CHAPTER THREE

LITERATURE REVIEW

From the previous chapter it is concluded that some investors search for not only the profit but also for social change. Islamic compliant investment portfolio is defined as investment portfolio that avoids any elements that are prohibited by Islamic law such as usury, gambling, deceiving, alcohol etc. Ethical investment portfolio or being socially responsible is defined in most papers as investment portfolio that does not earn revenues from armament sales, alcohol and tobacco activities, gaming or gambling activities, pornography and for a certain period, companies with activities in South Africa. Although these criteria are common in most papers, there are papers that used another term for screening namely positive screening. Positive screening compared to negative screening mentioned earlier focuses on activities that benefit the societies such as environmentally friendly products and services and socially concerned activities.

This chapter presents the past empirical studies on screened investment portfolio as well as non-screened investment portfolio. The first section reports the empirical literatures on performance of screened and non-screened investment portfolio. The second section reports the empirical studies on non-screened investment portfolio and their reaction to macroeconomic variables. The third section reports the firm specific variables impact on the performance of screened and non-screened investment portfolio. The final section is the conclusion of this chapter.

3.1 Screened Versus Non-Screened Investment Portfolio

This part is divided into two main sections. The first focuses on the performance of the socially responsible as well as the ethical investment portfolios in comparison to the conventional or non-screened investment portfolio. The second section review the literature of the performance of the Islamic investment portfolios compared to the non-Islamic investment portfolios. The division in this sense gives a clear difference between the Islamic and socially responsible and ethical investment portfolios since the screening criteria are not similar.

3.1.1 Socially Responsible and Ethical Versus Conventional Investment Portfolio

Hamilton et al. (1993) in testing whether socially responsible mutual funds outperformed, underperformed, or performed the similarly as the conventional mutual funds, studied 17 socially responsible funds from January 1981 to December 1990 against NYSE index returns as the market returns. In addition, they compared the raw returns and risk of social responsible funds with conventional mutual funds after dividing the sample into two periods namely funds established before 1985 and after 1986. It was found, in general using Jensen Alpha, that socially responsible funds did not outperform the market. In terms of raw returns and risk, for the first period, the conventional funds were higher in risk and returns while the opposite was true for the second period; however, none was statistically significant in terms of difference in means. This was an indication that socially responsible funds choice was not priced or in other words, if the holder of ethical investment portfolio decided to sell it off he will find enough investors to buy it. Therefore, investing in socially responsible was not punishable by the market.

Mallin et al. (1995) on analyzing the performance of the ethical and non-ethical funds in UK used the traditional risk adjusted measure implemented in majority of the studies such as Jensen alpha, Sharpe ratio, and Treynor ratio. Matched sample of both ethical and non-ethical funds based on the fund size and the date the fund was formed was implemented. The matching was done to eliminate first, the relatively short time existence of the ethical funds, and second, the size effect of the ethical funds, which compared to the non-ethical, was small. Monthly data were collected to investigate the performance of the funds while three-months Treasury bill rate as the benchmark for risk free interest rate. The results of the raw returns of 29 matched funds suggested that the ethical fund outperformed the market in 12 funds while the opposite was true for the rest of the ethical funds. On the other hand, 15 of the non-ethical fund outperformed the market while the remaining underperformed it. Using CAPM, the results implied that the beta for all the ethical funds were less than unity, however, five non-ethical funds have betas more than unity. Twenty-one ethical funds have beta less than the beta for the non-ethical funds, where it can be concluded that the non-ethical funds were riskier than ethical funds. In terms of the alpha, which represents the difference between the market return and the portfolio returns, the outcome showed that 22 ethical and 23 non-ethical funds have positive alpha implying the performance superior than the market. In testing for the alpha significance, only four cases were significant. For Sharpe and Treynor ratios, 14 of the ethical funds outperformed the non-ethical. In terms of best performers, both funds underperformed the market benchmark, while in comparison between both funds, ethical funds seemed to outperformed the non-ethical funds.

In addition, to investigate if there was an extra cost for being socially responsible investor, Guerard (1997) examined if there was any difference in returns between screened and

unscreened equity stocks. Using 1300 and 950 non-screened and screened equity stocks respectively from 1987-1994, he found that there were no significant difference in returns between the categories.

Moreover, to investigate the temporal behavior of fifteen socially responsible mutual funds relative to their peers Reyes and Grieb (1998) performed cointegration test and Jobson-Korkie significance test of performance from January 1986 to December 1995 in the US. After testing for stationarity of the data, cointegration test was performed to investigate the long-term relationship between the socially responsible funds and their peers. They argued that if both types of funds were cointegrated it means that the screening act does not have any impact on socially responsible mutual funds. The results concluded that there was no cointegration between the funds, which indicated that the process of screening tended to isolate the socially responsible funds behavior from their peers. Furthermore, the Sharpe ratio was higher for the 11 peer funds. However, for the Jobson-Korkie test of the null hypotheses of equality of mean between peer and socially responsible funds could not be rejected implying that the performance of both funds was equal.

DiBartolomeo and Kurtz (1999) compared the DSI 400 and the S&P 500 indices from May 1990 to January 1999. They used a complex multi-factor regression model that included not only a benchmark index but also 67 additional factors[14] that decompose Jensen's alpha. They measured a total outperformance of the DSI relative to the S&P 500 of 0.18% per month. They attribute 0.06% of this outperformance to a higher beta of the DSI (i.e. a higher risk exposure to the benchmark index). The remaining significant extra-return of

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[14] The sixty-seven factors consist of beta, eleven fundamental company characteristics, and fifty-five industry groups.

0.12% per month can be fully explained by specific differences in the risk exposure between the DSI and the S&P 500. They attributed 0.1% to differences in the industry composition of the indices and 0.02% to differences in the fundamental portfolio characteristics (i.e. the average company size and the level of financial leverage). They concluded that the outperformance of the DSI was not due to the effect of social screening but due to relative risk exposures of the DSI.

Arms (1999) divided the investment portfolios theories into two main types, namely, the pro-market theories and the pro-SRI. She asserted that the pro-market theories were based on the widely acknowledged principles of finance where the market portfolio outperforms the socially responsible investment portfolios because of the increase in diversifiable or unsystematic risk due to the screening criteria. On the other hand, the pro-SRI theories suggest that SRI investors outperform the market. This was because firms passing the screening criteria encounter less environment lawsuits, have higher employee relations leading to higher productivity and therefore higher returns, and have higher corporate citizenship standards that lead to higher loyalty and therefore higher product sales. In addition, the screening process might act as a proxy for "risk examination" for fund managers. This was done by avoiding high-risk investment portfolio such as South Africa and environmentally less friendly investment portfolio that might encounter lawsuits. In terms of empirical results of comparing SRI index against S&P 500 index from 1990 to 1998, the author finds that there were no significant difference in returns between both indices and that SRI has lower risk than the market portfolio, which was supposed to be highly diversified.

Statman (2000) analyzed the performance of Domini social index (DSI), which is an index of socially responsible companies and the performance of socially responsible mutual funds against the performance of S&P500 companies in the US from 1990 to 1998. Using statistical and mathematical techniques such as annualized mean return, standard deviation, Jensen alpha, excess standard deviation adjusted returns, and simple t-test for comparing means, he found that raw returns and risk for DSI were higher than S&P500. However, in terms of returns adjusted to risk, DSI was lower than S&P500 but not statistically significant. On the other hand, when socially responsible funds were compared with S&P500 and DSI they were found to be less risky and have lower returns. In addition, when socially responsible funds were compared with conventional funds of the same asset size, the former outperformed the latter, although it was not statistically significant.

Moreover, a study was done on Australian unit trust by Cummings (2000) using data from 1986 to 1994, to test ethical trusts performance compared to small company index, industrial index trusts, and market index. Correlation was found to be very strong between the ethical trusts and all three indices. Applying Sharpe, Treynor, and Jensen measures indicated that ethical trusts outperformed their industry averages however; they underperformed the small company index and market average, although in all cases, it was not statistically significant. It was noted that ethical investment portfolio was a long time investment portfolio and lower risk associated with it may be advantageous in the long term. Two of the main reasons for mixed results were survivorship bias due to the different formation dates and the level of strictness applied in choosing the ethical trusts.

