



Effectiveness of Technical Analysis Signals Around the Earning Announcements in Malaysian Stock Market

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Abstract

Technical analysis is an analysis that widely applied by the investor in the stock market. However, various corporate announcements could cause the market to react, and the most significant corporate announcement is the earnings announcement (1). Thus, this study examines the effectiveness of technical analysis signals around the earning announcements dates in Malaysian stock market. In doing so, this study applied and tested four technical indicators, namely Simple Moving Average (SMA), Relative Strength Index (RSI), Stochastic (K line), and Moving Average Convergence/Divergence (MACD) in Malaysian stock market. The sample of this study consisted of 30 largest capitalization companies from the main market of Kuala Lumpur Stock Exchange (KLSE). Meanwhile, the sample period covered from 2nd January 2014 to 31st March 2016. This study found that Moving Average Convergence/Divergence (MACD) significantly produced higher returns as compared to the other technical indicator before the earning announcement dates in financial year 2014 and 2015. The combined indicator of MA-MACD also found to have higher return in financial year 2015. The findings conclude that the technical analysis signals can be used to generate returns before earning announcement dates.

Keywords: Technical Analysis; Simple Moving Average (SMA); Relative Strength Index (RSI); Stochastic (K line); Moving Average Convergence/Divergence (MACD)

1. Introduction

Technical analysis is an analysis that widely applied by the investor in the stock market. Contradicting with the weak form market efficiency, technical analysis is using the past market data such as stocks price, volume and chart pattern to predict the future stock price movement. In the other word, technical analysis studied how the market reacted in the past and predict the market movement in the future. For Malaysian stock market, number of studies found that technical analysis able to generate profits even after the inclusion of transaction costs (1-4).

Various corporate announcements could cause the market to react, and the most significant corporate announcement is the earnings announcement (1). Earning announcement was the signalling device applied by manager to convey information about firm's outlook to the public (5). However, the study of Fan & Wong (6) revealed that the Malaysian companies had high concentrated ownership and low earnings informativeness. Along with this, more alternative information shall be demanded by the investor when the companies had higher level of concentrated ownership (7). Thus, this study employed the idea of (7) by using the signals generated by technical analysis as the alternative information. However, Holden & Subrahmanyam (8) predicted that informed traders usually trade aggressively around information releases and earn excess returns from trading. Thus, this action shall cause the market to react around the announcement dates. Sulistiawan & Hartono (7) also argued that market reactions before announcement dates were due to the information leakage or speculative actions. Prior study by Sulistiawan & Hartono (7) found that tech-

nical analysis signals can be used to produce profit before earnings announcements, but not after the earnings announcements in the Indonesian stock market.

This study aims to extend the study of Sulistiawan & Hartono (7) by examine the effectiveness of four common technical indicators' – simple moving average (SMA), stochastic oscillator (SO), relative strength index (RSI) and moving average convergence/divergence (MACD) signals around the earning announcements in Malaysian stock market. This study contributes to confirm the existing findings of (7) and expand the findings to other markets and included more technical indicators.

The remainder of the paper are organized and structured as follows. Section 2 reviews the relevant research papers. Next, Section 3 described the data and methodology used in this study. The Section 4 discussed four technical indicators tested in this study. Section 5 presents the results of this study. Lastly, Section 6 presents the conclusions of this study.

2. Literature Review

Technical analysis had been widely applied as an investment analysis tool, although it contradicted the Efficient Market Hypothesis (EMH) established by Fama (9). However, technical analysis is using past information such as historical stock prices and trading volume to predict the stock prices movements (10). In the context of technical analysis, (2) revealed that Malaysian stock market owned greater forecasting power as compared to the other developed market, for instances Hong Kong and Japan. In Malaysia, previous studies such as (3, 4) also found that the technical analy-

sis able to generate profits in Malaysian stock market even after the inclusion of transaction costs.

Regarding to the evidence of Malaysian stock market efficiency, earlier study of (11) found that Malaysian stock market is weak form efficient. However, later study by (12, 13) found that the Malaysian stock market was predictable and contradict with weak form efficiency. (13) studied the market efficiency of fourteen Asia-Pacific markets which included Malaysian stock market. These fourteen Asia-Pacific markets consisted of Australia, China, Hong Kong, India, Indonesia, Japan, Korea, Malaysia, Pakistan, Philippine, Singapore, Sri Lanka, Taiwan and Thailand. This study applied monthly closing data of these fourteen stock indices over the period 2004 to 2009. The findings concluded none of these fourteen Asia Pacific markets is weak form efficient as the monthly data of all markets do not follow random walks. Due to the market inefficiency found in these markets, investors may exploit this inefficiency and get arbitrage benefits.

