DETERMINANTS OF MALAYSIAN STOCK RETURNS IN OIL AND GAS INDUSTRY

By

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ABSTRACT

This research paper documents the determinants of Malaysian stock return in oil and gas industry by eight factors that influence the stock return namely dividend-price ratio, earnings-price ratio, price-to-book ratio, asset growth, company size, capital structure, unsystematic risk, and systematic risk using Pearson Correlation analysis and Standard Multiple Regression analysis model in the Malaysia stock market (Bursa Malaysia). The existence of these relationships is examined in terms of fourteen oil and gas public companies in Malaysia that are listed in Bursa Malaysia Berhad, and their performance throughout a recent five consecutive years (2010-2014). Through Pearson Correlation analysis, the researcher reports a strong relationship and high significance level between asset growth and stock return; capital structure and stock return; and price-to-book ratio and stock return. While a weak relationship and low significance level between systematic risk and stock return; unsystematic risk and stock return; company size and stock return. Capital structure and unsystematic risk are variables that have inverse relationship with stock return while other variables indicate positive relationship with stock return. Overall, asset growth shows the highest significance level and variance in stock return while the systematic risk shows the lowest significance level and variance in stock return. Through Standard Multiple Regression analysis, dividend-price ratio, earnings-price ratio, price-to-book ratio, asset growth, and capital structure correlate substantially with stock return. The Durbin-Watson statistics reports the existence of positive serial correlation, significant difference and small effect size in the study. Asset growth reports the strongest unique contribution variable in explaining the stock return.

Keywords: return determinants, performance, dividend-price ratio, earnings-price ratio, price-to-book ratio, asset growth, capital structure, unsystematic risk, and systematic risk.

ABSTRAK

Kertas kajian ini mendokumentasi penentu pulangan saham Malaysia dalam industri minyak dan gas oleh lapan faktor yang mempengaruhi pulangan saham iaitu nisbah harga dividen, nisbah perolehan harga, nisbah harga kepada nilai buku, pertumbuhan aset, saiz syarikat, struktur modal, risiko tidak sistematik dan risiko sistematik menggunakan Pearson Correlation analisis dan Standard Multiple Regression model analisis dalam pasaran saham Malaysia (Bursa Malaysia). Kewujudan perhubungan ini diperiksa dalam soal empat belas buah minyak dan syarikat gas awam di Malaysia yang tersenarai dalam Bursa Malaysia Berhad dan prestasi mereka sepanjang lima tahun berturut-turut (2010-2014) baru-baru ini. Melalui Pearson Correlation analisis, penyelidik melaporkan satu perkaitan yang kukuh dan kepentingan besar menyamakan antara pertumbuhan aset dan pulangan saham; struktur modal dan pulangan saham; dan nisbah harga kepada nilai buku dan pulangan saham. Manakala satu perhubungan lemah dan aras keertian rendah antara risiko sistematik dan pulangan saham; risiko tidak sistematik dan pulangan saham; saiz syarikat dan pulangan saham. Struktur modal dan risiko tidak sistematik ialah pembolehubah yang mempunyai hubungan songsang dengan pulangan saham manakala pembolehubah-pembolehubah lain menunjukkan hubungan positif dengan pulangan saham. Keseluruhan, pertumbuhan aset menunjukkan aras keertian tertinggi dan varians dalam pulangan saham manakala risiko sistematik menunjukkan aras keertian terendah dan varians dalam pulangan saham. Melalui Standard Multiple Regression analisis, nisbah harga dividen, nisbah perolehan harga, nisbah harga kepada nilai buku, pertumbuhan aset dan struktur modal mengaitkan sebahagian besarnya dengan pulangan saham. Laporan statistik Durbin-Watson kewujudan korelasi bersiri positif, saiz perbezaan penting dan kesan yang sedikit dalam kajian. Pertumbuhan aset melaporkan sumbangan unik terkuat berubah-ubah dalam menjelaskan pulangan saham.

Kata kunci: hasil penentu, prestasi, nisbah harga dividen, nisbah perolehan harga, nisbah harga kepada nilai buku, pertumbuhan aset, struktur modal, risiko tidak sistematik dan risiko sistematik.

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Nur Farhana Binti Abd Aziz

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LIST OF ABBREVIATIONS

BMI:	Business Monitor International Ltd.
GDP:	Gross Domestic Product
US:	United States
ASEAN:	Association of Southeast Asian Nations
FDI:	Foreign Direct Investment
ETP:	Economic Transformation Plan
ASPs:	Application Service Providers
NCER:	Northern Corridor Economic Region
ECER:	East Coast Economic Region
FIZs:	Free Industrial Zones
EOR:	Enhanced Oil Recovery
RAPID:	Refinery and Petrochemical Integrated Development
WEF:	World Economic Forum
NGL:	National Gas Liquids
EIA:	Energy Information Administration
BN:	Barisan Nasional

DP:	log dividend-price ratio
EP:	log earnings-price ratio
PB:	log price-to-book ratio
CAY:	consumption-wealth ratio
RTB:	relative T-bill rates
OLS:	Ordinary Lease Square
VAR:	Vector Autoregressive
C:	Cyclical component of financial ratios
G:	Stochastic trend component of financial ratios
dG:	Stochastic growth rate component of financial ratios
SPSS:	Statistical Package for the Social Sciences
b/d:	barrel per dam
KPSS:	Kwiatkowski, Phillips, Schmidt and Shin
ADF:	Augmented Dickey-Fuller
PP:	Philip-Perron
VIF:	Variance Inflation Factor

LOT: Life Orientation Test

S&P: Standard & Poors

IFC: International Finance Corporation

LNG: Liquefied Natural Gas

CAPEX: Capital Expenditure

ANOVA: Analysis of variance

ARMA: Autoregressive-moving-average model

LM: Lagrange multiplier

JB: Jarque-Bera

RMSE: Root-mean-square error

Sig.: Significance

p: Significance symbol

CHAPTER 1

INTRODUCTION

1.1. Background of the Study

Malaysia Business Forecast Report that includes 10-Year forecast from year 2014 to year 2023 recorded that Malaysian real GDP (Gross Domestic Product) is seeing a compound annual average rate of 4.0% (8.3% in nominal United States dollar terms) for over the next decade (from year 2014 to year 2023) as a result of continuous business environment improvement and further ASEAN (Association of Southeast Asian Nations) economic integration due to strong demographic trends. Even though this is slightly below the 4.3% (10.5% in nominal United States dollar terms) rate which is seen over the past decade, lower growth of working age population and the rise of labor productivity growth are seen to be the greater impact. There are risks of the lofty level of household debt and uncertainty regarding the fiscal trajectory but luckily not seemingly derails the economic strong prospects. Businesses in Malaysia benefit from one of the most open foreign direct investment regimes in East Asia and excellent access to financing on local equity markets. Since year 2010, Malaysia has been liberalizing many sectors of the economy to encourage growth and innovation via removing restrictions on FDI (Foreign Direct Investment). Malaysia's Economic Openness score of 79.8 out of 100, being in second place out of twenty nine countries, behind Hong Kong. This empirical study by BMI (Business Monitor

International Ltd) Trade and Investment Market Risks Index proves generally welcoming and very highly healthy in Asia in relative openness of Malaysia's economy. However, BMI highlights that the remaining FDI restrictions continue to prove a barrier to foreign investment. (Business Monitor International Ltd. (BMI) Quarter 1 2015 Malaysia Business Forecast Report Includes 10-Year Forecast to 2023).

The Malaysian government is generally open to FDI, particularly in the economically important manufacturing industry. Since the year 2010, Economic Transformation Plan (ETP) has been the current tool to strive the liberalization of the country's foreign investment regime through removing legal obstacles, introducing targeted areas for investment, and establishing special economic zones and 'growth corridors'. Furthermore, the high value of its imports and exports as a percentage of GDP emphasizes the importance of trade to the country's economy via its relatively liberal trading laws. The reflection of welcoming foreign direct investment in Malaysia has been reported via strong FDI inflows, which are equivalent to 43.6% of GDP in 2012, the eighth highest in Asia. ETP aimed to increase FDI in twelve key areas: oil gas and energy; palm oil and rubber; financial services; tourism; business services; electronics and electrical manufacturing; wholesale and retail; education; healthcare; communications and infrastructure; agriculture; and in the Klang Valley region. The government has removed foreign equity limits for companies in some of

these sectors, and 100% foreign ownership is now permitted for private hospitals, department stores, Application Service Providers (ASPs), education facilities such as private universities, and accounting and taxation services. In addition, investors in the twelve ETP industries are eligible for certain incentives and tax exemptions. Historically, favored areas for investment have been the oil and gas industry, high value manufacturing, electronics, financial products, and consumer services. While manufacturing remains a potentially lucrative sector for investment in Malaysia, BMI warns that manufacturing exports to one of Malaysia's main trading partners, China, are likely to suffer due to the economic slowdown. This will deter investment in the export-oriented manufacturing industry during year 2014 and 2015. (Business Monitor International Ltd. (BMI) Quarter 1 2015 Malaysia Business Forecast Report Includes 10-Year Forecast to 2023).

In addition to the twelve targeted sectors of the ETP, the government has designated several growth corridors in both Peninsular and East Malaysia, including; Iskandar Malaysia in Southern Johor, Northern Corridor Economic Region (NCER), East Coast Economic Region (ECER), Sabah Development Corridor, and Sarawak Corridor of Renewable Energy. Companies established in these zones receive benefits including corporate and income tax exemptions, a special lower rate of personal income tax for the highly-skilled foreign workers, and fewer restrictions on the employment of expatriates. There are also Free

Industrial Zones (FIZs) where export-oriented companies are qualified for duty-free imports of raw materials, machinery, and other components necessary for the manufacturing process. Trade is vital to Malaysia's economy, and the country has been able to capitalize on its position on major international shipping routes to become a major regional trade hub. The value of imports and exports as a percentage of GDP reflects the openness of its trading environment. At 79.8% for imports and 88.3% for exports, this ranks the country as the fourth and third highest in the region, respectively. This is an indication of the attractive options for investment which are available in Malaysia currently. Machinery and complex manufactured products are the main imports and exports, followed by chemicals and fuel. Agricultural and manufactured consumer goods exports also remain important to the economy. BMI notes that the reliance on China as a key export market exposes Malaysia to the Chinese economic slowdown, which will have a negative impact on exports and economic growth. (Business Monitor International Ltd. (BMI) Quarter 1 2015 Malaysia Business Forecast Report Includes 10-Year Forecast to 2023).

Despite several key areas of manufacturing contribute to Malaysia economy as a whole and the oil and gas industry is a key sector of Malaysia, the presence of rivalry from the regional peers are aggressive even though Malaysia is a stable oil and gas producer in coming years and boost in downstream production. BMI reports that it seems to acknowledge larger growth in gas production as

compared to crude oil beyond ten years even though Enhanced Oil Recovery (EOR) and new deep-water projects will promote better crude oil output. (Business Monitor International Ltd. (BMI) Quarter 1 2015 Malaysia Business Forecast Report Includes 10-Year Forecast to 2023)

The main trend and development highlighted by BMI analysis report for Malaysia's oil and gas sector: total hydrocarbons growth in Malaysia is mainly contributed by gas across BMI forecast age from year 2014 to year 2023; Liquefied Natural Gas (LNG) market of Malaysia will still be a vital supplier to Asia-Pacific in spite of growing pressure from new players such as Australia, Papua New Guinea and the United States; Enhanced Oil Recovery (EOR) and marginal field projects will benefit crude oil production in the short-to-medium tenure, while deep-water developments will benefit in the longer tenure, subject on crude oil prices remains supportive of project developments; the expectation of BMI in fuel subsidy cuts to moderate the oil demand growth rate would not spoil the oil consumption that will remain on the uptrend. New power projects will also benefit gas consumption growth, unless further cuts are made to gas subsidies; although the construction of the 300,000b/d RAPID (Refinery and Petrochemical Integrated Development) refinery, Malaysia's downstream outlook remains challenging especially with growing regional competition for a share of Asia's oil market demand. (Business Monitor International Ltd. (BMI)

Quarter 1 2015 Malaysia Business Forecast Report Includes 10-Year Forecast to 2023).

All public listed companies in Malaysia continuously play a great role in their contribution to the Malaysia's economic healthiness. In tracking their (public listed companies) business performance record in short or long horizon particularly that catches interests of major shareholders, active investors and the corporate management itself, The Bursa Malaysia acts as a platform and a sole official stock exchange in Malaysia, with a Main Market for the primary trading market whereas the secondary market is open to smaller corporations. The Malaysian bourse enjoys good liquidity, with the seventh-highest number of listed companies in the Asia region indicating its depth and sophistication. Moreover, BMI considers that Bursa Malaysia to be well connected to the international financial markets, with the country ranked sixth in Asia in this regard. The World Economic Forum (WEF)'s Global Competitiveness Index 2013-14 has ranked Malaysia in ninth place out of 148 countries globally with regard to financing through local equity markets. In addition, the index shows that financial services are both widely available and affordable, with Malaysia ranked 22nd and 15th respectively in these indicators. This implies the ease of credit financing in Malaysia, through financial institutions. As of the attractiveness and ongoing recognitions at world level, the performance of Malaysian stock returns would definitely make major shareholders, active investors and the corporate

management become interested and attracts them to invest in the profitable and good track record companies listed in Bursa Malaysia. Thus, they need to realize the availability of various tools in conducting a research, select the appropriate tool that suit them best and adapt it to recognize factors that influence the stock returns for future sound decision making.

1.2. Problem Statement

By referring to BMI Business Forecast Report in Quarter 1 2015 on Malaysia Oil and Gas Industry Forecast Year 2014 to 2023, BMI expects oil production to remain relatively stable in the medium term, from 610,000 barrel per day in year 2013 to about 657,890 barrel per dam in year 2018. Output from marginal fields and Enhanced Oil Recovery (EOR) on producing fields will support production in the short-term. Over the longer term, deep-water and green-field developments will therefore be necessary to maintain the oil production growth past its current expected peak in year 2018.

Malaysia's crude oil, national gas liquids (NGL) and other liquids production (or crude oil from henceforth) fall slightly from 622,170b/d in 2012 to 610,000b/d in 2013, according to the US Energy Information Administration (EIA). This is still considerably below its peak production of 861,810b/d in 2004. This is mainly a result of the natural depletion of reserves of its major oil fields, particularly in the

larger fields in the waters offshore Peninsular Malaysia, while the country lacks of discoveries to replace them. Most Malaysian oilfields have an average lifespan of around 19-30 years old.

