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Anomalous Market Reaction to Right Share Offers in Bangladesh

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We have examined the right offers made between January 2010 to October 2012 by companies listed on the Dhaka Stock Exchange and tested the speed of adjustment of market price of the issuers to the right issues. The analysis leads to the conclusion that the adjustment is not immediate, the market price is about 10-11 percent higher than the right adjusted price on the average and the difference is statistically significant. It takes about 15 days for the market price to reach a stage where the difference between the market price and right adjusted price is no longer statistically significant. This delay in adjustment can actually lead to a profitable strategy for investors in which the investor holds the stock till record date and then sells the stocks at the first opportunity after the record date.

JEL Codes: G11 G12 G14 N25

1. Introduction

Right and seasoned issues have received considerable attention of researchers for quite some time. When a firm chooses to raise new equity capital by offering shares to the general public, usually through an underwriter, such a mode of offer is known as seasoned issue and it is prevalent in the USA, Canada, and UK. Elsewhere around the world, new offers are generally made exclusively to the existing shareholders usually at a price which is substantially lower than the market price and such an offer is known as a right offer. Actually right offers were very common even in the USA up in the first half of the twentieth century. By1980, 99 percent of all equity issues were general offers to the public (Eckbo and Masulis 1995). This trend is now noticeable in the developed economies, such as France reported by Gajewski and Ginglinger (2002), and Japan reported by Kato and Schallheim (1995). Firms in smaller economies continue to rely on right offers for external equity capital. In some countries, firms are required to make right offers to existing shareholders first in order to respond to probable dilution of control of the business. In some cases, the firms’ articles take the option of an issue to the general public out.

In Bangladesh, it is not surprising that right offers are the norm when a firm chooses to raise new equity capital although there had been a few cases of repeat public offers. Usually, existing shareholders can take up new shares at a certain stated proportion to their holding at the issue price which is generally substantially lower than the going market price. A shareholder who is offered the rights, can choose to exercise or renounce in favor of a nominated potential investors.

Anomalous price behavior around new share issues, whether seasoned, IPOs, and private placement has been quite extensively studied. The anomalous price behavior around right share issues have also been examined, but such studies are not that
In this paper, we examine anomalous price behavior surrounding right share offers in Bangladesh. We apply somewhat different methodology to answer a specific aspect of right share pricing in the market that has not been done before. Most studies examine abnormal returns applying event study methodology and abnormal returns are commonly found. Estimating daily abnormal returns surrounding announcement of new issues is the common theme. Instead of daily abnormal returns, we focus on the actual price, expecting that the market will adjust the share price reflecting the exact share price dilution. There are two reasons for this. First, a very clear cut dilution in the net asset value of the shares takes place with every right share issue. Second, the flow chart for a right share issue sets up a record date on which a shareholder must be on record as a shareholder to be entitled to subscribe for a right share which follows a few weeks after the actual announcement is made to issue right shares. It seems reasonable to assume that all factors typically impacting the particular share surrounding the announcement date will fully play out by the record date. The only thing that remains is a mathematical adjustment for dilution on the record date assuming that all shareholders on record will be credited with right shares on credit date. We find that this expected adjustment is not immediate and confounding. We make an attempt to explain this anomalous behavior later in the paper.

Rest of the paper is organized as follows. In section 2, we reviewed recent literature on right issues and seasoned and unseasoned issues. In section 3, we detailed the methodology and the model applied in this paper. In this section, the right share credit process and the difference in institutional setting are discussed followed by the fundamentals of right share valuation preceded the details of the methodology and model. Findings are discussed in section 4. The paper is closed with concluding remarks which include the practical significance of the findings and points out how we plan to proceed further with our work in this area.

2. Literature Review

Wood (1975) lists several reasons why there should be a market price reaction to right share issue. The most obvious one is the response to the lower diluted earnings per share (EPS). However, market probably will also factor in the potential for increased EPS that may result from investing the new capital. Therefore, the profit margin on the new capital, if it could be estimated would contribute to price reaction. A second contributor to price reaction may be the leverage effect. New equity issue via rights reduces the leverage of the firm and hence the present value of tax shield and should have a negative effect on the value. A third factor influencing the price may result from an expected change in the dividend policy that may be intentionally or unintentionally conveyed through a decision to issue right shares.

