

PERFORMANCE OF UNIT TRUSTS IN AN EMERGING MARKET: A CASE STUDY OF MALAYSIA

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ABSTRACT

This study examines the performance, risk diversification and systematic risk of 34 unit trusts in Malaysia in the period January 1991 – June 1997. The results show that they, generally, performed better than the market. But, the risk-return characteristics of the different categories of funds are not consistent with the objectives of the funds. Generally, growth funds outperformed income funds which, in turn, outperformed balanced funds. Similarly, growth funds have higher systematic risk while balanced funds have higher systematic risk while balanced funds have the lowest systematic risk. Majority of the funds are reasonably well diversified, with balanced funds the most diversified and growth funds the least diversified.

I. INTRODUCTION

A unit trust is essentially a device which pools funds from a large number of investors for investment in a basket of financial securities such as those listed in the Kuala Lumpur Stock Exchange (KLSE) or foreign securities market, or other investment instruments which are managed by professional investment companies or managers. Thus, it serves as a medium through which small individual investors can acquire a share in a diversified portfolio of securities.

The function of a unit trust is based on the establishment of a tripartite relationship between 3 parties, namely, the unit holders or individual investors, the investment manager or management companies and the trustee. This relationship is governed by the trust deed which spells out clearly the objectives, the management and operation system of the fund, and the rights, duties and responsibilities of each party.

The unit holders may be individuals, companies or institutions which invest money in the fund with the hope of generating returns in the form of dividends and capital gain. The unit holders have no direct or indirect power in making management and investment decisions. On the other hand, an investment manager of a professional management company, who is equipped with the knowledge and expertise on investment, is responsible for the administration of the fund. His duties include the management of investment portfolios and also other day-to-day management of sales, repurchasing and redemption of the units. The trustees are mostly affiliated to major banks and act as custodian of the fund. They actively monitor the administration of the funds by the management company to ensure that the interests of unit holders are upheld and safeguarded and that all terms of the trust deed are strictly adhered to at all times. The trustees, like the unit holders, are also not involved in the manage-

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ment of the investment portfolios. However, as a reward for the work done, they, like the investment managers, are paid fees according to the formula set up in the trust deed.

In Malaysia, most of the unit trusts are "open-ended" in that the manager of the unit trusts can sell as many units to the investors as is stipulated in the trust deed at the manager's 'selling price' which is based either on the initial offering price or the net asset value. But the manager is obliged to repurchase units at the manager's 'buying price' if the unit holders choose to sell them later. Normally the manager's selling price is slightly above the buying price in order to cover the various expenses of the management company.

There are a number of benefits for investment in unit trusts. Firstly, it is affordable as it is possible for individual investors to invest only a small sum of capital. Secondly, unit trusts funds are usually invested in a well diversified portfolio of stocks in order to minimise risk and therefore individual investors with limited capital are able to enjoy this kind of investment security. Thirdly, unit trusts are managed by full time professional fund managers who, with their expertise, are in a better position to generate higher returns than the individual investors. Fourthly, investment in unit trusts is quite liquid since the unit trusts can be redeemed at any time. Finally, certain unit trust funds also provide life insurance coverage and permanent disability coverage which serve as a sweetener to attract potential investors.

II. DEVELOPMENT OF UNIT TRUST INDUSTRY IN MALAYSIA

In Malaysia, unit trusts were first introduced by the Malaya Unit Trust Ltd after its establishment in 1959. But the company has ceased to manage funds since 1969. The second unit trust was only introduced in 1969 and this was followed a year later by Amanah Saham Mara Bhd. (ASM). Over the years until the early 1990s, the growth of unit trusts industry was slow. However, since 1993, the unit trusts have increased in popularity following the enactment of the Securities Commission Act 1993 which provides for the Securities Commission (SC) to be responsible for all matters pertaining to unit trust schemes.