Kreander et al. (2000) analyzed 40 Socially Responsible investment portfolios (hereafter SRI) funds from seven countries using a matching approach. The countries included were

Belgium (1), Germany (4), the Netherlands (2), Norway (2), Sweden (11), Switzerland (2), and the UK (18)[15]. The authors applied four criteria for the matching procedure: age, size, country, and investment portfolio universe of the funds. Like most of the earlier studies, they used Jensen's alpha, Sharpe ratio, and Treynor ratio as performance measures. In the regression, equation to obtain Jensen's alpha a measure for market timing was included. The statistical tests concerning the differences in the performance measures showed that the Sharpe and Treynor ratios of the conventional funds were slightly higher but not significant whereas the Jensen's alpha of the SRI funds was higher but only at the 10% significance level. The authors concluded that SRI and conventional funds exhibited a very similar performance.

Geczy et al. (2003), tested whether investing in socially responsible investment portfolio costs more than investing in their counterpart using CAPM and Fama-French three-factor model and Carhart four-factor model. They constructed their own fund running from July 1963 through December 2001 on a monthly basis. The results indicated that when investors use CAPM as their strategy for picking assets while ignoring managerial skill it cost between 1 and 2 basis point. On the other hand, using Fama-French and Carhart models in calculating managerial skills it was found that investment portfolios in socially responsible was significantly costlier reaching up to 30 basis points.

Bello (2005) empirically investigated the extent to which ethical and moral screening of companies affected the level of diversification and overall performance of socially responsible stock mutual funds. He used 42 socially responsible funds with 84 conventional funds and returns on the S&P 500, three-month Treasury bills, and monthly return data on

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[15] Number in the parentheses refers to the number of funds in each country.

the DSI 400 as benchmarks for both socially and non-socially responsible assets. Applying two-sample Wilcoxon rank-sum test, Jensen's alpha, Sharpe ratio and excess standard deviation adjusted return (eSDAR). The findings were as follows; socially responsible funds were not significantly different from conventional funds for alpha and eSDAR. Conventional funds significantly underperformed their socially responsible peers for Sharpe ratio, portfolio diversification represented by residual variance showed the two groups of funds were not significantly different, and there was no significant correlation between alpha and residual variance for each of the two groups of funds or for the combined sample.

Another study that test the differences in screening within Socially Responsible Investment, was done by Barnett and Salomon (2006) who studied four main issues related to socially responsible investment portfolio. The first was regarding the intensity of social screening and financial performance where their hypothesis was that the relationship was curvilinear. It means that it is negative with lower number of screens and positive as the number of screens increases. This relationship was established by merging the stakeholder theory and the modern portfolio theory. The explanation follows that when the investors become more conscience about their investment portfolios and become very selective of the pool of investment portfolio available they become richer avoiding investment portfolio with bad stakeholder relations. Therefore, the relationship starts as negative and becomes positive as screens increases. This might indicate that the portfolio will be under-diversified causing a negative effect. However, this effect was offset by the screening for stock that was socially responsible as well as having above average returns. The remaining three issues dealt with the type of the screens rather than their number or intensity. The first type of screen was the labor related screens whereby the socially responsible investors included firms with a good

history of labor relations. The hypothesized relationship was that financial performance was positively related to good labor relation. This was based on the theory of instrumental stakeholder, whereby employees were instrumental to the financial performance of the firm. Therefore, they represent the "frontline" of the firm and gets involve in transforming inputs to outputs. In addition, good labor relations cause an increase in productivity and therefore increase in financial performance. Secondly, good community relations cause higher financial performance. The authors indicated that poor relation with the host community might cause costly problems to the firm since they were in the receiving end of the deal or simply put as "not-in-my-back-yard." Lastly, the environmental friendly screens that were hypothesized to be related positively to financial performance. Environmentally unfriendly firms might be exposed to activist protest, lawsuits, consumer unreferenced, negative media coverage and so on. Using panel data analysis of 61 mutual funds for 28 months and 12 screening criteria they found the following. First, in terms of intensity, they found that there was a curvilinear relationship. While for the number of screens, they found contradicting results. For labor relating the results were not only insignificant but with negative sign, suggesting that the labor relation was negatively related to financial performance. Community relation was significant and positively related to financial performance while for the last screening criteria, environmentally friendly, the result was significant but negatively related to financial performance.

Furthermore, people who were against the ethically investment portfolio claimed that it was costly to do so. There was a penalty in investing in such assets or portfolios. Bauer et al. (2005), in their study aimed at first, investigating whether there was evidence on the difference in performance between ethical compared to non-ethical investment portfolio. Second, to examine the claims that ethical investment portfolio was small-cap oriented. In

their paper, they utilized four factors model for both domestic and international ethically against non-ethically mutual funds from 1992 to 2003 in Australia. In addition, they examined the data against Home bias, and time sensitivity by dividing the data into three periods. They concluded that there was no statistically significant difference in return between ethical and conventional mutual funds both domestically and internationally. Ethical domestic investment portfolio was small-cap oriented and in general, ethical investment portfolio has less exposure to the market than conventional funds. There was strong evidence of home bias for international ethical funds. The ethical funds underperformed the market due to the overall sentiment of bearish market in the first period, while in the second period it outperformed the conventional funds, moreover for the last period there were no significant difference. The study has concluded that there was no penalty for ethical investors.

3.1.2 Islamic Versus Non-Islamic Investment Portfolio

In studying Islamic stock market in Malaysia, Ahmad and Ibrahim (2002) investigated the performance of KLSI (Islamically approved securities) with comparison to KLCI (conventional) from the period of 1999 to 2002. They used various methodologies to investigate the performance measured by risk and return of both indices. Techniques used were adjusted Sharpe ratio, Treynor Index, adjusted Jensen alpha and t-test for comparing means. They divided the sample into three periods; overall period, growing period from April 1999 to February 2000 and decline period from March 2000 to January 2002. In comparing raw returns and risk for all periods, it was concluded that for the overall and declining periods the return was lower for KLSI while for the growing period KLSI had slightly outperformed the market. For risk, KLCI was more risky for all the periods. When comparing the means using t-test the results were statistically not significant for all the

periods. In addition, using different measures such as risk adjusted return KLSI appeared to be higher than KLCI only in the growing periods. They argued that the underperformance of the KLSI might be because the market was dominated by non-Muslims as well as the less existence of Muslim investors in Syariah approved securities. Moreover, it can be said that the shortness of the period is one of the reasons for such results.

In addition, Hakim and Rashidian (2002) examined the risk and return of Islamic stock market index in the US. They used cointegration analysis and causality analysis to investigate the relationship between as well as among, the Dow Jones Islamic Market Index (DJIMI), the broad stock market represented by the Wilshire 5000 index, and the risk-free rate proxies by 3-month Treasury bill, but found that there were no visible link among and between them. The results showed that the Islamic index was influenced by factors independent from the broad market or interest rate. This finding provided a different perspective to claims by Dow Jones that the index exhibits significant high correlation with the broad market. Therefore, the evidence suggested that such correlation was merely temporary and spurious. However, their findings suggested that the Islamic index presented unique risk-return characteristics, which is known as company or unsystematic risk, a unique risk profile significantly different from the Wilshire 5000. This result was even more important given the fact that the Wilshire 5000 index was considerably more diversified than Islamic index.

Hussein (2005) investigated the impact of screening on the performance of FTSE Global Islamic Index and Dow Jones Islamic Market Index (DJIMI) in both the short term and long run against their counterparts Dow Jones World Index and FTSE All-World Index. Using parametric and non-parametric tests, betas, Jensen alpha, cumulative returns, and

buy and hold returns of a sample period of 1993-2004. He divided the sample into 4 periods, the entire period, bull (1), bear, and bull (2). He concluded that in the short run, Islamic Index outperformed its counterpart in the entire period and bull (2) and underperformed them in the bear period, while it yielded statistically significant positive return in Bull (1). In addition, the long run results suggested that in the entire period and the Bull (1) period Islamic Index outperformed its counterparts, however, the opposite was true for the bear and Bull (2) periods. In terms of screening, the application of Islamic screening did not have an unfavorable impact on the performance of Syariah compliant index

Hussein and Omran (2005) studied the performance of Islamic Index in Dow Jones against the Dow Jones index in three periods, namely, the entire period, bull period and the bear period. They performed few analytical and statistical techniques to calculate the risk adjusted return for monthly date from December 1995 to June 2003. They used raw return, Sharpe ratio, Jensen alpha, and Treynor index, while they used parametric t-statistics and non-parametric Wilcoxon signed-rank test to test whether the Islamic Index has abnormal return. Moreover, they applied cumulative abnormal return and buy-and-hold abnormal returns to investigate the long run performance of the indices as well as the wealth relative as a performance measure. The results suggested that the Islamic Index outperformed the non-Islamic index both in the entire and bull periods while the opposite was true for the bear period although it was not statistically significant in the bear period. In addition, the wealth relative indicated that $1 invested in both the whole and bull periods yield $1.16 and $1.27 respectively while it yielded $0.9 in the bear period. The main reasons pointed out for the outperforming and underperforming was of two fold. First, most profitable firms

borrows the least, this was accordance with the screening method of DJIMI[16] , which excludes companies with more than 33% of debt. Second, the events of September 11 as well as the exclusion of alcoholic firms from the Islamic Index, where they were one of the best performers during the bear market period, might cause Islamic investment portfolio to be less popular.

