COMPARATIVE ANALYSIS OF FIXED INCOME UNIT TRUST FUNDS VERSUS EQUITY UNIT TRUST FUNDS IN MALAYSIA

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MASTER OF SCIENCE (FINANCE)
UNIVERSITI UTARA MALAYSIA
DECEMBER 2012

COMPARATIVE ANALYSIS OF FIXED INCOME UNIT TRUST FUNDS VERSUS EQUITY UNIT TRUST FUNDS IN MALAYSIA

By

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Thesis Submitted to
Othman Yeop Abdullah Graduate school of Business,
Universiti Utara Malaysia,
in Fulfillment of the Requirement for the Master of Science (Finance

Kolej Perniagaan
(College of Business)
Universiti Utara Malaysia

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ABSTRAK

Tesis ini mengkaji hubungan antara unit amanah dana pendapatan tetap dan unit amanah ekuiti bagi tempoh Januari 2006 hingga Oktober 2012. Kajian ini dijalankan untuk menyiasat samada prestasi kedua-dua unit amanah ini dapat mencapai prestasi yang lebih tinggi berbanding penanda aras pasaran. Perbandingan prestasi ini dibuat ke atas beberapa kategori sampel ekuiti iaitu ekuiti keseluruhan, ekuiti pertumbuhan dan ekuiti nilai. Indeks Komposit Kuala Lumpur (KLCI) dijadikan sebagai penanda aras pasaran bagi dana ekuiti dan dana pendapatan tetap dengan penanda aras pasaran tambahan iaitu Maybank deposit tetap 12-bulan. Sebanyak tiga puluh satu dana pendapatan tetap dan lima puluh tujuh sampel keseluruhan ekuiti dibahagikan kepada subsample iaitu tiga puluh tujuh dana ekuiti pertumbuhan dan dua puluh dana ekuiti nilai dikaji dengan menggunakan tiga prestasi pengukur iaitu indeks Treynor, Sharpe dan Jensen.

Keputusan menunjukkan bahawa keuntungan purata dana ekuiti adalah lebih tinggi berbanding dana pendapatan tetap dan penanda aras pasaran KLCI. Walau bagaimanapun, apabila perbandingan dibuat di antara dana ekuiti dan dana pendapatan tetap dengan menggunakan Wilcoxon Signed Rank test, indeks Sharpe dan Treynor memberikan keputusan yang signifikan. Ini menunjukkan bahawa prestasi dana pendapatan tetap lebih tinggi daripada dana ekuiti. Sebaliknya, keputusan ujian yang sama untuk indeks Jensen memberikan keputusan yang bertentangan. Apabila sampel tesis dikategorikan kepada jenis ekuiti yang berbeza, terdapat keputusan ujian yang bertentangan. Indeks Sharpe dan Jensen memberikan keputusan tidak signifikan untuk sampel dana ekuiti pertumbuhan. Ini bermakna tiada perubahan signifikan di antara dana pendapatan tetap dan dana ekuiti jika dibandingkan dengan keputusan indeks Treynor yang memberikan keputusan yang signifikan. Bagi sampel dana ekuiti nilai, indeks Sharpe, Treynor dan Jensen memberikan keputusan signifikan. Ini bermakna terdapat perubahan signifikan di antara dana pendapatan tetap dan dana ekuiti.

Katakunci : Unit Amanah, Dana Pendapatan Tetap, Dana Ekuiti

ABSTRACT

This study examines the relationship between fixed income unit trust funds and equity unit trust funds for the period of January 2006 to October 2012. The performance of both types of funds are then compared to the market benchmark to determine whether they outperformed the market benchmark. The performance comparisons are made over several categories of equity sample namely overall equity, growth equity and value equity. The Kuala Lumpur Composite Index (KLCI) is used as the market benchmark for equity funds and fixed income funds with additional market benchmark of Maybank 12-month fixed deposit. A total of 31 fixed income funds and 57 overall equity funds which are made up of 37 growth equity and 20 value equity are evaluated by using three performance measures namely Treynor index, Sharpe index and Jensen index.

The results indicate that the mean returns of equity funds are higher than the fixed income funds and market benchmark of KLCI. Nevertheless, when equity funds are compared against fixed income funds using Wilcoxon Signed Rank Test, Sharpe and Treynor ratios produce significant results. This means that the performance of fixed income funds varies from the performance of equity funds. However the Jensen index produces insignificant result. When the sample categorised into different equity types of funds, the finding shows a conflicting result. The Sharpe and Jensen ratios indicate insignificant results for growth equity funds sample. This means that the performance of fixed income funds is not different from that of equity funds in comparison to Treynor that shows a significant result. As for the value equity, Sharpe, Treynor and Jensen produce results that are significant. This means that the performance of fixed income funds varies from that of equity funds.

Keywords: Unit Trust, Fixed Income Fund, Equity Fund

Acknowledgement

First and foremost, Alhamdulillah, thanks to Allah s.w.t for providing me the guidance and chance to complete this dissertation to fulfill the requirement of Master of Science Finance at Universiti Utara Malaysia.

I would like to take this opportunity to extend my sincere gratitude and appreciation to my supervisor Professor Dr. Nur Adiana Hiau Abdullah, who has read the various drafts, and for her continuous guidance, advice, support and encouragement throughout the preparation of this dissertation. I would also like to thanks Dr. Kamarun Nisham Taufil Mohd for his feedbacks. Their commitment and time spent for this dissertation is most appreciated.

I would like to thank my father, Shari Musa, and my mother, Tumirah Sukiaran, for their utmost assistance in taking care of my son, Mohamad Haikal Haiyan, when I was struggling to complete this dissertation. My heartfelt thanks go to my husband, Azrol Abas, and my son for their source of inspiration and motivation. To them I dedicated this dissertation.

Finally, to all my colleagues in the Master of Science (Finance) programme especially Nabihah Aminaddin, Nor Aida Adilla and Nor Maimun Wahab, I wish to thank you all for your friendship.

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CHAPTER 1

INTRODUCTION

1.1 Background of Study

Corporate bond markets in emerging Asia have continued to enjoy promising growth over the years and are predicted to grow in the future. By 2011, Asian countries hold the largest market share which consists 70% of total corporate bond issuance in the emerging market. The development of corporate bond market has been dominated by Asia Pacific countries namely Japan, China, and Korea that form the largest markets in terms of the value of corporate bond outstanding. As a percentage of Gross Domestic Product (GDP), Malaysia's bond market is now the second largest in Asia accounted for approximately 37% (Bank for International Settlements, 2011). Malaysia's bond market has seen a strong growth of 10.8% per annum over the period from 2000 until 2010 (Securities Commission and Bursa Malaysia).

Improvement in bond market outlook will continue to drive the Malaysian debt market as well as to encourage the circulation of fixed income unit trust funds. Further growth of such funds will help strengthen the capital market, where the government is pursuing retail investors to take part on investment in bond and sukuk by offering a stamp duty exemption. This will lead to the fund managers to reallocate their investment strategy towards fixed income unit trust funds to benefit from a downside protection and to take advantage of the expansion of the debt securities market.

The Malaysian equity market and debt market are relatively large compared to the size of its economy. As shown by the percentage of nominal GDP, the equity market capitalisation and outstanding debt securities account for approximately 165% and 97%, respectively. In terms of growth in equity market, the market size was RM2.0 trillion in 2010 as compared to RM717.5 billion in 2000. As a percentage of GDP, Malaysia's equity market capitalisation has seen a strong growth of 11.1% per annum which has consistently outpaced the economy (Securities Commission).

Given the improvement in Malaysian equity market, the total net asset value of equity unit trust funds remains uptrend over the period 2004 to 2010 except in 2008 driven by strong growth in equity market. Over the period, the new funds raised in the equity market exceeded the amount of new issues provided by debt securities market but the number of new equity funds launched declined in 2007 until 2009 as asset management companies consider the benefit of diversifying funds into fixed income unit trust funds in these market and take advantage on the volatility of equity market. As the number of unit trust funds invested in fixed income securities increases, it creates an opportunity for this study to be implemented. Despite the sharp increase in total net assets of fixed income unit trust funds since 2002, very few studies are carried out to look into their performance.

Due to above reason, the researcher intends to conduct a study on the comparative performance between fixed income unit trust funds and equity unit trust funds in Malaysia. Both types of funds are compared to find out which performs better in the Malaysian capital market. It is hypothesises that different types of unit trust fund lead to different outcomes in terms of risk and return.

1.2 The Development of Malaysian Unit Trust Fund

The unit trust industry started in Malaysia in 1959 with the introduction of the first asset management company called the Malayan Unit Trust Ltd. Its development was very encouraging as shown in Figure 1.1. As at September 2012, the industry recorded 37 asset management companies that manage a total of 601 unit trust funds with a total approved fund size of 342.108 billion units in Malaysia. There were a total of 168 Islamic unit trust funds when it was first launched in 1993, representing approximately one-fourth of the 589 unit of launched funds in this country with a total net asset value (NAV) of more than RM290 billion with more than 15,966,606 accountholders. The net asset value of unit trust funds represents 20.53% of the total market capitalisation of Bursa Malaysia as at September 2012 (Securities Commission, 2012).

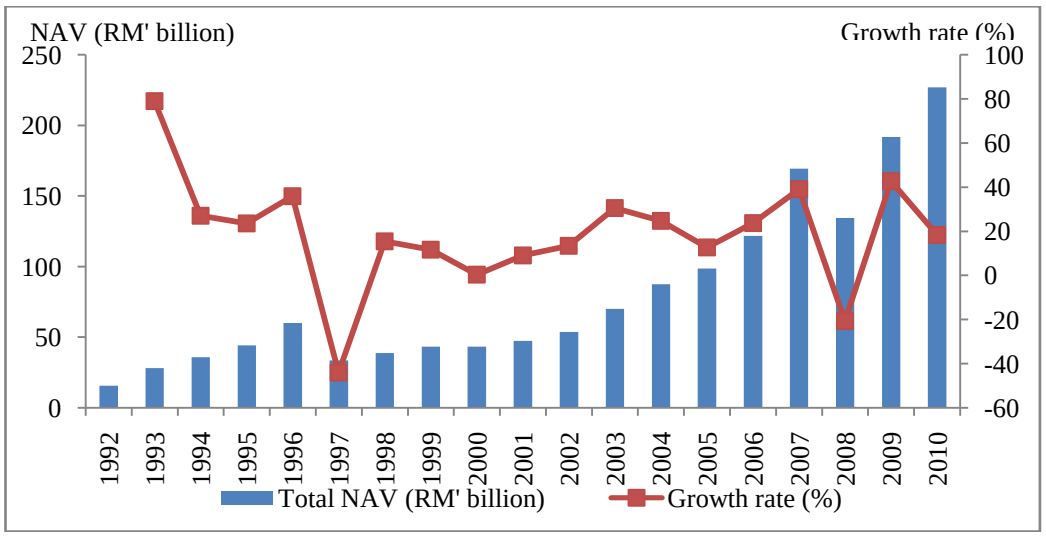

Figure 1.1
Net asset value of the Malaysian unit trust industry (1992-2010)
Source: Federation of Investment Managers Malaysia (FIMM) Annual Reports

Figure 1.1 shows the total net asset value of the 37 asset management companies related to unit trust fund in Malaysia from 1992 to 2010. Total net asset value increased dramatically from RM87.39 billion (Walter & Sisli, 2007) at the end of 2004 to RM226.81 billion by the end of 2010 (Securities Commission, 2010). The asset allocation of unit trust funds represents 27.54% equities, 11.09% bonds, 20.96% money market, and 26.83% Islamic unit trust funds. According to the Federation of Investment Managers Malaysia (2010), more than 50% of new unit trust funds offering was invested outside Malaysia in 2010.

1.3 Fixed Income Unit Trust Funds

Investment in fixed income funds in Malaysia could be done through open-end fund, exchange-traded funds (ETFs) and closed-end fund. The fixed income unit trust funds concentrates on investment in bonds and other debt securities. Investors tend to choose fixed income unit trust funds as they are less risky than equity unit trust funds (Smart Investor, January 2006). In addition, fixed income unit trust funds also provide lower risks than bond because they spread investors' investment over a number of different bonds. As a result, investors are protected against major uncertainty than they would be if they invest in bonds.

Amidst the volatile equity market and declining interest rate environment, investors tend to look for investment instruments that can give them a fair return and stable income. Generally, fixed income unit trust funds are considered to be less volatile than equities as they have diversified portfolio and received a steady stream of interest payments. Their portfolio would normally consists of various type of fixed income unit trust funds depending on categories (conventional and Islamic), issuers

(government and corporate) and structures (convertible bonds, callable bonds and zero-coupon bonds). Moreover, fixed income unit trust funds allow investors to automatically reinvest dividend incomes and to liquidate their unit trust at any time. Investors could benefit from the flexibility to buy and sell according to their needs.

For most fixed income unit trust funds, the minimum initial investment amount may be substantially less than what the investor would have to pay for a diversified portfolio of individual bonds. Malaysia has a minimum trading block value of RM5 million for a single bond (Lipper Hindsight, 2009). This is in contrast to fixed income unit trust funds as it could be bought at a minimum initial investment amount as low as RM1,000 for institutional investors since it "pools" money from many investors.

The fixed income unit trust funds were launched in the late 1990's. In 2002 there were seven fixed income unit trust funds issued. Out of 26 new funds, seven of them were fixed income unit trust funds which accounted for 27% of the total new funds offered in 2002. Since then, the Figure has increased. As at 31 December 2010, the net asset value was recorded at RM11.0 billion as compared to RM0.125 billion in 1998, a level that can be considered as impressive, as shown in Figure 1.2.