The SC has drawn up a set of guidelines for the establishment of unit trusts by management companies which must be complied with by all parties in the industry. It has also from time to time amended or issued additional guidelines to suit the changing needs and the financial situation. Some important basic guidelines are the following:

- (i) The maximum size of a unit trust fund shall not exceed 500 million units. Prior approval of the SC is required for any increase beyond this limit or any subsequent increase where the existing size of the fund is less than 500 million units;
- (ii) A unit trust fund is permitted to invest up to 10% of the net asset value of the fund in securities listed on a foreign stock exchange with the specific prior approval of the SC;
- (iii) A unit trust fund shall not invest more than 50% of the net asset value of the fund in non-trustee securities;
- (iv) Investment by a unit trust fund in the securities of any company shall not exceed 10% of the net asset value of the fund or 10% of the issued capital of the company whichever is lower;

- (v) Investment by a unit trust fund in any group of companies shall not exceed 15% of the net asset value of the fund;
- (vi) At least 10% of the net asset value of the fund should be maintained in the form of liquid assets at all times except during the dividend distribution date;
- (vii) A unit trust fund is not allowed to borrow to finance its activities;
- (viii) The management company of the unit trusts should be a subsidiary of a financial institution under the jurisdiction of Bank Negara Malaysia or of any other institution approved by the SC.

The unit trust industry is still very much in its infancy in Malaysia. There are only 100 unit trusts funds with a total net asset value of about RM42.2 billion which constituted only about 8.47% of the KLSE's market capitalization as at 30 November 1999. This figure is rather low compared to the 25-40% of market capitalisation in Thailand, India and Japan.

A number of reasons have been put forward for the low interest in unit trusts. Firstly, the returns of Malaysian unit trusts are not substantially higher than the fixed deposit rate of banks or finance companies. Thus, it provides little attraction for the Malaysian investors. Furthermore, a lot of shares in the KLSE can be considered cheap enough for individual investors to feel that they can invest directly to reap high profit. In addition, many Malaysians do not view unit trusts as a financial instrument for medium or long term investment. Consequently, at times there were high redemption rates for certain funds when some unit holders did not see any quick returns from their investment.

Notwithstanding the problems in the unit trusts industry, there have been some encouraging developments. The fund managers formed a Federation of Malaysian Unit Trusts Managers (FMUTM) on 20 September 1993. This federation basically acts as a mouthpiece of the fund managers on all matters pertaining to the unit trusts. In a move to improve the professionalism of the unit trust agents, effective from 1 July 1996, all unit trusts agents have to register with FMUTM and pass an examination conducted by the FMUTM before they are acknowledged as qualified agents.

III. LITERATURE REVIEW

The theory and measurement of the performance of unit trusts or mutual funds has been the subject of much research in the area of finance. It is, in part, prompted by the need to set a benchmark for the comparison of their performances with other forms of investment. The research in this area has intensified particularly since the development of the Modern Portfolio Theory pioneered by Markowitz (1952) and the risk-adjusted performance methodology put forth by Jensen (1968), Sharpe (1966) and others.

Sharpe (1966) developed a risk-adjusted measure of performance based on reward to variability ratio to study the performance of 34 mutual funds in the United States over the period 1954-63 and found that, on the average, mutual funds did not outperform the market. The mutual fund average ratio of 0.633 was below the value of 0.667 for the Dow Jones Industrial Average (DJIA). Only 11 out of 34 funds outperformed the DJIA. Sharpe (1966) also calculated the Sharpe Index and the Treynor Index for the two periods 1944-1953 and 1954-1966 and, using the Spearman's rank correlation, showed

that the fund performance was consistent from one period to the next. Furthermore, there was a tendency for the systematic risk to be stable over time.

Jensen (1968) developed a performance measure called the Jensen's Alpha which could be used to measure a fund manager's predictive ability of stock prices. His study of the performance of 115 open-end mutual funds in the United States over a 20-year period 1945-1964 revealed that, on the average, the funds were not able to predict stock prices well enough to outperform unmanaged portfolios. The mean performance measure, Alpha, of 115 funds was -1.1% and only 39 funds had positive Alpha during the study period. These mutual funds also possessed a lower systematic risk than the market with an average beta value of 0.840.

