

REVISITING MALAYSIA BANKS SHARE PRICE RESPONSE TO EARNINGS ANNOUNCEMENTS

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Abstract

This paper studied the relationship between cumulative abnormal returns over a 12-month-window and the standardized unexpected annual earnings over the period of 2000 to 2009 in the banking sector of Malaysia. Banks, as the critical part of financial system, play an important role in contributing to a country's economic development. If the banking industry does not perform well, the effect to the economy could be disastrous. Therefore; this study used the most accepted events study and regression to test the reaction of banks share prices on earnings announcement. The event study shows that the directional effects of earnings announcements are strong. The positive unexpected earnings increase the abnormal returns, and the negative unexpected earnings decrease the share price. The effects are asymmetrical; the negative earnings produce higher negative abnormal returns. These results were confirmed in the regression analysis. The positive earnings announcement ERC is only significant at 10% level, whereas the negative ERC is significance at 5% level. The negative ERC is larger than the positive ERC. The results that we obtained suggest that there is a significant relationship between the standardized unexpected earnings and cumulative abnormal returns. It implies that stock prices change in a statistically significant manner in response to earnings increases and decreases. The finding of earnings-to-price relation in the stock market is consistent with that documented in previous studies on developing and developed markets.

Keywords: Earnings response coefficients, Malaysia banks, Cumulative abnormal returns, unexpected earnings.

Introduction

Accurate earnings prediction was a long standing interest of investors, financial analysts, corporate executives, and researchers. One motivation for getting an accurate earnings prediction is to understanding and develop the relation between earnings information and firm's stock returns. The valuation of stock is important for wealth creations to all stakeholders. Stakeholders use all publicly available information, including accounting reports and disclosures to build expectations about the risks and returns of firms. Then for getting an accurate earnings prediction for the valuation of firm equity.

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In one of the school of study particularly focuses on the response of share prices to earnings announcement; changes in security prices associated with earnings announcements

have been considered as evidence that the announcement of earnings provide new information, causing the market participants to alter security prices. This hypothesis has been confirmed by earlier empirical tests. The seminal paper by Ball and Brown (1968) found abnormal returns both before and after the quarterly announcement of earnings. While the abnormal returns before the earnings announcement are relatively easy to theorize away as leakage of information into the market, such is not the case with respect to the abnormal returns after the earnings announcement (i.e., post-earnings-announcement drift).

The earning response coefficient, ERC is used to estimate the relationship between return of equities and the unexpected return of companies' earnings announcements. Under efficient market hypothesis (Fama 1970, 1976 and 1991), equity prices adjust rapidly to the arrival of new information related to the equity. Investors with the superior information are expected to use that information until the share prices have effectively reflects the information and that cause the change of the company's share price. The ERC is an estimate of the change in company's stock price due to the information in a company's earnings announcement coming into the market. Cheng et al. (2001) found a significant price-to-earnings relation, the strength, consistency and magnitude of the relation in emerging market. However, it was not as large as those reported in any institutionally more developed markets.

Cheng and Ariff (2007) used factor analysis to generate the banks risks and regressed against the earnings response coefficients equations. The results show that other than earnings, risks factors also affect the share price of Malaysia local banks.

The difference between actual and expected earnings is the surprise element or unexpected news for investors. The reaction of investors towards the surprise is captured in the share price changes through their trading activity. In an emerging market, the availability and transmission of information have been found to be relatively inefficient compared to developed markets, making the surprise element more relevant in this market (Cheng, Shamsher & Annuar, 2008). As a result, there is strong evidence that showed the earnings response coefficients are highly significant in several researches over decades on the relation between abnormal returns of stocks and accounting earnings.

