

## CHAPTER 4

### Summary And Conclusion

The primary objective of this study is to investigate the existence and persistency of the day-of-the-week effects on market trading returns and volatility in the Malaysian stock market. Besides that, the relationship between returns and volatility is also examined. The study is conducted on the KLCI, the EMAS index, the Second Board Index and nine sectoral indices over the period of January 1994 to December 2000.

Empirical results reveal that the day-of-the-week effects in returns do exist in the overall market, both Main Board and Second Board, and all the 9 sectors. Consistent with previous studies, the most pronounced seasonality found in the whole-period study is the Monday effect. The Main Board and the sectors of Finance and Industrial Products also displayed strong Thursday effect on returns in addition to Monday effect. Meanwhile, slight Friday effect was found in the Second Board and the Plantation and Consumer Products sectors. In general, negative returns occur on Monday, Tuesday and Thursday and positive returns occur on Wednesday and Friday. For the whole market, lowest (and significant) mean trading returns in a week is found on Monday while highest (though mostly not significant) mean trading returns is found on Friday. An identical pattern on the ranking of lowest through highest returns is observed for the KLSE, the 2 boards and all the sectors in the whole period though it becomes less clear in the sub-period analysis.

The sub-period analysis is performed for three sub-periods. Each sub-period coincides with the market environment at that point of time; the first sub-period corresponds with the stable market, the second sub-period with the declining market due to the Asian financial crisis and the third sub-period with the implementation of the selective capital control in the market. This analysis is conducted to examine the persistency of the day-of-the-week effects in a shorter time period. Similar results as in the whole period are obtained in the first sub-period. While Monday effect remains as the most persistent, clearer effects for Friday are found for the Second Board and several sectors in the market, namely Plantation, Industrial Products, Properties and Consumer Products, in this sub-period. The trend shifted in the second sub-period with only the Industrial and Construction sectors displaying Monday effect. Meanwhile, the Second Board revealed Wednesday and Thursday effects in mean returns. Tuesday, Wednesday and Thursday effects are uncovered in this largely negative returns market for only a few of the sectors. In fact, day-of-the-week effects are not found. The last sub-period revealed even less encouraging results on seasonality in mean returns. Only the Properties and Consumer Products sectors indicate strong Monday effect and Friday effect, respectively. Again, there seems to be no difference in the mean trading returns across the week for the KLSE, both Main Board and Second Board, and the various sectors.

On equality in mean volatility across the week, the day-of-the week effects are not found in the overall market, Main Board and most of the sectors in the market for the overall and sub-periods. The exceptions are found in the whole period, first and third sub-periods for the Second Board. Seasonal variations in volatility are also found in the

whole period and first sub-period for the Properties sector and in the first sub-period for the Mining sector.

Comparison between the methodologies on testing of the homoscedasticity in trading returns of the overall stock market, both boards and various sectors across the days of the week is made possible as there are two methods utilised in the study; Levene test on the trading returns, and the F-test and Kruskal-Wallis test on the volatility. Levene test is found to be more sensitive than the F-test but less effective in indicating unequal mean volatility across days of the week when compared to the Kruskal-Wallis test. Nevertheless, one undeniable advantage of the F-test on volatility over Levene test is that the pair(s) of days contributing to the differences in the mean volatility can be identified using multiple comparison tests.

Further, it is interesting to note that market returns and risk as proxied by the standard deviation on returns computed using the Parkinson (1980) extreme value method have an inverse relationship. Highest returns for the week have been found to be on the same day with the lowest volatility and vice versa although there are occasions of second lowest returns coinciding with highest volatility. As suggested by past findings, the reason that might account for the break from the general rule in investment that states that higher returns can only be gained by taking higher risk is the flow of information. In a situation where private information is available throughout the week while public information is available during weekdays, traders are bound to exercise the private information accumulated during the weekends by trading more intensely at the beginning of the week when the market re-opens. Arrival of information over the weekend may also cause traders to be more sensitive to changes in order flow at the

beginning of the week. All these lead to increase in activity in the market and consequently a bigger variance in the price changes.

On the causal relationship between market returns and volatility, bidirectional causal relationship is found for the overall market, the Main Board and 5 sectors of Consumer Products, Industrial, Trading/Services, Finance and Plantation, implying returns Granger-caused volatility and vice versa. The Second Board and the sectors of Mining, Industrial Products and Properties indicate unidirectional causal relationship of returns Granger-causing volatility while the Construction sector displayed causal relationship of volatility Granger-causing returns.

The last part of this study is on the proposition that day-of-the-week effects in the overall market, the 2 boards and various sectors are due to seasonal variation in equity market risk. The GARCH model is utilized for this purpose. The findings revealed that the most prominent effect, the Monday effect, is not eliminated even after the varying market volatility is taken into account. This implies that the day-of-the-week effects, especially the Monday effect, cannot be fully explained by the changes in return volatility. Even so, there are exceptions. The Second Board and the Consumer Product sector are found to have Monday effect that remains significant in the variance equation. In other words, varying market volatility fails to fully explain the anomaly found.

Finally, we can conclude that the overall market, both Main Board and Second Board and the various sectors do show support for the existence and persistency of the day-of-the-week effects in daily market trading returns. On the other hand, little evidence (if any) is found to support the existence and persistency of the same in the

market volatility. The findings of the study indicate that seasonality in returns can actually be explained by the changes in market risk except for the Second Board and Consumer Products sector. For anomalies that cannot be explained, investors might formulate their strategy for investment based on the seasonality found in the market. However, more studies should be conducted in different perspectives i.e. inclusion of other factors such as trading volume, different methodologies, etc, before we conclude that the notion of weak form efficiency in the Malaysian market is being challenged.