Cheng and Lewellen (1984) studied the performance of 67 mutual funds over the period January 1971 to December 1979 and concluded that neither skillful market timing nor clever securities selection abilities were evident in abundance in their observed mutual funds returns data. Cumby and Glen (1990) used the Jensen Index measure to study the performance of 15 US-based internationally diversified mutual funds over the period 1982-1988 and found that 11 out of 15 funds under-performed the market.

In the United Kingdom, Firth (1977) used the Sharpe Index to study the performance of 72 British unit trusts funds over the period 1965-1975 and obtained results that fund managers had not been able to outperform the naïve buy-and-hold strategy and did not possess a superior share price forecasting ability. A year later, Firth (1978) expanded his earlier study to include 360 unit trusts in the United Kingdom over the period 1967-1975 and obtained a similar conclusion. However, some other studies in European countries have shown positive results. For instance, McDonald (1973) studied 8 French funds over the periods 1964-1969 and 1967-1969 by using both Jensen Alpha and Sharpe Index and found that all the funds outperformed the market with average alpha value of 0.25. However, by and large, studies on developed markets in the West showed that unit trusts funds did not perform better than the market portfolio.

A number of studies have also been done in Singapore and Malaysia. In Singapore, Koh et al. (1987) examined 19 unit trusts funds over a five-year period 1980-1984 and found that 16 out of the 19 funds were unable to outperform the market. The average Adjusted Sharpe Index (ASI) of -0.0576 for the funds was well below those for the market indices used in the evaluation. Besides being poorly diversified, their performance was not consistent over the five-year period and their actual returns were not entirely consistent with their stated objectives. Koh et al. (1989) conducted a further study on the performance of four listed investment trusts for the period 1978-1987 and found that, on average, three out of the four investment trusts did outperform the market portfolio. However, they reached the same conclusion as that of Koh et al. (1987) in that their performance was not consistent over time and the returns were not consistent with the stated objectives of the funds. Similar results were obtained by Ariff and Johnson (1990) who examined the performance of 14 unit trusts in Singapore for the period 1984-1989 using weekly dividend adjusted returns and found that, on average, these funds under-performed the market and were also not well diversified. In a more recent study, Lee (1993)

examined 21 unit trusts in Singapore over a five-year period 1986-1990 and obtained similar results. Thus, the various studies show that, on the whole, the performance of most unit trusts funds in Singapore was not better than the market. Neither was their performance consistent over time or with their stated objectives.

In Malaysia, Chua (1985) studied the performance of 12 unit trusts over a ten-year period 1974-1984 and found that, on the whole, the unit trusts outperformed the market and had fairly consistent performance over time. The unit trusts also appeared to adhere to their stated objectives and were well diversified. However, Tan (1995) examined the performance of a sample of 21 funds over a ten-year period 1984-1993 and found that they under-performed the market and did not adhere very well to their stated objectives. All the fund managers could not forecast security prices well and failed to outperform the naïve buy-and-hold strategy. But the funds performed quite consistently over time and were well diversified. Further, their systematic risks were stable over time. Ewe (1994) also studied the performance of 32 funds for the period 1988-1992 and, using the Sharpe Index, found that 22 funds under-performed the market portfolio. In another study, Shamsheer and Annuar (1995) examined the performance of 54 unit trusts funds which included some foreign unit trusts funds for the period 1988-1992 and found that all except two funds under-performed the market portfolio and most of the funds were poorly diversified. In general, the performance of the funds was also not consistent over time. Therefore, on the whole, the performance of unit trusts in Malaysia was worse than the market and was inconsistent over time. These results are similar to those obtained in Singapore and the developed markets in the West.