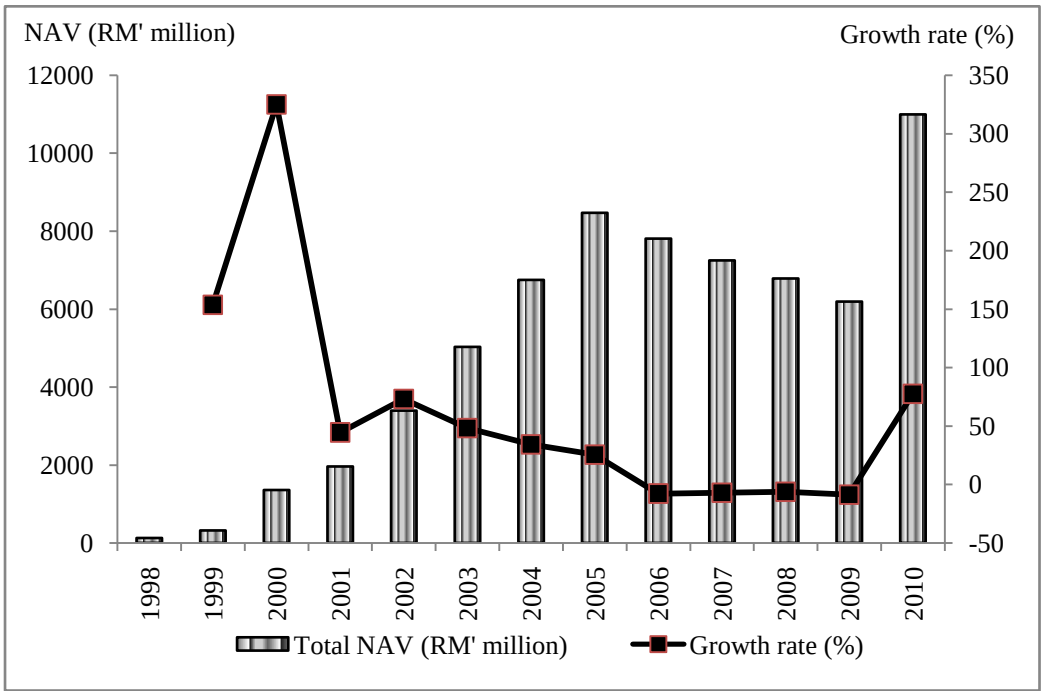

Figure 1.2
Net asset value of the fixed income unit trust funds (1998-2010)
Source: Federation of Investment Managers Malaysia (FIMM) Annual Reports

1.4 Equity Unit Trust Funds

Within the equity unit trust funds industry, such funds are holding the largest contributor to asset allocation of the asset management companies. Over the last 10 years as shown in Figure 1.3, the Malaysian equity unit trust funds shows a gradual increase except in 2008 where the net asset value of such funds dropped by approximately 42% to RM15.0 billion from RM25.7 billion in 2007. This is due to stock market downturn that dragged the funds' poor performance.

Investment in equity funds in Malaysia can be categorised into value and growth style funds. Generally equity unit trust funds are similar to stock funds, invested primarily in equities or securities listed on Bursa Malaysia. These equity funds concentrate on different types of funds depending on the nature of the funds namely growth funds, income and growth funds, aggressive growth funds, blue chip funds, small cap funds, and sector funds. In addition growth equity unit trust funds aim to

get a steady long-term income and capital growth through a diversified portfolio of larger capitalisation investment. The diversification could be done through a portfolio that consists of blue chip and high growth stocks listed on the stock exchange. More than half of the returns are in the form of capital gain by way of increments in unit price or bonus issues. A maximum of 98% of these funds are invested in the Malaysian equities market and the remaining 2% in the money market for liquidity purposes (AMB Master Prospectus, 2012).

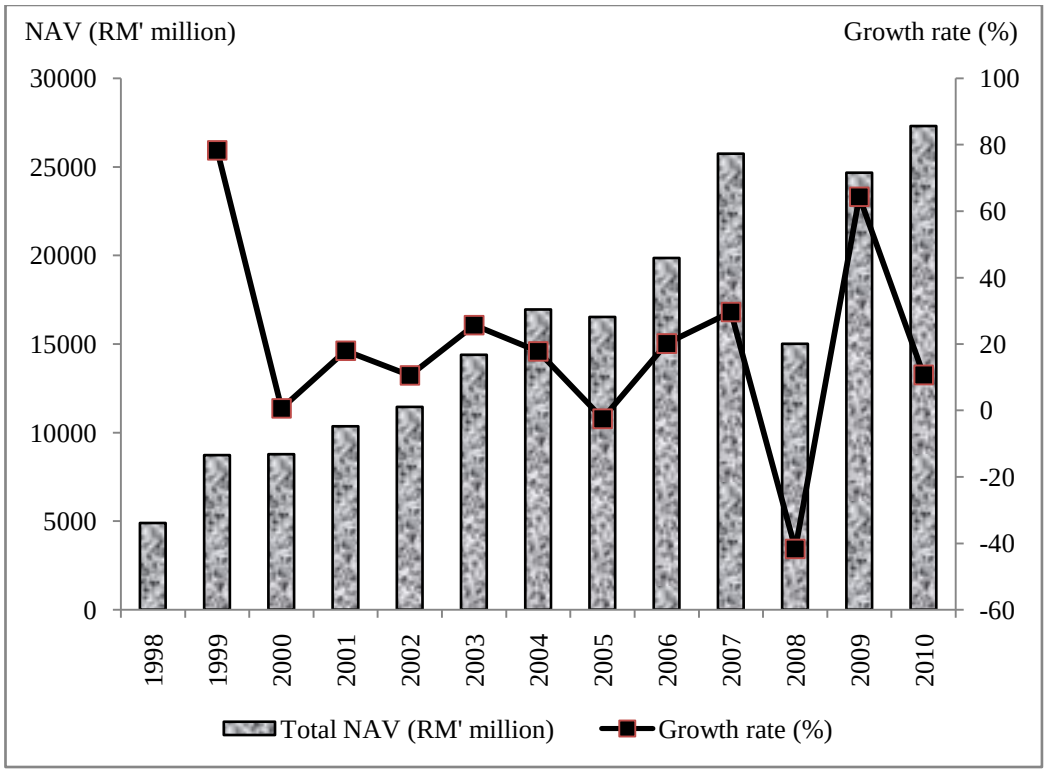

Figure 1.3
Net asset value of the equity unit trust funds (1998-2010)
Source: Federation of Investment Managers Malaysia (FIMM) Annual Reports

Value equity unit trust funds refer to income and growth funds. Such funds provide current income mostly generated from the dividends received and the long term growth via capital appreciation. The primary aim of these funds is to provide regular,

stable income stream and high dividend yield that is potentially higher than the prevailing fixed deposit rates. In addition, these funds focus on income-generated securities namely bonds, utilities stocks, money market instruments, rental properties and etc. For most value equity funds, 70% of the investment portfolios are invested in the equity market and the remaining 30% in fixed income instruments. It is designed for conservative investors who look for relatively higher returns than fixed deposits but are averse to take higher risks linked with high equity exposure.

1.5 Problem Statement

A well developed Islamic bond (sukuk) and conventional market is critical for the economic growth of the country as shown in Figure 1.4. As a percentage of GDP, the Malaysian bond market is now the second largest in Asia. Despite the uncertainty and instability of the global financial markets, the bond markets in Asia continues to increase with USD5.9 trillion in paper outstanding at the end of June 2011. As shown in Figure 1.4, the amount of Islamic bond outstanding increased tremendously by 109% to RM200 billion in 2011 from merely RM91.3 billion in 2005. The size of private debt securities as a percentage of total bank loans also increased from 44% in 2004 to 51% in 2011. Until the third quarter of 2012, there are RM38.5 billion corporate bonds outstanding in Malaysia as compared to RM31.3 billion in 2010, a level that is viewed as encouraging (Bond Pricing Agency Malaysia, 2012).

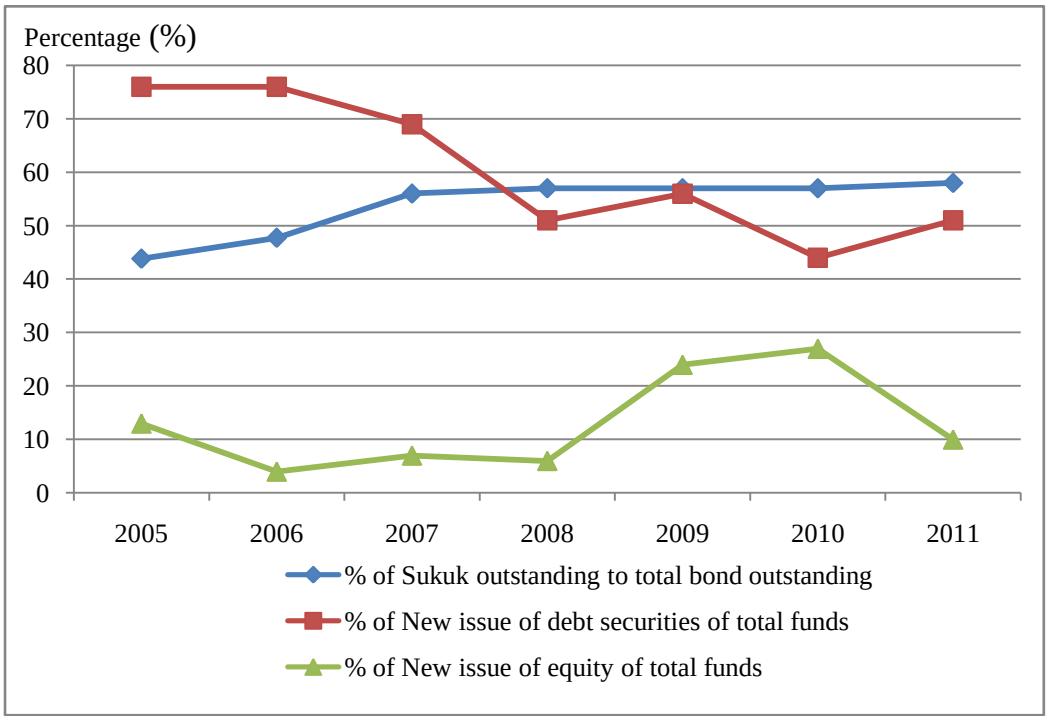

Figure 1.4
Fund raised in capital market and sukuk outstanding 2005-2011
Source: BNM Annual Report, Quarterly Bulletin of Malaysian Islamic Capital Market by Securities Commission

Figure 1.5 shows a stable increase in fixed income unit trust funds circulated in the unit trust industry in Malaysia. The total unit trust funds size in Malaysia is RM283.4 billion as at 31st July 2012, representing 20% of the market capitalisation. According to Lipper Hindsight, the total bond funds size in Malaysia was RM10.5 billion as at April 30, 2009, representing 15% of total fund size of the unit trust industry of which 73% or RM8.4 billion were conventional bond funds, and the remaining 27% or RM2.1 billion were Islamic bond funds.

There has been an oscillation in the development of equity unit trust funds as shown in Figure 1.5. The new equity funds launched also indicate the same pattern of overall progress of the total net asset value of such funds. In 2004, there were 22 equity unit trust funds issued. Out of 61 new funds, 22 of them were equity unit trust

funds which accounted for 36.1% of the total new funds offered in 2004. Hence, out of 22 new equity unit trust funds, 14 are growth equity unit trust funds, 5 small company funds, and the remaining 3 were income equity unit trust funds (FIMM Annual Reports, 2004). Even though the percentage of new issue of equity of total funds did not exceed the percentage of new issue of debt of securities as shown in Figure 1.4, the net asset value of equity unit trust funds has remained uptrend since 2004. This is observed in Figure 1.5 where there the total net asset value of equity unit trust funds slightly increased from RM4,891 million in 1998 to RM27,299 million in 2010.

The substantial increase of unit trust investment in fixed income securities coupled with the rapid growth of debt securities market had led to the pattern of investment that shifted towards fixed income securities related instruments in 2009. This is observed in Figure 1.5 where there was a double digit growth of new bond funds launched in 2009 as compared to 2008. As for equity unit trust funds, investment in equity rose 23% in 2008 to 27% in 2010 and this type of unit trust fund held a dominant position of more than 50% of new fund offered as at December 2010 than fixed income unit trust funds (FIMM Annual Reports, 2010).

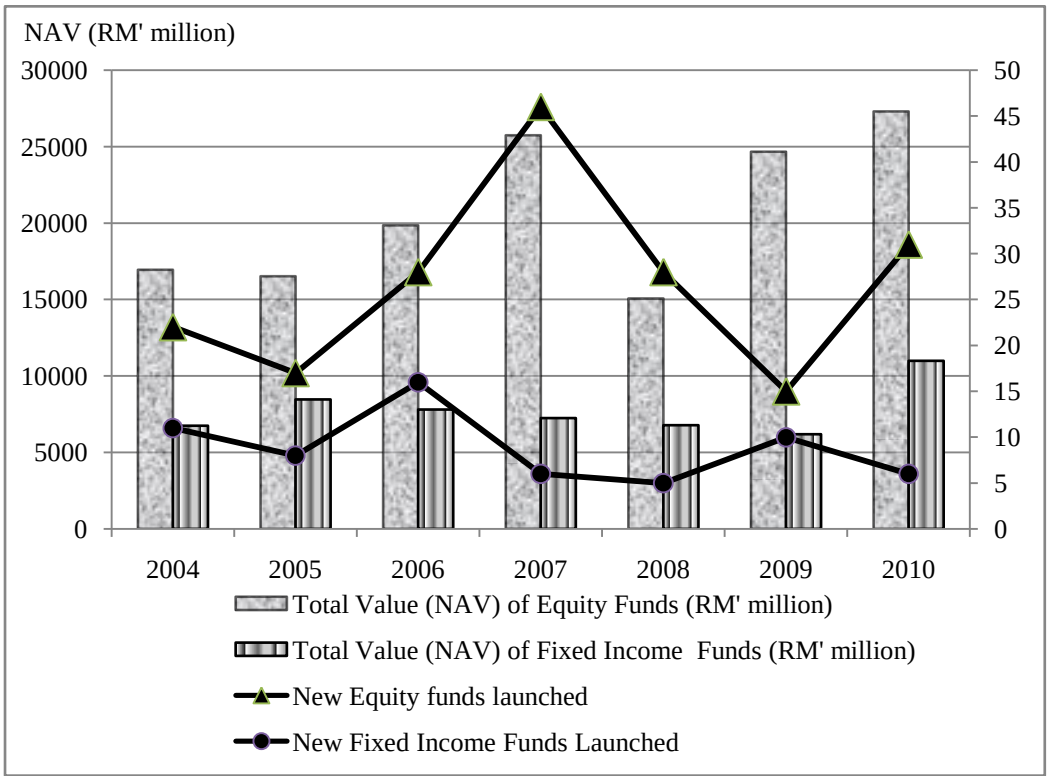

Figure 1.5
New unit trust fund launched by types of fund in 2002 to 2010
Source: Federation of Investment Managers Malaysia (FIMM) Annual Reports

Given the importance of unit trust funds to Malaysian investors, it is imperative to evaluate their relative performance. This is especially true as there is lack of comprehensive studies to compare the performance of fixed income unit trust funds and equity unit trust funds in Malaysia. The evidence from the previous studies on unit trust performance focused on the overall type of unit trust performance. To the researcher's knowledge there is no documented evidence from the previous study to focus on comparative analysis between both types of unit trust funds in terms of risk and return analysis. Therefore, this study fills this gap.

