004; Alti, 2006), whereas the months below the median are categorized as time belonging to cold market phase.

Step V: Similarly, a quartile for the moving average is identified and then the month belonging to the least number of issuers is defined as a very cold period (Q1), followed by the second phase as cold (Q2), third as hot (Q3) and the quartile with the most number of issuers as a very hot period (Q4). The study assumes that the issuers belong to the hot market phase at the time of their issue.

Control variables: Apart from independent variable and dependent variable, the study uses control variablei.e. market returns, offer price, issue amount, leverage, age and tlag.

Statistical tools used:The study primarily used moving average, median, descriptive statistics, one sample t-test and an independent sample t-test, correlation and cross-sectional rgression model. The study used multiple regression with a winsorized dependent variable after evaluating multicollinearity using correlation and variance inflation factors. It emphasizes that the presence of hot market timing considerably influences the stock performance of the issuers coming out with IPOsin India.

Regression analysis: influence of market timing on stock performance

The influence of market timing on stock performance is predicted using a cross-sectional regression model. The study includes LDR,BHARas independent variables and market timing based on a dichotomous (dummy) variable as an independent variable. After evaluating the presece of market timing, the study further detects the influence of market timing on the stock performance for varied phases of the market, i.e. hot and cold. The following equations are used to evaluate this:

$$LDR_{i,t} = \beta_1 + \beta_2 Mkt_{i,t} + \beta_3 Age_{i,t} + \beta_4 Profitabilty_{i,t} + \beta_5 Isize_{i,t} + \beta_6 Tlag_{i,t}$$
$$+ \beta_7 Leverage_{i,t} + \beta_8 OfferPrice + \beta_9 MT(IPO) + \beta_{10} Ydummy_{i,t}$$
$$+ \beta_{11} Idummy_{i,t} + \varepsilon_{i,t}$$
...(4)

$$LDR_{i,t} = \beta_1 + \beta_2 Mkt_{i,t} + \beta_3 Age_{i,t} + \beta_4 Profitabilty_{i,t} + \beta_5 Isize_{i,t} + \beta_6 Tlag_{i,t}$$
$$+ \beta_7 Leverage_{i,t} + \beta_8 OfferPrice + \beta_9 MT(AR) + \beta_{10} Ydummy_{i,t}$$
$$+ \beta_{11} Idummy_{i,t} + \varepsilon_{i,t}$$
...(5)

Further, to evaluate the influence of market timing on buy and hold abnormal returns, a cross-sectional regression model was also constructed. The discussion makes use of six, twelve, eighteen, twenty-four, and thirty-month periods BHAR as dependent variable and market timing as independent variable. The following equations are used to evaluate this:

$$BHAR_{i,t} = \beta_1 + \beta_2 UP_{i,t} + +\beta_3 Age_{i,t} + \beta_4 Profitabilty_{i,t} + \beta_5 Isize_{i,t} + \beta_6 Tlag_{i,t}$$
$$+ \beta_7 Leverage_{i,t} + \beta_8 OfferPrice + \beta_9 MT(IPO) + \beta_{10} Mkt_{i,t} + \beta_{11} Ydummy_{i,t}$$
$$+ \beta_{12} Idummy_{i,t} + \varepsilon_{i,t}$$
... (6)

$$BHAR_{i,t} = \beta_1 + \beta_2 UP_{i,t} + +\beta_3 Age_{i,t} + \beta_4 Profitabilty_{i,t} + \beta_5 Isize_{i,t} + \beta_6 Tlag_{i,t}$$
$$+ \beta_7 Leverage_{i,t} + \beta_8 OfferPrice + \beta_9 MT(AR) + \beta_{10} Mkt_{i,t} + \beta_{11} Ydummy_{i,t}$$
$$+ \beta_{12} Idummy_{i,t} + \varepsilon_{i,t}$$
...(7)

where,

LDR $_{i,t}$– Listing Day Returns for i[th] IPO firm for period 't',

BHAR $_{i,t}$–Buy and Hold Abnormal Returns for i[th] IPO firm for period 't',

Mkt$_{i,t}$ – Market Return for i[th] IPO firm for period 't',

$Age_{i,t}$ –   Natural log of (1+Age) for i[th] IPO firm for period 't',

$Profitabiltiy_{i,t}$– Natural log of Net Profit for i[th] IPO firm for period 't',

