Does earnings surprise determine the timing of the earnings announcement? Evidence from earnings announcements of Indian companies

Timing of
earnings
announcement
of companies

119

Received 5 April 2019
Revised 10 November 2019
2 February 2020
Accepted 26 February 2020

Krishna Prasad

Justice KS Hegde Institute of Management, Nitte, India, and

Nandan Prabhu

Manipal Institute of Management, Manipal, India

Abstract

Purpose – The purpose of this study is to investigate whether the earnings surprise influences decision to make earnings announcements during or after the trading hours is influenced by the earnings surprise resulting from the difference between consensus earnings estimates and the actual reported earnings.

Design/methodology/approach – Event study methodology was employed to test the hypotheses relating to earnings surprise and timing of earnings announcements. Twelve quarterly earnings announcements of 30 companies, drawn from BSE SENSEX of India, were studied to test the hypothesized relationships.

Findings – The study has found statistically significant differences in the market responses to the earnings announcements made during and after the trading hours. The market demonstrated a negative response to the earnings announcements made after the trading hours. Further, the results of the logistic regression have shown that the presence of significant earnings surprises is likely to induce firms to make earnings announcements after the trading hours. The results indicate that those firms that intend to reduce the overreaction and underreaction to earnings surprises are likely to make earnings announcements after the trading hours.

Originality/value – This paper highlights the market response to the earnings announcement made during and after the regular trading hour. Further, the paper examines if the earnings surprise influences the decision to announce the results.

Keywords Earnings surprises, Earnings announcements, Abnormal returns

Paper type Research paper

Introduction

This research aims to examine whether firms announce both positive and negative earnings surprises after the trading hours, in the Indian context. Corporate announcements on earnings in India demonstrate that companies announce their earnings during, as well as after the trading hours. In the USA, companies make earnings announcements only after the trading hours regardless of the presence of earnings surprises. However, in the Indian context, companies make earnings announcements during and after the trading hours. Until now, no study has examined whether the earnings surprises, positive or negative, influence corporate earnings announcement behavior in India. Therefore, this study addresses the

© Krishna Prasad and Nandan Prabhu. Published in *Asian Journal of Accounting Research*. Published by Emerald Publishing Limited. This article is published under the Creative Commons Attribution (CC BY 4.0) licence. Anyone may reproduce, distribute, translate and create derivative works of this article (for both commercial and non-commercial purposes), subject to full attribution to the original publication and authors. The full terms of this licence may be seen at <http://creativecommons.org/licences/by/4.0/legalcode>

Asian Journal of Accounting
Research
Vol. 5 No. 1, 2020
pp. 119-134
Emerald Publishing Limited
2443-4175
DOI 10.1108/AJAR-04-2019-0023

following research issues: Does the market react similarly to the earnings announcement made during and after trading hours? Does the earnings surprise influence the decision to announce quarterly results during or after trading hours?

The need to examine the unique institutional context of Indian companies' timing announcement behavior is the motivation for this study. Security and Exchange Board of India's (SEBI) compliance requirements stipulate that listed companies are required to submit quarterly and year-end financial statements within the time horizon of forty-five days (except the last quarter). According to regulation 34 of the listing regulations of SEBI, the listed companies must submit the audit report along with the corresponding financial statements. The absence of any regulatory mandate on the choice of timing of earnings announcements (during or after the trading hours) is noteworthy. Therefore, in the absence of the regulatory mandate on the timing of earnings announcements, there is a need to know the timing announcement behavior of Indian companies in the wake of earnings surprises. This paper addresses this need.

Research conversation on the timing of earnings announcement has studied several antecedents of earnings announcement decisions. The review of the literature reveals that firms announce the quarterly results early due to a higher demand for information from stakeholders and investors. For instance, [Sengupta \(2004\)](#) investigated why some firms chose to announce their earnings relatively early compared to others. In this context, there is an association between the lag in earnings announcement and earnings management ([Lee and Son, 2009](#)), reduction of information asymmetry ([Chen et al., 2005](#)), and internal corporate governance ([Michaely et al., 2014](#)). Besides early and lagged announcements, the decisions relating to the timing of the earnings announcement also include the decision to announce the results during the regular trading hours and after the trading hours. In this connection, this research is different from prior research, as this study considers the effects of earnings announcements during trading hours, as well as after trading hours. Further, the relative effects of earnings announcements during trading hours and after the trading hours, in the contexts of both good and bad news, has still not been investigated in the Indian context. This paper fills this gap.

In this paper, we examine the market response to the timing of earnings announcements during and after the trading hours. We also investigate the relationship between the timing of the earnings announcement and the earnings surprise. We argue that the existence of short-term overreactions to the earnings surprises will influence the firms' decisions on the timing of earnings announcements. We examine this hypothesis by using the quarterly earnings announcement of the firms that constitute the BSE Sensex Index of India. The rest of the paper is structured as follows. In [Section 2](#), we develop hypotheses by reviewing the literature. [Section 3](#) would discuss the sample and methodology. In the fourth section, we discuss the empirical results. The last section presents the discussion, implications, and conclusion.

Review of literature and hypotheses development

Prior research has provided evidence for investors' overreaction for both positive and negative information ([Piccoli et al., 2017](#); [Spyrou et al., 2007](#)). Overreactions of investors are attributed not only to the magnitude of the surprise but also to how newly arrived information deviates from commonly known expectations ([Teigen and Keren, 2003](#)). However, findings of [Fama and French \(1996\)](#) suggest that such short-term overreactions tend to reverse in the long term. The overreactions to the surprise, such as earnings surprises, increase the return volatility and trading volume around the announcement ([Ranaldo, 2006](#)). In this regard, [Patell and Wolfson \(1984\)](#) found that the disturbance in the variance extended itself to the following trading days. Advancements in information sharing, trading

technology, and lower levels of information asymmetry enable such overreactions to disappear as investors will have enough time to process the effects of surprise. Therefore, scholars argue that managers can decide effectively upon the timing of the announcement of corporate actions, such as earnings announcements, dividend decisions, mergers and acquisitions announcements to reduce intraday volatility (Lyle *et al.*, 2018).

