The Relation between Average Stock Return to Earning Ratio and Book to Market Ratio in FTSEBM

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A thesis submitted to the
fulfillment of the requirement for the degree
Master of Science (Finance)
College of Business (Division of Accounting and Finance)
Universiti Utara Malaysia
2009

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ABSTRACT

Malaysia stock market is an emerging market in Asia. Recently, Malaysia has implemented some liberalizations in the stock market. Malaysia stock market is a potential market to get high profits., Many local as well as foreign investors would be interested to know whether the Malaysian stock returns could predicted by financial ratios. The main purpose of this study is to investigate the ability of price to earning and book-to-market ratios to predict future stock market returns in FTSEBM.. A linear regression analysis is applied for this purpose. Findings reveal that book to market ratio significantly influences stock return,while there is no significant positive linkage between price to rarning ratio and stock return.

DEDICATION

To my great beloved father Mr. Massad Alrawashdeh

DECLARATION

I am responsible for the accuracy of all opinion, technical comment and illustrations in this project paper except for citations and quotations that have been adequately acknowledged. I bear full responsibility for the checking whether material has been previously or concurrently submitted for any other master's programme at UUM or other institutions. UUM does not accept any liability for the accuracy of such comment, report and other technical information claims.

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NAJED MASSA SULAIMAN ALRAWASHDEH

ACKNOWLEDGMENTS

In the name of Allah, Most Gracious, Most Merciful.

I would like to express my full gratitude to my supervisor, Associate Prof. Norafifah Ahmad, for her constant guidance, invaluable advice, suggestion and encouragement throughout my study in Universiti Utara Malaysia.

My special thanks will always be for the most important people in my life, my lovely family namely my father, Massad Alrawashdeh who has been selflessly devoting his life to my family and to the pursuit of excellence in knowledge for all his children. My ever-lasting indebtedness goes to the source of my happiness, my mother, who is simply the most wonderful, amazing woman and the greatest asset and treasure of my life. My constant remembrance to my sisters and my brothers.

There are many friends that left their heart prints on my heart. Thank you for your valuable suggestions and constructive comments. You all are very dear to me, especially Ammar, Basher, Hamdan, Loai, Khalid, Hazim, Raed, Hammam, Malik and Mahmoud. I wish you the best!

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Stock Return	SI
Price To Net Asset Value	PNAV
Net Asset Value	NAV
Kuala Lumpur Composite Index	KLCI
Price Earning	PE
Book To Market Ratio	BTM
Capital Asset Pricing Model	CAPM
Gross Domestic Product	GDP
United State	U.S
Risk Free	RF
Risk Market	RM
Beta	β
Average Return	AR
Book Value	BV
Market Value	MV
Johannes Burg Stock Exchange	JSE
Arbitrage Pricing Theory	APT
Modern Portfolio Theory	MPT
Cash Flow To Price	CFTP
Dividend Yield	DY

Financial Times Stock Exchange Bursa Malaysia	FTSEBM

CHAPTER ONE

BACKGROUND

1.0 Introduction

Stock return consists of dividend and increases in price (capital gain). It is important to investors and business organization to know the company's stock value and investment returns .The decision whether to choose a particular stock is one of the most important implications for the stock price. A lot of models and techniques have been developed and used by investors to help them obtain better returns on their stock investment.

Capital Asset Pricing Model (CAPM) is the most influential and widely used one factor pricing model. The model estimates the expected return of a stock, given the return for a theoretical risk free asset, market return and the stock's sensitivity to the market risk. In other words, non diversifiable market risk is the only risk factor that is used in the model and it is sufficient to explain the risk-return trade-off with an efficient market portfolio. The model's success depends on whether or not any persistent excess return can be made without taking additional market risk through β's

Capital asset pricing model is most practitioners' favorite when estimating expected return for an individual stock. CAPM developed by Sharpe (1964) and Linter (1965) was the first theoretical model that explains the non diversifiable market risk's impact on return. The model estimates the expected return of a stock. Non diversifiable

risk is the only risk factor that is used in the model, which is represented by beta in the CAPM model.

Financial managers most often use the CAPM to estimate the cost of capital for which they need to know the market risk premium. Some researcher have contended that other variables such as book to market equity ratio and price to earnings ratio exist that could significantly explain the expected return,. The greatest challenge to CAPM comes from Fama and French (1992).

According to Fama and French (1992), there is significant relationship between book to market value and stock return. They also find that stock return is associated with price to earnings ratio. Stattman (1980) finds a positive relationship between book to market ratio and expected stock return. Drew et al (2003) finds that \market beta alone is not sufficient to describe the variation in average equity return; there is a statistically significant non-beta risk associated with book to market equity. Rahmani et al (2006) asserts that there is significant relationship between earning to price ratio and the stock return.

The goal of this study is to the analyze the relation between stock return with book to market ratio and price to earning ratio in Malaysian stock market. The study investigates the predictive power of book to market ratio and price to earning ratio in order to determine whether a predictability phenomenon exist in the Malaysian stock market. For this purpose, the sample of Malaysian stock exchange was chosen for the

designated period of 2004-2008. The methodology adopted was based on regression analysis.