1.6 Research Questions

In this study, the main research questions are:

1. Is there a difference in the performance of risk and return between fixed income and equity unit trust funds?
2. Do fixed income unit trust funds and equity unit trust funds overperform or underperform the market benchmark?

1.7 Research Objectives

1. To examine whether there is a difference in performance of risk and return between fixed income unit trust fund and equity unit trust funds.
2. To compare fixed income unit trust funds and equity unit trust funds performance with the market benchmark.

1.8 Significance of the Study

The contribution of this study benefit investors as the findings would provide insight to guide their investment decision making, especially in the choice between fixed income unit trust funds and equity unit trust funds. For fund managers namely Employee Provident Fund (EPF), *Permodalan Nasional Bhd* (PNB) and insurance companies, the findings could help them decide which funds should be included to improve their portfolio performance. It is likely that there would be an adjustment on their portfolio investment policies. To the regulators, namely Bursa Malaysia and Securities Commission, a comparative analysis on the performance of fixed income unit trust funds and equity unit trust funds might assist in improving and strengthening the unit trust funds industries. In addition, it is hoped that the study would contribute to the body of knowledge and existing literature on unit trust funds.

1.9 Organization of the Study

The next chapter covers the theoretical underpinnings and performance. This is followed by research methodology in chapter 3. Chapter 4 presents the results based on some statistical tests performed. Subsequently, chapter 5 concludes the thesis.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter describes the underlying theory related to this study and empirical evidence on fixed income unit trust funds and equity unit trust funds performance. It begins with a discussion on risk and return of portfolio theory. This is followed by a report from previous studies.

2.2 Portfolio Theory

Portfolio theory was proposed by Harry Markowitz (1952). It is based on the variance computation of a portfolio to reduce the total risk as well as to illustrate how to mix asset effectively to form the most efficient portfolio. According to Reilly and Brown (2009), investors are able to create portfolios to maximize expected return based on a given level of risk.

2.3 Markowitz's Efficient Frontier

Markowitz's efficient frontier refers to a set of optimal portfolios that present the highest expected return for a given level of risk or the lowest risk for a given level of return (Reilly & Brown, 2009). Generally, investors yearn for portfolios that contain the best of risks and returns. The selected portfolio varies among investors depending on their utility curve in maximizing their satisfaction. Such decision could be made through efficient frontier where investors have an opportunity to select from a set of risk and return mixture of different portfolios.

2.4 Risk and Return

According to portfolio theory, with normal return distributions, risk is measured by standard deviation of return. Most investors would prefer a higher projected return with a lower standard deviation (risk) of return. Additionally, the likelihood to get returns which is higher or lower than the average return varies on the standard deviation (Ross, Westerfield, & Jaffe, 2010).

2.5 Empirical Evidence on the Overall Performance of Unit Trust Funds in Malaysia

Evidence from Malaysia with regard to unit trust funds performance shows a mixed result. The first group of studies shows that unit trust funds underperform the market return. A study conducted by Taib and Isa (2007) on 110 unit trust funds covering equity, balance and fixed income funds in 1991 until 2001 indicates that the unit trust performance is below the market portfolio. They also find that equity funds provide a negative return over all sub-periods despite having the most diversified portfolio as compared to fixed income unit trust funds. The highest *R* square shows that the equity unit trust funds are the most diversified portfolio compared to fixed income unit trust funds. They conclude that fixed income unit trust funds illustrate a greater performance than equity unit trust funds. This is due to the higher interest rate reserved during the crisis period. Furthermore, by having fixed income unit trust funds, it helps to hedge an investment portfolio during a bearish market. Another explanation that may lead to greater performance by fixed income unit trust funds is the capital preservation and consistent return received by the funds through all sub-periods. This is consistent with Low's (2007) finding. By using the Jensen's model to estimate the overall fund performance and the Henriksson and Merton's model to

complement it, she finds that, on average, the income, growth and balanced unit trust funds display negative overall performance. However, income funds show a greater performance on market returns.

Abdullah et al. (2002), Leong and Aw (1997), Shamsher and Annuar (1995), and Tan (1995) find that unit trust funds produced lower return than the market benchmark. The results reveal no significant difference in funds return among actively and passively managed funds. Although Abdullah et al. (2002) utilizes various composite measures such as Sharpe index, Modigliani measure and information ratio, their findings show that unit trust performances underperform the KLCI index. A limitation that is observed in this study is that all the funds are grouped together without segregating them into different types of funds.

The second group of studies shows that unit trust performance outperforms the market return. The earliest study by Chua (1985) illustrates that unit trust funds outperform the market return over the period 1974 to 1984. This is in contrast to Taib and Isa's (2007) finding. The different outcome might have been caused by different time period, sample size and method of analysis. Taib and Isa (2007) have a larger sample size covering all types of unit trust funds and multiple performance measures with rigorous statistical test. On the other hand, Chua (1985) has a limited sample as during the period of study there were not many funds issued as the industry was at the infancy stage. Despite this limitation, Chua (1985) is able to disclose that the government-sponsored funds outperform the private funds as they are less risky and backed by the federal government.

This finding is consistent with Annuar (1997) and Ong (2000). The result of Ong (2000) demonstrates that size of funds does not influence the unit trust performance. A study by Annuar (1997) of 31 Islamic and conventional unit trust funds over the period of 1990 to 1995 by using the Treynor method also indicates that the return on unit trust funds is above the market portfolio. This is further supported by Rozali and Abdullah (2006) where they find that the performance of Malaysian equity funds outperforms the market return over the period 1995 to 2004. Nevertheless, there is no significant difference in the performance of different types of funds. This is consistent with Abdullah and Abdullah (2009) on their study of 26 domestically invested and 23 internationally invested unit trust funds over the period of 2004 to 2008 and 2005 to 2008, respectively, by using Sharpe, Treynor and Jensen performance measures. The findings also reveal that there is no difference between performance of unit trust funds domestically invested and internationally invested unit trust funds when Sharpe index is utilised.

Empirical evidence in Malaysia shows mixed results. This might have been caused by small sample size except for Taib and Isa (2007). As a result, the findings are less accurate and could only represent the period of analysis. The use of different performance measures and time horizon also contribute to the mixed result where there is a shift of performance of unit trust funds overtime. In addition, the result might also be affected by using an aggregated sample instead of segregating the unit trust funds into specific categories.

2.6 Empirical Evidence on the Performance of Unit Trust Funds in Western Countries

Swinkels and Rzezniczak (2009) study the performance of different types of mutual funds on the Polish market by using Treynor and Mazuy method to investigate manager's selectivity and market timing. They find that fixed income and equity mutual funds outperform the market index with a positive α. Similar finding is reported in equity mutual funds and balanced unit trust funds. By using the Sharpe method, returns on equity mutual funds outperform the market portfolio. In addition, Sharpe ratio of fixed income mutual funds benchmark index is greater than the equity market Sharpe ratio. In China, Nan and Crystal (2011) show that the large Chinese equity funds outperform the medium and small equity funds over the period of 2003 until 2008. This contradicts the result reported by Sondhi and Jain (2006), who argue that timing capabilities among various size mutual funds could predict future returns. By using size wise performance analysis, Sondhi and Jain's (2006) findings indicate that small equity funds outperform medium and large funds. Furthermore, performance based on ownership pattern can explain a significant amount of the differences in return across different ownership categories.

Ross, Robin, and Clay (2010) study 99 New Zealand unit trust funds over the period of 1999 until July 2006. By using return based style analysis, their results suggest that investors expect a higher return on fixed income unit trust funds. Furthermore, asset allocation can explain a significant amount of differences in return across time and between funds. Kahn and Ruud's (1995) find contradicting evidence in the US. Focussing on the persistence of equity and fixed income mutual fund performance over the period of 1988 to 1993, they find that the fixed income unit trust funds

underperform the market portfolio. Their study is based on fixed income data including all active taxable domestic bond funds, money market funds, international bond funds, index funds, preferred stock funds and exclude junk bond funds. Their finding is supported by Mahreen and Nawazish (2011), who show that fixed income funds in Pakistan perform worst throughout all sub-periods. This is also consistent with Gallagher and Jarnecic's (2002) study on 66 institutional and 77 retail Australian open-ended active bond unit trust funds over the period of 1990 to 1999. Based on unconditional model and conditional composite performance, the results demonstrate that the retail bond funds underperform the market portfolio after adjusting for fees.

Further evidence on the underperformance of the unit trust funds can be observed in Malkiel (1995). He looks at US equity unit trust funds over the period of 1971 to 1991. Result shows that the funds underperform the market portfolio and there is inconsistent performance among unit trust funds in the early 1980s. This is verified by Coggin and Trzeinka (2000) who investigate the performance of equity pension fund managers in the US market. They find that it is difficult to discover pension fund managers who could outperform the S&P 500 index. The finding is also supported by Fama and Fench (2010), who further confirm the underperformance of the US equity unit trust funds industry in comparison to the market return.

CHAPTER 3

METHODOLOGY

3.1 Introduction

This chapter explains the research design and research method used to examine the performance of fixed income unit trust funds and equity unit trust funds in terms of risk and return analysis.

3.2 Data Collection and Sample Selection

In selecting the sample, prospectus of the asset management companies that issue unit trust funds in Malaysia and the website of all 37 asset management companies that provide information on the list of funds in Malaysia covering from January 2006 until October 2012, are used. The starting period of 2006 is selected because in this particular year, there is a double digit growth of newly issued fixed income unit trust funds which total 16 (FIMM Annual Report, 2006).

The weekly data on net asset value, inception dates and details of fixed income unit trust funds and equity unit trust funds for this study are gathered from the Bloomberg Terminal at the Library of Bursa Malaysia. Other data namely the weekly KLCI which is used as a proxy of the market return and weekly 90-days Malaysian Treasury Bills representing the risk free rate are gathered from the Thomson Datastream at the Sultanah Bahiyah Library, Universiti Utara Malaysia (UUM).

From a total of 54 fixed income unit trust funds and 127 equity unit trust funds issued over the period of study, the sample of 31 fixed income unit trust funds (refer

to Table 3.1) and 57 equity unit trust funds (refer to Table 3.2) are included in this study because they have complete data from January 2006 to October 2012. The equity unit trust funds are then segregated into subsample namely 37 growth equity unit trust funds (refer to Table 3.3) and 20 value (income and growth) equity unit trust funds (refer to Table 3.4). Other criteria used in selecting the sample are: (i) they are not closed-ended unit trust funds; (2) not newly launched funds; and (iii) missing data. This study only focuses on open-ended unit trust funds because most retail investors prefer such funds (Nan & Crystal, 2011). Thus, the results would have direct effect on individual investors. Closed-ended funds are excluded because the funds are traded with a limited number of shares which can only be offered via an initial public offering and is quoted and publicly traded on Bursa Malaysia. As for newly launched funds, they are excluded because it is not effective to compare funds that have been established in the industry for a period more than 10 years with those that are recently issued.

As the study attempts to compare fixed income unit trust funds and equity unit trust funds including overall sample of equity, growth equity and (income and growth) value equity between market benchmark, the main attributes of the market benchmark used is as follows:

a) Fixed income unit trust funds:

The Kuala Lumpur Index (KLCI) is used as a proxy of market benchmark for fixed income unit trust funds with an additional benchmark which is the Maybank 12-months fixed deposit rate. The Maybank 12-months fixed deposit rate is appropriate to be used because it refers to the average fixed deposit rates of commercial banks,

finance companies and merchant banks for maturities of 12-months quoted by Maybank.

For the purpose of the fixed income unit trust funds, the benchmark of Maybank 12-months fixed deposit rate is used as a yardstick to evaluate the performance of the funds only as the investors of the funds may assume a higher risk than a depositor of the Maybank's 12-months fixed deposit rate, as there is a fixed level of returns known for the placement of fixed deposit, whilst there is no fixed level of returns for the fixed income unit trust funds. In addition, placement of deposits may be insured by the *Perbadanan Insurans Deposit Malaysia* ("the PIDM") as compared to investment in the unit trust funds which is not insured by the PIDM. Moreover the rationale for this is that the funds are essentially managed in a fairly conservative manner with the primary aim of outperforming fixed deposit returns.

b) Equity unit trust funds:

The Kuala Lumpur index (KLCI) is a value weighted market based index of 100 Malaysian companies listed in Bursa Malaysia. Thus it is used in this study as the benchmark for market returns in comparison to fixed income unit trust funds, overall sample of equity unit trust funds, growth equity unit trust funds, and value equity unit trust funds.