However, the move towards deep-water, EOR and the turn to commercialize its' marginal and stranded fields will help to sustain Malaysia's oil production in the coming decade to avoid further drastic decline within 10-years of BMI forecast period from 2014 to 2023. Sources of new oil production will come from the following: deep-water, marginal fields and planned Enhanced Oil Recovery (EOR) projects. At the moment, BMI foresees oil production falling slightly post-2018, to reach 635,540b/d by year 2023.

BMI anticipates oil consumption to grow at a slower pace than GDP growth, increasing at an average rate of about 3.3% per annum between year 2014 and 2023 due to these developments. Oil demand is expected to rise from the EIA's estimation of 561,860 barrel per day in year 2012 to 723,330 barrel per day in 2018 and to 798,620 barrel per day by year 2023.

Oil and gas industry has been chosen in this study because of the BMI Malaysia Business Forecast Report in Quarter 1 Year 2015 that includes 10-Year forecast to year 2023 reported that historically one of the favored areas for investment in Malaysia is mainly in oil and gas industry. A further decline of world oil price results a decline in oil price sell to end user in RM per liter. This also will directly impact the demand and supply of oil and gas among the oil and gas companies and further impact the oil and gas companies' daily closing prices and daily Kuala Lumpur Composite Index (KLCI) in Bursa Malaysia. The up and

down of daily closing prices will then affect stock return of each company listed in Bursa Malaysia. While the up and down of daily KLCI (Kuala Lumpur Composite Index) will then affect the stock market return in Bursa Malaysia. Consequently, the average return, variance, and standard deviation of companies' stock return and stock market return then directly affect the beta value as a systematic risk proxy and unsystematic risk (via manipulation of stock market and companies' variance and beta value). Indirectly, the stock market return and companies' stock return generally will give large impact: management decision to pay dividend to shareholders based on the profit after corporate tax and GST; the reduction of earnings attributable to shareholders after consider paying corporate tax and GST to government; reduction of book value of companies; the assets available in companies that need to add to reflect the asset growth in the companies; company size via the market capitalization; capital structure via the management decision on the debt ratio per annum.

Through the collection of thirty oil and gas companies' data from year 2004 to year 2014, low dividend payment or no dividend payment at all for several years to shareholders, low earnings or negative earnings, low price-to-book ratio, low to medium asset growth, major cut in short and long-term liabilities that reduce the debt ratio, limit the market capitalization based on the company size.

1.3. Research Questions

a) Is there a relationship between dividend-price ratio and stock return?

b) Is there a relationship between earnings-price ratio and stock return?

c) Is there a relationship between price-to-book ratio and stock return?

d) Is there a relationship between asset growth and stock return?

e) Is there a relationship between company size and stock return?

f) Is there a relationship between capital structure and stock return?

g) Is there a relationship between unsystematic risk and stock return?

h) Is there a relationship between systematic risk and stock return?

i) How much of the variance in stock return determining can be explained by the following set of variables: dividend-price ratio, earnings-price ratio, price-to-book ratio, asset growth, company size, capital structure, unsystematic risk, and systematic risk?

j) Which of the variables is the best determinant of stock return?

1.4. Research Objectives

a) To describe the characteristics of sample and check variables for any violation of the assumptions underlying the statistical techniques to address specific research questions.

b) To examine the direction, strength, coefficient of determination and significance level of the linear relationship between two variables.

c) To explore the relationship between stock return and eight determinants on how well a set of determinants variables is able to influence the stock return.

1.5. Significance of the Study

The stock return performance is essential to the management, shareholders, and investors of public listed corporations in Bursa Malaysia as it ensures the continuous survival and the relevance of the corporations in the equity market. Hence, the findings result of this study will be able to provide knowledge and direction to management, shareholders, and investors (readers) in adjusting the factors element that influence the stock return performance. Readers will be able to adjust their current assets and fixed assets to influence the asset growth. The findings will ensure the dividend is paid to shareholders and the readers can adjust the dividend payment amount according to the earnings available to shareholders. The results also can influence the readers in adjusting their financial statements items to ensure the company achieves the expected profit, revenue, and return to the company's stock. Furthermore, readers are free to

adjust the items that influence the book value of company, items that influence the up and down of market capitalization based on the company size. The findings also act as a signal that debt ratio should always remain at low percentage. The findings inform readers that systematic and unsystematic risk items variability do not give great impact or influence the stock return performance.

1.6. Scope and Limitations of the Study

This research study aims to investigate the factors that influence stock return performance in Malaysia by focusing to the Malaysia key sector: Oil and gas Industry. Eight determinants of stock return are recognized through previous researchers' literatures and researcher chooses to include them in the study. They are dividend yield, earnings yield, price-to-book ratio, asset growth, company size, capital structure, unsystematic risk and systematic risk. The periods for this study only cover up to the recent five consecutive years (from year 2010 to 2014) of fourteen companies. This study is limited to corporations which are listed in Main Market Bursa Malaysia to make ease to researcher in investigating, analyzing, interpreting and to ensure the reliability and the validity of the research findings. Moreover, this study tend to focus on Malaysia equity market as Chin & Hong (2008) discover that there are many empirical researches on the predicting power of financial ratios on stock return but mostly focus in the United States stock market while only a few similar

studies on emerging market like Malaysia. This study is done to see the capability of the factors variables in influencing the stock return.

1.7. Organization of the Thesis

This research study is organized into five chapters:

Chapter One presents a brief discussion of the background of the study, problem statement, research questions, research objectives, significance of the study, scope and limitations of the study, and the organization of the thesis as a summary of all chapters in the research study.

Chapter Two discloses the determinants of stock return conducted by previous researchers' studies and their empirical results. Each of them used different tools, different method on proving the prediction power on stock return. From here, researcher could open the readers' eye to let them realize that each finding is varied to each other as a result of using different tools and methods.

In Chapter Three, researcher discusses the methodology of the study, which constructing the research framework (consists of eight independent variables that are expected to influence stock return that acts as a dependent variable), develop ten hypotheses, create research design, elaborate operational definition of all variables, instrumentation, data collection, sampling, data collection procedures, and the techniques of data analysis.

In Chapter Four, all the findings are revealed after followed and complied by the research framework, hypotheses development, research design, instrumentation, sampling, data collection procedures, and the techniques of data analysis. All

findings are analyzed using SPSS software to generate the empirical results. The results are interpreted and recorded to answer the research questions and fulfill the research objectives.

In Chapter Five, the researcher concludes the research findings, states a few discussions on limitations of the study and provides recommendations for future research.

CHAPTER 2

LITERATURE REVIEW

2.1. Introduction

The researcher would like to furnish the previous researchers' facts, findings, recommendations, and preferences in conducting their research. All variables namely stock return, dividend-price ratio, earnings-price ratio, price-to-book ratio, asset growth, market capitalization (proxy for company size), debt ratio (proxy for capital structure), unsystematic risk, and beta (proxy for systematic risk).

2.2. Determinants of Stock Return

2.2.1 Dividend-price ratio

Lyn & Zychowicz (2004) find out evidence of dividend yields are average positively related to stock returns but with lower degrees of statistical significance. Researchers also find that lower dividend yield ratios associated with lower returns while the largest group tends to have higher returns; mainly for six-month and twelve month forward-looking returns. Dividend yield is important significant predictors of positive market performance over horizons of one year. Higher liquidity tends to reduce required returns as relationship between market returns and turnover implied negative and significant. The coefficient on beta is consistently positive and significant at the one percent level in all regressions.

In other literature, log dividend yield is expressed in natural logarithms and diagnostics test are used for instance Breusch-Godfrey Lagrange Multiplier (LM) to test the autocorrelation, Jarque-Bera (JB) test for normality of residuals, White test for heteroscedasticity, and Ramsey RESET test for functional misspecification (Chin & Hong, 2008). The estimated equation shows positive coefficient of dividend yield that become the determinants of the dividend yield which is also positively correlated with stock return and the dividend yield is a statistically significant predictor for future stock return. Chin & Hong (2008) also suggest capital gain that included to the combination with dividend yield does not increase the predictive power of stock return.

Previous researchers view a high dividend yield as a signal of undervalued market. Dividend yield predictive power stemmed from dividend role in capturing the permanent component of prices (Aras & Yilmaz, 2008). A negative relationship with stock market returns and statistically significant recorded by six emerging market countries namely Brazil, Malaysia, Mexico, Philippines, Russia, and South Africa indicate the important role of dividend yield in the research study. Dividend yield records a high R^2 of 45.6%, indicates the most influential variable in Malaysia.

Prior study by Lin, Hsu & Chen (2009) mention about the reflection power of dividend yield ratio towards future expected return and expected excess return. The past one-period value could positively affect the stock market variables. They also find out that dividend yield ratio, relative interest rate, market liquidity, liquidity risk, and abnormal trading volumes were positively related to their lag one-period values by using the variance decomposition for stock return. The same result is found on stock excess returns.

In the working paper written by Allen & Bujang (2009), their consciousness are the capability to explain stock returns and equity premium using time series forecasting regressions by dividend-price ratios and dividend yields. The findings presented by descriptive statistics and time series regression, in-sample and out-of-sample performances, Mincer-Zarnowitz (1969) regression forecasting, comparison between researchers' results and Cochrane (2006). In descriptive statistics, the

mean of dividend-price ratio of 0.548% and mean of dividend yield of 0.550% are recorded. Regression namely Newey-West adjusted t-statistics as time series regression are employed to test the significance and the results display both stock returns and the equity premiums are significantly explained by the dividend yield, superior than dividend-price ratios, supported by Fama & French (1988) even though a very poor explanatory power are declared by the overall R-squared (R^2). In other words, time series regressions results are statistically significant explanatory ability with the indication of both independent variables do influence the dependent variables. Poor performances of stock returns for all three different economic conditions of Malaysia (before crisis, during crisis, and after crisis) and for the overall horizon are traced by the in-sample performance; results consistent with Goyal & Welch (2003, 2006) and Cochrane (2006). The evidence suggests that before the crisis, the subsample is the only one that indicates the significance at a 95% level of log dividend-price ratios explain the log stock returns. The forecasted log stock returns error appears an extreme gap in the prediction. Furthermore, all reported out-of-sample of RMSE (Root-Mean-Square Error) performers' statistics exhibit statistically insignificant (Diebold & Mariano, 1995). The stability of the model is doubted as the estimated coefficients differ widely across sub horizon. The same results appear in log equity premiums too.

Favero, Gozluklu & Tamoni (2011) state that many former researchers demonstrate log dividend-price ratio as persistent time series and forecastable stock market returns and excess returns over many years. A very high persistence of log dividend-price ratio is a very high persistent leads to a careful statistical analysis that provides evidence of the stock market return predictability based on the log dividend-price ratio. The structural breaks have also been found in the relationship between log dividend-price ratio and future returns while relationship between dividend growth and stock returns are predictable by long tenure equilibrium relationships derived from a linearized version of the consumer's intertemporal budget constraint. However, the relevance of findings of dividend-price ratio in predicting long tenure stock market returns are still being debated in financial econometrics issues. Facts exhibit that dividend-price ratio plays an important role regularly in recent empirical literature as replacement of efficient market hypothesis that has been acted as a long tradition in view of return predictability. The researchers also provide mean of dividend-price ratio that becomes vital time-varying expected returns component, which allows fluctuation of the demographic variable. An increased of forecasting horizon impacted by the importance of such a component. Moreover, in VAR models, log dividend-price ratio symbolizes a stationary variable, captures time variation in the investment opportunity set and acts as an input into the optimal asset allocation decision of a long tenure investor.

Based on Jiang & Lee (2012), log dividend-price ratio is selected as an independent variable as all future returns or future dividend growth, or both in discounted value is a best predictor. In predicting dividend growth, Jiang & Lee (2012) find out a negative coefficient by using cyclical component whereas a positive coefficient in predicting dividend growth by using the stochastic trend component. Jiang & Lee (2012) explore the previous researchers' findings that prove log dividend ratio model anticipated an increment in log dividend-price ratio is related to the future upward trend in stock returns and/or future downward trend in dividend growth rates. In univariate regression, the adjusted R^2 of C_{DP} (cyclical component of log dividend-price ratio) increased monotonically as a result of the forecast horizon has boosted and at sixteen quarters horizon, it achieves the highest level of 30%. While in the proportion to eight quarters horizon, the coefficients and adjusted R^2 in the future returns regression on the cyclical components accelerated. These indicate that C_{DP} has a positive coefficient that predicts future excess returns. Besides, the adjusted R^2 of G_{DP} (stochastic trend component of log dividend-price ratio) is 16% at the sixteen quarters horizon. The bootstrap p-values and adjusted R^2 demonstrate forecastable of future stock returns by the stochastic trend component especially in the long horizon, but with a negative coefficient. In multivariate regression, the adjusted R^2 of both components for log dividend-price ratio at the one quarter horizon is 5%, which is much higher than the raw material ratio of 1%. The adjusted R^2

increases monotonically as a result of the forecast horizon accelerated and at around twelve quarters, it achieves highest level. It falls as the prediction horizon increased beyond twelve or sixteen quarters. Dividend growth fails to predict by dividend-price ratio as the stochastic trend and cyclical components offset. Hence, their research recommends that each dividend-price ratio component should capture separately for any investment opportunities.

The positive coefficient on dividend yield is found by McMillan & Wohar (2013) is similar as Campbell & Shiller (1988a, 1988b) model, which indicates higher yield is consistent with higher future returns. However, when the researchers conduct a predictive regression, the dividend yield only shows significance with an adjusted R^2 of only 8%.

2.2.2 Earnings-price ratio

Lyn & Zychowicz (2004) find evidence of earnings-price ratio is negatively related to return with holding periods longer than six months. Researchers also find that lower earnings-price ratio associated with lower returns while the largest group tends to have higher returns; mainly for six-month and twelve month forward-looking returns. Earnings-price ratio is significantly related to one-month forward-looking returns. Earnings-price ratio is significantly related to six-month and one-year future returns and had a negative relationship for the case of five markets classified as

emerging markets by Standard & Poors (S&P)/International Finance Corporation (IFC).