Using eight categories of Islamic mutual funds in comparison with their counterparts, Elfakhani et al. (2005) tested the performance of the Islamic mutual funds by applying, Sharpe, Treynor, Jensen's alpha, Fama measures, and one-way ANOVA test. They used 46 mutual funds grouped into eight regional[17] categories and their regional conventional counterparts. They found that there was no statistically significant difference between Islamic and conventional funds although there was abnormal reward for some funds especially emerging, European, and emerging-south Africa. Therefore, screening mechanism did not affect the performance of Islamic investment portfolio.

3.1.3 Summary

In conclusion, it is clear that the ethical or socially responsible and the Islamic investment portfolios are performing similarly to the conventional investment portfolios for investors who both seeking to maximize profit along with being socially concerned about their investment portfolio. Although there are some critics of the ethical investment portfolio from opponents regarding less of diversity, higher transaction and monitoring costs, it is still gaining popularity in many countries. The future of such investment portfolio depends on the readiness of the investors to "do well while doing good" (Hamilton et al. 1993, p.66.)

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[16] Dow Jones Islamic Market Index.
[17] American, Emerging, Malaysian, Emerging-south Africa, European, technology, Asian, and Global.

3.2 Macroeconomic Variables and Stock Market Index

The literature on the relationship between macroeconomic variables and stock market returns in particular and the capital market in general is voluminous. Many researchers write about this topic due to its importance to the investors and policy makers as well as ordinary people. The following review explores a few articles in relation to this issue and sheds some light on the different results reached. The review is divided into three main sections. The first section reviews the literature on the developed markets macroeconomic variables and their relation to the non-screened stock market index returns. The second section summarizes the empirical studies on developing markets macroeconomic variables and the non-screened stock market index returns. The last section takes into consideration the literature done on the Malaysian economy since the unit of analysis in this thesis is the Malaysian economy. Specifically for this part, the review helps the research in selecting the most important macroeconomic variables influencing the stock market index returns.

3.2.1 Developed Markets

One of the most quoted studies was Chen et al. (1986) where they tested the influence of certain macroeconomic variables on the stock market returns. They used industrial production, inflation, risk premium, term structure, market indices, consumption, and oil prices on stock market returns from 1953 to 1983 on monthly basis. Using multiple regression, they concluded that industrial production, change in risk premium, term structure and inflation exert the strongest affect on stock returns. It is safe to say that stock market returns were priced correctly in accordance to their exposure to several macroeconomic variables. Nevertheless, the causality between returns and growth in the variables was not analyzed.

Hardouvelis (1987) analyzed the responses of stock prices to the announcements of 15 macroeconomic variables from 1979 to 1982 and from 1982 to 1984 on monthly basis. It focused on the distinction between monetary and non-monetary news and on the role of expected future Federal Reserve behavior might play both after monetary and non-monetary announcements. It examined the responses of four stock price indices, Standard and Poor 500, AMEX, the value line index, and NYSE financial index. In terms of the deterministic variables the following were used; narrow money supply (M1), free reserve, federal discount rate, surcharge rate, Consumer Price Index, Producer Price Index, unemployment rate, Industrial production, personal income, durable goods, index of leading indicators, consumer credit, retail sales, housing starts and trade deficit. The primary conclusion was that stock prices respond to monetary news. Moreover, NYSE financial index showed the strongest reactions to monetary news. Among non-monetary news stock price responded to announcement of trade deficit, unemployment rate and personal income.

Schwert (1989) analyzed the relation of stock volatility with real and nominal macroeconomic variables volatility, economic activity, financial leverage and stock trading activity. However, he did not test for causes of stock price volatility. The variables included in this study were, industrial production, monetary base, Producer Price Index (PPI), short term interest rate, yield on long term corporate bond, market value of firm dividend, a value-weighted portfolio of NYSE, volatility of monthly stock return, NYSE share trading volume and number of NYSE trading days per month. There were five conclusions that can be derived from this study; first, many economic series were more volatile in the 1929-1939 great depression. Second, many aggregate economic series were more volatile during

recession. Third, there was little evidence that macroeconomic variables volatility can help to predict stock and bond return volatility. Fourth, financial leverage influenced volatility. Fifth, there appeared to be a relation between trading activity and stock volatility.

Schwert (1990) did a secondary study to investigate the stability of the relations between stock returns and real activity estimated by Fama (1990) using different data and to compare two different indices for industrial production. The data interval used in this study was from 1889 to 1988, industrial production and stock return as both the independent and dependent variable. The application of multi regression was implemented in this paper. To calculate the stock returns he used the sum of the dividends yield on stock portfolio for the past 12 months, the default spread, and the term spread. The results regarding the stock returns and real activity were that there was a strong positive relation between real stock returns and future's production growth rate, even when variables that proxy for time varying expected returns and shocks to expected returns were included in the regression.

Chen (1991) studied the relation between changes in financial investment portfolio opportunities and changes in the macroeconomy. The argument is, in inter-temporal market equilibrium, the "state" variables that were priced were those that can forecast changes in the investment portfolio and consumption opportunity set. Since general equilibrium models suggested that characteristics of the macroeconomy should be related to assets returns, it was important to know whether these variables were related to the macroeconomy in a way consistent with their forecasts of asset returns. The ability of these variables to forecast future market returns was in terms of their correlations with changes in the macroeconomic environment. The state macroeconomy variables used to support this are, industrial production, the term structure, one-month Treasury bill, the default spread,

the dividend yield, Gross National Product (GNP) and real consumption. Two types of returns were used; real and excess market return of the value-weighted New York Stock Exchange index for the period from 1954 to 1986 on a quarterly basis. The study confirmed that the default spread, the term spread, the one-month Treasury bill rate the lagged industrial production growth rate and the dividend-price ratio were determinant of future stock market returns. It was concluded that these state variables were related to the recent and future growth of GNP and consumption. The expected excess market return was negatively related to the recent growth of GNP and positively related to GNP future growth. State variables that were positively related to the recent GNP were negatively related to expected market return and vice versa. State variable that were positively related to the future GNP were positively related to expected excess market return and vice versa.

In investigating the causality and the interactions between stock returns and real activity, interest rate and inflation in the post-war data from 1947-1984, Lee (1992) used Vector autoregressive system and impulse responses. He found that real activity was positively related to stock returns and that the latter explained substantial fraction of the former. In addition, inflation seemed to be affected more by interest rate rather than stock returns and reacted negatively to it, while interest rate was influenced by stock returns. Inflation was negatively related to real activity, however, it explained very little about the variations in real activity.

One of the frequently cited studies was Mukherjee and Naka (1995). They investigated the Japanese stock market and its relation to a set of macroeconomic variables. They used industrial production, money supply, inflation, long-term government bond rate, call money rate, and exchange rate against Tokyo stock market index from 1971 to 1990 on a monthly

basis. Applying cointegration and Vector error correction model they found that Japanese stock market was cointegrated with the selected macroeconomic variables. In addition, VECM further confirmed the cointegration between stock market and macroeconomic variables and proved to yield results superior than Vector Autoregressive estimation since it incorporated the long-term relation.