Table 3.1
Fixed Income Unit Trust Funds Inception Dates, Total Assets and Benchmarks

Funds	Inception Date	Total Assets (RM'000) (As At 30/11/2012)	Benchmark used by the funds
1 Affin Capital	12/03/2001	35,110	Maybank 12-months fixed deposit rate
2 Alliance Moneyplus	27/12/2001	1,702	RAM Quantshop MGS Medium index
3 AMB Lifestyle trust	28/10/2004	6,073	RAM Quantshop GII Medium index
4 AmBond	20/01/2000	1,060,000	RAM Quantshop MGS All index
5 AmBon Islam	26/11/2001	204,625	RAM Quantshop GII Medium index
6 AmDynamic bond	16/09/2003	422,080	RAM Quantshop MGS All index
7 Libra Bond Extra	08/10/2002	88,840	Maybank 12-months fixed deposit rate
8 Libra Money Extra	08/10/2002	210,740	Average repurchase agreement (Repo) rate
9 Libra Asnita Bond	18/03/2005	113,920	Maybank's 6-months General Investment Account rate
10 CIMB Principal bond	15/11/2005	813,380	RAM Quantshop MGS Bond index
11 CIMB Strategic bond	23/03/2004	123,290	RAM Quantshop MGS Bond index
12 CIMB Islamic Enhanced Sukuk	23/02/2005	36,270	CIMB Islamic 1-Month General Investment Account-i (GIA)
13 CIMB Islamic Sukuk	08/10/2004	103,680	RAM Quantshop GII Medium index
14 Hong Leong Bond	05/12/2001	483,620	RAM Quantshop MGS Bond (Short) Index.
15 Hong Leong Institutional Bond	15/09/2005	368,220	12-Month Kuala Lumpur Interbank Offer Rate KLIBOR
16 HwangDBS Select Bond	28/07/2003	488,850	Maybank 12-months fixed deposit rate
17 HwangDBS AIIMAN Income Plus	28/06/2004	257,080	Maybank 12-months fixed deposit rate
18 Kenanga Bond	29/07/2002	7,370	Maybank 12-months fixed deposit rate
19 MAAKL Bond	31/01/2002	168,360	5-Year MGS Bond Index
20 OSK-UOB Income	26/02/2003	72,090	Maybank 12-months fixed deposit rate
21 Pacific Dana Murni	25/03/2003	66,600	Maybank's 12-months General Investment Account rate
22 Pacific Select Income	08/11/2003	8,890	3-Month Kuala Lumpur Interbank Offer Rate KLIBOR
23 Pheim Income fund	28/01/2002	14,200	Maybank 12-months fixed deposit rate
24 Public Institutional Bond	30/04/2003	1,730,000	Corporate Bond Index - 1year and above
25 Public Enhanced bond	19/01/2005	299,650	Maybank 12-months fixed deposit rate
26 Public Select Bond	22/11/2005	1,510,000	Maybank 12-months fixed deposit rate
27 Eastpring Investments Dana al-Islah	14/08/2002	23,180	RAM Quantshop MGS short index
28 Eastpring Investments Dana Wafi	21/02/2005	15,550	RAM Quantshop MGS Medium index
29 Eastpring Investments Bond	29/05/2001	235,960	RAM Quantshop MGS Medium index
30 Eastpring Investment Institutional Income	29/03/2005	1,070,000	Maybank 12-months fixed deposit rate
31 RHB Isamic Bond	25/08/2000	39,970	Maybank's 12-months General Investment Account rate

Table 3.2
Overall Equity Unit Trust Funds Inception Dates, Total Assets and Benchmarks

	Funds	Inception Date	Total Assets (RM'000) (As At 30/11/2012)	Benchmark used by the funds
1	Affin Equity	27/06/2004	4,830	FTSE Bursa Malaysia KLCI
2	Alliance Dana Adib	25/02/2004	68,940	FTSE Bursa Malaysia Emas Shariah
3	Alliance Optimal income	29/07/2004	14,850	FTSE Bursa Malaysia KLCI
4	Alliance Tactical Growth	29/07/2004	31,150	FTSE Bursa Malaysia Emas Shariah
5	AMB Dividend Income	28/03/2005	59,150	FTSE Bursa Malaysia KLCI
6	AMB Ethical Trust	04/12/2002	30,280	FTSE Bursa Malaysia Emas Shariah
7	AMB Smallcap	11/02/2004	102,92	FTSE Bursa Malaysia Small Cap
8	AmIslamic Growth	10/09/2004	20,590	FTSE Bursa Malaysia Emas Shariah
9	Apex al-Sofi	28/08/2003	83,510	FTSE Bursa Malaysia Emas Shariah
10	CIMB Islamic Equity	08/10/2004	47,890	FTSE Bursa Malaysia Emas Shariah
11	CIMB Islamic Small cap	30/04/2003	146,390	FTSE Bursa Malaysia Small Cap
12	CIMB Principal Equity Aggressive fund 1	18/08/2004	118,350	FTSE Bursa Malaysia KLCI
13	CIMB Principal Equity Growth	01/10/2003	27,820	FTSE Bursa Malaysia KLCI
14	CIMB Principal Equity Income	01/10/2003	44,450	FTSE Bursa Malaysia KLCI
15	CIMB Principal Small cap	20/04/2004	97,290	FTSE Bursa Malaysia Small Cap
16	Eastpring Investment Dana Dinamik	25/02/2004	38,330	FTSE Bursa Malaysia Emas Shariah
17	Eastpring Investment Equity Income	18/10/2004	64,060	FTSE Bursa Malaysia KLCI
18	Eastpring Investments Asia Pacific Equity	21/07/2005	79,930	MSCI AC World Index
19	Eastpring Investments Dynamic	06/11/2003	34,430	FTSE Bursa Malaysia KLCI
20	Eastpring Investments Growth	29/05/2001	107,800	FTSE Bursa Malaysia KLCI
21	Eastpring Investments Small-cap	29/05/2001	40,500	FTSE Bursa Malaysia Small Cap
22	Hong Leong Consumer Product Sector fund	25/07/2000	39,960	Bursa Malaysia Consumer Product
23	Hong Leong Dana Makmur	02/10/2001	12,540	FTSE Bursa Malaysia Emas Shariah
24	Hong Leong Dividend Fund	22/12/2004	33,870	FTSE Bursa Malaysia KLCI
25	Hong Leong Penny Stock	12/03/1999	99,990	FTSE Bursa Malaysia Emas Shariah
26	HwangDBS AIIMAN Growth	08/10/2002	93,260	FTSE Bursa Malaysia KLCI
27	HwangDBS Asia Quantum	15/04/2004	44,050	MSCI Asia Pacific
28	HwangDBS Select Opportunity fund	07/09/2001	247,380	FTSE Bursa Malaysia KLCI
29	Kenanga Islamic Fund	29/07/2002	78,100	FTSE Bursa Malaysia Emas Shariah
30	Kenanga Syariah Growth	08/01/2002	17,280	FTSE Bursa Malaysia Emas Shariah
31	Libra Dividend Extra	03/05/2005	50,670	FTSE Bursa Malaysia KLCI
32	MAAKL al-Faid	12/06/2003	179,850	FTSE Bursa Malaysia Emas Shariah
33	MAAKL al-Fauzan	09/06/2005	224,030	FTSE Bursa Malaysia Emas Shariah
34	MAAKL growth	31/01/2002	33,590	FTSE Bursa Malaysia Emas Shariah
35	MAAKL Pacific fund	09/06/2005	26,860	MSCI Asia Pacific
36	MAAKL Progress fund	31/01/2002	58,460	FTSE Bursa Malaysia KLCI
37	MAAKL Regular saving fund	26/08/2004	26,140	FTSE Bursa Malaysia KLCI
38	MAAKL Value fund	15/10/1998	71,360	FTSE Bursa Malaysia Emas Shariah
39	OSK-UOB Asia Pacific	01/06/2006	10,310	MSCI Asia Pacific
40	OSK-UOB Dana Islam	26/10/2001	4,860	FTSE Bursa Malaysia Emas Shariah
41	OSK-UOB Global Equity Yield Fund	09/11/2005	16,590	MASCI AC World
42	Pacific Asia Brand	20/01/2006	17,030	MASCI AC World
43	Pacific Dana Aman	16/04/1998	163,020	FTSE Bursa Malaysia Emas Shariah
44	Pacific Focus18	16/06/2005	11,190	MSCI AC World
45	Pacific Milennium Fund	15/04/1999	38,020	FTSE Bursa Malaysia KLCI
46	Pacific Premier Fund	10/08/1995	78,930	FTSE Bursa Malaysia KLCI
47	Public Dividend Select	03/05/2005	1,090,000	FTSE Bursa Malaysia KLCI
48	Public Equity	15/08/2001	831,130	FTSE Bursa Malaysia KLCI
49	Public Far-East Select	22/11/2005	328,400	MSCI AC World
50	Public Focus Select	25/11/2004	436,350	FTSE Bursa Malaysia KLCI
51	Public Small cap	13/06/2000	867,330	FTSE Bursa Malaysia Small Cap
52	RHB Dividend Valued equity Fund	13/07/2005	36,780	MSCI Asia Pacific
53	RHB Islamic Growth	26/01/2004	6,370	FTSE Bursa Malaysia Emas Shariah
54	TA High growth	07/06/2004	7,560	FTSE Bursa Malaysia KLCI
55	TA Islamic fund	20/04/2001	97,510	FTSE Bursa Malaysia Emas Shariah
56	TA Small cap	09/02/2004	13,210	FTSE Bursa Malaysia Small Cap
57	TA South East Asia Equity Fund	28/11/2005	122,390	MSCI Asia Pacific

Table 3.3
Growth Equity Unit Trust Funds Inception Dates, Total Assets and Benchmarks

Funds	Inception Date	Total Assets (RM'000) (As At 30/11/2012)	Benchmark used by the funds
1 Alliance Tactical Growth	29/07/2004	31,150	FTSE Bursa Malaysia Emas Shariah
2 Alliance Dana Adib	25/02/2004	68,940	FTSE Bursa Malaysia Emas Shariah
3 AMB Smallcap	11/02/2004	102,92	FTSE Bursa Malaysia Small Cap
4 AmIslamic Growth	10/09/2004	20,590	FTSE Bursa Malaysia Emas Shariah
5 Apex al-Sofi	28/08/2003	83,510	FTSE Bursa Malaysia Emas Shariah
6 CIMB Principal Small cap	20/04/2004	97,290	FTSE Bursa Malaysia Small Cap
7 CIMB Principal Equity Growth	01/10/2003	27,820	FTSE Bursa Malaysia KLCI
8 CIMB Principal Equity Aggressive fund 1	18/08/2004	118,350	FTSE Bursa Malaysia KLCI
9 CIMB Islamic Equity	08/10/2004	47,890	FTSE Bursa Malaysia Emas Shariah
10 CIMB Islamic Small cap	30/04/2003	146,390	FTSE Bursa Malaysia Small Cap
11 HwangDBS Select Opportunity fund	07/09/2001	247,380	FTSE Bursa Malaysia KLCI
12 HwangDBS AIIMAN Growth	08/10/2002	93,260	FTSE Bursa Malaysia KLCI
13 HwangDBS Asia Quantum	15/04/2004	44,050	MSCI Asia Pacific Small Cap
14 Kenanga Islamic Fund	29/07/2002	78,100	FTSE Bursa Malaysia Emas Shariah
15 Kenanga Syariah Growth	08/01/2002	17,280	FTSE Bursa Malaysia Emas Shariah
16 MAAKL growth	31/01/2002	33,590	FTSE Bursa Malaysia Emas Shariah
17 MAAKL Progress fund	31/01/2002	58,460	FTSE Bursa Malaysia KLCI
18 MAAKL al-Faid	12/06/2003	179,850	FTSE Bursa Malaysia Emas Shariah
19 MAAKL Value fund	15/10/1998	71,360	FTSE Bursa Malaysia Emas Shariah
20 MAAKL Regular saving fund	26/08/2004	26,140	FTSE Bursa Malaysia KLCI
21 MAAKL Pacific fund	09/06/2005	26,860	MSCI Asia Pacific Index
22 OSK-UOB Dana Islam	26/10/2001	4,860	FTSE Bursa Malaysia Emas Shariah
23 OSK-UOB Asia Pacific	01/06/2006	10,310	MSCI Asia Pacific Index
24 Pacific Focus18	16/06/2005	11,190	MSCI AC World Index
25 Pacific Asia Brand	20/01/2006	17,030	MSCI AC World Index
26 Public Small cap	13/06/2000	867,330	FTSE Bursa Malaysia Small Cap
27 Public Equity	15/08/2001	831,130	FTSE Bursa Malaysia KLCI
28 Public Focus Select	25/11/2004	436,350	FTSE Bursa Malaysia KLCI
29 Public Far-East Select	22/11/2005	328,400	MSCI AC World Index
30 Eastpring Investments Small-cap	29/05/2001	40,500	FTSE Bursa Malaysia Small Cap
31 Eastpring Investments Growth	29/05/2001	107,800	FTSE Bursa Malaysia KLCI
32 Eastpring Investments Dynamic	06/11/2003	34,430	FTSE Bursa Malaysia KLCI
33 Eastpring Investments Asia Pacific Equity	21/07/2005	79,930	MSCI AC World Index
34 RHB Islamic Growth	26/01/2004	6,370	FTSE Bursa Malaysia Emas Shariah
35 TA Islamic fund	20/04/2001	97,510	FTSE Bursa Malaysia Emas Shariah
36 TA Small cap	09/02/2004	13,210	FTSE Bursa Malaysia Small Cap
37 TA High growth	07/06/2004	7,560	FTSE Bursa Malaysia KLCI

Table 3.4
Value Equity Unit Trust Funds Inception Dates, Total Assets and Benchmarks

	Funds	Inception Date	Total Assets (RM'000) (As At 30/11/2012)	Benchmark used by the funds
1	Affin Equity	27/6/2007	4,830	FTSE Bursa Malaysia KLCI
2	Alliance Optimal income	29/07/2004	14,850	FTSE Bursa Malaysia KLCI
3	AMB Ethical Trust	04/12/2002	30,280	FTSE Bursa Malaysia Emas Shariah
4	AMB Dividend Income	28/03/2005	59,150	FTSE Bursa Malaysia KLCI
5	CIMB Principal Equity Income	01/10/2003	44,450	FTSE Bursa Malaysia KLCI
6	Hong Leong Penny Stock	12/03/1999	99,990	FTSE Bursa Malaysia Emas Shariah
7	Hong Leong Consumer Product Sector fund	25/07/2000	39,960	Bursa Malaysia Consumer Product
8	Hong Leong Dana Makmur	02/10/2001	12,540	FTSE Bursa Malaysia Emas Shariah
9	Hong Leong Dividend Fund	22/12/2004	33,870	FTSE Bursa Malaysia KLCI
10	Libra Dividend Extra	03/05/2005	50,670	FTSE Bursa Malaysia KLCI
11	MAAKL al-Fauzan	09/06/2005	224,030	FTSE Bursa Malaysia Emas Shariah
12	OSK-UOB Global Equity Yield Fund	09/11/2005	16,590	MSCI AC World Index
13	Public Dividend Select	03/05/2005	1,090,000	FTSE Bursa Malaysia KLCI
14	Pacific Premier Fund	10/08/1995	78,930	FTSE Bursa Malaysia KLCI
15	Pacific Dana Aman	16/04/1998	163,020	FTSE Bursa Malaysia Emas Shariah
16	Pacific Milennium Fund	15/04/1999	38,020	FTSE Bursa Malaysia KLCI
17	Eastpring Investment Dana Dinamik	25/02/2004	38,330	FTSE Bursa Malaysia Emas Shariah
18	Eastpring Investment Equity Income	18/10/2004	64,060	FTSE Bursa Malaysia KLCI
19	RHB Dividend Valued equity Fund	13/07/2005	36,780	MSCI Asia Pacific
20	TA South East Asia Equity Fund	28/11/2005	122,390	MSCI Asia Pacific

3.3 Method

In order to answer the first objective of this study, the returns and risks of the sample are calculated. There are three performance measures used to calculate their returns. There are Treynor (1965), Sharpe (1966), and Jensen (1968).