1.1 Overview of Malaysian Economy

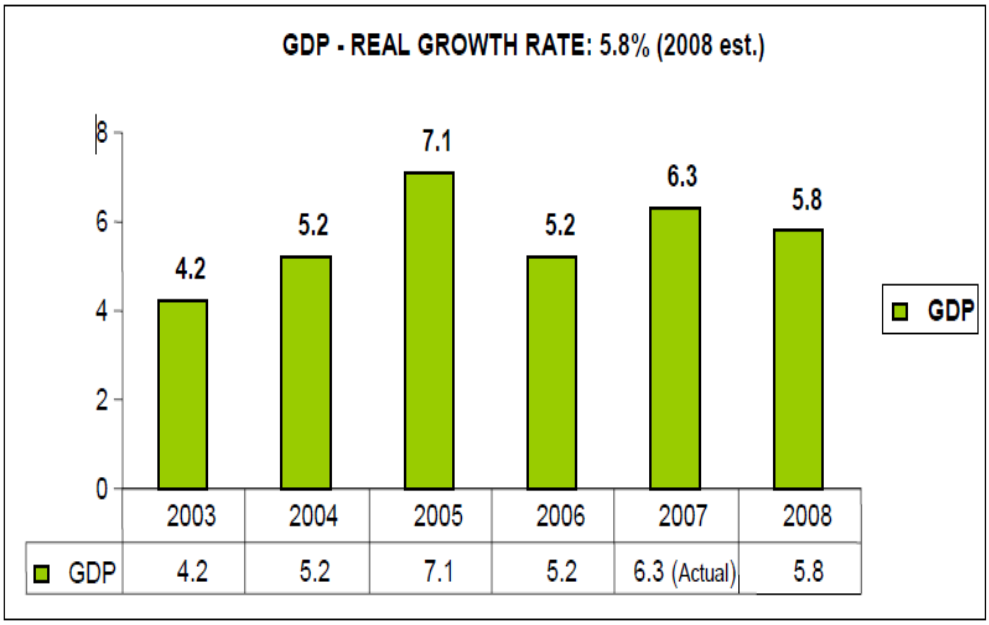
Malaysia, a middle-income country, has transformed itself since the 1970s from a producer of raw materials into an emerging multi-sector economy. After coming to office in 2003, former Prime Minister Abdullah Badawi tried to move the economy farther up the value-added production chain by attracting investments in high technology industries, medical technology, and pharmaceuticals. Throughout the years, the government of Malaysia continues its efforts to boost domestic demand and wean the economy off of its dependence on exports.

Nevertheless, exports - particularly of electronics - remain a significant driver of the economy. As an oil and gas exporter, Malaysia has profited from higher world energy prices, although the rising cost of domestic gasoline and diesel fuel forced Kuala Lumpur to reduce government subsidies. Malaysia unpaged the ringgit from the US dollar in 2005 and the currency appreciated 6% per year against the dollar in 2006-2008. Although this has helped to hold down the price of imports, inflationary pressures began to build in 2007. In 2008 inflation stood at nearly 6%, year-over-year. The government presented its five-year national development agenda in April 2006 through the Ninth Malaysia Plan, a comprehensive blueprint for the allocation of the national budget from 2006-10. Prime

Minister Abdullah unveiled a series of ambitious development schemes for several regions where Malaysia had trouble attracting business investment.[1]

Once dominated by the raw material trade, the economy of Malaysia is now driven by many sectors. Exports continue to fuel the economy's growth, especially in electronics, and investments in high technology industries, medical technology and pharmaceuticals are growing. Malaysia does export oil and gas and is profiting from high international energy prices, but the rising cost of fuel within the country is forcing authorities to decrease fuel subsidies.

Figure 1: GDP in Malaysia 2003-2008



Source: www.indexmundi.com, Malaysia GDP, Real Growth Rate

Figure 1 illustrates the GDP in Malaysia of period 2003 – 2008. It can be seen that the GDP grew at a rate of 6.3% in 2007, higher than the predictions from the

[1] http://www.indexmundi.com/malaysia/economy_overview.html

previous year and has positively withstood setbacks such as political unrest in areas along the Thai border and health scares. In 2008 the GDP declined to be 5.8%, which is lower than previous year. The country is moving forward with a policy of creating a strong knowledgebase in the fields of technology, research and development. Free trade zones and high-spec technology parks have also been set up across the country to aid businesses and research companies. Tourism has helped fuel the steady economic growth. Over 19.1 million tourists visited Malaysia in 2007, nearly 20% more than the figures recorded for 2006.[2]

[2] http://www.propertyfrontiers.com/research/country-guides/asiapacific/malaysia/country-economic-overview.aspx

1.2 Problems Statement

According to CAPM. Beta is the only variable that significantly affects return. CAPM is the most frequently applied model for prediction of stock returns. However, apart from the CAPM, there are empirical studies carried out on factors and variables capable in predicting the stock return. Including such variables like price to earnings ratio and book to market ratio.

Malaysian stock market is an emerging market which can be differentiated from developed markets with respect to their heterogeneous nature and inherent dynamics. These are the markets characterized by high volatility and high average returns. As discussed by Kürşat & Güner (2001), it has been shown that these emerging markets such as KLSE, now known as FTSE Bursa Malaysia (FTSEBM), are not integrated to the developed markets of the world as evidenced by very low correlation with the rest of the world. (Bekaert et. al. 1998).

