Informational Effect of Select Private Placements of Equity: An Empirical Analysis in Indian Capital Market

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In India, private placement of equity shares or securities convertible into equity shares by listed companies is of two types—preferential allotment and qualified institutional placement (QIP). While preferential allotments have been in existence for a long time, QIPs are of recent origin. QIPs are a quicker and cost-effective form of raising money and have emerged as an important and preferred choice among the listed companies for an issuance of follow-on equity financing in India.

The objective of the study is to investigate the information content of 150 placements of equity shares on QIP basis made by 131 Bombay Stock Exchange (BSE) listed companies from May 8, 2006 to December 31, 2012. The study seeks to analyze the effect of QIP announcements on Indian capital market. It explores the possibility of a relationship between short-run abnormal returns following QIP equity issues using market model-based event study methodology.

The results of the study show that the stock market response is negative to the QIP equity announcements and support the hypothesis of semi-strong form of market efficiency only during the three-day event period. The results are inconsistent with the findings of majority of the earlier studies which suggest that there is a positive stock-price performance following the announcements of private placements of equity.

As part of robustness checks, the study accords importance to the US subprime and European debt crisis and finds that the sample period could not be taken as the possible reason for adverse market reaction. The study also carries out a set of test statistics for the sample events that are free from event clustering and finds no significant difference in the results.

The study concludes that companies are overwhelmingly resorting to QIPs, as they offer a quick and easy way to raise funds on private placement basis but blames the regulatory loopholes for the negative market perception about QIPs. There is a scope for further research with regard to using sophisticated techniques for event clustering and conducting a volume event study to analyse changes in the trading volume surrounding the QIP equity announcements.
The firms’ choice between public issues and private placements for mobilizing resources from the capital market has gained considerable importance over the last few years. It is noticed that India Inc. is increasingly showing penchant for private placement route since it offers a time- and cost-effective mechanism to the issuers for raising funds.

Private placement involves issue of securities, debt or equity, to selected subscribers, such as banks, financial institutions, mutual funds and high-net-worth individuals. According to Companies Act, 1956, the total number of such select subscribers cannot exceed 49. As these placements are made to a few sophisticated and well-informed investors, the disclosure requirements are relatively less (NSE, 2011).

It is quite interesting to note that private placement offerings by private sector firms eclipsed public as well as rights issues in the primary market for the period between 2000–2001 and 2012–2013. Figure 1 indicates that the amount raised through private placements rose from `187.60 billion in 2003–2004 to as much as `1296.77 billion in 2007–2008. Market slowdown due to global financial turmoil in 2008–2009 resulted in a significant decline in the amount of funds raised from the market. This accounted for a massive 74.5 per cent fall in the resource mobilization by the way of public and rights issues and about 26 per cent drop in the quantum of money raised through private placements from the financial year 2007–2008 (Chandrasekhar, 2009). In 2009–2010, markets observed a substantial rebound in activity due to strong domestic recovery and improved external conditions. This helped the companies to mobilize funds to the tune of `279.79 billion via public and rights issues and `2332.94 billion through private placements. During 2010–2011, the primary market for corporate securities witnessed a sudden dip due to a 48 per cent drop in the capital raised through private placements, although the resources garnered by the way of public and rights issues saw a fall of mere 1.7 per cent. Weak economic environment and 11 rate hikes by The Reserve Bank of India (RBI) between March 2010 and July 2011 in response to mounting inflationary pressures could be responsible for restricted issuances in the private placement market. Fund raising slumped further in 2011–2012 on account of slowdown in the economy as financial markets witnessed significant spillover from the sovereign debt crisis in the euro area. As the market sentiment improved on the back of huge infusion of liquidity by central banks and governments in developed countries, especially the US, amounts raised in the capital market by the way of private placements surged to approximately `1,380 billion in 2012–2013. This signifies that private placements alone accounted for 89.5 per cent of the total resources mobilized by the private sector in 2012–2013.

![Figure 1: Resources Mobilized by Private Corporate Sector (in ₹ billion)](image)

Source: Reserve Bank of India (2013).
It is noteworthy that capital raised in the private placement market predominantly comes from debt issues. The RBI estimates suggest that the share of equity in total private placements is rather insignificant (NSE, 2011).

In India, listed companies can make private placement of equity shares or securities convertible into equity shares either by way of 'preferential allotments' under the provisions of Chapter VII of The Securities and Exchange Board of India (SEBI) (Issue of Capital and Disclosure Requirements [ICDR]) Regulations, 2009 or by means of 'qualified institutional placements' (QIPs) as per Chapter VIII of SEBI (ICDR) Regulations, 2009. It may, however, be mentioned that preferential allotments have been in existence for a long period but QIPs are of recent origin. To encourage Indian companies to raise funds from domestic markets instead of tapping overseas markets, SEBI introduced QIPs on 8 May 2006. Listed issuers can make QIP issue of equity shares or securities convertible into equity shares to qualified institutional buyers (QIBs) only. QIP is a quicker and less expensive mode of raising money for listed companies as compared to further public offering (FPO) and rights issue where regulatory approval and documentation is quite time-consuming and complicated. For instance, there is no pre-issue filing of the placement document for QIPs with the capital market regulator. Also, QIPs generally involve lower issuance costs, as they commonly avoid heavy marketing and printing costs associated with the issue.

QIPs have, thus, emerged as an important and preferred choice among the listed companies for issuance of ‘follow-on equity’ financing in India. It is observed that from 2006–2007 to 2012–2013, India Inc. mobilized about ₹1163.13 billion by the way of QIPs. In the course of the same period, companies garnered ₹529.22 billion from FPOs and raised ₹780.08 billion through rights issues. Thus, it is evident from these figures that private placement through QIP mode has taken off in a big way in a short span of time. It is clearly seen that the total amount raised through QIPs is twice that mobilized through FPOs and is nearly one and a half times more than the amount raised by the way of rights issues. In fact, QIPs provide a substantial part of corporate equity finance in India. It, therefore, becomes pertinent to assess the impact of corporate announcements of QIP issues on the shareholders’ wealth.

The purpose of this study is to investigate the information content of QIP of equity shares by BSE-listed companies. Since QIPs were launched by SEBI on May 8, 2006, the time period of the study begins from this date and spans to December 31, 2012. The study seeks to analyse the effect of announcements of QIPs of equity shares on the stock market in the light of testing semi-strong form of efficient market hypothesis. It explores the possibility of a relationship between short-run abnormal returns (ARs) following QIP equity issues using event study methodology. To the best of our knowledge, the study of informational effects of QIPs of equity in India in the context of testing of semi-strong form of market efficiency happens to be the first of its kind.

The present study has important implications for the regulator and market participants. It is found that companies making QIPs were not bound to disclose the identity of the investors to whom equity shares have been placed. In fact, annual and press reports of some selected sample companies stated that QIBs who participated in the issue included ‘prominent international and domestic fund houses’. The loophole in the regulation about the concealment of identity of placement investors has important ramifications on the wealth of existing shareholders of the issuing company for it is their right to know to whom shares have been allotted. However, it is heartening to note that as per SEBI’s circular of March 2010, the companies now have to disclose the statement of shareholding pattern pre- and post-QIP issue as well as details of those investors who have been allotted more than 5 per cent of the shares offered. But it is unfortunate that details of those allotted less than 5 per cent remain still hidden. Also, there is no restriction controlling the resale of securities by QIBs through a recognized stock exchange. They can sell the securities immediately in the market and may benefit by employing suitable trading strategies. In other words, public issues could be passed off in the guise of private placements. This may convey negative information to the market about firm’s quality and future prospects.

LITERATURE REVIEW

Private placements of equity, as the method of raising funds by the way of seasoned offerings, have received relatively little attention in the academic research. Only a few accredited scholars and researchers have examined the information content of announcements of private placement of equity shares. The finance literature has shown that announcements of private equity placements on average generate positive stock price reaction.
The initial study by Wruck (1989) reveals significant positive announcement returns for 99 private equity placements by The New York Stock Exchange (NYSE) and The American Stock Exchange (AMEX) listed firms during 1979–1985. She reasons that private equity placements reflect reductions in agency costs due to increased monitoring provided by a few large non-managerial shareholders. Hertzel and Smith (1993) examine 106 private placements by NASDAQ-listed firms between 1980 and 1987 and prove the favourable informational effect by extending the theoretical model of Myers and Majluf (1984). Hertzel and Smith (1993) explain that with private placements, managers can put intensive efforts into negotiating with a small group of investors that the firm is ‘undervalued’ and has good prospects. They emphasize that the investment by informed investors could serve as certification of firm value.

Goh, Gombola, Lee, and Liu (1999) suggest that private equity placements convey information about improved (short-term) earnings prospects for the firm. Their sample consists of 102 announcements made in the United States during 1979–1993. Their findings are consistent with those of Hertz and Rees (1998) who show that the favourable information about future earnings, conveyed through announcement of private equity placement, is reflected in both the upward revisions in current year earnings forecast by analysts and positive stock price reaction. Wruck and Wu (2009) study a sample of 1,976 private placements of common stock made by the US public companies between 1980 and 1999 and find that announcement of private equity placement is often concurrent with announcement of new relationship with investors. New relationship takes the form of managerial appointments, directorships and/or new business partnership or venture. They find that all placements associated with new relationships have significant positive announcement period (−3, 0) returns whereas those without such relationships have negative returns though statistically insignificant.

For publicly traded firms (issuers) in the United States, positive ARs around the private equity placement announcement are also reported by Besley and Kohers (2000), Hertzel, Lemmon, Linck, and Rees (2002) and Folta and Janney (2004). Kato and Schallheim (1993) examine 76 private placements by Japanese firms from 1974 to 1988 and report significant positive announcement returns. As per them, strong monitoring by the private investors that are generally publicly traded firms leads to positive response from the market.

Recent research, however, has challenged the hypothesis that positive announcement effect of private placements reflects ex-post monitoring (Wruck, 1989). Wu, Wang, and Yao (2005) show positive announcement effects for private placements by non-financial and non-utility firms listed on the Stock Exchange of Hong Kong (SEHK) for the period 1989–1997. They find no evidence for monitoring effect of private equity placements. According to them, sufficiently close incentive alignment at high level of ownership concentration facilitates positive information effects. Wu’s (2004) findings suggest that private placements in the United States are not motivated by enhanced monitoring of managers. He argues that monitoring may not become more effective after private placements if ownership is concentrated in the hands of passive investors. Floros and Sapp (2012) find that during 1995–2008, multiple or repeated issues of private equity placements have been a substantial source of finance for the US corporations. They show that positive stock price reaction to the private placement announcement is true for initial offerings only. They find that the information content of private investment in public equity (PIPE) offering disappears and announcement returns become insignificant by the fourth transaction. According to them, a drop in share price in the successive PIPE offerings results from issuance costs. They also find that hedge funds dominate as principal investors in the later offerings, which have short investment horizons and provide no monitoring benefits.