There were some US studies on right shares before right shares basically disappeared from the US market and it may be worth considering them. Nelson (1965) studied right offers in the US for the period 1946-1957 and concluded that share prices six months
after right offers were not significantly different from prices prevailing six months preceding the offers. Scholes (1972) studied right share issues for the period 1926-1966 and found that share prices generally appreciated before the issue, fell by 0.35 during the month of the offer and was not followed by any significant change after that. White and Lusztig (1980) and Hansen (1988) provided evidence of a negative response to right share announcements. Kothare (1991) examined right offers in the US for the period 1970-1987 and Eckbo and Masulis (1992) examined right offers for the period 1863-1981 and they also found negative statistically significant announcement period abnormal return.

Right offers are more common outside the USA and the institutional differences might have contributed to occasional different results in the smaller economies where right shares have been studied by authors. Marsh (1979) analyzed right shares in the UK and found large positive abnormal returns ahead of the announcement of the issue but insignificant backtracking in prices in the months surrounding the issue. Loderer and Zimmerman (1988) examined the right share issues in Switzerland (they used monthly stock returns) and they found the abnormal returns surrounding the announcement date to be statistically insignificant. Kang (1990) studied the right issues in Korea and reported significant stock price rise during the period surrounding the right issue announcement. Tsangarakis (1996) found positive abnormal return on right offer announcement days in Greece. Marisetty et al. (2008) report positive but insignificant price reaction to right offer announcement while Shahid et al. (2010) also report positive price reaction to right offers in China. In contrast, Marsden (2000) reports significantly negative price reaction to right issues and similar result was obtained in France by Gajewski and Ginglinger (2002). Adaoglu (2006) report statistically significant negative price reaction to right offers in Turkey. Owen and Suchard (2008) report significantly negative abnormal return around right share announcement in Australia. On the other hand, Ariff and Finn (1989) and Tan et al. (2002) find evidence of positive price reaction to right issues in Singapore. Bolognesi and Gallo (2013) find abnormal return of 5.85 percent on the ex-rights date in Italy and they attribute it to high dilution effect of the right offers.

From the above, we see some conflicting evidence regarding price reaction to right share announcements. Several theories have been advanced in the literature in this regard which seem to be applicable to seasoned issues and private placements. One explanation, known as the price pressure hypothesis has been advanced by Masulis (1980) and Asquith and Mullins (1986). This hypothesis posits that firms face a downward sloping curve for its stock and hence an increase in the supply of its stock depresses the stock price. Gajewski and Ginglinger (2002) find support for the price pressure hypothesis in France. However, Tan et al. (2002) do not find any evidence of price pressure in Singapore.

The wealth distribution hypothesis has been advanced mostly in connection with the seasoned equity offerings but is also applicable in the case of right share issues. According to this hypothesis, the new issue will reduce the risk of the firm’s outstanding debt, usually is followed by paying down of the debt, and in the process, wealth is transferred from shareholders to bond-holders. Debt to equity ratio decreases leading to negative abnormal return (DeAngelo and Masulis, 1980, and Masulis, 1983, Masulis and Korwar, 1986). However, there is contradictory evidence against this hypothesis,
especially in smaller capital markets. Tsangarakis (1996) finds no evidence for wealth distribution effect in Greece.

Empirical evidence appears to be more supportive of the information asymmetry hypothesis which suggests that new share issue helps reduce the asymmetry of information, especially with respect to the value of the firm, between the inside shareholder and outside shareholders. By retaining significant ownership in a new issue, inside managers can send a message to the outside shareholders about the true value of the company (Leyland and Pyle, 1977). According to Myers and Majluf (1984), firms are reluctant to issue new shares because it may convey a negative message about the value of the company and they tend to undertake new issue only after a period of share price increases. Thus, ownership concentration has information content as well as timing.

The signaling issue may be combined with additional information such as investment opportunities available. McConnel and Muscarella (1985) found that share prices react positively to new issue if there is a simultaneous announcement of investment opportunities or capital expenditures. Tan et al. (2002) found support for this in Singapore.