Fama and French (1992) find that market beta has little or no ability in explaining the variation on stock returns. High future stock returns also are generally associated with initially low price to earnings ratio and there is a significant positive relationship between book to market value and stock return.

Most of the studies testing the relation between stock return with book to market (BTM) ratio and price to earnings (PE) ratio have concentrated on the U.S stock markets although there is evidence to support the relationship from stock markets outside the U.S.

Since there is a lack of empirical evidence to tell whether there are BTM and PE ratios effect on the Kuala Lumpur stock exchange market. This gap creates several motivations for us to undertake this study.

1.3 Research objectives

The main objective of this study is to investigate the ability of price to Earning and book-to-market ratios to predict future stock market returns in FTSEBM. Specifically, the research objectives are as below:

1. To examine if book to market ratio significantly influences stock return.
2. To examine if price to earning ratio significantly influences stock return.

1.4 Research Questions

Based on the research objectives, below are the research questions which need to be investigated. The purpose of this study is to answer the following questions:

1- Is there any significant relationship between a firm's price to earning ratio and stock return in the Malaysian stock market?

2- Is there any significant relationship between a firm's book to market ratio and stock return in the Malaysian stock market?

1.5 Significance of Study

Many studies on various stock markets have been conducted with most focusing on stock returns, since it is important to both investors and business organizations to know what influences their investment returns and company stock value. Among the factors that are considered greatly influencing stock returns are dividend price ratio, book to market ratio, price earning (P/E) ratio, dividend yield and exchange rates. According to Wan Mansor, et al (2007), fundamental variables such as Dividend yieldand price earning ratio are important sources of information in determining stock market returns and are useful to investors and other market participants in deciding their investment strategies.

Although many previous empirical studies have investigated the relationship between stock returns and fundamental ratios such as P/E ratio, dividend yield and book-to-market ratio, the results are ambiguous. Basu (1983) and Banz and Rolf (1981), among others, find a evidence showing that stock returns are positively affected by their fundamental values. On the other hand, a study by Fama and French (1992) give contradictory results. They find that stock returns are negatively affected by their fundamental values.

In general, all these results show that a consensus on the role of fundamental ratios in the process of determining stock returns so far does not exist. Furthermore, the price-to-earnings ratios, book-to-market ratios as well as past returns have significant explanatory power for the variation in cross section of expected returns especially over

longer time periods even after controlling for market risk .Hence they can be used as tools in forming market timing and asset allocation strategy in emerging equity markets.

1.6 Scope of the Study

This study will be one of the few studies carried out in Malaysia, as an emerging market. Similar studies have been undertaken mostly in developed countries. The organization of the study will be based on the sample grouping with respect to P/E and book-to-market ratios. A detail summary is presented and the findings compared to those in the developed countries. . This study initially adopts a similar approach by grouping observed stock return, P/E ratio and book-to-market ratios (PBV) from FTSEBM which is an emerging equity market.

1.7 Chapter Summary

This chapter discusses the economic condition in Malaysia, followed by discussion the research problem, research objective, research questions, significance of study and lastly scope of study.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter discuses capital assets pricing model (CAPM) and also variables selection criteria, followed by empirical evidence of stock returns. In defining the empirical evidence of stock returns, there will be other related factors. In addition, Malaysian stock market will be included in the discussion.

2.1 Capital Asset Pricing Model (CAPM)

William Sharpe (1964) published the capital asset pricing model (CAPM). Parallel work was also performed by Treynor (1961) and Lintner (1965). CAPM extended Harry Markowitz's portfolio theory (1952) to introduce the notions of systematic and specific risk. For his work on CAPM, Sharpe shared the 1990 Nobel Prize in Economics with Harry Markowitz and Merton Miller.

Capital Asset Pricing Model is

$$r = Rf + Beta \times (RM - Rf)$$

r is the expected return rate on a security.

Rf is the rate of a "risk-free" investment.

RM is the return rate of the appropriate asset class.

The above given formula is known as capital asset pricing model (CAPM), The model implies that the expected return on a security is linearly related to its beta. Since the return on the market has been higher than the average risk free rate over long periods of time, $(R_m - R_f)$ is presumably positive. Thus the formula implies that the expected return on security is positively related to its beta.

CAPM considers a simplified world where there are no taxes or transaction costs. All investors have identical investment horizons. All investors have identical opinions about expected returns, volatilities and correlation of available investments.

In such a simple world, Tobin (1958) states that the super-efficient portfolio must be the market portfolio. All investors will hold the market portfolio, leveraging or de-leveraging it with positions in the risk-free asset in order to achieve a desired level of risk.

CAPM decomposes a portfolio's risk into systematic and specific risk. Systematic risk is the risk of holding the market portfolio. As the market moves, each individual asset is more or less affected. To the extent that any asset participates in such general market moves, that asset entails systematic risk. Specific risk is the risk which is unique to an individual asset. It represents the component of an asset's return which is uncorrelated with general market moves.

