Overnight Policy Rate Changes and Stock Market Reactions

– The Experience in Malaysia

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Abstract

This paper examines stock market reactions to changes in the overnight policy rate (OPR) by the Monetary Policy Committee (MPC) in Malaysia. The paper examines the effects of 44 Monetary Policy Committee meetings from January 2006 until December 2011. During this period the OPR has been revised upward six times, maintained at the same level for 35 times, and revised downward three times. The study fails to detect any significant market behavior in the days leading to and immediately after the announcement of the OPR is made. This implies that the stock market may have anticipated the information before the MPC meeting. Interestingly, the stock market seems to respond to the cut in the OPR judging by the higher mean daily return as well as lower standard deviation reported in the post-announcement period. In fact, prior to a reduction in the OPR, the stock market registers a negative mean daily return in the pre-announcement period. The mean daily return increases in the days after the OPR cut. The stock market seems to benefit from the downward revision of the OPR. Perhaps, the central bank can use this policy instrument as a means to stimulate the stock market.

Keywords: Overnight Policy Rate, stock price, stock market, Bursa Malaysia, event study, Efficient Market Hypothesis

1. Introduction

Interest rates and stock prices are hypothesized to have a negative relationship. The inverse relationship can be traced from the Dividend Discount Model (Note 1) which states that the current stock price (P_0) is equal to the expected future dividends (D_t) discounted to the present time at the required rate of return (k). Changes in the interest rate can affect the pricing model in two different ways. First, as the interest rate increases, the interest rate change will influence the discount factor, i.e. the required rate of return, by pushing it upward. As a result, the present value of the dividends will decrease, thus reducing the stock price. The opposite is assumed to take place in the event of interest rate cut. Second, the increase in interest rates will affect firms with heavy debt loads since these companies will incur higher interest expenses. Such a situation will affect the amount of interest expenses which will affect net income and expected, future dividends. The higher interest rate will result in lower net income which will affect the anticipated dividend payments, thus affecting the present value of the dividend stream, leading to a lower stock price. Likewise, a drop in the interest rate will bring about a reverse scenario.

Ahmad, et al. (2009) believe that changes in the interest rate will influence the stock price due to portfolio switching activities. The authors claim is based on their finding that the interest rate is inversely related to the bond yield in Malaysia. They believe that under different interest rate scenarios, investors will substitute stocks for bonds, and vice versa, in rebalancing their investment portfolios. An increase in the interest rate will reduce bond prices, attracting investors to buy cheaper bonds in view of possible higher returns in the future. This portfolio switching activity is executed at the expense of stocks. The portfolio switching from stocks to bonds will result in the excess supply of stocks in the market, thus pushing stock prices down. Similar logic is assumed in the event of a drop in interest rates whereby the demand for stocks will increase as a result of investors selling bonds with relatively high prices and switching to stocks with relatively low prices.

Changes in interest rates carry important information to investors which is useful in the formulation of their investment strategies. Consistent with the Efficient Market Hypothesis (EMH), news about interest rate changes is expected to influence the behavior of stock prices. Against the backdrop presented earlier, one can expect that stock prices will respond to the arrival of the news of interest rate changes. One can expect that the increase in interest rates will result in a decrease in stock prices and vice-versa. Within the framework of the EMH, spontaneous market reactions would eliminate any possibilities of exploitation of the interest rate information for abnormal profits. As such, news pertaining to factors that can influence the direction of the interest rate would be of interest to stock market participants. McGowan, Jr. and Sulong (2008), Hashemijoo et al. (2012) and Zaluki et al. (2012) provide evidence that the Malaysian stock market responds significantly to news and information that are pertinent to stock prices. News on interest changes must definitely be under the investors' radar and it is important to know the effects on the stock market.

In Malaysia, interest rates are influenced by the Overnight Policy Rate (OPR) which is used by the central bank, Bank Negara Malaysia (BNM), as a tool in pursuing the monetary policy. The OPR is an indicator of the monetary policy stance of BNM and it serves as a target rate for the day-to-day liquidity operations of the BNM. Any change in the monetary policy stance of the MPC would be signaled by a change in the OPR. The OPR is set by the Monetary Policy Committee (MPC) (Note 2) which meets at least six times a year. The OPR serves as the primary reference rate in determining other market rates (Note 3). Majid (2010) provides empirical evidence that Malaysian financial institutions adjusted the various interest rates – both lending and deposit rates, in response to the easing and tightening of BNM monetary policy. Foo (2009) discovers that changes in the interest rate have negative impacts on the stock market index, both in the long- and short-runs. Based on these reported findings, news on OPR changes is expected to trigger some sort of market reactions that will affect the behavior of stock prices.