Based on Jiang & Lee (2012), log earnings-price ratio is selected as an independent variable because it provides the optimal forecast of the discounted value of all future returns or future earnings growth rates, or both. In univariate forecast regression, the adjusted R^2 of C_{EP} (cyclical component of log earnings-price ratio) has increased monotonically as the prediction horizon increased and reached the highest level of 53% at the prediction horizon of 12 quarters. While the coefficients and adjusted R^2 in regression of future returns on the cyclical components increased in proportion to eight quarters horizon. These indicate that C_{EP} predicts future excess returns with a positive coefficient. Besides, the adjusted R^2 of G_{EP} is 17% at the 16 quarters horizon. The bootstrap p-values and adjusted R^2 show that the stochastic trend component was able to forecast future stock returns especially in long horizons, but with a negative coefficient. In multivariate forecast regression, the adjusted R^2 of both components for log earnings-price ratio at the one quarter horizon was 13%, which is much higher than the raw material ratio of 2%. The adjusted R^2 increases monotonically as the prediction horizon increases and reached the highest level at the horizon of around 12 quarters. It falls as the prediction horizon increases beyond 12 or 16 quarters.

Tudor (2012) investigated the relationship between earnings-price ratio and stock return. Researcher applied two-way fixed effects multiple

regression model with HCCM. The findings revealed that earnings-price ratio capture the most powerful impact on stock returns and there is a positive relationship between earnings-price ratio and returns; still remain the significance through different regression models. Earnings-price ratio also one of the variables that recognized as providing the most variation in stock returns.

2.2.3 Price-to-book ratio

Deng, Lev & Narin (1999) examine the correlations between the attributes and market-to-book ratios to gain first impression of the ability of patent attributes in predicting future company performance in the stock market. Researchers find that citation impact and science link has substantially higher correlations with market-to-book ratios and returns as compared to patent count and technology cycle time. Data period is five years (year 1985-1989), followed by five three-year periods; year 1989-1991, 1990-1992, 1991-1993, 1992-1994, and 1993-1995. Researchers calculate the subsequent annual stock return and the market-to-book ratio for each company and the six sub periods. Then, the researchers classify the companies within four sample industries namely chemicals, drugs, electronics, and other into four groups according to the relative size of the citation impact and science link indicators. The researchers compute the median one year ahead of market-to-book ratio and stock return for each

industry subgroup. Moreover, the researchers implement multivariate analysis to indicate the most patent attributes significantly associated with subsequent stock returns and market-to-book ratios. Market-to-book ratio equation is motivated by valuation model (Ohlson, 1995), which market value of company acts as a function of book value, earnings, and other information. Market-to-book ratio regressions conclude that number of patents approved and the patent citation measures are strongly associated with investors' growth expectations as reflected by subsequent market-to-book ratios.

Aras & Yilmaz (2008) choose market-to-book ratio as one of the independent variables because of Fama & French (1992) perception on the ability of market-to-book ratio in cross-sectional variation explanation of an individual stock return. Previous studies state the high ratios between the securities' market value and its book or equity offers lower returns as compared to the low market-to-book ratio securities. Book value proxy for future cash flow is the explanation of return predictability by market-to-book ratios. Empirical evidence describes that market-to-book ratio has a positive relationship with the market index returns except in South Africa. The significance level of 41% is recorded for all emerging market countries analyzed in the study including Malaysia. When market-to-book ratio increases, the market return also increases. Based on the regression, market-to-book ratio is the most influential in Turkey with a relatively high R^2 of 99.8% as compared to Argentina, Brazil, Korea, Malaysia,

Mexico, Philippines, Poland, Russia, South Africa, Taiwan, and Thailand as the other emerging market countries.

2.2.4 Asset Growth

Cooper, Gulen & Schill (2008) observe firm-level asset investment effects in returns by investigating the cross-sectional relation between firm asset growth and subsequent stock returns. Findings show that asset growth rates are strong predictors of future abnormal returns and it retains its forecasting ability on large capitalization stocks. When asset growth rates being compared with other previously documented determinants of the cross-section of returns (book-to-market ratios, firm capitalization, lagged returns, accruals and other growth measures), Cooper et al. (2008) found that an economically emerged of firm's annual asset growth rate and asset growth also indicate a statistically significant predictor of the cross-section of U.S. stock returns.

Li, Becker & Rosenfeld (2012) found that total asset growth seem to be the greatest return predictive power among the other variables namely size and book-to-market ratio. It is due to the fact that all the other asset growth-related measures are simply components of total asset growth. Generally, the two-year asset growth rates have greater return predictive power than the one-year asset growth rates. The predictive power of two-year asset growth is also robust in control for size, book-to-market factors,

and different normalization schemes. It also robust for different sub-periods, geographic regions, and market capitalization stock (large and small-cap stocks).

Wen (2013) found that the level of aggregate asset growth is a strong and robust negative predictor of aggregate stock returns. Aggregate asset growth also show correlation with stock returns is exist and it provides complementary power for the cross-sectional stock returns, above and beyond the common measure of investor sentiment.

2.2.5 Company size (Market Capitalization)

Tudor (2012) observed the relationship between size and stock return. Researcher applied two-way fixed effects multiple regression model with HCCM (White's Heteroscedasticity-Consistent Covariance Matrix). The findings revealed that firm size showed the highest statistical significance and there is an inverse relationship between size and returns subject to the number of variables used in the models that differ to each other. Size also reported as one of the variables that capture the most variation in stock returns.

Theart & Krige (2014) observed market capitalization (proxy for size) as one of the factors that influence stock returns. Results showed that market

capitalization strategy and market capitalization-based liquidity strategy (combination of market capitalization and liquidity) are the factors that influence stock returns. The approaches used are geometric mean, arithmetic mean, and single-factor CAPM Jensen's alpha.

2.2.6 Capital structure (Debt ratio)

Koslowsky (2009) explored the relationship between capital structure and expected returns by extending the traditional trade-off model of capital structure into a mean-variance environment similar to capital asset pricing model (CAPM), which provides a theoretical model of the relation between leverage and expected return. Results showed that leverage are negatively related to the expected return.

Olowoniyi & Ojenike (2013) discovered the relationship between capital structure and stock return of eighty five firms listed on the Nigeria Stock Exchange from year 2000 to 2010. Researchers employed panel co-integration methodology to investigate the existence of long run relationship between capital structure and stock return. Results indicate a long run relationship is exist between capital structure and stock return

and both variables will not drift away from each other when attention simultaneously being given to both of them.

Tsuji (2014) investigated the association between financial risks and corporate debt ratios are rewarded with higher returns within industries from year 1986 to 2012. Findings showed that the capital structure of every industry at Tokyo Stock Exchange First Section is statistically significantly much different. Besides, result showed that financial risks associated with corporate debt ratios are not rewarded with future positive stock returns when exclude the industrial differentials of corporate leverage effects.

2.2.7 Unsystematic risk

Harrington (1983) investigated the relationship between realized mean returns and nonsystematic risk of life insurance stocks by using regression analysis and portfolio analysis during the period of 1961 to 1976. The findings of regression analysis and portfolio analysis showed that a significant relationship between nonsystematic risk and mean returns, which contradict with the principle implication of CAPM (Capital Asset Pricing Model).

2.2.8 Systematic risk (Beta)

Harrington (1983) examined the relationship between realized mean returns and systematic risk of life insurance stocks by using regression analysis and portfolio analysis during the period of 1961 to 1976. Generally, the results showed that the relationship between beta and mean returns is weaker as compared to between nonsystematic risk and mean returns.

Tudor (2012) examined the relationship between beta and stock return. Researcher adopt two-way fixed effects multiple regression model with HCCM. The findings revealed that market beta (alone or together with other variables) does not help explain stock returns on the Romanian Stock Exchange. A significant simple relation between stock returns beta also does not exist. A slightly negative slope coefficient of beta reported in the study.

2.3. Empirical Evidence from Developed and Emerging Countries

Harrington (1983) examined the relationship between realized mean returns and two measures of risk namely systematic risk and nonsystematic risk during four consecutive year periods: 1961 to 1964, 1965 to 1968, 1969 to 1972, and 1973 to 1976 of life insurance stocks within the framework of Capital Asset Pricing Model (CAPM) by Sharpe-Lintner and Jensen. Results indicate that nonsystematic risk influence stock returns. The regression analysis showed that the relationship between mean returns and nonsystematic risk is strong during year 1961 to 1964, 1973 to 1976, and in 1965 to 1968, some specific indicator of significant relationship exist. In portfolio analysis, a significant different mean returns showed by the portfolio stocks with the ten highest return variances. While the portfolio stocks of ten with the lowest return variance showed in all except during 1961 to 1964 period. The findings provide a significant relationship between mean returns and market beta but it is considered as less evidence because during 1973 to 1976 period only the result appeared in both regression analysis and portfolio analysis.

Chin & Hong (2008) suggested that the dividend yield, earnings yield, book-to-market ratio, return on equity, and various measures of the interest rate are the common financial variables that indicate stock returns prediction. Thus, researchers conducted a study, which adopted dividend yield, price-to-earnings ratio, and capital gain in predicting the Malaysian stock return. The empirical

evidence exhibits that dividend yield is capable to predict the future stock return whereas earnings yield has less predictive power as compared to dividend yield. To test the capability of dividend yield to provide for profitable trading strategy or improve portfolio decisions as compared to trading strategy according to only earnings yield is one of the research objectives in the study. Moreover, to test the capability of dividend yield to provide for profitable trading strategy according to the combination of both dividend yield and capital gain is the second research objective in the study. Third research objective is to test the capability of dividend yield to provide for profitable trading strategy or improve portfolio decisions as compared to the trading strategy according to the combination of both earnings yield and capital gain for Malaysian public listed corporations' perspective. In determining the stationary of the time series, researchers adopt Augmented Dickey-Fuller (ADF), Philip-Perron (PP), and Kwiatkowski, Phillips, Schmidt and Shin (KPSS) unit root test. Researchers declare that all variables are integrating of order zero. Hence, researchers utilize Ordinary Least Square (OLS) method to generate monthly stock return via regressions. In sum, dividend yield has declared as a significant predictor of future stock return and the dividend yield is positively correlated with stock return. Unluckily, earnings yield or the combination of earnings yield and capital gain are unable to predict future stock return. Researchers also find two different views from prior literatures that expose positive relationship between earnings-price ratio and Malaysian stock return and it is statistically significant, while the other one

literature argues financial ratios usefulness in predicting the Malaysian stock return.

Since the last two decades, financial practitioners and economists suggest that size, interest rate, beta, market-to-book ratio, price-earnings ratio, and dividend yield are the good indicators in predicting future stock price performance (Aras & Yilmaz, 2008). Some previous studies forecast that dividend yield is significant in predicting stock return as they employ the conventional dividend discount model. While for market-to-book ratio and price-earnings ratio are useful as they employ accounting approach based on the accounting surplus relation. Thus, Aras et al. (2008) demonstrate market-to-book ratio, price-earnings ratio, and dividend yield to forecast market return in an integrated form. They integrate both finance and accounting approaches to explain future profitability and stock returns via the proposed linear co-integration model that combine three variables. The prominence in past time-series research by the dividend yield, recently acquired fame status in explaining cross-sectional stock returns variation by market-to-book ratio, and earnings-related strategies which have been traditionally applied in the investment community long ago by the price-earnings ratio are the reasons of selecting these variables. Aras et.al (2008) elaborate stock return predictability of twelve emerging markets by applying the same market indicators with similar characteristics. The findings reveal that market-to-book ratio and partially dividend yield are used to forecast the stock return with high probability level for one-year period by emerging markets'

investors. In forecasting stock return, price-earnings ratio plays a minor role. The empirical results indicate that the market-to-book ratio and dividend yield are good exhibitors in predicting future stock returns in the long horizon, supported by findings of Fama & French (1992) and many other academicians. Even though results above are interpreted as inefficiency in the market and in finance literature since the last three decades, they are hot issues being debated but the investors may benefit from the trend of variables and pursue promising trading strategies for twelve month horizon, using each variable separately as a forecaster or by combining them. Furthermore, the regression observed provide explanatory power (new index) that is less than the multi-regression results (R^2) although they were statistically significant. For example, R^2 for Korea is 70% whereas new index (indicate explanatory power) of Korea is 37%. Aras et al. also employed computation of confidence intervals to evaluate the analysis significance of predictive variables forecasting power for the linear regression market returns via t-statistics. The reliability in forecasting the market returns via employing aforementioned predictive variables is strengthened by a discoverable of 92% of the computed forecasted figures that are within the confidence interval for each country.

Cooper, Gulen & Schill (2008) introduced a new measure of firm growth and investigate whether growth is fairly priced in the cross-section of future stock returns and the study help them to understand the sources of firm-level growth effects. Cooper et al. (2008) used the year-on-year percentage change in total

assets with data from year 1968 to 2003. Researchers documented a strong negative correlation between a firm's asset growth and subsequent abnormal returns. Besides, they found that raw value-weighted (VW) portfolio annualized returns for firms in the lowest growth decile are on average much lower at 5%. The Sharpe ratio of the annual returns of the VW asset growth spread portfolio is 1.07, which is much higher than the Sharpe ratio for the book-to-market (0.37), size (0.13), and momentum factors (0.73) over the sample. Researchers also found that asset growth effect persists well beyond the first year; asset growth portfolios earn abnormal returns up to five years. They also found that firm asset growth remains strong when comparing to asset growth effect with the other standard determinants of the cross-section of returns (book-to-market ratios, firm capitalization, short-and long-horizon lagged returns, other growth measures such as growth in sales, growth in capital investments, accruals, a cumulative accruals measure such as net operating assets). The result showed that firm asset growth rate is the strongest determinant of future returns, with t-statistics of more than twice those obtained by other documented predictors of the cross-section. For large capitalization firms, the ability of asset growth to predict the cross-section is even more pronounced whereas the coefficient is strongly significant on asset growth.