Barclay, Holderness, and Sheehan (2007) find that private investors in the United States are usually not active and allow the managers of private placement firms to entrench by solidifying their control of the firm. By taking a sample that is six to ten times larger than those used in Wruck (1989) and Hertzel and Smith (1993), they find that during 1979–1997, 80 per cent of the sample placements are characterized by passive investors6 who have no post-placement interaction with the issuing firm.7 They find negative mean cumulative ARs (CARs) (−9.9 per cent over 130-day event window) associated with private placements made to passive investors. They bring into light the role (if any) that the buyer of private equity plays in firm affairs. Wruck (1989) also hints entrenchment in some placements where she finds that the relationship between ownership concentration and firm value is non-linear, with a negative slope between the ownership level of 5 per cent and 25 per cent and after 50 per cent. Krishnamurthy, Spindt, Subramaniam, and
Woidtke (2005) analyse whether investor identity or investor affiliation matters among the private equity placements made in the United States during 1983–1992. In contrast to positive announcement period returns, generally associated with private placements of equity, they find no positive announcement reaction for a sub-sample of placements made to unaffiliated investors by firms that have potential access to public equity markets. In other words, private placements to unaffiliated investors serve to entrench the management.

Tan, Chng, and Tong (2002) examine 67 private placements of equity of Singapore Exchange-listed firms over 1988–1996 and find that average ARs (AARs) are significantly positive 21 days prior to the announcement, while they become insignificant on the event date. For post-announcement period, they find significantly negative ARs. According to them, a possible reason for such behaviour of returns could be the leakage of information and speculative trading before the formal announcement of private placement. Chen, Ho, Lee, and Yeo (2002) also examine Singapore stock market from 1988 to 1993 but report an average negative announcement period (−1, 0) return of −0.89 per cent for their sample of 53 private placement announcements. According to them, as per the regulations governing private placements in Singapore, shares cannot be sold to directors and existing block holders. This implies reduction in their equity holdings post issue that could adversely impact the firm value.

Marciukaityte, Higgins, Friday, and Mason (2007) investigate a short-run price performance of real estate investment trusts (REITs) making equity private placements in the United States during 1981–1999. Using a post-announcement estimation window, they find significantly negative stock price reaction during (−1, 1) and (−1, 0) event windows. They suggest that costs of increased ownership concentration by the way of private placements might have outweighed the benefits by referring to Barclay et al. (2007). In fact, they do not find evidence of benefits from external monitoring for REITs.

Anderson, Rose, and Cahan (2006) find significant negative announcement effect for private equity placements that were placed at a discount in New Zealand during 1990–2002. They also show run-down in returns over 30 trading days after the announcement and significantly higher increase in trading volume in 5 days subsequent to private placements. Their explanation is that the regulation in New Zealand allows buyers of discounted private placements to buy at prices lower than the current market value and sell immediately on market value. This may likely convey negative information regarding buyer perception of firm quality and long-term prospects.

Thus, private equity placements have been observed in different financial markets in various countries. Research demonstrates both positive as well as negative announcement period returns in regard to private placements of equity. Several hypotheses have been put forth to explain the announcement effect for such private equity issues. Most accepted explanations regarding positive announcement reaction are provided under monitoring hypothesis (Wruck, 1989) and certification hypothesis (Hertzel & Smith, 1993). Wu (2004) and Barclay et al. (2007) challenge the validity of monitoring hypothesis and find that most private placements are made to friendly and passive investors. Barclay et al. (2007) suggest managerial entrenchment hypothesis and find negative announcement period returns for a sample of passive placements made in the United States. Chen et al. (2002) in Singapore and Anderson et al. (2006) in New Zealand also show that stock market reacts negatively to announcements of private equity placements. According to them, since regulations governing private equity placements in their respective countries are different from those in the United States, the announcement effect is negative.

REGULATION OF QIPS IN INDIA

Private placements in India are lightly regulated. The probable reason for rapid growth of QIPs could be an attempt by the listed issuers to avoid compliance of lengthy, cumbersome and time-consuming regulations that are mandatory for public and rights issues. This section outlines the regulations of QIPs in India and compares them with those of the developed countries.

Since September 2009, QIPs are governed by the provisions of SEBI (ICDR) Regulations, 2009, which were hitherto provided in SEBI (DIP) Guidelines, 2000. Table 1 compares key regulatory characteristics of private placements on QIP basis in India with those of the developed markets of United States, Singapore, and New Zealand.
Table 1: Regulations on Private Placements of Shares—India and Developed Countries

| Regulation          | India (QIPs)                                                                 | USA (Regulation D)                                                                 | Singapore                                                                 | New Zealand                                                                 |
|---------------------|-----------------------------------------------------------------------------|----------------------------------------------------------------------------------|---------------------------------------------------------------------------|----------------------------------------------------------------------------|
| Investors to issue  | Shares can be sold only to qualified institutional buyers (who are neither promoters nor persons related to promoters of the issuer). | Shares can be sold to unlimited number of accredited investors¹ and up to 35 non-accredited but sophisticated investors. They can be sold to owner-managers or existing block holders. | Shares cannot be sold to directors and/or substantial shareholders.² | Shares can be sold to directors and/or associated persons if their participation is in the best interests of the issuer and fair to the non-participating equity shareholders. |
| Issue size          | The total of the proposed QIP and the previous QIPs made in the same fiscal year not to exceed five times the net worth of the issuer as per the audited balance sheet of the previous financial year. | No restriction                                                                   | Issue size is restricted to 50% of existing equity share capital at the time of passing the resolution approving the issue. | Issue size is restricted to 20% of the firm’s total number of shares at the beginning of 12 months before the issue. |
| Pricing             | Issue price shall be not less than average of weekly high and low of equity shares of the same class during two weeks before the date of meeting in which board of directors (BOD) decides to open the proposed issue. Maximum discount of 5% is allowed on the price so calculated subject to the approval of shareholders. | No restriction                                                                   | Issue of shares must not be priced at more than 10% discount to the weighted average price³ for trades done on the date the placement agreement is signed. | The price and terms of issue should be fair and reasonable to the existing shareholders in the opinion of the board. |
| Lock-in of shares   | No lock-in period if shares are sold through recognized stock exchange (one year otherwise). | Lock-in is six months if the issuer is subject to SEC periodic reporting requirements and one year otherwise | No lock-in period                                                          | No lock-in period                                                          |

Source: Securities and Exchange Board of India Notification (2009); Office of Investor Education and Advocacy (2013); Singapore Exchange Limited (2013); and NZX Limited (2010).

Notes: 1. Accredited investors include directors, executive officers and investors whose net worth, either individually or jointly with their spouse, equals or exceeds $1 million.
2. A substantial shareholder or a block holder is a person who has an interest in 5 per cent or more of the voting shares of a company.
3. Weighted average price is the total value of transactions in a listed security (for each transaction, the price multiplied by volume) for that market day divided by the volume transacted for that market day.

In India, QIPs cannot be made to promoters of the issuer or persons related to them while in Singapore, directors and substantial shareholders are not allowed to participate in private placements. This implies a reduction in their equity holdings after the issue that could adversely impact the firm value. In contrast, the United States and New Zealand allow private placement of shares with directors and associated persons. There are no issue size and pricing restrictions in the United States, which are evident in case of other three countries.

Unlike the United States, there are no restrictions on private placement buyers on reselling shares in the stock market in India, Singapore, and New Zealand. In other words, private placement investors can immediately sell the shares allotted by way of QIPs. This could be interpreted as negative information regarding the firm’s quality and long-term prospects because well-informed QIBs could dump the shares for immediate profits. Further, regulations in India do not provide for disclosure of details of identity of those placement investors who have been allotted less than 5 per cent of shares. Thus, we can say that several unique characteristics exist in the regulations governing QIPs in India.
SAMPLE SELECTION AND DATA SOURCES

The sample consists of 150 private placement announcements of equity shares made on QIP basis by 131 BSE-listed companies in India during the period under study, that is, from May 8, 2006 to December 31, 2012. As per the regulations governing QIFPs, the issuer is required to furnish a copy of the placement document to each stock exchange on which the same class of equity shares is listed. But for the present study, the sample consists of those announcements for which companies have furnished a copy of final placement document on the BSE website. Table A in the Appendix gives the names of the sample companies, dates of placement documents and the groups within which they fall (classified by BSE on the basis of size and liquidity). We also mention the category of the trading groups so as to know whether the stock is thinly traded or not. It is found that 67 per cent of the stocks belong to B category, about 27 per cent to A category, 2 per cent to S category and 4 per cent to T category. Therefore, the sample chosen includes a vast majority of companies (nearly 94 per cent) enjoying higher trading volumes.

Using CMIE Prowess database, a list of a total of 195 QIP equity issues has been generated for the period May 8, 2006–December 31, 2012. It is found that out of 195 issues reported by Prowess, actually only 176 are QIFPs. Of the remaining 19 issues, 16 are preferential allotments, 1 is employee stock option plan, 1 is institutional placement programme and 1 is wrongly given. It is further noticed that Prowess database failed to report as many as 17 QIFPs, although they stand included in the list of QIFPs posted under Information Memorandum on the BSE and The National Stock Exchange of India Limited (NSE) website. Cross-check reveals that in respect of these 17 issues, private placement documents are also filed on the companies’ website. The study, thus, reports 193 (176 + 17) QIP equity announcements during the sample period.

In order to detect outliers, ARs for all the QIP announcements on each day of the event period are standardized. ARs with the standardized score (Z value) exceeding ±3 are designated as outliers. In respect of as many as 21 cases, Z values of ARs exceeded the threshold on more than one day during 21-day (−10, +10), 11-day (−5, +5) and 3-day (−1, +1) event windows considered in the study. Interestingly, after excluding these 21 announcements, ARs series are found to be normally distributed for nearly all the days of the three event periods. To check whether the distribution of ARs of the sample companies on each day of the event window is normal, Jarque-Bera test of normality is conducted. Thus, by removing outliers from the sample, we are left with a number of 172 QIP equity announcements.

Furthermore, it is important to control for the confounding events, especially for longer event windows. This is because the longer the window, the more likely it becomes that other events will affect the stock price and cloud the results of an event study. According to Foster (1980) and McWilliams, Siegel and Teoh (1999), researchers should exclude firms that experience confounding events from their empirical analysis rather than making assumptions about the size or direction of the effect of the confounding events. Table B in the Appendix lists the names of 22 companies from the sample that experienced ‘other significant and economically relevant’ events over the 21-day event period, along with the date and the type of confounding announcements. In order to ensure that the impact of the event is measured correctly and is not distorted by the possibilities of the confounding events, these 22 concurrent announcements are removed from the sample. Thus, in order to control for confounding effects and get empirically strong results, a final sample of 150 events is considered. It is observed from the sample that maximum number of QIP announcements to raise equity from the market was made in the calendar year 2010 that comes to around 33 per cent of the total number of announcements.

