# Stock Price Reactions And Long Run Performance Of Rule 144A Equity Issuance

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**ABSTRACT**

*This paper examines the valuation effect of Rule 144A equity offers on issuing firms' common stocks for the period 1970 to 2010. Similar to findings for seasoned equity offerings, I find a statistically significant cumulative abnormal return of -3.07 percent over the three-day issue period for the overall sample of 160 Rule 144A equity offers. Further, I find that issuing firms exhibit significant long-run under-performance in stock returns over the three years after the issuance of Rule 144A equity offers. The results are consistent with the under-reaction hypothesis.*

**Keywords:** Rule 144A; Stock Valuation; Long-Run Stock Returns

## INTRODUCTION

This paper investigates the announcement effects and long term stock returns of Rule 144A equity offers in U.S for the period of 1990 to 2010.

In April 1990, the SEC adopted Rule 144A which releases registration requirements for the resale of privately placed securities by Qualified Institutional Buyers (QIBs). As documented by Sjostrom (2008), the purpose of the adoption is to "spur further development of the U.S. private placement market". Traditional private placements provide some advantages over the public equity offers. However, privately placed securities generally are not freely tradable. The high illiquidity results in a discount at offer for the privately placed securities. Rule 144A provides a more liquid and efficient resale market for private placed securities because QIBs can immediately resell privately placed securities. Therefore compared with traditional private placement, it has a higher liquidity.

Tang (2004) argues that firms choose Rule 144A offer for the benefits of speedy access to the capital market and/or avoiding mandatory disclosure. In this paper, I focus on Rule 144A equity offers placed by public firms. Public firms need to fulfill the mandatory disclosure requirements from SEC. Thus, the benefit of Rule 144A offers placed by these public firms is only to quickly access the capital market.

It is well documented that public offers of equities are associated with significant negative common stock reactions (Asquith and Mullins, 1986, Masulis and Korwar, 1986). Evidence on the long-run stock return performance (Spiess and Affleck-Graves, 1995, Loughran and Ritter, 1997) suggests that in addition to the negative announcement period returns, issuing firms experience significant long-run under-performance. One explanation of these findings is that managers time equity issues to take advantage of "windows of opportunity" by issuing overvalued equity. This explanation suggests that investors under-react to the information conveyed by the announcement.

On the other hand, previous research indicates that private sales of equity to small numbers of sophisticated investors reveal positive information about issuing firms (Hertzel and Smith, 1993). The stock price reactions are significantly positive on announcements of private placement offers (Wruck, 1989; Hertzel and Smith, 1993), which is in direct contrast to public seasoned equity offerings in the United States. In terms of long term stock returns, Hertzel, Lemmon, Linck and Rees (2002) document that positive announcement period returns of private placement

  

offers are followed by abnormally long-run under-performance in stock returns. This finding is inconsistent with the under-reaction hypothesis. Hertzel, Lemmon, Linck, and Rees (2002) attribute the under-performance following private equity issues to investor over-optimism.

This paper investigates stock price reactions and long term stock returns of the Rule 144A equity offers. Similar to private placements, Rule 144A offers aim for QIBs who are a group of sophisticated investors. However, Rule 144A offers allow the immediate resell of the security which is similar to public offers. The main goal of this paper is to examine the impact of Rule 144A Equity offers on shareholder wealth at the issue time and in the long run.

Using a sample of 160 Rule 144A equity offers placed by public firms during the period 1990 to 2010, I find a significant negative issue period abnormal return. The three-day cumulative abnormal return is -3.07 percent, which is statistically and economically significant. This result suggests that Rule 144A equity shares similar characteristics with public offers. The offers convey negative information about the issuing firm. In further analysis, I find that there is no statistically significant difference between the valuation effects of Rule 144A offers in Pre-SOX period and Post-SOX period. Rule 144A offers that are placed by foreign firms experience more favorable stock price reaction than issued by domestic firms and the favorable CARs are driven by the issues from developed countries.