Earnings surprise

According to the efficient market hypothesis by Fama (1965), competition among rational, profit-maximizing investors leads to a situation where the stock prices would reflect all available information. If the information does not meet the expectations, there would be a surprise. Stock prices react to analysts' estimates and recommendations with an underlying assumption that actual results will be approximately close to analysts' estimates. Empirical evidence has demonstrated that, on average, portfolio creation based on analysts' recommendations would help investors outperform the market (Ahmed and Boutheina, 2017; Womack, 1996). As investors tend to follow analysts' recommendations, stock prices are likely to incorporate expectations related to future earnings. If actual financial results deviate from estimates, it will create "earnings surprise." Earnings surprises can be positive or negative. Stock prices would then react to incorporate the surprise. For instance, if the actual result is above (below) the estimates, prices would increase (decrease) to capture the earnings surprise. Furthermore, prior research has argued that the earnings announcements made in the evenings may attract less attention to investors as the trading time slot would have expired by evening (Patell and Wolfson, 1982). However, there is a contradictory view which states that making earnings announcements later in the evening or during Friday evenings might provide more time for investors to reflect upon the earnings' announcement, and consequently, market attention would indeed increase (DeHaan *et al.*, 2015).

Regardless of the investor attention, in an efficient market, prices are expected to change proportionately to the surprise when the actual financial results deviate significantly from the estimates. However, prior studies have documented investors' tendencies to overreact (Bondt and Thaler, 1985; Kadiyala and Rau, 2004). Therefore, investor attention influenced by media coverage and the consequent effect on stock prices would compel companies to account for the presence of market anomalies. Accordingly, we argue that the fear of overreaction to earnings surprises will influence the decision to announce results during either the regular trading hours or after trading hours. In this connection, prior research has argued that managers would take advantage of the voluntary nature of the earnings announcement timing decision to hide the bad news by choosing to release the earnings news when the market attention is lower (DeHaan *et al.*, 2015).

Furthermore, even if the cost-benefit ratio between the choice of the earnings announcement timing and the probability of reaping the expected benefit is low, managers would choose to take advantage of the earnings announcement timing. We, therefore, hypothesize that the firms with negative earnings surprises, i.e. actual results significantly below market expectations, would announce their results after the trading hours. Accordingly, we frame the following hypothesis:

- H1. There is no difference in the abnormal returns of firms that announce the results during trading hours and after trading hours.

The timing of earnings announcement

Researchers, in the past, have taken a particular interest in analyzing and explaining factors that determine the timing of earnings announcements. Prior research has demonstrated that firms act strategically to influence perceptions of stakeholders by timing the earning

announcements (Bowen *et al.*, 1992). There are six reasons that the prior research has pointed out, which make managers alter their earnings announcement timing decision. First, the limited attention theory argues that it is possible to hide given news amid the clutter, especially in the presence of information explosion and overreach (Hirshleifer *et al.*, 2009). Therefore, managers are likely to change the earnings announcement timing to explore the possible smoothening of the effect of bad news (Hirshleifer *et al.*, 2009). Second, managers expect the price decline to happen in a gradual fashion instead of a sudden decline (Donelson *et al.*, 2012). Therefore, they consider the shifting of the earnings announcement time. Third, the timing decision of the announcement of good news is dependent upon managers' desire to increase their reputation, and thereby, explore the possibilities of joining other corporate boards (Malmendier and Tate, 2009). Fourth, prior research has shown that the possibility of compelling CEOs to quit their positions is higher in the wake of extensive media coverage (Farrell and Whidbee, 2002). Accordingly, managerial incentive to announce good news is higher, which may influence them to alter the timing announcement decision too even while there exists good news. Fifth, positive media coverage helps firms in gaining favorable judgments of both potential and existing employees on the quality of the firm and CEO. Therefore, managers are more than likely to alter the earnings announcement timing to exercise their influence over the stakeholders, such as employees (Blankespoor and DeHaan, 2015). Sixth, prior research has shown that potential investors are more than likely to purchase those shares that catch their attention first. Therefore, the possibility of purchasing those shares about which there is good news is higher (Barber and Odean, 2007). Therefore, this is a strong incentive for managers to decide upon a favorable earnings announcement timing decision.

Prior research on the earnings announcement timing has shown that investors are distracted by the weekend and, therefore, they may not pay attention to the nuances of the earnings announcements. The distraction would act as an incentive for managers to make the earnings announcements during weekends and after the trading hours. The findings of Gennotte and Trueman (1996) imply that managers should consider releasing the earnings with positive (negative) surprise during (after) the trading hours. However, scholars also argue that the announcement after the trading hours may give time for better dissemination and evaluation of the implication on the firm value (Patell and Wolfson, 1982). Besides, prior research has shown that information asymmetry declines over the day, and the prices will be less noisy (Barclay and Hendershott, 2003).

Further, Skinner and Sloan (2002) demonstrate that prices exhibit a disproportionately sizeable negative response to negative earnings surprises. Understanding the ramifications of such significant earnings disappointments may motivate managers to announce the results after the trading hours. In this connection, prior research has also shown that the "chaotic traders" may not react to overnight announcements (Francis *et al.*, 1992). Therefore, we propose the following hypothesis:

- H2. Earnings surprises do not have any significant influence on the earnings announcement.