In order to show the existence of short-run ARs around the period of QIP equity announcements, adjusted daily closing stock prices of the sample companies and daily closing values of S&P CNX NSE Nifty have been obtained from Prowess database. A broad-based stock index like S&P CNX NSE Nifty Index is considered as the benchmark to evaluate the ARs for each company raising equity through QIPs during the sample period.

According to various event studies, event dates are taken when significant news items are first published in the press. However, due to technological advancements in the IT sector and online trading, easy accessibility to internet has become the order of the day. So, the event date is taken as the date of final placement document that has been obtained from the website of BSE. It is pertinent to mention that QIP announcements of four companies that were made on Saturdays have been taken to be on the following Mondays—Saturdays being non-trading days.
However, for the sake of accuracy, a cross-check is carried out in the print media for about 20 companies and no significant time gap has been found between the date of final placement documents and the date of QIP announcement published in the newspapers. The newspapers are accessed on the archives section of The Economic Times, The Hindu Business Line and Business Standard website as also on the concerned companies’ website (under Press Releases). Table C in the Appendix contains the names of newspapers and the dates on which news relating to private placement (QIP) equity issues was first published in respect of these 20 companies. To posit the relation between QIP information release and change in the value of equity, event study methodology has been employed.

**EVENT STUDY METHODOLOGY**

The study seeks to examine the impact of announcements of QIPs of equity shares on the firms’ stock prices in the form of short-run ARs. For this purpose, event study methodology has been employed.

To conduct an event study, event date, event period and estimation period are defined. We have taken the event date as the date on the final placement document, the copy of which has been filed by the selected companies to BSE. In order to decide how fast the information is incorporated into prices, we consider daily stock returns adjusted for bonus issues/stock splits, etc., for the companies comprising the sample.

The event window is the number of trading days before and after day zero (event date) that is subject to statistical testing regarding ARs. This study considers three different lengths of event windows, that is, \((-10, +10), (-5, +5)\) and \((-1, +1)\), relative to the event date (day 0), that is, event period spans 21 days, 11 days and 3 days, respectively.

The estimation period is defined as the time prior to the event window. In general, the event study literature uses the length of the estimation period between 120 (Dyckman, Philbrick & Stephan, 1984) and 250 days (Mac Kinlay, 1997). For the purpose of the study, estimation period of 120 trading days has been taken. The length of the estimation window is motivated by an attempt to lessen the sampling error in estimating parameters of market model. In other words, estimation window is \((-130, -11), (-125, -6)\) and \((-121, -2)\) for 21-day, 11-day and 3-day event period, respectively.

In this study, normal (expected) returns have been estimated using market model for each corporate announcement for raising funds through QIP equity issues. The market model assumes that asset returns are jointly multivariate normal and independently and identically distributed through time. As per Mac Kinlay (1997), this assumption is considered sufficient for market model to be correctly specified. Further, use of market model for measuring normal returns is justified, as sophisticated multifactor models also do not lead to much reduction in variation of ARs. The market model for estimating expected returns is given as

\[
R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it}
\]

where

- \(R_{it}\) is the return on firm \(i\) on day \(t\);
- \(\alpha_i\) is the expected return on firm \(i\) when market as a whole is stationary;
- \(\beta_i\) is the measure of sensitivity of firm’s return to the market return;
- \(R_{mt}\) is the return on S&P CNX NSE Nifty Index on day \(t\);
- \(\varepsilon_{it}\) is random error term generating AR with mean zero and variance \(\sigma^2_{\varepsilon_i}\);
- \(\tau = (1, \ldots, T)\), time index for estimation period, where \(T = 120\) days, length of estimation period
- \(i = (1, \ldots, N)\), firm index;
- \(\varepsilon_{it}\) is random error term generating AR with mean zero and variance \(\sigma^2_{\varepsilon_i}\) and
- \(\tau = (1, \ldots, T)\), time index for estimation period, where \(T = 120\) days, length of estimation period
- \(i = (1, \ldots, N)\), firm index.

The daily returns for each sample company making QIP of equity have been computed for both estimation period and the event window as

\[
R_{a} = \left( \frac{P_t - P_{t-1}}{P_{t-1}} \right) \times 100,
\]

where \(P_a\) and \(P_{a-1}\) are daily prices for firm \(i\) at time \(t\) and \(t-1\) \((t = \tau\) for estimation period and \(t = t\) for the event period). Similarly, actual returns for the market are also computed as

\[
R_{m} = \left( \frac{I_t - I_{t-1}}{I_{t-1}} \right) \times 100,
\]

where \(I_t\) and \(I_{t-1}\) are the daily Nifty Index values at time \(t\) and \(t-1\).
Expected returns on the sample stocks have been estimated using ordinary least squares (OLS) regression method. The market model regression of daily stock returns on NSE Nifty Index values during the estimation window produced estimated parameters alpha (constant), beta (slope) and variance for each of the selected companies issuing equity shares through private placement. Then, the expected returns for the event period are found by substituting these estimates into the market model equation for each of the three event windows.

ARs have been calculated as the difference between actual and the expected returns for all the selected companies during the event period. They measure the unexpected change in shareholder value related to the event and are found as

\[ \text{AR}_t = \text{R}_t - (\hat{\alpha}_i + \hat{\beta}_i \text{R}_{mt}), \]

where \( \text{AR}_t \sim N(0, \sigma^2_{\text{AR}_t}) \)

and \( \text{AR}_t = \text{R}_t \) and \( (\hat{\alpha}_i + \hat{\beta}_i \text{R}_{mt}) \) are abnormal, actual and estimated returns, respectively, on stock of firm \( i \) at time \( t \) during the event period. Time index for event window \((t_1, t_2)\) is \( t = (t_1, \ldots, t_T) \), for \( T > T \).

ARs have been aggregated across all the sample events at each day \( t \) of the (-10, +10), (-5, +5), and (-1, +1) event window, that is, of length 21-day, 11-day and 3-day, respectively. The sample aggregated returns have been divided by \( N \) to calculate AARs for each event day. As per Mac Kinlay (1997), for a sample of \( N \) events, the AAR for day \( t \) is calculated as

\[ \text{AAR}_t = 1/N \sum_{i=1}^{N} \text{AR}_i, \]

where \( \text{AR}_i \) are the abnormal returns for firm \( i \) at day \( t \) calculated as the difference between actual returns and the returns estimated from the market model.

According to Goss (1992), ARs around the time of announcement are the results of many influences and not just the announcement of a particular economic event in which the researcher might be interested. Therefore, it is inappropriate to examine the AR for an individual announcement. To neutralize announcement-specific price changes caused by events, other than announcements under study, ARs are averaged across the sample firms at one point in time. In other words, AARs show the average impact of QIP equity announcements on the shareholders’ value on a particular day in the event window. Brown and Warner (1985) show that the non-normality of daily returns has no obvious impact on event-study methodologies. They provide evidence that the AARs in a cross-section of securities converge to normality as the number of securities in the sample increases.

To determine whether the QIP announcement effect on stock prices is significant, various parametric and non-parametric tests have been conducted.

**TEST STATISTICS**

This section describes the following set of test statistics for testing the statistical significance of the sample events.

(i) **Parametric Tests**

The following test statistics have been computed to test whether or not AARs in the event period are equal to zero.

(a) **Conventional Cross-sectional T-test**

Conventional cross-sectional \( T \) statistic is estimated on each day of the event period by dividing the AAR by its cross-sectional standard deviation:

\[ \theta_i = \text{AAR}_i / \text{var} (\text{AAR}_i)^{1/2} \sim t_{N-1}, \]

where \( \text{var} (\text{AAR}_i) = 1/N(N-1) \sum_{i=1}^{N} (\text{AR}_i - \text{AAR}_i)^2 \).

As detailed in Collins and Dent (1984), this test implicitly assumes that all firms have equal residual variances and that there is zero cross-sectional correlation between the residuals. Cross-sectional test ignores estimation period variance and is likely to be misspecified when variance differs across securities and abnormal performances are correlated across firms.

(b) **Patell Standardized Residual (PSR) Test**

As per Collins and Dent (1984), Patell (1976) was among the first to employ test procedures that gave explicit consideration to the possible existence of different residual variances across securities. Patell’s (1976) testing procedure for detecting a mean effect involves forming a standardized prediction error (or standardized AR, SAR) for each sample security for each day in the event window according to the following formula:

\[ \text{SAR}_i = \text{AR}_i / s_i C_{ii}, \]
where $s_i$ is the standard error of residuals of the estimation period (estimated from market model regression) and $C_i$ is the adjustment factor and is given by:

$$C_i = \frac{1 + \frac{1}{T_i} \sum_{t=1}^{T_i} (R_{it} - \bar{R}_m)^2}{\sqrt{1 + \frac{1}{T_i} \sum_{t=1}^{T_i} (R_{it} - \bar{R}_m)^2}}$$

where $T_i$ is the length of estimation window for firm $i$, $R_{it}$ is the market return at period $t$ of the event period and the $\bar{R}_m$ is average market return over estimation period and is given by:

$$\bar{R}_m = \frac{1}{T} \sum_{t=1}^{T} R_{mt}.$$

SARs are approximately unit normally distributed assuming ARs are normal and independent. These SARs are then accumulated across securities for a given event day, $t$, to obtain total SAR (TSAR$_t$), that is,

$$\text{TSAR}_t = \sum_{i=1}^{N} \text{SAR}_it.$$

Patell test statistic is obtained by dividing TSAR$_t$ by its standard error, that is,

$$\theta_2 = \frac{\text{TSAR}_t}{\sqrt{\frac{\sum_{i=1}^{N} T_i - 2}{\sum_{i=1}^{N} T_i - 4}}^{1/2}}.$$

By the central limit theorem, Patell standardized test statistic converges to unit normal for large $N$ under the null hypothesis of zero TSAR.

As per Collins and Dent (1984), Patell’s approach is essentially equivalent in estimating AR via weighted least squares where each firm’s AR is weighted in inverse proportion to its residual standard deviation computed over the estimation period. It offers distinct advantages over the conventional OLS test, which gives equal weight to all observations. It, however, does not address the problems of contemporaneous correlation of returns and possible changes in the residual variances from the estimation to the event period.

(c) **Boehmer, Musumeci and Poulsen (BMP) T-test**

Brown and Warner (1985) show that when the effect of a certain event is not identical across firms, there is a substantial increase in the variance of security’s return for days around some types of events. The implication of a variance increase (or event-induced variance) is that standard procedures using a time series of non-event period data to estimate the variance of the AAR (like Patell test) will result in too many rejections of the null hypothesis of zero AAR, when it is true. Boehmer, Musumeci and Poulsen (1991) proposed standardized cross-sectional testing procedure that is robust under event-induced variance. The assumption of uncorrelated residuals or ARs, however, does remain.