Given the significant role of the OPR in influencing interest rates in Malaysia, it is interesting to see how stock market participants react to announcements by the MPC on the level of OPR. During the period from January 2006 to December 2011, MPC had 44 meetings to review the OPR (Note 4). During this period, MPC has revised the OPR upward six times and downward three times. For the remaining 35 times, the OPR was maintained at the same level as in its previous meeting. One can hypothesize that the MPC meeting is a very significant event as the MPC provides an important piece of news that affects everyone in the country. For stock prices, for instance, an increase of the OPR is expected to have a negative effect on the stock market while a decrease in the OPR would have a positive impact on stock prices. The stock market is expected to behave as usual in the event that the OPR is maintained at the same level. These stock market reactions, if any, should be reflected in the movement of the stock prices. Therefore, this paper investigates the stock market responses to the announcement of the OPR in Malaysia. It is interesting to know how the stock market behaves at the time surrounding the announcement date. The behavior of the stock market during this period will reflect the level of efficiency of the stock market within the framework of EMH.

This paper is divided into five sections.   The introduction provides the rationale for the paper.   Section 2 discusses the literature review.   This is followed by Section 3 which provides a discussion of the data and methodology applied in this paper.   Section 4 presents the empirical results and a discussion of the results.   Lastly, Section 5 offers the conclusion that can be drawn from this study.

2. Literature Review

Previous studies have documented evidence that suggests the negative relationship between interest rates and stock prices. For example, Alam and Uddin (2009) examine the relationship between the stock index and interest rates for fifteen developed and developing countries, i.e. Australia, Bangladesh, Canada, Chile, Colombia, Germany, Italy, Jamaica, Japan, Malaysia, Mexico, Philippine, S. Africa, Spain, and Venezuela. For all of the countries, the empirical results indicate that interest rate changes have a significant negative relationship with share prices. Similar findings are reported by Moya-Martínez, et al. (2003) who investigate the relationship between movements in interest rates and changes in the Spanish stock market for industries across time and frequencies. The empirical results indicate that Spanish industries show, a statistically significant interest rate sensitivity, although the extent of the interest rate sensitivity varies greatly across industries and depends on the time horizon under consideration. As expected, the authors find a negative link between interest rate changes and stock returns which leads them to acknowledge the important role of interest rates as a key driver of stock market returns for companies in Spanish industries.

Panda (2008) addresses an important question of whether interest rates really matter for stock markets. The author examines the nature of the relationship and of the direction of causality between interest rates and stock price changes in India for the period from April 1996 to June 2006. The monthly averages of the BSE SENSEX and

NIFTY are used to measure stock prices and the month-end yields on a 10-year government security and TB-15-91 are used to proxy for long-term and short-term interest rates, respectively. The results show that there is a long-run relationship between interest rates and stock price changes. A unidirectional long-run causality is found from interest rates to stock prices. The short-run causality is found from long-term interest rates to stock prices. Not only do interest rates Granger-cause the stock price changes, interest rate changes Granger-cause the volatility of stock returns. Zakaria and Shamsuddin (2012) examine the relationship between stock market returns volatility in Malaysia with five selected macroeconomic volatilities including interest rates. Based for monthly data from January 2000 to June 2012, the authors find that interest rates Granger-cause stock market volatility.

Given the documented evidence that suggests the negative relation between interest rate and stock prices as well as the short-run and long-run relationship between the two, in addition to the Granger causality relationship, it is not surprising to find that stock markets react to changes in the interest rate which is an important tool in pursuing monetary policy by central banks. Rigobon and Sack (2003) find empirical results that indicate that monetary policy reacts significantly to stock market movements, with a 5% rise (fall) in the S&P 500 index increasing the likelihood of a 25 basis point tightening (easing) by about a half.   Rigobon and Sack (2004) show that the response of asset prices to changes in monetary policy can be identified based on the increase in the variance of policy shocks that occurs on days of FOMC meetings and of the Chairman's semi-annual monetary policy testimony to Congress. The results indicate that an increase in short-term interest rates results in a decline in stock prices and in an upward shift in the yield curve that becomes smaller at longer maturities.

Rosa (2013) examines the financial market effect of the release of Federal Open Market Committee (FOMC), the Federal Reserve's monetary policy-making body, minutes on U.S. asset prices using a high-frequency analysis. The release of the minutes is shown to induce "higher than normal" volatility across different asset classes. The author believes that the empirical results indicate that the FOMC minutes provide market-relevant information since the themes of the FOMC minutes are correlated with current and future economic conditions. These empirical results explain the findings of Lucca and Moench (2013) who document large average excess returns on U.S. equities in anticipation of monetary policy decisions made at scheduled meetings of the FOMC in the past few decades. These pre-FOMC returns are found to have increased over time and account for sizable fractions of total annual realized stock returns. Other major international equity indices experienced similar pre-FOMC returns. However, these reactions are not found in the event of changes in other major U.S. macroeconomic new announcements. Hence, the FOMC announcement proves to be a significant event to the stock market.