According to the CAPM, the marketplace compensates investors for taking systematic risk but not for taking specific risk. This is because specific risk can be diversified away. When an investor holds the market portfolio, each individual asset in that portfolio entails specific risk, but through diversification, the investor's net exposure is just the systematic risk of the market portfolio.

There is a number of empirical research and developmental research on CAPM. Which was one of the important topic to be investigated until the 1990s. As found by Fama and French (1992) the relationship between the Beta (β) and the average return was weak over the era from 1941 to 1990 and virtually nonexistent from 1963 to 1990. The

second, most important argument made is that the average return on a security is negatively related to both the firm's price-to-earning (P/E) ratio and the firm's market value-to-book value (M/B) ratio.(Ross, Westerfield & Jaffe, 2005).

2.2 Book to Market (BTM) Ratio Effect on Stock Return

A number of researchers pointed out that the BTM ratio could be an additional risk factor. Stocks with a high BTM ratio earned higher returns than stocks with a low BTM ratio. The difference between the high BTM ratio stocks' earning and low BTM ratio stocks' earning is the value premium Daniel, Titman and Wei (2001), Fama and French (1992), and Chan et al. (1991).

As discussed by Fama and French, (1992), there is a strong relationship between the average returns on stocks and size, but there is no reliable relation between average returns and β. It has been further argued that there is a strong cross –section influence between average returns (AR) and book-to-market equity. If anything, this book-to-market effects is more powerful that the size effect. Findings also show that the combination of size and book-to-market equity absorbs the apparent roles of leverage and E/P in stock returns.

Daniel et al (2001) find that BTM ratio has a stronger power to predict average stock returns in the Japanese stock market than the U.S. market. They investigated the U.S. and Japanese stock markets from 1975 to 1997.

Stattman (1980) and Rosenberg, Reid and Lanstein (1985) find positive relation between book-to-market ratio and average return for U.S. stocks. Chan et al (1992) find the same relationship for the Japanese stocks.

Chen et al. (2007) find that stock returns are positively related to the BTM ratio on the Chinese stock market by applying a different method to test the BTM ratio effect. Wang and Iorio (2007) show that BTM ratio has sufficient power to explain stock returns, and that the conditional local betas and the global betas are not related to stock returns for the period 1994 through 2002 in Chinese stock market.

Barber and Lyon (1997) carry out another study based on the research findings by Fama and French (1992). They studied returns of the financial institutes excluded from analysis by Fama and French (1991).

The evidence collected by Barber and Lyon shows that size and BV/MV ratio significantly explains the cross-sectional variations in the stock return. Similar phenomenon has been studied by Mukherji et al (1997), who included fundamental variables namely beta, BTM ratio, debt-book-value to stock market value ratio, earnings per share to stock price ratio, and stock market value and sale per share to stock price ratio. The findings explain that annual returns during the time of 1982-1993 had a positive relationship with BV to stock market value, sale to stock price ratio and debt to equity ratio, while annual return had a negative correlation with size.

Attempts have been made to segregate the BTM outcome into a variety of categories of risk for which it may proxy leftovers an interesting avenue for additional research. For example, previous studies on returns on the Johannesburg Stock Exchange (JSE) have mainly been performed within the framework of the CAPM, with various firm-specific attributes being tested jointly with the CAPM's risk measure, beta, in order to provide evidence for or against the CAPM (Auret & Sinclaire, 2006). They found that BTM has more explanatory power than size and PE radio

As observed by Lam (2002) beta does not seem to be capable in explaining the average stock return in Hong Kong Stock Exchange in the period of 1984-1997. This result is consistent with earlier research findings.

2.3 Price to Earnings (PE) Ratio Effect on Stock Return

Price earning (P/E), is explained as the ratio of the current market price of a stock relative to its earnings per share. This model is very simple and factual and can easily be applied to a company's historical earnings. It can also be used to measure how cheap or expensive the stock is relative to other stocks.(Hassan and Rahman, 2005).

Basu (1977) formed five portfolios based on P/E ratio using the data applicable to a 14-year period of 1957-1971. As analysis the portfolio t explains that the greates P/E ratio and lowest return had a greater systematic risk.

In another research, Basu (1983), provides evidences that the effet of P/E ratio was not visible with respect to small capitcal stocks only and the same study confirmed the findings by Jaffe et al. (1989)

Fama and French (1992) conclude that the greatest relationship exists between BV/MV ratio and size. Under such circumstances, when these two variables are introduced, the predictive power of other variables is reduced to a great extent, and the cross-sectional stock return average may simply be explained by these two variables.

On the other hand, Lam (2002) observed that Beta was not apparently capable of explaining the average stock return in Hong Kong Stock Exchange in the period of 1984-1997.it seems that the three variables including size, BV/MV and P/E ratio can explain the cross-sectional changes in the stock return average during that period. Lewllen (2004) studied the dividend yield, BV to MV ratio as well as P/E ratio in the period of 1946-2002 in the companies listed in New York Stock Exchange. He found that there was a weak relationship between E/P and the Stock Return.