IV. OBJECTIVES OF STUDY

This study aims to examine the performance, risk diversification and systematic risk of unit trusts in Malaysia. The specific objectives are:

- (i) to evaluate the performance of the trusts funds and compare the performance of the different categories of funds;
- (ii) to evaluate the degree of risk diversification of the trust funds;
- (iii) to determine whether the unit trusts funds' risk and return characteristics are consistent with their stated objectives;
- (iv) to evaluate the consistency of the performance of the trust funds over advancing and declining markets;
- (v) to evaluate the stability of the trust funds' systematic risk over an advancing phase and a declining phase of the market.

V. DATA AND METHODOLOGY

A sample of 34 unit trusts funds is used in the study. The list of names of these funds is given in Appendix I. It comprises 5 income funds, 21 balanced funds and 8 growth funds. An income fund provides as liberal a current income from investment as possible, a balanced fund minimises risk and at the same time retains some possibilities for long term growth and current income, and a growth fund views income as only a secondary or incidental objective.

The period of study is January 1991 to June 1997. The data on unit trusts are the weekly closing prices of the 34 unit trusts funds. The weekly closing price of a fund refers to its net asset value on the last trading day of the week on the KLSE which is published in the newspaper on the following day as the manager's buying price. The sources of data are the Star and New Straits Times newspapers. Data on dividends and bonus issues of the funds are obtained from the fund management companies. The KLSE Composite Index is used as the market portfolio. Data on the weekly closing levels of the KLSE Composite Index are obtained from the Investors Digest. The interest rate for Bank Negara's 3-month treasury bill is used to represent the risk-free rate.

The weekly return of a fund is

$$R_{jt} = (P_{jt} - P_{j,t-1} + D_{jt}) / P_{j,t-1} \quad (1)$$

where

R_{jt} = weekly return of fund j at week t ,

P_{jt} = net asset value of fund j at the end of week t ,

D_{jt} = dividend or bonus per unit paid by the fund during week t .

The weekly return of the market portfolio is

$$R_{mt} = (I_t - I_{t-1}) / I_{t-1} \quad (2)$$

where

R_{mt} = weekly return of market portfolio at week t ,

I_t = level of the KLSE Composite Index at the end of week t .

A number of measures are used to compare the performance of the unit trusts funds and the market portfolio. They are the Adjusted Sharpe Index, Treynor Index and the Adjusted Jensen's Alpha Index.

The Adjusted Sharpe Index (ASI) is given by

$$ASI = \frac{(R_p - R_f)N}{\sigma(N + 0.75)} \quad (3)$$

where

R_p = average return of the fund,

R_f = average risk-free rate,

σ = standard deviation of the fund's returns.

N = number of return intervals over the whole evaluation period.

The Treynor Index (TI) developed by Treynor (1965) is given by

$$TI = \frac{(R_p - R_f)}{\beta_p} \quad (4)$$

where β_p is the beta value of the fund.

The Jensen's Alpha Index, introduced by Jensen (1969) to determine the size of the excess return achieved by a fund, is given by

$$J_p = (R_p - R_f) - [\beta_p(R_m - R_f)] \quad (5)$$

A positive Jensen's Alpha Index value indicates that a fund achieves a higher return than the market portfolio with the same degree of risk. The Jensen's Alpha Index is obtained by regressing the excess return of the fund on the excess return of the market portfolio as in the following equation:

$$R_{pt} - R_{ft} = A_p + \beta_p(R_{mt} - R_{ft}) + e_{pt}, t = 1, \dots, N$$

where e_{pt} are normally distributed with mean 0 and variance σ^2 . However, this index cannot be used to compare the performance of different funds which may have different levels of systematic risk. The Adjusted Jensen's Alpha Index (AJA), adjusted for systematic risk, is then computed as follows:

$$\text{Adjusted Jensen's Alpha Index} = \frac{\text{Jensen's Alpha}}{\text{Beta of the fund}} \quad (6)$$

For each of the 3 indices for unit trust fund performance, the F test and the Kruskal-Wallis test are used to test whether the 3 types of unit trust funds have different average levels of performance. Similarly, for each of these 3 indices, the investment performances of the 34 funds are examined for their consistency from one sub-period to another by using the Pearson correlation coefficient and the Spearman rank correlation coefficient.