Banking Sector in Malaysia

Banks, as the critical part of financial system, play an important role in contributing to a country's economic development. If the banking industry does not perform well, the effect to the economy could be huge and broad (Said & Tumin, 2011). Banking business got tremendous changes after the independence of Malaysia in 1957. Malaysian banks are now much stronger. There are presently a total of 22 commercial banks, comprising nine domestic banks and 13 locally incorporated foreign banks, which operate in Malaysia and which are members of the Association of Banks in Malaysia (ABM). The banking system, comprising commercial banks, investment banks, and Islamic banks, is the primary mobiliser of funds and the main source of financing which supports economic activities in Malaysia. Commercial banks constitute the largest and most important group of all financial institutions in Malaysia with total assets of approximately RM1, 231 billion as at 30 June 2008. Therefore, this study focuses on the information effect on share prices, especially accounting earnings information for banks. It's a research on the usefulness of earnings and market-based security price.

According to the present theory of how capital markets behave, the drifts cannot occur if either the capital asset pricing model (CAPM) or the efficient market hypothesis (EMH) is valid. The efficient market hypothesis predicts that stock prices will reflect all publicly available information. Thus, if information is already publicly available, a positive announcement about a company will not, on average, raise the price of its stock because this information is already reflected in the stock price. However, the earlier empirical studies had proven that the real situation is different from the presented theory. There exists a relation between share prices and earnings announcements. Is this the situation that occurs in all stock prices? In Malaysia, stocks are traded in Bursa Malaysia. Bursa Malaysia is relatively small in size compared to some developed markets, but fairly efficient (Cheng, Shamsher & Nasir, 2008) in the weak and semi-strong forms. So, how will the share prices response to earning announcements for bank stocks in Malaysia?

Ball and Brown (1968) identified a significant relation between earnings information and stock returns. Reported earnings have been documented as an important determinant of stock prices in both accounting and finance literature. But the relation between earnings announcement and price changes of banks firms listed in Malaysia's stock market has not been well documented. This study intends (1) to examine the relation between stock price movements with earnings changes of banks listed on the Bursa Malaysia. (2) To determine the direction of banks stock prices response to the earnings announcements.

This study uses banks as the sample to examine the relation between stocks prices movements with earnings changes of the firms listed on Bursa Malaysia. The findings of this study are useful for investors, financial analysts, bankers and creditors in helping them to make more informed decisions. It is also useful for the professional practices as it may reveal the behavior of other sectors in Malaysia's stocks market.

Literature Review

The empirical evidence from Ball and Brown (1968) and later by Beaver's study (1968) suggests that the behavior of the price changes uniformly supports the contention that earnings reports possess information content. Observing a price reaction as well as a volume reaction indicated that not only are expectations of individual investors altered by the earnings report but also the expectations of the market as a whole, as reflected in the changes in equilibrium prices.

The contemporaneous relation between earnings innovations and common stock returns has been a focal point for empirical accounting research since Ball and Brown (1968). They established the usefulness of earnings to investors by testing the null hypothesis that accounting income numbers *per se* are not useful to share market participants. It indicated that negative earnings forecast errors (that is if the actual change in income is less than its conditional expectation) would result in the return on that firm's securities being less than what would have been expected; conversely positive earnings forecast errors are associated with positive unsystematic returns.

Some scholars include the impact of firm size on the share market's short-term response to earnings announcement in their studies. Byung (1988) outline the relation between firm size and the information content of annual earnings announcements. This study focus on previous work by Atiase (1985). which indicates that the information content of quarterly earnings releases is inversely related to firm size. This study explores the firm size related differential information content of earnings releases by focusing on annual earnings, assuming that the role of firm size as a proxy for the availability of predisclosure information may differ between

annual versus quarterly earnings. In addition, it also investigates how abnormal return reactions to annual earnings releases as a function of firm size change around the date of annual earnings releases. The results suggest that the firm-size related differential information content of earnings releases exists with annual earnings. Specifically, the extent of common stock return reactions around the annual earnings dates is inversely related to firm size, while market reaction to some early pre-disclosure dates is positively associated with firm size. The inverse relationship begins to show up a week prior to the earnings release date, and the positive relationship exists for days prior to that week. The latter finding is different from that reported by Atiase in that he does not detect the similar evidence with quarterly earnings. No appreciable pattern of association between return reactions and firm size is detected during the week following the release date.