Nevertheless, there were number of studies which conducted based on Malaysian stock market and studied the announcement effects on stock prices. In the context of Malaysian stock market, (14) tested the semi-strong form efficiency by studying the announcement effect of dividend and corporate earnings on the stock prices. Through this study, the stock prices found to be reacted to both of the dividend and earnings announcements, and specifically dividend announcement effect also found to be stronger than the earnings announcements effect. Hussin et al. (14) also revealed that increasing dividend announcement generated positive abnormal returns, while the decreasing dividend announcement generated negative abnormal returns. However, Yip et al. (15) found that the positive abnormal returns were associated with both of the dividend increase and dividend unchanged announcements. These findings in Malaysian stock market were in line with the dividend signalling hypothesis.

Besides that, Isa et al. (16) carried out a study on price behaviour around earnings announcement of newly listed shares in Malaysian stock market. They found that increasing earnings announcements were associated with positive abnormal returns, whereas the decreasing earnings announcements were associated with negative abnormal returns. Isa et al. (16) found that the stock price contained substantial earnings information before the actual earnings announcement is made. In addition, (17) also found the upward trend of stock price before the actual earnings announcement in Malaysian stock market and suggest that this might happened due to the information leakage.

Sulistiawan & Hartono (7) detected the stock price reactions around earnings announcement dates in Indonesian stock market by using the signals of technical analysis. Data of listed companies over the sample periods from 2007 to 2012 were obtained from Indonesian Stock Exchange (IDX). Their results indicated that technical analysis signals were reliable information and produced profits before earnings announcements. This implied that signals before earnings announcements able to help in generate profits; meanwhile the signals after earnings announcements unable to help in generate profits. Hence, these results suggested that the technical analysis signals before earnings announcement can be used by retail investors to detect informed investors reactions.

Based on the literature reviewed, the hypotheses of this study are constructed as below:

H₁: The technical analysis return before announcement is greater than the buy-and-hold return.

H₂: The technical analysis return after announcement is lesser than the buy-and-hold return.

3. Technical Indicators

As mentioned in the earlier section, this study applied four technical indicators, namely Moving Average (MA), Relative Strength Index (RSI), Stochastic Oscillator (SO) and Moving Average Convergence/Divergence (MACD) to track the market reaction

around the announcement dates. This section briefly discussed about four technical indicators applied in this study

3.1. Moving Average (MA)

The Simple Moving Average (SMA) of each stock is calculated as follows:

$$\text{Moving Average (MA)} = \frac{1}{n} \sum_{i=t-n+1}^t C_i = \frac{C_t + C_{t-1} + \dots + C_{t-n+1}}{n}$$

The short MA used in this study was 5 days, while the long MA used was 60 days. This combination of these short and long MA are selected as (4) found that these combination of MA earned significantly higher returns compared in the Malaysian stock market. Meanwhile, the buy (sell) signals generated when the short MA cross the long MA upward (downward).

3.2. Relative Strength Index (RSI)

The formula of Relative Strength Index (RSI) is calculated as follows:

$$\text{RSI} = 100 - \frac{100}{1 + \text{RS}}$$

Where RS refers to the Relative Strength. The Relative Strength Index (RSI) shall provide readings range from 0 to 100.

The Relative Strength (RS) is calculated based on the following formula:

$$\text{RS} = \frac{\text{Average of } x \text{ days' up closes}}{\text{Average of } x \text{ days' down closes}}$$

Consistent with (18), this study used a time period of 14 days for relative strength. Hence, the formula of RS is as follows:

$$\text{RS} = \frac{\text{Average of 14 days' up closes}}{\text{Average of 14 days' down closes}}$$

The numerator (Average of 14 days' up closes) refer to the average of increasing price occurred within 14 days period. The denominator (Average of 14 days' down closes) refer to the average of decreasing price occurred within 14 days period. The 'touch' method considered in this study. According to Wong et al. (18), the 'touch' method shall indicate oversold market and generates buy signal when RSI reach the reading of 30 and below. Meanwhile, there will be an overbought market and sell signals are generated when RSI reach the reading of 70 and above.