The long run stock return analysis is consistent with the event period results. Over the three years after issuance of Rule 144A equity offers, issuing firms significantly under-perform on a risk-adjusted basis. The implied three-year buy-and-hold risk adjusted abnormal return is -19 percent for the OLS regression and -26 percent for the WLS regression. The results suggest that managers exploit windows of opportunity to sell overpriced equity in Rule 144A market and are consistent with the under-reaction hypothesis.

The rest of the paper is organized as follows. In Section 2, I discuss the data and samples used. Section 3 presents the methodology and the empirical results of event study. Section 4 documents the long run stock return and Section 5 concludes the study.

## SAMPLE SELECTION AND DESCRIPTION

I use SDC New Issues database to get a sample of Rule 144A equity offers between 1990 and 2010. Following prior research, issues made by financial firms (SIC = 6XXX) are deleted. The final sample has 456 issues. Table 1 compares public offers, private placements and Rule 144A offers.

**Table 1: Comparison of Public, Rule 144A and Private Placement Offers**

| | Exchange Traded? | Types of Investors | Subject to Mandatory Disclosure? | Freely Tradable? |
|---|---|---|---|---|
| **Public** | Yes | Institutional and Individual Investors | Yes | Yes (Immediately) |
| **Rule 144A** | No | Qualified Institutional Investors (QIBs) only | No | Yes (Immediately among QIBs only) |
| **Private Placement** | No | Informed Institutional and Individual Investors | No | No (Need to satisfy the 6-month holding period requirement) |

Table 2 reports the number and the total issue size of the sample. In addition, Table 2 shows the number and the proportion of the issues placed by the public firms. There are extensive variations in Rule 144A equity offer activities over the sample period. For instance, the number of issues ranges from a low of 1 in 2007 to a high of 44 in 1997. The average issue size is $342 million. The number of issues by public firms ranges from a low of 0 in 2007 to a high of 20 in 1998. The average issue size is $357 million. There are 160 Rule 144A equity offers placed by public firms. Among these, 118 are offered in the Pre-SOX period.

  

**Table 2: Rule 144A Equity Offers by Issue Year**

| Year of Issue | Number | Total Issue Size ($M) | Number of Public Firms | Proportion of Public Firms |
|---|---|---|---|---|
| 1990 | 11 | 960 | 1 | 9.09% |
| 1991 | 31 | 2,547 | 2 | 6.45% |
| 1992 | 17 | 3,339 | 9 | 52.94% |
| 1993 | 23 | 6,861 | 14 | 60.87% |
| 1994 | 44 | 10,289 | 4 | 9.09% |
| 1995 | 12 | 3,649 | 4 | 33.33% |
| 1996 | 22 | 3,719 | 10 | 45.45% |
| 1997 | 30 | 4,835 | 18 | 60.00% |
| 1998 | 33 | 36,298 | 20 | 60.61% |
| 1999 | 20 | 6,019 | 10 | 50.00% |
| 2000 | 27 | 9,609 | 12 | 44.44% |
| 2001 | 39 | 31,746 | 8 | 20.51% |
| 2002 | 28 | 13,308 | 6 | 21.43% |
| 2003 | 19 | 7,781 | 5 | 26.32% |
| 2004 | 15 | 5,850 | 4 | 26.67% |
| 2005 | 17 | 4,776 | 8 | 47.06% |
| 2006 | 12 | 2,739 | 3 | 25.00% |
| 2007 | 1 | 663 | 0 | 0.00% |
| 2008 | 2 | 218 | 2 | 100.00% |
| 2009 | 10 | 360 | 5 | 50.00% |
| 2010 | 43 | 308 | 15 | 34.88% |
| Total | 456 | 155,874 | 160 | 35.09% |

Table 3 reports some descriptive statistics for 160 Rule 144A equity offers placed by public firms. Panel A indicates that there are 132 issues placed by domestic firms and 28 issues placed by foreign firms. Panel B, which segregates the issues by market listing, indicates that over half of the sample issues (56 percent) are placed by firms listed on the NYSE. In addition, Table 2 shows that it takes a shorter time for foreign firms and firms listed on the Nasdaq to gain access to the Rule 144A market. The average time between initial public offer of equity and the Rule 144A equity offer is 7 years for foreign firms and 6 years for firms listed on the Nasdaq. On the other hand, after going public, domestic firms and firms listed on the NYSE take about 15 and 20 years, respectively to gain access to the Rule 44A equity market.