2.4 Theory Applied

The CAPM was developed in the early 1960's (Treynor, 1961.William, 1964 & John 1965**).** An alternative to the CAPM, called arbitrage pricing theory (APT), was developed subsequently, Unlike the CAPM, the APT, however, does not itself reveal the identity of its priced factors, the number and nature of these factors is likely to change over time and between economies. (Ross, 1976). The differences between the two models stem from the APT's treatment of interrelationship among the returns on securities. The APT assumes that returns on securities are generated by number of industrywide and market-wide factors. Correlation between a pair of securities occurs when these two securities are affected by the same factor or factors. By contrast , though the CAPM allows correlation among securities, it does not specify the underlying factors causing the correlation. However, both the APT and the CAPM imply a positive relationship between expected return and risk. In addition the APT views risk more generally than just the standardized covariance or beta of a security with the market portfolio. (Ross, Westerfield and Jaffe, 2005).

According to the Fama-French (1992) three-factor model, the first factor is the stock's CAPM beta, which measures the market risk of the stock. The second is the size of the company, measured by the market value of its equity (MVE). If small companies are riskier then large companies, then it is expected that small companies would have higher stock returns than large companies. The third factor is the book value of the equity divided by market value of equity, or the book–to–market ratio (BTM). If the market

value is larger than the book value, then investors are optimistic about the stock's future (Brigham and Ehrhardt, 2005).

Another theory known as modern portfolio theory (MPT), shows s detailed information about the proposes of how rational investors use diversification to optimize their portfolios. And how a risky asset should be priced. What then should be an ideal pricing model based on MPT? The basic concepts of this theory are Markowitz diversification, the efficient frontier, capital asset pricing model, the alpha and beta coefficients, the capital market line (CML) and the securities market line (SML)[3].

2.5 Other Factors

With the addition of BTM, there are some other factors which can also influence stock returns such as size, cash flow to price, dividend yield, and price to net assets value Van Rensburg and Robertson (2003). Those factors include size which can play an important role in term of the natural log of market value of the company. Market value is calculated as the number of ordinary shares outstanding times the price per share. The second factor is the price per earning which is explained as the price per share divided by earning per share. The third factor, known as cash flow-to price (CFTP), is measured by adding the ordinary dividends and non-cash flow items divided by ordinary shares in issue, then dividing the total by price per share. The fourth factor which can affect the stock return is dividend yield (DY), which is calculated as those ordinary dividends divided by the ordinary shares, with the total then divided by price per share. The fifth

[3] en.wikipedia.org

factor is price-to-net asset value (PNAV), which is calculated as price divided by NAV. The total is then divided by ordinary shares. The last factor is the book-to-market (BTM) ratio, which is measured by book value of equity divided by market value of equity.

Mukherji et al. (1997) and Masulis (1983) established that there exist a positive relationship between debt -to -equity ratio and stock return. Lam (2002), Mukherji et al. (1997) and Fama and French (1992) find a significant relationship between market risk (β) and stock return. Sheu et al. (1998) and Mukherji et al. (1997) established a positive relationship between sale-to-price ratio and stock return.

2.6 Evidence on Malaysian Stock Market

Research based on the Malaysian stock returns predictability shows developments that have stimulated an interest in studying the behavior of Malaysian stock market. (Mahmood et al., 2007) where stock returns are compared on market level to the firms level. It is also observed that the stock market is increasingly interdependence among regional stock markets.

Based on different research carried out on Malaysian stock exchange it is found that there is a issue of variation in stock returns, which has not been adequately investigated in the context of emerging stock market, such as the Malaysian capital market (Pandey, 2001).

As discussed by Isa and Jin (2000), there is a weak relationship between earning–per-price ratio and stock returns under Malaysian stock market context, but a significant

size can have an effect on Malaysian stock returns. Chui and Wei (1998) examine the relationships between stock returns and B/M for Hong Kong, Korea, Taiwan, Malaysia, and Thailand. These authors find that for Hong Kong, Korea, and Malaysia stock returns are positively related to the B/M.

2.7 Chapter Summary

This study aims to review existing research on the relationship between the stock return with book-to-market ratio and price earnings ratio of stock returns. The predictive power of ratios in order to determine whether is there any correlation phenomenon exists among the stock return with book market ratio and price earnings ratio is examined to illustrate whether stock returns are influenced by book-to-market ratio and price-earnings ratio (considered fundamental variables) in the long run, and whether there is any causality phenomenon between and among the variables under study. Research and literature related to Malaysian stock market is limited. Not many researchers have investigated the dynamic relationship between stock return with book-to-market ratio and price-earnings ratio of stocks and other fundamental factors for the Malaysian stock market.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