Lin, Hsu & Chen (2009) adopt the return decomposition model developed by Campbell (1991), which implies multivariate regression approach in the United States stock market to test the variance of stock returns, stock excess returns, and

the impinge on stock returns and stock excess returns. The findings exhibit the ability in predicting stock returns and stock excess returns by dividend payout ratio. Vector Autoregressive (VAR) approach developed by Campbell (1991) used to analyze stock excess return as well as stock return by imposing short-term interest rate as a new variable. In analyzing the unpredicted stock returns and the unpredicted stock excess returns, variables namely dividend yield, log stock returns, log stock excess returns, relative interest rate, short-term interest rate, market liquidity, liquidity risk, abnormal trading volume, and book-to-market ratio are employed in VAR approach. Empirical results declare a negative mean by stock excess returns, which showed negative risk premium in the stock market by computing natural logarithm of the difference between the stock return and the risk-free rate. Empirical evidence displays a significant with negative skewness statistics of stock returns (-0.4918) and stock excess returns (-0.0391), that indicate both variables skewed to the left. Kurtosis statistics exhibit a result of 4.2212 for stock returns and 7.6305 for stock excess returns, which larger than three. The researchers also employ ADF test to test the presence of a unit root in order to avoid inefficient of estimation using regression equation with an intercept term, regression with an intercept term and trend term, and equation without an intercept term and trend term. All variables are free from problem of the unit root and have a stationary time series.

Koslowsky (2009) presented a theoretical model that examines the prediction of the trade-off model under conditions of leverage costs and investor portfolio

choice in a mean-variance setting, which similar to the capital asset pricing model (CAPM). The mean-variance trade-off model actually connects the capital structure models of Modigliani & Miller (1958, 1963) and Miller (1977) with the CAPM of asset pricing theory, whereby the model incorporates personal and corporate taxes, leverage costs, and shows both levered and unlevered expected equity returns. The mean-variance trade-off model capture a picture of the relationship between capital structure and expected returns that is closer to observed behavior in the real world than the standard model. The main finding is the mean-variance trade-off model predicts that leverage should be negatively related to expected returns. The mean-variance model further showed that the excess return per unit of risk for unlevered equity increases faster than for levered equity as expected returns increase, so there is a shift toward lower leverage.

According to Favero, Gozluklu & Tamoni (2011), Campbell & Shiller (1988) have the most available evidence on predictability, which proposes the dynamic dividend growth model. The assumption model of its stationary and validity of a standard condition relied on a log-linearized of I-period returns on the stock portfolio. Earlier, Lettau & Van Nieuwerburgh (2008) found that forecasting power of stock market returns are stronger during time-varying mean of DP_t (log dividend-price ratio at time t) deviations as compared to constant mean of DP_t deviations, supported by employing a particle filtering framework of log dividend-price ratio (Johannes, Korteweg & Polson, 2008). Demographic trends

are the reason of slow evolvement in log dividend-price ratio mean, which may possibly affect the investigation objectives. The purpose of demographic trends is to record log dividend-price ratio slow evolve mean and the DP_t deviations from log dividend-price ratio mean, which displays possible predictor for dividend growth and long tenure of stock market returns. Generally, mean of stock return is 0.71% with the minimum return of -23.24% and the maximum return of 31.94% as proved by Allen & Bujang (2009) in their working paper. Skewness coefficient of near to zero and a positive kurtosis coefficient of 2.444 are also recorded. Favero et al. (2011) employ Mincer-Zarnowitz (1969) regression forecasting but unluckily log stock returns and log equity premium fail to offer good forecasting ability of imperfect actual forecast, which denoted as $\beta \neq 1$ and R^2 is very low. Moreover, the Newey-West adjusted t-statistic exhibit insignificance at a 95% confidence level for three different economic conditions and the overall horizon for both log stock returns and log equity premium. The researchers' findings were similar to that of Cochrane (2006) findings whereby in the Malaysian stock market, the average return appears very low as compared to 4% to 7% in many developed and developing countries. Then, researchers exhibit through data deflated by changes in the consumer price index, dividend growth are certainly predictable. Whenever stock returns and dividend growth unable to promote any predictive power, price growth need to be predictable to achieve equilibrium to the stationary dividend yield (Cochrane, 2006). Favero et al. (2011) research evidence also supported by Valkanov (2003) and Boudoukh

(2006), which constitutes of difference in terms of significance and the choice of sample period sensitivity.

Jiang & Lee (2012) decomposed three financial ratios namely dividend-price ratio, earnings-price ratio, and book-to-market ratio into cyclical components to predict an upward trend in stock returns whereas the stochastic trend components to predict a downward trend in stock returns. The interpretation of predictive power of local mean reversion affects the cyclical component whereas slow mean reversion affects the stochastic trend component. In the long-term, persistency are motivated by the insight findings of previous researchers if stock prices are rational or irrational. As long as it permitted to stray from its intrinsic value, the three financial ratios are able to decompose into random walk and bubbles. The persistence of returns is catalyzed by cash flow risk. Returns catalyzed by discount rate risk are offset by unfavorable future returns in mean reversion. Jiang & Lee (2012) also test consumption-wealth ratio (CAY) and relative T-bills rates (RTB) in a univariate regression to forecast stock returns. Unfortunately, predictive power disappears when researchers encompass two components of financial ratios in the prediction regression. The prediction of stock returns is significantly investigated for all horizons when researchers use both cyclical and stochastic trend components. Researchers also test using correlation among independent variables and note that all financial ratios are positively and closely correlated with stock returns. In the research, researchers employ Hodrick & Prescott's (1997) filter method to decompose financial ratios

because the decomposition considers a new classical economic theory as explained in Lucas (1980, 1981) and it is a flexible methodology that achieve highly persistent stationary series and potentially non-stationary series as it is argued the existence of a unit root in financial ratios.

Li, Becker & Rosenfeld (2012) compare the various asset growth-related measures in return predictive efficacy in the international universe (MSCI World Universe) from year 1985 to 2009 and the sample is all non-financial companies (include all developed markets). The asset growth measurement is one-year asset growth and two-year asset growth as proposed by Cooper et al. (2008). Li et al. (2012) use Fama-MacBeth (1973) regression in conducting the research. They found significant coefficient estimates of the asset growth measures that suggest the measures have predictive power and stock return do not fully reflect the future return. Two-year asset growth rates indicate the strongest return predictive power. Results also vary significantly in different countries as the existence of different accounting standards and the levels of asset growth rates. Li et al. (2012) also investigate the ability of the asset growth-related measures to predict cross-sectional returns with and without the equity market capitalization and book-to-market equity as control variables. For no control variable, the coefficient estimates of the asset growth-related measures are negative and are significant at the 1% level.

Tudor (2012) observed the relationship between stock returns and company-specific financial ratios (earnings-price ratio, beta, size, A/B ratio, book-to-market ratio, return on asset, return on equity, and foreign trade). All listed companies on Bucharest Stock Exchange from January 2002 to March 2008 are analyzed in the study. The approach used in the study is two-way fixed effects multiple regression model with HCCM (White's Heteroscedasticity-Consistent Covariance Matrix) as suggested by White (1980). This approach discovered that all but one (refer to book-to-market ratio) of the nine risk factors presumed to explain future stock returns have indeed explanatory power on Romanian stock market returns. Results showed that firm size achieved the highest statistical significance and still persistent even variables are dropped from the regression. The negative relationship exists between size and returns vary depends on the different number tested in the model. In term of the impact on stock returns, earnings-price ratio acknowledged as the most powerful variable that give impact on stock returns (ranging from a minimum of 0.65 in the multivariate model to a maximum of 1.24 when earnings-price ratio is the only risk factor). Besides, earnings-price ratio has a positive relationship with returns and it remains statistically significant even though the researcher used different regression models. In terms of the variation in stock returns, the size, foreign trade (FRGN), and earnings-price ratio captured the most variation in stock returns as compared to other variables (A/B ratio, beta, book-to-market ratio, return on asset, return on equity). Unfortunately, market beta (alone or together with other explanatory

variables) failed to explain stock returns on the Romanian Stock Exchange. Return on asset and return on equity showed a little impact on returns and their information already captured by the earnings-price ratio. A significant time effect is recorded as a result of different and continuous changing economic conditions in the country during the period of the study.

McMillan & Wohar (2013) consider six predictor variables namely bond-equity yield ratio, dividend yield, payout ratio, price-earnings ratio, interest rate spread, and three-month Treasury bill to assess the predictive power for the United Kingdom stock returns. The whole sample data employed in-sample, out-of-sample test, and five-year rolling windows. The findings show limited full sample predictability, however time-varied predictability. The researchers would like to observe any systematic relationship between predictability and the state of the world by considering the nature of any relationship between the time-varying predictability and Gross Domestic Product (GDP) that aimed to improve the predictive content of the model. The predictive coefficients were significant for the bond-equity yield ratio, dividend yield, and price-earnings ratio. Unfortunately, the insignificant coefficients signs appear for payout ratio, the term spread, and the three-month Treasury bill. When McMillan & Wohar (2013) demonstrate evidence based on periodic significance, the predictability does exist, but its time varying. For examples, in the later 1970s, early and 1980s, early 1990s, there are evidence of statistical significance of dividend yield and price-earnings ratio recorded by the researchers. In the early 2000s, dividend

yield shows statistical significance whereas in the mid-2000s, price-earnings ratio shows statistical significance, although both series has some significance but of the wrong sign in year 2009. Such time variation as mentioned above might also partly explained the amount of previous studies that both supported and rejected such predictability. Thus, taking into account of such time variation could lead to an improvement in forecasting performance.

Wen (2013) examined the relation between aggregate asset growth and its role in a broad set of asset pricing anomalies in cross-sectional stock returns. The results recommend that aggregate asset growth captures market-wide sentiment and the anomaly returns is consistent with its implication in the cross-section of stock returns. The predictive regression is used by constructing an aggregate asset growth index (AGI) to capture the persistence in asset growth and its effect on cross-sectional stock returns. The slope coefficient on AGI for long short spread for the combination strategy is 1.65 with t-statistics of 4.10. These results suggest that aggregate asset growth provides complementary power for cross-sectional stock returns. Furthermore, the result that showed lower returns on short-leg portfolio of each anomaly following high AGI due to the negative strategy used reported a negative coefficient of -1.60 and t-statistics of -4.22.

Olowoniyi & Ojenike (2013) distinguished between correlation from a share trend and one associated with an underlying causal relationship by testing the data of capital structure and stock returns for a unit root (non-stationary) with a

panel unit root approach consisting of IPS (Im, Peasaran and Shin W-statistics). Findings showed that the capital structure and stock returns are integrated of order one. Then, a panel co-integration test was applied to observe the long run steady state or co-integration exists among capital structure and stock returns. Results of Pedroni co-integration test indicate that at constant level, five out seven statistics reject null hypothesis of no co-integration at the five percent level of significance for the panel statistics. This result showed that capital structure and stock returns are co-integrated in the long run for the sampled firms from the period of 2000 to 2010.

Tsuji (2014) overviewed the equally weighted average values of various industries' corporate capital structure at the Tokyo Stock Exchange First Section. Next, researcher tests whether the capital structure of various industries are different from the full sample average values. Then, researcher examined the connection between the risk and the level of debt ratio is rewarded with higher one-year future stock return in each industry by using pooled regressions and by excluding the industrial differential effects. Oil and coal products industry also is being included in the research study. Results showed that the capital structure of every industry at the Tokyo Stock Exchange First Section was statistically significantly much different. Tsuji (2014) also revealed that the financial risk that associated with the corporate leverage was not rewarded with future return when exclude the size effects and the industrial differentials' effects. Thus, the

researcher concluded that the higher financial risks due to the higher debt ratios are not rewarded with higher return.

Theart & Krige (2014) assessed liquidity as a risk factor affecting stock returns in the South African equity market by incorporating a liquidity style into passive portfolio strategies namely market capitalization strategy, earnings weighted strategy, volume weighted strategy, earnings-based liquidity strategy, and market capitalization-based liquidity strategy. Results showed that market capitalization strategy and market capitalization-based liquidity strategy outperforms the earnings and volume weighted strategies over the year 1996 to 2012 based on the annualized geometric and arithmetic average mean rates of return. Moreover, the single-factor CAPM Jensen's alpha showed that the market capitalization strategy and market capitalization-based liquidity strategy yield positive monthly alphas.

2.4. Summary

This chapter aimed to explore the prior studies relating to the prediction of stock return, the relationship with stock return, and the determinants of stock return. The citation of determinants of stock return variables (dividend-price ratio, earnings-price ratio, price-to-book ratio, asset growth, company size, capital structure, unsystematic risk, and systematic risk) and the empirical evidence from various previous researchers are included in this literature review chapter.

CHAPTER 3

METHODOLOGY

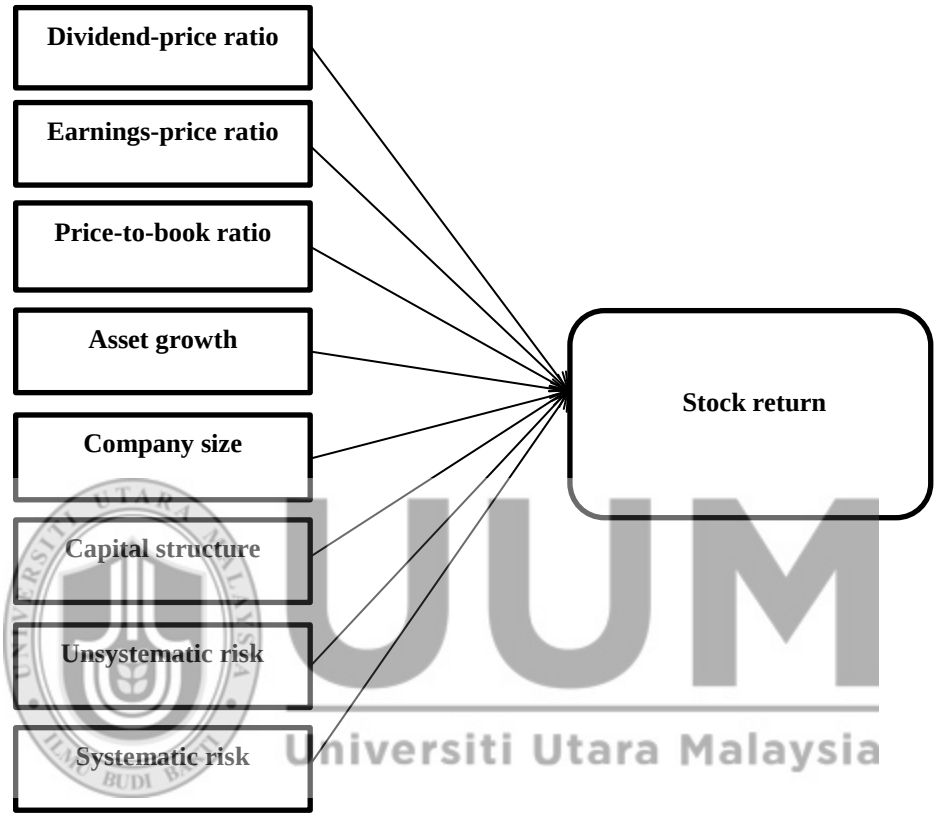
3.0. Introduction

This chapter discusses the methodology of the research study. First, the research framework informs readers the existence of eight factors (dividend-price ratio, earnings-price ratio, price-to-book ratio, asset growth, company size, capital structure, unsystematic risk, and systematic risk) that influence the stock return performance. Then, the study is followed by hypotheses development, research design, operational definition, instrumentation, data collection, sampling, data collection procedures, and techniques of data analysis.