Goukasian and Whitney (2006) analyze the reaction of the stock market to monetary policy announcements by the FOMC. Their findings show that the full information conveyed by the Fed is not immediately incorporated into asset prices. They find evidence of a statistically significant abnormal return to a broad market index on the day after the announcement by the FOMC of its monetary policy actions. Using data from the federal funds futures market to measure the expected and unexpected changes in the federal funds rate they find that the stock market reacts to unexpected changes in monetary policy by the FOMC.   Positive and statistically significant abnormal stock market returns are detected on the day after the FOMC makes its monetary policy announcements. This is contrary to the finding by Filbien and Fabien (2011) who examine the Eurozone stock market reactions to European Central Bank (ECB) monetary policy announcement surprises by estimating the unexpected changes on the basis of the market's expectations released in the financial press just before the monetary policy announcement. The results show that the impact of ECB monetary policy surprises is not significant for Euro-zone stock markets. However, when they account for business conditions, they find a significant stock market reaction around unexpected ECB monetary policy announcements.

Kurov (2012) believes that information communicated through monetary policy statements has important business cycle dependent implications for stock prices. He provides evidence that the state dependence in the stock market's response is explained by information about the expected equity premium and future corporate cash flows contained in monetary policy statements. He shows that the average stock returns on days are dependent of the scheduled FOMC meetings and in the impact of monetary policy statements on stock and bond return volatility. This finding is consistent with Bohl et al (2007) who believe that monetary policy decisions of the ECB are well anticipated by the market implying that the central bank successfully communicates its monetary policy. This is based on the negative and statistically significant relationship that they observe between unexpected ECB decisions and European stock markets performance. Not surprisingly, Kholodilin, et al. (2008) find that monetary policy tightening has a heterogeneous impact on the Euro Area sectors on the day the monetary policy is publicly announced. They offer statistical evidence which shows that an increase in the interest rate by 25 basis points results in a decrease in stock

market in the range between 0.3% and 2.0% on the day the monetary policy shock is publically announced. At the aggregate stock market level, the corresponding decrease approximately constitutes 1.0%.

The documented evidence presented above suggests that the changes in the level of interest rate, as reflected in the announcements of the monetary policy, will affect the stock market behavior given the implications that they can bring about. As stipulated by the EMH, stock market should respond favorably to the anticipated cut of the OPR but not when OPR is pushed upward. As such, it is hypothesized that the drop in the OPR will result in the stock price to move upward, thus producing significant positive daily return in the immediate post-announcement period. Likewise, the increase in OPR will result in the drop of the stock prices which will lead to the significant negative daily returns in the days after the announcement of OPR hikes. The stock market is expected to be indifference in the event where OPR is set at the same level as in the previous term. Using the event study method, this study is designed to monitor the daily stock return   in the period before and after the announcement of OPR decision with the hope of capturing the trend of significant returns (if any) which will indicate whether (or not) the stock market in informationally efficient as posited by the EMH

3. Data and Methodology

This study uses the daily FTSE Bursa Malaysia Kuala Lumpur Composite Index (KLCI) as the proxy for stock prices. The data is obtained from https://finance.yahoo.com/. Using the data set that runs from January 2006 to January 2012, the daily KLCI covering the 60 days before and after each MPC's meeting date are analyzed. The reason for doing so is to detect for any significant prices changes in the days before and after the announcement. The 120-day period is chosen as it covers a longer timeframe that would enable a wider scope of observation for any unusual activities in the days before and after the MPC meeting. Overall, there are 44 meetings during the period under study, resulting in the OPR being revised upward six times and downward three times and in the other 35 meetings, the OPR was maintained at the same level as in the previous period. Based on the pre-announcement and post-announcement data, the daily return is computed using the following formula:

$$R_{i,t} = \left(\frac{KLCI_{i,t} - KLCI_{i,t-1}}{KLCI_{i,t-1}} \right) x\ 100\%$$

where,

R	=	daily return
i	=	the respective MPC meeting
$KLCI$	=	the adjusted closing KLCI
t	=	the pre- and post-announcement period

The data are grouped into four categories – the first category includes all 44 meetings while the other three categories are based on the decisions made by the MPC – downward revisions, upward revisions, and no revisions. For each category, the average daily return is computed and this value is tested using the one sample t-test to determine whether the daily returns surrounding the announcement date are statistically equal (or not) to zero. Based on EMH, the stock market is expected to incorporate the impending decisions by MPC on the OPR into the pricing mechanisms. As such, the mean daily return is hypothesized to be zero. Further analysis is performed to determine whether there is any significant difference between the mean daily returns over the three different categories – upwards, downwards and no changes. Employing ANOVA, this study seeks to determine whether the average daily returns during the pre- and post-announcement periods between the three categories are equal or otherwise.

4. Empirical Results and Discussion

Table 1 presents the descriptive statistics for the four different data categories during the period under study. Based on the results for the overall data, the range between the maximum and the minimum returns is found to be wider in the period after the announcements are made compared to the period before the announcement, i.e. 0.73% - (-0.37%) = 1.10% as opposed to 1.06% - (-0.59%) = 1.65%. This wider range is confirmed by the standard deviation which is found to be greater in the post-announcement period, i.e. 0.27%, than in the pre-announcement period which is only 0.19%. Nonetheless, the average daily returns during the two periods are about the same, i.e. 0.42% vs. 0.38%. This finding implies that the OPR announcements seem to affect the volatility of the stock returns rather than the daily returns. The pattern of the mean daily return can be seen in Figure 1a. As illustrated in the graph, the mean daily fluctuates more aggressively in the post-announcement period. Figure 1c confirms the high volatility of the mean daily return in the period after the announcement is made.

