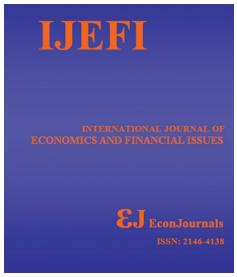

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Markowitz Portfolio Theory and Capital Asset Pricing Model for Kuala Lumpur Stock Exchange: A Case Revisited

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ABSTRACT

Capital asset pricing model (CAPM) is widely used by investors to estimate the return or the moving behavior of the stock and Markowitz model is employed to achieve portfolio diversification. This study examine whether CAPM is valid to forecast the behavior of the each individual stock and its return as well as its validity in the portfolio with stocks listed in Malaysia. Second, it evaluates the suitability of Markowitz model to evaluate the performance of the Malaysia investment portfolio. This is done within the framework of 2010 to 2014 using weekly data of 60 companies. OLS unbiased estimator, autocorrelation and heterodasticity problems are to be conducted to test the validity of the model. It is concluded that CAPM is reasonable to be the indicator of stock prices in Malaysia as well as in portfolio basket. It proves that there is linearity in CAPM but unique risk and systematic do not need to be captured. Managers can use CAPM as a proxy to estimate their stock return and diversify the portfolio to reduce the unsystematic risk to enable them to execute the right policy in their management in order to maximize profit at the same time increase shareholder wealth maximization. Furthermore, it is suggested to apply Markowitz portfolio diversification to reduce the unsystematic risk. Overall, portfolio diversification could build up the investors' confidence towards the investment decision and to develop a sound investment financial market in assisting Malaysia to achieve its mission to be a developed country in 2020.

Keywords: Capital Asset Pricing Model, Risk and Return, Markowitz Portfolio Diversification
JEL Classifications: G11, G12

1. INTRODUCTION

In this new century, stock investment is not only heavily traded by local institutions and foreign institutions, it has become very common for household investors to involve in stock market as well. This is due to the transparency of the reporting requirement by the public listed companies and the new advanced technology and software. Malaysia is not an exception, stock market Malaysia which is Kuala Lumpur Security Exchange (KLSE) has expanded significantly with market capitalization increasing from RM444 billion in 2000 to RM1.2 trillion in 2010 (BNM, 2012). This is because investors notice that by investing in stock market, it will offer them higher return. It is also believed that stock market is one of the major contributions for Malaysia's economic development (Zeti, 2009).

Capital asset pricing model (CAPM) is widely used by investors to estimate the return or the moving behavior of the stock whereas Markowitz model is employed to achieve portfolio diversification. The study by Rahman (2010) investigated the factors of the CAPM risk exposures by using Malaysia commercial banks. Lean and Parsva (2012) examined the performance of Islamic indices in Malaysia with CAPM. Their studies are focusing on CAPM with performance of Islamic indices or commercial banks in Malaysia, but not the stocks come from variety of industries which could be more representative of the performance of the stocks in Malaysia. Moreover, the study on portfolio diversification by Markowitz model is used by researchers to study on the sample in Malaysia in the area of oil by Mansourfar et al. (2010) and Islamic Unit trust by Kassim and Kamil (2012) are narrower in a specific industry. In addition, the study by Goh et al. (2014) only investigated

25 companies' stocks in the portfolio to examine the portfolio diversification might be less convincing due to lesser sample data selection.

This paper attempts to study an empirical assessment of the benefits of portfolio diversification in the Malaysia's stock market and more particularly it involves four vital objectives. First, it examines whether CAPM is valid to forecast the behavior of each individual stock and its return. Secondly, it tests the validity of CAPM in the portfolio with the stocks listed in Malaysia. Thirdly, it evaluates the suitability of Markowitz model to study the performance of the Malaysia investment portfolio and whether portfolio investment is preferable to single company's stock investment. Lastly, it studies the effectiveness of portfolio diversification in reducing risk.