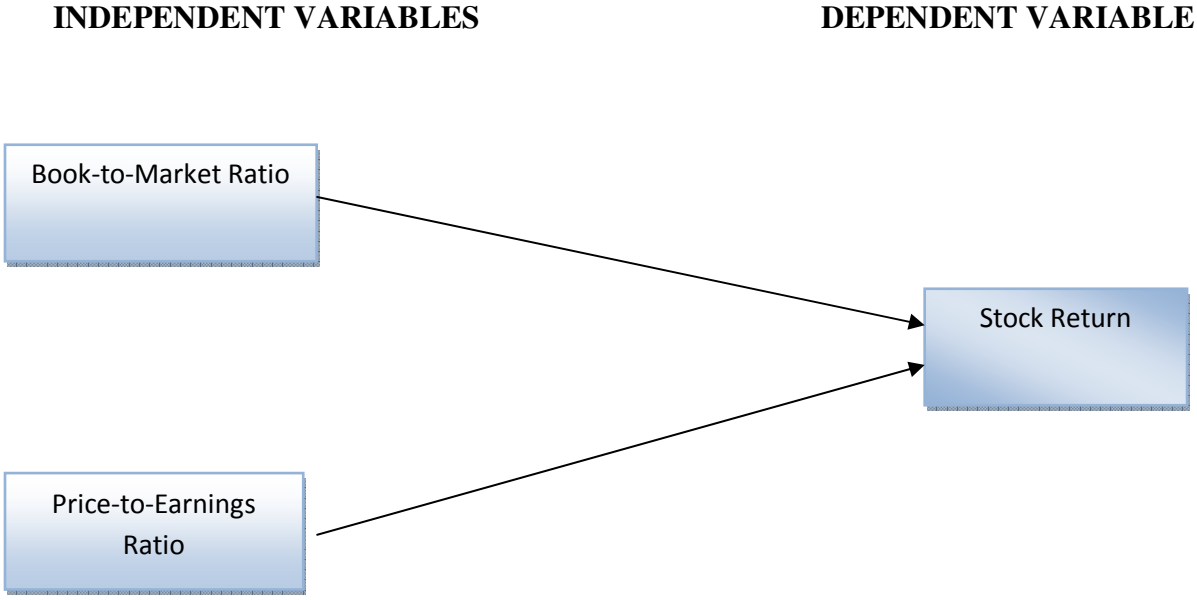
In this chapter, the methodology used is highlighted. This chapter provides an explanation for research design and reliability of measurement for the methods of study, uses data collection method, a brief description of the method used to conduct the study, instruments and methods used to analyze the data.

This study is conducted on firms listed on the Kuala Lumpur Stock Exchange (now known as FTSE Bursa Malaysia) with data collected from Data Stream Universiti Utara Malaysia.

3.1 Theoretical Framework

This study explores the method of using a framework for independent variables book-to-market ratio and Price–to-earnings ratio and their influence on stock return:

Figure 2: Theoretical Framework



3.1.1 Independent and Dependent Variables

In this study we are aiming the independent variables such as monthly stock return with other variables such as book-to-market ratio and price-earnings ratio. This section of variables will guide the study by the results in comparison with previous studies. Our aim is to examine the influence these variables, rather then identifying any new variables on stock returns from KLCI Malaysia.

3.1.1.1 Book to Market Ratio

The independent variable is explained as the stock's book value divided by its market value. Book value is obtained from the company's balance sheet, while market value is based on the price of its stock. The sample are the listed companies from FTSEBM.. A ratio above 1 indicates a potentially undervalued stock, while a ratio below 1 indicates a potentially overvalued stock.

Lewllen (1999), Allen and Cleary (1998), Mukherji et al. (1997), Barber and Lyon (1997), Fama and French (1992), and Chan et al. (1991) find a positive and remarkably strong relationship between book to market ratio and stock return.

Book-value-to-market-value ratio (BV/MV): Book value means the shareholders equity reported in the balance sheet at the end of the fiscal year. Market value means the number of the ordinary stock of the company at the end of the fiscal year multiplied by the last price of each stock at the end of the same fiscal year. Therefore I hypothesize the following:

H_1: There is a significant relationship between book-to-market ratio and stock return.

3.1.1.2 Price-to-Earnings Ratio

P/E ratios are ratios of share prices to earnings. The P/E ratio of a stock is equal to the price of a share of the stock divided by earnings per share of the stock.

The value is assumed to be the same whether the calculation is done for the whole company or on the basis of per-share. As there will be higher P/E, the proposition will be more towards the market and the market will be willing to pay for each dollar of annual earnings.

Bagella et al. (2000) and Chan et al. (1991) find a negative relationship, but Mukerji et a. (1997) and Fama and French (1992) demonstrate that there is no significant relationship between price to earning ratio and stock return.

Price-to-earning Ratio (P/E)*:* As for the earning, the earning per share as declared for each fiscal year was used, and with respect to the price, the stock price at the end of the fiscal year was used. Therefore I hypothesize the following:

H_2: There is a significant relationship between Price-to-earning ratio and stock return.

3.1.1.3 Stock Return

In this study the dependent variable is stock return which is the explanatory variable toward book-to-market and price-to-earning as independent variables. This method of analysis is based on previous studies that have been conducted on the developed capital markets. In this study our aim is to investigate the influence of book-to-market ratio and price–to-earnings ratio towards stock return of FTSEBM.

3.2 Data Collection Method

This research was conducted by using secondary data collected from FTSEBM sources such as other researcher's work, case studies, electronic journals and some other related company's financial statements.

I obtained the data from data stream Universiti Utara Malaysia Library, sample is chosen from FTSEBM in the period of January 2004 – December 2008 (60 months). There were previously 100 companies that represent Kuala Lumpur stock exchange index (KLCI). I used financial data of 48 Malaysian companies out of 100 companies because of the completely data and the companies' that have missing data are excluded from this study. However, the companies that represent Kuala Lumpur stock exchange index (KLCI) are chosen as a sample for this study.