**Table 3: Rule 144A Equity Offers Issued by Public Firms**

| Descriptive Variable | # of Rule 144A Equity Offers | Percentage | Time in Years From EIPO and Rule 144A Equity Offer |
|---|---|---|---|
| **Panel A: Domestic V.S. Foreign** | | | |
| Domestic | 132 | 82.50% | 15.47 |
| Foreign | 28 | 17.50% | 7.02 |
| **Panel B: Exchange** | | | |
| NYSE | 89 | 55.63% | 19.76 |
| AMEX | 9 | 5.63% | 11.61 |
| NASDAQ | 62 | 38.75% | 5.74 |
| Total | 160 | 100% | 13.99 |

In next sections, I'll focus on these 160 offers to study the event period stock price reaction and the long term stock returns.

## EVENT STUDY

I use the standard event-study market model (Brown and Warner, 1985) to study the stock price reaction to the issue of Rule 144A equity offers. Day 0 is the offer date. I estimate the market model for each issue over a 255-day period ending on day − 46 relative to the offer date. The CRSP value-weighted index is used as the proxy for the stock market.

  

The daily abnormal return (AR) is calculated as:

$AR_{i,t} = R_{i,t} - (\alpha_i + \beta_{i} * R_{M,t})$,

where $AR_{i,t}$ is the rate of abnormal stock return of issuing firm *i* on day *t*, $R_{i,t}$ is the rate of stock return of issuing firm *i* on day *t*, $R_{M,t}$ is the rate of return of the market index on day *t*; $\alpha_i$ and $\beta_i$ are the intercept and slope coefficient of stock *i*, respectively. The mean abnormal return (AAR) on day *t* is defined as the average of abnormal stock returns across all issuing firms:

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

where *N* is the total number of Rule 144A offers on event day t.

Following Mitchell and Stafford (1998) and Fama (1988), I compute the cumulative abnormal return (*CAR*) to measure the stock price reaction to Rule 144A equity offers. Over an event window $[t_1,t_2]$, the cumulative average abnormal stock return for issuing firms is calculated as:

$$CAR_{t1,t2} = \sum_{t=t1}^{t2} AAR_t.$$

Table 4 reports negative and statistically significant cumulative abnormal returns (CAR) for selected event windows. For instance, the average CAR for the 3-day (-1, +1) window is -3.07 percent, and that for the 2-day (-1, 0) window is -3.02 percent. The 61-day CAR amounts to -4.39 percent for the overall sample. The average abnormal return of Rule 144A equity offer on the issue date is a significant -1.42 percent. These results are similar to the announcement effects on the seasoned equity offers (SEOs). The results suggest that the market interprets the Rule 144A equity offer as a negative signal about the issuing firm. In general, investors don't value the certification effects of the Qualified Institutional Investors (QIBs) that participate in Rule 144A market.

**Table 4: Mean Cumulative Abnormal Returns for Selected Event Windows**

This table reports the mean cumulative abnormal stock return (CAR). Day 0 is the Rule 144A offer date. The market model is used to estimate abnormal return with the model parameters estimated over the period day -300 to day -46. Z-Statistic tests the null hypothesis that the CAR is zero. For each event window, I also report the number of firms with positive CAR versus firms with negative CAR. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

| Event Window | Mean Cumulative Abnormal Return | Positive: Negative | Z-Statistic |
|---|---|---|---|
| (-1,0) | -3.02% | 38:122 | -6.408*** |
| (-1,+1) | -3.07% | 43:117 | -6.465*** |
| (0,0) | -1.42% | 55:105 | -4.154*** |
| (-30,30) | -4.37% | 66:94 | -1.956** |

