THE ANNOUNCEMENT EFFECTS OF CREDIT RATING ADJUSTMENTS ON STOCK PRICE PERFORMANCE IN THE THAI REAL ESTATE & CONSTRUCTION SECTOR

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Abstract - We examine the impact of corporate bond credit rating announcements on abnormal returns of listed companies in the real estate & construction sector on the Stock Exchange of Thailand. The event study methodology developed by Seiler (2004) is chosen to test the significance of abnormal returns of sampled companies that experience rating events. Results of the study show that credit rating changes do not lead to significant abnormal returns in real estate & construction sectors. This phenomenon prevails both before and after the time of credit rating changes. It appears that in the case of the real estate & construction sector, new information received from the bond market will not be passed to the equity market. This insignificance is not consistent with previous research.We observe some interesting results when we look at patterns of the cumulative abnormal returns during the event window. As soon as credit rating upgrades were announced, our sampled stocks experience negative abnormal returns and these negative abnormal returns worsen throughout the event window. We theorize that this phenomenon occurs because investors sell these stocks to realize profits following the announcement of positive news. On the contrary, positive abnormal returns are observed after the announcement of credit rating downgrades and these positive returns improve throughout the event window. We theorize that investors in the real estate & construction sector of Thailand employ a contrarian investing strategy, by shifting their capital from the bond market that has just received bad news to the stock market. A redistribution of capital from bond market to stock market causes an increase of stock prices.

Keywords - Credit rating, Cumulative Abnormal Return, Corporate Bond, Creditworthiness.

I. INTRODUCTION

Prior studies have shown significant market responses (or price movements) to changes in security ratings. Market adjustments and credit score changes appear to have a non-monotonic relationship. This phenomenon is observed by Holthausen and Leftwich (1986) and Griffin and Sanvicente (1982) who found that a firm experiences a significant stock price decrease after its bond rating is downgraded, while the opposite phenomenon cannot be observed after its bond rating improves. Other studies, such as that of Pinches and Singelton (1978), argue that the official announcement of credit rating adjustments is will not send new relevant information to the stock market.

We examine the impact of corporate bond credit rating announcements on stock price performance of listed companies in the real estate & construction sector of the Stock Exchange of Thailand. To do this, we employ an event study methodology to test the significance of cumulative abnormal returns of sampled companies that experience rating events. We attempt to ascertain whether the asymmetric phenomenon mentioned above by Holthausen and Leftwich (1986) and Griffin and Sanvicente (1982) does exist in the Thai real estate & construction sector.

II. RELATED LITERATURE

We have seen a large body of literature pertaining to information effects of credit rating changes on stock returns. Most prior studies are conducted in the US. Examples include Wansley and Clauretie (1985) and Holthausen and Leftwith (1986) who present evidence suggesting a negative market response following debt rating downgrades, and no response following the upgraded events. Similarly, Hand et al. (1992) find that unexpected downgrades have a negative effect on returns. Also found is that the further the rating drops, the more negative the stock market reacts. Followill and Martell (1997) investigate the impact of the announcement of future rating reviews and subsequent changes and they too find that that downgrade announcements have a negative market impact.

Goh and Ederington (1993) examine the redistribution hypothesis and report that not all rating downgrades will be followed by negative investor reactions, especially the downgrade resulting from changes in the financial leverage that will only result in wealth transfers from bondholders to shareholders. In their subsequent study, Goh and Ederington (1999) find that the negative reaction to the downgrades is more severe in the case of speculative bond issues than in the case of investment grade bond issues. Similar observations are noted by Nayar and Rozeff (1994) who focus on rating changes in commercial papers, and by May (2010) who focuses on over-the-counter bonds. When studying the impact of rating changes on Eurobond prices, Steiner and Heinke (2001) find more negative market reactions in the case of downgrades from investment grade to speculative grade. Steiner and Heinke (2001) also assert that the degree to which the market reacts to

rating changes depends on yields, issuer type, and the nationality of the issuer. Dichev and Piotroski (2001) argue that small firms of low credit quality underperform during the first year following the downgrade.