Institutional setting

This study's sample constitutes the information on the shares of those companies that are listed on the Bombay Stock Exchange. The Bombay Stock Exchange (BSE) is the oldest in India. It features among the top 10 exchanges in the world. Its total market capitalization is approximately \$1.6 trillion (PTI, 2018). S&P BSE SENSEX is the primary market index of BSE. S&P BSE SENSEX came into existence in 1986. It has stocks of 30 representative Indian companies. These stocks are from the relevant industrial sectors of the Indian economy. Most of these stocks have been among the liquid stocks in the Indian stock market. 1978–79 is the

base year of the index. Its base value was 100. The BSE SENSEX is among the widely discussed and analyzed stock market indices of India. By implication, analysts consider this index to be indicative of the state of the Indian economy. Investors and analysts get access to stock market data of the preceding four decades (1979–2019). Accordingly, BSE SENSEX has become synonymous with the Indian stock market.

This study is unique in the Indian context, against the background of the institutional setting discussed above, because it remains unclear whether Indian companies make a conscious choice of timing of earnings announcements if there is an earnings surprise. This study is essential because there is an almost equal number of Indian companies that announce their earnings during and after the trading hours. Does their earnings announcement change behavior if earnings contain surprise? This research issue assumes significance if we compare it with similar data on the timing of earnings announcements in the context of the USA. The relevant data on the timing of earnings announcements, in the presence of earnings surprise, demonstrates that all US companies listed on the Dow Jones Industrial Average index choose to announce their earnings surprises only after the trading hours (Frino *et al.*, 2017; Li, 2016).

Methodology

Data and sample

We studied the quarterly earnings announcements of the 30 firms constituted in the BSE S&P Sensex index of the Bombay Stock Exchange for a period of three years from April 2015 to March 2018. Among the 30 firms, three firms had a policy of announcing quarterly results after the trading hours, and two firms had a policy of announcing the results during the trading hours. Therefore, we excluded the earnings announcements of these firms. In this research, we studied the last 300 quarterly announcements. The timings, i.e. during the regular trading hour or after the regular trading hour, are collected from Bloomberg Professional database corporate filing, and they were cross-verified with the corporate announcement portal of the Bombay Stock Exchange. Table 1 provides the details of the quarterly earnings announcements studied:

Market response to earnings announcement: method of study

The event study methodology is used in this study to examine short-term stock price reaction to the quarterly earnings announcements. The event study methodology was proposed by

Quarter end	During the trading hours	After the trading hours
Jun 2015	16	09
Sept 2015	13	12
Dec 2015	13	12
Mar 2016	14	11
Jun 2016	15	10
Sept 2016	14	11
Dec 2016	12	13
Mar 2017	11	14
Jun 2017	13	12
Sept 2017	13	12
Dec 2017	08	17
Mar 2018	12	13
Total	154	146

Table 1.
Quarter-wise earnings
announcements during
and after the
trading hours

Fama *et al.* (1969) to measure the impact of a specific event on the value of a firm, using financial market data. The effectiveness and the practicality of this method emerge from the fact that, given rationality in the financial marketplace, the effects of an event will be replicated immediately in the prices of securities. Thus, the event's economic impact can be measured using security prices observed over a relatively short period.

We can attribute the stock price changes to two types, i.e. the macro factors (such as the change in interest rates, government policy), which would affect the entire market, and second, the firm-specific factors (such as merger and acquisition, new product launch, fraud). If there are no firm-specific factors to influence the stock price, it is possible to estimate the expected return using Sharpe's (1963) single index market model. The difference between the expected and the actual returns, which is known as the abnormal return, can be attributed to the firm-specific factors. In the event study, we use the abnormal return of the stock on the announcement day to determine the effect of information. We calculate the abnormal return using Eqn (1):

$$AR_{it} = R_{it} - ER_{it} \quad (1)$$

Where, AR_{it} is the abnormal return of stock i at time t , R_{it} is the actual return and ER_{it} is the expected return estimated using Eqn (2).

$$ER_{it} = \alpha + \beta R_{mt} + \varepsilon_{it} \quad (2)$$

Where, α is a constant, β measures the sensitivity of stock price to market movements, R_{mt} is a market return and ε_{it} is residual or error term. We used the daily returns of 250 days before the announcement to estimate the expected rate of return.

The abnormal return is observed on the announcement day (0) and between 20 days before the announcement to 20 days after the announcement ($-20, 0, +20$) event window. The 0 day for the announcement during the trading hour (between 09.00 and 15.30 EST) will be the same, while 0 day for the earnings announcement after the trading hours (after 15.30 EST) will be the next trading day (MacKinlay, 1997). Further, for the calculation of abnormal returns for the after-trading hour announcements, the opening price of the stock of the 0 day is used, as the opening price reflects the impact of earnings announcements made after the trading hours on the stock price.

The average of the abnormal returns (AAR_t) is calculated for each day of the event window using Eqn (3):

$$AAR_t = \frac{1}{N} \sum_{i=1}^N AR_{it} \quad (3)$$

where N is the number of firms.

The cumulative average abnormal return is computed using Eqn (4):

$$CAAR_{T_1, T_2} = \frac{1}{N} \sum_{i=1}^N \sum_{t=T_1}^{T_2} AR_{it} \quad (4)$$

The CAAR is used to analyze the aggregate effect of average abnormal returns around the announcement.