The BMP test statistic is assumed to follow unit normal distribution under the null hypothesis of zero average SAR and is given by

$$\theta_3 = \frac{1}{N} \sum_{i=1}^{N} \text{SAR}_it \sqrt{\frac{1}{N(N-1)} \sum_{i=1}^{N} [\text{SAR}_it - \frac{1}{N} \sum_{i=1}^{N} \text{SAR}_it]^2},$$

According to Corrado (2011), Patell test and the Boehmer–Musumeci–Poulsen test may not perform well when the distribution of security returns data departs markedly from a normal distribution.

(d) **Brown and Warner’s Crude Dependence Adjustment for Event Clustering**

As per Brown and Warner (1980), calendar clustering or event clustering refers to events occurring at or near the same time. In other words, when event windows of the included stocks overlap and covariances between ARs are not zero then such clustering will increase the variance of the performance measures (e.g., the average residual or AAR), and hence lower the power of the tests.

To account for the dependence across firms’ average residuals, in event time, Brown and Warner (1980) suggest that the standard deviation of average residuals should be estimated from the time series of the AARs over the estimation period. Thus, they have come up with the procedure called ‘crude dependence adjustment’. With crude dependence adjustment, the test statistic is distributed Student-1 with $T-1$ degrees of freedom (T is the length of the estimation window) and is given by

$$\theta_4 = \frac{\text{AAR}_t}{\sqrt{\frac{|\text{var} (\text{AAR})|^{1/2}}{T-1}}},$$

where AAR$_t$ and AAR$_r$ are the cross-sectional average at each day in the event window and estimation period, respectively, and variance of AARs during estimation period is given by

$$\text{var}(\text{AAR}_r) = \frac{1}{T-1} \sum_{t=1}^{T} (\text{AAR}_r - \text{AR}^*)^2,$$

where $\text{AR}^* = \sum_{t=1}^{T} \text{AAR}_r / T$. 
In the T-test for abnormal performance in the event window \((t_p, t_s)\) interval, the numerator of the test statistic \(\theta_p\) becomes

\[
\frac{1}{t_2 - t_1 + 1} \sum_{i=1}^{t_2} \text{AAR}_i.
\]

The denominator is the same as shown in \(\theta_p\) divided by \((t_2 - t_1 + 1)^{1/2}\). This test statistic is also assumed to be distributed Student-\(t\) with \(T - 1\) degrees of freedom.

(c) Test Statistic for Cumulative Average Abnormal Returns

In this study, AARs have also been summed up across time, that is, over the event window \((t_1, t_s)\) to arrive at cumulative AARs (CAARs). As per Mac Kinlay (1997), CAAR and variance of CAAR are calculated as:

\[
\text{CAAR}(t_1, t_2) = \sum_{i=t_1}^{t_2} \text{AAR}_i,
\]

\[
\text{var (CAAR}(t_1, t_2)) = 1 / N^2 \sum_{i=1}^{N} \sigma^2_1 (t_i, t_2)
\]

where \(\sigma^2_1 (t_i, t_2)\) is the variance of each firm during the event period computed as \((t_i - t_1 + 1) \sigma^2_0\). The sample variance measure of \(\sigma^2_0\) has been obtained from market model regression in the estimation window. For variance estimator, it has been assumed that there is no clustering. To test the null hypothesis that ARs are normally distributed with mean zero and variance, var \((\text{CAAR}(t_1, t_2))\), is calculated as

\[
\theta_s = \frac{\text{CAAR}(t_1, t_2)}{\text{var (CAAR}(t_1, t_2))^{1/2}} \sim N(0, 1).
\]

AARs have been cumulated over the entire event period to know the collective impact of all the sample private placement announcements on stock prices, test statistic as per Mac Kinlay (1997) is calculated as

\[
\theta_s = \frac{\text{CAAR}(t_1, t_2)}{\text{var (CAAR}(t_1, t_2))^{1/2}} \sim N(0, 1).
\]

(ii) Non-parametric Tests

In order to obtain robust results, the study also conducts non-parametric tests such as Rank test by Corrado (1989) and generalized sign test as analysed by Cowan (1992).

(a) Corrado’s Rank Test

Corrado (1989) describes the rank test for a one-day event window. The ranks of the ARs of different days are dependent by construction. However, as per Cowan (1992), the effect of ignoring the dependence may be negligible for event windows of a few days. Following Cowan (1992), this study extends the rank test to event windows of length 3–21 days by assuming that the daily return ranks within the window are independent.

The rank test procedure treats the estimation period and the event period as a single time series and assigns a rank to each daily return for each firm. Rank 1 is assigned to the smallest AR in the combined estimation period and the event period. The length of event window is given by \(L\) which is equal to \((t_2 - t_1 + 1)\). For the null hypothesis of no AR, the rank test statistic for the event window composed of days \(t_1\) through \(t_2\) is

\[
\theta_\tau = \frac{(t_2 - t_1 + 1)^{1/2} \text{R}_t}{\left[\sum_{i=1}^{T+L} (\text{R}_i - \bar{K}) / (T+L)\right]^{1/2}},
\]

where \(\text{R}_t = 1 / (t_2 - t_1 + 1) \sum_{i=1}^{t_2} \text{K}_i\) and \(\bar{K} = (T + L + 1) / 2\) is the expected rank.

\(K_i\) represents rank of abnormal return \(\text{AR}_i\) in the time series of \((T + L)\) ARs of firm \(i\). \(T\) and \(L\) denote number of days in estimation and event period, respectively. \(\text{R}_t\) is the average rank across the \(N\) events and \(L\) days of the event window. \(\bar{K}\) is average rank across \(N\) events on day \(t\) of the combined estimation and event period. It is assumed that the asymptotic null distribution of rank test statistic is standard normal.

(b) Generalized Sign Test

The generalized sign test, as analysed by Cowan (1992), examines whether the number of stocks with positive CARs in the event window exceeds the number expected in the absence of abnormal performance. If the proportion of firms with positive ARs in the event window as a whole exceeds the proportion of positive ARs in the estimation period, the null is rejected. The number expected is based on the fraction of positive ARs in the \(T\)-day estimation period which is

\[
\hat{p} = \frac{1}{N} \sum_{i=1}^{N} \frac{1}{T_i} \sum_{i=1}^{T_i} S_{it},
\]

where \(S_{it} = 1\) if \(\text{AR}_i > 0, 0\) otherwise; and the generalized sign test statistic is
\[ \theta = \frac{w - Np}{\sqrt{Np(1-p)}}. \]

Here, \( w \) is defined as number of stocks in the event window for which \( CAR_r(t_i, t_f) \) is positive. The test statistic uses the normal approximation to the binomial distribution with parameter \( p \). As per Cowan (1992), rank test is more sensitive to increases in the length of the event window, increases in return variance on the event date and to thin trading. The generalized sign test is a viable alternative to the rank test under these conditions.

**EMPIRICAL RESULTS**

This section presents and discusses the test results for a sample of 150 QIP equity announcements for the three different event windows. Two-tailed parametric and non-parametric tests have been conducted to find the possibility of existence of significant ARs around the announcements.

**Parametric Test Results for 21-day Event Period**

Table 2, Panel A, shows AARs and CAARs, conventional cross-sectional \( T \)-test statistic along with Brown and Warner's (1980) crude adjustment for clustering for each day of the 21-day event period, that is, 10 days preceding the QIP announcement to 10 days following such announcement.

### Table 2: Average and Cumulative Average Abnormal Returns, Cross-sectional \( T \)-test Statistic and Crude Adjustment for Clustering during 21-day Event Period

| Event Day | AAR (%) | CAAR (%) | Cross-sectional \( T \) Statistic | Crude Adjustment \( T \) Statistic |
|-----------|---------|----------|-----------------------------------|-----------------------------------|
| -10       | -0.115  | -0.115   | -0.535 (0.594)                   | -0.474 (0.637)                   |
| -9        | 0.105   | 0.010    | 0.588 (0.558)                    | 0.432 (0.667)                    |
| -8        | 0.191   | 0.181    | 0.849 (0.397)                    | 0.786 (0.433)                    |
| -7        | 0.196   | 0.378    | 0.680 (0.498)                    | 0.806 (0.422)                    |
| -6        | 0.272   | 0.650    | 1.041 (0.300)                    | 1.117 (0.266)                    |
| -5        | 0.246   | 0.404    | 1.251 (0.213)                    | 1.099 (0.315)                    |
| -4        | 0.176   | 0.228    | 0.819 (0.414)                    | 0.723 (0.471)                    |
| -3        | 0.156   | 0.383    | 0.745 (0.458)                    | 0.640 (0.524)                    |
| -2        | 0.107   | 0.490    | 0.442 (0.659)                    | 0.439 (0.661)                    |
| -1        | -0.304  | 0.186    | -1.306 (0.194)                   | -1.248 (0.214)                   |
| 0         | -0.531  | -0.345   | -2.840*** (0.005)                | -2.180** (0.031)                 |
| +1        | -0.313  | -0.657   | -1.737* (0.084)                  | -1.283 (0.202)                   |
| +2        | -0.069  | -0.726   | -0.328 (0.743)                   | -0.283 (0.778)                   |
| +3        | -0.583  | -1.309   | -3.378*** (0.001)                | -2.393** (0.018)                 |
| +4        | -0.342  | -1.652   | -2.068** (0.040)                 | -1.406 (0.162)                   |
| +5        | -0.462  | -2.114   | -2.394** (0.018)                 | -1.898* (0.060)                  |
| +6        | -0.453  | -2.567   | -2.097** (0.038)                 | -1.861* (0.065)                  |
| +7        | -0.231  | -2.798   | -0.953 (0.342)                   | -0.949 (0.345)                   |
| +8        | -0.098  | -2.896   | -0.490 (0.625)                   | -0.403 (0.688)                   |
| +9        | -0.658  | -3.554   | -3.272*** (0.001)                | -2.700*** (0.008)                |
| +10       | -0.204  | -3.758   | -1.052 (0.295)                   | -0.837 (0.405)                   |

**Source:** Computed by authors from the data obtained from Prowess database.

**Note:** *, ** and *** indicate significance at the 10, 5 and 1 per cent levels, respectively. The standard deviation values are reported in square brackets. The \( p \)-values are reported in parentheses.

It is seen from Table 2 that AARs are positive on all the days prior to the event date excepting four days, that is, \(-1, -4, -5\) and \(-10\). They become negative on the day of announcement (day 0) and continue to remain negative up to 10 days after the announcement. During the 21-day event window, CAARs for days \(-10\) to \(-1\) preceding the
event are positive (0.186 per cent) but become negative on the announcement date and thereafter. Figure 2 gives graphical representation of the same.