3.3 Data analysis

3.3.1 Descriptive Analysis

This decretive study reduced the mean, minimum, maximum, and standard deviation for each variable for the sample that is chosen in this study.

3.3.2 Correlation of Variables

This study shows how one variable is related to another. The results of this analysis represent the nature, direction and significant of the correlation of the variables used in this study and the correlation between the variables is analyzed by using the person correlation.

3.4 Model Specification and Multiple Regression

Multiple regression method is used to examine the relationship between the stock return in FTSEBM companies and book-to-market ratio and price-to-earning ratio.

The result of regression analysis is an equation that represents the best prediction of a dependent variable from several independent variables. This method is used when the independent variables are correlated with one another and with the dependent variable.

The following regression equation is estimated as follow:

S_i = $\alpha + \beta 1BTM + \beta 2PE$, Where:

α = Constant

Si = Stock Return

BTM = Book-to-Market Ratio

PE = Price-to-Earnings Ratio

To examine the relation between the whole set of predictors and the dependent variable. In this model, all independent variables enter the regression equation at once. The aim of this analysis is to determine which of the independent variables are more highly significant to determine the stock return.

3.5 Summary

This chapter discusses the methodology that is used in this research. It also explained the hypothesis that is listed earlier in this chapter. This chapter provides an explanation for research framework and reliability of measurement for the methods of study. The procedures for collecting, measuring and analyzing data of this study are also discussed.

CHAPTER FOUR
ANALYSIS AND FINDING

4.0 INTRODUCTION

In this chapter, the results of this study on the relationship between the explanatory variables in explaining the relationship between the independent variable and dependant variables are discussed. This chapter is divided into three sections; the first section provides the descriptive analysis of the data and variables for this study, followed by the second section which discusses correlation analysis that demonstrates the strength of relationship between the dependant variable and independent variables. The third section discusses the outcomes of the regression analysis and data analysis that compose the main findings of this study.

4.1 Descriptive Analysis

Descriptive analysis describes the response for the major variables studied. The descriptive analysis includes mean and standard deviation on the dependant variables and independent variables. The results of the descriptive analysis are shown in Tables 4.1. In addition are the results of the descriptive analysis for the whole sample.

Table 4.1 Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
STOCK RETURN	60	-.12	.19	.0120	.05983
BMR	60	.56	22.30	6.4645	6.16336
PER	60	.11	1.00	.6028	.29728
Valid N (listwise)	60				

The mean and standard deviation for the variables are shown in Table 4.1. There are 60 months[4] as a period of study because the data was collected from January 2004 to December 2008. It can be observed that the means for the all variables fall between a minimum 0.0120 which belongs to stock return and maximum 6.4645 which belongs to BMR. However, the standard deviation is also shown in the table for all variables. It can be seen that the standard deviation fall between a minimum stock return (0.05983) and maximum book-to-market ratio (6.16336).

[4] There are 60 months because of the period from January 2004 to December 2008; stock return was calculated using this formula SR= $(R_t-R_{t-1}) / R_{t-1}$.

4.2 Correlation Analysis

The correlation coefficient represents the linear relationship between two variables. The most widely-used type of correlation coefficient is Pearson r, also called linear or product- moment correlation. The significance level calculated for each correlation is a primary source of information about the reliability of the correlation.

On other hand, correlation analysis is executed to test the strength of relationships between variables. Statistical test at 1% level is used to test the significance of the relationships between the independent variables in this study. It is also used to examine the potential issue of multicollinearity that exists when two explanatory variables are highly correlated. The model should avoid from multicollinearity among explanatory variables, because the information in one variable is already demonstrated by another variables.

Here, we analyze the significant correlations between the dependent variable and each independent variable, to decide whether to accept or reject the hypothesis. Table 4.2 shows the correlation matrix among the independent variables.

Table 4.2: Correlation Matrix among the Independent Variables

		Stock return	BMR	PER
Stock return	Pearson Correlation	1	.854(**)	-.228
	Sig. (2-tailed)	.	.000	.080
	N	60	60	60
BMR	Pearson Correlation	.854(**)	1	-.298(*)
	Sig. (2-tailed)	.000	.	.021
	N	60	60	60
PER	Pearson Correlation	-.228	-.298(*)	1
	Sig. (2-tailed)	.080	.021	.
	N	60	60	60

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

As displayed in Table 4.2, the results indicate that there is a significant and positive relationship between BMR and stock return (0.854). That means if book to market ratio increased, the stock return would increase. However, if Pearson correlation result is higher than 0.7, then there is relation among independent variables (Anderson, Sweeney, and Williams, 1996). Moreover, it can be seen in Table 4.2 that book to market ratio is negatively significant correlated with price earning ratio with a correlation of -0.298, which means that if book-to-market ratio increases, the price earning decreases. In addition there is a negative relationship between stock return and price-earning ratio (0.228) but this is not a significant relationship.

4.3 Regression Analysis

4.3.1 Regression Analysis for All Observations

Table 4.3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.854(a)	.729	.720	.03167	.729	76.785	2	57	.000	2.171

a Predictors: (Constant), PER, BMR
b Dependent Variable: stock return

The coefficient R is 85.4%. This shows that all of the independent variables collectively explain 85.4% changes in stock return (Table 4.3). The cumulative effect of the two independent variables employed in this study are PER and BMR. From these findings it is clear that there is a significant relationship between the two independent variables and stock return. The remaining 14.6% of changes will be identified by other factors not captured in the model.