Treynor (1965) analyses the performance of 57 open-ended unit trust funds covering the period of 1953 to 1962. The findings reveal that investors in unit trust funds rely on the variability of the market index. He concludes that fund managers of the 57 funds do not outperform the market. The Treynor ratio uses a systematic risk component of the portfolio's return as measured by (β_i) (portfolio's beta coefficient) in relation to market portfolio's return. It also evaluates the ability of a portfolio to

get an excess return that has been adjusted for systematic risk. The Treynor ratio is quite similar to the Sharpe ratio except for risk evaluate. The Treynor index can be calculated as follows:

$$T_i = \frac{R_i - R_f}{\beta_i} \quad (1)$$

Where:

R_i = average return on fund i
R_f = average return on Malaysian 3-month Treasury Bills[1]
β_i = Beta of the unit trust fund over the evaluation period or the slope of the fund's characteristic line during the selected period (indicating the fund's relative volatility)

Since the reported Treasury bill rate is an annualized holding period yield on a 3-month Treasury bill, this rate is converted to a weekly equivalent, consistent with the weekly returns of the unit trust funds and the market's return. Essentially, the formula to compute the estimation of weekly equivalents of the annualized yield is $(1 + Annualized\ Yield)^{1/52} - 1$ as a geometric mean.

Sharpe (1966) proposes a composite measure to evaluate performance of unit trust funds. Rather than just looking at systematic risk(β_i), total risk of the portfolio represented by standard deviation of return is utilized (Reilly & Brown, 2009). The Sharpe ratio utilizes a standard deviation which evaluates the total risk including systematic risk and unsystematic risk while Treynor ratio only uses the component of systematic risk. Meanwhile, Sharpe ratio is a measure of excess return per unit of risk. It measures reward-to-risk of a portfolio. Higher Sharpe ratio indicates better risk-adjusted performances of the unit trust funds. Therefore, the ratio looks at both, returns and risk, and delivers a single measure that is proportional to the risk-

[1] The proxy used to represent the risk free rate of return is the average yield on 3-month Malaysian Treasury Bills.

adjusted returns. It is also considered to be useful for investors as it could evaluate fund performance by looking at the amount of risk involved. Even though a particular fund could present superior return, it would only be regarded as superior investment if there is less risk involved to generate such return. Higher Sharpe ratio indicates better risk-adjusted performances of the fund. If the Sharpe ratio is negative, it indicates that a risk-less asset would be a better option than the analysed fund scheme. The formula to measure the Sharpe index is as follows:

$$S_i = \frac{R_i - R_f}{\sigma_i} \tag{2}$$

Where:

R_i = average return on fund i
R_f = average return on Malaysian 3-month Treasury Bills
σ_i = standard deviation (total risk) of returns for fund

The average weekly returns of fund i (R_i) for Treynor and Sharpe are calculated based on the following formula:

$$R_{it} = \frac{NAV_{it} - NAV_{it-1}}{NAV_{it-1}} \tag{3}$$

Where:

R_{it} = Return of fund i in period $_t$
NAV_{it} = Net Asset Value of fund i in period $_t$
NAV_{it-1} = Net Asset Value of fund i in period $_{t-1}$

Jensen's (1968) performance measure is based on the capital asset pricing model (CAPM). Both Treynor and Sharpe performance measure only provide relative performance rankings (Reilly & Brown, 2009). A major advantage of Jensen method is that it corrects for market risk and primarily evaluates security selection skill, market timing skill or the combination of the skills of the fund manager. It is also

easy to understand and to interpret the results. For example, an alpha value of 0.03 indicates that the fund has generated a return of 3% under the period of evaluation. The equation below is used to measure the Jensen index:

$$R_{it} - RFR = \alpha_i + \beta_i(R_M - RFR) + \check{e}_{it} \quad (4)$$

Where:

$R_{it} - RFR$ = Excess return of portfolio i in period t
$(R_M - RFR)$ = Excess return of market portfolio proxied by KLCI index
α_i = Jensen's alpha to measure portfolio performance
β_i = The systematic risk (beta) for Portfolio i
$\check{e}_{it}$ = The random error term

The α_i value indicates whether the portfolio manager is superior or inferior in market timing and or stock selection to beat the market. A significant positive α_i indicates that a fund has superior performance because of consistent differences as the fund manager has the ability to beat the market with his stock picking skills. Meanwhile, a significant negative α_i provides inferior performance of funds because its return is not above the expectation of capital asset pricing model that results in consistent negative differences (Lai & Lau, 2010). The higher the value of a fund means the better the performance of it. As for a retail investor, the α_i value is significant because it measures the excess returns a fund generates in relation to the returns generated by its benchmark.

The average weekly risks of fund i for Treynor and Sharpe are calculated based on the following formula. The equation of standard deviation is shown:

$$Standard\ Deviation, \sigma = \sqrt{\frac{\sum(R - \bar{R})^2}{(n-1)}} \quad (5)$$

Where:

σ = The Standard deviation on portfolio i
R = Return of a fund
$\bar{R}$ = Mean Return of the fund
n = Number of weekly returns

There are two ways to measure risk in this study. The said measures are standard deviation and beta. As mentioned above, standard deviation evaluates the total risk of the funds. For the calculation of systematic risk(β_i), the slope coefficient, in the regression of the fund rate of return on the market rate of return is used. Similarly, it is calculated by dividing the covariance of the fund returns and the market returns by the standard deviation:

$$\beta_{(fund\ i)} = Cov_{(fund\ i,KLCI)} / \sigma^2_{KLCI} \quad (6)$$

Weekly returns on the KLCI are used as benchmarks to proxy for the market returns.

To answer part of objective 1 that is to compare the performance between fixed income unit trust funds and equity unit trust funds, a Wilcoxon signed-ranked test is executed. As the distribution of the sample is not normal, this test is used.

3.4 Hypothesis

The study compares the risk adjusted return for fixed income unit trust funds with the risk adjusted return for equity unit trust funds. Thus the following hypothesis is proposed:

H_{10} : The risk adjusted performance of fixed income unit trust funds is not different from the performance of equity unit trust funds.

H_{1A} : The risk adjusted performance of fixed income unit trust funds varies from the performance of equity unit trust funds.

H_{20} : The risk adjusted performance of fixed income unit trust funds is not different from the performance of market benchmark.

H_{2A} : The risk adjusted performance of fixed income unit trust funds varies from the performance of market benchmark.

H_{30} : The risk adjusted performance of equity unit trust funds is not different from the performance of market benchmark.

H_{3A} : The risk adjusted performance of equity unit trust funds varies from the performance of market benchmark.

CHAPTER 4

ANALYSIS AND FINDINGS

4.1 Introduction

This chapter provide the analysis and findings of the study. The performance of fixed income unit trust funds is compared to equity unit trust funds. The performances of both types of funds are then compared to the market benchmark to determine whether they outperformed the market benchmark. The performance comparisons are made over several categories of equity sample namely overall equity, growth equity and value equity. The Kuala Lumpur Composite Index (KLCI) is used as the market benchmark for equity unit trust funds and fixed income unit trust funds with additional market benchmark of Maybank 12-months fixed deposit. A total of 31 fixed income unit trust funds and 57 overall equity sample broken into subsample namely 37 growth equity and 20 value equity unit trust funds are evaluated by using three performance measures namely Treynor index, Sharpe index and Jensen index.

4.2 Results of the Study

Table 4.1 provides the return, risk and performance measures of the fixed income unit trust funds. Table 4.2 consists of return, risk and performance measures for the overall equity unit trust funds. Table 4.3 indicates the return, risk and performance measures for the growth equity unit trust funds, and Table 4.4 provides the return, risk and performance measures of the value equity unit trust funds.

Table 4.1 shows the return, risk and performance measures for the fixed income unit trust funds. The first group of analysis uses KLCI and additional benchmark of

Maybank 12-months fixed deposit as a market index for fixed income unit trust funds. The fund's standard deviations range from 0.0135% to 0.9449% as compared to the standard deviation of benchmark KLCI which is 2.0311% and Maybank 12-months fixed deposit which is 0.0091%. Standard deviations of the weekly return for all funds are below those of the KLCI benchmark funds. The fund with the highest standard deviation is HwangDBS AIIMAN Income Plus with a weekly standard deviation of 0.9449%. The fund with the superior mean return is AmDynamic Bond with an average weekly return of 0.1754%. The average weekly return for all the fixed income unit trust funds is 0.0903%. In comparison, the average weekly return of the benchmark KLCI is 0.1958% and Maybank 12-months fixed deposit is 0.0626%. All betas for the funds are lower than the benchmark KLCI index of 1.0. The average value of beta is 0.0471, which is close to zero. This shows that fluctuations in market returns have a very low impact on the prices of the fixed income unit trust funds.

Table 4.1
Weekly Performance Measures for Fixed Income Unit Trust Funds: January 2006 – October 2012

	Funds	MEAN (%)	SD(%)	Sharpe	Beta	Treynor	Jensen
1	Affin Capital	0.0619	0.2666	0.0233	-0.0009	-0.0694	0.0001
2	Alliance Moneyplus	0.0709	0.3853	0.0396	0.0488	0.0031	0.0001
3	AMB Lifestyle trust	0.0925	0.6587	0.0560	0.0765	0.0048	0.0003
4	AmBond	0.0973	0.3148	0.1323	0.0128	0.0325	0.0004
5	AmBon Islam	0.0960	0.3632	0.1112	0.0136	0.0296	0.0004
6	AmDynamic bond	0.1754	0.4094	0.2924	0.0122	0.0978	0.0012
7	Libra Bond Extra	0.0751	0.4094	0.0218	0.0195	0.0100	0.0002
8	Libra Money Extra	0.0604	0.0443	0.1071	-0.0002	-0.2190	0.0000
9	Libra Asnita Bond	0.0702	0.5021	0.0290	0.0070	0.0208	0.0001
10	CIMB Principal bond	0.0968	0.2276	0.1809	0.0088	0.0470	0.0004
11	CIMB Strategic bond	0.1115	0.4990	0.1120	0.0729	0.0077	0.0005
12	CIMB Islamic Enhanced Sukuk	0.1166	0.4969	0.1226	0.2078	0.0029	0.0003
13	CIMB Islamic Sukuk	0.0822	0.2372	0.1119	0.0042	0.0628	0.0003
14	Hong Leong Bond	0.0963	0.5503	0.0738	0.0109	0.0371	0.0004
15	Hong Leong Institutional Bond	0.0621	0.0653	0.0989	0.0007	0.0894	0.0001
16	HwangDBS Select Bond	0.1190	0.2796	0.2264	0.0182	0.0348	0.0006
17	HwangDBS AIIMAN Income Plus	0.1547	0.9449	0.1049	0.3748	0.0026	0.0005
18	Kenanga Bond	0.0923	0.1263	0.2904	0.0054	0.0680	0.0004
19	MAAKL Bond	0.0792	0.3309	0.0711	0.0046	0.0511	0.0002
20	OSK-UOB Income	0.0847	0.7132	0.0408	-0.0308	-0.0094	0.0003
21	Pacific Dana Murni	0.0662	0.1277	0.0826	0.0013	0.0795	0.0001
22	Pacific Select Income	0.0882	0.4620	0.0704	0.2046	0.0016	0.0000
23	Pheim Income fund	0.0976	0.3567	0.1175	0.0695	0.0060	0.0003
24	Public Institutional Bond	0.0657	0.1202	0.0836	0.0005	0.2201	0.0001
25	Public Enhanced bond	0.1006	0.4899	0.0917	0.1524	0.0029	0.0002
26	Public Select Bond	0.0844	0.1424	0.2018	0.0059	0.0488	0.0003
27	Eastpring Investments Dana al-Islah	0.1222	0.5894	0.1128	0.1506	0.0044	0.0005
28	Eastpring Investments Dana Wafi	0.0725	0.2058	0.0818	0.0021	0.0805	0.0002
29	Eastpring Investments Bond	0.0658	0.3424	0.0295	-0.0002	-0.6221	0.0001
30	Eastpring Investment Institutional Income	0.0472	0.0135	-0.6232	-0.0002	0.4222	-0.0001
31	RHB Isamic Bond	0.0934	0.5233	0.0721	0.0069	0.0544	0.0004
	Average	0.0903	0.3612	0.0828	0.0471	0.0194	0.0003
	KLCI	0.1958	2.0311	0.0690	1.0000	0.0014	0.0000
	Maybank 12-month Fixed Deposit	0.0626	0.0091	0.7636	1.0000	0.0001	0.0000
	Malaysia 90-day T-Bills	0.0556	0.0001	0.0000	-0.0006	0.0000	0.0000

On average, the Malaysian 90-day Treasury Bills has lower return compared to KLCI and Maybank 12-months fixed deposit. The lower return is consistent with its standard deviation and β or the systematic risk which are 0.0001 and -0.0006, respectively.

Based on the Treynor measures, 27 out of the 31 funds outperform the KLCI index and Maybank 12-months fixed deposit which are 0.0014 and 0.0001, respectively. The fund with the highest Treynor measure of 0.4222 is Eastpring Investment Institutional Income.

The Sharpe measure results point out that 23 out of the 31 funds outperform the market index that shows 0.0690 while only 19 funds outperform the Maybank 12-months fixed deposit. The fund that indicates the highest Sharpe measure is AmDynamic Bond with a Sharpe measure of 0.2924. All funds have Jensen's alphas which are above the KLCI benchmark and Maybank 12-months fixed deposit except for Eastpring Investment Institutional Income that has a Jensen measure of -0.0001. The result is consistent to that reported by Annuar (1997), Chua (1985), and Ong (2000) as evidence on the outperformance of unit trust funds in Malaysia and the work of Swinkels and Rzezniczak (2009) in Western countries. Thus even thought returns without adjusting for risk are lower for fixed income unit trust funds, risk-adjusted returns are higher for fixed income unit trust funds as compared to the market portfolio.