3.3. Stochastic Oscillator (SO)

Stochastic Oscillator used two lines – the %K line and the %D line for analysis. However, the %D line is more important and provided the major signals as compared to %K line. Both of the %K line and the %D line measured based on a percentage basis from 0 to 100. The particular stock is in oversold area when the D line is under 20 and overbought area when the D line is over 80. Throughout this study, the oversold area will consider as the buy signal, while the overbought area will consider as the sell signal.

3.4. Moving Average Convergence and Divergence (MACD)

Moving Average Convergence and Divergence (MACD) used to signal both the trend and momentum of a security (19). MACD line (also known as faster line) is the difference between 12 and 26 days exponentially smoothed moving average (EMA). Besides that, signal line (also known as slower line) is the 9 days EMA. Thus, the buy signals are emitted when faster line cross above the slower line. On the contrary, the sell signals are emitted when slower line cross above the faster line.

4. Data and Methodology

This study used daily data of 30 large capitalization listed companies from Bursa Malaysia. The sample period in this study covered from 2nd January 2014 to 31st March 2016. In line with (7), return of stock price is calculated as follows:

$$R_t = [CP_t - CP_{t-1}] / C_{t-1}$$

Where R_t refers to the daily returns of the particular stock at time t , CP_t refers to the closing price of the particular stock at time t , CP_{t-1} refers to the closing price of the particular stock at time $t-1$. Besides that, four technical indicators, namely Simple Moving Average (SMA), Relative Strength Index (RSI), Stochastic Oscillator (SO) and Moving Average Convergence/Divergence (MACD) had been applied and tested in this study. These four technical indicators were chosen due to its popularity. In addition, these four technical indicators also always been used in the financial website and analysis software such as Yahoo Finance and Chart Nexus respectively.

This study tests the capability of technical analysis in generating profits around the earning announcement dates. Hence, the earning announcement dates for the 30 large capitalization companies are firstly determined. However, only the earning announcement dates that occurred within financial year 2014 and 2015 are used. Second, signals of the technical indicators are determined by using the Chart Nexus software and followed by the calculation of stock prices returns. Two types of returns used in this study were technical analysis return and buy-and-hold return. Technical analysis returns refer to the average return generated by using technical analysis signals. Meanwhile, buy-and-hold return refers to the average daily return without using any analysis.

Next, this study will conduct t-test to test the following hypotheses:

H_1 : The technical analysis return before announcement is greater than the buy-and-hold return.

H_2 : The technical analysis return after announcement is lesser than the buy-and-hold return.

The t-statistics for the t-test is calculated as below:

$$t = \frac{R_T - R_B}{\sqrt{\left(\frac{\sigma_T^2}{n_T} + \frac{\sigma_B^2}{n_B}\right)}}$$

where R_T represented the technical analysis return (return generated by using technical analysis), R_B represented the buy-and-hold return (daily return), σ_T^2 represented the standard deviation of technical analysis returns, σ_B^2 represented the variance of buy-and-hold returns, n_T represented the number of observation for technical analysis returns, n_B represented the number of observation for buy-and-hold returns.

Four technical indicators tested in this study also used to produce several combinations for combined indicators. Combined indicators refer to the indicator that consisted of two or more technical indicator. The combined indicator only emits signals when the technical indicators used in this combination emitted the same signal. For instances, the combination of Moving Average (MA) and Relative Strength Index (RSI) only emitted the buy signal when both the MA and RSI technical indicators emitted the buy signals and vice versa.

Besides that, this study also used various periods for the purpose of analysis and comparison. The period refers to the number of days before and after the earning announcement date for the companies. The periods used in this study were 2 days before and 2 days after; 5 days before and 5 days after; 10 days before and 10 days after; 20 days before and 20 days after the earning announcement dates. Meanwhile, the announcement considered in this study was the earning announcement occurred in the fourth financial quarter in financial year 2014 and 2015.

