

CHAPTER FIVE DATA ANALYSIS

This chapter details the results of the data analysed in testing the hypotheses as explained in Chapter Four. The results of the analysis in this chapter will be dealt with as per the hypotheses formulated. In the case of market efficiency test or H_1 , only the samples within the rating type will be analysed and not the individual stocks. However, in testing H_2 both the samples within the rating type and the individual stocks themselves will be analysed and detailed in this chapter.

5.1 Summary Statistics of Respondents

The sanitized bond rating announcements totalled 142 from the preliminary list of 144 bond ratings. Initial assignments totalled 31 broken down into 28 for the investment grade and 3 for the speculative grade. Reaffirmations totalled 50 of which 42 involved investment grade and the remaining 8 speculative grade. Upgrades totalled 21 divided into 14 of investment grade, 2 of speculative grade and the remaining 5 of intra grade. Finally, downgrades totalled 40 broken down into 17 investment grade downgrades, 9 speculative grade downgrades and the remaining 14 of downgrades across classes.

5.2 Analysis of Measures/Testing of Hypotheses

Hypothesis H_0 : Ratings announcement has no impact on market efficiency during event window period.

Hypothesis H_1 : Ratings announcement has impact on market efficiency during event window period.

This Hypothesis is tested by analysing data for all the four rating types namely, initial assignment, reaffirmation, upgrades and downgrades.

Initial Assignment

A total of 31 initial assignment- rating announcements were analysed of which 28 or 90% were pertaining to investment grade bonds and 3 or 10% of speculative grade. The AR_{Nt} for the 28 investment grade bond issuer companies ranged from a minimum of -0.0154 to a maximum value 2.2130 during the event window period. The announcement day registered the maximum AR_{Nt} of 2.2130 with a t-value of only 0.5265 that is not statistically significant at 95% confidence interval (t-value 2.052). The pre and post announcement days also showed no statistically significant abnormal returns. Their t-values (and AR_{Nt}) ranged from a minimum of -0.0037 (-0.0154) to a maximum of -0.5129 (-2.1557).

The speculative grade sample consisted of 3 related stocks showing an AR_{Nt} on day 0 as -4.4543 with a t-value of -0.1077. Statistically, this sample too revealed no impact for market efficiency on announcement day or day 0 at the 95% confidence level (t-value 4.303). The pre and post announcement days recorded negative AR_{Nt} , but statistically insignificant.

The next analysis under initial assignment was undertaken at the summary level comprising all the 31 investment and speculative grades. Again, the analysis did not reveal any significant departures from the results of the two previous grades. In the combined pool the AR_{Nt} ranged from a minimum of -2.3144 (for day -3) to a maximum of 1.5678 (for day 0). At the 95% confidence level with a t-value of 2.042 none of the AR_{Nt} for all the 11 days showed any statistically significant results.

Overall initial rating announcements as the results speak do not carry any impact on market efficiency. Upon its announcement the market views it just as information the market already knew

Reaffirmation

Reaffirmation maintains a bond's rating at its status quo. Does this provide new information to the market participants so as to make them react on announcement day?

A total of 50 companies make up this class of ratings with 84% (42 stocks) of investment grade and the remaining 16% (8 stocks) relating to the speculative grade.

The investment grade reported a negative AR_{Nt} of -6.0103 on announcement day with a t-value of -1.18754 . In terms of statistical significance it is insignificant compared to the required minimum level of 2.021. Hence, on announcement day there appears to be no major shake-up in the stock prices of investment grade bond issuers. Even the pre and post announcement day too gives the same picture. All the AR_{Nt} values show a negative figure though small. The maximum loss in AR_{Nt} (excluding the event day 0) was -7.9398 on day +2 with a t-value of -1.07795 . Both these levels are statistically insignificant at 95% confidence level.

The speculative grade consisted of 8 companies and on announcement day AR_{Nt} was 2.0593, with a t-value of 0.3214, way below the expected minimum value of 2.365. Hence, no reaction was seen on announcement day 0. The remaining 10 days showed a maximum positive AR_{Nt} of 6.9858 on day +5 (t-value 1.0901) and a maximum negative value of -2.6337 on day +3 (t-value -0.4110). On the other hand the minimum negative value AR_{Nt} was day -2 with a value of -0.7707 (t-value -0.12027) and the minimum positive value was on day +1 with AR_{Nt} of 0.5356 (t-value 0.0836). However, even these extremes are statistically insignificant.