3. **Methodology and Model**

3.1 **Right Share Offer and Credit Process**

The Right Issue Rule (RIR) of 2006 published by the Security and Exchange Commission (SEC) of Bangladesh sets out the guideline for right shares. Figure 1 below summarizes the process of issuing right shares by a company. A firm planning to issue right shares must first qualify by meeting certain conditions. If the firm qualifies, then the right share issue and price have to be approved by the shareholders in a general meeting. The shareholders may decline their preemptive right to subscribe to the new issue, in which case, the firm may proceed to make a general public offer. This has not happened yet in Bangladesh. Within fifteen days of the general shareholders' meeting, the firm must seek approval for the issue with the Security and Exchange Commission. Within this time frame, the firm will employ an issue manager who must agree to fully underwrite the issue on a firm commitment basis. In its application, the firm has to state the purpose for the proposed capital, the price and ratio for the new offers. All directors including shareholders holding at least 5 percent of the shares are required to lock in the shares for a period of 3 years. In the event of renunciation of right shares by any one belonging in this group, the renounced shares are also subject to lock-in for the same period of time.

Once the firm secures approval from the SEC, it must announce the record date for the issue. Investors who are on record as shareholders on this date are entitled to subscribe for the right shares. The record date must be no earlier than fourteen working days and no later than twenty one working days from the date of approval. Subscription opening and closing days must also be announced. Subscription commences after fifteen days of the record date and may continue for fifteen to thirty days. The rules do not specify when the shares are to be credited. The issuing company is required to submit with the SEC a statement of subscription received within ten days of closing of subscription and the underwriter is required to submit a statement of under-subscription which the underwriter
must take up. Actual crediting normally is completed within thirty days. Shareholders, except the directors and those holding 5 percent or more shares, are allowed to sell their shares immediately after they receive the new shares.

**Figure 1. Time Line for Right Offers**

![Timeline diagram for right offers]

### 3.2 Difference in Institutional Setting

The seasoned issues in Bangladesh will be difficult to compare to those in the more advanced economies. First, the capital market in Bangladesh is relatively small and seasoned issues are rare. The capital market has become vibrant only recently and there is no scope yet of examining the long-run performance of the right issues that came in the market. All seasoned equity offers have been right offers and they must be supported by firm commitment by the underwriter as required by the SEC rule regarding right issues being applied since 2006. Rights do not formally trade independently.

The rights are usually heavily discounted. Of the 48 samples we use in this paper covering right offers made from February 2010 to October 2012, the average dilution was to 61 percent, a loss of 39 percent of value which makes it prohibitively expensive not to take up the right shares. The quality of corporate governance is persistently questioned and regulations attempting to improve transparency, dissemination of information, and protection of outside shareholders interest are not very effective. Accusation of market manipulation surrounding certain stocks has been quite regular.

The event studies reported in the literature study the announcement effect around t+2 on the time line presented in Figure 1 which provides tests for announcement effects which might be due to information asymmetry and a surprise element. However, an announcement effect or a surprise effect exactly around t+2 is suspect since there was no surprise as the market has a significant span of time between the time the company seeks permission to make a right offer (normally 15 days between board approval and seeking SEC approval, one more week before announcement is made), the Security and Exchange Commission actually grants the permission, and the company makes the offer detailing the mechanism of the offer to absorb the information. A run-up preceding the announcement date may be attributed to announcement effect and resolution of some information asymmetry. However, unlike any other paper cited, we examine the speed of price adjustment that one should expect around the record date into the subscription period spanning from t+4 to t+5 in Figure 1. The purpose is to specifically examine if the market is factoring in the dilution effect which should take place on the day after the record date.
3.3 Fundamentals of Right Share Valuation

The following simplifying assumptions are made:

1. Current market price reflects fair value of the stock and all available information.
2. No dividend of any kind during the right share offer window.
3. No other factors within the right share offer window will impact the price.
4. Market value utilizes a discounting process to determine the present value.
5. All shareholders will subscribe for the additional issue.