Table 4.2 shows the performances of overall (growth and value) equity unit trust funds used in this study. The fund with the superior mean return is MAAKL Value fund with an average weekly return of 0.3345%. The average weekly return for all the equity unit trust funds is 0.1791%. In comparison, the average weekly return of the benchmark KLCI is 0.1958%. There are 28 out of 57 funds having higher than the KLCI return, which shows that the performance of equity unit trust funds is similar to that of KLCI.

Results shown in Tables 4.2, 4.3, and 4.4 indicate that the standard deviations of equity unit trust funds are higher than fixed income unit trust funds. Moreover, the standard deviation of fixed income unit trust funds and equity unit trust funds varies widely. The result shows that fixed income unit trust funds possess a lower total risk and market risk with standard deviations being lower than 1% as compared to equity unit trust funds. The results also indicate that the average betas for fixed income unit trust funds are below the benchmark beta of 1.0.

Table 4.2
Weekly Performance Measures for Overall Equity Unit Trust Funds: January 2006 – October 2012

	Funds	MEAN (%)	SD(%)	Sharpe	Beta	Treynor	Jensen
1	Affin Equity	0.1581	1.8683	0.0548	0.8570	0.0012	-0.0002
2	Alliance Dana Adib	0.2129	1.6693	0.0942	0.7228	0.0022	0.0006
3	Alliance Optimal income	0.0431	1.5850	-0.0079	0.7035	-0.0002	0.0003
4	Alliance Tactical Growth	0.1983	2.1208	0.0672	0.9018	0.0016	0.0002
5	AMB Dividend Income	-0.0336	1.2663	-0.0705	-0.0105	0.0847	-0.0009
6	AMB Ethical Trust	0.1430	2.2497	0.0388	0.2852	0.0031	0.0010
7	AMB Smallcap	0.1531	1.8905	0.0516	0.6544	0.0015	0.0001
8	AmIslamic Growth	0.2154	1.8229	0.0876	0.8045	0.0020	0.0005
9	Apex al-Sofi	0.2231	1.8177	0.0921	0.7810	0.0021	0.0006
10	CIMB Islamic Equity	0.2194	2.2241	0.0736	0.9426	0.0017	0.0003
11	CIMB Islamic Small cap	0.2507	2.6581	0.0734	1.0224	0.0019	0.0005
12	CIMB Principal Equity Aggressive fund 1	0.2320	2.1387	0.0825	0.9003	0.0020	0.0005
13	CIMB Principal Equity Growth	0.1899	2.4412	0.0550	1.0448	0.0013	-0.0001
14	CIMB Principal Equity Income	0.0485	2.4321	-0.0029	0.9978	-0.0001	0.0005
15	CIMB Principal Small cap	0.2779	2.8423	0.0782	1.1186	0.0020	0.0007
16	Eastpring Investment Dana Dinamik	0.1876	1.3751	0.0959	0.5557	0.0024	0.0016
17	Eastpring Investment Equity Income	0.1471	1.4635	0.0625	0.6815	0.0013	0.0013
18	Eastpring Investments Asia Pacific Equity	0.0687	2.6227	0.0050	0.9106	0.0001	-0.0011
19	Eastpring Investments Dynamic	0.1656	1.5138	0.0726	0.6272	0.0018	0.0002
20	Eastpring Investments Growth	0.2303	2.0223	0.0864	0.9478	0.0018	0.0004
21	Eastpring Investments Small-cap	0.2668	2.7756	0.0761	0.9482	0.0022	0.0008
22	Hong Leong Consumer Product Sector fund	0.2935	1.3259	0.1794	0.2983	0.0080	0.0025
23	Hong Leong Dana Makmur	0.1044	1.9884	0.0245	0.5121	0.0010	-0.0009
24	Hong Leong Dividend Fund	0.0888	1.9745	0.0168	0.4795	0.0007	-0.0009
25	Hong Leong Penny Stock	0.1475	2.2663	0.0405	0.5505	0.0017	0.0007
26	HwangDBS AIIMAN Growth	0.2762	1.7301	0.1275	0.7579	0.0029	0.0011
27	HwangDBS Asia Quantum	0.3000	2.1551	0.1134	0.7556	0.0032	0.0014
28	HwangDBS Select Opportunity fund	0.2664	2.1171	0.0996	0.8671	0.0024	0.0009
29	Kenanga Islamic Fund	0.2859	2.5362	0.0908	1.0347	0.0022	0.0009
30	Kenanga Syariah Growth	0.3241	1.5141	0.1773	0.6607	0.0041	0.0018
31	Libra Dividend Extra	0.1639	1.5641	0.0692	0.6226	0.0017	0.0002
32	MAAKL al-Faid	0.2405	1.6526	0.1118	0.7503	0.0025	0.0008
33	MAAKL al-Fauzan	0.1576	2.7375	0.0372	0.3194	0.0032	0.0012
34	MAAKL growth	0.3191	2.9559	0.0891	0.8165	0.0032	0.0015
35	MAAKL Pacific fund	0.0710	3.0541	0.0050	1.0100	0.0002	-0.0013
36	MAAKL Progress fund	0.3309	3.5061	0.0785	0.7816	0.0035	0.0017
37	MAAKL Regular saving fund	0.2738	2.6952	0.0810	0.8927	0.0024	0.0009
38	MAAKL Value fund	0.3345	3.4449	0.0809	0.8077	0.0035	0.0017
39	OSK-UOB Asia Pacific	-0.0652	2.9272	-0.0413	0.9625	-0.0013	-0.0026
40	OSK-UOB Dana Islam	0.2215	1.8717	0.0886	0.7738	0.0021	0.0006
41	OSK-UOB Global Equity Yield Fund	-0.0742	2.1650	-0.0600	0.5561	-0.0023	-0.0010
42	Pacific Asia Brand	0.0052	2.1316	-0.0236	0.7250	-0.0007	-0.0015
43	Pacific Dana Aman	0.1027	1.8615	0.0253	0.4688	0.0010	0.0007
44	Pacific Focus18	0.1042	1.9612	0.0248	0.7663	0.0006	-0.0006
45	Pacific Milennium Fund	0.0787	2.0630	0.0112	0.4703	0.0005	0.0005
46	Pacific Premier Fund	0.0862	2.0882	0.0146	0.5090	0.0006	0.0006
47	Public Dividend Select	0.2559	1.6440	0.1218	0.4297	0.0047	0.0022
48	Public Equity	0.2432	2.3022	0.0815	1.0122	0.0019	0.0005
49	Public Far-East Select	0.1280	3.1446	0.0230	1.1628	0.0006	-0.0009
50	Public Focus Select	0.2736	1.8986	0.1148	0.8229	0.0026	0.0010
51	Public Small cap	0.3169	2.0085	0.1301	0.7679	0.0034	0.0015
52	RHB Dividend Valued equity Fund	0.0248	2.6353	-0.0117	0.5519	-0.0006	0.0000
53	RHB Islamic Growth	0.1945	2.0174	0.0688	0.8997	0.0015	0.0001
54	TA High growth	0.2403	2.2390	0.0825	0.9409	0.0020	0.0005
55	TA Islamic fund	0.1879	1.8735	0.0706	0.7626	0.0017	0.0003
56	TA Small cap	0.1515	1.8997	0.0505	0.6708	0.0014	0.0000
57	TA South East Asia Equity Fund	0.1579	2.9094	0.0352	0.6468	0.0016	0.0014
	Average	0.1791	2.1695	0.0596	0.7406	0.0032	0.0004
	KLCI	0.1958	2.0311	0.0690	1.0000	0.0014	0.0000
	Malaysia 90-day T-Bills	0.0556	0.9851	0.0000	-0.0602	0.0000	-0.0032

The standard deviations of the Malaysian 90-day Treasury Bill were lower than the KLCI and average standard deviations of 57 equity funds, 37 growth equity funds and 20 value equity unit trust funds as shown in Table 4.2, 4.3 and 4.4. This is also observed in its beta and mean returns.

As shown in Table 4.2, standard deviations for overall equity unit trust funds ranged from 1.3259% to 3.5061% where MAAKL Progress fund has the highest standard deviation. Meanwhile MAAKL Value fund present a superior return of 0.3345% as compared to the mean benchmark of 0.1958%. Half of the funds average returns outperformed the KLCI.

In term of Treynor index, 38 out of 57 overall equity unit trust funds outperformed the market index KLCI with a Treynor measure of 0.0014. As for Sharpe measure, 30 out of 57 overall equity unit trust funds outperformed the market return. The fund with the highest Sharpe measure as well as Jensen measure is Hong Leong Consumer Product Sector fund with a Sharpe measure of 0.1794 as compared of the Sharpe measure of market index which is 0.0690 and Jensen alpha of 0.0025. The Jensen's alpha for the fund ranged from -0.0026 to 0.0025.

Table 4.3

Weekly Performance Measures for Growth Equity Unit Trust Funds: January 2006 – October 2012

	Funds	MEAN (%)	SD(%)	Sharpe	Beta	Treynor	Jensen
1	Alliance Tactical Growth	0.1983	2.1208	0.0672	0.9018	0.0016	0.0002
2	Alliance Dana Adib	0.2129	1.6693	0.0942	0.7228	0.0022	0.0006
3	AMB Smallcap	0.1531	1.8905	0.0516	0.6544	0.0015	0.0001
4	AmIslamic Growth	0.2154	1.8229	0.0876	0.8045	0.0020	0.0005
5	Apex al-Sofi	0.2231	1.8177	0.0921	0.7810	0.0021	0.0006
6	CIMB Principal Small cap	0.2779	2.8423	0.0782	1.1186	0.0020	0.0007
7	CIMB Principal Equity Growth	0.1899	2.4412	0.0550	1.0448	0.0013	-0.0001
8	CIMB Principal Equity Aggressive fund 1	0.1899	2.1387	0.0825	0.9003	0.0020	0.0005
9	CIMB Islamic Equity	0.2194	2.2241	0.0736	0.9426	0.0017	0.0003
10	CIMB Islamic Small cap	0.2507	2.6581	0.0734	1.0224	0.0019	0.0005
11	HwangDBS Select Opportunity fund	0.2664	2.1171	0.0996	0.8671	0.0024	0.0009
12	HwangDBS AIIMAN Growth	0.2762	1.7301	0.1275	0.7579	0.0029	0.0011
13	HwangDBS Asia Quantum	0.3000	2.1551	0.1134	0.7556	0.0032	0.0011
14	Kenanga Islamic Fund	0.2859	2.5362	0.0908	1.0347	0.0022	0.0009
15	Kenanga Syariah Growth	0.3241	1.5141	0.1773	0.6607	0.0041	0.0018
16	MAAKL growth	0.3191	2.9559	0.0891	0.8165	0.0032	0.0015
17	MAAKL Progress fund	0.3309	3.5061	0.0785	0.7816	0.0035	0.0017
18	MAAKL al-Faid	0.2405	1.6526	0.1118	0.7503	0.0025	0.0008
19	MAAKL Value fund	0.3345	3.4449	0.0809	0.8077	0.0035	0.0017
20	MAAKL Regular saving fund	0.2738	2.6952	0.0810	0.8927	0.0024	0.0009
21	MAAKL Pacific fund	0.0710	3.0541	0.0050	1.0100	0.0002	-0.0013
22	OSK-UOB Dana Islam	0.2215	1.8717	0.0886	0.7738	0.0021	0.0006
23	OSK-UOB Asia Pacific	-0.0652	2.9272	-0.0413	0.9625	-0.0013	-0.0026
24	Pacific Focus18	0.1042	1.9612	0.0248	0.7663	0.0006	-0.0006
25	Pacific Asia Brand	0.0052	2.1316	-0.0236	0.7250	-0.0007	-0.0015
26	Public Small cap	0.3169	2.0085	0.1301	0.7679	0.0034	0.0015
27	Public Equity	0.2432	2.3022	0.0815	1.0122	0.0019	0.0005
28	Public Focus Select	0.2736	1.8986	0.1148	0.8229	0.0026	0.0010
29	Public Far-East Select	0.2736	3.1446	0.0230	1.1628	0.0006	-0.0009
30	Eastpring Investments Small-cap	0.2668	2.7756	0.0761	0.9482	0.0022	0.0008
31	Eastpring Investments Growth	0.2303	2.0223	0.0864	0.9478	0.0018	0.0004
32	Eastpring Investments Dynamic	0.1656	1.5138	0.0726	0.6272	0.0018	0.0002
33	Eastpring Investments Asia Pacific Equity	0.0687	2.6227	0.0050	0.9106	0.0001	-0.0011
34	RHB Islamic Growth	0.1945	2.0174	0.0688	0.8997	0.0015	0.0001
35	TA Islamic fund	0.1879	1.8735	0.0706	0.7626	0.0017	0.0003
36	TA Small cap	0.1515	1.8997	0.0505	0.6708	0.0014	0.0000
37	TA High growth	0.2403	2.2390	0.0825	0.9409	0.0020	0.0005
	Average	0.2171	2.2756	0.0735	0.8575	0.0019	0.0004
	KLCI	0.1958	2.0311	0.0690	1.0000	0.0014	0.0000
	Malaysia 90-day T-Bills	0.0556	0.0099	0.0000	-0.0602	0.0000	-0.0032

Table 4.3 presents the results of growth equity unit trust funds, which is represented by 37 funds. The total risks as measured by standard deviations of the weekly return for 21 of the 37 funds surpass the market benchmark fund. The standard deviation of

KLCI is 2.0311% as compared to the funds' standard deviations that range from 1.5138% to 3.4449%. The fund with the superior total risk and mean return is MAAKL Value funds with a weekly standard deviation of 3.4449% and weekly return of 0.3345%. In comparison, the weekly mean return of the benchmark KLCI is 0.1958%. There are 25 out of 37 funds having higher than the KLCI return.

28 out of 37 growth equity unit trust funds outperform the KLCI in terms of return measured by Treynor index. The Sharpe measure results indicate that 26 out of 37 growth equity unit trust funds outperform the KLCI. The highest Sharpe measure is Kenanga Syariah Growth with a Sharpe measure of 0.1773. This result supports the work by Swinkels and Rzezniczak (2009) who show that the returns on equity unit trust funds outperform the market benchmark when Sharpe measure is used. More than two-third of the funds outperform the benchmark index when measured by Jensen index.