The beta coefficients of the 34 unit trusts funds can be computed by regressing the returns of each fund on the market portfolio returns in the market model given below:

$$R_{it} = a_i + b_i R_{mt} + e_{it}$$

where

$$e_{it} \sim \text{IN}(0, \sigma^2)$$

R_{it} = weekly return of fund i in week t ,

a_i = a constant term,

β_i = beta coefficient of fund i ,

R_{mt} = weekly return of the market portfolio in week t .

VI. RESULTS

Table 1 presents the values of the Adjusted Sharpe Index, Treynor Index and Adjusted Jensen's Alpha for the 34 unit trusts funds selected for the study together with the ranking of these funds according to each index. The values of the ASI range from -0.0015 to 0.0275 with a mean of 0.0542. Only one fund, MBf First Fund, has a negative ASI value which implies that this fund earned lower returns than the risk-free treasury bills during the same period. The TI values are in the range -0.0001 to 0.0063 with a mean of 0.0019. Again, MBf First Fund is the only unit trust with a negative TI value. The AJA values range from -0.0009 to 0.0049 with a mean of 0.0006. There are, however, 12 funds with negative AJA values.

The overall time period has been subdivided into two separate sub-periods, January 1991 to December 1993 and January 1994 to June 1997 for our analysis. These sub-periods correspond approximately to an advancing phase and a declining phase of the market; the KLSE Composite Index rose from 501.23 on 2 January 1991 to 1,275.32 on 31 December 1993 and fell back to 1,077.30 on 30 June 1997. This sub-division, therefore, would enable us to examine the performance of the funds in an advancing and a declining market.

Table 2 presents the results of the 3 measures for the 34 unit trusts funds together with their rankings during the sub-period January 1991 to December 1993. The ASI values range from 0.0766 to 0.5553 with a mean of 0.2043. None of the funds have a negative ASI value. The TI values are in the range 0.0034 to 0.0269 and have a mean of 0.007. Again, none of the funds have a negative TI value. The AJA values range from -0.0013 to 0.0159 with a mean of 0.0017. There are 7 funds with negative AJA values.

Table 1: Results of Adjusted Sharpe Index, Treynor Index, Adjusted Jensen's Alpha and ranking of unit trusts funds for whole period, January 1991 to June 1997

Fund Number	Category of funds	Adjusted Sharpe Index (ASI)	Treynor Index (TI)	Adjusted Jensen's Alpha (AJA)	Ranking of unit trusts funds		
					(ASI)	(TI)	(AJA)
1	Income	0.028385	0.001136	-0.00026	29	27	29
2	Income	0.050160	0.001499	0.000109	19	20	20
3	Income	0.047032	0.001406	0.000024	20	22	21
4	Income	0.085039	0.002450	0.001061	4	9	9
5	Income	0.036836	0.002099	0.000722	25	13	12
6	Balanced	0.064212	0.001974	0.000585	10	14	15
7	Balanced	0.058681	0.001817	0.000430	14	16	17
8	Balanced	0.051225	0.001557	0.000168	18	18	19
9	Balanced	0.062037	0.002109	0.000721	12	12	13
10	Balanced	0.016444	0.000603	-0.00078	33	33	33
11	Balanced	0.058999	0.001791	0.000402	13	17	18
12	Balanced	0.027484	0.000850	-0.00054	30	30	31
13	Balanced	0.034404	0.001202	-0.00018	26	25	27
14	Balanced	0.046663	0.001410	0.000022	21	21	22
15	Balanced	0.031709	0.000932	-0.00046	27	29	30
16	Balanced	0.037666	0.001123	-0.00016	24	28	26
17	Balanced	0.041395	0.001293	-0.00009	23	24	25
18	Balanced	0.042792	0.001377	-0.00009	22	23	24
19	Balanced	0.077027	0.002210	0.000592	8	11	14
20	Balanced	0.056544	0.002361	0.000797	15	10	10
21	Balanced	0.077377	0.003129	0.001749	7	3	3
22	Balanced	0.084749	0.002831	0.001420	5	6	6
23	Balanced	-0.00154	-0.00005	-0.00092	34	34	34
24	Balanced	0.029538	0.001156	-0.00024	28	26	28
25	Balanced	0.053012	0.003112	0.001722	16	4	4
26	Balanced	0.077383	0.002836	0.001447	6	5	5
27	Growth	0.052396	0.001556	0.000737	17	19	11
28	Growth	0.025407	0.000807	-0.00007	31	32	23
29	Growth	0.086564	0.002727	0.001346	2	7	7
30	Growth	0.160554	0.006256	0.004887	1	1	1
31	Growth	0.085610	0.004067	0.002675	3	2	2
32	Growth	0.022805	0.000820	-0.00056	32	31	32
33	Growth	0.064101	0.001961	0.000579	11	15	16
34	Growth	0.070030	0.002494	0.001110	9	8	8
Mean		0.054195	0.001909	0.000558			
Market		0.053565	0.001350	0			