The following symbols are used to develop the initial specification.

\[ P_0 = \text{current market price (before right offer is announced.)} \]
\[ k = \text{the discount rate} \]
\[ \alpha = \text{the fraction of shares issued for each share held.} \]
\[ Q = \text{issue price. When issue price is discounted by a fraction, } \beta, \text{ then } Q = (1 - \beta) P_0. \]

When a firm announces \( \alpha \) shares for every one share held, the shareholder will hold \((1+\alpha)\) shares after subscription. After announcement, the intrinsic value of one share with a right to acquire \( \alpha \) share at market price is given by

\[
\text{Value of 1 share with a right} = \frac{([P_0 + \alpha*(1-\beta)P_0]/(1+\alpha))/(1 + k/m)^n}. \quad \text{(Eq. 1)}
\]

The denominator in the above equation, \((1 + k/m)^n\), discounts the expected price of a share the shareholder will hold on the credit date to a present value using annual compounding, where \( n \) is the number of days to credit. In the above equation, \( m \) may be taken as 360 to convert the discount rate to daily discount rate and \( n \) is the number of days till the acquisition of the right share. Alternatively, we could have used continuous compounding instead of daily compounding, but we don’t believe that would make a difference.

If the offer price is discounted by a factor of \( \beta \), then the above equation takes the following form:

\[
\text{Value of 1 share with a right} = \frac{([P_0 + \alpha*(1-\beta)P_0]/(1+\alpha))/(1 + k/m)^n}. \quad \text{(Eq. 2)}
\]

To illustrate, assume the current market price per share before the announcement is Taka 80 and now the firm announces a right offer of 1 share per one share held at an issue price of Taka 40. The nominal value of one share and the right becomes \((P_0 + \alpha*(1-\beta)P_0) = 80 + 1*(1-0.5)*80 = Taka 120\). The nominal value of each share then becomes Taka 120/(1+1) = Taka 60. This price is to take effect after issuance of the right shares. At 20 percent annual rate and 90 days to actual disbursement, the present value of each share will be Taka 60/(1+.20/360)^{90} = Taka 57.07.

The equation that we used, which was a very convenient formula, is better explained by an example. Assume that a right offer is made where one share will be issued for every two shares held on record date for an issue price of Taka 20. Suppose the market price of the firm’s share on record date is Taka 100. Thus the shareholder has to hold two
shares worth Taka 100 each which gets him one share at Taka 20. Once the right share is issued, he will hold three shares. The total value of his holding at the time of issue, assuming no other influence on price will be $2*100+20$, producing an average price of Taka 220/3 = Taka 73.33 which should be discounted to present time. Thus, the value of one share will be

$$\text{Value of 1 share with a right} = \frac{[2*100+20]/(2+1)]/(1 + k/m)^n}{n}. \quad (\text{Eq. 3})$$

Once the right share offer is announced, the market should factor in the adjustment discussed above and should decline in value to reflect the right offer dilution until the offer is completed. In the meantime, assuming no other intervening price influencing factor, the share price will fluctuate primarily influenced by market movement.

### 3.4 The Test Design

As one can see from the above discussion, the price of the shares of a firm issuing right shares at a discount should immediately decline when the market absorbs the dilutive information in the rights issue. However, as we have stated earlier, several studies indicated that there is actually a price run up around the announcement day which may be attributable to the announcement effect. However, anybody holding the stock just before the record date is expected to subscribe for the right shares since not doing so will result in significant loss of investment value as a result of dilution. These investors should know how much of the negative penalty of non-subscription is overcome by subscribing for the right shares. Equation 2 provides the diluted value of one share held on record date assuming the investor subscribes for the new issue. Our goal in this paper is to examine if this adjustment is actually taking place.

In order to test if the market makes the dilutive price adjustment, we need to forecast what the price of the candidate shares would have been had there been no right share offers. We will generate the forecast using two approaches, we will call the first, market price based forecast, and the second, percentage change based forecast. We will compare the performance of these two approaches in predicting future price movements based on traditional measures of accuracy and choose the approach that performs better in predicting actual future stock prices.

**Market price based forecast:** This approach is very simple. First, let us just assume that rights were not being offered. Assuming no other price influencing factors other than the general market movement, the stock price of the specific firm may be predicted by the estimating the following simple linear regression equation:

$$P_{jt} = a + b P_{mt} \quad (\text{Eq. 4})$$

$P_{jt}$ in the above equation is the market price of the specific stock $j$ at time $t$ and $P_{mt}$ is the appropriate market index at time $t$. The estimate of $a$ and $b$ in the above equation may be obtained on the basis of 50 price pairs before the announcement.