$Isize_{i,t}$ –   Natural log of Issue Amount for i[th] IPO firm for period 't',

$Tlag_{i,t}$ –   Difference in Listing day and offer day scaled by 365 for i[th] IPO firm for period t',

$Leverage_{i,t}$–   Debt- Equity ratio for i[th] IPO firm for period 't',

$OfferPrice_{i,t}$–   Offer Price for i[th] IPO firm for period 't',

$MT (IPO)_{i,t}$–   Dummy Variable representing market timing on the basis of IPO as identified in   earlier section for i[th] IPO firm for period 't',

$MT (AR)_{i,t}$–   Dummy Variable representing market timing on the basis of Amount raised as identified in earlier section for i[th] IPO firm for period't',

$Ydummy_{i,t}$–   Issue-Year dummy for i[th] IPO firm for period 't',

$Idummy_{i,t}$–   Industry dummy for i[th] IPO firm for period 't'.

Results and discussions

Usually, market timing is predicted on the basis of the number of IPOs in the primary issue market at a particular time or on the basis of the amount raised in the market. Both these variables can be predicted in advance, and both issuers and investors try to get the best out of the market fluctuations. For the present study, the moving average of the issue amount are used to evaluate the level of market timing. Table 3 shows the descriptive statistics for the sample companies. The mean and median numbers are presented for the sample size of 769 initial public offers that were listed on the BSE from April 2012 to March 2022.

Insert Table 3

The table presents a simple mean and median of Rs. 8866.814 million and 2105.700 million for the issue amount raised. But, the mean and median values, on the basis of a moving average, is Rs. 8996.226 and 4384.983 million for the amount raised. The analysis in this study is based on the median of moving averages. Values above the median for the amount raised indicate a hot market phase, while values below the median indicate a cold market phase. The study further evaluates the market timing on the basis of quartile as presented in Table 3. The table shows the quartile values of 28.00, 300.100, 2105.700, and 8414.100 for the amount issued. Descriptive statistics also shows that the minimum amount raised per month is 122.3 million and maximum is 60771.2771 million.

Insert Table 4

In order to observe the amount raised during the hot and cold phases, in-depth analysis is conducted on the basis of quartile (Table 4). Unlikeother studied classifications, the months for market timing on the basis of quartile ofamount issued are evenly classified between 23.33 percent and 24.167 percent. However, when the amount raised is observed, it is found that 82.030 percent of the amount is raised during Quartile 4 (Very Hot period), followed by Quartile 3 (Hot period) with 15.12 percent, as compared to just 2.8 percent in Qaurtile 2 and 0.45 percent in Quartile 1(Very Cold period).

The analysis states that there is a presence of market timing in India on the basis of issuers belonging to a hot market period. The minimum amount raised during the period is in Jun 2020 (24.6 million) during a very cold market period, whereas the maximum amount raised is Rs. 162199.1 million from Jun 2021 to Aug 2021. The results of the study are in line with findings presented by Loughran and Ritter (2004); Warganegara and Warganegara (2014); Zaier and Abdelmoula (2014); Jain and Kanjilal (2017); and Wadhwa and Syamala (2017; 2018).

Listing day returns

Aggarwal (2017) mentioned that initial public offers could be fairly priced, under-priced, or over-priced. Fairly priced IPOs are a function of market perfection, which is hard to find in real market situations. Capital markets are generally inefficient due to the asymmetric flow of information and the inability of investors to appropriately discount the information, thus increasing the probability of an under-priced or over-priced IPO. An under-priced IPO means that the listing day trading price is higher than the offer price, resulting in gains for the investors who invest in the IPOs while the issuer leaves the money on the table. On the other hand, overpriced IPOs have higher

offer prices, and the lower listing day price leads to losses for investors. Both under-pricing and over-pricing are results of market imperfections. Under-priced IPOs are a major concern as they give short-term returns to the investors, but in the long term, the investors are befooled due to the stock's underperformance. The listing day returns for the entire period, which represent IPOs for the financial years between April 2011 and March 2022, are 12.714 percent, and the winsorized is 11.92 percent (Table 5), which are significant at the 1 percent level.

Insert Table 5

But the extent of underpricing is less than the Listing Day Returns (LDR) presented by Mayur and Mittal (2014) (LDR-103.25 percent, 2000-2010), Sahoo and Rajib, (2010) (LDR-46.55 percent, 2002-2006), Handa and Singh (2017) (LDR -22.90 percent), Kumar (2007) (LDR-27.26 percent, 1999-2007). It shows a remarkable reduction in the level of under-pricing over the period, indicating enhanced efficiency in the Indian issue market.