Table 1. The descriptive statistics for the average daily return during the pre- and post-announcement periods for the four categories.

		Max	Min	Avg	Std Dev
Overall	Before	0.7300	-0.3650	0.0420	0.1890
	After	1.0610	-0.5860	0.0380	0.2690
Upwards	Before	0.5041	-0.3355	0.0359	0.1822
	After	0.4697	-0.5221	0.0374	0.2276
No Change	Before	0.8867	-0.3883	0.0555	0.2125
	After	1.2527	-0.7264	0.0271	0.3155
Downwards	Before	1.9770	-1.6233	-0.1166	0.7615
	After	1.7094	-0.9788	0.1722	0.5765

A further inspection of the standard deviation for each data set seems to provide some support to the earlier claim. For the three sets of data categories, it is found that the standard deviation in the post-announcement periods is greater than that in the pre-announcement periods in two of the three categories. This can be seen in Figure 2c and 3c where the range between the maximum and minimum values is found to be more volatile in the post-announcement period for the two cases, i.e. 0.18% vs. 0.23% and 0.21% vs. 0.32% respectively. The difference in volatility of the stock returns in the pre- and post-announcement periods explains the wider range of the mean daily return in the post-announcement period as shown in Figure 2a and 3a (i.e. 0.50% - (-0.34%) vs. 0.47% - (-0.52%) in the case of upward revision and 0.89% - (-0.39%) vs. 1.25% - (-0.73%) for when OPR is being maintained). The standard deviation for the two periods has also increased, i.e. from 0.18% to 0.23% for the former and from 0.21% to 0.32% for the latter. Nonetheless, the pattern is only found to be so in the case of upward OPR revision and when there is no change in OPR.

When the OPR is revised downward, the range of difference between the maximum and minimum values reduces from 1.98 - (-1.62) = 3.60 to 1.71 -(-0.98) = 2.69. This can be seen graphically in Figure 4c. This result suggests that the volatility of stock returns decreased after the announcement of the OPR cuts. As for the mean daily return, the empirical results show inconsistent findings for the period when there is no change in the OPR versus when the OPR is revised downward. For the former, the post-announcement period registers smaller mean daily returns than before the announcements are made (0.0555 vs. 0.0271). However, for the latter, the opposite is true where the mean daily return is greater in the post-announcement period (-0.1166 vs. 0.1722). This result is consistent with the hypothesized negative relationship between the OPR and stock returns. Unfortunately, the trend does not hold in the case of upward revision as the average daily return is found to be almost the same in the two periods, i.e. 0.0359 vs. 0.0374. Therefore, the negative relationship cannot be upheld in all situations as the expected finding cannot be established in the event when the OPR is revised upward and when there is no change in the OPR. Perhaps, the one-sided relationship can be attributed to the investors' favorable response towards the anticipated increase in the stock price. This is consistent with the finding by Sankaraguruswamy and Mian (2008)   who find that the prevailing sentiment sways stock price response to news in the direction of the sentiment - the positive stock price response to good news increases with sentiment, whereas the negative stock price response to bad news decreases with sentiment.

The empirical results from the statistical tests provide support to the findings presented earlier. As presented in Table 2, despite the differences in the mean daily return and the standard deviation for the overall data set, the null hypothesis of equal means and equal variances during the two periods cannot be rejected (at 5% level), i.e. p-values equal 0.121 and 0.947 respectively. This implies that the announcement about OPR made after the MPC meeting does not seem to affect the stock return and its volatility.   Further inspection of the three data sets confirms the observation described earlier. The mean daily return and the standard deviation for the cases involving upward OPR revisions and no changes are found not to be statistically different. This is based on the failure to reject the null hypothesis at 5% level for both cases, i.e. p-values of 0.968 and 0.173 for the former and 0.563 and 0.099 for the latter. However, it is not the case for the downward revisions of the OPR – the null hypothesis for equal means and variances is rejected at 5% level, i.e. p-values of 0.021 and 0.026 respectively. This finding indicates that the stock market responds favorably to OPR cuts as evident from the higher mean daily returns in the post-announcement period. In addition, the stock market becomes less volatile in the subsequent period after the announcement of a decrease in the OPR.

A couple of interesting findings emerge from Figure 2b, 3b and 4b which represent the cumulative mean daily return for the three different scenarios. Based on the graphical depiction, no significant surge of the cumulative mean daily return is detected in the subsequent period after the announcement is made. In other words, the stock market does not seem to behave in an extraordinary manner after the announcement is made. Such a finding is consistent with the premise of EMH whereby in an efficient market, market participants should not be able to capitalize on any piece of information to obtain abnormal profits. In a way, this finding suggests that the Malaysia stock market participants may have impounded the information in the pricing process in anticipation of OPR results. This is an indication that the Malaysian stock market is efficient at the semi-strong form level.