Mookerjee and Yu (1997) used macroeconomic variables to test the presence of informational inefficiencies in a small open economy stock market. The explanatory variables were narrow and broad money supply, nominal exchange rates, and foreign currency reserve with all-share price index for Singapore on a monthly basis from October 1984 to April 1993. Their justification for using both narrow and broad money supply was that they influenced the stock market both directly and indirectly. The direct influence was through portfolio change and the indirect was by their impact on real activity. To test for informational efficiency they employed the techniques of cointegration and causality. Their argument was that if two or more non-stationary time series share a common trend, then they were believed to be cointegrated. In the context of stock market efficiency, however, the finding of cointegration had been interpreted as potential market inefficiency and vice versa. Therefore, if a long-term relationship was found between or among variables, (i.e. they were cointegrated) the market was inefficient and the investor can make abnormal profit, while the opposite was true. However, they argued that if a short-term causality exists between variables it indicated that the news had been incorporated in the variables and therefore market efficiency. The cointegration results suggested that the market was not efficient in terms of M1, M2 and foreign reserves, while it was efficient concerning exchange rate. In addition, the causality and forecasting equations yielded different results. Causality suggested market inefficiency for M2 and the opposite for both M1 and foreign

reserves. However, in forecasting equation market inefficiency was predicted for M1 and foreign reserve and implied no information in M2. The pitfalls of this study were in twofold, first the use of the simple Engle-Granger cointegration test that was heavily criticized by many researchers, such as Jeon and Lee (2002). It only indicated the existence of long-term relationship but did not specify the number of the cointegration vectors. Second, in econometric time series application when two series were cointegrated there is a long run adjusting mechanism that cannot be ignored in testing causality. Therefore, the results should be taken with caution.

Nasseh and Strauss (2000) examined the relationship between level of stock prices and the domestic and international macroeconomic activity in a multivariate cointegration framework. Quarterly data from 1962 to 1995 for France, Germany, Italy, Netherlands, Switzerland, and the U.K. were used. The variables selected to measure domestic and international activity were, industrial production, business surveys of manufacturing orders, consumer price index, interest rates and long-term government bond rates. The proxy concerning stock price varies from one country to the other. Findings indicated long run relationship (i.e. cointegration) between stock prices and macroeconomic activity in Europe. In addition, stock prices were influenced positively by industrial production, interest rate, business expectations, and the consumer price index. However, the Long-term interest or bond rate was negatively related to stock prices, which was concluded to be the best proxy for discount rate. The variance decomposition showed that real activity variables affect stock prices more in the horizon of 4 years compared to the1 year horizon. Vector Error Correction Model (VECM) results showed that macroeconomic variables explained a much smaller percentage of the own variance of stock returns in the unrestricted vector autoregressive (VAR) models compared to the VECM and VAR in the level. Thus, models

that forecast stock returns without long run cointegrating restrictions imposed; remove important equilibrium information between stock prices and the level of macroeconomic activity. For all countries except the U.K. and Italy, VECM imposed the co integrating relationships between stock prices; industrial production and interest rate substantially increased the explanatory power of stock returns compared to VAR models. Real activity variables explained much of the variation in the stock prices in the long run.

In the Spanish market, Ansotegui and Esteban (2002) studied the relationship between Madrid stock market index and real output, interest rate and inflation rate. They used the period from 1980 to 1992 to figure out the cointegration and impulse responses of the system of variables. They found that the variables were cointegrated, the relationship between stock market and industrial production was positive while it was negative for both interest rates and inflation. Using impulse response on VAR system, to account for the short run dynamics, the results varied depending on the order of the variables. However, if industrial production preceded the financial variables the response of stock market to all innovations was negative.

Furthermore, Kim et al. (2004), used six macroeconomic variables news announcements to examine their impact on return of three-major the US financial markets namely, equity, bond, and foreign exchange markets rather than individual market as precedent works did it. The six variables included were, nominal foreign international trade balance (BOT), gross domestic product (GDP), unemployment rate (UE), retail sales growth (RET), consumer price index (CPI), producer price index (PPI). They compared the actual value of each variable and the expected value and their effect on the three financial markets, therefore they measured the effects of the difference on the variation in the financial

markets. Returns of three markets were used namely; the US stock market represented by Dow Jones Index, exchange market represented by Japanese Yen to the US dollar and Dutch mark to the US dollar and the bond market for the period of 1986 to 1998. For announcements effects, day of the week effect was found in all markets, while retail sales and BOT influenced only the bond and exchange markets. In terms of the impact of the news, positive and negative impacts were found for BOT in the exchange market; however, unemployment had positive effect while GDP has a negative effect. For bond and stock markets, CPI and PPI have double impact. In general the results were mixed some markets were affected by variables that did not affect other markets; however, the results suggested that the effect on the financial markets was not caused by the news itself but by the difference between the actual and expected figures.

Moreover, to investigate the effect of the macroeconomic variables announcements on other stock markets, Nikkinen and Sahlström (2004) studied the sensitivity of the European stock market specifically German and Finnish market towards the European and the US domestic macroeconomic variables announcements. The impact was measured by the implied volatility in the stock market as a result to the release of the news. This study was different in the sense that it examined both domestic and worldwide macroeconomic variables effect on the stock markets, it confirmed the integration of the markets, and therefore their volatility, and it compared two different markets in terms of size, industrial diversity, and foreign ownership. Four macroeconomic variables news were used, consumer price index, producer price index, authorities meeting regarding monetary policy and employment for the US, Germany and Finland from 1996 to 1999 on a monthly basis. In terms of implied volatility, they used volatility index based on both German and Finland stock index options. After regression analysis, the results were as follows; the US

employment and authorities meetings have the strongest effect on volatility of both markets and inflation measure, PPI, were significant in Finland but not Germany. The domestic news announcements on the other hand have no effect on both markets.

On the influence of the macroeconomic variables news on the returns, Chelley-Steeley and Siganos (2004) investigated whether for the period from 1975 to 2001 monthly basis data, the return of stock was effected by macroeconomic variables namely, real GDP, total indirect taxation, one month T-bill interest rate, market sentiment measured by portfolio flow and employment on the return in stocks. The methodology was to calculate the average return over six months period and rank them in five categories with one being the worst performing (loser) and five the best performing (winner). The results were mixed with GDP, risk free interest rate effecting winner positively and negatively for loser and the market sentiment negatively affecting both portfolio. All in all the most significant variable for both portfolios was the portfolio flows.

Hess (2004) analyzed time varying dynamics linkages between domestic and foreign macroeconomic variables conditions, economic policy surprises, and financial markets in an open economy environment. The paper employed Vector Error Correction and cointegration techniques with macroeconomic variables data from January 1975 to December 2000 for Germany and Swiss markets. The variables were real Gross Domestic Product (GDP), consumer price index (CPI), monetary policy indicator measured as term spread, exchange rate, and deflated equity prices in local currency. They tested for the overall sample and two sub periods, expansion and recession for both closed and open economy. Results indicated that there was significant evidence of stock market sensitivity to macroeconomic variables news and that both market were interlinked and affected by the

fluctuation of each other. The most important factor affecting the markets was the inflation in all the periods in the closed economy. Output and money supply have effects only during the recession period in the closed economy. In open economy however, most of the impact was caused by foreign shocks.

In addition, Jones et al. (2005) studied the effect of macroeconomic variables announcements on interest rate and future contracts index for UK. They examined the influence of the arrival of the information on the pricing of the interest rate and the equity index of future contracts namely, Short Sterling, FTSE, and Long Gilt. The data used were daily data from December 1998 to November 1999. They used a number of announcements such as retail sales, industrial production, unemployment, PSBR[18] and national accounts with some inflationary news such as RPI, PPI and two monetary news namely, change of UK monetary policy, and change in the US federal funds target rate. They used five minutes interval to measure the effect of the news on the stock market. The results after applying different econometrics techniques lead to the conclusion that investors reacted differently to different announcements. Specifically, changes in monetary policy were the most important news affecting all the markets. This was because it influenced changes in expected future cash flows through changes in discount rates. In addition, all the three markets showed long run relationship and Short Sterling market lead the other two markets namely Long Gilt and FTSE.

3.2.2 Developing Markets

Kwon and Shin (1999) attempted to investigate whether current economic activities in Korea can explain stock market returns. The variables used to investigate the linkage

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[18] Public sector borrow rate.

between the economic variables and stock market were trade balance, foreign exchange, industrial production, M1, and the two indices of Korean stock market based on monthly data from January 1980 to December 1992. They concluded that all the four macroeconomic variables were cointegrated, in multivariate and not bivariate terms, with the stock price, which indicated direct long run and equilibrium relations. Moreover, the findings implied that macroeconomic variables were significant in predicting changes in stock prices. However, production index and not the stock price indices was the leading indicator for economic variables.