This paper will elaborate the relevant literature review, details the methodology, present the data and interpretation of the results in the next section. Finally, the last part will summarize the main finding and present some concluding remarks.

2. LITERATURE REVIEW

Investors apply many techniques to minimize risk at the same time to optimize return. Among the methods are Markowitz model developed by Harry Markowitz in 1952 and followed by its development which is CAPM by Treynor (1962), Sharpe (1964), Lintner (1965) and Mossin (1966) independently. CAPM takes into the account of asset's sensitivity to non-diversifiable risk (systematic risk), and is symbolized by the beta (β) in the industry, as well as the expected return of the market and the expected return of a theoretical risk-free asset. CAPM provides precise expectation of the relationship that should be monitored between the expected return of an asset and its risk (Treynor, 1962).

Markowitz model tries to maximize portfolio expected return for a given amount of portfolio risk, or homogeneously minimize risk for a given level of expected return, with the correct proportions of various securities. This model presumes that investors are rational and markets are efficient, tends to illustrate an asset's return as a normally distributed random variable, identifies risk as the standard deviation of return, and demonstrates a portfolio. By combining different assets whose returns are not perfectly positively correlated, modern portfolio theory seeks to reduce the total variance of the portfolio return. This model looks for reduction of the total variance of the portfolio return, by combining different assets whose returns are not perfectly positively (Markowitz, 1952).

Hasan et al. (2011) employed the framework in Dhaka Stock Exchange (DSE) by using monthly stock returns from 80 non-financial companies from 2005 to 2009 to study risk-return relationship with CAPM. The result showed that the intercept term was significantly non-zero and there was positive relationship between beta and return of stocks. The results opposed the CAPM hypothesis and suggested unique risk and the interaction were insignificant in DSE but recommended existence of linearity in the securities market line. This study include the financial crisis period 2008-2009 in the data however did not explain the impact of its influence. Besides, it only employed 8 stocks in a portfolio where the sample size was quite small as the rule of thumb for the sample size is at least 30 stocks (Voorhis and Morgan, 2007). Thus, this provides an insight to this research to use the sample period without financial crisis and use the sample size more than 30 stocks in portfolio.

Novak (2015) made methodological modifications to the method of checking CAPM beta and these modifications affect presumptions about the alliance between CAPM beta and stock returns. The conventional beta proxy is indeed largely unrelated to realized stock, thus the researcher utilized forward-looking beta and eliminating unrealistic assumptions about expected market returns makes it significant. It proposed that weak empirical support for CAPM beta is likely resulted by complications with implementing CAPM rather than by the theoretical concept. Therefore, the application of the theoretical excess of market return compared to risk free asset return is sufficient to explain the excess of stock return. This proposes that the study of multi-factors model to examine the behavior of stock returns is not always appropriate.

Tsai et al. (2015) recommended that the optimal level of diversification for the maximization of bank value is asymmetrical and depends on the business cycle by using empirical evidence in Taiwan. Systematic risks were low during expansion thus the influence of lifting systematic risks from portfolio diversification was minor. Subsequently, the benefit of reducing individual risks dictated any loss from raising systematic risks, resulting to a higher value for a bank by holding a diversified portfolio of assets. Systematic risks were high during recession. It was more likely that the loss from raising systematic risks surpasses the benefit of reducing individual risks from portfolio diversification. Consequently, more diversification leads to lower bank values. Instead of using bank industry as the sample as done by Tsai et al. (2015), further research could use the companies in other industries and study the result of the diversification of investment benefits to investors. CAPM's testability issue was discussed by Guermat (2014), it employed a simple combination of the coefficients of determination from ordinary least squares to test whether the index used in the empirical test is efficient. The second step tests the efficient index hypothesis by market portfolio. This has highlighted that to test the CAPM not only testing on the individual assets, it could also test on the portfolio investment.