Table 2: The results for test of equal means and variances in the pre- and post-announcement periods

|		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	Sig. (2-tailed)
OVERALL	Equal variances assumed	2.445	.121	.066	.947
	Equal variances not assumed			.066	.947
UP	Equal variances assumed	1.878	.173	-.041	.968
	Equal variances not assumed			-.041	.968
SAME	Equal variances assumed	2.760	.099	.580	.563
	Equal variances not assumed			.580	.563
DOWN	Equal variances assumed	5.073	.026	-2.341	.021
	Equal variances not assumed			-2.341	.021
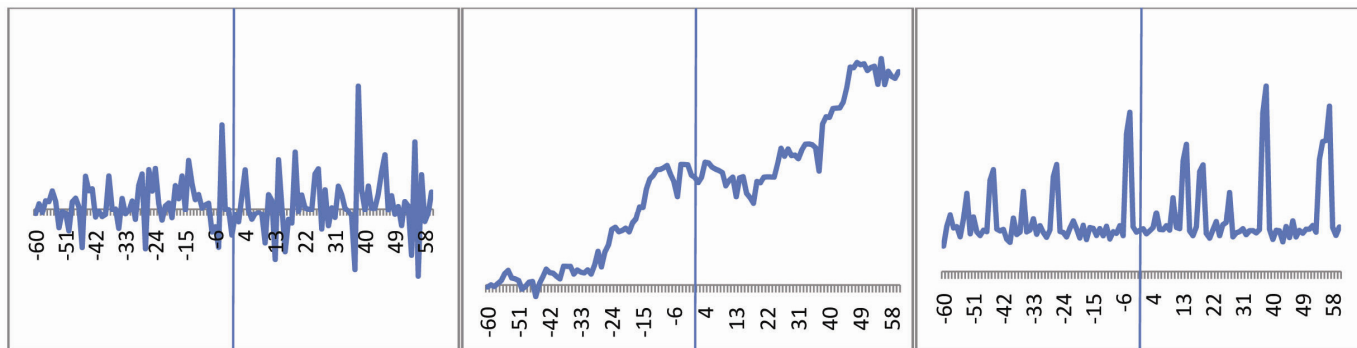
Fig.1a: Mean daily return for all announcements.   Fig. 1b: Cumulative daily return for all announcements.   Fig. 1c: Std. dev. of mean daily return for all announcements.
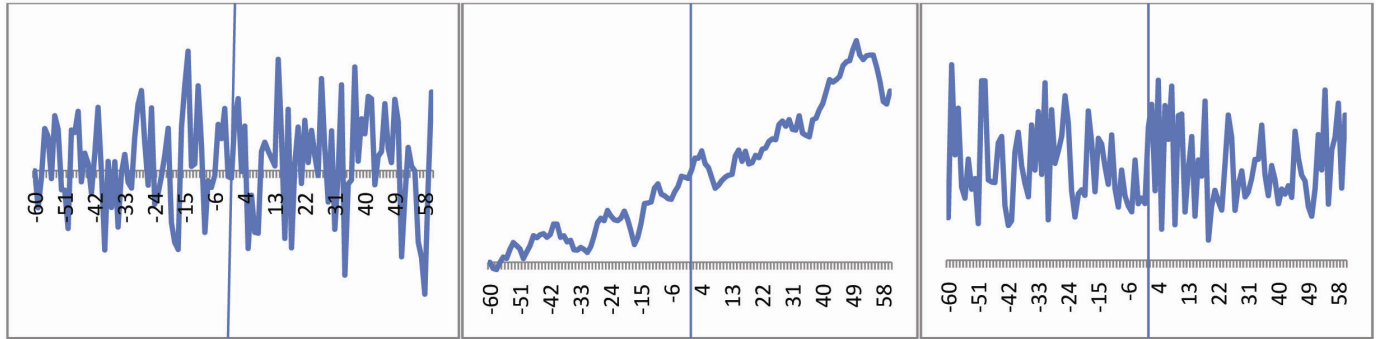
Fig.2a: Mean daily return for upward revision. Fig. 2b: Cumulative daily return for upward revision. Fig. 2c: Std. dev. of mean daily return for upward revision.
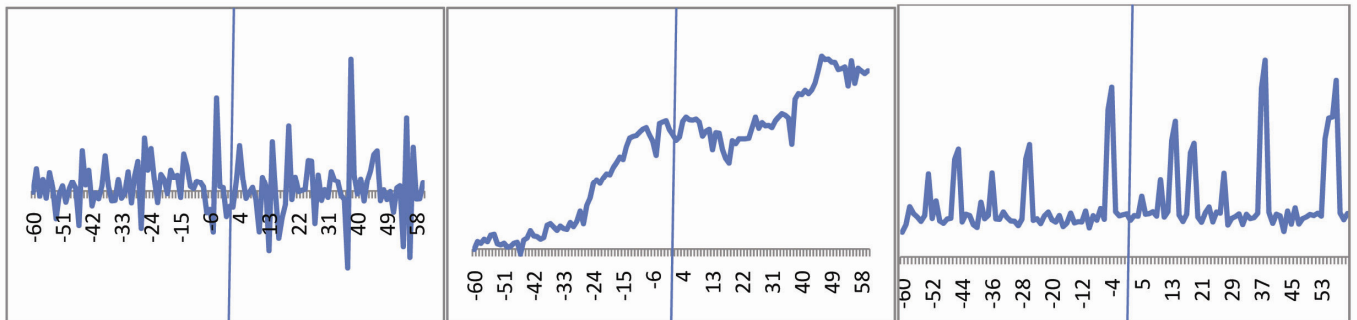