Strong (1993) presents an empirical study on the relation between returns and earnings for United Kingdom. The study focus on the explanatory power of annual earnings figures for annual stock returns using UK data. The analysis is performed on a sample of companies, with varying year-ends, over the period 1969 – 1990. The research exploits Ohlson's theoretical contributions to the study of the valuation relevance of accounting information, and its complements a study by Easton and Harris on US data. Similar to the results of Easton and Harris, the results for the UK provide consistent evidence that both earnings levels and earnings differences have significant explanatory power for security returns. However, unlike the Easton and Harris, the evidence from individual year regressions suggests that changes in earnings rather than the level of earnings may be more important in explaining security returns in the UK.

Hew, Skeratt, Strong and Walker (1996) study the presence of post-earnings-announcement drift on London Stock Exchange using the data for seven half-years for a constant sample of 206 quoted companies. Separate result are presented for interim and final earnings announcements and the result are disaggregated by firm size. The empirical evidence suggest that there is a significant drift for the earnings announcements of small firms but not for the announcements of large firms.

Studies outlined by Cheng, Ariff and Shamsheer (2006) reports that share prices change significantly when accounting earnings changes are disclosed in an emerging capital market: the (a) strength, (b) consistency and (c) magnitude of the observed effect are not different from those reported in few institutionally more developed capital market. The findings suggest that accounting earnings change is a price relevant variable, and that earnings has a sole contemporaneous impact on share prices in the emerging market. Stock prices change ordinally and monotonically in a statistically significant manner in response to earnings increases and decreases are quite evident. The strength or magnitude of the correlation between the risk-adjusted price changes is quite high in the tests using long window figures. These results were robust with variations for firm size and industry effect. However, the finding on the firm specific variables on earnings-to-returns relation shows no significant effect. Therefore, only the unexpected earnings explained the abnormal returns during earnings announcement period.

The findings of Cheng (2008) in examining the earnings response of bank stocks and their factor suggest that accounting earnings is a price relevant variable for banks also in other Asia Pacific economies that earnings have a contemporaneous impact on share prices for banks in emerging and developed markets. That risks determinants affect the magnitude of the earnings response coefficients that stock prices change ordinally in a statistically significant manner in response to earnings increases and decreases is quite evident, as is the case of existing findings. The credit risk factor of banks contributed significantly to the returns-to-earnings

relation, which suggests that this is an important factor that influences the investors' revaluation of bank share price.

Data and Methodology

Research Design

The standard event study method is applied to identify the direction and magnitude of stock price revaluation effect from earnings changes. Sharpe's (1963) Market Model was used as a standard equilibrium model to estimate abnormal returns (AR) :

$$AR_{it} = R_{it}[\alpha_i + \beta_i R_{mt}] \quad (1)$$

with $R_{it} = \ln(P_{it}/P_{i,t-1})$ and $R_{mt} = \ln(I_t/I_{t-1})$. Where, in addition to terms already defined, \ln is the logarithm and I refer to market's composite index. The market parameters α_i and β_i are estimated by ordinary least square (OLS) regression over trading period, approximately 60 days to 3 months (estimation period) relative to the announcement month.

The returns were adjusted for thin trading bias using Fowler-Rorke's method. The resulting risk-adjusted abnormal returns of each observation is added and averaged across all the observations at to obtain the AAR_i as the simple arithmetic average. Next the average returns over $t = 1, \dots, T$ is cumulated as :

$$CAR = \sum_{t=1}^T AAR_t \times 100 \quad (2)$$

The cumulating is done over a price reaction window consistent with other studies in percentage and tested for statistical significance.

Analysis of Unexpected Accounting Earnings

Unexpected earnings are computed using the naïve expectation model (Cheng, Ariff, & Shamsheer, 2001) that assumes the next period's expectation is simply the current period's earnings. The accounting earnings are defined as follows :

$$EPS = \frac{(EASH - PREFDIV - MINOR)}{No.EQ} \quad (3)$$

where,

- EASH : earnings attributable to shareholders,
- PREFDIV : preferred dividends,
- No.EQ : number of shares measured as average outstanding,
- MINOR : minority interest,

Unexpected earnings (UEs) are computed using the naïve model;

$$UE_{it} = E_{it} - E_{i(t-1)} \quad (4)$$

The unit normal variables are estimated as follows :

$$SUE_i = UE_i / \sigma_{(UE_i)} \quad (5)$$

where $\sigma_{(UE_i)}$ is the standard deviation of UE

This transformation, which mitigates the effect of changing variance or heteroscedasticity on the variables adjusted for volatility differences, $\sigma_{(UE_i)}$.