3.1. Research Framework

Figure 1

Schematic diagram for the research framework



3.2. Hypotheses Development

3.2.1. Dividend-price ratio

Studies conducted by Chin & Hong (2008), Aras & Yilmaz (2008), Lin, Hsu & Chen (2009), Favero, Gozluklu & Tamoni (2011), Jiang & Lee (2012), McMillan & Wohar (2013) investigate the relationship between dividend-price ratio and stock return. Chin & Hong (2008) found that dividend yield is positively correlated with stock return and dividend yield is capable to predict the future stock return, consistent with Jiang & Lee (2012), which found that dividend-price ratio is positively and closely correlated to the stock return, and agreed by Lin, Hsu & Chen (2009). McMillan & Wohar (2013) stated that the prediction of stock return is available but time varying. The relationship between dividend-price ratio and stock return is prominence in past time-series research as the high probability level result for one-year period by the emerging markets' investors. These positive relationship evidence lead to the following hypothesis:

H_1: There is a relationship between dividend-price ratio and stock return.

3.2.2. Earnings-price ratio

Tudor (2012) found that earnings-price ratio has the most powerful impact on stock returns and the positive relationship between earnings-price ratio and returns remains statistically significant through different regression models, consistent with Basu (1977) that discovered future stock returns with higher earnings-price ratio exceed expected returns computed with CAPM (capital asset pricing model). The extended studies by Basu (1983), Peavy & Goodman (1983) and Jaffe (1989) showed that high earnings-price ratio stocks still explain stock returns when size and market beta are included in the tests. This similar empirical evidence on the relationship between the earnings-price ratio and stock return lead to the following hypothesis:

H_2: There is a relationship between earnings-price ratio and stock return.

3.2.3. Price-to-book ratio

A study conducted by Aras & Yilmaz (2008) proved that price-to-book ratio received fame status in explaining stock return variation and commonly used to forecast stock return with high expectation level for one-year period by the emerging markets' investors. An, Bhojraj & Ng (1990) observed and found that one-to-three year-ahead firms' stock returns appeared overvalued economically and statistically underperform the stock returns of firms that were undervalued although after adjusting

for known risk factors. These different empirical evidence and argument on the relationship between the price-to-book ratio and stock return lead to the following hypothesis:

H_3: There is a relationship between price-to-book ratio and stock return.

3.2.4. Asset growth

The previous researchers namely Li, Lecker & Rosenfeld (2012) found that two-year asset growth rates have the strongest return predictive power among all the measures related to asset growth, consistent with Cooper, Gulen & Schill (2008) empirical findings result that found the asset growth-related measures demonstrate the ability to predict future stock return. Wen (2013) found the firm-level of aggregate asset growth is a strong and robust negative predictor of aggregate stock returns in the time series analysis. Thus, for this research study, the consistent and argument statements lead to the following hypothesis:

H_4: There is a relationship between asset growth and stock return.

3.2.5. Company size

Tudor (2012) found that firm size is the highest significance and explanatory power on future stock returns by using the methodology of two-way fixed effects multiple regression model. The negative relationship between size and returns varies depending on the different

number of variables used in the model. Lakonishok & Shapiro (1984) found a significant relationship between stock returns and firm size. Keene & Peterson (2007) found that size is significantly affected returns. Theart & Krige (2014), whom in line with Chen, Ibbotson & Hu (2010;2013) used market capitalization as a proxy for size and found that market capitalization strategy led to statistically significant in the coefficients of determination (R^2) value, thus consequently proved that firm size has a relationship with stock returns. These different empirical evidence and argument on the relationship between the company size and stock return lead to the following hypothesis:

H_5: There is a relationship between company size and stock return.

3.2.6. Capital structure

Koslowsky (2009) found that the mean-variance trade-off model correctly predicts that leverage is negatively related to the expected returns. Olowoniyi & Ojenike (2013) conclude that there is a long run co-integration among capital structure and stock returns. Both variables are correlated, implied that attention needs to be paid to both variables simultaneously as evidence recommend that both variables will not drift away from each other. Tsuji (2014) found that the capital structure of each industry was statistically significantly much different and financial risk linked with corporate leverage was not rewarded with future return

when exclude the effects of industrial differentials and size effects. Thus, higher financial risks due to the higher debt ratios are not rewarded with higher return. Hence, the findings evidence lead to the following hypothesis:

$H_{6:}$ There is a relationship between capital structure and stock return.

3.2.7. Unsystematic risk

According to Harrington (1983), mean returns were strongly related to unsystematic risk in periods of 1961-64 and 1973-76, and some specifications exhibit a significant relationship between mean returns and unsystematic risk during 1965-68 period. The significant impact of unsystematic risk could be due to specification error if the true return generating process does not depend on unsystematic risk but includes factors that are correlated with the unsystematic risk measures used in the study. Hence, the evidence leads to the following hypothesis:

H_7: There is a relationship between unsystematic risk and stock return.

3.2.8. Systematic risk

Research study conducted by Harrington (1983) found that mean returns were significantly related to systematic risk in only 1973-76 period in both regression and portfolio analysis. Unfortunately, market and

industry beta do not adequately control for factors that may influenced ex post returns in a given period. Tudor (2012) argued that market beta alone does not help explain stock returns on the Romanian stock exchange. Daniel & Titman (1997) also found that market beta has no explanatory power for stock returns even after controlling for size and book-to-market ratio. Lakonishok & Shapiro (1984) found insignificant relationship between beta and stock returns. Fama & French (1992) found that beta does not help explain the cross-section of US average stock returns. These different empirical evidence and argument on the relationship between the systematic risk and stock return lead to the following hypothesis:

H_8: There is a relationship between systematic risk and stock return.

3.2.9. Variance in stock return

The explanation of the variation in stock return by the independent variables were available in the studies conducted by Fama & French (1992), Aras & Yilmaz (2008), Lin, Hsu & Chen (2009), and Tudor (2012). Thus, the evidence leads to the following hypothesis:

H_9: There is variance in stock return explained by dividend-price ratio, earnings-price ratio, price-to-book ratio, asset growth, company size, capital structure, unsystematic risk, and systematic risk.

3.2.10. Best determinant of stock return

Cooper, Gulen & Schill (2008) found that firm total asset growth dominates other standard variables in predicting the future returns due to its ability to capture common return effects across components of firm's total investment or financing activities that varies across firm size (complex linkages among returns, size groups and financing types). Li, Becker & Rosenfeld (2012) found that the asset growth-related measures demonstrate the ability to predict future stock returns, with two-year total asset growth rates showing the greatest predictive power. Wen (2013) found that investors overreact to asset growth and a high level of aggregate asset growth induces an overvaluation of the stock market. These similar empirical evidence lead to the following hypothesis:

H_{10}: Asset growth is the best determinant of stock return than dividend-price ratio, earnings-price ratio, price-to-book ratio, company size, capital structure, unsystematic risk and systematic risk.

3.3. Research Design

This research study is designed to determine the factors that influence the stock return. This study eager to investigate the relationship between the independent variables (dividend yield, earnings yield, price-to-book ratio, asset growth, company size, capital structure, unsystematic risk, and systematic risk) and a dependent variable namely stock return, the variance in stock returns explained by each independent variable, and to find the best determinant of stock return.

3.4. Operational Definition

Table 3

List of Dividend-Price Ratio Definitions by Various Scholars

Author	**Definition**
Bloomsbury Business Library (2007)	Dividend-Price Ratio is the price of a stock dividend by the annual dividend paid on a share.
Albers (2015)	Dividend-Price Ratio is another name for Dividend Yield, a study of variability of interest, used by finance researchers. When emphasis is done on yield or return from a particular stock by practicing investor, the term used is Dividend Yield. But one distinction that made between the use of the term Dividend Yield and Dividend-Price Ratio is that the latter term can be applied to the total market for a company's shares by

	using the term "Dividend-Price Ratio to apply to the total amount of money paid by a company in dividends as a ratio of its market capitalization, or the price of all of its outstanding common shares.
Khan & Jain (2013)	Dividend yield is computed by dividing the cash dividends per share by the market value per share.

Table 4

List of Earnings-Price Ratio Definitions by Various Scholars

Author	**Definition**
Scott (2003)	Investors capitalize the expected earnings in the future tenure, computed as dividing the planned earnings per share by the stock current market price. A low E/P ratio expecting higher-than-average earnings growth. Earnings-price (E/P) ratio is the opposite of the price-earnings ratio. The other name of E/P ratio is earnings capitalization rate and earnings yield.
Harvey (2011)	After a deduction of tax and interest payments on fixed interest debt to the current share price. The opposite of the price-earnings ratio. The formula is total twelve months earnings divided by number of outstanding shares, divided by the

	recent price, multiplied by 100. The end result is shown in percentage terms. We often look at earnings yield because this avoids the problem of zero earnings in the denominator of the price-earnings ratio.
Harvey (2012)	An annual earnings also known as 12-month earnings used often by an individual but some analysts use other forms. A security's stock valuation, which stocks fair value in a perfect market determined by earnings-price ratio. Earnings-price ratio also measures the expected growth but not realizes growth.
Khan & Jain (2013)	Earnings-price ratio which is also called as earnings yield, defined as the ratio of earnings per share to the market value per ordinary share.
Spaulding (2015)	The earnings yield (earnings-price ratio, E/P ratio) for stocks is the opposite of the price-earnings (P/E) ratio of stocks. The formula is earnings per share of common stock divided by the market price of the stock. The greater of E/P ratio caused by the greater earnings. The lesser of E/P ratio caused by the greater of stock price. One rule of thumb is stock market as a whole is overvalued

	when earnings yield on stocks is less than maturity period since higher stock prices will lower the earnings yield.

Table 5

List of Price-To-Book Ratio Definitions by Various Scholars

Author	**Definition**
Koslowsky (2009)	The market-to-book ratio is defined as the book value of debt plus the market value of equity divided by the book value of debt plus the book value of equity. The market-to-book ratio is commonly used in corporate finance research to proxy for expected growth or expected profitability. The market-to-book ratio and book-to-market equity ratio are closely connected and usually produce similar results when used as a proxy for expected growth or expected profitability.
Ross, Westerfield & Jaffe (2010)	Market-to-Book ratio compares the market value of the company's investments to their cost. A value less than 1 could mean that the firm has failed in creating value for its shareholders.
Brigham & Houston (2010)	Market/book ratio indicates investors' willingness to pay more on stocks as compared to accounting book values of the stocks, which normally exceed 1.0. The asset values do not reflect either inflation or

	goodwill as reported by accountants on balance sheets. Pre-inflation prices of assets purchased years ago are carried at the original costs even though actual values tend to rise substantially as a result of inflation; historical costs are lower than the successful companies' values, whereas low M/B ratios defined unsuccessful companies.
Kok, Weina, Marimuthu & Bhattacharya (2010)	Market-to-book ratio compares the market price of a firm's stock relative to the historical cost of the shares. A value that is more than one (1) may indicate that the management of a firm has created value for its shareholders whereas a value that is less than one (1) may be taken to demonstrate that management has failed to create value for its shareholders.
Khan & Jain (2013)	Also known as Price-to-Book Value ratio and Price to book (P/B) ratio, measures the relationship between the market price of equity share with book value per share. P/B ratio is significant in predicting future stock returns. For instance, Fama and French observe that the P/B ratio (along with size) is the best predictor of future stock returns. Firms with low P/B ratios have consistently higher returns compared

	to the firms with high P/B ratios.
London South East (2015)	The company ratio of a statement of financial position value to the total stock market value.
Financial Times (2015)	Price/Book ratio (p/b ratio)which is also known as the Market-To-Book ratio, links the company stock price with the book value or accounting value of shareholders' equity per share. It affects how many times book value investors are ready to pay for a share.

Table 6
List of Asset Growth Definitions by Various Scholars

Author	**Definition**
Cooper, Gulen & Schill (2008)	Asset growth is the year-on-year percentage change in total assets because asset growth is the sum of the subcomponents of growth from the left-or right-hand side of the balance sheet, it synergistically benefits from the predictability of all sub-components of growth, allowing asset growth to better predict the cross-section of returns relative to any single component of growth.
Lohrey (2009)	Asset growth means the degree to which an asset increases or decreases in value over time.

Table 7

List of Market Capitalization (proxy for Company Size) Definitions by Various Scholars

Author	**Definition**
Financial Times (2014)	Market capitalization or market cap is the market value of a company's issued share capital. In other words, the number of shares multiplied by the current price of those shares on the stock market. Companies are ranked as large-cap, mid-cap, and small-cap depending on their market capitalization, though the actual criteria for classification depend on the market concerned.
The Economics Times (2016)	The aggregate valuation of the company based on its current share price and the total number of outstanding stocks. It is calculated by multiplying the current market price of the company's share with the total outstanding shares of the company. It helps the investors determine the returns and the risk in the share and help to choose the stock that can meet their risk and diversification criterion.
Investopedia (2016)	The total dollar market value of all of a company's outstanding shares. It is calculated by multiplying a company's shares outstanding by the current market price of one share. It determines a company's size, as

	opposed to sales or total asset figures. It is frequently referred to as "market cap".