Elton et al. (2014) illustrated the percentage of risk can be removed by holding a widely diversified portfolio in each of several countries in western region. It showed that the contribution to the portfolio variance by each of the single stock approached to zero as number of stocks in a portfolio getting larger. Furthermore, the contribution of the covariance terms (systematic risk) move towards the average covariance as number of stocks increase. This suggested that the individual risk of the stocks can be diversified away but the contribution to the total risk caused by the systematic risk cannot be diversified away. Hence, the test could be examined by employing the stocks market in non-western region to confirm the validity of this theory.

In addition, the study by Aleknevičiute (2012) examined the diversification consequence in Lithuanian Stock Exchange Market by using daily stock market price from 2009 to 2010. It investigated the study with the order of criterions (1) Negative correlation coefficient with the highest number, (2) negative correlations with the other stocks based on quantitative characteristics, (3) stocks based on different industry. The result indicated that the portfolio with naive selections shown a better diversification results compared to the selection criterion portfolios. Thus, it provides another way of methodology tend to work, instead of selection of portfolios based on criterions and with daily stocks return, randomly selection of stocks in the portfolio with weekly returns is suggestible as most of the researchers employed either weekly, monthly or yearly return data as the volatility of daily stock return is very high which might defeat the purpose of portfolio diversification in reducing risk (Hiraki et al., 2015; Marshall et al., 2015; Dutt and Mihov, 2013; Alamer, 2015a; 2015b).

In summary, this study extends the literature in four aspects. First, to include the companies listed in Malaysia main market and test the suitability to fill the gap in literature where the previous researchers only focus on banking related or Islamic related stocks in Malaysia. Secondly, whether CAPM is suitable to be used in a portfolio to capture the risk and return analysis. Thus, there will be two phases of test (time series and cross sectional series) to test whether individual stocks could be estimated by CAPM and followed by portfolio construction to be tested by CAPM. Thirdly, it tends to provide an insight whether investors could achieve positive diversification value in Malaysia stock market. Lastly, it also aims to study the usefulness of diversification in reducing the risk on a portfolio in Malaysia's stock market.

3. METHODOLOGY AND DATA

3.1. Data

The data will randomly select 60 stocks listed in Malaysia main market from the period of 1st January 2010 to 31st December 2014 and employ weekly data for all the variables. These recent 5 years were chosen to evade any structural break such as significant economy crisis. The companies from financial industries are being excluded due to the reporting system of financial companies is different from non-financial companies (Aletkin, 2014). Daily data is avoided because according to Basu and Chawla (2010) the risk and return relationship too volatile. The company stock prices and market price is estimated by the proxy of FBM KLCI are both extracted from Yahoo finance and risk free interest rate is obtained from Bank Negara Malaysia website. Computation result will be done by Microsoft Excel and E-view.

3.2. Test Individual Stock by CAPM

The theoretical CAPM (Treynor, 1962) formula is:

$$R_{it} = R_{ft} + \beta_i (R_{mt} - R_{ft}) \quad (1)$$

3.2.1. First phase of regression

To estimate the above equation by ordinary least square is:

$$R_{it} - R_{ft} = \alpha_i + \beta_i (R_{mt} - R_{ft}) + \varepsilon_i \quad (2)$$

Where,

R_{it} = Company's rate of return = $\frac{P_t - P_{t-1}}{P_{t-1}}$

R_{ft} = Risk free interest rate,

R_{mt} = Market return,

ε_i = Random disturbance term.

The above time series data is then regressed then to obtain α_i and β_i and substitute to,

$$UR_i = \sigma_i^2 - \beta_i^2 \sigma_m^2 \quad (3)$$

Where,

UR_i = Unique risk.

3.2.2. Second phase of regression

The cross sectional regression formula is:

$$\bar{r}_i = \gamma_0 + \gamma_1 \beta_i + \gamma_2 \beta_i^2 + \gamma_3 UR_i + \gamma_4 IT_i + \varepsilon_i \quad (4)$$

Where,

$\bar{r}_i = R_{it} - R_{ft}$

β_i = Estimate systematic risk in company *i*, from Equation (2),

β_i^2 = Square of β_i, from Equation (2),

UR_i = Unique risk, from Equation (3),

IT_i = Interaction of systematic risk and unique risk = $\beta_i \times UR_i$,

ε_i = Random disturbance term.