Studies on return-to-earnings relation also examine the coefficient in the linear regression analysis between the unexpected earnings as independent variables and cumulative abnormal return as the dependent variables. Typically, inferences regarding the information content of earnings are based on the significance of the slope coefficient (b) and the explanatory power (R^2) of the following linear model estimated cross-sectionally and/or over time (pooled data):

$$CAR_{it} = a_1 + a_2 \times SUE_{it} + e_{it} \quad (6)$$

where,

CAR_{it} : is the risk-adjusted return in percentage for security i cumulated over period t,

SUE_{it} : is the standardized unexpected earnings, and

e_{it} : is a random disturbance term assumed to be normally distributed.

The slope coefficient of the regression, a_2 , is the earnings response coefficient (ERC).

Hypothesis

The major hypothesis in this study is that a direct relation in sign and magnitude exists between risk-adjusted abnormal returns, which represents adjusted share price changes, and unexpected earnings changes. The strategic hypothesis is :

Changes in stock prices are explained/ determined by the sign and the magnitude of the unexpected earnings changes.

Where

H_0 : There is no relation between stock prices and unexpected earnings announcement.

i.e. the average abnormal return (AR_i) is not greater than zero, at announcement date, and the t-statistic is insignificant at 0.05 level.

H_1 : There is relation between stock price changes and unexpected earnings announcement.

i.e. the average abnormal returns (AR_i) is greater than zero, at announcement date, the statistic is significant at 0.05 level.

The null will be accepted if there is no significant relation between stock price changes and unexpected earnings changes: i.e. t-statistics for AAR is not significant. If the earnings-to-price relation in the stock market is consistent with that documented in developed markets, we expect the null to be rejected in favor of the findings in the developed capital markets.

Data

The data set relating to the period 2000 to 2009 came from the monthly closing prices and earnings information for 17 banks which includes 8 commercial banks, 1 Islamic bank and 8 investment banks in Malaysia. The data is obtained from the following sources: Bursa Malaysia official website; the financial information from the Company Annual Reports; and the earnings announcements obtained from Bursa Malaysia official website. The sample consists of listed and traded companies in plantation sector over the test period. These companies are subjected to the following selection criteria: the companies should have recorded

traded prices 70 percent of the time; the companies are Malaysian-domiciled and not foreign companies; the annual reports containing accounting statements are publicly available; and the selected observations do not have any other confounding information released during the test window. Monthly closing prices of the selected stocks traded anytime during January 2000 to December 2009 were extracted. Information on capitalization changes (bonus and right issues) and dividends as in the Bursa Malaysia official website were used to make adjustments. The monthly returns calculated were screened for error using filter test. Monthly changes of 1 percent and above were checked for transcription errors.

Findings

Descriptive Statistics of Standardised Unexpected Earnings (SUE) and Cumulative Abnormal Returns (CAR)

The descriptive statistics of cumulative abnormal returns (CAR) over -12 to +6 months are summarized in Table 1. The mean is 0.035938 with a standard deviation of 0.414239. The returns range from -0.863764 to 3.307230. The standardized unexpected earnings, which is the change over a period of earnings is measured by dividing the variable by its standard deviation. As shown in the Table 1, the mean is 0.023156 with a standard deviation of 0.862738. It ranges from -2.732600 to 7.583693.

TABLE 1: Descriptive Statistics for SUE and CAR.

	CAR	SUE
Mean	0.0359	0.0231
Median	0.0041	0.0256
Maximum	3.3072	7.5836
Minimum	-0.8637	-2.7326
Std. Dev.	0.4142	0.8627
Sum	5.5345	3.5660
Sum Sq. Dev.	26.253	113.88
Observations	154	154

The Direction of Revaluation Effect for Annual Earnings Announcement

From the unexpected earnings that we have computed, there were 88 earnings increases and 66 earnings decreases. The market price is assessed back to 12 months before, and 6 months after announcement. The cumulative average abnormal returns are plotted against months relative to announcement date to show the trend. The graph is shown in FIGURE 1.