Table 8

List of Debt Ratio (proxy for Capital Structure) Definitions by Various Scholars

Author	**Definition**
Sabri, Hendri & Nik Muhammad Naziman (2004)	Debt ratio measures the percentage of total funds provided by creditors as compared to funds provides from owner capital. Total debt consists of current liabilities and long-term debt. Thus, the net of debt ratio is the percentage of funds provided by owners.
Besley & Brigham (2013)	Debt ratio measures the percentage of the firm's assets financed by borrowing (loans) Total debt includes both current liabilities and long-term liabilities. Creditors prefer low debt ratios because the lower the ratio, the greater the cushion against creditors' losses in the event of liquidation. The owners, on the other hand, can benefit from leverage because it magnifies earnings, thereby increasing the return to stockholders.

Table 9

List of Unsystematic Risk Definitions by Various Scholars

Author	**Definition**
Sabri, Hendri & Nik Muhammad Naziman (2004)	A diversifiable risk also known as non-market risk that is unique to a particular firm and avoidable in an investment portfolio. It includes factors such as the new competition, lawsuits, and others that relate to a specific firm. Therefore, undesirable events in one firm may have a different and positive impact on the other firm. For an individual firm, it arises from the investment and financing decisions made.
Ross, Westerfield & Jaffe (2010)	A risk that specifically affects a single asset or a small group of assets. The announcement of a small oil strike by a company may affect that company alone or a few other companies. Certainly, it is unlikely to have an effect on the world oil market. To stress that such information is unsystematic risk and when affects only some specific companies, it is called as idiosyncratic risk.

Table 10

List of Systematic Risk Definitions by Various Scholars

Author	**Definition**
Sabri, Hendri & Nik Muhammad Naziman (2004)	A non-diversifiable risk also known as market risk that is unavoidable in an investment portfolio no matter how many securities held. Factors that contribute to the systematic risk include inflation, oil embargoes, recessions, interest rates, political attitudes, and others that affect all firms in the market simultaneously. It refers to the external environment, which management has no direct control or influence.
Ross, Westerfield & Jaffe (2010)	Any risk that affects a large number of assets, each to a greater or lesser degree. Uncertainty about general economic conditions such as GNP, interest rates, or inflation, is an example of systematic risk. Sometimes systematic risk is referred to as market risk.

Table 11

List of Stock Return Definitions by Various Scholars

Author	**Definition**
Investopedia (2015)	Return is defined as the security's gain or loss in a stipulated period. It comprises of income and capital gains relative on an investments quoted as a percentage. The more risk ones take, the greater return-and loss achieved (general rule).
Economy Watch (2010)	Returns generated from stock market by investors are known as stock market returns, in the form of profit via trading or in dividends entitled to shareholders from time-to-time, announced by the companies. Another way to generate stock market return is by trading in the secondary market, which investors buy a stock at lower price and sell at higher price. The returns are unfixed and based on market risks, may be positive or negative; heterogeneous and may vary subject to amount of risks an investor take and quality of stock market analysis conducted by the investors. Unlike fixed returns generated by bonds, stock market returns are variable naturally. Rule of thumb is to buy cheap and sell high, but risks should participate in and negative returns would be generated if investors do wrong speculations.

3.5. Instrumentation

In this research study, the variables consist of two categories namely independent variables and a dependent variable. Instrumentation is one of the important elements in the study. The independent variables influence a dependent variable and the findings results will be analyzed based on the relationship. The independent variables are dividend yield (also known as dividend-price ratio), earnings yield (also known as earnings-price ratio), price-to-book ratio, asset growth, company size (proxy is market capitalization), capital structure (proxy is debt ratio), unsystematic risk, and systematic risk (proxy is 5-Year Beta value). A dependent variable is called as stock return. All variables are widely used in many previous studies by prior researchers and academicians that related to the determinants of stock return. Table 12 provides a summary of the measurement used in this study. Table 13 records the measurement of each variable in the stock.

Table 12

Table of Variables

Dependent Variable	**Acronym**
Average Company's Stock Return	RETURN
Independent Variables	**Acronym**
Average Dividend-Price Ratio/ dividend yield	DP
Average Earnings-Price Ratio/Earnings Yield	EP
Average Price-to-Book Ratio	PB
Average 2-Year Asset Growth	AG
Average Market Capitalization (proxy for Company Size)	MC
Average Debt Ratio (proxy for Capital Structure)	DEBT

5-Year Unsystematic Risk	USR
5-Year Beta (proxy for Systematic Risk)	BETA

Table 13

Table of Key Concept

Dependent Variable	**Measurement**
Average Company's Stock Return	**Average Return (RETURN) of Individual Company** Definition: The average of an investment's returns over an extended period of time. Formula: To find the Average Return of Individual Company, the sum (Σ) of Return is divided by the number of days (n) as follows: $\overline{R_i} = \frac{\sum R_i}{n}$
Independent Variables	**Measurements**
Average Dividend-Price Ratio/ dividend yield	**DP** Definition: The amount of dividends that a company pays to its investors in comparison to the market price of its stock.

	Formula: Dividend per share divided by the stock price per share. It is also a company's total annual dividend payments divided by its market capitalization, assuming the number of shares is constant. Then divided with 5 years. DP={∑(DPS/P)} / 5 years
Average Earnings-Price Ratio/Earnings Yield	**EP** Definition: The percentage of each ringgit invested in the stock that was earned by the company. Used by investors to determine optimal asset allocations. Formula: Earnings per share divided by the stock price. Then divided with 5 years. EP={∑ (EPS/P)} / 5 years
Average Price-to-Book Ratio	**PB** Definition: A ratio used to compare a stock's market value to its book value. Book value is

	calculated by looking at the company's historical cost or accounting value. Market value is determined in the stock market through its market capitalization. Formula: Divide the current closing price of the stock by the latest quarter's book value per share. Then sum from year 2010 to 2014. Then, divided with 5 years.
Average 2-Year Asset Growth	**AG** Definition: The change in TA (total assets) over the most recently completed two fiscal years. Formula: $\{\sum [TA_t/(TA_{t-2} - 1)]\}$ / 5 years
Average Market Capitalization (proxy for Company Size)	MC Definition: Market value of a company's outstanding shares. Formula: Sum of the multiplying the stock price per share by the

	number of shares outstanding. Then divided with 5 years.
Average Debt Ratio (proxy for Capital Structure)	**DEBT** Definition: The percentage of the Total assets amounts stated on the balance sheet that is owed to creditors. Formula: Sum of Total liabilities divided by Total assets. Then divided with 5 years. DEBT= {∑(Total debts/Total assets)} / 5 years
5-Year Unsystematic Risk	**USR of Individual Company** Definition: Risk that is unique to an asset, derived from its particular characteristics. It can be eliminated in a diversified portfolio. Period used & Formula: Unsystematic Risk of Individual Company is comprises of January 4, 2010 till December 31, 2014 data of daily end market prices. $\sigma_{ei^2} = \sigma_i^2 - \beta_i^2 \sigma_m^2$

5-Year Beta (proxy for Systematic Risk)	**BETA** Definition: It measures a stock's relative volatility. The Beta is the covariance of a stock in relation to the rest of the stock market. Any stock with a higher beta is more volatile than the market, and any with a lower beta can be expected to rise and fall more slowly than the market. A conservative investor whose main concern is preservation of capital should focus on stocks with low betas while one willing to take high risks to earn high rewards should look for high beta stocks. Period used & Formula: Beta of Individual Company is comprises of January 4, 2010 till December 31, 2014 data of daily end market prices.

	$b = \frac{\sum (x - \bar{x})(y - \bar{y})}{\sum (x - \bar{x})^2}$

3.6. Data Collection

All data in this research study are obtained from secondary sources. The data collected from the Bloomberg database are daily Kuala Lumpur Composite Index (KLCI) from January 4, 2010 until December 31, 2014; fourteen companies' daily closing price from January 4, 2010 until December 31, 2014; short and long-term debts in yearly basis from year 2010 until 2014 to compute debt ratio; total assets data from year 2008 until 2014 to compute 2-Year Asset Growth; dividend yield, earnings yield, price-to-book ratio, and historical market capitalization in yearly basis from year 2010 until 2014.

3.7. Sampling

The population of this research study is thirty oil and gas corporations that listed in Main Market Bursa Malaysia (refer Table 1 in Appendix A for the list of company name). In this research study, fourteen (14) companies are selected from the population as a sample (refer Table 2 in Appendix B for the list of company name) by using the simple random sampling technique. They are chosen because of the data availability for all variables in this study from year 2010 until 2014.

3.8. Data Collection Procedures

From the data collected from Bloomberg database, the researcher computes average value of dividend yield, earnings yield, price-to-book ratio, asset growth, market capitalization, debt ratio for each company. From the daily KLCI and daily company's closing price, the researcher computes stock market return, company's stock return, average, variance, and standard deviation of stock market return and company's stock return, 5-Year Beta value, and 5-Year unsystematic risk. Then, all data computed are inserting in Data View available in SPSS software. Prior to it, the researcher inserts the relevant information in Variable View.

3.9. Techniques of Data Analysis

In this quantitative data analysis, all reliable, relevant, and valid data from year 2010 to 2014 was analyzed by using three techniques namely Descriptive Statistics, Pearson Correlation, and Standard Multiple Regression model. The researcher uses software named IBM SPSS Statistics 21.

3.9.1. Descriptive Statistics

Researcher begins the data analysis to inspect data file and explore the nature of all variables in the study via running the Descriptive Statistics. The researcher need to describe the characteristics of variables in data file by obtaining descriptive statistics, which include the mean, standard

deviation, range of scores (minimum and maximum value), skewness, and kurtosis. It is essential to check that the researcher is not violating any of the assumptions (normality, linearity, normal distribution). To test the normality of stock return (dependent variable), researcher chose Kolmogorov-Smirnov and Shapiro-Wilk statistics. The Histogram graph curve of stock return and the Detrended Normal Q-Q Plot of stock return are used to test the assumption of normal distribution. The Normal Q-Q Plot graph of stock return is used to test the assumption of linearity. Boxplot graph is used to check for the availability of outliers and extreme points.

3.9.2. Pearson Correlation

Pearson Correlation is also known as Pearson product-moment correlation coefficient, which the correlation is a simple bivariate correlation between two variables also called as zero-order correlation. Prior conducting a Pearson Correlation analysis, the researcher generates a Scatterplot graph to check for violation of the assumptions of linearity and homoscedasticity, checking for outliers, inspecting the distribution of data points, determine the direction of the relationship between the variables. Then, the researcher reports a correlation matrix of Pearson Correlation between the independent variables and dependent variable to determine

the direction and strength of the relationship, calculating the coefficient of determination, and assessing the significance level of the relationship.

3.9.3. Standard Multiple Regression

All independent variables are entered into the equation simultaneously in Standard Multiple Regression analysis model so that each independent variable is evaluated in terms of its correlation substantial through the Correlation table, predictive power and the researcher eagerness to know the variance percentage in a dependent variable (stock return) that explained by each individual independent variable via the value of R Square while Durbin-Watson statistics is used to describe the direction of the serial correlation. This analysis also informs the impact of all predictors on stock return level (the significant difference) is described by ANOVA and the effect size is determined by computing the eta squared. The collinearity diagnostics to test the assumption of multi collinearity is described in the Coefficients table. The most unique contribution variable in determining the stock return is also informed by looking at the Coefficients table. The Normal Probability Plot (P-P) of the Regression Standardized Residual graph is used to test the assumption of normality while Scatterplot of the Standardized Residual graph is used to check for outliers' availability. Any unusual case also can be detected by using this analysis model.

CHAPTER 4

RESULTS AND DISCUSSION

4.1. Descriptive Statistics

Table 14

Descriptive Statistics

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
AVERAGE DIVIDEND PRICE RATIO	14	.0000	7.8512	1.912121	2.0600159	1.984	.597	4.961	1.154
AVERAGE EARNINGS PRICE RATIO	14	-19.5486	13.1340	2.783207	8.1569067	-1.754	.597	3.727	1.154
AVERAGE PRICE-TO-BOOK RATIO	14	.6551	6.4290	2.069693	1.6924760	1.628	.597	2.239	1.154
AVERAGE 2 YEAR ASSET GROWTH	14	.9713	1.8897	1.234286	.2956182	1.747	.597	2.169	1.154
AVERAGE MARKET CAPITALIZATION	14	70.3473	34509.0861	4890.619186	9911.4836524	2.602	.597	6.523	1.154
AVERAGE DEBT RATIO	14	.0316	.4080	.251521	.1270791	-.468	.597	-1.035	1.154
5 YEAR UNSYSTEMATIC RISK	14	.00011	.00101	.0004887	.00028696	.123	.597	-1.111	1.154
5 YEAR BETA	14	.12726	2.05970	1.2016479	.48406113	-.405	.597	.806	1.154
AVERAGE STOCK RETURN	14	-.00097	.00147	.0002701	.00074456	.095	.597	-.924	1.154
Valid N (listwise)	14								

In Table 14, the researcher presents a report of descriptive statistics summary of all variables in the study namely dividend-price ratio (also known as dividend yield), earnings-price ratio (also known as earnings yield), price-to-book ratio, asset growth, market capitalization (proxy for company size), debt ratio (proxy for capital structure), unsystematic risk, beta (proxy for systematic risk), and stock return of five consecutive years (from year 2010 to 2014). The researcher reported valid case (N) of 14 public listed companies (refer to Table 2 in Appendix B for the name list of these companies), the ranging ratios from minimum value to maximum value, mean, standard deviation, skewness, and kurtosis.

The researcher finds out that high mean value is recorded in dividend yield (1.912), earnings yield (2.783), price-to-book ratio (2.06969), asset growth (1.234), company size (RM4890.619B), and systematic risk (1.2016). Low mean value is recorded in capital structure (25.15%), unsystematic risk (0.04887%), and stock return (0.27%).

High standard deviation value is recorded in dividend yield (2.06), earnings yield (8.1569), price-to-book ratio (1.692), and company size (RM9914.48B). Low standard deviation value is recorded in asset growth (0.2956), capital structure (0.127), unsystematic risk (0.00028696), systematic risk (0.484), and stock return (0.00074).

Skewness indicates the symmetry of the distribution. Positive skewness values shows positive skewed, which the clustered scores situated on the left-hand side and at the low values. Positive skewness values are shown by dividend yield (1.984), price-to-book ratio (1.628), asset growth (1.747), company size (2.602), unsystematic risk (0.123), and stock return (0.095). Negative skewness values indicate scores clustered at high-end, which is

situated on the right-hand side. Negative skewness values are shown by earnings yield (-1.754), capital structure (-0.468), and systematic risk (-0.405).