3.3. Test Markowitz Model by CAPM

30 stocks will be combined together to form a portfolio, so there will be 2 portfolios in total. 30 stocks in a portfolio is reasonable as it satisfy rule of the of the statistics computation as well as to diversify unsystematic risk require minimum 25 stocks (Gupta et al., 2001). Hasan et al. (2011) suggested that in order to accomplish diversification and hence minimize any errors that might happen because of the existence of unique risk, thus the beta need to be organized according to ascending and combine in a portfolio. The 30 stocks are chosen based on the Beta arranged from highest to lowest. The highest 30 stocks' betas will be grouped into 1 portfolio, another lowest 30 stocks' betas will be grouped into 1 portfolio.

Average portfolio excess returns of companies formula is (Hasan, 2011).

$$r_{pt} = \frac{\sum_{i=1}^{k} r_{it}}{k} \quad (5)$$

Where,

r_{it} = Excess return of companies,

k = Number of stocks in portfolio (k = 30),

p = Number of portfolios (p = 2).

To estimate portfolio's beta, the formula:

$$\bar{r}_{pt} = \alpha_p + \beta_p r_{mt} + \varepsilon_i \quad (6)$$

Where,

β_p = Beta of portfolio,

r_{mt} = Average market risk premium.

3.3.1. Hypotheses

For CAPM to hold true in the individual stocks, the following hypothesizes should be convinced:

1. $\gamma_0 = 0$, should not be different significantly from 0
2. $\gamma_1 > 0$, stock price should be positively sensitivity to market price in capital market
3. $\gamma_2 = 0$, security market line is linear
4. $\gamma_3 = 0$, diversifiable unique risk that will not affect return
5. $\gamma_4 = 0$, interaction risk that will not affect return.

3.4. Effect of Number of Stocks in Risk of the Portfolio

The risk of the portfolio with increasing number of stocks is calculated through: (Elton, 2014)

$$\sigma_p^2 = \frac{1}{N}\bar{\sigma}_j^2 + \frac{N-1}{N}\bar{\sigma}_{jk} \quad (7)$$

Where,

σ_p = Standard deviation of the portfolio = risk of the portfolio,

N = Number of stocks (j =1, k = 1, $k \neq j$ to N),

$\bar{\sigma}_j = \frac{\sum \sigma_j^2}{N}$ = Average standard deviation of the stock = Average risk of the stock,

$\bar{\sigma}_{jk} = \frac{\bar{\Sigma}\sigma_{jk}}{N(N-1)}$ = Covariance term.

4. EMPIRICAL RESULTS

4.1. Result for the Individual Companies

Table 1 illustrates the beta coefficient for individual companies; the range is from 0.227 to 1.577. This shows that the systematic risk of the companies in Malaysia are spread in wider range among the companies due to the nature of the business. Air Asia attains the highest beta at 1.577. This might suggest that aviation business in Malaysia has higher undiversifiable risk compared to other business. Whereas, Denko which is a manufacturing company has the lowest beta at 0.227, however the data shows no significance level. The lowest beta that shows significance at 1% is Amway at 0.2956 which engaged in distribution of consumer product. The finding highlights that 57 companies out of 60 companies demonstrate significant beta at 1% significance level. One company's beta shows 5% of significance level. Only 2 companies such as Harbour and Denko show insignificance level on their beta. The concluding of this result supports the study by Michailidis et al. (2006) but contradicts the research by Hasan (2011). As suggested by Treynor (1962), the higher the beta in CAPM, the higher the return would be. Air Asia has an average excess return of −0.35% per week. On the other hand, Amway has an average excess return of −0.49% per week. The lowest average excess return is −0.45% per week by ACME, however its beta is 0.84. The highest average excess return is 0.64% per week by Yinson which is an investment holding with business segment in transportation, trading and operation in addition as an insurance agency, its beta is 1.05. The result of this result does not support with the theory of the higher the systematic risk, the higher the return. Based on the sample result, it can be concluded that CAPM could be employed to estimate the systematic risk of the company in Malaysia. Nevertheless, there is no evidence to show that the company in Malaysia with higher systematic risk could gain higher return.