Further, the study presents market returns of 10.1 percent, lower than the listing day returns of the issuers during the study period. Apart from that, the table presents the descriptive statistics for other control variables used in the study. The table presents the mean offer price of Rs. 163.54, leverage of 0.586, net profits of Rs. 703.499 million, the mean amount raised of Rs. 1975.724 million, and a listing gap of -24.567 days.

Insert Table 6

Actually, apart from this, ANOVA is also applied to evaluate the difference in levels on LDRof companies belonging to different quartiles for quartile-based classification.Table 6 presents the results for market timing for amount raised. The quartile-based classification shows no significant difference as depicted by insignificant F values (0.592 and 0.527), thus showing that there is no influence of market timing on the level of LDRin India.

Regression analysis

Cross-Sectional Regression is used to evaluate the influence of market timing on listing day returns. However, prior to moving ahead with the regression analysis, two assumptions regarding multicollinearity and heteroscedasticity are recognized. Table 7 presents correlation coefficients for listing returns and winorizedLDRbased on an analysis of correlation coefficients. However, none of the values are found close to 0.8, thus indicating the absence of any major presence of multicollinearity in the data. However, another assumption of regression analysis holds no good. Hence, inorder to ensure unbiased standard errors for regression coefficients, robust standard errors are used.

Insert Table 7

In order to verify the variation in LDR on the basis of the median, regression is conducted using quartile-based market timing for the amount raised (Table 8). The market timing as defined on the basis of quartiles has insignificant results as depicted by coefficient values of   2.842, 7.738, -2.986 for market timing evaluated on the basis of amount raised (Panel 1). It shows that market timing does not predict listing returns in India.

Insert Table 8

Whereas the results presented in Panel 2 show that hot market timing (8.192) as studied on the basis of amount raised significantly induces LDR, the interaction variable has a negative coefficient (-16.45) for group affiliation. It can be interpreted that, though listing day returns are a function of hot market timing, group-affiliated issuers during hot market periods have lower listing returns than non-group issuers. Apart from hot market timing MT (AR) (Hot) and Group*MT (AR) (Hot), none of the variables were found to be significant, indicating that neither market timing nor group affiliation of issuers during those phases have any influence on LDR. Furthermore, the 0.00 coefficient value of Group*MT (AR) very hot indicates that none of the group affiliated issuers existed during a very hot period, resulting in the zero coefficient value.

Long run performance

To visualise the stock performance variation due to market timing, the study presents variation in BHAR as per the market timing. The study observes the level of BHAR on the basis of amount raised, as per quartile based classification. Initially, the univariate analyses were conducted on the basis of the independent sample t-test as studied on the basis of median-based classification for the amount raised. Table 9 presents the results for median-based analyses for market timing, with 165 issuers belonging to the cold market phase and 311 issuers in hot market

phase. Table shows the mean values of BHAR for IPOs based on amount raised upto a year of holding; the issuers belonging to both the hot and cold phases are indifferent to their underperformance. However, for further holding up to thirty months, the issuers belonging to the cold market phase perform much better than the issuers belonging to the cold market phase do.

Insert Table 9
Insert Table 10

Apart from that, ANOVA is also applied to evaluate the difference in levels of buy and hold abnormal returns of companies belonging to different quartiles for quartile based classification. For doing so, after evaluating the moving average based on amount raised, the data is sorted in increasing order and quartiles are identified. Table 10 shows the analysis conducted for market timing. Table presents the market timing based on the amount raised. For both the forms of market timing, the quartile-based classification shows a significant difference during the second year of holding, as depicted by significant F values, thus portraying that there is buy and hold abnormal returns vary significantly across quartiles after eighteen months of holding returns in India.

Regression analysis

Cross Sectional Regression is used to evaluate the influence of market timing and group affiliation on buy and hold abnormal returns. However, prior to moving ahead with the regression analysis, two assumptions regarding multicollinearity and heteroscedasticity are recognized. Table 11 presents correlation coefficients for BHAR. However, none of the values is found close to 0.8, thus indicating the absence of any major presence of multicollinearity in the data.

Insert Table 11

Further, the regression table depicts the presence of heteroscedasticityin data. Hence, inorder to ensure unbiased standard errors for regression coefficients, robust standard errors are used.