Table 2: Results of Adjusted Sharpe Index, Treynor Index, Adjusted Jensen's Alpha and ranking of unit trusts funds for sub-period, January 1991 to December 1993

Fund Number	Category of funds	Adjusted Sharpe Index (ASI)	Treynor Index (TI)	Adjusted Jensen's Alpha (AJA)	Ranking of unit trusts funds		
					(ASI)	(TI)	(AJA)
1	Income	0.152804	0.005464	0.000533	25	18	18
2	Income	0.184430	0.005004	0.000035	18	26	26
3	Income	0.209680	0.006048	0.001115	8	13	13
4	Income	0.196864	0.005356	0.000425	12	21	21
5	Income	0.076588	0.004510	-0.000430	34	28	30
6	Balanced	0.195653	0.005353	0.000382	14	22	23
7	Balanced	0.178060	0.004972	0.000002	20	27	27
8	Balanced	0.189797	0.005400	0.000428	17	20	20
9	Balanced	0.203497	0.007271	0.002294	10	7	8
10	Balanced	0.155429	0.004186	-0.000780	24	30	31
11	Balanced	0.193488	0.005234	0.000263	16	24	24
12	Balanced	0.148420	0.004046	-0.000920	26	31	32
13	Balanced	0.202014	0.005646	0.000673	11	15	15
14	Balanced	0.182630	0.005147	0.000178	19	25	25
15	Balanced	0.208077	0.005572	0.000601	9	17	17
16	Balanced	0.194426	0.005432	0.000463	15	19	19
17	Balanced	0.226964	0.006596	0.001621	7	11	11
18	Balanced	0.417378	0.011448	0.003032	3	5	5
19	Balanced	0.158741	0.004244	-0.000120	23	29	28
20	Balanced	0.430780	0.026877	0.015942	2	1	1
21	Balanced	0.177757	0.007409	0.002477	21	6	7
22	Balanced	0.393690	0.012343	0.004495	4	3	4
23	Balanced	0.120886	0.003384	-0.000950	31	34	33
24	Balanced	0.140409	0.005588	0.000609	28	16	16
25	Balanced	0.134778	0.011748	0.006728	30	4	3
26	Balanced	0.196706	0.006721	0.001742	13	10	10
27	Growth	0.239259	0.007045	0.002837	5	9	6
28	Growth	0.136931	0.003929	-0.000270	29	32	29
29	Growth	0.235306	0.007056	0.002122	6	8	9
30	Growth	0.555312	0.017862	0.010356	1	2	2
31	Growth	0.099588	0.005330	0.000405	32	23	22
32	Growth	0.088430	0.003659	-0.001270	33	33	34
33	Growth	0.174459	0.005748	0.000816	22	14	14
34	Growth	0.146235	0.006360	0.001421	27	12	12
Mean		0.054195	0.001909	0.000558			
Market		0.053565	0.001350	0			

The results of the 3 measures for the second sub-period January 1994 to June 1997 are presented in Table 3. The ASI values range from -0.0939 to 0.0717 with a mean of -0.0396. There are 30 funds with negative ASI values. Thus, 88% of the funds earned lower returns than the risk-free treasury bills during this period of market decline. The TI values are in the range -0.0031 to 0.0026 and have a mean of -0.00139. Again, the 30 funds with negative ASI values also have negative TI values. The AJA values range from -0.0015 to 0.0043 and have mean 0.0003. But, only 16 funds have negative AJA values.