In Table 2, Panel A, results of cross-sectional T-test show statistically insignificant ARs for all the days preceding the event date. They are found to be negative and significant (at 1 per cent level) on the event date. Significant and negative AARs have also been observed on +1, +3, +4, +5, +6 and +9 days, post QIP announcement. Again, results do not change materially after making crude adjustment for event day clustering as per Brown and Warner (1980). It is seen that AARs are significantly negative (at 5 per cent level) on the announcement day as well as on the third, fifth, sixth and ninth day after the event date. They remain statistically indifferent from zero on all other days during the event period.

Thus, as per the results of cross-sectional and crude adjustment test statistics, investors show negative reaction to QIP equity announcements not only on the event date but also on some days after the announcement. The reason for the observed post-announcement AARs could be that market is pessimistic about QIP issues. In other words, the presence of negative and significant returns on the days after the event date indicates the evidence of underreaction by the market to the event announcement. That is, only a part of the information conveyed by the QIP announcement is captured in the prices on day 0. As a result, it takes three to nine days after the event during the 21-day event period to fully impound the effects of the event into the stock price. If the market were semi-strong form efficient, then ARs would have been expected on the day of announcement and not on other days during the event window.

Panel B (Table 2) shows that CAARs during the 21-day event window are negative (−3.758 per cent) and statistically significant at 1 per cent level. This shows that there is a perceptible impact of all the sample announcements during the entire event period of 21 days on the stock prices that happens to be negative. Even with crude adjustment, T statistic is negative and statistically significant at 1 per cent level for 21-day event period.

Table 3 summarizes the total and average SARs along with Patell (1976) and BMP (1991) standardized test statistics. The examination of this Table shows that TSARs are negative and significant on the event date

![Figure 2: Average Abnormal Returns, Cumulative Average Abnormal Returns (%) during 21-day Event Period](image)

Source: Graphical representations of AARs and CAARs, which are computed by authors from the data obtained from Prowess database.
with the p-value less than 0.05. Again, the impact of private equity placement announcements is felt unfa-
vourably by the market on days +3, +5, +6 and +9 following the event when TSARs continued to remain negative and statistically significant.

Table 3: Total and Average Standardized Abnormal Returns with Standardized T-test Statistics over 21-day Event Window

| Event Day | TSAR (%) | Patell (1976) T Statistic | ASAR (%) | BMP (1991) T Statistic |
|-----------|----------|--------------------------|----------|------------------------|
| -10       | -4.858   | -0.393 (0.694)           | -0.032   | -0.447 (0.655)         |
| -9        | 6.105    | 0.494 (0.621)            | 0.041    | 0.666 (0.505)          |
| -8        | -0.155   | -0.013 (0.990)           | -0.001   | -0.015 (0.988)         |
| -7        | 6.396    | 0.518 (0.605)            | 0.043    | 0.443 (0.658)          |
| -6        | 9.635    | 0.780 (0.435)            | 0.064    | 0.797 (0.425)          |
| -5        | -8.722   | -0.706 (0.480)           | -0.058   | -0.890 (0.373)         |
| -4        | -1.012   | -0.082 (0.935)           | -0.007   | -0.092 (0.927)         |
| -3        | 8.079    | 0.654 (0.513)            | 0.054    | 0.696 (0.486)          |
| -2        | 3.915    | 0.317 (0.751)            | 0.026    | 0.320 (0.749)          |
| -1        | -13.250  | -1.073 (0.283)           | -0.088   | -1.013 (0.311)         |
| 0         | -29.64   | -2.399** (0.016)         | -0.198   | -3.051*** (0.002)      |
| +1        | -16.700  | -1.352 (0.176)           | -0.111   | -1.695* (0.090)        |
| +2        | -1.374   | -0.111 (0.911)           | -0.009   | -0.125 (0.900)         |
| +3        | -29.220  | -2.365** (0.018)         | -0.195   | -3.337*** (0.001)      |
| +4        | -19.430  | -1.573 (0.116)           | -0.13    | -2.163** (0.031)       |
| +5        | -23.580  | -1.909* (0.056)          | -0.157   | -2.327** (0.020)       |
| +6        | -23.620  | -1.912* (0.056)          | -0.157   | -2.097** (0.036)       |
| +7        | -15.870  | -1.285 (0.199)           | -0.106   | -1.307 (0.191)         |
| +8        | -6.760   | -0.547 (0.584)           | -0.045   | -0.623 (0.553)         |
| +9        | -27.950  | -2.263** (0.024)         | -0.186   | -2.612*** (0.009)      |
| +10       | -6.519   | -0.528 (0.598)           | -0.043   | -0.620 (0.535)         |

Source: Computed by authors from the data obtained from Prowess database.

Note: *, ** and *** indicate significance at the 10, 5 and 1 per cent levels, respectively. The p-values are reported in parentheses.

As per BMP (1991) standardized test statistic, a significantly negative market response is noticed on the day of announcement, that is, day 0. In fact, the post-announcement results of BMP test exactly corroborate those of conventional cross-sectional T-tests. The observed behaviour of ARs indicates market underreaction as price continues to move in the same direction after the event announcement over the 21-day event window. The results are inconsistent with the conditions of semi-strong form of market efficiency as significant market reaction continues to persist subsequent to the event date.

Parametric Test Results for 11-day Event Period

As per Table 4, Panel A, in a 11-day event window, that is, 5 days prior to and 5 days after the event date, AARs are found negative on all days except on days −2 and −3, prior to event date. Negative CAARs (−2.737 per cent) are reported over the entire 11-day event period.

Table 4: Average and Cumulative Abnormal Returns, Cross-sectional T-test Statistic and Crude Adjustment for Clustering during 11-day Event Period

| Event Day | AAR (%) | CAAR (%) | Cross-sectional T Statistic | Crude Adjustment T Statistic |
|-----------|---------|----------|-----------------------------|-----------------------------|
| -5        | -0.236  | -0.236   | -1.185 (0.238)              | -1.007 (0.316)              |
| -4        | -0.180  | -0.416   | -0.827 (0.409)              | -0.765 (0.446)              |
| -3        | 0.153   | -0.262   | 0.732 (0.465)               | 0.654 (0.514)               |
| -2        | 0.108   | -0.154   | 0.445 (0.657)               | 0.462 (0.645)               |
| -1        | -0.318  | -0.472   | -1.381 (0.169)              | -1.354 (0.178)              |
| 0         | -0.516  | -0.988   | -2.741*** (0.007)           | -2.201** (0.030)            |
| 1         | -0.315  | -1.303   | -1.742* (0.084)             | -1.343 (0.182)              |
| 2         | -0.058  | -1.362   | -0.276 (0.783)              | -0.247 (0.805)              |
| 3         | -0.583  | -1.945   | -3.395*** (0.001)           | -2.485** (0.014)            |
| 4         | -0.336  | -2.281   | -2.042** (0.043)            | -1.431 (0.155)              |
| 5         | -0.456  | -2.737   | -2.344*** (0.020)           | -1.943* (0.054)             |

Source: Computed by authors from the data obtained from Prowess database.

Note: *, ** and *** indicate significance at the 10, 5 and 1 per cent levels, respectively. The standard deviation values are reported in square brackets. The p-values are reported in parentheses.
In Panel A of Table 4, as per conventional cross-sectional T-test, AARs become statistically different from zero on the event day with the p-value less than 0.01. The negative and significant AARs seen on days +1, +3, +4 and +5, subsequent to the announcement day, reveal downward adjustment of stock prices to the private placement news. Just like the case of 21-day event window, the results of Brown and Warner’s (1980) crude adjustment also show significant and adverse market reaction on the event day over the (−5, +5) event period. However, the impact of private placement announcements continues to remain negative and significant on the firm value on the third and the fifth day following the event. Again, the observed findings result in the perception that market underreacts to the QIP equity announcements. The existence of statistically significant post-event drifts of the same sign as the event date reaction does not seem to be consistent with the efficient market conditions.

In Panel B of Table 4, CAARs over 11-day event period are seen to be negative and significant at 1 per cent level. In other words, cumulative impact of QIP equity issues is negative on stock prices. When adjustment for clustering is made, the statistic remains significant at 1 per cent level, that is, ARs on average in the 11-day period are statistically different from zero.

Table 5 reports statistical results after standardizing ARs.

| Event Day | TSAR (%) | Patell (1976) T Statistic | ASAR (%) | BMP (1991) T Statistic |
|-----------|----------|---------------------------|----------|------------------------|
| −5        | −7.418   | −0.600 (0.548)            | −0.049   | −0.745 (0.456)         |
| −4        | −1.351   | −0.109 (0.913)            | −0.009   | −0.120 (0.904)         |
| −3        | 8.579    | 0.695 (0.487)             | 0.057    | 0.732 (0.464)          |
| −2        | 6.216    | 0.503 (0.615)             | 0.041    | 0.497 (0.619)          |
| −1        | −12.340  | −0.999 (0.318)            | −0.082   | −0.934 (0.350)         |
| 0         | −30.310  | −2.454 (0.014)            | −0.202   | −3.066 (0.002)         |
| 1         | −16.530  | −1.338 (0.181)            | −0.110   | −1.647 (0.100)         |
| 2         | −1.401   | −0.113 (0.910)            | −0.009   | −0.129 (0.897)         |
| 3         | −29.340  | −2.375 (0.018)            | −0.196   | −3.330 (0.001)         |
| 4         | −19.890  | −1.610 (0.107)            | −0.333   | −2.208 (0.027)         |
| 5         | −22.910  | −1.855 (0.064)            | −0.153   | −2.225 (0.026)         |

Source: Computed by authors from the data obtained from Prowess database.

Note: *, ** and *** indicate significance at the 10, 5 and 1 per cent levels, respectively. The p-values are reported in parentheses.
In addition to this, persistence of significantly negative SARs on the first, third, fourth, and fifth day consequent to the QIP equity announcement shows that market does not react completely on the event date. Thus, post-event drifts explained by subsequent significant market reactions over 11-day event period do not conform to the conditions of semi-strong form of market efficiency.

**Parametric Test Results for 3-day Event Period**

Table 6, Panel A, shows that AARs are negative on all the three days during the (−1, +1) event window. Results of cross-sectional T-test indicate that AARs are negative and significant at 1 per cent level on the announcement day. They become significant at 10 per cent level on the day +1 following the event. When the crude adjustment is made for event day clustering, market reaction is perceived as significantly negative only on day 0. In Panel B, CAARs are found to be negative (−1.153 per cent) and significant at 1 per cent level over the 3-day event period. Crude adjustment statistic also shows that on average, informational effect of QIP equity announcements on the shareholders’ value is negative and statistically significant at 1 per cent level. Figure 4 graphically represents AARs (per cent) and CAARs (per cent) over the (−1, +1) event period.