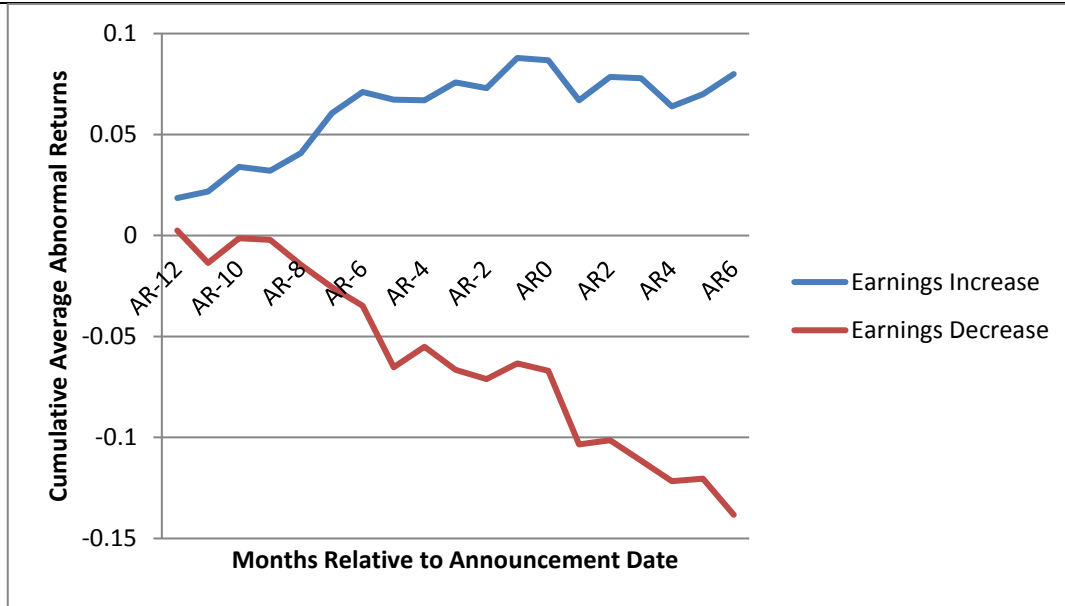


FIGURE 1: Risk-adjusted CAR around Annual Earnings Announcement on Banking Sectors Bursa Malaysia over 2000-2009; n = 154

Results on Price-Earnings Regression

Table 4, Panel 1, 2 and 3 show the regression results of the cumulative average abnormal return with the standardized unexpected earnings. Table 4, Panel 1 shows the regression using the CAR and SUE which having a positive unexpected earnings. The results show that the p-value of t-test for the standardized unexpected earnings is 0.0615 (significant at 10% level only), which is insignificant under 5% significance level. It implies that we fail to reject the null hypothesis that the coefficient of the standardized unexpected earnings is equal to zero. The finding suggests that there is weak relationship between standardized unexpected earnings and abnormal returns for the cases that having positive unexpected earnings.

TABLE 4: Regression Results for the Cases that Having Positive, Negative and Total sample of Unexpected Earnings

Dependent Variable: CAR				
Panel 1				
Positive Earnings				
Included observations: 88				
Variable	ERC	Std. Error	t-Statistic	Prob.
SUE	0.1001	0.0528	1.8950	0.0615
C	0.1224	0.0513	2.3863	0.0192*
Panel 2				
Negative Earnings				
Included observations: 66				
SUE	0.1345	0.0602	2.2338	0.0290*
C	-0.0709	0.0413	-1.7181	0.0906
Panel 3				

Total Sample				
Included observations: 154				
SUE	0.1573	0.0368	4.2740	0.0000****
C	0.0323	0.0317	1.0203	0.3092
R-squared	0.1073	Mean dependent var	0.0359	
Adjusted R-squared	0.1014	S.D. dependent var	0.4142	
S.E. of regression	0.3927	Akaike info criterion	0.9812	
Sum squared resid	23.437	Schwarz criterion	1.0207	
Log likelihood	-73.554	Hannan-Quinn criter.	0.9972	
F-statistic	18.266	Durbin-Watson stat	1.3322	
Prob(F-statistic)	0.0000			