To further examine the possible role of domestic firm versus. foreign firm in explaining the valuation effect of Rule 144A on stock returns, Figure 1a plots the CAR over the 61-day (-30, +30) window for the overall Rule 144A equity issue sample, as well as the issues placed by domestic firms and by foreign firms. Results in Figure 1a show a distinctive CAR patterns between the two subsamples of Rule 144A equity offers. The 61-day cumulative abnormal return is a significant -5.79 percent for domestic Rule 144A equity issuers, compared to a significant 2.24 percent for foreign Rule 144A equity issuers. It is apparent that the significant negative CAR of -4.39 percent for the overall sample is driven by larger number of domestic issuers.

To examine the possible impact of SOX on the valuation effect of Rule144A equity offers on stock returns, Figure 1b plots the CAR over the 61-day (-30, +30) window for the overall sample period, as well as the Pre-SOX period and the Post-SOX period subsamples. The 61-day cumulative abnormal returns for Rule 144A equity offers issued during Post-SOX and Pre-SOX period are both significantly negative. The CARs are lower in the Post-SOX period.

  

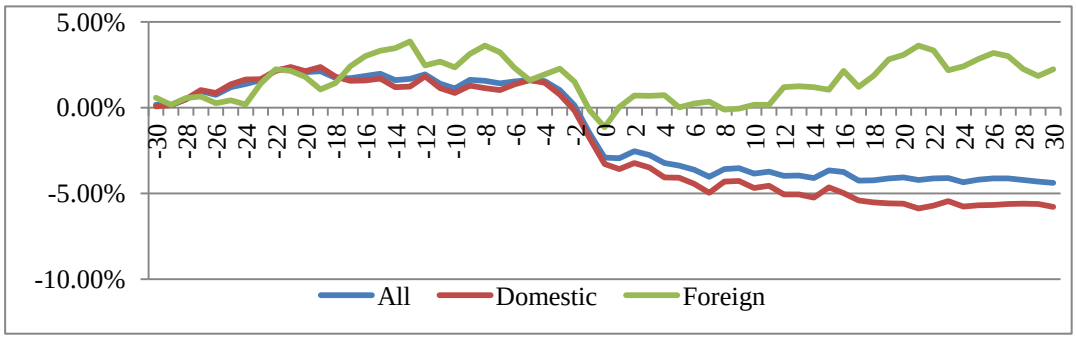


**Figure 1a: Cumulative Abnormal Returns Domestic Issuers vs. Foreign Issuers [-30, 30]**

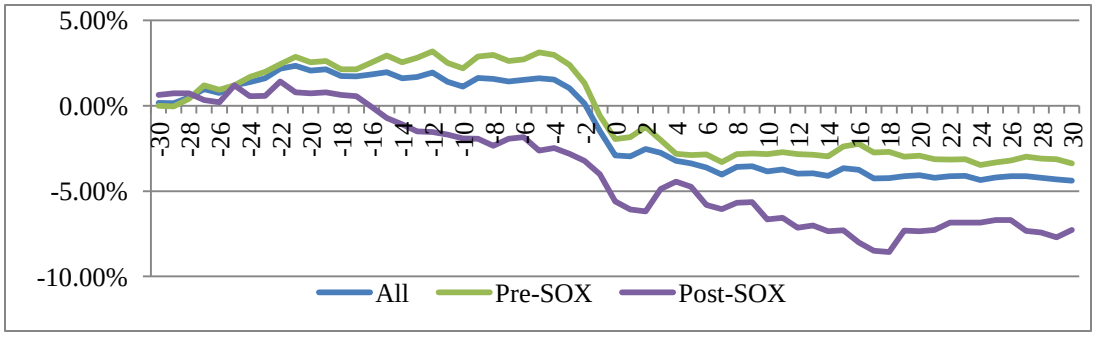


**Figure 1b: Cumulative Abnormal Returns Pre-SOX vs. Post-SOX [-30, 30]**

In Table 5, I test the difference of the three-day CARs between Rule 144A equity issues by foreign firms and by domestic firms in the pre-SOX period and post-SOX period. The results suggest that the average mean cumulative returns for foreign firms that issue Rule 144A equity offer is not significant different from zero. Domestic Rule 144A issuers, however, experience a significant -3.42 percent CAR. The difference in mean CARs is not significant between two sub samples.