Taking both these sub-samples as one sample does not reveal any significance AR_{Nt} on announcement day 0 or the pre/post announcement days. All the AR_{Nt}

reported negative returns ranging from -4.6016 (t-value -0.8683) on day +5 to -6.7548 (t-value -1.2746) on day +4.

Upgrades

The total number of upgrades totalled 21 companies of which 14 (67%) involved upgrades within the investment grade; 2 (10%) within the speculative grade and the remaining 5 (23%) upgrades from speculative to investment grades.

Overall considering all the 21 companies as one sample, no significant changes in abnormal returns were observed on announcement day 0. The AR_{Nt} on day 0 was 0.8500 with a t-value of 0.3029. At 95% confidence level (t-value 2.806) the observed t-value of 0.3029 is statistically insignificant. The pre and post announcement days recorded AR_{Nt} 's ranging from a minimum positive value of 0.1699 (t-value 0.0606) on day +1 to a maximum AR_{Nt} of 0.8268 (t-value 0.2948) on day +4. The maximum negative AR_{Nt} reading was -0.7781 (t-value -0.2774) on day +5 and the minimum negative reading was -0.0713 (t-value -0.0254) on day -3. None of these readings were statistically significant.

The investment grade sample consisting of 14 stocks displayed no impact on announcement day in the form of abnormal returns. The AR_{Nt} on day 0 was 0.5810 with a t-value of 0.1934 that is statistically insignificant (t-value 2.16) at 95% confidence level. The remaining 10 days also showed no signs of significant abnormal returns. The positive AR_{Nt} 's range from a maximum of 1.1720 (t-value 0.3900) on day +4 to a minimum of 0.0440 (t-value 0.0147) on day -4. The negative values of AR_{Nt} range from a maximum of -1.1548 (t-value -0.3843) on day +2 to a minimum of -0.0178 (t-value -0.0059) on day +1.

The sample on speculative grade consisting of 2 stocks showed an AR_{Nt} of 1.0866 (t-value 0.1331) on announcement day that is insignificant statistically at 95% confidence interval (12.706). The pre and post announcement days also

displayed statistically insignificant abnormal returns. The positive values range from a maximum of 1.2045 (t-value 0.4915) on day -5 to a minimum value of 0.2445 (t-value 0.0997) on day -4. The negative values likewise ranges from a high of -1.4882 (t-value -0.6072) on day -5 to a low figure of -0.0010 (t-value -0.0004) on day -3.

Downgrades

Downgrades involved 40 companies involving 17 (43%) relating to investment grade bonds; 9 (23%) to speculative bonds and the remaining 14 (34%) related to bond downgrades from investment to speculative grades.

Overall, at the summary level, the announcement day 0 observed an AR_{Nt} of 0.8690 with a t-value of 0.1633. At 95% confidence level this is considered rather insignificant statistically (2.750). The pre/post announcement day showed the positive maximum AR_{Nt} of 3.1262 (t-value 0.7410) on day -5 and negative maximum AR_{Nt} of -0.8313 (t-value -0.1971) on day +1. The minimum positive AR_{Nt} 0.0261 (t-value 0.0062) showed on day -4 and day 3 showed the minimum negative AR_{Nt} of -0.0797 (t-value -0.01891). The pre and post announcement day AR_{Nt} 's showed no consistency to affect market efficiency.

The investment grade sample consisting of 17 stocks likewise displayed no statistically significant abnormal returns on announcement day with an AR_{Nt} of -0.0231 (t-value -0.0053). The remaining 10 days too did not show any consistent presence of abnormal returns. Day -5 had the highest positive AR_{Nt} of 1.3107 (t-value 0.02996) and day +1 the lowest positive AR_{Nt} of 0.1912 (t-value 0.0437). Day -2 showed the highest negative AR_{Nt} of -0.7634 (t-value -0.1745) and day -4 had the lowest negative AR_{Nt} of -0.3671 (t-value -0.0839).