We only find a small body of literature outside the US due to a smaller proportion of debt financing and a lesser presence of the rating agencies. However, research findings of these non-US studies still corroborate those US studies. Examples include the UK study of Barron et al. (1997) and the Australian study of Matolcsy and Lianto (1995). Another closely-related area of research focuses on examining the characteristics that are most influential to rating agencies' development of ratings for life insurance. Eckles and Halek (2012) find several determinants that significantly correspond to the degree to which the market reacts to insurer rating downgrades, which is measured by CARs.

III. METHODOLOGY AND DATA

This session contains 2 parts. The first part outlines event study methodology used in this research, including all the necessary steps to test the event. The second part deals with sampled firms that have experienced credit rating changes in the period of 1995-2014.

3.1. Event Study Methodology

An event study approach outlined in Seiler (2004) is employed to calculate the CTSAR of all sampled companies in the event. The investigation covers the period from 120 trading days prior to the first announcement date to 15 trading days after the announcement date. The first announcement day or event date is denoted as day 0. The estimation period occurs from 120 trading days before the first announcement day through 16 trading days after the first announcement day (-120, -16). The event period is 15 trading days before the first announcement day through 15 trading days after the first announcement day (-15, 15) in order to eliminate the impact that is not caused by factors influencing the overall market, and to cover unintended effects owing to leakage of news and investors' trading delays.

The calculation process goes through several steps before coming up with CTSAR. First, the abnormal return (AR) on stock i for day t ($AR_{i,t}$) in the event period was calculated based on the well-known market model. Second, the standardized AR for each stock and for each day in the event period was determined using the following formula:

$$SAR_{i,t} = \frac{AR_{i,t}}{\sqrt{s^2_{AR_{i,t}}}} \quad (9)$$

where $SAR_{i,t}$ equals the standardized AR (SAR) for stock i at day t. $s^2_{AR_{i,t}}$ is the variance of the AR for stock i at day t, calculated using the following equation:

$$s^2_{AR_{i,t}} = \left[\frac{\sum_{t=-120}^{-16}\left(AR_{i,t(est.period)} - \overline{AR}_{i(est.period)}\right)^2}{D_i - 2}\right] \times \left[1 + \frac{1}{D_i} + \frac{\left(R_{m,t(event.period)} - \overline{R}_{m(est.period)}\right)^2}{\sum_{t=-120}^{-16}\left(R_{m,t(est.period)} - \overline{R}_{m(est.period)}\right)^2}\right] \quad (10)$$

where $AR_{i,t(est.period)}$ equals the AR for stock i at day t over the estimation period. $\overline{AR}_{i(est.period)}$ is the mean AR for stock i over the estimation period. D_i is the number of observed trading day returns for stock i over the estimation period. $R_{m,t(event.period)}$ is the return on the market at day t over the event period. $\overline{R}_{m(est.period)}$ is the mean return on the market over the estimation period.

The next step was to obtain the total SAR (TSAR) for each day in the event period by aggregating the SARs across all sampled companies for each separate day in the event window.

The final step was to compute the CTSAR of each day during the (-15, 15) period using the following formula:

$$CTSAR_{T_1,T_2} = \sum_{t=T_1}^{T_2} TSAR_t \quad (11)$$

where $CTSAR_{T_1,T_2}$ equals the CTSAR for each day in the event period. $TSAR_t$ is the TSAR for each day in the event period. T_1 is the earliest date in the event period (-15), while T_2 is the later date in the event period (ranges from -15 through +15). Significance of TSARs and CTSARs for each day in the event window can be determined by calculating the Z-statistic on each variable as follows.

$$Z\text{-}TSAR_t = \frac{TSAR_t}{\sqrt{\sum_{i=1}^{N}\frac{D_i - 2}{D_i - 4}}} \quad (12)$$

$$Z\text{-}CTSAR_t = \left(\frac{1}{\sqrt{N}}\right)\left(\frac{\left(\sum_{T_1}^{T_2} SAR_{it}\right)}{\sqrt{(T_2 - T_1 + 1)\left(\frac{D_i - 2}{D_i - 4}\right)}}\right) \quad (13)$$