Fig.3a: Mean daily return for no change.   Fig. 3b: Cumulative daily return for no change. Fig. 3c: Std. dev. Of mean daily return for no change.
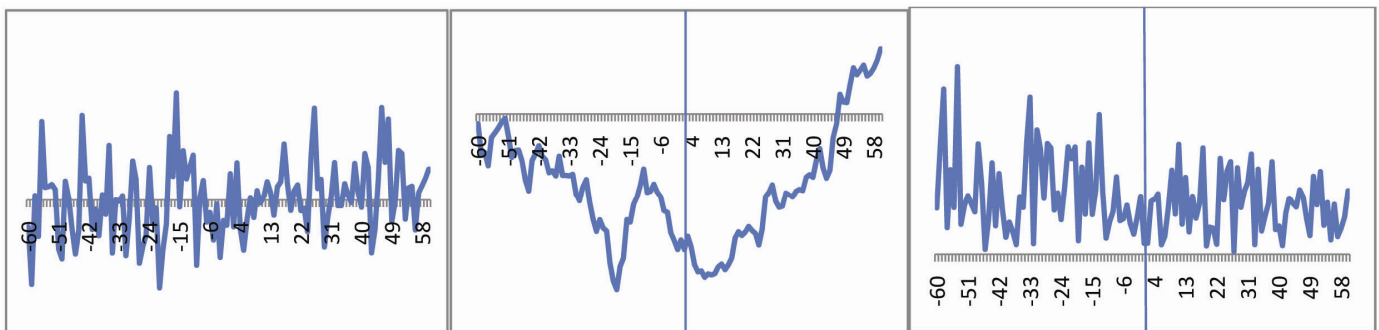

Fig.4a: Mean daily return for downward revision. Fig. 4b: Cumulative daily return for downward revision. Fig. 4c: Std. dev. of mean daily return for downward revision.

Another interesting finding is related to the pattern of the cumulative mean daily return as illustrated in Figure 4b. Unlike Figure 2b and 3b which show similar pattern of movement, the pattern shown in Figure 4b is different. It seems that prior to the announcement of OPR cuts, the stock market has been registering negative mean daily returns along the days leading to the announcement day. This explains the downward direction of the cumulative mean daily return in the pre-announcement period. After the announcement of the downward revision of the OPR, the stock price seems to react positively which is reflected in the positive mean daily return in the post-announcement period. As a result, the cumulative mean daily return starts to move in the upward direction as evident in the second half of Figure 4b. This finding indicates that the stock market benefits from the OPR cut which is consistent with the proposed theory. Therefore, the central bank, in the attempt to revive the stock market, can always resort to reducing the OPR as one of the means to attract investors to the local stock market.

The examination of the daily return in the 60 days before and after the announcement date seems to render support to EMH. The stock market does not seem to react to the news pertaining to the outcome of the MPC meeting. There is no evidence to suggest that the stock market produces a mean daily return that is significantly different from zero as such finding is not being manifested in the pattern of daily stock return leading before and after the MPC meeting. Table 3 summarizes the results of the t-tests for the zero mean of daily return. Based on the overall data set, only 5 out of the 60 days prior to the MPC meeting register a daily return that is significantly different from zero. In the period after the

announcement is made, only 6 days report a daily return that is significantly different from zero. These incidents, however, occur in the period away from the announcement date. For example, with the exception of one reported case that register significantly positive return within the first 5 days after the announcement is made, all the other reported cases are found to take place way before and after the announcement day. The same pattern is observed when the three different data sets are examined. There is no cluster of significant daily returns being reported in the last 10 days before and the first 10 days after the announcement is made. The significant daily returns are mostly found in the farther distance period from the announcement day.

Table 3. The number of days with mean daily returns that are significantly different from zero at 5 percent level.

	No of Days	21-60		11-20		6-10		1-5		
	Sig. Return	> 0%	< 0%	> 0%	< 0%	> 0%	< 0%	> 0%	< 0%	Total
Overall	Before	3		2						5
	After	2		2			1	1		6
Up	Before	1								1
	After	3							1	4
Maintain	Before	3		1						4
	After	2				1		1		4
Down	Before		1	1					1	3
	After	2						1	1	4

These empirical results indicate that despite the important news that the OPR provides, the announcement made after the MPC meeting does not seem to trigger any sensational moves in the stock market. This is consistent with the finding by Bernanke and Kuttner (2005) who notice that the stock market responds differently towards the anticipated and unanticipated monetary policy announcements. Perhaps the market participants have already digested the information given that in Malaysia, many analysts at the stockbroking houses and investment banks release the report on their forecast of the outcome of the MPC meeting ahead of the date of the meeting (Note 5). It is therefore expected that stock market participants have incorporated the anticipated outcome of the MPC meeting in the pricing process. This supports the earlier contention that the stock market is acting efficiently in incorporating the news pertaining to the anticipated changes in the OPR in the stock pricing process. It implies that the market participants have discounted the news way in advance before the official announcement is made.