Table 4.4 summarizes the performance of value equity unit trust funds. The fund with the highest standard deviation and beta is TA South East Asia Equity with an average weekly standard deviation of 2.9094% and an average weekly beta of 1.1229. It is also the only fund among 20 value equity funds that provide a higher beta than the benchmark beta of 1.0. Meanwhile, the standard deviation of the weekly returns for half of the unit trust funds exceeds that of the market return where funds' standard deviation ranges from 1.2663% to 2.9094%. The mean return of all the funds underperforms the KLCI except for two funds namely Hong Leong Consumer Product Sector fund and Public Dividend Select which have higher returns than that of the KLCI index.

Table 4.4
Weekly Performance Measures for Value Equity Unit Trust Funds: January 2006 – October 2012

Funds	MEAN (%)	SD(%)	Sharpe	Beta	Treynor	Jensen
1 Affin Equity	0.1581	1.8683	0.0548	0.8570	0.0012	-0.0002
2 Alliance Optimal income	0.0431	1.5850	-0.0079	0.5499	-0.0002	-0.0009
3 AMB Ethical Trust	0.1430	2.2497	0.0388	0.6374	0.0014	0.0000
4 AMB Dividend Income	-0.0336	1.2663	-0.0705	-0.0277	0.0322	-0.0009
5 CIMB Principal Equity Income	0.0485	2.4321	-0.0029	0.9978	-0.0001	-0.0015
6 Hong Leong Penny Stock	0.0000	2.2663	0.0405	0.9334	0.0010	-0.0004
7 Hong Leong Consumer Product Sector fund	0.2935	1.3259	0.1794	0.4779	0.0050	0.0017
8 Hong Leong Dana Makmur	0.1044	1.9884	0.0245	0.7654	0.0006	-0.0006
9 Hong Leong Dividend Fund	0.0888	1.9745	0.0168	0.8125	0.0004	-0.0008
10 Libra Dividend Extra	0.1639	1.5641	0.0692	0.6226	0.0017	0.0002
11 MAAKL al-Fauzan	0.1576	2.7375	0.0372	0.5305	0.0019	0.0003
12 OSK-UOB Global Equity Yield Fund	-0.0742	2.1650	-0.0600	0.5561	-0.0023	-0.0021
13 Public Dividend Select	0.2559	1.6440	0.1218	0.7671	0.0026	0.0009
14 Pacific Premier Fund	0.0862	2.0882	0.0146	0.8363	0.0004	-0.0009
15 Pacific Dana Aman	0.1027	1.8615	0.0253	0.7409	0.0006	-0.0006
16 Pacific Milennium Fund	0.0787	2.0630	0.0112	0.8142	0.0003	-0.0009
17 Eastpring Investment Dana Dinamik	0.1876	1.3751	0.0959	0.5557	0.0024	0.0005
18 Eastpring Investment Equity Income	0.1471	1.4635	0.0625	0.5884	0.0016	0.0001
19 RHB Dividend Valued equity Fund	0.0248	2.6353	-0.0117	0.8817	-0.0004	-0.0015
20 TA South East Asia Equity Fund	0.1579	2.9094	0.0352	1.1229	0.0009	-0.0006
Average	0.1067	1.9732	0.0337	0.7010	0.0026	-0.0004
KLCI	0.1958	2.0311	0.0690	1.0000	0.0014	0.0000
Malaysia 90-day T-Bills	0.0556	0.0001	0.0000	-0.0006	0.0000	0.0000

Based on Treynor measure, 7 out of 20 value equity unit trust funds outperform the market index that shows 0.0014. There are 6 out of 20 value equity unit trust funds outperform the KLCI when measured by the Jensen index. The Sharpe measure shows only 4 out of 20 value equity funds outperform the KLCI. Thus it indicates that majority of the value equity funds underperform the market return.

4.3 Analysis of Wilcoxon Signed Ranks Test Results based on Types of Funds

Figure 4.1 shows that, the risk adjusted returns are not evenly distributed for the Treynor, Sharpe and Jensen performance measures. As the distribution of the sample is not normal Wilcoxon Signed Ranks test is used. Meanwhile, the results of the Wilcoxon Signed Ranks test are presented in Tables 4.5, 4.6, and 4.7 within the equity types of unit trust funds namely overall equity unit trust funds, growth equity unit trust funds and value equity unit trust funds.

Figure 4.1: Distribution of risk adjusted returns

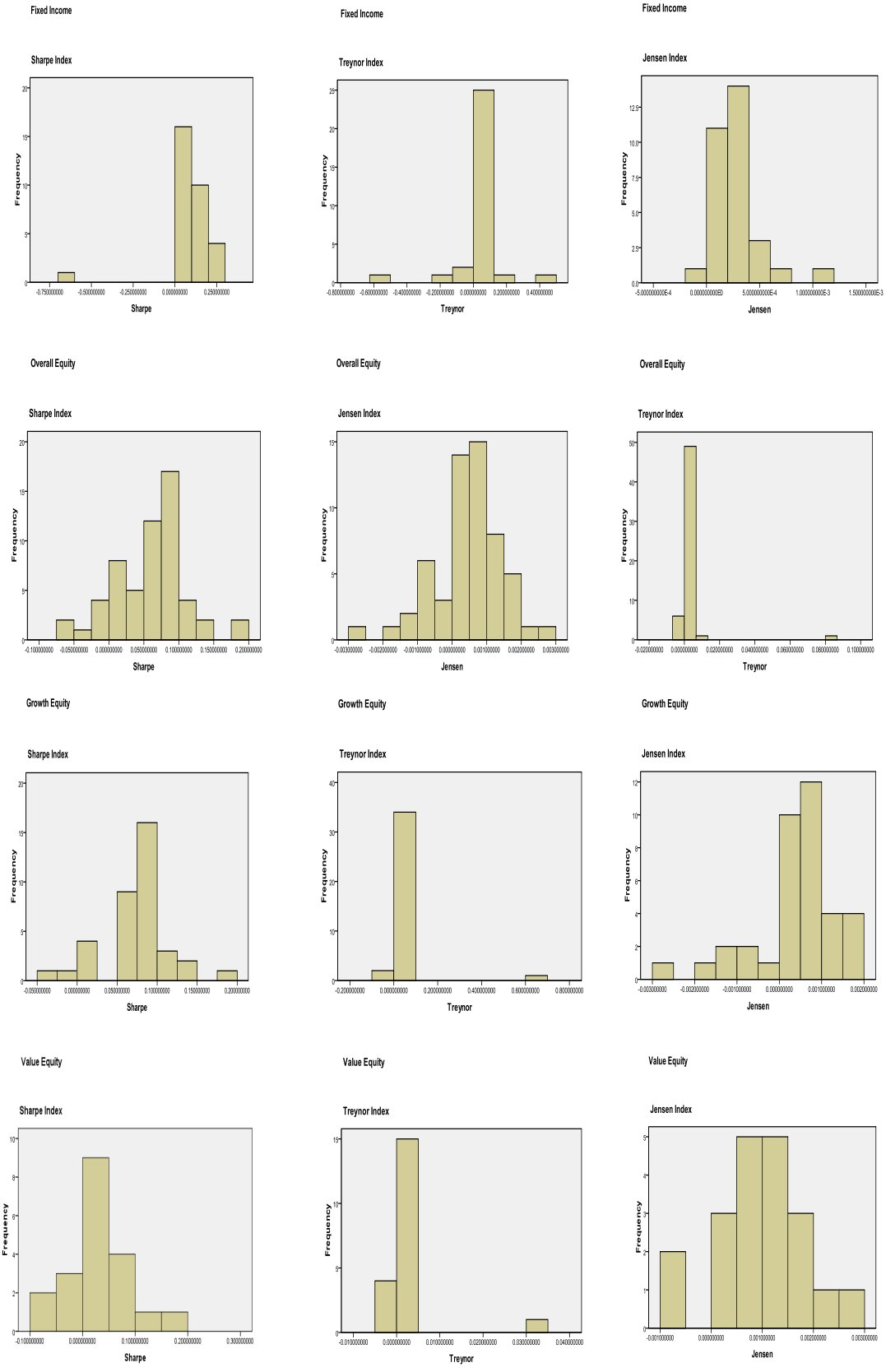

Table 4.5
Z-score Results for Wilcoxon Signed Ranks Test (Fixed Income Unit Trust versus Overall Equity Sample of Unit Trust Funds)

	Z-score (2-tailed)	*Asymptotic Sig.*
Sharpe	-2.018[a]	0.044**
Treynor	-2.450[a]	0.014**
Jensen	-1.431[a]	0.153

*** Significant at a = 0.05; a: based on negative ranks. A detailed output could be referred to Appendix A: Mean Performances of Fixed income Unit Trust Funds and Overall Equity Unit Trust Funds*

Table 4.5 shows the result of overall equity unit trust funds based on the Wilcoxon Signed Ranks test. There is a significant difference on the performance of fixed income unit trust funds and the overall equity unit trust funds for the Sharpe and Treynor index with a z-score of -2.018 and -2.450, respectively. Hence, both performance measures with a significance level of 0.044 and 0.014, respectively, show that the null hypothesis that the risk adjusted performance of fixed income unit trust funds is not different from the performance of equity unit trust funds could be rejected. In comparison to both performance measures, the Jensen index shows a z-score of -1.431 with a significance of 0.153, which indicates that there is no significant difference in the performance of fixed income unit trust funds from that of equity unit trust funds. Therefore, the null hypothesis is accepted.

When the overall equity unit trust funds is segregated into the different types, the results reveal no significant difference on the performance of fixed income unit trust funds and growth equity unit trust funds between Sharpe and Jensen index with a z-score of -1.176 and -1.685, respectively (refer to Table 4.6). As a result, both performance measures with a significance of 0.24 and 0.092, respectively, show that

the null hypothesis can be accepted. However, the Treynor index indicates a different result with a z-score of -2.391 at the significance level of 0.017, indicating that the performance of fixed income unit trust funds is significantly different from that of growth equity unit trust funds. Thus, the null hypothesis that the risk adjusted performance of fixed income unit trust funds is not different from the performance of equity unit trust funds can be rejected.

Table 4.6
Z-score Results for Wilcoxon Signed Ranks Test (Fixed Income Unit Trust versus Growth Equity Unit Trust Funds)

	Z-score (2-tailed)	*Asymptotic Sig.*
Sharpe	-1.176[a]	0.24
Treynor	-2.391[a]	0.017**
Jensen	-1.685[a]	0.092

*** Significant at a = 0.05; a: based on negative ranks. A detailed output could be referred to Appendix A: Mean Performances of Fixed income Unit Trust Funds and Growth Equity Unit Trust Funds*

The finding of this study is consistent with work of Abdullah and Abdullah (2009), who find no significant difference in the performance of unit trust funds domestically invested and internationally invested unit trust funds when Sharpe and Jensen are implemented. In this study, the test indicates that performance on fixed income unit trust funds and equity unit trust funds is not significant at 5 per cent level between Sharpe and Jensen performance measures.

Table 4.7
Z-score Results for Wilcoxon Signed Ranks Test (Fixed Income Unit Trust versus Value Equity Unit Trust Funds)

	Z-score (2-tailed)	*Asymptotic Sig.*
Sharpe	-3.024[a]	0.002**
Treynor	-2.240[a]	0.025**
Jensen	-2.725[a]	0.006**

*** Significant at a = 0.05; a: based on negative ranks. A detailed output could be referred to Appendix A: Mean Performances of Fixed income Unit Trust Funds and Value Equity Unit Trust Funds*

Table 4.7 review the Wilcoxon Signed Ranks test results of fixed income unit trust funds versus value equity unit trust funds. Based on Sharpe, Treynor and Jensen, the results indicate that there is significant difference in the performance of fixed income unit trust funds and value equity unit trust funds among the three standard performance measures with a z-score of -3.024, -2.240 and -2.725, respectively. Therefore, all three performance measures at the significance levels of 0.002, 0.025 and 0.006, respectively, indicate that the null hypothesis that the risk adjusted performance of fixed income unit trust funds is not different from the performance of equity unit trust funds could be rejected at the 0.05 level of significance.

4.4 Summary of Findings

This study yields conflicting results. The result shows that the return of overall equity and growth equity outperform the benchmark KLCI index and Maybank 12-months fixed deposit. However, the return that underperforms KLCI is found in fixed income unit trust funds and value equity unit trust funds. In addition, equity unit trust funds are found to show greater performance than fixed income unit trust funds in terms of risk and return analysis. The mean return and standard deviation of equity

unit trust funds are shown to be greater than those of the fixed income unit trust funds.

However, the Wilcoxon Signed Ranks test reports that when comparison is made between fixed income unit trust funds and equity unit trust funds including the overall sample equity, growth equity and value equity, the z-score of Treynor measure is statistically significant, indicating that differences in the performances of fixed income unit trust funds versus equity unit trust funds. The z-score reveals that the fixed income unit trust funds measured by Treynor Index outperform the equity unit trust funds. Using the overall equity sample, the z-score is statistically significant when Sharpe and Treynor measures are utilised. The z-score indicates that the fixed income unit trust funds measured by both performance measures outperform the equity unit trust funds.

When the comparison on the performance of fixed income unit trust funds is broken down into sub samples of equity unit trust funds, mixed findings are reported. The z-score is statistically significant when the Sharpe, Treynor and Jensen measures are used to compare the performances of fixed income unit trust funds and value equity unit trust funds. The z-score based on negative ranks designates that the fixed income funds measured by three performance measures outperform the equity unit trust funds. As a result, the Wilcoxon Signed Ranks test rejects the null hypothesis that the risk adjusted performance of fixed income unit trust funds is not different from the performance of equity unit trust funds. However, by using Sharpe and Jensen measures to examine the performances between fixed income unit trust funds and growth equity unit trust funds, the results show no statistically significant difference.

The test cannot reject the null hypothesis that the risk adjusted performance of fixed income unit trust funds is not different from the performance of equity unit trust funds.