Kurtosis provides information of distribution peak. Positive kurtosis values display the distribution is rather peaked (clustered in the center); with long thin tails. Positive kurtosis values are shown by dividend yield (4.961), earnings yield (3.727), price-to book ratio (2.239), asset growth (2.169), company size (6.523), and systematic risk (0.806). Kurtosis values below zero displays a distribution that is relatively flat, which are shown by capital structure (-1.035), unsystematic risk (-1.111), and stock return (-0.924).

Table 15 (available in Appendix C) report that the significant value of 0.2 stated by Kolmogorov-Smirnov statistic and 0.862 stated by Shapiro-Wilk (significant value of more than 0.5) indicates normality for the stock return.

Bell-shaped curve can be seen in the Histogram (Figure 2 in Appendix C) that the scores appear to be reasonably normally distributed.

Normal Q-Q Plot of stock return (Figure 3 in Appendix C) support the inspection of the normal probability plots, which the observed value for each score is plotted against the expected value from the normal distribution. A reasonably straight line suggests a normal distribution.

The Detrended Normal Q-Q Plot of stock return (Figure 4 in Appendix C) plotting the actual deviation of the scores from the straight line shows no real points clustered and most of the points are collecting around the zero line support the normal distribution assumption of stock return.

Boxplot (Figure 5 in Appendix C) shows no outliers and no extreme points. The length of the box is the interquartile range of stock return (0.00113) and contains 50% of cases. The line across the inside of the box represents the median value of stock return (0.0002827). The whiskers protruding from the box go out to the stock return's smallest value of -0.00097 and largest value of 0.00147.

In sum, high mean value is reported by company size and earnings yield as the highest mean values, followed by price-to-book ratio, dividend yield, asset growth, and systematic risk. Low mean value is reported by unsystematic risk as the lowest mean values, followed by stock return, and capital structure. High standard deviation is reported by earnings yield and company size as the highest standard deviation, followed by dividend yield, and price-to-book ratio. Low standard deviation are reported by unsystematic risk as the lowest standard deviation values, followed by stock return, capital structure, asset growth, and systematic risk. The highest value in positive skewness is reported in company size, followed by dividend yield, asset growth, price-to-book ratio, unsystematic risk, and the lowest value is reported in stock return. The highest value in negative skewness is reported in earnings yield, followed by capital structure, and the lowest value is reported in systematic risk. The highest value in positive kurtosis is reported in company size, followed by dividend yield, earnings yield, price-to-book ratio, asset growth, and the lowest value in positive kurtosis is reported in systematic risk. Three variables record negative kurtosis namely unsystematic risk as the highest negative kurtosis value, followed by capital structure and stock return as the lowest negative kurtosis value. Kolmogorov-Smirnov and Shapiro Wilk statistics proved the normality of stock return, supported by the bell-shaped curve in the Histogram, straight line of the

Normal Q-Q Plot of stock return, major points spread around the zero line of the Detrended Normal Q-Q Plot of stock return, and a normal boxplot with free from the existence of outliers and extreme points exhibit normal distribution of stock return as a dependent variable in the study.

4.2. Pearson Correlation

Table 16

Correlations

Correlations

		AVERAGE DIVIDEND PRICE RATIO	AVERAGE EARNINGS PRICE RATIO	AVERAGE PRICE-TO-BOOK RATIO	AVERAGE 2 YEAR ASSET GROWTH	AVERAGE MARKET CAPITALIZATION	AVERAGE DEBT RATIO	5 YEAR UNSYSTEMATIC RISK	5 YEAR BETA	AVERAGE STOCK RETURN
AVERAGE DIVIDEND PRICE RATIO	Pearson Correlation	1	.410	.035	.034	.140	-.506	-.308	-.405	.395
	Sig. (2-tailed)		.146	.906	.909	.633	.065	.284	.151	.162
	N	14	14	14	14	14	14	14	14	14
AVERAGE EARNINGS PRICE RATIO	Pearson Correlation	.410	1	.023	.298	.056	-.411	.231	.250	.433
	Sig. (2-tailed)	.146		.938	.301	.849	.144	.427	.388	.122
	N	14	14	14	14	14	14	14	14	14
AVERAGE PRICE-TO-	Pearson Correlation	.035	.023	1	.611*	.567*	-.622*	-.577*	-.179	.568*

BOOK RATIO	Sig. (2-tailed)	.906	.938		.020	.034	.018	.031	.539	.034
	N	14	14	14	14	14	14	14	14	14
AVERAGE 2 YEAR ASSET GROWTH	Pearson Correlation	.034	.298	.611*	1	-.078	-.422	.011	.024	.730**
	Sig. (2-tailed)	.909	.301	.020		.791	.133	.969	.936	.003
	N	14	14	14	14	14	14	14	14	14
AVERAGE MARKET CAPITALIZATION	Pearson Correlation	.140	.056	.567*	-.078	1	-.648*	-.573*	-.292	.250
	Sig. (2-tailed)	.633	.849	.034	.791		.012	.032	.311	.388
	N	14	14	14	14	14	14	14	14	14
AVERAGE DEBT RATIO	Pearson Correlation	-.506	-.411	-.622*	-.422	-.648*	1	.303	.296	-.636*
	Sig. (2-tailed)	.065	.144	.018	.133	.012		.293	.304	.014
	N	14	14	14	14	14	14	14	14	14
5 YEAR UNSYSTEMATIC RISK	Pearson Correlation	-.308	.231	-.577*	.011	-.573*	.303	1	.643*	-.130
	Sig. (2-tailed)	.284	.427	.031	.969	.032	.293		.013	.657
	N	14	14	14	14	14	14	14	14	14
5 YEAR BETA	Pearson Correlation	-.405	.250	-.179	.024	-.292	.296	.643*	1	.110
	Sig. (2-tailed)	.151	.388	.539	.936	.311	.304	.013		.709

	N	14	14	14	14	14	14	14	14	14
AVERAGE STOCK RETURN	Pearson Correlation	.395	.433	.568*	.730**	.250	-.636*	-.130	.110	1
	Sig. (2-tailed)	.162	.122	.034	.003	.388	.014	.657	.709	
	N	14	14	14	14	14	14	14	14	14

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

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

In Table 16, a positive correlation with moderate relationship of 0.395 between the dividend yield and stock return suggests the greater of dividend yield associated with the higher level of stock return. Dividend yield helps to explain 15.603% of the variance in the companies' scores on the stock return and the significant (2-tailed) of 0.162 implies a moderate significance level between the dividend yield and stock return, which shows 83.8% confidence level in the result obtained. This result is similar to Lyn & Zynchowics (2004), Chin & Hong (2008), Lin, Hsu & Chen (2009), McMillan & Wohar (2013) but argued with Aras & Yilmaz (2008) that recorded negative relationship.

A positive correlation with moderate relationship of 0.433 between the earnings yield and stock return suggests the greater of earnings yield associated with the higher level of stock return. Earnings yield helps to explain 18.749% of the variance in the companies' scores on the stock return and the significant (2-tailed) of 0.122 implies a moderate significance level between the earnings yield and stock return, which shows 87.8% confidence level in the result obtained. This result is argued with Lyn & Zynchowicz (2004) that reported

negative relationship between earnings yield and stock return, similar to Tudor (2012) that reported positive relationship but contradicts in terms of the powerful impact on stock return and the variation in stock return.

A positive correlation with strong relationship of 0.568 between the price-to-book ratio and stock return suggests the greater of price-to-book ratio associated with the higher level of stock return. Price-to-book ratio helps to explain 32.262% of the variance in the companies' scores on the stock return and the significant (2-tailed) of 0.034 implies a strong significance level between the price-to-book ratio and stock return, which shows 96.6% confidence level in the result obtained. This result is similar to Deng, Lev & Narin (1999) and Aras & Yilmaz (2008) that reported strong relationship between the price-to-book ratio and stock return.

A positive correlation with strong relationship of 0.730 between the asset growth and stock return suggests the greater of asset growth associated with the higher level of stock return. Asset growth helps to explain 53.29% of the variance in the companies' scores on the stock return and the significant (2-tailed) of 0.003 implies a strong significance level between the asset growth and stock return, which shows 99.7% confidence level in the result obtained. This result is consistent with Cooper, Gulen & Schill (2008), Li, Becker & Rosenfeld (2012), and similar to Wen (2013) in terms of the strong predictor of stock return but contradict in terms of the direction of relationship, which in Wen (2013) reported negative relationship.

A positive correlation with weak relationship of 0.250 between the company size (proxy of market capitalization) and stock return suggests the larger of company size associated with the higher level of stock return. Company size helps to explain 6.25% of the

variance in the companies' scores on the stock return and the significant (2-tailed) of 0.388 implies a weak significance level between the company size and stock return, which shows 61.2% confidence level in the result obtained. This result is contradicted with Tudor (2012) that reported inverse relationship between the company size and stock return.

A negative correlation with strong relationship of -0.636 between the capital structure (proxy of debt ratio) and stock return suggests the lesser of debt ratio in the capital structure will lead to a higher level of stock return. Debt ratio in the capital structure helps to explain 40.45% of the variance in the companies' scores on the stock return and the significant (2-tailed) of 0.014 implies a strong significance level between the capital structure and stock return, which shows 98.6% confidence level in the result obtained. This result is similar to Koslowsky (2009), Olowoniyi & Ojenike (2013), and Tsuji (2014) that reported negative and strong relationship between the capital structure and stock return.

A negative correlation with weak relationship of -0.130 between the unsystematic risk and stock return suggests the lesser value of unsystematic risk will lead to a higher level of stock return. Unsystematic risk helps to explain 1.69% of the variance in the companies' scores on the stock return and the significant (2-tailed) of 0.657 implies a weak significance level between the unsystematic risk and stock return, which shows 34.3% confidence level in the result obtained. This result is similar to Harrington (1983) that reported significant relationship between the unsystematic risk and stock return.

A positive correlation with weak relationship of 0.110 between the systematic risk (proxy of Beta) and stock return suggests the greater of beta value as a systematic risk associated with the higher level of stock return. Beta as a systematic risk helps to explain 1.21% of the variance in the companies' scores on the stock return and the significant (2-tailed) of 0.709 implies a weak significance level between the systematic risk and stock return, which shows 29.1% confidence level in the result obtained. This result is consistent with Harrington (1983) that indicates the weak relationship between the systematic risk and stock return, but argued with Tudor (2012) that reported no significant relationship exist between the systematic risk and stock return.

Hence, the asset growth, capital structure, and price-to-book ratio are the three independent variables that have strong relationship and strong significance with the stock return. The earnings yield and dividend yield have moderate relationship and moderate significance with the stock return while systematic risk, unsystematic risk, and company size have weak relationship and weak significance with the stock return. Only capital structure and unsystematic risk show negative correlation with stock return. The remaining independent variables show positive correlation with stock return. Asset growth implies the highest variance in stock return (53.29%) and the highest significance level with 99.7% confidence level while systematic risk implies the lowest variance in stock return (1.21%) and the lowest significance level with 29.1% confidence level in the result obtained.

4.3. Standard Multiple Regression

Table 17
Correlations

Correlations

		AVERAGE STOCK RETURN	AVERAGE DIVIDEND PRICE RATIO	AVERAGE EARNINGS PRICE RATIO	AVERAGE PRICE-TO-BOOK RATIO	AVERAGE 2 YEAR ASSET GROWTH	AVERAGE MARKET CAPITALIZATION	AVERAGE DEBT RATIO	5 YEAR UNSYSTEMATIC RISK	5 YEAR BETA
Pearson Correlation	AVERAGE STOCK RETURN	1.000	.395	.433	.568	.730	.250	-.636	-.130	.110
	AVERAGE DIVIDEND PRICE RATIO	.395	1.000	.410	.035	.034	.140	-.506	-.308	-.405
	AVERAGE EARNINGS PRICE RATIO	.433	.410	1.000	.023	.298	.056	-.411	.231	.250
	AVERAGE PRICE-TO-BOOK RATIO	.568	.035	.023	1.000	.611	.567	-.622	-.577	-.179
	AVERAGE 2 YEAR ASSET GROWTH	.730	.034	.298	.611	1.000	-.078	-.422	.011	.024

	AVERAGE MARKET CAPITALIZATION	.250	.140	.056	.567	-.078	1.000	-.648	-.573	-.292
	AVERAGE DEBT RATIO	-.636	-.506	-.411	-.622	-.422	-.648	1.000	.303	.296
	5 YEAR UNSYSTEMATIC RISK	-.130	-.308	.231	-.577	.011	-.573	.303	1.000	.643
	5 YEAR BETA	.110	-.405	.250	-.179	.024	-.292	.296	.643	1.000
Sig. (1-tailed)	AVERAGE STOCK RETURN	.	.081	.061	.017	.002	.194	.007	.328	.355
	AVERAGE DIVIDEND PRICE RATIO	.081	.	.073	.453	.454	.316	.033	.142	.075
	AVERAGE EARNINGS PRICE RATIO	.061	.073	.	.469	.150	.425	.072	.213	.194
	AVERAGE PRICE-TO-BOOK RATIO	.017	.453	.469	.	.010	.017	.009	.015	.270
	AVERAGE 2 YEAR ASSET GROWTH	.002	.454	.150	.010	.	.395	.067	.485	.468

	AVERAGE MARKET CAPITALIZATION	.194	.316	.425	.017	.395	.	.006	.016	.155
	AVERAGE DEBT RATIO	.007	.033	.072	.009	.067	.006	.	.146	.152
	5 YEAR UNSYSTEMATIC RISK	.328	.142	.213	.015	.485	.016	.146	.	.007
	5 YEAR BETA	.355	.075	.194	.270	.468	.155	.152	.007	.
N	AVERAGE STOCK RETURN	14	14	14	14	14	14	14	14	14
	AVERAGE DIVIDEND PRICE RATIO	14	14	14	14	14	14	14	14	14
	AVERAGE EARNINGS PRICE RATIO	14	14	14	14	14	14	14	14	14
	AVERAGE PRICE-TO-BOOK RATIO	14	14	14	14	14	14	14	14	14
	AVERAGE 2 YEAR ASSET GROWTH	14	14	14	14	14	14	14	14	14

AVERAGE MARKET CAPITALIZATION	14	14	14	14	14	14	14	14	14
AVERAGE DEBT RATIO	14	14	14	14	14	14	14	14	14
5 YEAR UNSYSTEMATIC RISK	14	14	14	14	14	14	14	14	14
5 YEAR BETA	14	14	14	14	14	14	14	14	14

Table 17 reports the correlation between each independent variable (dividend yield, earnings yield, price-to-book ratio, asset growth, company size, capital structure, unsystematic risk, and systematic risk) and a dependent variable namely stock return. The findings report that dividend yield, earnings yield, price-to-book ratio, asset growth, and capital structure (debt ratio) correlate substantially with stock return (0.395, 0.433, 0.568, 0.730, and -0.636 respectively). Company size (market capitalization), unsystematic risk, and systematic risk (beta) correlate insubstantially with stock return (0.250, -0.130, and 0.110 respectively). Bivariate correlation of above 0.3 but less than 0.7 is considered as preferable in the correlation matrix. All variables are retained as all variables are less than 0.7.