**Percentage change based forecast:** The second approach is based on the usual event study methodology generating abnormal returns. The experimental designs in event studies typically use daily returns and test for significant deviation from zero returns.
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around announcement date or a benchmark date. Daily returns are generally computed using one of the two following equations (Brooks 2008):

\[ R_t = \left[ \frac{(P_t - P_{t-1})}{P_{t-1}} \right] \times 100 \]  
Simple returns \hspace{1cm} (Eq. 5)

\[ R_t = \left[ \frac{\ln(P_t)}{\ln(P_{t-1})} \right] \times 100 \]  
Continuously compounded returns \hspace{1cm} (Eq. 6)

In order to measure excess return, a popular approach is to use market adjusted return using an estimation procedure similar to equation 7 below (Brown and Warner 1985):

\[ A_{t,i} = R_{t,i} - (\alpha_i + \beta_i R_{m,t}) \] \hspace{1cm} (Eq. 7)

Where \( A_{t,i} \) is the excess return and \( \alpha_i \) and \( \beta_i \) are OLS estimates from the observation window. When there is no excess return,

\[ R_{t,i} = (\alpha_i + \beta_i R_{m,t}) \] \hspace{1cm} (Eq. 8)

If we replace equation 5 into equation 8, we will obtain

\[ \left[ \frac{(P_t - P_{t-1})}{P_{t-1}} \right] = \alpha_i + \beta_1 \frac{(P_{t,m} - P_{t-1,m})}{P_{t-1,m}} \]

It can be shown that this equation can be transformed to Equation 9 below.

\[ P_{t,i} = \beta_0 + \beta_1 \frac{(P_{t,m} - P_{t-1,m})}{P_{t-1,m}} \] \hspace{1cm} (Eq. 9)

As we can see, we are really regressing the percentage change in stock price on the percentage change of stock price index. Once the estimate of \( \beta_0 \) and \( \beta_1 \) is obtained for the above equation, we can use it for forecasting expected price \( P_{t+1,i} \) using the following transformation:

\[ P_{t,i} = \left[ \beta_0 + \beta_1 \frac{(P_{t,m} - P_{t-1,m})}{P_{t-1,m}} \right] \times P_{t-1,i} \]

Subsequent forecasts can be made based on the predicted value of the forecast of the preceding time period as shown in Equation 10 below.

\[ P_{t+1,i} = \left[ \beta_0 + \beta_1 \frac{(P_{t+1,m} - P_{t,m})}{P_{t-1,m}} \right] \times P_{t,i} \] \hspace{1cm} (Eq. 10)

Selection of a forecasting model: Once we obtain the coefficient estimates for Equation 4 and Equation 10 for a select stock, about 60 forecasts were made using the estimated equations. We will evaluate forecasts for ten different stocks generated under the two approaches and select the model that is better able to predict stock prices. The selected model will be utilized to form the basis for adjustment for rights.

Projected Adjustment of price to terms of right issue: With fifty samples companies, we will have fifty projected prices with adjustment for rights for each of the days of prices we track (after the record date). The adjustments were made using Equation 2. The discount rate we used is 25 percent. This is a reasonable rate for Bangladesh and is based on a recent article by Ahkam and Rahman (2011). The professionals also tend to use a rate that is close to 25 percent in Bangladesh. After the forecasted prices adjusted
for rights are obtained, those will be paired with actual market prices for each of the stocks.

If the adjusted price minus the paired market price remains consistently below zero, the conclusion will be that the market does not make adequate downward adjustment for the dilution effect of the right issue. If the market price is consistently lower than the adjusted price, the implication is that the market over-adjusts for the right issue. When the market fully adjusts to dilution, the mean difference should be zero on the day after the record date. However, since different stocks had different face value, we standardized the right adjusted price by using the following equation:

$$\text{Price ratio} = \frac{\mu_{\text{ratio}}}{\text{Right adjusted price (per equation 2)/Market Price}} \quad \text{(Eq. 11)}$$

When the market fully adjusts to expected dilution, market price should be equal to the right adjusted price and the ratio should be 1. We can expect this ratio to be normally distributed with a mean of one when the market efficiently factors in the expected dilution adjustment. We have to rely on the estimate of sample standard deviation based on the estimated sample mean ratio and the individual ratios we obtain.