As in Table 2, the regression result fitted into Equation (4) become:

$$\bar{r}_i = -0.0021 - 0.0045\beta_i + 0.002\beta_i^2 - 0.3803UR_i + 0.5915IT_i$$

The intercept, γ_0 do not reject hypothesis 1, therefore CAPM could be used to estimate security market line (SML) for Malaysia stocks. It is observed that the CAPM slope is −0.0045, shows that it does not support the theory of there should he non-negative price of risk in the capital markets. This result is the same as the finding by Omran (2007). Moreover, this study accepts hypothesis 3, 4 and 5 by do not rejecting null hypothesis of γ_2, γ_3 and γ_4 = 0. It demonstrated that SML of Malaysia stocks is linear relationship. In addition, unique risk and interaction risk do not influence the creating return process by company in Malaysia. Therefore, it could be concluded that CAPM does hold for the Malaysia stock market.

Based on Table 3, portfolio 1 beta is 1.226 and portfolio 2 beta is 0.6596 significant at level 1%. Therefore, it can be concluded that the stocks of Malaysia combine together to form a portfolio, the CAPM still applicable to it. However, the portfolio result does not support higher systematic risk to yield higher excess return. Worth to highlight that Markowitz model supposes to yield higher return, however, the average excess return in the portfolio surprisingly turns to negative which is contradicted with portfolio diversification theory. Thus, it shows that investors diversify investment in difference Malaysia stocks do not necessary yield higher return compared to only invest in one individual stock.

This study further examines the effect of risk in the portfolio by adding more stocks in the portfolio. As presented in Figure 1, it is shown that with the increasing number of stocks in a portfolio, the risk is reducing. It also clearly supports Markowitz Theory