Garcia and Liu (1999) explained the differences in stock market development in major stock markets in Latin America compared to those in East Asia and selected industrial countries. The study empirically explored the determinants of stock market development, measured by market capitalization. Moreover, it examined the relationship between financial intermediary development macroeconomic factors with stock market development. These countries included seven countries in Latin America, six countries in East Asia and two industrial countries. They examined the effects of real income, saving rate, financial intermediary development, stock market liquidity, and macroeconomic stability on stock market capitalization. The study conducted panel analysis on pooled data from 15 selected countries from 1980 to 1995. These countries include Argentina, Brazil, Chile, Colombia, Mexico, Peru, Venezuela, Indonesia, Korea, Malaysia, the Philippines, Taiwan, Thailand, Japan and the United States. It was found that the real income level, saving rate, financial intermediary development and stock market liquidity were significant predictors of stock market capitalization, while macroeconomic stability was insignificant. In addition, East Asia stock market was more developed than Latin America this might be

due to the sustained economic growth, higher saving rate, more liquid stock market, and the more developed banking system.

Utilizing the data of 20 different emerging markets Bilson et al. (2001) investigated the relationship of macroeconomic variables, market, and other variables with the stock market returns of each country. They applied three different models, the first regressing returns on the growth of four local macroeconomic factors[19] and one world factor, which was the return on world market index; they found that exchange rate and world market returns were the most influential variable followed by money supply. The second model was done by regressing the returns of each market on local macroeconomic variables[20] and microeconomic[21] variables plus the return of world market. Here they found that exchange rate, regional index, price to earnings ratio and dividend yield were the most influential among markets. The third and most interesting analysis was the application of principle component Factor analysis. After estimating the second model, they applied factor analysis on the 11 variables and they were reduced into four main factors. Testing each region rather than each market against the four factors yielded that emerging market in three regions (Latin America, Asia, and Europe) reacted significantly to all the four factors.

Testing a very active economy in the South East Asia, Maysami and Koh[22] (2000) in their study of macroeconomic variables and Singapore stock market they used, industrial production, inflation, money supply, short and long-term interest rate, exchange rate and domestic export. Similar to many recent studies they used cointegration to investigate the

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[19] Good prices, exchange rate, industrial production, and money supply.
[20] Good prices, exchange rate, industrial production, and money supply.
[21] Price to earning ratio, dividend yield, return on equally weighted regional risk, country risk, interest rate, and trade sector.
[22] The paper also examine the interrelationship among Singapore, Japan, and U.S. stock markets, however the result is not discussed here due to its irrelevance to this study.

co-movement between Singapore stock market and macroeconomic variables from 1988 to 1995. Based on cointegration results, they concluded that stock market was cointegrated with all the variables except for domestic export and industrial production. In addition, inflation and long-term interest rates were negatively related to stock market while the rest were positively related to the stock market. However, in testing the relevancy of variables to the stock market money supply and inflation were insignificant. Singapore stock market was cointegrated with the remaining variables. Nonetheless, the study did not try to investigate the short run dynamic in the system.

Handroyiannis and Papapertrou (2001) tested a medium size economy such as Greece. They tested the performance of domestic stock returns to four macroeconomic variables namely, industrial production, interest rate, exchange rate, oil prices and foreign stock returns from 1984-1999 on monthly basis. It was found that variables were not cointegrated however, causation exists. Industrial production was affected negatively by oil prices. Variance decomposition suggested that most of the variables were affected by its own innovations followed by oil prices and industrial production in the long term. Based on impulse responses, stock return was negatively related to growth in industrial production, interest rate, and exchange rate. The application of cointegration should be implemented when the variables were integrated of the same degree. Therefore, the causality in this paper was spurious.

In another paper, Papapertrou (2001) using the same techniques as in Handroyiannis and Papapertrou (2001) but two different specifications reached the same conclusions. Applying cointegration, Vector autoregressive, variance decomposition, and impulse response on monthly data from 1989 to 1999 for interest rates, oil prices, industrial

production, industrial employment, and stock returns. The results suggested that there was no cointegration. Concerning variance decomposition, it was found that oil price was the most influential variable followed by industrial production. For impulse response, oil price, Growth in industrial production and employment and interest rate responded negatively to a real stock return shock.

In emerging markets, Wongbangpoa and Sharmab (2002) examined the interdependence between stock markets and fundamental macroeconomic variables dynamics in the ASEAN countries. They investigated the existence of long and short run relationships using cointegration, Granger causality, and Vector Error Correction Model (VECM) along with impulse responses and variance decomposition. The macroeconomic variables were Gross National Product, consumer price index, money supply, interest rate and exchange rates from 1985 to 1996 on a monthly basis. Their results indicate that in the long-term the stock prices were positively related to output growth and negatively to the aggregate price level. Negative long run relationship between stock prices and interest rates were detected for Philippines, Singapore, and Thailand. However, a positive relation was observed for Indonesia and Malaysia. In addition, the Granger causality tests detected the causal relationships from the macroeconomic variables to stock prices in all five ASEAN stock markets. Finally, the impulse responses and variance decomposition suggested that ASEAN-5 stock markets dynamically interact with their own key macroeconomic factors.

Prantik and Vina (2003), attempted to explain the linkages between the stock market movement and the real economic events in the Indian stock market in the post reform era using vector autoregressive (VAR) and artificial neural network (ANN). The explanatory variables used in their study were, index of industrial production, wholesale price index,

prime lending rate, foreign institutional investment portfolio in Indian capital market, fiscal deficit, money stock (M3) and exchange rates against Sensitive Index (Sensex) Bombay stock exchange for the period from April 1994 to March 2003 on a monthly basis. They found a consistent relationship between exchange rates (negative), interest rates (negative), index of industrial production (positive), inflation (negative) and money supply (M3) (positive) with stock market returns in both models. In contrast, a few variables like fiscal deficit and foreign institutional investment portfolio in the capital market have shown insignificant influence on the stock market. However, the study did not touch on the long-term relationship and the causality in the Indian stock market.

Nwokoma (2004) studied the performance of the Nigerian stock market and its relation with macroeconomic variables from 1988 to 2002. He used the Nigerian stock market index against output, inflation, money supply, and interest rate. It was found that the variables interest rate and output were both cointegrated with the stock market index. In addition, impulse response indicated that the stock market was exogenous.

Recent study on the stock market growth by El-wassal (2005) who investigated the growth of the stock market measured by market capitalization and trading value of 12 emerging markets[23] and its relation with industrial production, number of listed companies , and rate of return on stocks, using monthly data from 1988 to 2000. Few statistical and econometric techniques for time series were applied, such as descriptive statistics, unit root test, cointegration, and Granger causality. The results for cointegration analysis indicated that the existence of a long-run relationship between each of the stock market capitalization and

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[23] Countries were Malaysia, Mexico, Colombia, Greece, Venezuela, Pakistan, the Philippines, Zimbabwe, Chile, India, Jordan, and Korea.

trading value with the five variables existed for India, Korea, Malaysia, Philippines, and Zimbabwe only. The results of Granger causality for the five cointegrated countries, indicated unidirectional relation moving from industrial production to market capitalization in Korea, while a bidirectional causality relationship existed in Malaysia, the Philippines and Zimbabwe. For privatization and market capitalization, it was found that in India and Zimbabwe it was bidirectional while it was unidirectional in Philippines and Malaysia. Trading values and industrial production causality runs bidirectional in Zimbabwe, Philippines, and Malaysia, while it was unidirectional from industrial production to trading value in Korea. Privatization was found by Granger to cause trading value in Zimbabwe and Malaysia unidirectional, while it ran bidirectional in India. The results further showed that the privatization programs have a significant impact on stock market activating. The influence of the international market was not investigated in this paper. Variables such as oil prices, and the openness to foreign investment portfolios or capital inflow to these markets might have contributed a lot to their growth.