5. Conclusions

The study provides empirical evidence that suggests the Malaysian stock market is acting efficiently in incorporating the expected news pertaining to OPR changes. This is shown by the non-existence of statistically significant mean daily returns in the days leading to and immediately following the announcement made by the MPC. This finding is consistent with the work of Bernanke and Kuttner (2005) who notice that stock market only reacts strongly to the unexpected announcements. However, the stock market is found to react positively to the news of a downward revision of the OPR. The mean daily return is found to be positive in the post-announcement period. Although the cumulative mean daily return is found to be trending downward in the days prior to the announcement day, the trend changes after the announcement and an upward movement is observed thereafter. It seems like the stock market has become the beneficiary of the expansion monetary policy. The OPR cut can therefore be used by the central bank as a means to stimulate the stock market. Nonetheless, this finding is not conclusive as the same reaction cannot be detected in the event of upward revision and no changes in the OPR. The negative relationship between OPR and stock price in Malaysia tends to hold true only in the case of OPR cuts but not the other way round. Perhaps, the market participants react more favorably towards positive news as suggested by Sankaraguruswamy and Mian (2008). For future research, this study can be extended to firm level to check whether the one-sided inverse relationship between OPR and stock price remains the same at that level and whether the stock prices are indifference towards the decisions made by the MPC.

References

Ahmad, N., Muhammad, J. & Masron, T. A. (2009), "Factors influencing yield spreads of the Malaysian bonds", *Asian Academy of Management Journal,* 14(2), pp. 95-114.

Alam, M. M. & Uddin, G. S. (2009). "Relationship between Interest Rate and Stock Price: Empirical Evidence from Developed and Developing Countries", *International Journal of Business Management,* 4(3), 43-51. http://dx.doi.org/10.5539/ijbm.v4n3p43

Bernanke, B. S. & Kuttner, K. N. (2005). "What explains the stock market's reaction to Federal reserve policy?" *The Journal of Finance* 60, pp. 1221 - 1257. http://dx.doi.org/10.1111/j.1540-6261.2005.00760.x

Bohl, M. T., Siklos, P. L. & Sondermann, D. (2007). "Shocking Markets: European Stock Markets and the ECB's Monetary Policy Surprises". Available at SSRN: http://ssrn.com/abstract=1091133.

Flbien, J-Y. & Fabien, L. (2011). "Eurozone Stock Market Reactions to Unexpected ECB Monetary Policy Announcements", *Brussels Economic Review,* 55(2). Available at SSRN: http://ssrn.com/abstract=1833622.

Foo, Z. T. (2009). "The Impact Interest Rate and Exchange Rate on the Stock Market Index in Malaysia: A Cointegration Analysis," Master of Business Administration Project Paper, Universiti Sains Malaysia.

Goukasian, L. & Whitney, L. K. (2006). "Does the stock market under-react to the Federal Reserve Bank's monetary policy actions?" *Working Paper*, Pepperdine University. Available at http://faculty.pepperdine.edu/lgoukasi/documents/pdf/Does%20the%20stock%20market%20underrect%209-28-06.pdf

Hashemijoo, M., Ardekani, A. M. & Younesi, N. (2012). "The Impact of Dividend Policy on Share Price Volatility in the Malaysian Stock Market", *Journal of Business Studies Quarterly,* 4(1), pp. 111-129.

Kholodilin, K., Montagnoli, A., Napolitanok, O. & Siliverstovs, B. (2008). "Assessing the impact of the ECB's monetary policy on the stock markets: A sectoral view", DIW Berlin Discussion Papers 814, German Institute for Economic Research. Available at: http://www.diw.de/documents/publikationen/73/diw_01.c.88566.de/dp814.pdf

Kurov, A. (2012). "What determines the stock market's reaction to monetary policy statements?", *Review of Financial Economics* 21(4) : 175-187. http://dx.doi.org/10.1016/j.rfe.2012.06.010

Lucca, D. O. & Moench E. (2013). "The Pre-FOMC Announcement Drift", Federal Reserve Bank of New York Staff Reports, no. 512. Available at http://www.newyorkfed.org/research/staff_reports/sr512.pdf

Majid, M. Z. A. (2010). "How sticky is the adjustment of retail interest rates in Malaysia? Empirical evidence from commercial banks and finance companies", *Banker's Journal Malaysia, The Journal of the Institute of Bankers Malaysia*, 134, pp. 3 – 21.

McGowan, Jr., C. B. & Sulong, Z. (2008). A Note On The Effect Of M&A Announcements On Stock Price Behavior And Financial Performance Changes: The Case Of Arab Malaysian Bank Berhad And Hong Leong Bank Berhad, *International Business & Economics Research Journal*, 7(9), pp. 21-26.