Earnings surprise

The quarterly consensus estimate of the EPS data is collected from the Earnings Estimate (EE) function of the Bloomberg database. Bloomberg offers access to consensus and contributor-specific details of 16,000 active companies across 110 countries. Earnings

Estimates analysts of Bloomberg, who are located globally, monitor estimate content submissions and updates from more than 1,100 contributors on a real-time basis. Bloomberg provides historical estimates coverage for 25 financial measures and ratios. The difference between the actual or reported EPS (RPS_{it}) and estimated EPS ($EEPS_{it}$) is considered as the earnings surprise (ES_{it}):

$$ES_{it} = REPS_{it} - EEPS_{it} \quad (5)$$

The earnings surprises are categorized into three types, i.e. positive, negative and no surprise. The stock analysts consider the forecast error of plus or minus 10 percent (Dreman and Berry, 1995). Hence, in this study, we categorize the surprises between plus or minus 10 percent as no surprise because this error is within the zone of tolerance. The earnings surprise above +10 percent is considered a positive surprise (PSURP) and below -10 percent as a negative surprise (NSURP). The logistic regression model, to analyze the effect of earnings surprise on the timing of earnings announcement, is conceptualized as follows:

$$\log_{it}(EAD_t) = \emptyset_1 + \emptyset_2 PSURP_t + \emptyset_3 NSURP_t + k_t \quad (6)$$

EAD is the earnings announcement decision measured as a dummy variable of 1 if the earnings announcement is made after the trading hours and as 0 otherwise, PSURP is the positive surprise measured as, if ES more than +10 percent and as 0 otherwise, NSURP is negative surprise measured as 1 if ES less than -10 percent and as 0 otherwise. $\emptyset_1$ is the constant, $\emptyset_2$ and $\emptyset_3$ are the coefficients.

Results

The descriptive statistics are presented in Table 2. The mean AAR of the announcement during the regular trading hours was positive, and the mean AAR was negative for the announcements done after the trading hours. It can be inferred that the announcements during the trading hours were positive, and therefore, met the investors' expectations while investors negatively perceived the announcements after the trading hours.

The AAR and Cumulative average abnormal returns, i.e. CAAR, are calculated for the quarterly earnings announcements made during the trading hours and after the trading hours in order to observe the price response to the new information. The AAR and CAAR are

Variable	Mean	Median	SD	10th percentile	90th percentile
<i>Panel A: Descriptive statistics of announcements during trading hours</i>					
AAR	0.09	0.02	2.89	2.89	3.43
CAAR	0.20	0.22	0.30	-0.14	0.57
ES	1.40	0.79	24.77	-16.39	20.14
ΔPx	1.05	0.09	9.00	-3.81	3.93
<i>Panel B: Descriptive statistics of announcements after trading hours</i>					
AAR	-0.28	0.25	2.73	-3.68	2.43
CAAR	-0.63	-0.71	0.56	-1.30	0.07
ES	-9.41	-1.77	66.39	-44.61	35.74
ΔPx	-0.49	-0.33	10.93	-4.91	7.11

Note(s): All the units expressed are in percentage. AAR is the average abnormal return on the announcement day, CAAR is the cumulative average abnormal return on the announcement day, ES is earnings surprise, ΔPx is the price change on the announcement day. SD is the standard deviation

Table 2.
Descriptive statistics

Figure 1.
AAR of the
announcements during
the trading hours
https://drive.google.com/open?id=1J9nZOH8orpwoknIh-FrW7Z1kx9_EXE1P

observed for the event window of -20 days to $+20$ days. Figures 1 and 2 is the graphical representation of AAR and CAAR of the announcements made during the trading hours.

It can be observed that, in the above figures, there is no visually significant abnormal return on the announcement day. However, there is a sharp increase in AAR from -0.24 percent to 0.23 percent on the 7th day before the quarterly earnings announcement. It also shows the average abnormal return of 0.31 percent during the 4th day before the earnings announcement. On the announcement day, there is only a small positive abnormal return of 0.09 percent. The highest average abnormal return of 0.43% is observed on the 2nd day after the announcement and AAR of 0.30 percent on the 4th day after the announcement. The cumulative average abnormal returns continue to increase after the announcement day. The table shown below presents the abnormal returns across various event windows (see Table 3).

The average abnormal return for the event window $(-5, +5)$ was 0.799 percent, and for the event window $(-20, +20)$, it was 0.225 percent. Based on the implications of the information contained in the figure and table shown above, we can conjecture that, on average, the actual earnings were in line with the estimates, and there were no significant earnings surprises (see Figures 3 and 4).

Figure 2.
CAAR of the
announcements during
the trading hours
<https://drive.google.com/open?id=1-9gh1hXhvQee7ZXil8TxO7NO5tSKyoaC>

It is evident from the average abnormal return on the announcements made after the trading hours that earnings were below the estimates. The AAR on the day after the announcement (0 day) was -0.28 percent. Further, the negative streak continues even as

Timing of earnings announcement of companies

127

Event window	Average abnormal return	
	Cumulative	Median
(-5,0)	0.371%	0.052%
(-1,0)	-0.113%	-0.057%
(0,+1)	-0.122%	-0.061%
(0,+5)	0.494%	0.043%
(+2,+20)	0.195%	0.010%
(-1,+1)	-0.301%	-0.179%
(-2,+2)	0.344%	0.066%
(-5,+5)	0.799%	0.037%
(-10,+10)	0.530%	0.019%
(-20,+20)	0.225%	-0.006%

Table 3. Abnormal returns to shareholders during multi-days event windows for the quarterly earnings announcements made during the trading hours

Figure 3. AAR of the announcements after the trading hours
https://drive.google.com/open?id=1ClkZzsY9pxZDp2Uz_6J16MyIkmyfnpPd

Figure 4. CAAR of the announcements after the trading hours
https://drive.google.com/open?id=1SGoQvs_Vx3jSLgw405w6KXkUXvvCWp1O

the AAR was -0.60 percent on the day after 0 day. The cumulative average abnormal return continues to fall after the announcement. We can observe a small recovery in the following days. However, the CAAR remains negative until 20 days after the announcement. The continuous decrease in the CAAR during the event window implies that, on average, the quarterly earnings announced after the trading hours were below the expectations of the market (see Table 4).