It is also worth comparing the performance of the unit trusts funds with the market portfolio. Table 4 presents the results for each type of funds for the whole period. As a whole, unit trusts funds performed better than the market. While 22 out of 34 funds performed better than the market according to the measures TI and AJA, only 14 funds outperformed the market based on the ASI. Thus, our findings contradict those obtained by other researchers on unit trusts in Malaysia and may, therefore, indicate greater expertise of fund managers in recent years.

According to the findings of McDonald (1974), theoretically, the mean returns of growth funds should be higher than the mean returns of balanced funds and the latter should be higher than that of income funds. However, it is found here that the mean returns of these three categories of funds are not fully consistent with McDonald's findings. In our case, while growth funds outperformed income funds, balanced funds were the worst performers. This is

Table 3: Results of Adjusted Sharpe Index, Treynor Index, Adjusted Jensen's Alpha and ranking of unit trusts funds for sub-period, January 1994 to June 1997

Fund Number	Category of funds	Adjusted Sharpe Index (ASI)	Treynor Index (TI)	Adjusted Jensen's Alpha (AJA)	Ranking of unit trusts funds		
					(ASI)	(TI)	(AJA)
1	Income	-0.060600	-0.002640	-0.000990	26	31	31
2	Income	-0.031860	-0.001000	0.000666	11	10	10
3	Income	-0.079970	-0.002450	-0.000790	33	30	30
4	Income	0.017443	0.000518	0.002190	4	4	3
5	Income	-0.021020	-0.000990	0.000676	7	9	9
6	Balanced	-0.032690	-0.001090	0.000580	12	11	11
7	Balanced	-0.021880	-0.000720	0.000946	8	7	7
8	Balanced	-0.039110	-0.001240	0.000431	15	15	15
9	Balanced	-0.054280	-0.001800	-0.000130	20	21	21
10	Balanced	-0.069610	-0.003140	-0.001480	30	34	34
11	Balanced	-0.034520	-0.001130	0.000541	14	13	13
12	Balanced	-0.052780	-0.001770	-0.000098	19	20	20
13	Balanced	-0.057700	-0.002280	-0.000600	25	26	26
14	Balanced	-0.048780	-0.001540	0.000128	18	17	17
15	Balanced	-0.073970	-0.002290	-0.000620	31	27	27
16	Balanced	-0.055960	-0.001730	0.000044	22	19	18
17	Balanced	-0.093920	-0.003090	-0.001430	34	33	33
18	Balanced	-0.054800	-0.001820	-0.000150	21	23	23
19	Balanced	0.019843	0.000600	0.001295	2	3	5
20	Balanced	-0.039130	-0.001530	0.000140	16	16	16
21	Balanced	-0.031620	-0.001210	0.000461	10	14	14
22	Balanced	-0.067880	-0.002310	-0.000660	29	28	28
23	Balanced	-0.067010	-0.002440	-0.000760	28	29	29
24	Balanced	-0.043120	-0.001690	-0.000017	17	18	19
25	Balanced	-0.078830	-0.002820	-0.001150	32	3	32
26	Balanced	-0.057060	-0.002140	-0.000470	24	25	25
27	Growth	-0.066710	-0.002010	-0.000340	27	24	24
28	Growth	-0.032950	-0.001110	0.000564	13	12	12
29	Growth	-0.056060	-0.001810	-0.000140	23	22	22
30	Growth	-0.016590	-0.000710	0.000958	6	6	6
31	Growth	0.071736	0.002616	0.004290	1	1	1
32	Growth	-0.029540	-0.000980	0.000690	9	8	8
33	Growth	-0.006180	-0.000180	0.001488	5	5	4
34	Growth	0.019349	0.000630	0.002300	3	2	2
Mean		0.039640	0.001909	0.000252			
Market		0.062260	-0.001640	0			