5. Result and Discussion

Table 1: Summary Statistics of Stock Returns around Earnings Announcements (Financial Year 2014)

Period	5 days before	5 days after	10 days before	10 days after	20 days before	20 days after
N	150	150	300	300	600	600
Mean	-0.01	0.19	0.09	0.07	0.09	0.12
Min	-6.80	-3.54	-6.80	-3.60	-9.64	-5.72
Max	4.78	5.68	4.78	5.68	10.42	8.33
S.D	1.26	1.58	1.19	1.42	1.48	1.39

Notes:

N refers to the number of observation;

Mean refers to the average stock returns;

Min refers to the minimum stock returns observed;

Max refers to the maximum stock returns observed;

S.D refers to the standard deviation of the stock returns.

Table 1 reported the summary statistics of stock returns around the earning announcements in financial year 2014. For the period 5 days and 20 days around the earning announcements, the average stock returns before the earning announcements were greater than that of the earning announcements. However, for the period 15 days around the earning announcements, the average stock returns before the earning announcements were lesser than that of the earning announcements. Table 1 also indicated that the highest stock return before the earning announcement was 10.42% while the highest stock return after the earning announcement was 8.33%. Meanwhile, the lowest stock return before the earning announcement was -9.64% while the lowest stock return after the earning announcement was -5.72%.

Table 2: Summary Statistics of Stock Returns around Earnings Announcements (Financial Year 2015)

Period	5 days before	5 days after	10 days before	10 days after	20 days before	20 days after
N	150	150	300	300	600	600
Mean	-0.14	0.21	-0.10	0.11	-0.01	0.10
Min	-7.75	-3.67	-7.75	-6.84	-8.51	-8.79
Max	5.13	5.18	5.13	5.18	6.24	7.39
S.D	1.76	1.40	1.54	1.35	1.56	1.42

Notes:

N refers to the number of observation;

Mean refers to the average stock returns;

Min refers to the minimum stock returns observed;

Max refers to the maximum stock returns observed;

S.D refers to the standard deviation of the stock returns.

Table 2 reported the summary statistics of stock returns around the earning announcements in financial year 2015. For the period 5 days, 15 days and 20 days around the earning announcements, the average stock returns before the earning announcements consistently lesser than that of after the earning announcements. Table 2 also indicated that the highest stock return before the earning announcement was 6.24% while the highest stock return after the earning announcement was 7.39%. Meanwhile, the lowest stock return before the earning announcement was -8.51% while the lowest stock return after the earning announcement was -8.79%.

Table 3: Technical Analysis Returns around Earnings Announcements (Financial Year 2014)

Technical Indicator	5 days before	5 days after	10 days before	10 days after	20 days before	20 days after
MA	0.05	0.10	0.10	0.06	-0.29	0.01
	0.50 ¹	-0.64 ²	0.16 ³	-0.02 ⁴	-4.79 ⁵	-1.79 ⁶
RSI	0.00	0.01	0.01	0.00	-0.01	-0.01
	0.05	-1.42	-1.16	-0.84	-1.56	-2.26
SI	-0.05	0.02	-0.02	0.00	-0.03	0.00
	-0.39	-1.33	-1.60	-0.78	-1.90	-2.04
MACD	0.14	0.17	0.11	0.17	0.39	0.17
	1.33*	-0.18	0.30	1.19	3.94***	0.92

MA-RSI	0.00	-0.03	0.01	-0.01	0.00	-0.01
	0.05	-1.70	-1.16	-0.94	-1.41	-2.20
MA-SI	0.01	0.00	0.01	0.01	-0.02	0.01
	0.18	-1.52	-1.21	-0.73	-1.70	-1.97
MA-MACD	0.09	0.13	0.11	0.12	0.05	0.09
	0.93	-0.43	0.23	0.59	-0.56	-0.45
RSI-SI	0.00	0.03	0.00	0.01	-0.01	0.00
	0.07	-1.22	-1.32	-0.70	-1.56	-2.17
RSI-MACD	0.00	-0.01	0.01	0.00	0.01	0.00
	0.10	-1.60	-1.13	-0.86	-1.32	-2.13
SI-MACD	0.00	0.00	0.00	0.00	0.01	0.00
	0.07	-1.49	-1.32	-0.80	-1.33	-2.09
MA-RSI-SI	0.00	0.00	0.00	0.00	0.00	0.00
	0.07	-1.49	-1.32	-0.80	-1.43	-2.09
MA-RSI-MACD	0.00	0.00	0.00	0.00	0.00	0.00
	0.07	-1.49	-1.32	-0.80	-1.43	-2.09
MA-SI-MACD	0.00	0.00	0.00	0.00	0.00	0.00
	0.07	-1.49	-1.32	-0.80	-1.43	-2.09
ALL	0.00	0.00	0.00	0.00	0.00	0.00
	0.07	-1.49	-1.32	-0.80	-1.43	-2.09

Notes:

MA refers to the Moving Average Rules; RSI refers to the Relative Strength Index;

SO refers to the Stochastic Oscillator; MACD refers to the Moving Average Convergence Divergence.