**Table 6: Average and Cumulative Abnormal Returns, Cross-sectional T-test Statistic and Crude Adjustment for Clustering during 3-day Event Period**

| Event Day | AAR (%) | CAAR (%) | Cross-sectional T Statistic | Crude Adjustment T Statistic |
|-----------|---------|----------|----------------------------|------------------------------|
| −1        | −0.326  | −0.326   | −1.424 (0.156)             | −1.401 (0.164)              |
| 0         | −0.515  | −0.842   | −2.751*** (0.007)         | −2.212** (0.029)            |
| 1         | −0.312  | −1.153   | −1.723* (0.087)           | −1.337 (0.104)              |

**Source:** Computed by authors from the data obtained from Prowess database.

**Note:** *, ** and *** indicate significance at the 10, 5 and 1 per cent levels, respectively. The standard deviation values are reported in square brackets. The p-values are reported in parentheses.

| Event Window | CAAR (%) | CAAR Test Statistic | Crude Adjustment T Statistic |
|--------------|----------|---------------------|------------------------------|
| (−1,+1)      | −1.153   | −2.677*** (0.007)   | −2.858*** (0.005)           |

**Non-parametric Test Results**

To provide more reliable inferences, we also conduct non-parametric tests. The results of these tests are
reported in Table 8 for (−10, +10), (−5, +5) and (−1, +1) event windows.

Table 8: Non-parametric Test Statistics over Different Event Windows

| Event Window | Rank Test Statistic | Generalized Sign Test Statistic |
|--------------|---------------------|--------------------------------|
| (−10, +10)   | -1.837*             | -2.685***                     |
|              | (0.066)             | (0.007)                       |
| (−5, +5)     | -2.165**            | -2.072**                      |
|              | (0.030)             | (0.038)                       |
| (−1, +1)     | -2.711***           | -2.417**                      |
|              | (0.007)             | (0.016)                       |

Source: Computed by authors from the data obtained from Prowess database.

Note: *, ** and *** indicate significance at the 10, 5 and 1 per cent levels, respectively. The p-values are reported in parentheses.

Rank test statistic rejects the null hypothesis of zero ARs for 21-day, 10-day and 3-day event periods at 10 per cent, 5 per cent and 1 per cent level of significance, respectively. Further, the negative sign of rank test statistic indicates adverse market reaction to private placement announcements.

Generalized sign test statistic considers whether the event window as a whole has positive AR for each stock. It strongly rejects the null hypothesis for 21-day event window at 1 per cent level and for 11-day and 3-day event periods at 5 per cent level. Its negative sign indicates that proportion of firms with negative CARs in the event period exceeds the proportion of positive ARs in the estimation period, that is, there is a negative AR associated with the event. Thus, we find that the results of non-parametric tests corroborate with the results of crude adjustment statistic calculated for an average day in the event window and those of CAAR test statistics.

Robustness Checks

We find that stock market reaction to QIP announcements in India is significantly negative around 21-day, 11-day and 3-day event periods. Since this finding is inconsistent with the popular conception of positive response of stock prices to private equity placements, a set of robustness checks is also carried out on the sample.

It is observed that one-third of the sample announcements of private placements of equity on QIP basis was made during the boom period. Only 1 out of 150 QIP announcements was made when markets busted worldwide due to subprime crisis. As the values of Nifty soared from April 2009 onwards and the market revived again on account of fiscal stimulus resorted to by central banks in the developed countries, it is noticed that as many as 85 QIP equity announcements were made by the end of December 2010. It is seen that from January 2011 to December 2012, when the market turned sideways, as the index values fluctuated around a narrow range (4700–5800), only 11 per cent of the sample equity announcements of private placements took place. These numbers clearly reveal that resource mobilization through QIPs fell considerably during the phase of economic slumps.

We find that the stock price reaction to QIP announcements is not sensitive to the economic conditions at the time of issuance of private equity placements. Mac Kinlay’s (1997) test statistic for CAARs is found to be negative and statistically significant at 1 per cent level for QIP announcements made by sample companies during the phase of market boom (May 2006–February 2008) for the three event windows considered in this study. Again, during the period of market revival
(April 2009–December 2010), we find that CAARs are negative, though insignificant over the event windows. The results, thus, show that the stock market response to QIP equity announcements remains negative even during the periods when market was on the rally. The sample period, therefore, could not be taken as a valid reason for adverse market reaction.

As a further robustness check, we compute a set of test statistics for the sample events after excluding the ones with overlapping event windows to see whether there is a significant difference in the results. Out of 150 sample events, event clustering is found for 33 events. The results obtained after removing the effect of calendar clustering (i.e., when \( N = 117 \)) are reported in Tables 9 and 10.

**Table 9: Cumulative Average Abnormal Returns Over Different Event Windows (N = 117)**

| Event Window | CAAR (%) | CAAR Test Statistic |
|--------------|----------|---------------------|
| (-10,+10)    | -3.723   | -2.852*** (0.004)   |
| (-5,+5)      | -2.528   | -2.715*** (0.007)   |
| (-1,+1)      | -0.872   | -1.810* (0.070)     |

**Source:** Computed by authors from the data obtained from Prowess database.

**Note:** *, ** and *** indicate significance at the 10, 5 and 1 per cent levels, respectively. The \( p \)-values are reported in parentheses.

**Table 10: Non-parametric Test Statistics Over Different Event Windows (N = 117)**

| Event Window | Rank Test Statistic | Generalized Sign Test Statistic |
|--------------|---------------------|---------------------------------|
| (-10,+10)    | -1.923* (0.054)     | -2.329** (0.020)                |
| (-5,+5)      | -1.975** (0.048)    | -1.993** (0.046)                |
| (-1,+1)      | -2.104** (0.035)    | -1.650* (0.099)                 |

**Source:** Computed by authors from the data obtained from Prowess database.

**Note:** *, ** and *** indicate significance at the 10, 5 and 1 per cent levels, respectively. The \( p \)-values are reported in parentheses.

So, when the effect of event clustering is removed, results of CAAR test statistic (Table 9) and rank and generalized sign test statistics (Table 10) show no change for the three different event windows considered in the study. Thus, we once again conclude that the collective impact of QIP equity announcements made over the sample period is significantly negative on the shareholders’ value during the 21-day, 11-day and 3-day event periods.

**CONCLUSION AND SCOPE FOR FURTHER RESEARCH**

In this study, we investigate how stock prices respond to the release of information regarding QIP of equity shares in order to test whether the Indian stock market is efficient in the semi-strong form. We examine a sample of 150 private equity placement announcements on QIP basis made by 131 companies from May 8, 2006 to December 31, 2012. We employ market model-based event study methodology using the estimation period of 120 days and three different event periods of the length of 21 days, 11 days, and 3 days.

To examine the informational effects of QIP announcements, we conduct popular parametric tests like conventional cross-sectional \( T \)-test and Patell’s (1976) standardized residual test, BMP (1991) \( T \)-test and test statistic for cumulative AARs, Brown and Warner’s (1980) crude adjustment for clustering and non-parametric tests, namely Corrado’s (1989) rank test and generalized sign test analysed by Cowan (1992). The test results show negative and statistically significant ARs not only on the day of the event but also on few days after the announcement for 21-day and 11-day event periods. Negative and significant post-announcement drifts indicate market underreaction to the news of QIPs and thus cast aspersions on the validity of market efficiency. However, in case of 3-day event period, overall inference indicates that there is an immediate and significant market reaction on the announcement date with no significant post-event drift. We, thus, conclude that market seems to be efficient in its semi-strong form when results are analysed over a much shorter span of event window.

Thus, overall, the results indicate that QIP announcements affect the short-term returns around the event but fail to elicit the positive response of the stock prices. This finding runs contrary to the findings of majority of earlier studies that issuing equity shares privately signal positive information about firm’s future prospects.

However, findings of this study are consistent with the US-based studies of Barclay et al. (2007) and Krishnamurthy et al. (2005), who report negative ARs for a sub-sample of private placements to the investors.
who serve to entrench the management. The results of this study are similar to those of Chen et al. (2002) of Singapore and Anderson et al. (2006) of New Zealand who also find negative informational effects of private equity placements on account of regulatory differences.

Furthermore, we conduct a set of robustness checks on our sample to validate the results. Firstly, we divide the sample period (May 2006–December 2012) into four market phases—boom, bust, revival, and sideways—in order to see whether the results are adversely affected by the US subprime meltdown and the European debt crisis. We further observe that number of QIP issues went down substantially during the time when Indian economy witnessed spillovers from the global crises. The study finds negative and strongly significant CAARs during the period of market boom. We also find negative CAARs for the phase when markets revived, although they were statistically insignificant. Therefore, the sample period could not be attributed as one of the possible reasons for negative market reaction to private placements. Secondly, we compute a set of test statistics for a sample of 117 QIP equity announcements (i.e., after excluding events with same event dates) to check whether the results change substantially. For all the three event windows, we observe that results of test statistics for CAAR and rank and generalized sign test remain the same when the effect of clustering is removed. That is, informational effect of private equity placements on the firms’ value is found significantly negative for clustered-free events also.

It needs to be emphasized that unlike the United States, regulations governing QIPs in India stipulate no lock-in period for resale of shares by QIBs through a recognized stock exchange. They can sell the securities immediately and make them available in the active secondary market. This shows that public issues could be passed off in the guise of QIPs. Further, well-informed institutional investors might benefit by employing suitable trading strategies. That is, QIBs, who possess the capability and expertise for evaluating the risks associated with the investment, could possibly earn unduly high returns at the cost of small retail investors by suitably timing the market. Moreover, since promoters are not allowed to participate in QIPs, it might be possible that they actually place large blocks of stock with friendly investors who are less inclined to require a board seat or play an active role in the company. This is likely to convey negative information about firm’s quality and long-term prospects to the market. This could have an adverse impact on the wealth of non-participating shareholders. Besides, there is a regulatory loophole about non-disclosure of identity of investors who have been allotted less than 5 per cent of the shares in the QIP issue.

On the basis of the above findings, we conclude that companies are overwhelmingly resorting to QIPs as they offer a quick and easy way to raise funds on private placement basis. However, market perception about QIPs is found to be negative due to lax regulation. However, there is scope for further research with regard to (a) using sophisticated statistical techniques for dealing with calendar clustering, such as event parameter approach involving single equation estimation with dummies for event dates and the use of non-parametric generalized rank test that is robust to AR serial correlation and cross-correlation due to clustering, (b) using multiple event periods with short and long duration and (c) conducting a volume event study to analyse changes in the trading volume surrounding the QIP equity announcements that could provide further insight into the information content of such announcements.