Table 4, Panel 2 shows the regression using the CAR and SUE for the case of negative unexpected earnings. It shows a different result from Table 4. From the table, the p-value of t-test for the standardized unexpected variables is 0.0290, which implies that it has a significant coefficient of 0.1344 under 5% significance level. This suggests that for every one unit increase in standardized unexpected earnings, there is a 0.1344 increase in the abnormal returns.

Table 4, Panel 3, examine the overall relationship between the standardized unexpected earnings and abnormal returns, we combined both the positive and negative standardized unexpected earnings and run the regression. Table 4, Panel 3 shows the regression results. The standardized unexpected earnings variable has a significant coefficient of 0.1572 since the p-value of the t-test (0.000) is less than the 1% significance level. This suggests that for every one unit increase in standardized unexpected earnings, the abnormal return will increase by 0.1572. We can conclude that under the 1% significance level, we reject the null hypothesis that there is no relation between stock prices and unexpected earnings announcement. The finding of earnings-to-price relation in the stock market is consistent with that documented in developing and developed markets.

The model shown from the result is:

$$CAR_i = 0.0322 + 0.1572 SUE_i + e_i$$

The R-squared of the regression is 10.7%, which is consistent with the findings in other developed countries which reports low R-squared values between 3 to 10 percent (Cheng, et al 2006). However, the Durbin-Watson statistic (1.33) suggests that there is the grey area of autocorrelation.

Table 5 contains the results of White test which we employed to test for whether the variances of residuals are constant. The p-value is 0.9593, which is insignificant under 5% of significance level. Therefore, we do not reject the null hypothesis. The residuals in the model do not appear to have heteroscedasticity.

TABLE 5: Heteroskedasticity Test - White General Test

Heteroskedasticity Test: White

F-statistic	0.041585	Prob. F(2,151)	0.9593
Obs*R-squared	0.084776	Prob. Chi-Square(2)	0.9585
Scaled explained SS	1.332220	Prob. Chi-Square(2)	0.5137

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 05/27/11 Time: 15:48

Sample: 1 154

Included observations: 154

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.154957	0.071574	2.164992	0.0320
SUE	0.032163	0.113418	0.283581	0.7771
SUE^2	-0.004745	0.020250	-0.234312	0.8151
R-squared	0.000550	Mean dependent var	0.152190	
Adjusted R-squared	-0.012687	S.D. dependent var	0.867251	
S.E. of regression	0.872735	Akaike info criterion	2.584918	
Sum squared resid	115.0116	Schwarz criterion	2.644080	
Log likelihood	-196.0387	Hannan-Quinn criter.	2.608949	
F-statistic	0.041585	Durbin-Watson stat	1.696841	
Prob(F-statistic)	0.959279			

Conclusion

This paper studied the relationship between cumulative abnormal returns over a 12-month-window and the standardized unexpected annual earnings over the period of 2000 to 2011 in the banking sector of Malaysia. The event study shows that the directional effects of earnings announcements are strong. The positive unexpected earnings produce 7.5% % increase in abnormal returns, and the negative earnings announcement decrease the share price by more than 12% on average 5 days after the announcement. The effects are asymmetrical; the negative earnings produce higher negative abnormal returns. These results were confirmed in the regression analysis. The positive earnings announcement ERC is only significant at 10% level, whereas the negative ERC is significance at 5% level. However, overall the total sample ERC is strongly significant at 0.1% level. Comparing the magnitude of the ERC; Positive ERC = 0.1001; Negative ERC = 0.1345. The negative ERC is larger than the positive ERC. These results that we obtained suggest that there is a significant relationship between the standardized unexpected earnings and cumulative abnormal returns. It implies that stock prices change in a statistically significant manner in response to earnings increases and decreases. The finding of earnings-to-price relation in the stock market is consistent with that documented in developed and developing markets.

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