Insert Table 12

Table 12 presents the results for market timing as evaluated based on amount raised. The proxy for market timing as presented by MT (AR) cold, MT (AR) hot, and MT (AR) very hot shows no significant value of coefficient, depicting that influence on buy and hold returns is indifferent to which market phase issuers belong to. Whether an issuer belongs to a cold market phase or a very hot market phase, there is no impact on returns earned by investors while holding the shares issued. The table presents the R-square varying from 32.9 percent to 54.2 percent, depicting the extent to which the explanatory variable explains the variation in the dependent variable.

Conclusion

From the ecstatic highs of Nykaa to the despondent depths of Paytm, Indian flippers of IPOs have been on a roller-coaster ride through the crowded IPO amusement park squatting on Dalal Street for the past year. What most investors seem to be missing in their liquiditysozzled sojourn at the IPO casino is a sober understanding of the economics of IPOs and their post-listing performance. The behaviour of Indian Primary market disclosed that listing day returns, also known as underpricing, are not a function of market timing in India. The outcomes on Indian issuer's state the presence of market timing, yet their underperformance can't be accredited to market timing. There is no significant influence of market timing on the longrun performance of the issuer. The findings of the study suggest that long-term investors should remain cautious and sceptic, as there can be varied factors that can lead to underperformance of the issuers apart from market timing. The stringent reporting environment and the pursuance of corporate governance in true spirit make it difficult for issuers to indulge in undue influences.

References

1. Aggarwal, D. (2017). Exploring relation between Indian market sentiments and stock market returns. *Asian Journal of Empirical Research*, *7*(7), 147-159.
2. Alti, A. (2006). How persistent is the impact of market timing on capital structure? *The Journal of Finance*, *61*(4), 1681-1710.
3. Baker, M. & Wurgler, J. (2002). Market timing and capital structure. *The Journal of Finance, 57*(1).
4. Brav, A., Geczy, C. & Gompers, P.A. (2000). Is the abnormal return following equity issuances anomalous? *Journal of Financial Economics, 56* (2).
5. Burugula, P. & Mirchandani, S. (November 11). More 2018, than half of the IPOs since 2017 now below the offer price. *The Economic Times.*
6. Coakley, J., Hadass, L. & Wood, A. (2008). Hot IPOs can damage your long-run wealth. *Applied Financial Economics, 18*(14).
7. Gao, J., Cong, L. M., & Evans, J. (2015). Earnings management, IPO underpricing, and post-issue stock performance of Chinese SMEs. *The Chinese Economy, 48*(5), 351-371.
8. Handa, R., & Singh, B. (2017). Performance of Indian IPOs: an empirical analysis. *Global Business Review*, *18*(3).
9. Helwege, J., & Liang, N. (2001). Initial public offering in hot and cold market. *Working Paper*.
10. Ibbotson, R. G., & Jaffe, J. F. (1975). "Hot issue" markets. *The Journal of Finance*.
11. Jain, M., & Kanjilal, K. (2017). Non-linear dynamics of hot and cold cycles in Indian IPO markets. *Macroeconomics and Finance in Emerging Market Economies*, *10*(2), 172-190.
12. Kumar, S. (2007). Short and long-run performance of book built IPOs in India.
13. Loughran, T., & Ritter, J. R. (1995). The new issues puzzle. *The Journal of Finance*, *50*(1), 23-51.
14. Lowry, M., & Schwert, G. (2003). IPO market cycles:bubbles or sequential learning?
15. Mayur, M., & Mittal, S. (2014). Relationship between underpricing and post IPO performance: India.*Asia-Pacific Journal of Management*, *10*(2).
16. McConaughy, D.L. &Mishra, C.S. (1996). Debt, incentives and firm performance. *Financial Management, 25*(2).
17. Pagano, M., Panetta, F. & Zingales, L. (1998). Why do companies go public?*The Journal of Finance, 53*(1).
18. Ritter, J. R. (1991). The long run performance of initial public offerings. *The Journal of Finance*, *46*.
19. Sahoo, S., & Rajib, P. (2010). After market pricing performance of IndianIPOs. *Vikalpa*, *35*(4), 27-44.
20. Teoh, S., Welch, & Wong, T. (1998a). Earnings management and performance of initial public offerings. *The Journal of Finance*, *53*(6).
21. Wadhwa, K., & Syamala, S. (2017). Market timing and pseudo market timing: an empirical examination of IPOs in India. *Managerial Finance*.
22. Wadhwa, K., & Syamala, S. (2018). Role of market timing and market conditions: evidence from seasoned equity offerings. *The North American Journal of Economics and Finance*, *48*.
23. Zaier, L., & Abdelmoula, A. (2014). Hot and cold cycles for African emerging share IPO market. *Asian Economic and Financial Review*, *4*, 1691-1704.