Table 1: Individual stock's beta coefficient

Code	Company	Beta	R^2	No	Code	Company	Beta	R^2
7054	AASIA	1.5768***	0.1931	31	5062	HUAYANG	1.3311***	0.0953
		(0.2007)					(0.2553)	
7131	ACME	0.8474**	0.0027	32	1597	IGB	0.6747***	0.1156
		(0.3464)					(0.1161)	
5014	AIRPORT	0.7740***	0.1931	33	3336	IJM	1.0323***	0.2961
		(0.1302)					(0.0991)	
2658	AJI	0.6185***	0.0910	34	4723	JAKS	1.5280***	0.1655
		(0.1217)					(0.2136)	
7293	YINSON	1.0546***	0.0627	35	4383	JTIASA	0.8898***	0.0929
		(0.2539)					(0.1731)	
6351	AMWAY	0.2956***	0.0562	36	6769	KELADI	0.6419***	0.0413
		(0.0754)					(0.1925)	
6888	AXIATA	0.9879***	0.3631	37	9083	JETSON	0.8320***	0.0531
		(0.0814)					(0.2188)	
4162	BAT	0.8326***	0.1785	38	3476	KSENG	0.8742***	0.1040
		(0.1112)					(0.1598)	
4863	TELEKOM	0.8130***	0.2501	39	2445	KLK	0.8353***	0.2356
		(0.0876)					(0.0936)	
2836	CARLSBG	0.7521***	0.0914	40	1643	LANDMRK	1.3494***	0.1325
		(0.1476)					(0.2149)	
8982	CEPAT	0.8094***	0.1244	41	3859	MAGNUM	1.1115***	0.1962
		(0.1336)					(0.1400)	
2828	CIHLDG	0.9960***	0.0318	42	8583	MAHSING	1.3518***	0.1790
		(0.3419)					(0.1802)	
5094	CSCSTEL	0.91311***	0.1460	43	4707	NESTLE	0.3764***	0.0784
		(0.1375)					(0.0803)	
8176	DENKO	0.2272	0.0016	44	4634	POS	1.0802***	0.1135
		(0.3499)					(0.1879)	
6947	DIGI	0.6654***	0.0684	45	4588	UMW	0.7580***	0.1755
		(0.15284)					(0.1022)	
1619	DRBHCOM	1.4133***	0.1497	46	5142	WASEONG	0.9199***	0.1007
		(0.2097)					(0.1711)	
7233	DUFU	0.7775***	0.0409	47	4677	YTL	0.9753***	0.1920
		(0.2345)					(0.1245)	
3026	DLADY	0.5510***	0.0648	48	5355	DAIMAN	0.7674***	0.0803
		(0.1302)					(0.1616)	
8877	EKOVEST	1.0369***	0.0718	49	5141	DAYANG	1.3655***	0.1549
		(0.2321)					(0.1985)	
3417	E&O	1.4519***	0.1576	50	7277	DIALOG	1.2728***	0.0473
		(0.2090)					(0.3556)	
3689	F&N	0.4487***	0.0560	51	7229	FAVCO	1.4928***	0.1326
		(0.1146)					(0.2376)	
7210	FREIGHT	0.6488***	0.0675	52	3255	GAB	0.5174***	0.0652
		(0.1501)					(0.1219)	
4715	GENM	1.1951***	0.2726	53	7022	GTRONIC	1.2710***	0.1197
		(0.1215)					(0.2146)	
7382	GLBHD	0.6471***	0.0588	54	7668	HAIO	0.8343***	0.1243
		(0.1612)					(0.1378)	
5020	GLOMAC	1.3683***	0.2664	55	3441	JOHAN	1.4535***	0.0905
		(0.1413)					(0.2868)	
1503	GUOCO	1.4722***	0.1770	56	3522	KIANJOO	0.8531***	0.1146
		(0.1976)					(0.1476)	
2062	HARBOUR	0.2977	0.0072	57	7153	KOSSAN	0.5912***	0.0244
		(0.2170)					(0.2329)	
5008	HARISON	0.9418***	0.1415	58	5878	KPJ	0.7279***	0.0388
		(0.1444)					(0.2254)	
5072	HIAPTEK	1.0522***	0.1360	59	6012	MAXIS	0.4141***	0.1549
		(0.1651)					(0.0602)	
6238	HSL	1.4558***	0.2551	60	5347	TENAGA	0.8550***	0.2136
		(0.1548)					(0.1021)	

Number in parentheses is standard error. Significance at 1% (***), 5% (**)

that unsystematic can be minimized with increasing number of stocks up to a risk of ±3%. This shows that initially a single stock's risk is more than 20% (could be reduced by around 17%) to approximately 3% which is the market risk. This is consistent with the research by Gupta (2001), which indicated that increase the number of stocks in a portfolio could reduce the risk.

Table 2: Estimates of individual companies by ordinary least square

Model	1	2	3	4	5
Constant, γ_0	−0.0046	−0.0044	−0.0043	−0.0043	−0.0021
(t value)	−4.22222	−6.4594	−6.7609	−7.6528	−0.7172
(Significant)	0.0000***	0.0000***	0.0000***	0.0000***	0.4763
Beta, γ_1	0.0007				−0.0045
(t value)	0.6559				−0.766
(Significant)	0.5145				0.4464
Beta square, γ_2		0.0004			0.0020
(t value)		0.8014			0.6866
(Significant)		0.4262			0.4952
Unique risk, γ_3			0.2025		0.3803
(t value)			0.6935		−0.4917
(Significant)			0.4908		0.6249
Interaction, γ_4				0.2472	0.5915
(t value)				1.0238	0.7105
(Significant)				0.3102	0.4804
R^2	0.0074	0.011	0.0082	0.0178	0.0298
F statistics	0.4302	0.6422	0.4809	1.0481	0.4227
(Significant)	0.5145	0.4262	0.4908	0.3102	0.7915