When the market is slow to react, market price will be higher and the ratio will be less than 1. Thus, a ratio of 0.9 will indicate that the market price is about 11 percent higher than what it should be. We obtain the ratios for each company one day after the record date and follow that for 47 days, obtain the standard deviation and standard error for each of those days. For each day, there will be a sample mean ratio which is the test statistic. A t test will aid us to draw conclusions regarding the statistical significance of the ratio being different from 1 and at what point, the ratio stops to be statistically significantly different from 1. Thus, we test the following null hypothesis:

$$H_0: \mu_{\text{ratio}} = 1 \quad \text{H}_a: \mu_{\text{ratio}} \neq 1$$

The observed t value is given by the following equation:

$$t = \frac{\mu}{\left(\frac{\sigma}{\sqrt{n-1}}\right)}$$

In order to accomplish the above, the following steps will be taken:

1. Select sample firms with right offers during 2010-2012.
2. Obtain the announcement date, date of SEC approval, and ex-right date (record date).
3. Obtain stock price of each stock for 50 days preceding the ex-right date and corresponding DGEN Index values. DGEN index is used as the market price variable and is often used as the index representing the stock market in Bangladesh.
4. For each stock, estimate the forecasting value of stock price based on either Equation 4 or Equation 10, whichever performs better out of sample, using the price of the stock and DGEN Index values for 50 days preceding the ex-right date. This would be the expected price of the stock had there been no rights offer and resulting adjustment.
5. Complete the adjustment for rights using Equation 2 till the credit date.
6. Obtain the corresponding actual market price of the particular stock.
7. Compute the ratio of right adjusted price to market price for each stock for the necessary number of days using Equation 11.
8. Test for significance and draw conclusions.

Samples: We have obtained data for 48 companies listed on the DSE offering right shares during the period spanning January 2010 to October 2012. Table 1 gives an indication of the industry classification (according to DSE) of these companies. It may be worth mentioning that banks and financial institutions were required to increase their capital base during the sample period for Basel II compliance and banks resorted to issuing right shares for this purpose. It may be assumed that the firms in the sample, issuing right shares was not forced by regulatory reasons to issue new shares but rather it was done for their own needs such as financing expansion or rebalancing and modernization.

One problem with the design explained above is that the length of the subscription period varied from company to company. Moreover, the distances between credit date and record date are also different for the sample firms. As a result, the actual number of days the price deviation was observed was different for different samples. This resulted in fewer sample observation of the price differences for firms which took longer time to credit the right shares. This meant that the sample size needed to estimate the standard error of the ratios varied. We have determined a confidence interval of the ratios to see how many days it took on the average for the actual price to fully reflect right adjustment and typically it was less than a month.

<table>
<thead>
<tr>
<th>Industry Groups</th>
<th>Number of Firms Offering Rights</th>
</tr>
</thead>
<tbody>
<tr>
<td>Banks and Financial Institutions</td>
<td>20</td>
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<tr>
<td>Insurance</td>
<td>13</td>
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<tr>
<td>Textile</td>
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<tr>
<td>Cement</td>
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<tr>
<td>All others</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td>48</td>
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4. Findings

4.1 Selection of Forecasting Model

We have generated 60 forecast prices for ten companies (not in our sample) using equation 4 and equation 10. Both equations are based on market index as the predictor variable, first in the form of actual market price directly, and second, in the form of predicting percentage change in the stock price based on the percentage change in the market index value. The forecast accuracy is measured in terms of the mean error, mean absolute errors (MAE), mean squared errors (MSE), mean absolute percentage errors (MAPE), and mean percentage errors (MPE). The results are presented in Table 2 below. As can be seen from Table 2, Equation 4 significantly underperforms Equation 10 in all measures of accuracy and the pooled average errors on the bottom row of Table 2. Therefore, we have selected Equation 10 to develop the necessary price forecasts.
We used these projected prices to derive right adjusted price and compared that to actual market price and obtained the price ratios given in Equation 11.