**Table 5: Mean Cumulative Abnormal Returns [-1, +1] for Different Sub Samples**

This table reports the comparison of mean cumulative abnormal returns (CAR) for foreign firms and domestic firms that issue Rule 144A equity offers in pre-SOX period and post-SOX. Day 0 is the Rule 144A issue date. The market model is used to estimate abnormal return with the model parameters estimated over the period day -300 to day -46. T-statistic tests the null hypothesis that the mean cumulative abnormal return (CAR) is the same between two samples. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

| | Issues by Foreign Firms | | | Issues by Domestic Firms | | | Difference | |
|---|---|---|---|---|---|---|---|---|
| | **N** | **Mean CAR** | **T-statistic** | **N** | **Mean CAR** | **T-statistic** | **Difference** | **T-statistic** |
| **Pre-SOX** | 21 | -1.70% | -1.04 | 97 | -3.46%*** | -5.59 | 1.76% | 1.04 |
| **Post-SOX** | 7 | -0.57% | -0.29 | 35 | -3.31%** | -2.54 | 2.74% | 0.29 |
| **Total** | 28 | -1.42% | -1.09 | 132 | -3.42%*** | -6.01 | 2.00% | 1.09 |

  

## MULTIVARIATE REGRESSION ANALYSIS

Table 6 presents the ordinary least squares regression results. The dependent variable of the multivariate regressions is $CAR_{-1,+1}$, which is the cumulative abnormal stock return of the issuing firm over the three-day announcement period of its Rule 144A equity offer.

**Table 6: Ordinary Least Squares Regressions**

This table reports the regression results on the announcement period cumulative abnormal stock returns for Rule 144A equity offers. The Dependent variable is $CAR_{-1,+1}$. *Hi-Tech* is a dummy variable that takes a value of one if the issuing firm is in Hi-Tech industry, and zero otherwise. *Foreign* is a dummy variable that takes a value of one if the offer is issued by a foreign firm, and zero otherwise. *Developed (Emerging)* is a dummy variable that takes a value of one if the offer is issued by a foreign firm from the developed (emerging) country, and zero otherwise. *Size* is the natural log of the Rule144A equity's offer size in millions. *Length* is the natural log of the years from issuing firm's IPO date to the Rule 144A offer date. *NYSE* is a dummy variable that takes a value of one if the issuing firm is listed on the New York Stock Exchange, and zero otherwise. *Post-SOX* is a dummy variable that takes a value of one if the offer is made in the post-SOX period, and zero otherwise. *Recession* is a dummy variable that takes a value of one if the offer is made in a NBER recession period, and zero otherwise. * and ** indicate statistical significance at the 10% and 5% level, respectively.

| | Model 1 | | Model 2 | |
|---|---|---|---|---|
| **Variables** | **Coefficient** | **T- value** | **Coefficient** | **T- value** |
| Intercept | 0.02 | 1.02 | 0.03 | 1.19 |
| Hi-Tech | -0.03** | -2.30 | -0.03** | -2.21 |
| Foreign | 0.03* | 1.94 | | |
| Developed | | | 0.04** | 2.26 |
| Emerging | | | 0.01 | 0.58 |
| Size | -0.01** | -2.10 | -0.01** | -2.27 |
| Length | 0.00 | -0.33 | 0.00 | -0.41 |
| NYSE | 0.01 | 0.58 | 0.01 | 0.50 |
| Post-Sox | -0.02 | -1.15 | -0.01 | -0.99 |
| Recession | 0.02 | 0.64 | 0.02 | 0.84 |