Tables

Table 1: Sample distribution of initial public issuers in India for market timing.

Issue Year	Number of Issuers
2012-2013	29
2013-2014	38
2014-2015	41
2015-2016	64
2016-2017	90
2017-2018	175
2018-2019	115
2019-2020	53
2020-2021	49
2021-2022	115

Source: Compiled by the Researcher

Table 2: Sample distribution of initial public issuers in India for stock performance.

Issue Year	Number of issuers	
	Listing Day Returns	Long run Performance
2012-2013	25	24
2013-2014	35	34
2014-2015	00	00
2015-2016	57	57
2016-2017	61	61
2017-2018	85	85
2018-2019	57	57
2019-2020	42	42
2020-2021	41	41
2021-2022	75	75
Total	478	476

Source: Compiled by the Author

Table 3: Descriptive statistics.

	Issue Amount (million)
Simple Mean	8866.814
Simple Median	2105.700
Mean of Moving Average	8996.226
Median of Moving Average	4384.983
Quartile 1	28.00
Quartile 2	300.100
Quartile 3	2105.700

Quartile 4	8414.100
Minimum	122.3
Maximum	60771.2667
Number of IPOs	**769**

Source: Compiled by the Author

Table 4: Market timing on the basis of quartile.

Q1 (Very Cold)	Issue Amount	Q2 (Cold)	Issue Amount	Q3 (Hot)	Issue Amount	Q4 (Very Hot)	Issue Amount
Aug-12	145.4	Apr-12	350	May-12	3880.9	Dec-12	39529.5
Oct-12	108.5	Jul-12	630	Mar-13	3254.3	Mar-15	12370.8
Nov-12	86.7	Sep-12	320	May-14	2153.4	Sep-15 - Nov-15	4038.5
Jan-13	75.6	Feb-13	692.7	Sep-14	3315.7	Aug-16	14775
May-13	28	Apr-13	488	Apr-15	4581.2	Sep-16	8539
Jun-13	216.4	Aug-13	586.3	May-15	4393.3	Nov-16	36811.7
Sep-13	205.3	Oct-13	818.6	Jul-15	4424	Mar-17	26247.9
Nov-13 - Feb-14	721.3	Mar-14	353.2	Feb-16 - May-16	29055.1	Aug-17 - Nov-17	82639.1
Apr-14	102.1	Oct-14	747.3	Jul-16	4822.5	Feb-18	9315.1
Jun-14 - Aug-14	559.7	Aug-15	2058	Dec-16	3098.2	Mar-18	46052.3
Nov-14 - Jan-15	366.9	Oct-16	897.8	May-17	5609	May-18	9995.6
Dec-15	242.1	Jan-17	541.7	Jun-17	7143.9	Feb-19	10241.4
Jan-16	129.3	Feb-17	337.4	Dec-17	7321.1	Dec-19	10411.2
Jun-16	173.6	Apr-17	1062.4	Jan-18	8200.4	Nov-20	12527
Nov-18	95.1	Jul-17	1341.7	Apr-18	2177.3	Jan-21	36539
Sep-19	300.1	Jun-18	1418.4	Aug-18 - Oct-18	15919.7	Mar-21	25226.2
Nov-19	219.9	Jul-18	1497.4	Apr-19	4738.4	Apr-21	27368
Jan-20	287	Dec-18	742.3	Aug-19	5062.3	Jun-21 - Aug-21	162199.1
Feb-20	222.7	Jan-19	735.4	Mar-20	5138.6	Nov-21	139310
Apr-20	139.2	Mar-19	1069.7	Sep-20	8414.1	Dec-21	41943.8
Jun-20	24.6	May-19 - Jul-19	2635.3	Oct-20	3738.9	Feb-22	36753.9
Aug-20	114.4	Oct-19	563.1	Dec-20	5755.4		
		Jul-20	645.3	Sep-21	4340		
		Feb-21	1982.4	Mar-22	6421.9		
		Oct-21	1060				
		Jan-22	538.9				
29	4563.9	28	24113.3	29	152959.6	28	829180.1
24.1667	0.451506	23.33	2.3855	24.16	15.13228	23.33	82.03069