The abnormal returns presented in the table above suggest that the returns during various event windows were negative. The cumulative average abnormal return for the event window $(-20, +20)$ was -1.297% . The AAR of the announcements during and after the trading hours support our argument that firms with earnings surprises choose to announce the results after the trading hours (see Table 5).

To test Hypothesis 2, we ran the logistic regression model (Eqn 6) with earnings announcement decision as the dependent variable and degree of surprises as the independent variable. The results are presented below:

The logistic regression analysis results, shown above, suggest that both positive and negative earnings surprises are the significant predictors of the earnings announcement decision. The odds ratio for the positive earnings surprises is 1.938, which is significant at a 5

Table 4.
Abnormal returns to
shareholders during
multi-days event
windows for the
quarterly earnings
announcements made
after the trading hours

Event window	Average abnormal return	
	Cumulative	Median
$(-20, -2)$	-0.362%	-0.007%
$(-5, 0)$	-0.435%	-0.035%
$(-1, 0)$	-0.346%	-0.173%
$(0, +1)$	-0.885%	-0.442%
$(0, +5)$	-0.894%	-0.031%
$(+2, +20)$	0.014%	0.009%
$(-1, +1)$	-0.949%	-0.282%
$(-2, +2)$	-0.909%	-0.064%
$(-5, +5)$	-1.047%	-0.027%
$(-10, +10)$	-0.783%	-0.006%
$(-20, +20)$	-1.297%	-0.013%

Panel A: Model summary

Number of obs	300
Wald χ^2	11.22
Pseudo R^2	0.01
Log pseudolikelihood	-205.60

Panel B: Parameter estimates

Predictor	Odds ratio	β	z	$p > z $	[95% conf. interval]	
Constant	0.663	0.106	-2.560	0.010	0.484	0.908
PSURP	1.938	0.579	2.210	0.027	1.078	3.482
NSURP	2.423	0.701	3.060	0.002	1.373	4.273

Table 5.
Logistic regression
analysis of earnings
announcement during
and after the
trading hours

Note(s): The dependent variable in this analysis is earnings announcement decision (EAD) coded as 1 if the announcement is after the trading hour and 0 during the trading hour. PSURP is positive surprise coded as 1 if the earnings surprise is more than 10 percent. NSURP is negative earnings surprise coded as 1 if the earnings surprise is more than -10 percent

percent level of significance, and the odds ratio for the negative earnings surprise is 2.423, which is significant at a 1 percent level of significance. The model predicts the log of odds of quarterly earnings announcements after the trading hour increases with the presence of earnings surprise.

Discussion

We conducted this study to explore answers to the two research questions in the Indian context. First, is there a difference in the market response to the earnings announcement made during the trading hours and after the trading hours? Second, does earnings surprise influence the decision to announce the results during or after the trading hours? The study reveals that the market response to the announcements during and after the trading hours was not similar. The market reacted negatively to the earnings announcements after the trading hours.

Furthermore, the logistic regression analysis indicates that the firms with positive and negative surprises are more likely to announce the results after the trading hours. This finding is consistent with the findings of [DeHaan *et al.* \(2015\)](#), whose study shows that managers make earnings announcements of bad news after the trading hours. Further, the findings of this study are similar to those of [Doyle and Magilke \(2015\)](#), who report that the probability of delaying the earnings announcement and the possibility of making an earnings announcement after the trading hours are high if there is bad news. Moreover, this study's finding that managers announce good news also after the trading hours is similar to the prior research's finding on the managers' choice to announce the positive news on earnings after the trading hours to take advantage of the possible high attention of investors ([DeHaan *et al.*, 2015](#)). Therefore, this indicates that those firms that intend to reduce the overreaction and underreaction to earnings surprises will choose to announce the results after the trading hours.

The firms' decision to announce the results after the regular trading hours when there are earnings surprises (both positive and negative) can be attributed to investors' overreaction and underreaction to the actual earnings surprises. According to [Bondt and Thaler \(1985\)](#), investors tend to give higher weight to recent information than they assign to historical information. [Kahneman and Tversky \(1982\)](#) call this as the result of representativeness heuristics. Further, [Schnusenberg and Madura \(2001\)](#) argue that investors tend to interpret positive surprises pessimistically and interpret negative surprises optimistically in the short-term. In this connection, [Brown *et al.* \(1998\)](#) observe a similar behavior, which indicates that investors tend to overreact to negative news and underreact (or no reaction) to positive news.

The empirical results presented in this paper suggest that firms with both positive and negative surprises tend to announce the results after the trading hours. This could be to avoid the tendency of investors' overreaction to negative news and underreaction to positive news. The existence of such anomalies leads the price away from its fundamental value. It is interesting to note that the legendary investor Warren Buffet, in a letter to investors in the year 2017, made a point that his firms would continue to announce the results on Friday as the investors and market professionals would get more time to process the information, and thus, come up with an informed analysis about the implication of the results. Therefore, it would be better for companies to announce their quarterly results, which are inconsistent with the market expectations (positive or negative) after the trading hours, as this is likely to help reduce market anomalies.