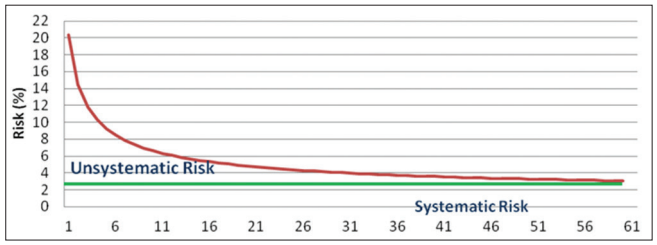
Significance at 1% (***)

Table 3: Beta coefficient in the portfolio

Portfolio	Average excess return	Portfolio beta
1	−0.00355	1.1226***
		(0.0374)
2	−0.00436	0.6596***
		(0.0313)

Number in parentheses is standard error. Significance at 1% (***)

Figure 1: The effect of number of stocks on risk of the portfolio in Malaysia



5. CONCLUSION

This research studies the validity of the CAPM on individual stocks as well as on portfolio investment. It also evaluates the suitability of Markowitz model to evaluate the performance of the investment portfolio within the framework in Malaysia by using the stocks listed in Malaysia's main stock market.

It is concluded that CAPM is reasonable to be the indicator of stock prices in Malaysia as well as in portfolio basket in the investment from 2000 to 2014. From individual stock, result does support that CAPM linear relationship is adequate to explain the return of the stocks. Moreover, unique risk and interaction with systematic risk are tested whether they should be important aspects in to be captured by CAPM and the result shows that systematic risk itself is adequate to explain CAPM but not unique risk and its interaction with systematic risk. The result indicated that excess return toward market return is rewarded for the investors.

For the Markowitz model, the framework in Malaysia does not support that portfolio diversification can generate higher return and reduce the risk. This could be due to the portfolio diversification is not suitable for short-term investment such as weekly investment. However, the result shows that with the increased number of stocks in a portfolio, the unsystematic risk is diversifiable but systematic risk is un-diversifiable, thus, it is suggestible that for the optimistic investor who has low risk appetite, it is better to invest money in fixed deposit to earn risk free rate and to avoid the hassle of worrying stocks volatility that might provide them negative return. This is similar to a study by DeLong and Saunders in 2008, where fixed deposit insurance introduction had reduced the risk of banks and trust. Fixed deposit had in return generated a greater banking system to ensure the financial stability. This is because in Malaysia, the money deposited by investor in the bank is protected by Perbadanan Insurans Deposit Malaysia (PIDM), which is a deposit insurance system that insures depositors against the loss of their insured deposits placed with member banks, in the unlikely event of a member bank failure up to with RM250,000 as the maximum limit of the coverage (PIDM, 2014). Hence with fixed deposits, investor can guarantee a return with the minimum amount as the same as capital amount, however compared to stocks, the investors could obtain a return lower than capital amount. Nevertheless, there is a risk and return balance among fixed deposit and stock.

In summary, investors could use CAPM to estimate the behavior and the systematic risk of the stocks in Malaysia before investing in stock market. This could be a way to minimize their downside risk as they understand the stock trend of the company and hence invest rationally. In addition, managers in the companies of Malaysia can use CAPM as a proxy to estimate their stock return and execute the right policy in their management in order to maximize profit at the same time increase shareholder wealth maximization. Furthermore, it is suggested to apply portfolio diversification to reduce the unsystematic risk. Overall, portfolio diversification could build up the investors' confidence towards the investment decision and to develop a sound investment financial market

in assisting Malaysia to achieve its mission to be a developed country in 2020.

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