Table 5: Descriptive Statistics

	N	Mean	Median	t-value
Underpricing (%)	478	12.714	3.115	8.168
Underpricing (Winsorised) (%)	478	11.928	3.115	9.254
Market Returns (%)	478	10.100	1.500	1.407
Offer price (Rs.)	478	163.543	50	13.321
Issue Amount (Rs. million)	478	1975.724	103.7	6.009
Leverage (Ratio)	447	.586	.27	13.302
Age (Years)	478	2.423	2.485	65.605
Tlag (Days)	478	6.567	4	-.79

Source: Compiled by the Author

Table 6: Univariate analysis of listing day returns on the basis of market timing.

		Sum of Squares	df	Mean Square	F	Sig.
Listing Day Returns	Between Groups	1772.373	3	590.791	0.743	0.527
	Within Groups	377033.983	474	795.430		
	Total	378806.356	477			
Listing Day Returns (Winsorised)	Between Groups	2422.693	3	807.564	0.696	0.555
	Within Groups	550069.521	474	1160.484		
	Total	552492.213	477			

Source: Compiled by Authors

Table 7: Correlation Analysis (Listing Day Returns)

	LDR	Mkt	Age	Profitability	Isize	Tlag	Leverage	Offer Price
LDR	1.000							
Mkt	-0.044	1.000						
Age	0.059	0.080	1.000					
Profitability	0.179*	0.017	0.439*	1.000				
Isize	0.132*	0.031	0.355*	0.837*	1.000			
Tlag	0.021	0.019	-0.067	-0.048	-0.095*	1.000		
Leverage	-0.052	-0.010	0.143*	0.163*	0.138*	-0.036	1.000	
Offer Price	0.120*	0.056	0.327*	0.608*	0.640*	-0.065	0.032	1.000

*** $p<0.01$, ** $p<0.05$, * $p<0.1$*

Source: Compiled by the Author

.

Table 8: Regression analysis.

Variables	Listing Day Returns	
	Panel 1	Panel 2
	MT(AR) (Hot)	Group*MT(AR) Hot
Mkt	-0.0987	0.0804
	(0.867)	(0.890)
Age	-3.007	-3.323
	(0.246)	(0.208)
Profitability	2.713***	2.757***
	(0.000954)	(0.00128)
I size	-1.763	-1.661
	(0.319)	(0.400)
T lag	0.00349***	0.00300***
	(0.00)	(0.00)
Leverage	-3.364***	-3.830***
	(0.000930)	(0.00551)
Offer Price	0.00882	0.00919
	(0.337)	(0.336)
Group Dummy		-7.413
		(0.470)
MT(IPO) (Cold)		
MT(IPO) (Hot)		
MT(IPO) (Very Hot)		
MT(AR) (Cold)	2.842	2.410
	(0.528)	(0.589)
MT(AR) (Hot)	7.738	8.192*
	(0.123)	(0.0944)
MT(AR) (Very Hot)	-2.986	-3.506
	(0.537)	(0.463)
Group*MT(IPO) (Cold)		
Group*MT(IPO) Hot		
Group*MT(IPO) Very Hot		
Group*MT(AR) (Cold)		15.45
		(0.203)
Group*MT(AR) Hot		-16.45**
		(0.043)
Group*MT(AR) Very Hot		0.00
		(0.00)
Constant	-6.449	-9.201

		(0.597)	(0.482)
Hettest		338.46 (0.000)	330.59 (0.000)
Year dummy		Yes	Yes
Industry dummy		Yes	Yes
Observations		382	380
R-squared		0.261	0.267

Source: Compiled by the Author

Table 9: Univariate analysis of buy and hold abnormal returns on the basis of market timing.

	Cold		Hot				
	N	Mean	N	Mean	Difference	t value	p value
BHAR06	165	-0.367	311	-0.148	-0.219	-1.70	0.087
BHAR12	165	-0.42	311	-0.06	-0.36	-1.10	0.266
BHAR18	165	0.442	311	-0.228	0.669**	2.45	0.015
BHAR24	165	0.012	311	-0.204	0.216	0.90	0.367
BHAR30	165	2.305	311	0.574	1.731*	1.80	0.075

Source: Compiled by the Author

Table 10: Univariate analysis of buy and hold abnormal returns on the basis of market timing.