The interesting theoretical issue to be addressed is whether or not companies make the earnings announcements during the trading hours despite the presence of positive news. From a valuation perspective, prior research on timing announcements has argued that it is better to make intraday announcements of earnings because this will enable better

assessment of future profitability. In this connection, it is also argued that the subsequent price changes are going to be positive if companies make announcements of their earnings during the day. This is evidenced in the present study also. Companies are less likely to make earnings announcements during the trading hours if the managers perceive that the positive news is not significant enough to make a positive impact on stock prices. Given the absence of information on what constitutes positive news that contributes significantly to the price rise of stocks, managers would believe that stock markets would underreact to the announcement of positive news during trading hours. Therefore, they would decide to announce positive news also after the trading hours as this would give enough time to investors and analysts to think over the information on positive news and thus process the value of information on the positive news. As a result, stock prices in the following period are likely to incorporate the impact of the positive news.

The related issue to be discussed, in this context, is the following: why is it that the stock prices experience abnormal returns following the earnings surprise? Findings of the recent research on the relationship between earnings announcements and systematic risk (Savor and Wilson, 2016) throw light on the results found in this study. First, the cash flow news relating to the earnings announcing firm and the expected cash flows news inferred for the entire market would lead to a higher rate of covariance between the cash flow news of the individual earnings announcing firm and the expected cash flow news of all the firms that announce the earnings in the market. Therefore, the higher degree of covariance between these two types of cash flow news would increase the systematic risk. Accordingly, those firms that announce their earnings' surprise would experience abnormal returns. Further, those firms that announce negative earnings news would also experience abnormal negative returns. Drawing from the explanation that Warren Buffet provides, we argue that the firms that announce abnormal earnings surprise would attempt to provide time to investors to assimilate and digest the news relating to earnings announcements. Therefore, the firms make announcements relating to earnings surprises after the trading hours.

Second, prior research contends that the dynamics relating to discount rate news would also contribute to earnings surprises (Savor and Wilson, 2016). What this implies is that the increase in market returns is not just a function of the risk represented in the market beta of a stock. On the other hand, it is also due to the component of the fundamental risk inherent in a company's business. Therefore, the increase in stock returns need not necessarily be proportionate to the market beta of the company in question. Therefore, by implication, the increase in stock price return could be much more than the market beta captures. Accordingly, there could be a definite increase in stock prices, even while the earnings surprise is zero. This is the result of the covariance between the discount rate news of the individual stock and the discount rate news of the entire stock market. Therefore, the individual market beta does not represent the entire component of the impact of systematic risk on an individual stock. As a result, earnings surprise produces more than the expected stock returns. As it can work both positively and negatively, companies in India seem to be taking a cue from Warren Buffett to make announcements of earnings surprise returns, especially after the trading hours to give breathing time to investors to make sense of the earnings surprise.

Third, the phenomenon of announcement timing risk compels firms to make their earnings announcements after the trading hours. In this connection, prior research has shown that early announcers provide more information to investors with which the late announcers are also assessed. Therefore, this results in higher returns to early announcers. However, if earnings announcements contain either the fall in earnings or losses, the market reaction is expected to be more than proportionate. Accordingly, companies prefer to make earnings announcements after the trading hours.

Practical implications and conclusion

The discussion on the reasons for making earnings announcements leads us to examine the managerial incentives for delaying the earnings announcements or for deciding to make an early announcement of earnings. There are at least three reasons for this phenomenon due to which managers are particular about earnings announcements' timing decisions. First, there exists an explicit managerial preference to tone down the impact of bad news on the stock prices while there is a clear managerial expectation of facilitating the highest impact on stock prices if there is positive news. In the event of the bad news, managers would want the effect of bad news to spread over a relatively long period, though the impact of both good and the news is short-lived (DeHaan *et al.*, 2015). Second, managers do not want to put their reputation at stake by revealing the bad news early (Rajgopal *et al.*, 2006). Further, they actively seek to increase their market reputation by revealing good news early. However, in the Indian context, managers demonstrate a clear preference to make the earnings announcements of even the good news after the trading hours. Third, the direct cost of earnings announcement timing is low, and therefore, managers switch the timing of the announcement, although the probable direct benefit is relatively smaller (Barber and Odean, 2007).

The prior research has demonstrated that managers release earnings news later if their performance is evaluated relatively in comparison with the performance of their peers (Gong *et al.*, 2019). Therefore, this will exercise its impact on income smoothing practices also. In this connection, prior research provides evidence that shows the reluctance of managers to engage in income smoothing practices if their performance is evaluated based on external performance standards (Murphy, 2000). However, those managers whose performance is evaluated against internal performance standards are found to be more than willing to resort to income smoothing practices. The logical extension of these findings is that managers wait to release their earnings news in those firms in which managerial performance is relatively assessed. Therefore, managers may not resort to income smoothing downward if their company's performance is likely to go down relative to the performance of their peers. In such cases, managers might alter the timing of the announcement of earnings.

The early announcement of earnings also depends upon particular events. For example, the possibility of making early earnings announcement increases if firms are expected to make mergers and acquisitions related announcements (Hu *et al.*, 2018). The logical explanation of the early earnings announcements-mergers and acquisitions' announcements relationship is the idea that the early quarterly earnings announcements will provide positive signals to analysts. Consequently, the probability of valuing a company to be acquired higher will also be high. Furthermore, the regulatory expectations on the earnings announcements are expected to make managers delay the announcement of earnings (Pawlewicz, 2018).