The following variables are included in regression models: *Hi-Tech* is a dummy variable that takes a value of one if the issuing firm is in Hi-Tech industry, and zero otherwise. *Foreign* is a dummy variable that takes a value of one if the offer is placed by a foreign firm, and zero otherwise. *Developed (Emerging)* is a dummy variable that takes a value of one if the offer is placed by a foreign firm from the developed (emerging) country, and zero otherwise. *Size* is the natural log of the Rule144A equity's offer size in millions. *Length* is the natural log of the years from issuing firm's IPO date to the Rule 144A offer date. *NYSE* is a dummy variable that takes a value of one if the issuing firm is listed on the New York Stock Exchange, and zero otherwise. *Post-SOX* is a dummy variable that takes a value of one if the offer is made in the post-SOX period, and zero otherwise. *Recession* is a dummy variable that takes a value of one if the offer is made in a NBER recession period, and zero otherwise.

In parallel with the CAR patterns presented in Figures 1a, Rule 144A offers that are placed by foreign firms experience more favorable stock price reaction than issued by domestic firms. *Foreign* dummy has a statistically significant (at the 10% level) positive coefficient in Model 1 which indicates that Rule 144A equity offers placed by foreign issuers enjoy a 3% premium in risk-adjusted cumulative stock return over the three-day period surrounding their offer, when compared to their domestic peers. In Model 2, we include the *Developed* and *Emerging* variables. Results from Model 2 echo those from Model 1. The results show that the positive CARs are driven by the issues from developed countries.

*Recession* dummy and *Post-SOX* dummy are not statistically significant in both models which suggest the economic condition around Rule 144A equity offer and enactment of SOX have no impact on the stock price reaction.

## LONG-RUN STOCK PRICE PERFORMANCE

This section examines the long-run risk-adjusted stock return performance of Rule 144A equity offers by using the monthly calendar-time portfolio approach. For each calendar month, following Fama (1998) and Mitchell and Stafford (2000), I form value-weighted portfolios for the Rule 144A equity offers. The weights are based on the

  

end of previous month market capitalization of sample firms. The excess returns of the portfolios used to estimate the Fama–French three-factor model are computed as follows:

$$R_{pt} - R_{ft} = \alpha + \beta (R_{mt}-R_{ft}) + \gamma SMB_t + \delta HML_t + \varepsilon_t$$

where the dependent variable is the difference between the calendar-time portfolio return for each sample in month t ($R_{pt}$) and the risk free return in the same month ($R_{ft}$). The three Fama–French factors are the excess return on the market portfolio, ($R_{mt} - R_{ft}$); the difference in the returns of value-weighted portfolios of small stocks and large stocks, ($SMB_t$); and the difference in the returns of value-weighted portfolios of high book-to-market and low book-to-market stocks, ($HML_t$). The coefficient estimate of the intercept term, $\alpha$, from the time-series regressions is used as an indicator of risk-adjusted stock return for each sample portfolio.

Table 7 shows the time-series regression results of Fama and French (1993) three-factor model for a three-year horizon following the month of Rule 144A. Panel A of Table 7 presents the ordinary least squares (OLS) regression results. For the overall sample, the intercept is -0.0059 with a t-statistic of 1.69, which is significant at the 10% level. The results suggest that over the three years after issuance of Rule 144A equity offers, firms significantly under-perform on a risk-adjusted basis. The implied three-year buy-and-hold risk adjusted abnormal return is $(1-0.0059)^{36}-1 = -19.19\%$. The intercept for domestic and foreign samples of are also negative. However, they are not different from zero in OLS regressions.

The weighted least square (WLS) regression results are presented in Panel B of Table 7 while the regressions are weighted by the square root of the number of Rule 144A firms in the calendar-time portfolio in each month. In WLS regressions, the magnitude and significance level of the intercepts are higher than the OLS results. The intercepts for the overall sample, domestic sample and foreign sample are all negative and significantly different from zero. The implied three-year buy-and-hold risk adjusted abnormal returns are -26.19%, -24.29% and -33.33% for the overall sample, domestic sample and foreign sample, respectively. The results show that issuing firms exhibit significant long-run under-performance in stock returns over the three years after issuance of Rule 144A equity offers.