The speculative sample with 9 companies had an AR_{Nt} of 1.8688 (t-value 0.3189) on announcement day, a statistically insignificant figure (2.306). The pre and post

periods too were insignificant. The highest positive AR_{Nt} was 10.2986 (t-value 1.7573) on day -3 and the highest negative AR_{Nt} was -5.3215 (t-value -0.9080) on day -2. The lowest positive value recorded was on day day +4 with an AR_{Nt} of 0.2190 (t-value 0.0374) and the lowest negative AR_{Nt} was -0.6976 (t-value -0.1190) on day +2.

All the four categories of ratings did not show any adjustment of share prices upon the rating announcement and hence did not produce any abnormal returns on announcement day. The pre and post announcement days also did not show proof of any consistent occurrences of abnormal returns either before or after the announcement day 0. Hence, H_0 is accepted.

Hypothesis H_0 : Rating announcements provide no significant abnormal returns over event window period.

Hypothesis H_2 : Rating announcements provide significant abnormal returns over event window period.

In this second part the same data are analysed differently. The focus is on the impact of the announcement throughout the 11 day event window period. It is assumed that the 11day event window period is thought to be sufficient to capture the total impact of the bond-rating announcement. The $CAAR_{Nn}$ is the area of interest in this second part and the individual stocks, investment, speculative and summary samples are analysed for this purpose.

Initial Assignment

Of the 31 individual companies in all, none of $CAAR_{Nn}$'s showed any statistically significant abnormal returns at 95 % confidence interval. The maximum average gain of 5.9599 over the 11 day period was found for Mitrajaya (with investment grade bond) and the minimum average gain of 0.4378 was recorded for OSK

(with investment grade bonds). However, their t-values of 0.8005 and 0.1143 respectively appear insignificant. Interestingly the impact of the initial assignment on stock returns also showed negative stock returns. The minimum loss was found for Hicom with a value of -0.1392 (investment grade bond issuer) and a t-value of -0.0804 . The maximum loss was recorded for Lien Hoe at -7.1887 and a t-value of -1.3773 . The assignment of speculative bond grading reflecting the market's negative perception explains the -7.1887 loss as the company is taking in more loans with a lower asset quality.

The investment grade sample of companies (28) showed a $CAAR_{Nn}$ of -0.1242 with a t-value of -0.0071 . At 95% confidence level the return appears statistically insignificant. Interestingly, the return appears to be in the negative.

On the other hand, the speculative sample grade initial assignment showed a relatively higher negative stock returns of -4.9485 with a t-value of -0.1196 . At the 95% confidence level this value appears insignificant.

The summary sample consisting of all the companies in this category showed $CAAR_{Nn}$ of -0.5911 and a t-value of -0.0909 . Likewise, it is also insignificant.

However, although insignificant, the speculative grade issuers' stock returns that are negative appears relatively bigger compared to an investment grade issuer.

Hence, with the above observations it can be concluded that initial assignments do not carry new information to the market and has produced no impact in the form of statistically significant abnormal returns. Therefore, H_0 is accepted.

nations

Does the data say about the average 11-day impact on the related share on the average? Are they significant statistically? Of the 50 stocks, KFC (investment grade bond issuer) showed the largest $CAAR_{Nn}$ of -286.30 with a t -value of -11.9515 and is statistically significant. No significant news was found during the eleven-day period to explain the huge t -value except for this reaffirmation announcement. The other 49 companies displayed $CAAR_{Nn}$ and t -values that were not statistically significant at 95 % confidence level (2.2288). The positive $CAAR_{Nn}$ /t-value range from a high of $1.0714/0.6458$ (Kian Joo) to a low of $0.59/0.0020$ (Sapura). On the other hand, the negative values range from a high of $-6.4052/-1.6613$ (Juan Kuang) to a low of $-0.0217/-0.0030$ (Trutech).

The investment grade sample of ratings (42) reported a $CAAR_{Nn}$ of -6.9032 and a t -value of -1.3640 . The speculative grade sample consisting of 8 companies reported a $CAAR_{Nn}$ of 0.1267 and a t -value of -0.0198 . The overall sample shows a $CAAR_{Nn}$ of -5.7784 and a t -value of -1.0903 . All these 3 samples' results are statistically insignificant.