R square is the relative predictive power of a model and it is a measure between 0 and 1. The closer it is to one, which that means the closer to one is the significant model. In this analysis, the adjusted R square is .720. This shows that on an adjusted basis, the independent variables are collectively 72.00 % related to the dependent variable, stock return.

4.3.2 Coefficient Analysis of Stock Return

The Ordinary Least Squares (OLS) multivariate regression is used to see whether there is a significant relationship between stock return and the determinants in this study. Multicollinearity[5] exists when one or more of the explanatory variables are highly collinear with other variables in the regression model. The result of the VIF collinearity statistics shows values less than 10.

Multicollinearity can assessed by examining tolerance and the Variance Inflation Factor (VIF), two collinearity diagnostic factors that can help us to identify multicollinearity. Tolerance is a measure of collinearity. A small tolerance value indicates that the variable under consideration is almost a perfect linear combination of the independent variables already in the equation and that it should not be added to the regression equation. All variables involved in the linear relationship will have a small tolerance. Some suggest that a tolerance value less than 0.1 should be investigated further. If a low tolerance value is accompanied by large standard errors and non-significance, multicollinearity may be an issue. Nevertheless, in this analysis all independent variables has tolerance value bigger than 0.1. Hence, the statistic shows evidence of no multicollinearity.

[5] Multicollinearity exists when one or more of the explanatory variables are highly collinear with other variables in the regression model. In this study, each of the explanatory variables is regressed on the remaining explanatory variables to compute R square values.

Table 4.4: Coefficients analysis and collinearity statistic

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-.046	.012		-3.889	.000		
	BMR	.008	.001	.862	11.944	.000	.911	1.097
	PER	.006	.015	.029	.405	.687	.911	1.097

a Dependent Variable: stock return
Variance Inflation Factor: VIF = 1/ (1-R2)

According to the results in the table above, it can be observed that there is only one independent variable that is significant, which is book-to-market ratio that has 0.000 in sig. column. The result of the VIF collinearity statistics shows values of less than 10, which means there is no collinearity between the variables.

CHAPTER FIVE

CONCLUSION AND DISCUSSION

5.0 INTRODUCTION

This chapter summarizes the interpretations of results presented in the previous chapter and provides conclusion of this study. In addition, this chapter discussed the findings in this study with relation to the research objectives. The chapter begins divided into two sections, the first section is conclusion of this study, and the second section is the suggestion for future research.

5.1 CONCLUSION

The purpose of this study is to investigate the relationship between selected fundamental variables and stock return on selected Malaysian firms, and to examine if BTM and PE ratio significantly influence the stock return.

The sample used in this study is financial data of 48 Malaysian companies out of 100 companies listed on the KLCI over the period 2004-2008. Thus, the sample represents about 48% of the KLCI listed companies. Sample companies are chosen based on the companies that have complete data over the period of the study, and the rest of the companies have been excluded because of unavailable data. Just like any type of investment, in the case of Malaysia, it is important to recognize that the purpose of investment is to realize a positive return over a given time period. Identifying variables that successfully predict the returns for a given security is a continuing quest for investors seeking higher returns. Malaysian stock market is an emerging market in Asia. Recently, Malaysia has implementrd some liberalizations in the stock market. Malaysian stock market is thus ta potential market to get the high profit., Many local as well as foreign

investors would therefore be interested to know whether the Malaysia stock returns could predict by the financial ratios.

Empirical analysis shows the importance of the factors that affect the stock return such as BTM and PE ratios. The results of this present study using correlation analysis show that there is a highly significant relationship between BTM ratio and stock return, which means that BTM is highly correlated with stock returns. This finding is consistent with Stattman (1980), Rosenberg, Reid and Lanstein (1985), and Chan, Hamao and Lakonishok (1992) who find that there is a positive relationship between book-to-market ratio and average return in U.S. stocks and Japanese stocks.

For the PE ratio, it is found to be highly negatively correlated with stock return, which that means if the PE ratio increase, the stock return will decrease. This finding is consistent with Bagella et al. (2000), and Chan et al. (1991) who find a negative relationship between PE ratio and stock return. Mukerji et al. (1997), and Fama & French (1992) find that there is no significant relationship between price to earning ratio and the stock return.

As the results in the regression analysis shows, BTM ratio is significantly correlated with stock return, while PE ratio is found to be not significantly related.

5.2 Suggestion for Future Research

An extension of this study. future researches can be developed in several areas. First, interested parties can develop prediction model for fundamental variables such as dividend yields and companies' size which that could let market player use that developed fundamental variables in deciding their investment strategies since it is an important source of information in determining stock market returns.

Second, focusing on economic factors and fundamental variables in the interaction with stock returns, which that will be focusing not only in the relationship between fundamental variables and stock return. But also to focus on the relationship between stock price and macroeconomics variables which consist interest rates, inflation, and exchange rates. Third, future researchers should develop three factor model to examine in the listed Malaysian companies, stock excess returns in the long-run.

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