APPENDIX

Table A: Names of the Selected Companies and Dates of Placement Document

| S. No. | Company Name                      | Date            | Trading Group |
|--------|-----------------------------------|-----------------|---------------|
| 1      | Spentex Industries Ltd            | 18 August 2006  | B             |
| 2      | Kalpataru Power Transmission Ltd  | 1 September 2006| B             |
| 3      | Ashapura Minechem Ltd             | 13 September 2006| B            |
| 4      | Mahindra lifespace Developers Ltd | 5 October 2006  | B             |
| 5      | Asian Electronics                 | 17 October 2006 | B             |
| 6      | Emco Ltd                          | 23 October 2006 | B             |
| 7      | Mc Leod Russel India Ltd          | 8 November 2006 | B             |

Table A continued
| No. | Company Name                   | Date of Placement     | Type |
|-----|-------------------------------|-----------------------|------|
| 8   | Deccan Chronicals Holdings Ltd | 20 November 2006      | B    |
| 9   | S Kumars Nationwide Ltd       | 29 November 2006      | B    |
| 10  | Marico Ltd                    | 2 December 2006 (4 December) | A   |
| 11  | Ansal Properties & Infrastructure Ltd | 6 December 2006 | B    |
| 12  | A I A Engineering Ltd         | 14 December 2006      | B    |
| 13  | Future Retail Ltd             | 15 December 2006      | A    |
| 14  | I V R C L Ltd                 | 18 December 2006      | A    |
| 15  | Bombay Rayon Fashions Ltd     | 19 January 2007       | B    |
| 16  | Om Metals Infraprojects Ltd   | 22 January 2007       | B    |
| 17  | Visaka Industries Ltd          | 29 January 2007       | B    |
| 18  | Ganesh Housing Corpn. Ltd     | 13 February 2007      | S    |
| 19  | Television Eighteen India ltd | 13 February 2007      | B    |
| 20  | Bartronics India Limited      | 2 March 2007          | B    |
| 21  | P S L Ltd                     | 9 March 2007          | B    |
| 22  | Pritish Nandy Communications Ltd | 23 March 2007  | B    |
| 23  | Max India Ltd                 | 11 June 2007          | B    |
| 24  | Escorts Ltd                    | 29 June 2007          | B    |
| 25  | I D F C Ltd                   | 5 July 2007           | A    |
| 26  | Phoenix Mills Ltd             | 31 July 2007          | B    |
| 27  | Centurion Bank of Punjab Ltd  | 24 September 2007     | B    |
| 28  | South Indian Bank Ltd         | 27 September 2007     | B    |
| 29  | Logix Microsystems Ltd         | 28 September 2007     | S    |
| 30  | Kotak Mahindra Bank Ltd       | 10 October 2007       | A    |
| 31  | Intense Technologies Ltd      | 16 October 2007       | T    |
| 32  | United Phosphorus Ltd         | 16 October 2007       | A    |
| 33  | Shree Renuka Sugars Ltd       | 31 October 2007       | A    |
| 34  | I N G Vysya Bank Ltd          | 8 November 2007       | B    |
| 35  | Godrej Industries Ltd          | 15 November 2007      | A    |
| 36  | Nitco Ltd                     | 21 November 2007      | B    |
| 37  | C E S C Ltd                   | 8 December 2007 (10 December) | B |
| 38  | G M R Infrastructure Ltd      | 10 December 2007      | A    |
| 39  | Simplex Infrastructures Ltd   | 13 December 2007      | B    |
| 40  | United Breweries (Holdings) Ltd | 13 December 2007 | B    |
| 41  | Arshiya International Ltd      | 17 December 2007      | B    |
| 42  | Pratibba Industries Ltd       | 18 December 2007      | B    |
| 43  | Peninsula Land Ltd            | 20 December 2007      | B    |
| 44  | P T C India Ltd               | 12 January 2008 (14 January) | B |
| 45  | Sunil Hitech Engineers Ltd    | 16 January 2008       | B    |
| 46  | Birla Power Solutions Ltd     | 31 January 2008       | T    |
| 47  | Sintex Industries Ltd          | 6 February 2008       | A    |
| 48  | Bank of India                 | 7 February 2008       | A    |

Table A continued
| No. | Company Name                                      | Date            | Code |
|-----|--------------------------------------------------|-----------------|------|
| 49  | Dynamatic Technologies Ltd                        | 7 August 2008   | T    |
| 50  | Indiabulls Real Estate Ltd                        | 19 May 2009     | A    |
| 51  | P T C India Ltd                                   | 25 May 2009     | B    |
| 52  | Network 18 media and investments ltd              | 11 June 2009    | B    |
| 53  | Shree Renuka Sugars Ltd                           | 30 June 2009    | A    |
| 54  | Sobha Developers Ltd                              | 30 June 2009    | B    |
| 55  | Hindustan Construction Co. Ltd                    | 30 June 2009    | A    |
| 56  | Housing Development & Infrastructure Ltd          | 2 July 2009     | A    |
| 57  | Dewan Housing Finance Corporation Ltd             | 6 July 2009     | B    |
| 58  | Emami Ltd                                         | 6 July 2009     | S    |
| 59  | Rei Agro Ltd                                      | 23 July 2009    | A    |
| 60  | Lanco Infratech Ltd                               | 4 August 2009   | A    |
| 61  | Punj Lloyd Ltd                                    | 5 August 2009   | B    |
| 62  | Websol Energy System Ltd                          | 13 August 2009  | B    |
| 63  | Indusind Bank                                     | 13 August 2009  | A    |
| 64  | Orbit Corporation Ltd                             | 14 August 2009  | B    |
| 65  | P S L Ltd                                         | 24 August 2009  | B    |
| 66  | N C C Ltd                                         | 1 September 2009| B    |
| 67  | Delta Corp Ltd                                    | 3 September 2009| B    |
| 68  | Hubtown Ltd                                       | 10 September 2009| B  |
| 69  | L I C Housing Finance Ltd                         | 18 September 2009| A  |
| 70  | Cipla Ltd                                         | 24 September 2009| A  |
| 71  | United Spirits Ltd                                | 20 October 2009 | A    |
| 72  | Allied Digital Services Ltd                       | 21 October 2009 | B    |
| 73  | Patel Engineering Ltd                             | 21 October 2009 | B    |
| 74  | Jai Balaji Inds. Ltd                              | 26 October 2009 | B    |
| 75  | K S K Energy Ventures Ltd                         | 13 November 2009| B    |
| 76  | Development Credit Bank Ltd                       | 13 November 2009| B    |
| 77  | Aban Offshore Ltd                                 | 17 November 2009| B    |
| 78  | Adhunik Metaliks Ltd                              | 20 November 2009| B    |
| 79  | Future Retail Ltd                                 | 23 November 2009| A    |
| 80  | Welspun Corp Ltd                                  | 24 November 2009| B    |
| 81  | Sunteck Realty Ltd                                | 26 November 2009| B    |
| 82  | Hindalco Industries Ltd                           | 26 November 2009| A    |
| 83  | Bajaj Electricals Ltd                             | 9 December 2009  | B    |
| 84  | J Kumar Infraprojects Ltd                         | 15 December 2009| B    |
| 85  | Unity Infraprojects Ltd                           | 21 December 2009| B    |
| 86  | Usha Martin Ltd                                   | 18 January 2010 | B    |
| 87  | Yes Bank Ltd                                      | 22 January 2010 | A    |
| 88  | Karnataka Bank Ltd                                | 22 January 2010 | A    |
| 89  | Shriram Transport Finance Co. Ltd                 | 25 January 2010  | A    |

Table A continued
|   | Company Name                        | Date       | Grade |
|---|-------------------------------------|------------|-------|
| 90| Manappuram Finance Ltd              | 2 March 2010| B     |
| 91| Exide Industries Ltd                | 10 March 2010| A     |
| 92| India Cements Ltd                   | 11 March 2010| B     |
| 93| Radico Khaitan Ltd                  | 17 March 2010| B     |
| 94| Alok Industries Ltd                 | 26 March 2010| B     |
| 95| Jubilant Life Sciences Ltd          | 29 March 2010| B     |
| 96| Jindal Stainless Ltd                | 30 March 2010| B     |
| 97| C & C Constructions Ltd             | 13 April 2010| B     |
| 98| Welspun India Ltd                   | 19 April 2010| B     |
| 99| G M R Infrastructure Ltd            | 19 April 2010| A     |
| 100| Allcargo Logistics Ltd              | 27 April 2010| B     |
| 101| Marg Ltd                            | 28 April 2010| B     |
| 102| Phillips Carbon Black Ltd           | 3 May 2010| B     |
| 103| Kalpataru Power Transmission Ltd    | 3 May 2010| B     |
| 104| Magma Fincorp Ltd                   | 10 May 2010| B     |
| 105| Dewan Housing Finance Corpn. Ltd    | 2 June 2010| B     |
| 106| G S S Infotech Ltd                  | 14 June 2010| T     |
| 107| Ess Dee Aluminium Ltd               | 1 July 2010| B     |
| 108| Godrej Consumer Products Ltd        | 1 July 2010| A     |
| 109| I D F C Ltd                         | 2 July 2010| A     |
| 110| Dhanlaxmi Bank Ltd                  | 19 July 2010| B     |
| 111| Nilkamal Ltd                        | 20 July 2010| B     |
| 112| Adani Enterprises Ltd               | 23 July 2010| A     |
| 113| Diamond Power Infrastructure Ltd    | 26 July 2010| B     |
| 114| Jyothy Laboratories Ltd             | 15 August 2010| B     |
| 115| Veer Energy & Infrastructure Ltd    | 6 September 2010| B     |
| 116| Housing Development & Infrastructure Ltd | 15 September 2010| A     |
| 117| S Kumars Nationwide Ltd             | 15 September 2010| T     |
| 118| Elder Pharmaceuticals Ltd            | 24 September 2010| B     |
| 119| Strides Arcolab Ltd                 | 28 September 2010| A     |
| 120| J B F Industries Ltd                | 30 September 2010| B     |
| 121| Shoppers Stop Ltd                   | 1 October 2010| B     |
| 122| Parsvnath Developers Ltd            | 5 October 2010| B     |
| 123| H S I L Ltd                         | 6 October 2010| B     |
| 124| Tata Motors Ltd                     | 7 October 2010| A     |
| 125| Ansal Properties & Infrastructure Ltd| 8 October 2010| B     |
| 126| Pratibha Industries Ltd             | 13 October 2010| B     |
| 127| Capri Global Capital Limited        | 15 October 2010| B     |
| 128| Kiri Industries Ltd                 | 27 October 2010| T     |
| 129| Tilaknagar Industries Ltd           | 29 October 2010| B     |
| 130| Vardhman Textiles Ltd               | 29 October 2010| B     |
Table A continued

| S.No. | Company Name                               | Date of Placement Document (Event Date) | Type of Confounding Announcement | Date of Confounding Announcement |
|-------|--------------------------------------------|----------------------------------------|---------------------------------|---------------------------------|
| 131   | Info-Drive Software Ltd                    | 6 November 2010 (8 November)           | B                               |                                 |
| 132   | Prime Focus Ltd                            | 9 November 2010                        | B                               |                                 |
| 133   | Manappuram Finance Ltd                     | 12 November 2010                       | B                               |                                 |
| 134   | Usher Agro Ltd                             | 29 November 2010                       | B                               |                                 |
| 135   | Mahindra & Mahindra Financial Services Ltd | 18 February 2011                       | A                               |                                 |
| 136   | Canara Bank                                | 11 March 2011                          | A                               |                                 |
| 137   | I N G Vysya Bank Ltd                       | 16 June 2011                           | A                               |                                 |
| 138   | Apollo Hospitals Enterprise Ltd            | 18 July 2011                           | A                               |                                 |
| 139   | Kaveri Telecom Products Ltd                | 18 October 2011                        | B                               |                                 |
| 140   | Dewan Housing Finance Corpn. Ltd           | 24 February 2012                       | B                               |                                 |
| 141   | Development Credit Bank Ltd                | 5 March 2012                           | B                               |                                 |
| 142   | Trent Ltd                                  | 14 March 2012                          | B                               |                                 |
| 143   | K S Oils Ltd                               | 4 April 2012                           | B                               |                                 |
| 144   | Gujarat Pipavav Port Ltd                   | 5 July 2012                            | B                               |                                 |
| 145   | S K S Microfinance Ltd                     | 17 July 2012                           | B                               |                                 |
| 146   | South Indian Bank Ltd                      | 5 September 2012                       | A                               |                                 |
| 147   | Mahindra & Mahindra Financial Services Ltd | 12 November 2012                      | A                               |                                 |
| 148   | Indusind Bank Ltd                          | 30 November 2012                       | A                               |                                 |
| 149   | Talwalkars Better Value Fitness Ltd         | 10 December 2012                       | B                               |                                 |
| 150   | Gayatri Projects Ltd                       | 17 December 2012                       | B                               |                                 |

Source: Compiled by authors from the BSE website (www.bseindia.com).