With the above observations it can be concluded that reaffirmations do not convey new information to the market and has produced no impact in the form of statistically significant abnormal returns. Therefore, H_0 will be accepted.

2.5

$CAAR_{Nn}$ with both positive and negative values were found in the summary consisting of all the 21 companies. However, all the $CAAR_{Nn}$'s were not statistically significant. The highest positive $CAAR_{Nn}$ was recorded for Apex with a t -value of 0.7691 and the lowest recorded for UMW was 0.0946 (t -value of -0.0030). On the negative values, the highest $CAAR_{Nn}$ was recorded for Palmco

at -2.002 (t-value -0.6689) and the lowest for S. Acids at -0.1517 (t-value -0.0724).

The investment grade sample showed a $CAAR_{Nn}$ of -0.0576 (t-value -0.0192); the speculative grade sample recorded 0.1086 (t-value 0.0443) and the overall sample -0.0278 (t-value -0.0099). Hence, H_0 is accepted.

Downgrade

Both positive and negative values were observed in $CAAR_{Nn}$ among the companies. The highest positive $CAAR_{Nn}$ was recorded for Renong at 13.6749 (t-value 2.9989) and is statistically significant at 95% confidence level. The lowest positive $CAAR_{Nn}$ was found for Metroplex at 0.0543 (t-value 0.0082). On the negative values, the highest $CAAR_{Nn}$ was found for Antah at -3.0292 (t-value -0.5818); and the lowest for Hicom at -0.0457 (t-value -0.0070). Except for Renong, all the other values are statistically insignificant.

The Investment grade sample showed a $CAAR_{Nn}$ of 0.0846 (t-value 0.0193); the speculative grade 1.1012 (t-value 0.0517) and the overall summary sample 0.1647 (t-value 0.0390). All these values are statistically insignificant at 95% confidence level.

Even downgrade announcements do not lead to a statistically significant fall in the value of share prices. Hence, H_0 should be accepted.

5.2 Summary of Research Results

5.2.1 Market Efficiency

The first hypothesis tested for market efficiency in the semi-strong form and results conclude the market to be efficient as far as bond-rating announcements are concerned. This is in line with the findings of Pinches et al (1978). No

movement in terms of abnormal returns were observed on announcement day nor were consistent abnormal returns found for the pre and post announcement days for all the sub-samples earmarked for testing. Hence, the market can be termed as efficient. The market was able to distinguish between new and old information when it comes to bond rating announcement. As there is a lagging effect from the time the information of a company gets into rating evaluation and announced, the announcement by itself becomes old information which the market already knew through company announcements, interim reports and the prompt print media. In other words it can be said that the market appears semi-strong efficient, similar to the findings of Neoh, (1986) on earnings announcement; Ariff and Finn (1988) on bonus issue announcements in the Singapore market. It also concurs with Ball and Brown (1990) on earnings announcement where evidence showed that annual reports did not rate highly as the contents were already discounted by the market on information disseminated by the prompt media (including interim reports). In the words of Higgins (1992), the bones thrown to the piranhas had no flesh even to gnaw at!

5.2.2 Impact on stock returns

The initial assignment announcement did not cause any significant average abnormal return for the 11-day event window period and one would not profit by acting on initial bond announcement. The findings are in line with the findings of Elayan, Hsu and Meyer (2000) whose study focused on a small thinly traded market, the New Zealand Stock Exchange. Reaffirmations on the other hand do not bring new information into the market but merely states that the status quo stands. As expected the results of insignificant abnormal returns were in line with expectations. Previous studies on upgrades indicate no reaction by the market upon upgrade announcements. The results of this study concurs with previous research undertaken by Griffin et al (1982); Holthausen et al (1986); Zaima et al (1988); Hand et al (1992); and Motolcsy et al (1995). However, on downgrades, surprisingly no abnormal returns were observed and the findings contradict with the findings of Elayan et al (2000); Griffin et al (1982); Holthausen et al

(1986);Zaima et al (1988); Hand et al (1992); and Motolcsy et al (1995). It could be due to the small sample size or the short event-window period selected.