		Sum of Squares	df	Mean Square	F-stat	Sig.
BHAR 06	Between Groups	5.661	3	1.887	1.075	.359
	Within Groups	828.431	472	1.755		
	Total	834.092	475			
BHAR 12	Between Groups	20.827	3	6.942	0.614	.606
	Within Groups	5333.012	472	11.299		
	Total	5353.838	475			
BHAR 18	Between Groups	58.833	3	19.611	2.435*	.064
	Within Groups	3802.151	472	8.055		
	Total	3860.984	475			
BHAR 24	Between Groups	52.595	3	17.532	2.863**	.036
	Within Groups	2890.315	472	6.124		
	Total	2942.910	475			
BHAR 30	Between Groups	1156.722	3	385.574	3.833***	.010
	Within Groups	47474.925	472	100.582		
	Total	48631.647	475			

Source: Compiled by Authors

Table 11: Pairwise Correlation.

Variables	Bhar06	UP	Mkt	Age	Profita bility	Isize	Tlag	Levera ge	Offer Price
BHAR06	1.000								
UP	0.214*	1.000							
Mkt	-0.107*	-0.029	1.000						

Age	0.094*	0.058	0.023	1.000					
Profitability	0.274*	0.177*	-0.073	0.439*	1.000				
Isize	0.189*	0.131*	-0.038	0.356*	0.538*	1.000			
Tlag	-0.006	0.021	-0.014	-0.067	-0.048	-0.095*	1.000		
Leverage	-0.019	-0.053	0.004	0.142*	0.161*	0.138*	-0.036	1.000	
Offer Price	0.118*	0.119*	-0.035	0.319*	0.597*	0.631*	-0.065	0.031	1.000

Source: Compiled by the Author

*Notes: Significance level of 5 per cent are represented by *.*

Table 12: Regression analysis.

VARIABLES	BHAR06	BHAR12	BHAR18	BHAR24	BHAR30
UP	0.00390	0.000748	0.00329	0.00185	0.0182
	(0.209)	(0.844)	(0.382)	(0.471)	(0.399)
Age	-0.0221	-0.0623	0.0792	-0.170	0.603
	(0.780)	(0.672)	(0.704)	(0.560)	(0.479)
Profitability	0.199***	0.269	0.0939	0.288*	0.566
	(0.00183)	(0.109)	(0.306)	(0.0822)	(0.647)
Isize	-0.0615	-0.205	-0.0522	-0.294	-1.220
	(0.523)	(0.413)	(0.659)	(0.156)	(0.381)
Tlag	5.13e-06	6.98e-05	-1.12e-05	-3.16e-05	-0.00974
	(0.803)	(0.304)	(0.719)	(0.495)	(0.408)
Leverage	-0.0670*	-0.0727	-0.0551	0.0122	-0.119
	(0.0786)	(0.247)	(0.480)	(0.884)	(0.783)
Offer Price	-3.42e-05	-0.000587	-0.000371	-0.000444	0.000202
	(0.827)	(0.232)	(0.361)	(0.208)	(0.907)
Mkt 6	-0.900				
	(0.106)				
Mkt12		-0.400			
		(0.427)			
Mkt18			-0.898		
			(0.198)		
Mkt24				-1.282	
				(0.110)	
Mkt30					1.251
					(0.856)
MT(AR) (Cold)	-0.0445	-0.0748	0.491	0.658	-4.544
	(0.847)	(0.855)	(0.449)	(0.337)	(0.565)
MT(AR) (Hot)	-0.0905	0.389	0.449	0.452	-9.599
	(0.581)	(0.378)	(0.388)	(0.149)	(0.368)
MT(AR) (Very Hot)	-0.302	0.343	0.128	0.523	-7.107
	(0.181)	(0.466)	(0.806)	(0.231)	(0.451)
Constant	-0.548	-0.766	2.472	1.942	6.282
	(0.433)	(0.536)	(0.286)	(0.307)	(0.360)

Year dummy	Yes	Yes	Yes	Yes	Yes
Industry dummy	Yes	Yes	Yes	Yes	Yes
Hettest	2603.67	11318.11	819.20	2962.37	140.47
Observations	366	352	332	320	187
R-squared	0.406	0.329	0.427	0.422	0.542

Source: Compiled by the Author