^{1,3,5} The t-statistics that tests the hypothesis 1; ^{2,4,6} The t-statistics that tests the hypothesis 2.

*significant at 1% level of significance

**significant at 5% level of significance

***significant at 10% level of significance

Table 3 reported the technical analysis returns around the earning announcements in financial year 2014. The technical analysis returns refer to the stock returns obtained by using technical indicator. Table 3 also indicated that MACD was the only technical indicator that produces the highest returns in financial year 2014. In addition, only MACD significantly produced higher return during the period 5 days before the earning announcement at 10% significant level. Meanwhile, MACD also significantly produced higher return during the period 20 days before the earning announcement at 1% significant level. These findings thus provided support to hypothesis 1 and consistent with the findings of (7). However, there is no evidence found to support hypothesis 2. Obviously, the combination of three technical indicators and four technical indicators did not perform well and cannot be used to generate profits.

Table 4: Technical Analysis Returns around Earnings Announcements (Financial Year 2015)

Technical Indicator	5 days before	5 days after	10 days before	10 days after	20 days before	20 days after
MA	0.16	-	0.05	0.11	0.04	0.01
		-		-		-
	1.93** ¹	3.58 ²	1.64* ³	2.72 ⁴	0.81 ⁵	1.78 ⁶
RSI	-0.19	0.01	-0.11	0.01	-0.07	0.00
		-		-		-
	-0.32	1.70	-0.17	1.54	-0.97	1.70
SI	-0.10	0.04	-0.08	0.03	-0.02	0.02
		-		-		-
	0.27	1.47	0.26	1.03	-0.23	1.36
MACD	0.32	0.08	0.16	0.10	0.18	0.09
		-		-		-
	3.03**	-	2.80**	-	2.89**	-
	*	1.00	*	0.10	*	0.01
MA + RSI	0.00	0.03	0.01	0.02	0.00	0.01
		-		-		-
	1.00	2.10	1.21	1.64	0.22	1.80

MA + SI	0.00	-	0.01	-	0.01	-
		-		-		-
	1.00	2.02	1.18	1.58	0.24	1.75
MA + MACD	0.24	0.08	0.11	0.00	0.11	0.04
		-		-		-
	2.52**	-	2.24**	1.44	1.86**	0.90
	*	2.41				
RSI + SI	-0.10	0.02	-0.07	0.00	-0.03	0.01
		-		-		-
	0.29	2.01	0.33	1.47	-0.31	1.75
RSI + MACD	0.00	0.00	0.01	0.00	0.00	0.01
		-		-		-
	1.00	1.81	1.17	1.42	0.19	1.54
SI + MACD	0.00	0.00	0.00	0.00	0.00	0.00
		-		-		-
	1.00	1.81	1.12	1.42	0.21	1.65
MA,RSI,SI	0.00	0.00	0.00	0.00	0.00	0.00
		-		-		-
	1.00	1.81	1.12	1.42	0.15	1.65
MA,RSI,MACD	0.00	0.00	0.00	0.00	0.00	0.00
		-		-		-
	1.00	1.81	1.12	1.42	0.15	1.65
MA,SI,MACD	0.00	0.00	0.00	0.00	0.00	0.00
		-		-		-
	1.00	1.81	1.12	1.42	0.15	1.65
ALL	0.00	0.00	0.00	0.00	0.00	0.00
		-		-		-
	1.00	1.81	1.12	1.42	0.15	1.65

Notes:

MA refers to the Moving Average Rules; RSI refers to the Relative Strength Index;

SO refers to the Stochastic Oscillator; MACD refers to the Moving Average Convergence Divergence.

^{1,3,5} The t-statistics that tests the hypothesis 1; ^{2,4,6} The t-statistics that tests the hypothesis 2.