Table 18

Model Summary

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.954[a]	.911	.769	.00035820	1.590

a. Predictors: (Constant), 5 YEAR BETA, AVERAGE 2 YEAR ASSET GROWTH, AVERAGE MARKET CAPITALIZATION, AVERAGE DIVIDEND PRICE RATIO, AVERAGE EARNINGS PRICE RATIO, 5 YEAR UNSYSTEMATIC RISK, AVERAGE DEBT RATIO, AVERAGE PRICE-TO-BOOK RATIO

b. Dependent Variable: AVERAGE STOCK RETURN

R Square value of 0.911 (in Table 18) means that the researcher standard multiple regression model (which includes systematic risk, asset growth, company size, dividend yield, earnings yield, unsystematic risk, capital structure, and price-to-book ratio) explains 91.1% of the variance in stock return. Durbin-Watson statistics value of 1.590 indicates evidence of positive serial correlation.

Table 19
ANOVA

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.000	8	.000	6.396	.028[b]
	Residual	.000	5	.000		
	Total	.000	13			

a. Dependent Variable: AVERAGE STOCK RETURN

b. Predictors: (Constant), 5 YEAR BETA, AVERAGE 2 YEAR ASSET GROWTH, AVERAGE MARKET CAPITALIZATION, AVERAGE DIVIDEND PRICE RATIO, AVERAGE EARNINGS PRICE RATIO, 5 YEAR UNSYSTEMATIC RISK, AVERAGE DEBT RATIO, AVERAGE PRICE-TO-BOOK RATIO

ANOVA table (in Table 19) exhibits the impact of all predictors (systematic risk, asset growth, company size, dividend yield, earnings yield, unsystematic risk, capital structure, and price-to-book ratio) on levels of stock return, as measured by the Life Orientation Test (LOT). A statistically significant difference at the $p<0.05$ level in LOT scores for all predictors: $F(8,5) = 6.396$, $p = 0.028$. Eta squared of zero indicates a small effect size.

Table 20

Coefficients

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	-.004	.002		-2.408	.061	-.008	.000					
	AVERAGE DIVIDEND PRICE RATIO	.000	.000	.488	1.836	.126	.000	.000	.395	.635	.245	.252	3.961
	AVERAGE EARNINGS PRICE RATIO	-2.529E-005	.000	-.277	-1.347	.236	.000	.000	.433	-.516	-.180	.421	2.375
	AVERAGE PRICE-TO-BOOK RATIO	.000	.000	-.668	-1.426	.213	-.001	.000	.568	-.538	-.190	.081	12.333
	AVERAGE 2 YEAR ASSET GROWTH	.003	.001	1.160	3.617	.015	.001	.005	.730	.851	.483	.173	5.774
	AVERAGE MARKET CAPITALIZATION	3.918E-008	.000	.522	1.540	.184	.000	.000	.250	.567	.205	.155	6.445
	AVERAGE DEBT RATIO	-.001	.002	-.174	-.424	.689	-.007	.005	-.636	-.186	-.057	.106	9.437
	5 YEAR UNSYSTEMATIC RISK	-1.073	1.020	-.413	-1.052	.341	-3.695	1.550	-.130	-.426	-.140	.115	8.683
	5 YEAR BETA	.001	.000	.699	2.780	.039	.000	.002	.110	.779	.371	.282	3.551

a. Dependent Variable: AVERAGE STOCK RETURN

Collinearity diagnostics on variables is reported in Coefficients table (in Table 20), presented in the column table labelled Collinearity Statistics, which two values are given for instance Tolerance and VIF. Tolerance value of less than 0.10 and VIF value of above 10 indicate the presence of multicollinearity. Price-to-book ratio is the only one independent variable that records tolerance value of 0.081, which is less than 0.10 and VIF value of 12.333, which is above than 10. Thus, both results of price-to-book ratio exhibit the presence of multicollinearity in price-to-book ratio. Hence, the researcher considers removing the price-to-book ratio from the standard multiple regression model. The remaining variables (dividend yield, earnings yield, asset growth, company size, capital structure, unsystematic risk, and systematic risk) are retained as they report tolerance value of more than 0.10 (0.252, 0.421, 0.173, 0.155, 0.106, 0.115, and 0.282 respectively) and VIF value of below 10 (3.961, 2.375, 5.774, 6.445, 9.437, 8.683, and 3.551 respectively) that indicate the absence of multi collinearity in each of them.

The research also is interested in comparing the contribution of each independent variable; therefore the researcher use the beta values as reported in the output box labelled Coefficients, in the column labelled Beta, under Standardized Coefficients. The largest beta coefficient is 1.160, which is for asset growth. This indicates that asset growth makes the strongest unique contribution in explaining the stock return as a dependent variable, when the variance explained by all other variables in the standard multiple regression model

is controlled for, consistent with Cooper, Gulen & Schill (2008) and Li, Becker & Rosenfeld (2012). The asset growth also considered as making the most significant unique contribution as the significance (p) value is 0.015, which is less than 0.05 in determining the stock return. The asset growth has a Part correlation coefficient of 0.483. When the researcher square this value, the result is 0.2333, indicating that asset growth uniquely explains 23.33% of the variance in stock return. Systematic risk is also the other one variable that makes a significant unique contribution in determining the stock return, which the p value is 0.039. The other variables' p value is greater than 0.05, which conclude that other variables (dividend yield, earnings yield, price-to-book ratio, company size, capital structure, and unsystematic risk) are not making a significant unique contribution in determining the stock return (p = 0.126, 0.236, 0.213, 0.184, 0.689, and 0.341 respectively). No unusual cases appear in the output result as the absence of a table titled Casewise Diagnostics.

In the Normal Probability Plot (P-P) of the Regression Standardized Residual graph (Figure 6 in Appendix D), all points are lying in a reasonably straight diagonal line from bottom left to top right. It suggests that no major deviations from normality.

In the Scatterplot of the Standardized Residual graph (Figure 7 in Appendix D), the residuals are roughly rectangular distributed, with most of the scores concentrated in the center (along the zero point). From the Scatterplot and Residuals Statistics table, no outliers appear as none of the cases have a standardized residual of more than 3.3 or less than -3.3.

4.4. Summary

In Descriptive Statistics, the highest mean and standard deviation values are recorded by earnings yield (2.783 and 8.1569 respectively) and company size (RM4890.619B and RM9914.48B respectively) while the lowest mean and standard deviation values are recorded by unsystematic risk (0.04887% and 0.028696% respectively). The highest positive skewness is found in company size (2.602) while the lowest positive skewness is found in stock return (0.095). The highest negative skewness is found in earnings yield (-1.754) while the lowest negative skewness is found in systematic risk (-0.405). The highest positive kurtosis is found in company size (6.523) while the lowest positive kurtosis is found in systematic risk (0.806). The highest negative kurtosis is found in unsystematic risk (-1.111) while the lowest negative kurtosis is found in stock return (-0.924). Test of normality using Kolmogorov-Smirnov and Shapiro Wilk statistics exhibit normality of stock return as a dependent variable in the study. The histogram depicts a bell-shaped curve indicates stock return is reasonably normally distributed. The Normal Q-Q Plot of stock return depicts a reasonably straight line while the Detrended Normal Q-Q Plot of stock return depicts a major of points are available around the zero line justify a normal distribution assumption of stock return. A normal boxplot shows no outliers and no extreme points exist.

The Pearson Correlation provides a glance idea of strong relationship between three independent variables for instance the asset growth (0.730) as having the strongest relationship with stock return (dependent variable), followed by capital structure as explained by the debt ratio (-0.636), and the price-to-book ratio (0.568). Moderate relationship with stock return is recorded by two independent variables namely earnings yield (0.433) and dividend yield (0.395). Weak relationship with stock return is recorded by three independent variables namely systematic risk as explained by Beta (0.110) as having the weakest relationship with stock return, followed by unsystematic risk (-0.130), and company size as explained by the market capitalization (0.250). Asset growth exhibits the greatest significance level with 99.7% confidence level, followed by capital structure (98.6% confidence level), price-to-book ratio (96.6% confidence level), earnings yield (87.8% confidence level), dividend yield (83.8% confidence level), company size (61.2% confidence level), unsystematic risk (34.3% confidence level), and the least significance level is recorded by systematic risk (29.1% confidence level). Hence, H_1, H_2, H_3, H_4, H_5, H_6, H_7, and H_8 are accepted in this study.

The Standard Multiple Regression model, which includes control of dividend yield, earnings yield, price-to-book ratio, asset growth, company size, capital structure, unsystematic risk, and systematic risk, explains 91.1% of the variance in stock return. Of these eight independent variables, asset growth makes the largest unique contribution (Beta = 1.160) and thus, asset growth is considered as the best determinant of stock return. Hence, H_9 and H_{10} are accepted in this study.

CHAPTER 5

CONCLUSION AND RECOMMENDATION

5.0. Introduction

This chapter presents the findings with discussion and suggestions for future research. This final chapter focuses on the introduction, discussions of the study, and at the end discusses the implications and recommendations for future research.

5.1. Findings of the Study

Two different perspectives of the relationship between eight factors (dividend-price ratio, earnings-price ratio, price-to-book ratio, asset growth, company size, capital structure, unsystematic risk, and systematic risk) and stock return are examined in the study by way of two studies. These studies exhibit several general conclusions. The study is started with a Descriptive Statistics that describe the characteristics of all variables so that no violation of any assumption. The main results showed that company size and earnings-price ratio achieve the highest mean and standard deviation values while the unsystematic risk achieve the lowest mean and standard deviation values and achieve the highest negative kurtosis value. Company size also achieves the highest value in positive skewness and kurtosis while stock return achieves the lowest of positive skewness and

negative kurtosis. Earnings-price ratio achieves the highest value of negative skewness while systematic risk achieves the lowest of negative skewness and positive kurtosis. Generally, the variables in the study do not violate any assumption of normality, linearity, and normal distribution.

The first study presents a Pearson Correlation (also known as zero-order correlation) that provide a picture of the relationship between each independent variable with the stock return (dependent variable) by examining the direction and strength of the relationship, determining the coefficient of determination, and assessing the significance level of the relationship. The empirical results indicate that three variables namely asset growth, capital structure, and price-to-book ratio have a strong relationship and high significance with the stock return while three variables namely systematic risk, unsystematic risk, and company size have a weak relationship and low significance with the stock return. Earnings-price ratio and dividend-price ratio indicate a moderate relationship and significance with the stock return. Capital structure and unsystematic risk showed a negative correlation with the stock return, which means that both capital structure and unsystematic risk have a negative relationship with the stock return. While the other factors namely dividend-price ratio, earnings-price ratio, price-to-book ratio, asset growth, company size, and systematic risk have a positive relationship with the stock return. Asset growth exhibits the highest significance level and variance in stock return while systematic risk exhibits the lowest significance level and variance in stock return.

The second study presents a Standard Multiple Regression analysis model that examine the direction of serial correlation, the variance in stock return, the impact of predictors on stock return level, the effect size, and the assumption of multicollinearity and normality testing. The empirical results showed that dividend-price ratio, earnings-price ratio, price-to-book ratio, asset growth, and capital structure correlate substantially with the stock return while company size, unsystematic risk, and systematic risk correlate insubstantially with the stock return. The variance percentage in stock return is 91.1% and Durbin-Watson statistics of 1.590 indicate the existence of positive serial correlation. A statistically significant difference for all eight predictors and small effect size are recorded through ANOVA. All variables reported the absence of multi collinearity except price-to-book ratio, which need to remove from the regression model. The regression model also proved that the assumption of normality is adhered. Asset growth is reported as the strongest unique contribution variable in explaining the stock return.

5.2. Implications and Recommendations for Future Research

The findings of this research paper have several implications for research, which related to the factors that influence the stock return performance. The first study shows that a Pearson Correlation analysis model have the same capability and strength in examining the relationship between the eight determinants and the stock return, similar the other methodology used by the previous researchers that

conduct their research in other industries. Thus, for future research, this approach can be useful to the research that aims to examine the relationship of other industries or by the same industry (oil and gas) that is listed in other stock exchanges around the world. The second study shows the empirical implication that justify the best determinant of the stock return and the variance in stock return by each predictors, suggesting that the Standard Multiple Regression analysis model should be used to investigate the determinants of stock return. This methodology is able to provide the new insight of the factors that influence the stock return. Future research could examine the industry effects on the factors that influence the stock return in long tenure within different industries or the same industries in local stock exchange or in abroad stock exchanges around the globe. Overall, all factors are influence the stock return performance but in different direction, strength, significance, and variance percentage in stock return. All hypotheses are accepted in this research study. The findings in this research paper might assist the corporate management in adjusting the factors that influence the stock return in order to ensure their oil and gas corporation still survive during this challenging years.

5.3. Conclusion

From the empirical findings, it can be concluded that the researcher achieved the overall objectives that previously developed in Chapter One. This research study has shown the relationship between each independent variable (dividend-price ratio, earnings-price ratio, price-to-book ratio, asset growth, company size, capital structure, unsystematic risk, and systematic risk) and stock return (act as a sole dependent variable) by selecting fourteen oil and gas companies out of thirty oil and gas companies that are listed in Bursa Malaysia. However, each relationship is differing in terms of the direction, strength, and the significance level. Asset growth is acknowledged as the main factor or main contributor that influences the stock return performance. This study also proves that the findings are consistent with the major previous researchers' findings even though using the different methodology in the study.

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