Table 2: Comparison of Forecasts

<table>
<thead>
<tr>
<th>Company’s Name</th>
<th>Mean Error</th>
<th>Mean Absolute Percentage Error</th>
<th>Mean Squared Error</th>
<th>Mean Absolute Percentage Error</th>
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<td>Price Based</td>
<td>Percent Based</td>
<td>Percent Based</td>
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<tr>
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<td>17.33</td>
<td>16,756</td>
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</tbody>
</table>

4.2 Significance of Departure from Par Ratio

Table 3 provides the t statistics of the sample average ratios for about 20 days by which time the ratio no longer appears to be significantly different from 1. The table indicates that it takes on the average about 16 days for the market price to reflect dilution adjustment.

If this pattern persists, then it leads to an obvious profitable strategy. Investors should buy and hold the shares till the record date and should sell the stocks immediately after the record date to take advantage of the higher than the correct price. This will allow
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them to grab the right shares at significant discount and the new issues should jump to the theoretical price. Thus, a window of opportunity may actually exist for investors.

5. Concluding Remarks

It would be interesting to examine why there is such a delay in adjustment. One reason may be attributable to an error in the forecasting and adjustment models. For example, the adjustment depends on the discount rate. However, it does not seem plausible that the discount rate itself can explain the difference in the theoretical and actual price. The price forecasting model may not be correct for some stocks, but we doubt that it will significantly sway the average. For some companies, the announcement of the issue of right shares may send a positive signal to the investors where the message is the new capital will be invested in projects which will significantly improve the profitability of the firm. However, as we pointed out before, the investors have quite a wide window to evaluate that and whatever the market concludes should be reflected in the prices well before the record date. We have not accounted for transaction cost in this study, but we do not believe that the gap can be explained by transaction cost.
There are other possibilities which are related to the market structure of Bangladesh. Short selling is not permitted. Foreign investor presence is negligible. Pension and retirement funds do not participate in the equity market. There are some mutual funds but they are really not engaged in management of funds. Traders rather than investors lacking the fundamental knowledge of investment dominate the market. These statements are subject to debate and we will address it in our follow up work. At this point, we attribute this anomaly to the absence of sufficient number of knowledgeable participants. Overall, we feel that the evidence is quite convincing that there is a statistically significant delay in adjustment to the right issues. We will explore the answer to the ‘why’ question in depth in our follow-up work.

If the pattern of delayed adjustment persists, then the obvious strategy for investors and traders is to purchase the stock prior to the record date, hold on to it till the record date, and sell it in the market at the presumably higher than true value at the first opportunity. While the adjustment is immediate for some stocks, for most a significant price disparity persists for about 15-17 days. Since the average price in the market is about 10-11 percent higher than the right adjustment price on the first trading day after the record date, the strategy should yield decent returns for investors. It would appear that this profit, which appears to have very little downside risk, will be made at the cost of those traders in the market who are not sophisticated enough to determine the fair price reflecting the adjustment for rights. The appeal for this strategy is so obvious that we think that the investors recognizing this opportunity will seek out these shares just before the record date.
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We wish to extend this study in several other directions. The most immediate issue we wish to test is if there is a difference in market response between and banks and financial institutions which were required to increase their capital base versus nonbank nonfinancial institutions which did not have to face any regulatory requirement to do so. Next, we would like to see if the stock performance was better for investors of those stocks which quickly adjusted to rights versus those firms which were selling above the right adjusted price during the period between record date and credit date. This will be a comparison for those stock holders who bought the stocks after full adjustment versus those who held on to the stocks at prices above the right adjusted price.

A point that had been made in the literature is that firms do not immediately show the benefits of new capital raised through right issues. Perhaps, it takes a couple of years for the investments made with the new capital to generate the cash flows and profits that will show up on the profit and market price performance figures. This will require tracking the performance of these companies for at least three years post the right issue.

References


Appendix

Figure 2: Ratio of Right Adjusted Price to Market price

- **Right Adjusted Projected Price/Actual Price**
- **Days since Record Date**
- **Ratio of Theoretical Price to Actual Price**
  - Upper Band
  - Lower Band