*significant at 1% level of significance

**significant at 5% level of significance

***significant at 10% level of significance

Table 4 reported the technical analysis returns around the earning announcements in financial year 2015. The technical analysis returns refer to the stock returns obtained by using technical indicator. Table 4 also indicated that Moving Average, MACD and MA-MACD were technical indicators that produced the higher returns in financial year 2015. MA significantly produced higher return during the period 5 days and 10 days before the earning announcement at 5% and 10% significant level respectively. MACD significantly produced higher return during the period 5, 10 and 20 days before the earning announcement at 1% significant level. On the other hand, combination of MA and MACD produced significant higher return during the period 5, 10 and 20 days before the earning announcement at 5% significant level. These findings thus provided support to hypothesis 1 and consistent with the findings of (7). However, there is no evidence found to support hypothesis 2. In line with the results obtained in financial year 2014, the combination of three technical indicators and four technical indicators did not perform well and cannot be used to generate profits.

6. Conclusion

This study found that the technical analysis signals can only been used as an informative signals to track the stock price movement round the earning announcement date. Specifically, only the Moving Average Convergence/Divergence (MACD) significantly produced higher returns in both of financial year 2014 and 2015. Interestingly, the combined indicator MA – MACD significantly produced higher returns before earning announcements in financial year 2015. Hence, this concludes that the selection of technical indicator is an important matter for the stock price analysis

around the earning announcement dates. In conclusion, Moving Average Convergence/Divergence (MACD) found to be the best technical indicator as it generated higher return as compared to the other indicator.

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References

- [1] Mlonzi VF, Kruger J, Nthoesane MG. Share price reaction to earnings announcement on the JSE-ALtX : A test for market efficiency. *South African Business Review*. 2011;15(3):142-66.
- [2] Bessembinder H, Chan K. The profitability of technical trading rules in the Asian stock markets. *Pacific-Basin Finance Journal*. 1995;3:257-84.
- [3] Heng FTK, Azizan NA, Yeap LW. Technical Trading Systems as Crystal Balls in Reducing Risk: The Malaysian stock market. *International Business Management*. 2012;6(2):140-6.
- [4] Lai MM, Balachandher KG, Nor FM. An Examination of the Random Walk Model and Technical Trading Rules in the Malaysian Stock Market. *Malaysian Accounting Review*. 2007;6(2):99-121.
- [5] Aharony J, Swary I. Quarterly Dividend and Earnings Announcements and Stockholders' Returns: An Empirical Analysis. *The Journal of Finance*. 1980;35(1):1-12.
- [6] Fan JPH, Wong TJ. Corporate Ownership Structure and the Informativeness of Accounting Earnings in East Asia. *Journal of Accounting and Economics*. 2002;33(3):401-25.
- [7] Sulistiawan D, Hartono J. Can Technical Analysis Signals Detect Price Reactions Around Earnings Announcement?: Evidence from Indonesia. *The International Journal of Business and Finance Research*. 2014;8(1):113-23.
- [8] Holden CW, Subrahmanyam A. Long-Lived Private Information and Imperfect Competition. *Journal of Finance*. 1992;47(1):247-70.
- [9] Fama EF. Efficient capital markets: A review of theory and empirical work. *Journal of Finance*. 1970;25(2):383-417.
- [10] Dbouk W, Jamali I, Soufani K. The effectiveness of technical trading for Arab stocks. *Emerging Markets Finance and Trade*. 2014;50(4):5-25.
- [11] Nassir AM, Ariff M, Mohamad S. Weak-Form Efficiency of the Kuala Lumpur Stock Exchange: An Application of Unit Root Analysis. *Pertanika J Soc Sci & Hum*. 1993;1(1):57-62.
- [12] Balkiz O. Testing Informational Market Efficiency on Kuala Lumpur Stock Exchange. *Jurnal Ekonomi Malaysia*. 2003;37:3-20.
- [13] Hamid K, Suleman MT, Shah SZA, Akash RSI. Testing the Weak Form of Efficient Market Hypothesis: Empirical Evidence from Asia-Pacific Markets. *International Research Journal of Finance and Economics*. 2010(58):121-33.
- [14] Hussin BM, Ahmed AD, Ying TC. Semi-Strong Form Efficiency: Market Reaction to Dividend and Earnings Announcements in Malaysian Stock Exchange. *IUP Journal of Applied Finance*. 2010;16(5):36-60.
- [15] Yip PP, Isa M, Kester GW, Lee SP. Share Price Reaction to Dividend Announcements and the Interaction with Earnings Announcements in the Malaysian Stock Market. *Asian Journal of Business and Accounting*. 2010;3(2):101-20.
- [16] Isa MM, Ahmad R, Chan YW. Price behavior around earnings announcements of newly listed shares. *Asian Academy of Management Journal*. 1996;1(2):48-56.
- [17] Sanda AU, Ang J, Gupta GS. Behaviour of Excess Stock Return Around Earnings Announcement Day: A Test of the Efficiency of Kuala Lumpur Stock Exchange. 1998. p. 99-113.
- [18] Wong W-K, Manzur M, Chew B-K. How rewarding is technical analysis? Evidence from Singapore stock market. *Applied Financial Economics*. 2010;13(7):543-51.
- [19] Nithya J, Thamizhchelvan G. Effectiveness of Technical Analysis in Banking Sector of Equity Market. *IOSR Journal of Business and Management*. 2014;16(7):20-8.