Notes: Trading group A includes companies with large capital base, good growth record and greater volumes in the secondary market; B includes relatively liquid stocks and satisfactory growth prospects and volumes; S represents scrips forming part of the ‘BSE-Indonext’ segment. It consists of scrips from B group and companies listed on regional stock exchanges having capital of 3–30 crores. T consists of scripts that are traded on trade to trade basis as a surveillance measure.

QIP issues of companies (four in number), which were made on Saturdays, were taken to be on the following Mondays—Saturdays being non-trading days. The announcement dates are shown in italics in the above table.

Names of companies with same event dates are mentioned in bold (clustered cases, 33 in number).

Table B: List of Companies with Confounding Announcements Around 21-day Event Window

| S.No. | Company Name                        | Date of Placement Document (Event Date) | Type of Confounding Announcement | Date of Confounding Announcement |
|-------|-------------------------------------|----------------------------------------|---------------------------------|---------------------------------|
| 1     | Apollo Tyres                        | 20 October 2006                        | Preferential issue of warrants   | 20 October 2006                 |
| 2     | I O L Netcom Ltd                    | 19 January 2007                        | Preferential issue of equity     | 17 January 2007                 |
| 3     | Sadbhav Engineering Ltd             | 6 July 2007                            | Preferential issue of warrants   | 6 July 2007                     |
| 4     | Axis Bank Ltd                       | 26 July 2007                           | Allotment of GDRs                | 23 July 2007                    |
| 5     | Punj Lloyd Ltd                      | 17 August 2007                         | Preferential issue of warrants   | 10 August 2007                  |
| 6     | West Coast Paper Mills Ltd          | 30 November 2007                       | Allotment of GDRs                | 30 November 2007                |
| 7     | Suzlon Energy Ltd                   | 18 December 2007                       | Stock split                      | 28 December 2007                |
| 8     | India Cements Ltd                   | 20 December 2007                       | Allotment under ESOS            | 28 December 2007                |
| 9     | Tv18 Broadcast Ltd                  | 24 November 2008                       | Preferential issue of warrants   | 28 November 2008                |

Table B continued
Table B continued

| S.No. | Name of the Company                  | Date of Placement Document | Name of the Newspaper       | Date of Publication in Newspaper |
|-------|-------------------------------------|-----------------------------|------------------------------|----------------------------------|
| 10    | Unitech Ltd                         | 30 June 2009                | Preferential issue of warrants | 29 June 2009                     |
| 11    | G V K Power & Infrastructure Ltd    | 7 July 2009                 | Preferential issue of warrants | 30 June 2009                     |
| 12    | I N G Vysya Bank Ltd                | 8 September 2009            | Preferential issue of equity  | 4 September 2009                 |
| 13    | Glenmark Pharmaceuticals Ltd         | 14 September 2009           | Allotment under ESOS         | 3 September 2009                 |
| 14    | Axis Bank Ltd                       | 22 September 2009           | Allotment of GDRs            | 24 September 2009                |
| 15    | 3I Infotech Ltd                     | 22 September 2009           | Allotment under ESOS         | 22 September 2009                |
| 16    | Larsen & Toubro Ltd                 | 9 October 2009              | Issue of FCCBs               | 9 October 2009                   |
| 17    | H C L Infosystems Ltd               | 16 October 2009             | Declaration of interim dividend | 12 October 2009                  |
| 18    | 3I Infotech Ltd                     | 5 April 2010                | Allotment under ESOS         | 5 April 2010                     |
| 19    | Bharat Forge Ltd                    | 26 April 2010               | Redemption of FCCBs          | 21 April 2010                    |
| 20    | Aksh Optifibre Ltd                  | 27 August 2010              | Allotment of GDRs            | 2 September 2010                 |
| 21    | Indusind Bank Ltd                   | 21 September 2010           | Allotment under ESOS         | 22 September 2010                |
| 22    | Sintex Industries Ltd               | 12 November 2012            | Issue of FCCBs               | 15 November 2012                 |

Source: Compiled by authors from the BSE website (www.bseindia.com).

Note: Global Depository Receipt, ESOS: Employee Stock Option Scheme, FCCB: Foreign Currency Convertible Bond.

Table C: Names of Companies, Newspapers and the Respective Dates of Private Placement

| S.No. | Name of the Company                  | Date of Placement Document | Name of the Newspaper       | Date of Publication in Newspaper |
|-------|-------------------------------------|-----------------------------|------------------------------|----------------------------------|
| 1     | Info-Drive Software Ltd             | 8 November 2010             | Economic Times               | 8 November 2010                  |
| 2     | Prime Focus Ltd                     | 9 November 2010             | Economic Times               | 10 November 2010                 |
| 3     | Manappuram Finance Ltd              | 12 November 2010            | Economic Times               | 12 November 2010                 |
| 4     | Usher Agro Ltd                      | 29 November 2010            | Business Standard            | 1 December 2010                  |
| 5     | Mahindra & Mahindra Financial Services Ltd | 18 February 2011    | Economic Times               | 18 February 2011                 |
| 6     | Canara Bank                         | 11 March 2011               | Economic Times               | 14 March 2011                    |
| 7     | I N G Vysya Bank Ltd                | 16 June 2011                | Business Standard            | 16 June 2011                     |
| 8     | Apollo Hospitals Enterprise Ltd     | 18 July 2011                | Business Standard            | 18 July 2011                     |
| 9     | Kaveri Telecom Products Ltd         | 18 October 2011             | Business Standard            | 18 October 2011                  |
| 10    | Dewan Housing Finance Corpn. Ltd    | 24 February 2012            | Business Standard            | 24 February 2012                 |
| 11    | Development Credit Bank Ltd         | 5 March 2012                | Economic Times               | 5 March 2012                     |
| 12    | Trent Ltd                           | 14 March 2012               | Economic Times               | 12 March 2012                    |
| 13    | K S Oils Ltd                        | 4 April 2012                | Economic Times               | 9 April 2012                     |
| 14    | Gujarat Pipavav Port Ltd            | 5 July 2012                 | Business Standard            | 6 July 2012                      |
| 15    | S K S Microfinance Ltd              | 17 July 2012                | Business Standard            | 17 July 2012                     |
| 16    | South Indian Bank Ltd               | 5 September 2012            | Business Standard            | 5 September 2012                 |
| 17    | Mahindra & Mahindra Financial Services Ltd | 12 November 2012   | Economic Times               | 12 November 2012                 |
| 18    | Indusind Bank Ltd                   | 30 November 2012            | Business Standard            | 30 November 2012                 |
| 19    | Talwalkars Better Value Fitness Ltd | 10 December 2012            | Economic Times               | 10 December 2012                 |
| 20    | Gayatri Projects Ltd                | 17 December 2012            | Hindu Business Line          | 18 December 2012                 |

Source: Compiled by authors using the archives section of e-Papers of The Economic Times, The Hindu Business Line, and Business Standard and the Press releases section of the concerned companies’ website.
NOTES

1 However, Companies Act, 2013 states that offer of securities to more than 200 persons is deemed to be a public issue.

2 SEBI (Issue of Capital and Disclosure requirements) Regulations, 2009 (ICDR Regulations) have replaced SEBI (Disclosure and Investor Protection) Guidelines, 2000 (DIP Guidelines) that stand rescinded with effect from 26 August 2009. As a result, provisions of Chapter XIII relating to preferential allotments and those of Chapter XIIA concerning qualified institutional placements of SEBI (DIP) Guidelines, along with few changes, have since been incorporated in the Chapter VII and Chapter VIII of SEBI (ICDR) Regulations, respectively.

3 QIB means (a) public financial institution as defined in section 4A of the Companies Act, 1956; (b) scheduled commercial bank; (c) mutual fund registered with SEBI; (d) foreign institutional investor and sub-account registered with SEBI, other than a sub-account that is a foreign corporate or a foreign individual; (e) multilateral and bilateral development financial institution; (f) venture capital fund registered with SEBI; (g) foreign venture capital investor registered with SEBI; (h) state industrial development corporation; (i) an insurance company registered with Insurance Regulatory and Development Authority (IRDA); (j) provident fund with minimum corpus of ₹25 crores; (k) a pension fund with minimum corpus of ₹25 crores; (l) National Investment Fund and (m) insurance funds set up and managed by army, navy or air force of the Union of India.

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4 These figures have been compiled by the authors from the annual reports of SEBI.

5 Myers and Majluf (1984) presented a theoretical model of issue-investment decision under information asymmetry. Managers of undervalued firms would choose to forgo investment opportunities (projects with positive net present values) by not issuing common stock to public. This is to avoid excessive wealth transfer from existing stockholders to new stockholders when new equity is needed to finance projects.

6 Barclay et al. (2007) define passive investor as a buyer who does not become publicly active in firm affairs in two years following the purchase.

7 As per Barclay et al. (2007), most of the interaction that does transpire involves joint research or combined marketing between the issuing firm and the buyer. It often includes the buyer/the officer of buyer joining the board/becoming the CEO of the issuing firm.

8 As per Krishnamurthy et al. (2005), affiliated investors are likely to be better informed about the firm’s value and future cash flows (e.g., officers, directors, their relatives, consultants, affiliated institutions and so on).

9 To trace for the confounding announcements made by the sample companies within 10 days before and after the event day, authors made an extensive search on the archives section of ‘corporate announcements’ at the BSE website for each sample company.
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