References

- Ahmed, B. and Boutheina, R. (2017), "The accuracy of financial analysts' earnings forecasts and the Tunisian market reliance with time", *Cogent Economics and Finance*, Vol. 5 No. 1, p. 1345186, doi: [10.1080/23322039.2017.1345186](https://doi.org/10.1080/23322039.2017.1345186).
- Barber, B.M. and Odean, T. (2007), "All that glitters: the effect of attention and news on the buying behavior of individual and institutional investors", *The Review of Financial Studies*, Vol. 21 No. 2, pp. 785-818, doi: [10.1093/rfs/hhm079](https://doi.org/10.1093/rfs/hhm079).
- Barclay, M.J. and Hendershott, T. (2003), "Price discovery and trading after hours", *The Review of Financial Studies*, Vol. 16 No. 4, pp. 1041-1073.
- Blankespoor, E. and DeHaan, E. (2015), *CEO Visibility: Are Media Stars Born or Made?*, No. 204, doi: [10.2139/ssrn.2577994](https://doi.org/10.2139/ssrn.2577994).
- Bowen, R.M., Johnson, M.F., Shevlin, T. and Shores, D. (1992), "Determinants of the timing of quarterly earnings announcements", *Journal of Accounting, Auditing and Finance*, Vol. 7 No. 4, pp. 395-422.

- Brown, K.C., Harlow, W.V. and Tinic, M.C. (1998), "Risk aversion, uncertain information and market efficiency", *Journal of Financial Economics*, Vol. 22, pp. 355-385.
- Chen, G., Cheng, L.T.W. and Gao, N. (2005), "Information content and timing of earnings announcements", *Journal of Business Finance and Accounting*, Vol. 32 Nos 1-2, pp. 65-95.
- De Bondt, W.F.M. and Thaler, R. (1985), "Does the stock market overreact?", *The Journal of Finance*, Vol. 40 No. 3, pp. 793-805, doi: [10.2307/2327804](https://doi.org/10.2307/2327804).
- DeHaan, E., Shevlin, T. and Thornock, J. (2015), "Market (in)attention and the strategic scheduling and timing of earnings announcements", *Journal of Accounting and Economics*, Vol. 60 No. 1, pp. 36-55.
- Donelson, D.C., McInnis, J.M., Mergenthaler, R.D. and Yu, Y. (2012), "The timeliness of bad earnings news and litigation risk", *The Accounting Review*, Vol. 87 No. 6, pp. 1967-1991, doi: [10.2308/accr-50221](https://doi.org/10.2308/accr-50221).
- Doyle, J.T. and Magilke, M.J. (2015), "The strategic timing of management forecasts", doi: [10.2139/ssrn.1479867](https://doi.org/10.2139/ssrn.1479867).
- Dreman, D.N. and Berry, M.A. (1995), "Analyst forecasting errors and their implications for security analysis", *Financial Analysts Journal*, Vol. 51 No. 3, pp. 30-41.
- Fama, E.F. (1965), "Random walks in stock market prices", *Financial Analysts Journal*, Vol. 21 No. 5, pp. 55-59.
- Fama, E.F., Fisher, L., Jensen, M.C. and Roll, R. (1969), "The adjustment of stock prices to new information", *International Economic Review*, Vol. 10 No. 1, pp. 1-21, doi: [10.2307/2525569](https://doi.org/10.2307/2525569).
- Fama, E.F. and French, K.R. (1996), "Multifactor explanations of asset pricing anomalies", *The Journal of Finance*, Vol. 51 No. 1, pp. 55-84, doi: [10.2307/2329302](https://doi.org/10.2307/2329302).
- Farrell, K.A. and Whidbee, D.A. (2002), "Monitoring by the financial press and forced CEO turnover", *Journal of Banking and Finance*, Vol. 26 No. 12, pp. 2249-2276, doi: [10.1016/S0378-4266\(01\)00183-2](https://doi.org/10.1016/S0378-4266(01)00183-2).
- Francis, J., Pagach, D. and Stephan, J. (1992), "The stock market response to earnings announcements released during trading versus nontrading periods", *Journal of Accounting Research*, Vol. 30 No. 2, p. 165.
- Frino, A., Prodromou, T., Wang, G.H.K., Westerholm, P.J. and Zheng, H. (2017), "An empirical analysis of algorithmic trading around earnings announcements", *Pacific-Basin Finance Journal*, Vol. 45, pp. 34-51, doi: [10.1016/j.pacfin.2016.05.008](https://doi.org/10.1016/j.pacfin.2016.05.008).
- Gennotte, G. and Trueman, B. (1996), "The strategic timing of corporate disclosures", *The Review of Financial Studies*, Vol. 9 No. 2, pp. 665-690.
- Gong, G., Li, L.Y. and Yin, H. (2019), "Relative performance evaluation and the timing of earnings release", *Journal of Accounting and Economics*, Vol. 67 No. 2, pp. 358-386, doi: [10.1016/j.jacceco.2019.03.002](https://doi.org/10.1016/j.jacceco.2019.03.002).
- Hirshleifer, D., Lim, S.S. and Teoh, S.H. (2009), "Driven to distraction: extraneous events and underreaction to earnings news", *The Journal of Finance*, Vol. 64 No. 5, pp. 2289-2325, doi: [10.1111/j.1540-6261.2009.01501.x](https://doi.org/10.1111/j.1540-6261.2009.01501.x).
- Hu, H., Platt, K. and Chih-Huei, S. (2018), "Strategic sequencing of earnings and M&A announcements".
- Kadiyala, P. and Rau, P.R. (2004), "Investor reaction to corporate event announcements: underreaction or overreaction?", *The Journal of Business*, Vol. 77 No. 2, pp. 357-386, doi: [10.1086/381273](https://doi.org/10.1086/381273).
- Kahneman, D. and Tversky, A. (1982), "Intuitive prediction: biases and corrective procedure", in Kahneman, D., Slovic, P. and Tversky, A. (Eds), *Judgment Under Uncertainty: Heuristics and Biases*, Cambridge University Press, London, p. 416.
- Lee, H.Y. and Son, M. (2009), "Earnings announcement timing and earnings management", *Applied Financial Economics*, Vol. 19 No. 4, pp. 319-326, doi: [10.1080/09603100701857872](https://doi.org/10.1080/09603100701857872).