3.2. Data

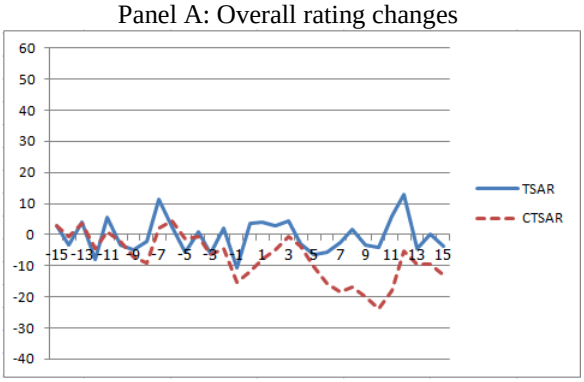
The dataset contains 14 listed companies in the real estate & construction sector that issue debt instruments and receive credit ratings. The list of firms, their ticker symbols, and the date of their rating changes are provided in the Appendix. Information on actual rating changes, rating upgrades, and rating downgrades is obtained by a local rating agency, TRIS Rating. Overall, the data comprises 86 events of credit rating adjustments. To calculate CARs, historical data of relevant stocks is collected from 120 trading days before the announcement date to 15 trading days after the announcement date. Twelve-year study period is investigated, which lasts from October 2002 until September 2014. The subprime mortgage crisis period (December 2007 to June 2009) is omitted from the analysis to avoid extreme irregularities in the bond market

IV. RESULTS

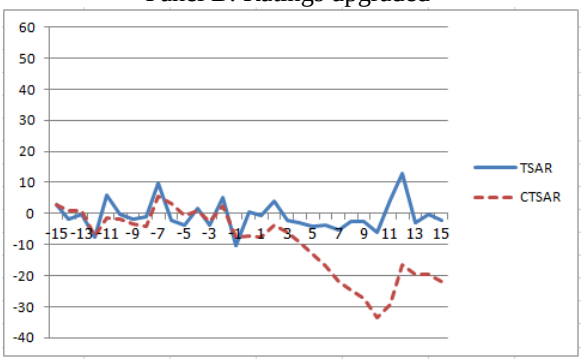
We Calculatetsars and CTSARs and their significance over the event window. If the announcement effects of credit rating adjustments exist, we should witness significant TSARs and CTSARs for a number of days over the event window. Consider first the general case when Thai real estate & construction firms experience a bond rating adjustment (regardless of whether the rating is upgraded or downgraded). Very few TSARs are significant (days -7, -1, and 12), while none of CTSARs are significant. This means that the official announcement of credit rating changes by TRIS Rating does not convey relevant information to the stock market. In other words, Thai real estate & construction firms generally do not experience a significant stock price response after their bond rating is adjusted. Looking at Panel A of Figure 1, we could not see a clear direction of stock price performance during the event window.

If we consider upgraded and downgraded circumstances separately, we get a similar picture regarding significance of abnormal returns during the event period for both rating upgraded & rating downgraded situations (few significant TSARs and insignificant CTSARs). However, the direction of the abnormal returns during the event window is now much clearer. As soon as credit rating upgrades were announced,our sampled stocks experience negative abnormal returns and these negative abnormal returns worsen throughout the event window. We theorize that this phenomenon occurs because investors sell these stocks to realize profits following the announcement of positive news. On the contrary, positive abnormal returns are observed after the announcement of credit rating downgrades and these positive returns improve throughout the event window. We theorize that investors in the real estate & construction sector of Thailand employ a contrarian investing strategy, by shifting their capital from the bond market that has just received bad news to the stock market. A redistribution of capital from bond market to stock market causes an increase of stock prices.

Panel A: Overall rating changes



Panel B: Ratings upgraded



Panel C: Ratings downgraded

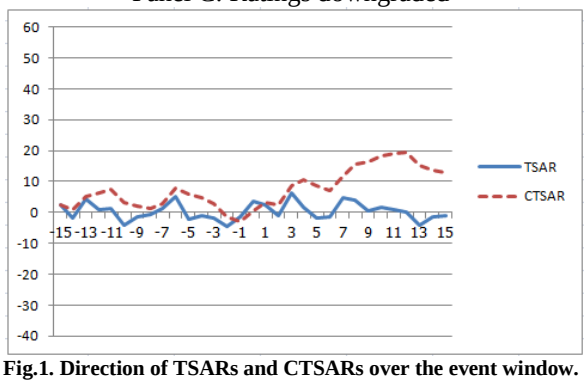


Fig.1. Direction of TSARs and CTSARs over the event window.