Overall, significant negative stock returns in the issue period and significant long run stock return under-performance suggest that managers time Rule 144A equity issues to take advantage of "windows of opportunity". The results are consistent with the under-reaction hypothesis, suggesting that investors under-react to the information conveyed by the announcement of Rule 144A.

**Table 7: Long-Term Stock Price Performance of Rule 144A Offers**

This table presents the Fama and French (1993) three factor time-series regression results for three years following the Rule 144A. For each calendar month I form value-weighted portfolio for each of the Rule 144A offer. The weights are based on the end of previous month market capitalization of sample firms. The excess returns of the portfolio are used to estimate the Fama–French three-factor model as follows: $R_{pt} - R_{ft} = \alpha + \beta (R_{mt}-R_{ft}) + \gamma SMB_t + \delta HML_t + \varepsilon_t$ where $R_{pt}$ is the calendar-time portfolio return for each sample in month t and $R_{ft}$ is the risk free return in the same month. The three Fama–French factors are the excess return on the market portfolio ($R_{mt} - R_{ft}$), the difference in the returns of value-weighted portfolios of small stocks and large stocks ($SMB_t$), and the difference in returns of value-weighted portfolios of high book-to-market and low book-to-market stocks ($HML_t$). T-statistics for intercept is given below in parentheses.

| | Overall Sample | | Domestic | | Foreign | |
|---|---|---|---|---|---|---|
| **Panel A: Ordinary Least Squares** | | | | | | |
| Intercept ($\alpha$) | -0.0059 | -1.69* | -0.0014 | -0.24 | -0.0069 | -1.03 |
| $\beta$ | 1.3974 | 16.46*** | 1.0687 | 7.73*** | 1.4314 | 9.42*** |
| $\gamma$ | 0.5731 | 4.96** | 0.5506 | 2.93** | 0.3165 | 1.53 |
| $\delta$ | -0.1479 | -1.22 | -0.7300 | -3.73*** | 0.1618 | 0.74 |
| Adjusted $R^2$ | 59.54% | | 32.68% | | 28.33% | |
| **Panel B: Weighted Least Squares** | | | | | | |
| Intercept ($\alpha$) | -0.0084 | -2.49** | -0.0077 | -1.92* | -0.0112 | -2.09* |
| $\beta$ | 1.4262 | 17.35*** | 1.4237 | 14.26*** | 1.4331 | 12.23*** |
| $\gamma$ | 0.5295 | 5.63*** | 0.5778 | 5.11*** | 0.3253 | 2.31* |
| $\delta$ | -0.1571 | -1.41 | -0.1911 | -1.40$ | -0.001 | -0.01 |
| Adjusted $R^2$ | 66.39% | | 59.61% | | 43.27% | |

  

## CONCLUSION

This paper examines the valuation effect and long-term stock return performance of Rule 144A equity offers. I find a statistically significant negative risk-adjusted cumulative abnormal return of -3.07 percent over the three-day issue period for the overall sample of 160 Rule 144A equity offers made by public firm. The results suggest that the market interprets the Rule 144A equity offer as a negative signal about the issuing firm. Investors in Rule 144A equity market don't value the certification effects of the Qualified Institutional Investors (QIBs). The long-run stock return analysis is consistent with the event study results. Over the three years after issuance of Rule 144A equity offers, issuing firms significantly underperform on a risk-adjusted basis. The implied three-year buy-and-hold risk adjusted abnormal return is -19 percent for the OLS regression and -26 percent for the WLS regression. The results suggest that managers time Rule 144A equity issues to take advantage of "windows of opportunity" and are consistent with the under-reaction hypothesis.

## AUTHOR INFORMATION

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