Appendix

Appendix I: List of Companies and Announcement Dates (Financial Year 2014)

Name	Announcement Dates	Name	Announcement Dates
AMMB Holdings Bhd	20/5/2014	Maxis Bhd	6/2/2015
Astro Malaysia Holdings Bhd	31/3/2014	Malayan Banking Bhd	26/2/2015
British American Tobacco	16/2/2015	MISC Berhad	6/2/2015
Berjaya Sports Toto Bhd	17/6/2014	Public Bank Bhd	5/2/2015
CIMB Group Holdings Bhd	27/2/2015	Petronas Chemicals Group Bhd	18/2/2015
DIGI.Com Bhd	9/2/2015	Petronas Dagangan Bhd	12/2/2015
Genting Malaysia Bhd	26/2/2015	Petronas Gas Bhd	17/2/2015
Genting Bhd	26/2/2015	PPB Group Bhd	27/2/2015
Hap Seng Consolidated Bhd	26/2/2015	RHB Capital Bhd	27/2/2015
Hong Leong Bank Bhd	26/8/2014	Sime Darby Bhd	29/8/2014
Hong Leong Financial Group Bhd	26/8/2014	Sapurakencana Petroleum Bhd	24/3/2014
IHH Healthcare Bhd	26/2/2015	Tenaga Nasional Bhd	31/10/2014
IOI Corporation Bhd	20/8/2014	TELEKOM Malaysia Bhd	26/2/2015
KLCC Property Holdings Bhd	26/1/2015	Westports Holdings Bhd	11/2/2015
Kuala Lumpur Kepong Bhd	19/11/2014	YTL Corporation Bhd	28/8/2014

Appendix II: List of Companies and Announcement Dates (Financial Year 2015)

Name	Announcement Dates	Name	Announcement Dates
AMMB Holdings Bhd	22/5/2015	Maxis Bhd	4/2/2016
Astro Malaysia Holdings Bhd	30/3/2015	Malayan Banking Bhd	25/2/2016
British American Tobacco	17/2/2016	MISC Berhad	5/2/2016
Berjaya Sports Toto Bhd	18/6/2015	Public Bank Bhd	3/2/2016
CIMB Group Holdings Bhd	25/2/2016	Petronas Chemicals Group Bhd	23/2/2016
DIGI.Com Bhd	5/2/2016	Petronas Dagangan Bhd	19/2/2016
Genting Malaysia Bhd	23/2/2016	Petronas Gas Bhd	24/2/2016
Genting Bhd	23/2/2016	PPB Group Bhd	29/2/2016
Hap Seng Consolidated Bhd	24/2/2016	RHB Capital Bhd	26/2/2016
Hong Leong Bank Bhd	26/8/2015	Sime Darby Bhd	26/8/2015
Hong Leong Financial Group Bhd	26/8/2015	Sapurakencana Petroleum Bhd	24/3/2015
IHH Healthcare Bhd	25/2/2016	Tenaga Nasional Bhd	29/10/2015
IOI Corporation Bhd	24/8/2015	TELEKOM Malaysia Bhd	24/2/2016
KLCC Property Holdings Bhd	21/1/2016	Westports Holdings Bhd	3/2/2016
Kuala Lumpur Kepong Bhd	18/11/2015	YTL Corporation Bhd	20/8/2015