Another study by Verma and Ozuna (2005) went beyond merely looking at the effect of one country's economic policies on its stock market. They investigated the response of the Latin America stock markets to movement in cross-country Latin American macroeconomic variables. In other words, the study was conducted on the effects of the macroeconomic policies of one country on the stock markets of another country. They used four countries namely, Mexico, Argentina, Brazil, and Chile for the period from 1993 to 2003 on monthly basis. Statistical and econometrics techniques similar to other researches plus impulse response were employed on the following variables in all four countries, stock market index, narrow stock of money (M1), interest rate measured, Exchange rate as nominal values (local currency per the US$), and inflation. The study concluded that no

evidence supported the responsiveness of cross section Latin America stock market of one country to macroeconomic variables changes of other countries. However, Mexico's stock market influenced other countries' stock market but not the other way around. In addition, the exchange rate in Latin American countries, Mexico, Brazil, and Chile affected its stock market negatively. Interest rates in Brazil and Argentina has no effect on stock market while it adversely affected Mexico and Chile. Since the study, was focused on the cross section relationship between macroeconomic variables of one country on the stock market of another country the export and import of each country might have been critically important. This was because the trade among these countries might affect their balance of payment and therefore their real activity.

In bivariate system, Doong et al. (2005) investigated the dynamic relationship between stock prices and exchange rates for six emerging Asian markets. Using weekly data and the application of cointegration, Granger causality and GARCH techniques from 1989 to 2003 they concluded the following. First, there was no cointegration in any of the emerging markets. Second, there was bidirectional causality between stock market and exchange rate for all the markets. Third, there was significant and negative association between stock returns and changes in exchange rates in all the markets except Thailand. Therefore, when currency depreciated stock market was expected to fall in the Asian markets.

3.2.3 Malaysian Market

Earlier study by Habibullah and Baharumshah (1996) applying econometric techniques, such as unit root and cointegration tests, to test for the efficiency of the Malaysian stock market finds contrary results. They used money supply (M1 and M2) and GDP with several stock market indices in Bursa Malaysia, on a monthly basis from 1978 to 1992. They found

that the Malaysian market with respect to these variables was informationally efficient, which means that all past information was reflected in the stock prices.

However, Ibrahim (1999) performed a study on the effect of macroeconomic variables on stock prices in Malaysia. He used seven macroeconomic variables, industrial production, consumer price index (CPI), narrow and broad money supply M1 and M2, domestic credit aggregates, official reserve and exchange rate as independent variables and Kuala Lumpur Composite Index (KLCI) as the proxy for stock prices. The study applied the concepts of cointegration and Granger causality to test for market information efficiency. The data used were from January 1979 to June 1997. Results of the bivariate analysis suggest cointegration between stock prices and three macroeconomic variables, CPI, credit aggregates and official reserve. Therefore, this indicated that the market was informationally inefficient while it was informationally efficient in the rest of the variables. In the multivariate model, cointegration confirmed and therefore efficiency was rejected. Moreover, the error correction model implied that there was reaction of the stock prices towards the deviation from the long run equilibrium.

In addition, of trying to investigate the interactions between national stock market prices and aggregate economic variables, Cheung and Ng (1998) examined their empirical long run relationship. This would not only provide an insight about their long run behavior, but would also shed light on the nature of their short run variation. They used quarterly data of Canada, Germany, Italy, Japan and the U.S. for the following variables, real oil price, real gross national product (GNP), real money supply, real consumption and stock price. It was found that real stock market indices were typically cointegrated with macroeconomic. Based on the ECM, it was concluded that real returns on stock indices were generally

related to money supply and oil prices. It was negatively related to oil price whilst positively related to money supply.

In addition, using three types of exchange rates Ibrahim (2000) analyzed the interaction between stock prices and exchange rates in Malaysia. Bivariate and multivariate cointegration and Granger causality tests were applied. Exchange rate importance emerged from reasons cited by the author from previous researchers' works. The paper used three exchange rates measures, real effective exchange rate, the nominal effective exchange rate, the RM/US$ rate along with money supply broadly defined (M2), official reserve and Kuala Lumpur Composite Index. The period considered was from January 1979 to June 1997. The findings from bivariate models indicated no long run relationship between the stock market index and any of the exchange rates, while when M2 and reserves were included there was evidence of cointegration. However, in multivariate model, the results indicated the following. First, unidirectional causality from the stock market to the exchange rate, second, the exchange rate and stock index were caused by the money supply and the reserve, lastly, the error correction coefficients indicated the stock index and the exchange rates adjusted to correct of deviation from long run relationships that constrained the co-movement of the variables. In addition, the analysis indicated that the Malaysian market was informationally inefficient due to the cointegration.

Nevertheless, Ibrahim and Yosoff (2001) criticized previous studies in Malaysia as being lacking in two main aspects. They argued that previous studies in Malaysia focused on a subset of the markets. That there were many variables that have not been included that was vital to the stock market. Second, they asserted that previous studies stop at reporting cointegration and Granger causality while there were stronger techniques that should be

used such as impulse response and variance decomposition. The study used Kuala Lumpur composite index, exchange rate, industrial production, broad money supply (M2), and consumer price index from 1977 to 1998 on monthly basis. After applying cointegration, VAR, impulse response and variance decomposition, they concluded the following. Variables were found to be cointegrated and that in the long-term industrial production and inflation were positively related to composite index while it was the opposite for M2 and exchange rate. Variance decomposition results in two different variables ordering showed that most of the variation in composite index was explained by its own and M2. Moreover, impulse response confirmed the earlier results of cointegration, whereby innovations in industrial production and consumer price index caused positive response in composite index. On the other hand, composite index started with a positive response to M2 but it faded away and became negative with time. For exchange rates, the result was consistent to the cointegration equation whereby it had a negative impact on composite index.

Using two samples to test the dynamic behavior of stock prices and money supply, Ibrahim (2001) applied Vector autoregressive techniques in the Malaysian market before and during the Asian crisis. He used Kuala Lumpur composite index (KLCI), Money supply (M2), exchange rate, real activity (Industrial production) and inflation (consumer price index) from 1977 to 1997 and 1997 to 1998. He found that stock prices were more affected by money supply but not vice versa. Impulse response results suggested that KLCI responded positively to all the variables except exchange rates.

Moreover, arguing that the line of researches in Malaysia were lacking in the area of integration with international markets Ibrahim (2003) included four economic variables two major international stock market. He used Kuala Lumpur Composite index (KLCI) with

money supply (M1), consumer price index, industrial production, and exchange rate along with the US S&P 500 and Japan Nikkei 255 indices from 1977 to 1998 on monthly basis. The findings of the study were first, the variables were cointegrated and positively related to KLCI except exchange rate and the US stock market, which were negatively related to KLCI. Second, variance decomposition and impulse response implied that the dominant effect on the stock market was for money supply, exchange rate, and consumer prices index and both international markets. It was worth mentioning that the domestic market exerted substantial effect on macroeconomic variables. Although, the study did not consider studying the predictability of the market, the author suggested that the bidirectional influence indicated that predictability of stock market from macroeconomic variables and vice versa.

Following the US data from 1947 to 1996 Sadorsky (2001) using stock returns, inflation, interest rate, and industrial production, found that industrial production was a broken trend stationary rather than first difference stationary. The application of Granger causality suggests that inflation causes interest rates, while interest rates caused stock returns; finally, stock return caused industrial production.

Yuosof and Majid (2007) investigated whether there was a difference between Syariah compliant and non-Syariah compliant indices returns in their reaction towards macroeconomic variables in Malaysia. Using monetary (M1, M2, exchange rate, interest rate), real (industrial production index) and international (federal fund rate) variables from 1992 to 2000. They found that both indices reacted similarly to all the macroeconomic variables except interest rate with regards to Islamic index where there was no significant influence.

In conclusion, the above-mentioned studies indicate that some variables were positively related with stock returns while others were negatively related with returns. However, there was little studies done on the influence of these or other variables on Islamic stock returns in general and screened stocks in specific since the screening criteria might cause the screened index to either react differently to the same variables or be influenced by other variables. Although it might be inferred that since it was the stock market it should be more concerned with the individual investor rather than the whole economy. However, since the whole market was comprised of individual investor and their decision will collectively influence the whole market. Thus if Syariah compliant investment portfolio was criticized of being inefficient then their reaction to macroeconomic variables might be different from the conventional viewpoint.

3.3 Stock Returns and Firms Specific Factors

Many studies have investigated the factors affecting the cross-section of the stock market returns. Most of the studies were done in the developed countries; however, few were done in emerging markets. The most commonly used factors in these studies were size, book to market ratio, price-earnings ratio and turnover. Some factors proved significant in some cases however, the most significant factors were size and book to market ratio. In this section, both developed and developing markets is reported some of the studies done on market returns. This part is divided into two main sections. The first section reviews the literature on the developed markets on the relationship between firm specific variables and the returns while the second deals with the literature of the developing markets. The reason for the division is the difference in the nature of the relationship that exists between firm specific variables and returns in these two markets.