- Li, J. (2016), "Slow price adjustment to public news in after-hours trading", *The Journal of Trading*, Vol. 11 No. 3, pp. 16-31, doi: [10.3905/jot.2016.11.3.016](https://doi.org/10.3905/jot.2016.11.3.016).
- Lyle, M.R., Rigsby, C., Stephan, A. and Yohn, T.L. (2018), "The speed of the market reaction to pre-open vs post-close earnings announcements", Nos 17-75, doi: [10.2139/ssrn.3064160](https://doi.org/10.2139/ssrn.3064160).
- MacKinlay, A.C. (1997), "Event studies in economics and finance", *Journal of Economic Literature*, Vol. 35 No. 1, pp. 13-39.
- Malmendier, U. and Tate, G. (2009), "Superstar CEOs", *The Quarterly Journal of Economics*, Vol. 124 No. 4, pp. 1593-1638, doi: [10.1162/qjec.2009.124.4.1593](https://doi.org/10.1162/qjec.2009.124.4.1593).
- Michaely, R., Rubin, A. and Vetrashko, A. (2014), "Corporate governance and the timing of earnings announcements", *Review of Finance*, Vol. 18 No. 6, pp. 2003-2044.
- Murphy, K.J. (2000), "Performance standards in incentive contracts", *Journal of Accounting and Economics*, Vol. 30 No. 3, pp. 245-278, doi: [10.1016/S0165-4101\(01\)00013-1](https://doi.org/10.1016/S0165-4101(01)00013-1).
- Patell, J.M. and Wolfson, M.A. (1982), "Good news, bad news and the intraday timing of corporate disclosures", *Accounting Review*, Vol. 57 No. 3, p. 509.
- Patell, J.M. and Wolfson, M.A. (1984), "The intraday speed of adjustment of stock prices to earnings and dividend announcements", *Journal of Financial Economics*, Vol. 13 No. 2, pp. 223-252, doi: [10.1016/0304-405X\(84\)90024-2](https://doi.org/10.1016/0304-405X(84)90024-2).
- Pawlewicz, R. (2018), "The effect of regulation on the timeliness and informational role of earnings announcements", *Contemporary Accounting Research*, Vol. 35 No. 4, pp. 1675-1701, doi: [10.1111/1911-3846.12365](https://doi.org/10.1111/1911-3846.12365).
- Piccoli, P., Chaudhury, M., Souza, A. and da Silva, W.V. (2017), "Stock overreaction to extreme market events", *The North American Journal of Economics and Finance*, Vol. 41, pp. 97-111, doi: [10.1016/j.najef.2017.04.002](https://doi.org/10.1016/j.najef.2017.04.002).
- PTI. (2018), *BSE in Top 10 League as Market Cap Vaults to \$1.6 Trillion*, The Hindu Business Line, available at: <https://www.thehindubusinessline.com/markets/stock-markets/bse-in-top-10-league-as-market-cap-vaults-to-16-trillion/article20921148.ece> (accessed 29 December 2019).
- Rajgopal, S., Shevlin, T. and Zamora, V. (2006), "CEOs' outside employment opportunities and the lack of relative performance evaluation in compensation contracts", *The Journal of Finance*, Vol. 61 No. 4, pp. 1813-1844, doi: [10.1111/j.1540-6261.2006.00890.x](https://doi.org/10.1111/j.1540-6261.2006.00890.x).
- Ranaldo, A. (2006), "Intraday Market Dynamics Around Public Information Arrivals", doi: [10.2139/ssrn.475524](https://doi.org/10.2139/ssrn.475524).
- Savor, P. and Wilson, M. (2016), "Earnings announcements and systematic risk", *The Journal of Finance*, Vol. 71 No. 1, pp. 83-138, doi: [10.1111/jofi.12361](https://doi.org/10.1111/jofi.12361).
- Schnusenberg, O. and Madura, J. (2001), "Do US stock market indexes over- or underreact?", *The Journal of Financial Research*, Vol. 24, pp. 179-204.
- Sengupta, P. (2004), "Disclosure timing: determinants of quarterly earnings release dates", *Journal of Accounting and Public Policy*, Vol. 23 No. 6, pp. 457-482, doi: [10.1016/j.jaccpubpol.2004.10.001](https://doi.org/10.1016/j.jaccpubpol.2004.10.001).
- Sharpe, W.F. (1963), "A simplified model for portfolio analysis", *Management Science*, Vol. 9 No. 2, pp. 277-293.
- Skinner, D.J. and Sloan, R.G. (2002), "Earnings surprises, growth expectations and stock returns or don't let an earnings Torpedo sink your portfolio", *Review of Accounting Studies*, Vol. 7 Nos 2-3, pp. 289-312.
- Spyrou, S., Kassimatis, K. and Galariotis, E. (2007), "Short-term overreaction, underreaction and efficient reaction: evidence from the London Stock Exchange", *Applied Financial Economics*, Vol. 17 No. 3, pp. 221-235, doi: [10.1080/09603100600639868](https://doi.org/10.1080/09603100600639868).
- Teigen, K.H. and Keren, G. (2003), "Surprises: low probabilities or high contrasts?", *Cognition*, Vol. 87 No. 2, pp. 55-71, doi: [10.1016/s0010-0277\(02\)00201-9](https://doi.org/10.1016/s0010-0277(02)00201-9).

Corresponding author

Nandan Prabhu can be contacted at: nandan.prabhu@manipal.edu