There are contradictory results among the different performance measures and Wilcoxon Signed Rank Test results. This might have been caused by several factors. First, the difference in the performance measure might be due to the use of Beta (β_i) and standard deviation in calculating the Treynor and Sharpe ratios. The Sharpe ratio utilizes a standard deviation which evaluates the total risk including systematic risk and unsystematic risk while Treynor ratio only uses the component of systematic risk. Meanwhile, the Sharpe ratio evaluate on both return and risk as compared to Treynor ratio that evaluate the ability of a portfolio to get an excess return that has been adjusted for systematic risk only. Secondly, the different in the Wilcoxon Signed Rank Test might be due to the segregation of equity types of unit trust funds used in the study namely growth equity unit trust funds and value equity unit trust funds. The use of value equity unit trust funds is closely related to fixed income unit trust funds as the funds focus on income generated securities where 30% of the portfolio is invested in fixed income instruments as compared to growth equity unit trust funds that concentrate mostly on the Malaysian equity market.

CHAPTER 5

CONCLUSION

5.1 Introduction

This chapter concludes the whole research. It begins with a summary of the study. This is followed by implication of the study, the limitations, and, recommendations for further research.

5.2 Summary of the Study

Of the various types of equity unit trust funds under investigation, the finding indicates that fund's return on overall equity sample and growth equity unit trust funds shows superior performance over and above the market benchmark and fixed income unit trust funds after taking into account the risk adjusted performance measures. The mean returns of equity unit trust funds are higher than the fixed income unit trust funds and benchmark KLCI, as shown in Tables 4.1, 4.2, 4.3 and 4.4.

In terms of risk, standard deviations of equity unit trust funds are higher than those of fixed income unit trust funds, as shown in the Tables 4.2, 4.3, and 4.4. It is observed that the standard deviation of fixed income unit trust funds and equity unit trust funds varies widely. Result also indicates that fixed income unit trust funds possess a lower total risk and market risk than those of equity unit trust funds.

When the overall equity funds sample is tested using Wilcoxon Signed Rank Test, the Sharpe and Treynor ratios produce significant results. This means that the

performance of fixed income unit trust funds varies from the performance of equity unit trust funds. However the Jensen index produces insignificant result. When the sample categorised into different equity types of unit trust funds, the finding shows a conflicting results. The Sharpe and Jensen ratios indicate insignificant results for growth equity funds sample. This means that the performance of fixed income unit trust funds is not different from that of equity unit trust funds in comparison to Treynor that shows a significant result. As for the value equity sample, it is found that Sharpe, Treynor and Jensen produce results that are significant. This means that the performance of fixed income unit trust funds varies from that of equity unit trust funds.

There are contradictory results among the different performance measures due to the use of Beta (β_i) and standard deviation in the calculation of the Treynor and Sharpe respectively. The Sharpe ratio utilizes a standard deviation which evaluates the total risk including systematic risk and unsystematic risk while Treynor ratio only uses the component of systematic risk. In addition, the different in the Wilcoxon Signed Rank Test might be due to the segregation sample of equity types of unit trust funds used in the study.

In contrast to Sharpe and Jensen measures, Treynor measure shows that the differences are significant at 0.05 level for overall equity as well as when they are categorised into a different equity types of fund. This study implements the same approach used by Abdullah and Abdullah (2009), where the Sharpe measure is more appropriate to be used when the investment decisions are to be made. As for Sharpe measure, fixed income unit trust funds are measured to be superior to equity unit

trust funds and market benchmark of KLCI. Results of the Wilcoxon Signed Ranks test indicates a significant difference between risk adjusted return of fixed income unit trust funds and equity unit trust funds by using Sharpe measure. It is concluded that there is a difference in the performance of fixed income unit trust funds and equity unit trust funds. In addition, the z-score based on negative ranks designates that the fixed income funds measured by Sharpe index outperform the equity unit trust funds. Therefore this study rejects the null hypothesis that the risk adjusted performance of fixed income unit trust funds is not different from the performance of equity unit trust funds.

Based on the results, it can be concluded that investors would yield a steady return by investing in fixed income unit trust funds, as they are shown to have a higher return-to-risk as measured by the Sharpe ratio than the equity unit trust funds. The chosen fixed income unit trust funds has been found to have a lower total risk.

5.3 Implications of the Study

This study observes significant results on the performance of fixed income unit trust funds and equity unit trust funds, which indicates that result of this study could benefit investors and fund managers namely Employee Provident Fund (EPF), *Permodalan Nasional Berhad* and insurance companies in their asset allocation strategy and decision making on which funds to be included in their portfolio to improve their portfolio investments. The results of this study shows that they would benefit to reallocate their investment strategy towards fixed income unit trust funds as the funds posses a lower total risk and market risk and a higher return-to-risk as measured by the Sharpe ratio than the equity unit trust funds.

Bursa Malaysia and Securities Commission as the regulators of unit trust industry could also benefit from this study as the finding might aid in strengthening the unit trust fund industries by improving the existing policies on promoting fixed income unit trust funds among institutional and retail investors.

5.4 Limitations

The limitation of this study refers to the number of observations used. As the study only focuses on the current period which is 2006 to 2012, the results might be more reliable if a longer time period is analysed. In addition, this study does not take into consideration the performance of unit trust funds before and after the crisis period due to time constraint.

This study highlights the unit trust funds' performance in comparison to the market benchmark only without taking into account the specific benchmark used for different types of unit trust funds.

5.5 Recommendations for Further Research

The present study makes a comparison between fixed income unit trust funds and equity unit trust funds based on market benchmark. Further studies are recommended to use a specific benchmark to suite the investment objective of the unit trust funds and to investigate whether or not they are able to outperform the specific benchmark used. Other areas of future research are to make a comparison on the performance of both types of unit trust funds between emerging and developed markets. Moreover, future study could investigate the impact of debt securities issuance on the performance of fixed income funds and equity funds.

The longer time period could also be taken into consideration in order to make a better comparison on the performance before crisis and after crisis of both types of unit trust funds.

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Appendix A: Mean Performances of Fixed Income Unit Trust Funds – Equity Unit Trust Funds

NPar Tests

Wilcoxon Signed Ranks Test

Ranks

		N	Mean Rank	Sum of Ranks
Sharpe_FI - Sharpe_OverallEquity	Negative Ranks	11[a]	13.18	145.00
	Positive Ranks	20[b]	17.55	351.00
	Ties	0[c]		
	Total	31		

a. Sharpe_FI < Sharpe_OverallEquity

b. Sharpe_FI > Sharpe_OverallEquity

c. Sharpe_FI = Sharpe_OverallEquity

Test Statistics[b]

	Sharpe_FI - Sharpe_OverallEquity
Z	-2.018[a]
Asymp. Sig. (2-tailed)	.044

a. Based on negative ranks.

b. Wilcoxon Signed Ranks Test

Appendix A: Mean Performances of Fixed Income Unit Trust Funds – Equity Unit Trust Funds

NPar Tests

Wilcoxon Signed Ranks Test

Ranks

		N	Mean Rank	Sum of Ranks
Treynor_FI - Treynor_OverallEquity	Negative Ranks	6[a]	20.50	123.00
	Positive Ranks	25[b]	14.92	373.00
	Ties	0[c]		
	Total	31		

a. Treynor_FI < Treynor_OverallEquity

b. Treynor_FI > Treynor_OverallEquity

c. Treynor_FI = Treynor_OverallEquity

Test Statistics[b]

	Treynor_FI - Treynor_OverallEquity
Z	-2.450[a]
Asymp. Sig. (2-tailed)	.014

a. Based on negative ranks.

b. Wilcoxon Signed Ranks Test

Appendix A: Mean Performances of Fixed Income Unit Trust Funds – Equity Unit Trust Funds

NPar Tests

Wilcoxon Signed Ranks Test

Ranks

		N	Mean Rank	Sum of Ranks
Jensen_FI - Jensen_OverallEquity	Negative Ranks	19[a]	16.89	321.00
	Positive Ranks	12[b]	14.58	175.00
	Ties	0[c]		
	Total	31		

a. Jensen_FI < Jensen_OverallEquity

b. Jensen_FI > Jensen_OverallEquity

c. Jensen_FI = Jensen_OverallEquity

Test Statistics[b]

	Jensen_FI - Jensen_OverallEquity
Z	-1.431[a]
Asymp. Sig. (2-tailed)	.153

a. Based on positive ranks.

b. Wilcoxon Signed Ranks Test

Appendix A: Mean Performances of Fixed Income Unit Trust Funds – Equity Unit Trust Funds

NPar Tests

Wilcoxon Signed Ranks Test

Ranks

		N	Mean Rank	Sum of Ranks
Sharpe_FI - Sharpe_Growth	Negative Ranks	14[a]	13.43	188.00
	Positive Ranks	17[b]	18.12	308.00
	Ties	0[c]		
	Total	31		

a. Sharpe_FI < Sharpe_Growth

b. Sharpe_FI > Sharpe_Growth

c. Sharpe_FI = Sharpe_Growth

Test Statistics[b]

	Sharpe_FI - Sharpe_Growth
Z	-1.176[a]
Asymp. Sig. (2-tailed)	.240

a. Based on negative ranks.

b. Wilcoxon Signed Ranks Test

Appendix A: Mean Performances of Fixed Income Unit Trust Funds – Equity Unit Trust Funds

NPar Tests

Wilcoxon Signed Ranks Test

Ranks

		N	Mean Rank	Sum of Ranks
Treynor_FI - Treynor_Growth	Negative Ranks	7[a]	18.00	126.00
	Positive Ranks	24[b]	15.42	370.00
	Ties	0[c]		
	Total	31		

a. Treynor_FI < Treynor_Growth

b. Treynor_FI > Treynor_Growth

c. Treynor_FI = Treynor_Growth

Test Statistics[b]

	Treynor_FI - Treynor_Growth
Z	-2.391[a]
Asymp. Sig. (2-tailed)	.017

a. Based on negative ranks.

b. Wilcoxon Signed Ranks Test

Appendix A: Mean Performances of Fixed Income Unit Trust Funds – Equity Unit Trust Funds

NPar Tests

Wilcoxon Signed Ranks Test

Ranks

		N	Mean Rank	Sum of Ranks
Jensen_FI - Jensen_Growth	Negative Ranks	23[a]	14.52	334.00
	Positive Ranks	8[b]	20.25	162.00
	Ties	0[c]		
	Total	31		

a. Jensen_FI < Jensen_Growth

b. Jensen_FI > Jensen_Growth

c. Jensen_FI = Jensen_Growth

Test Statistics[b]

	Jensen_FI - Jensen_Growth
Z	-1.685[a]
Asymp. Sig. (2-tailed)	.092

a. Based on positive ranks.

b. Wilcoxon Signed Ranks Test

Appendix A: Mean Performances of Fixed Income Unit Trust Funds – Equity Unit Trust Funds

NPar Tests

Wilcoxon Signed Ranks Test

Ranks

		N	Mean Rank	Sum of Ranks
Sharpe_FI - Sharpe_ValueEquity	Negative Ranks	3[a]	8.00	24.00
	Positive Ranks	17[b]	10.94	186.00
	Ties	0[c]		
	Total	20		

a. Sharpe_FI < Sharpe_ValueEquity

b. Sharpe_FI > Sharpe_ValueEquity

c. Sharpe_FI = Sharpe_ValueEquity

Test Statistics[b]

	Sharpe_FI - Sharpe_ValueEquity
Z	-3.024[a]
Asymp. Sig. (2-tailed)	.002

a. Based on negative ranks.

b. Wilcoxon Signed Ranks Test

Appendix A: Mean Performances of Fixed Income Unit Trust Funds – Equity Unit Trust Funds

NPar Tests

Wilcoxon Signed Ranks Test

Ranks

		N	Mean Rank	Sum of Ranks
Treynor_FI - Treynor_ValueEquity	Negative Ranks	3[a]	15.00	45.00
	Positive Ranks	17[b]	9.71	165.00
	Ties	0[c]		
	Total	20		

a. Treynor_FI < Treynor_ValueEquity

b. Treynor_FI > Treynor_ValueEquity

c. Treynor_FI = Treynor_ValueEquity

Test Statistics[b]

	Treynor_FI - Treynor_ValueEquity
Z	-2.240[a]
Asymp. Sig. (2-tailed)	.025

a. Based on negative ranks.

b. Wilcoxon Signed Ranks Test

Appendix A: Mean Performances of Fixed Income Unit Trust Funds – Equity Unit Trust Funds

NPar Tests

Wilcoxon Signed Ranks Test

Ranks

		N	Mean Rank	Sum of Ranks
Jensen_FI - Jensen_ValueEquity	Negative Ranks	17[a]	10.47	178.00
	Positive Ranks	3[b]	10.67	32.00
	Ties	0[c]		
	Total	20		

a. Jensen_FI < Jensen_ValueEquity

b. Jensen_FI > Jensen_ValueEquity

c. Jensen_FI = Jensen_ValueEquity

Test Statistics[b]

	Jensen_FI - Jensen_ValueEquity
Z	-2.725[a]
Asymp. Sig. (2-tailed)	.006

a. Based on positive ranks.

b. Wilcoxon Signed Ranks Test

List of 37 Approved Unit Trust Management companies in relation to unit trust funds in Malaysia

Affin Fund Management Bhd

Alliance Investment management Bhd

Amanah Mutual Bhd

Amanah Saham Kedah Bhd

Amanah Saham Sarawak Bhd

AmInvestment Services Bhd

Apex Investment Services Bhd

Areca Capital Bhd

ASM Investment Services Bhd

Libra Invest Bhd

BIMB Investment Management Bhd

CIMB-Principal Asset Management Bhd

CIMB Wealth Advisors Bhd

Hong Leong Asset Management Bhd

HwangDBS Investment Management Bhd

ING Funds Bhd

Inter-Pacific Asset Management Sdn Bhd

KAF Management Sdn Bhd

Kenanga Investors Bhd

Maybank Investment Management Sdn Bhd

Manulife Unit Trustd Bhd

MAAKL Mutual Bhd

MIDF Amanah Asset Management Bhd

OSK-UOB Islamic Fund Management Bhd

OSK-UOB Investment Management Bhd

Pacific Mutual Fund Bhd

Pelaburan Johor Bhd

Pengurusan KUMIPA Bhd

Permodalan BSN Bhd

Pheim Unit Trust Bhd

Philip Mutual Bhd

Prudential Fund Management Bhd

PTB Unit Trust Bhd

Public Mutual Bhd

RHB Investment Management Sdn Bhd

Saham Sabah Bhd

TA Investment Management Bhd