3.3.1 Developed Markets

The most famous paper that investigated the multifactor model of stock returns was the Fama and French (1992). They were not the first to attack the Capital Asset Pricing Model (CAPM). However, they were the first to include all these factors together and investigated a longer interval of data in the US. They used data from 1963 to 1990 of companies in NYSE, AMEX, and NASDAQ. Using size, book to market ratio, beta and price-earnings ratio with return, they concluded that beta does not explain any variation in the returns. In addition, size and book to market ratio were the most significant factors in explaining the variations in returns. On the other hand, price earnings ratio and leverage power were absorbed when size and book to market ratio were included in the model.

Fama and French (1993) studied the common factors in both stock and bond returns from 1963 to 1991 on a monthly basis. Grouping stock according to size differences and book to market ratio differences, they had 25 portfolios to study. They chose three factors to explain the stock returns while two for the bond returns. They applied multiple regressions on various models with varying variables to check the robustness of the model and to ensure that there was no misspecification in the variables included. After various regressions, they concluded that the three factors related to stock returns and the two factors related to bond returns explained the variation in the stock returns collectively. However, most of the variation was explained by size, book to market ratio and bond factors. In the bond market, they found that only unexpected change in the interest rate and default risk explained most of the variation in the bond returns. Only in the low-grade bond, they found that the same factors explaining stock returns were explaining bond

returns. The previous relationship of negative effect of size and positive effect of book to market ratio on the stock returns was confirmed.

Chan et al. (1993) studied the fundamentals of the Japanese stock market from 1971 to 1988 on a monthly basis. Using size, book-to-market ratio, cash flow yield, and earnings yield on 1570 companies of Tokyo stock exchange, they found that in full model estimation, where the four variables were included, all variables were significant except for size. Book to market ratio was the strongest explanatory variables in all models, followed by size and cash flow yield and lastly earnings yield. Size was significant in univariate model and with earnings yield, while cash flow yield was significant in univariate model and in the full model. In addition, it was concluded that beta of the market does not have any explanatory power in the models. The relationship of book to market with return was ratio was confirmed here.

One of the comprehensive studies done was by Fama and French (1996) where they examined many issues concerning the CAPM model. Applying Fama and French (1993) three-factor model they examined market Beta, size, book-to-market equity, price to earnings, sales growth, long term past returns and price to cash flow effects in explaining the variation in stock returns. In addition, they investigated the existence of long run reversal and short run continuation of returns. They concluded that all the factors affect stock returns. Moreover, they found that there was a reversal effect, but not continuation effect in stock returns.

Loughran (1997) in inquiring why the value and growth fund managers did not exhibit impressive performance difference between those stocks although the financial literature

declared that there was a difference, found the following. He found very strong results that; a) using value weighted returns growth firms outperformed value firms by huge difference; b) value firms performed the best in the month of January. This was justified by the rebalancing hypothesis and microstructure considerations. The explanation for the microstructure was that value firms have lower stock prices, thus they were under higher risk of bid and ask spread miscalculations. However, reasoning behind the rebalancing hypothesis or window dressing was that fund managers reinvested the end of the year tax loss selling proceeds to rebalance their portfolios at the beginning of the year (i.e. January) and the value firms received a boost. Moreover, the author found that when the month of January was excluded the size and the book-to-market equity did not explain of the variation the stock returns. He characterized small growth firms as being heavily listed in NASDAQ, being newly listed, being highly de-listed, and had poor performance.

However, contrary to this, Fama and French (1998) reexamined whether there was a value premium in 13, 16 developed, and emerging markets from 1975 to 1995 and 1987 to 1995 respectively. They used several variables to formulate their portfolios including book-to-market equity, earning to price, cash flow to price and dividend yield. They used two models and compared between their results namely CAPM and ICAPM or two-factor Arbitrage pricing theory. They found that value premium existed in both markets and ICAPM was better in explaining the variation in the stock returns.

Elfakhani et al. (1998) studied the relationship between returns and market Beta, firm size and book-to-market equity in the Canadian stock market from 1975 to 1992 with the effect of turn of the year and in two sub periods to test the tax-loss selling hypothesis. Tax-loss selling was a process of selling securities at a loss to offset a capital gains tax liability. It

was typically used to limit the recognition of short-term capital gains, which were normally taxed at higher federal income-tax rates than long-term capital gains. The rationale behind dividing the period into two sub-periods was because taxes on capital gain were reduced in 1984. Utilizing Fama and French Model (1992), they created 25 portfolios by crossing beta with the firm size. They conclude that there was no significant market beta effect on returns while size and book to market were significantly related to returns. In addition, they found January effect in firm size for all the periods however, the returns fell post 1984, and this was contrary to the tax-loss selling hypothesis where returns will increase when tax was decreased. On the other hand, book-to-market effect was apparent post-1984.

This was contrary to the findings by Berkowitz and Qiu (2001) where they studied the common risk factors from bond and equity markets on the stock returns applying Fama and French (1993) model in the Canadian stock market. They found that Market Beta, size and book-to-market equity were the strongest factors affecting returns while the two bond market factors have no explanatory power on stock returns. However, when dividing the companies by industries it was concluded that market beta was the strongest and the most significant factor in explaining returns followed by size premium where it was negative for some industries and positive in the others. Surprisingly book-to-market ratio and the bond market factors did not appear to explain much of the variation in the stock returns.

Testing Fama and French three factors model augmented by the momentum variable on the Canadian stock market, L'Har et al. (2004) investigated, in addition to the explained variation by these four factors, the turn of the year effect and market environment (i.e. up and down market, and the monetary policy effect). They concluded that size, book-to-market equity and momentum were positive and significant variables in explaining returns

variations. In term of the January effect, they find that it was pronounced in market beta and the size variables. In addition, they note that book-to-market equity was influence by the up and down market, whereby it was positive and significant in the down market while it was negative and insignificant in the up market. The rest of the variables reaction was positive for both size and momentum in both timing, while market beta was positive in the up market and negative in the down market. Lastly, in terms of reaction to monetary policy, it was found that size and book-to-market were positive and significant in the expansive monetary policy while momentum was positive and significant in expansive as well as restrictive monetary policy.

In investigating the relationship between stock returns and book-to-market equity, Bulkley et al. (2004) derived a model that investigates the effect of set of variables with book-to-market in the US market using panel data technique from 1981 to 1998. They included two main effects in their model namely the firm specific fixed effects and the time specific effect. They concluded that the firm specific fixed effects were more dominant then time specific fixed effects in forecasting future returns.

In evaluating the performance of growth and value, strategies to test the extrapolation model that suggests that investors overreact to stocks that perform well or bad in the past and therefore build their portfolio on this overreaction Cai (1997) studied the Japanese stock market from 1975 to 1993. In checking the overall performance of the two types of portfolio, they find that value portfolio outperforms growth or glamour portfolio. In the cross-sectional regression in univariate and multivariate models, the most significant variables were book-to-market equity and size, while cash flow yield comes second in the

importance in explaining the returns. In addition, it was found that value stocks outperforms glamour stock more in the worst time than in the best times.

3.3.2 Developing Markets

In a study done in the emerging markets by Claessens et al. (1995) who studied cross-section of stock returns in 19 emerging markets. They used size, earnings-price ratio, dividend yield, turnover, book to market equity and exchange rate of 19 emerging markets[24] from 1986 to 1993. Using between estimator methodology, they concluded that size, earnings-price ratio were significant in 10 countries, foreign exchange and turnover were significant in nine countries, book to market equity was significant in 6 countries, while dividend yield was significant in 5 countries. The results were mixed. However, contrary to studies in developed countries; the result suggested that size was positively related to returns in most of the countries. The justifications of this was of four folds, first, it was related to periods of sustained performance which was found in previous studies that size effects was reversed in sustained periods. Second, these markets were open to foreign investors that were attracted to large companies, which caused them to have higher returns. Third, the easy access of these large companies to cheaper capital and lastly, major trade reforms occurred in these markets might have benefited large firms more than small firms.