CONCLUSIONS

The purpose of this study is to assess the on stock prices before and after credit rating announcements. The case study concentrates on real estate & construction firms listed on the Stock Exchange of Thailand that have received credit-rating adjustments. Event Study Methodology is applied to analyze the data. The subprime mortgage crisis period is omitted

from the analysis. We find that what is usually found in prior studies cannot be applied to our case. We do not clearly observe significant announcement effects of credit rating adjustments, regardless of whether they are good news or bad news. We do, however, observe a clear picture regarding the direction of abnormal returns following the announcement. Following the upgraded credit rating announcement, investors sell their stocks to realize profits. This leads to negative stock performance throughout the event period. On the other hand, downgraded credit rating adjustments incentivize investors to employ the contrarian investing strategy. We theorize that investors will sell their bond holding following bad news in the bond market and use proceeds to buy equity securities in the stock market, leading to positive stock performance. Our study provides evidence that the asymmetric stock market response to the announcement of credit rating upgrades and downgrades as suggested by previous studies does not hold for firms in the real estate & construction sector.

REFERENCES

[1] Barron, M.J., A.D. Clare, and S.H. Thomas, 1997, "The Effect of Bond Rating Changes and New Ratings on UK Stock Returns" Journal Of Business Finance and Accounting 24 (3/4): 497-509.

[2] Dichev, Ilia D. and Joseph D. Piotroski, 2001, "The Long-Run Stock Returns Following Bond Ratings Changes," The Journal of Finance 56 (1): 173-203.

[3] Eckles, David L. and Martin Halek, 2012, "Determinants of Abnormal Reactions to Rating Downgrades: An Investigation of Insurer Ratings," Working Paper.

[4] Followill, R.A. and Martell, T., 1997, "Bond Review and Rating Change Announcements: An Examination of Informational Value and Market Efficiency." Journal of Economics and Finance 21, Summer, 75-82.

[5] Griffin, Paul A. and Antonio Z. Sanvicente 1982, "Common Stock Returns and Rating Changes: A Methodological Comparison," Journal of Finance 37 (1): 103-119.

[6] Goh, Jeremy C. and Louis H. Ederington, 1993, "Is a Bond Rating Downgrade Bad News, Good News, or No News for Stockholders?" Journal of Finance 48: 2001-2008.

[7] Goh, Jeremy C. and Louis H. Ederington, 1999, "Cross-Sectional Variation in the Stock Market Reaction to Bond Rating Changes," The Quarterly Review of Economics and Finance 39 (1): 101-112.

[8] Hand, John R. M., Robert W. Holthausen and Richard W. Leftwich, 1992, "The Effect of Bond Rating Agency Announcements on Bond and Stock Prices," Journal of Finance 47: 733-752.

[9] Holthausen, Robert W. and Richard W. Leftwich, 1986, "The Effect of Bond Rating Changes on Common Stock Prices," Journal of Financial Economics 17: 57-89.

[10] May, Anthony D., 2010, "The Impact of Bond Rating Changes on Corporate Bond Prices: New Evidence from the Over-the-Counter Market," Journal of Banking and Finance 34: 2822-2836.

[11] Matolcsy, Zoltan P. and T. Lianto, 1995, "The Incremental Information Content of Bond Rating Revisions: The Australian Evidence," Journal of Banking and Finance 19: 891-902.

[12] Nayar, N. and M.S. Rozeff. 1994, "Ratings, Commercial Paper, and Equity Returns," Journal of Finance 49(4): 1431-1449.

[13] Pinches, G. and J. Singleton 1978. "the Adjustment of Stock Prices to Bond Rating Change," Journal of Finance 33 (1): 29-44.

[14] Seiler, Michael J. Performing Financial Studies: A Methodological Cookbook. New Jersy: Prentice Hall 2004.

[15] Steiner, Manfred and Volker G. Heinke, 2001, "Event Study Concerning International Bond Price Effects of Credit Rating Actions," International Journal of Finance and Economics 6: 139-157.

[16] Wansley, James W. and Terrance M. Clauretie, 1985, "The impact of Creditwatch placements on equity re-turns and bond prices," Journal of Financial Research 8(1), 31-42.

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