Moya-Martínez, P., Ferrer-Lapeña, P. & Escribano-Sotos, F. (2013). "Relationship between interest rate changes and stock returns in Spain: A wavelet-based approach", *Department of Economics and Finance Working Papers*, Universidad de Castilla-La Mancha. Available at http://www.uclm.es/dep/daef/DOCUMENTOS%20DE%20TRABAJO/DT-2013/2013-4%20DT-DAEF.pdf

Panda, C. (2008). "Do Interest Rates Matter for Stock Markets?", Economic & Political Weekly, 43(17), pp. 107-115.

Rigobon, R. & Sack, B. (2004). "The Impact Of Monetary Policy On Asset Prices," *Journal of Monetary Economics,* 51, pp. 1553-1575. http://dx.doi.org/10.1016/j.jmoneco.2004.02.004

Rigobon, R. & Sack, B. (2003). "Measuring the Reaction Of Monetary Policy To The Stock Market," *Quarterly Journal of Economics,* 118, pp. 639-669. http://dx.doi.org/10.1162/003355303321675473

Rosa, C. (2013). The Financial Market Effect of FOMC Minutes", *FRBNY Economic Policy Review,* December: 67-81. http://www.newyorkfed.org/research/epr/2013/0913rosa.pdf

Sankaraguruswamy, S. & Mian, G. M., (2008). "Investor Sentiment and Stock Market Response to Corporate News". Available at SSRN: http://ssrn.com/abstract=1107619 or http://dx.doi.org/10.2139/ssrn.1107619

Zakaria, Z. & Shamsuddin, S. (2012). "Empirical Evidence on the Relationship between Stock Market Volatility and Macroeconomics Volatility in Malaysia", *Journal of Business Studies Quarterly*, 4(2), pp. 61-71.

Zaluki, N. A. A., Abdullah, R., Abdullah, S. & Alassan, Z. (2012). "Do Investors React Differently on Friday's Earnings Announcements?" *International Journal of Economics and Management* 6(1): 75 – 97.

Notes

Note 1. $P_0 = \sum_{t=1}^{\infty} {D_t}/{(1+k)^t}$

Note 2. The MPC consists of 7 to 11 members, with the Governor being the Chairman of the Committee. The Governor and Deputy Governors remain as members of the MPC for so long as they hold office. Members, other than the Governor and the Deputy Governors, are appointed by the Bank's Board of Directors from amongst senior officials at the Bank with relevant expertise, on the recommendation of the Board Governance Committee. (Source: BNM)

Note 3. For a discussion on the effects of OPR on interest rates, see http://www.thesundaily.my/news/988884

Note 4. Please refer to Appendix A for the dates of the meetings.

Note 5. For examples of newspaper reports on OPR, see http://www.thestar.com.my/Business/Business-News/2013/11/26/Bank-Negara-may-raise-OPR-to-325.aspx/, http://www.thesundaily.my/news/938999, http://www.theedgemalaysia.com/business-news/269649-economic-overnight-policy-rate-may-rise-in-2h-this-year-says-cimb.html and http://www.theborneopost.com/2014/04/18/possible-hike-in-opr-later-this-year-on-marchs-steady-inflation-rate/.

APPENDIX A

Monetary Policy Committee Meetings from January 2006 until December 2011

No.	Increase	+/-	No.	Maintain	+/-	No.	Decrease	+/-
1	22.02.2006	+0.25	1	20.01.2006	0.00	1	24.11.2008	-0.25
2	26.04.2006	+0.25	2	22.05.2006	0.00	2	21.01.2009	-0.75
3	04.03.2010	+0.25	3	28.07.2006	0.00	3	24.02.2009	-0.50
4	13.05.2010	+0.25	4	25.08.2006	0.00			
5	08.07.2010	+0.25	5	26.09.2006	0.00			
6	05.05.2011	+0.25	6	24.11.2006	0.00			
			7	26.01.2007	0.00			
			8	26.02.2007	0.00			
			9	27.04.2007	0.00			
			10	28.05.2007	0.00			
			11	24.07.2007	0.00			
			12	24.08.2007	0.00			
			13	30.10.2007	0.00			
			14	26.11.2007	0.00			
			15	29.01.2008	0.00			
			16	25.02.2008	0.00			
			17	29.04.2008	0.00			
			18	26.05.2008	0.00			
			19	25.07.2008	0.00			
			20	25.08.2008	0.00			
			21	24.10.2008	0.00			
			22	29.04.2009	0.00			
			23	26.05.2009	0.00			
			24	29.07.2009	0.00			
			25	25.08.2009	0.00			
			26	28.10.2009	0.00			
			27	24.11.2009	0.00			
			28	26.01.2010	0.00			
			29	02.09.2010	0.00			
			30	12.11.2010	0.00			
			31	27.01.2011	0.00			
			32	11.03.2011	0.00			
			33	07.07.2011	0.00			
			34	08.09.2011	0.00			
			35	11.11.2011	0.00			
	Total	+1.50			0.00			-1.50

Note: OPR was 3% in January 2006 and despite a number of revisions, OPR returned to the same level in January 2012.