Another study in the emerging markets was by Chui and Wei (1998) about the effect of size, book-to-market, turn of the year in Malaysia, Thailand, Taiwan, Hong Kong and Korea. Monthly data was used from 1977 to 1993 to investigate the effect of these variables on the returns. Following Fama and MacBeth (1973) regression model they concluded in

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[24] Brazil, Chile, Colombia, Greece, Indonesia, India, Jordan, Korea, Malaysia, Mexico, Nigeria, Pakistan, Philippines, Portugal, Taiwan, Thailand, Turkey, Venezuela, and Zimbabwe.

term of size and book to market ratio the expected signs were negative and positive respectively, however, they were not statistically significant in all countries. In addition, the beta does not explain any of the variation in the returns. On the other hand, concerning the turn of the year effect or January effect and non-January effect grouping the result was as follows. In terms of portfolio, the size negative sign and book to market positive sign were dominant in almost all countries for both groups. The beta still does not have any explanatory power in both groups. Similarly, for individual stocks the result was almost the same for beta, size and book to market variables for both groups. This indicates that there was no January effect in both portfolio and individual stocks.

In addition, Rouwenhorst (1999) studied 20 emerging markets factors to investigate the similarity or difference between factors in developed and developing countries, the locality of the factors, similarity of the market, relationship between liquidity and returns, and factors relationship to liquidity. The study covers the period, according to availability, from 1982 to 1997 with 1705 companies using market Beta, size, book to market ratio and turnover following Fama and French (1995). The results suggest that first; returns factors were similar in both developing and developed markets. Second, beta has no effect on the returns. Third, the global exposure was not reflected in the returns factors. Forth, there was no correlation between factors portfolio. Fifth, market factors were different in each country. Sixth, there was no relation between returns and turnover. Finally, and Beta, size, book to market, momentum were positively related to turnover.

In the Malaysian realm, Pandey (2001) studied the returns of Malaysian publicly listed companies and their common effecting factors. They used variables such as Beta, size, book-to market equity, earnings-to-price ratio, dividend yield, leverage, and dividend

payout of 247 companies with returns annually for 1993 to 2000. They pooled the time series data with cross sectional data to reach a set of data that panel data techniques can be applied. They concluded that in the univariate analyses size, book to market equity, earning to price ratio and dividend yields were significant and positive except for size, which was negatively related to returns. In the multivariate model Beta, size, earning-price ratio and dividend yield were significant. Book to market equity power disappears when size was included.

In the same vein, Drew and Veeraraghavan (2002) applied the Fama and French (1993) model in the Malaysian case. They concluded that multifactor model was robust and explained the variation in stock returns better than CAPM. They found size and value premium affected the Malaysian stock market. In addition, they tested the hypothesis that there was turn of the year effect. They concluded the rejection of the turn of the year effect or January effect.

Drew et Al. (2003) in their paper tried to investigate two issues. First whether beta in CAPM was the only risk explaining the variation in the average stock returns and whether the multifactor model developed by Fama and French (1996) explained the variation in average stock return better than CAPM. Using data from four Asian countries, Hong Kong, Korea, Malaysia, and the Philippine they developed six main portfolios by the intersection of two size levels and three categories of book to market equity. They ran CAPM and the multifactor model and compared them to conclude which model was best to explain the variation the average stock returns. They concluded the following; first small and high book-to-market equity firms generated higher returns than big and low-to-market equity firms do. Second, the multifactor model explained more variation in the average stock

returns than CAPM. Third, the absolute pricing error measured by the intercept was lower in the multifactor model than CAPM. Lastly, the multifactor model should be considered when choosing a portfolio in the studied markets.

However, Drew et al. (2003) investigated whether the multifactor model can explain the variation in the stock market returns better than CAPM in the Shanghai stock market, China using Fama and French (1993) multifactor model their conclusion was different. They concluded that a) the multifactor model explains more variation in the stock returns than the CAPM does, b) growth firms generates higher returns than big and value firms, while value firms do not generate higher returns as predicted in their previous study in four emerging Asian markets. They offered two possible reasons for such results. First, they suggested that investors have overexploited the opportunity that value shares were mispriced, therefore invested heavily on them causing them to yield lower returns. Second, they suggested that Chinese investors were 'quasi rational' that was investors were unable to process information adequately causing them to act more like noise traders. The authors also argued that a huge percentage of the shares in the stock market were not tradable due to government regulations.

However, Wong et al. (2006) in investigating the relationship between stock returns in Shanghai stock exchange and four variables found that size and book-to-market equity were the significant variables in explaining the variation in the stock returns. Beta and the tradable share of firm's were insignificant in the full regression model. Size and book-to-market equity were negatively and positively related to stock returns respectively. Therefore, small and value companies yield higher returns than big and growth firms do. In addition, the January effect was in existence in Shanghai stock market.

Lam (2002) studied Hong Kong stock market returns and its relation to seven variables[25] using Fama and MacBeth (1973) model. He used 100 listed companies from 1980 to 1997. He concluded that in the overall period and both the sub periods that size, book-to-market equity, and earning price ratio were the most significant variables explaining the variations in the stock returns while beta was insignificant. In addition, after performing tests to check whether there was turn of the year effect or January effect, it was concluded that was did not occur. However, the relationship between stock returns and the size was found to be positive in all the regressions performed. Nevertheless, no justification was provided for the positive sign.

Kim (1997) using Fama and MacBeth (1973) model investigated four variables effect on the stock returns variation from 1963 to 1993 both on monthly and quarterly basis. He finds that market beta was very significant and strong in explaining the variations in the stock returns followed by book-to-market equity and price to earning while size was marginally significant in the monthly estimation and insignificant in the quarterly estimation.

To study the determinants of returns in 21 emerging markets, Serra (2000) used a set of financial, macroeconomic variables and price attributes for Latin American and Asian markets. The main findings were there were six factors that effected returns and were common among the markets. These factors were lagged prices, earning to price ratio, book to market ratio, dividend yield, and liquidity (i.e. size, and price per share). Although these

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[25] Size, book-to-market equity, book leverage, market leverage, earning price ratio, earning price ratio dummy, and Beta.

factors were common but they were not correlated, suggesting markets were segmented. Lastly, it was found that the factors effecting returns were local factors.

Raising the question that if the higher book-to-market values the higher the return as claimed by many researchers, why professional do not exploit this opportunity, Ali et al. (2003) investigated whether arbitrage risk, transaction cost and investor sophistication were among the reasons preventing the exploitation of mispricing to occur. Using data from 1976 to 1997, they found that the greater the arbitrage risk, transaction cost and the lower the investor sophistication the greater the ability of book-to market ratio to predict the future returns. Put differently, the higher the book-to market ratio the greater the risk, cost and the lower the investor sophistication hence the higher the return.

3.4 Conclusion

This chapter reports empirical studies on screened investment portfolio performance with comparison with non-screened investment portfolio. In addition, it reports the studies on macroeconomic variables as well as firm specific variables with stock returns of non-screened investment portfolio. It was concluded that screened investment portfolios yield the same returns as non-screened investment portfolio in most of the cases. In terms of macroeconomic variables and firm specific variables for non-screened investment portfolio, there were certain variables that strongly influence stock returns. However, little studies investigate the influence of these variables on screened investment portfolio. This study is different from most of the studies in its three parts. The first part is covering the risk and returns of KLCI and KLSI in the Malaysian stock market. Some studies had covered this area in either Malaysia or other countries; however, none so far has studied the long-term relationship and causality between these two indices in Malaysia. This study will

investigate the performance of indices, the long run relationship, and the causality between the indices. The second part of the study had not been studied so far in any country except in Malaysia. However, those studies were focusing on variables influencing the Islamic index compared to the non-Islamic index or on volatility. This study uses different local variables plus one external variable. In addition, this study investigates the long-term relationship as well as the causality between each index and the selected macroeconomic variables. The third part of the study focuses on whether screened and non-screened firms differ in their returns and which firm's specific variable explains returns. The following chapter discusses the variables used in each part, data, the methodology, and the hypothesis of the study.

CHAPTER FOUR

DATA AND METHODOLOGY

The methodology of this study is divided into three parts. The first section is concerned with the answering the first part questions which are investigating the performance of KLSI vs. KLCI using t-test and risk adjusted ratios. It is extended into investigating the stationarity and the long and short-term relationships between them. The second section is to answer the second part questions. It deals with the macroeconomic variables and their influence on both KLSI and KLCI, utilizes the same time series techniques used in the first part (i.e. stationarity, long and short run relationship). Since, the first and second part of the methodology is overlapping, the time series technique is explained once for both parts. The third section utilizes panel data techniques to determine whether returns of both Syariah and non-Syariah firms differ to answer the third part questions.