Table 4: Comparison of the performance of unit trusts funds with market portfolio for whole period, January 1991 to June 1997

Category of funds	Adjusted Sharpe Index		Treynor Index		Adjusted Jensen's Alpha	
	Mean	Proportion of funds which outperformed market portfolio	Mean	Proportion of funds which outperformed market portfolio	Mean	Proportion of funds which outperformed market portfolio
Income	0.049490	1/5	0.001718	4 / 5	0.000330	4 / 5
Balanced	0.048939	7/21	0.001696	12 / 21	0.000314	12 / 21
Growth	0.070933	6/8	0.002586	6 / 8	0.001338	6 / 8
All Funds	0.054195	14/34	0.001909	22/34	0.000557	22 / 34
Market Portfolio	0.053565	-	0.001350	-	0	-

also generally reflected in the proportion of funds in each category which outperformed the market portfolio.

Table 5 presents the results of similar comparisons of the 3 categories of funds for the first sub-period when the market advanced. Consistent with the results for the whole period, the unit trusts funds outperformed the market portfolio in an advancing market based on the 2 measures TI and AJA. The mean returns are again not fully consistent with the findings of McDonald (1974). As expected, income funds performed the worst on all 3 measures. However, contrary to expectation, balanced funds outperformed growth funds based on both measures ASI and TI. Thus, the findings are only consistent if AJA is used.

Table 6 presents the results for the second sub-period when the market declined. Again, the unit trusts generally still performed better than the market portfolio based on all three measures. However, the mean returns of the 3 categories of funds are not fully consistent with McDonald's (1974) findings.

Table 5: Comparison of the performance of unit trusts funds with market portfolio for sub-period, January 1991 to December 1993

Category of funds	Adjusted Sharpe Index		Treynor Index		Adjusted Jensen's Alpha	
	Mean	Proportion of funds which outperformed market portfolio	Mean	Proportion of funds which outperformed market portfolio	Mean	Proportion of funds which outperformed market portfolio
Income	0.164073	0 / 5	0.005276	4 / 5	0.000336	4 / 5
Balanced	0.211885	3 / 21	0.007363	17 / 21	0.001865	17 / 21
Growth	0.209440	3 / 8	0.007124	6 / 8	0.002052	6 / 8
All Funds	0.204278	6 / 34	0.007000	27 / 34	0.001684	27 / 34
Market Portfolio	0.226000	-	0.005259	-	0	-

Table 6: Comparison of the performance of unit trusts funds with market portfolio for sub-period, January 1994 to June 1997

Category of funds	Adjusted Sharpe Index		Treynor Index		Adjusted Jensen's Alpha	
	Mean	Proportion of funds which outperformed market portfolio	Mean	Proportion of funds which outperformed market portfolio	Mean	Proportion of funds which outperformed market portfolio
Income	-0.035200	4 / 5	-0.001310	3 / 5	0.000352	3 / 5
Balanced	-0.050230	15 / 21	-0.001770	8 / 21	-0.000140	9 / 21
Growth	-0.014620	7 / 8	-0.000440	6 / 8	0.001226	6 / 8
All Funds	-0.039640	26 / 34	-0.001390	17 / 34	0.000252	18 / 34
Market Portfolio	-0.062260	-	-0.001640	-	0	-

While growth funds performed the best, contrary to expectation, income funds performed better than balanced funds based on all 3 measures.

Table 7 presents the F test and Kruskal-Wallis test results for comparison of performance of unit trusts of different categories. Both test statistics are not significant for all 3 performance measures in the whole period and in the first sub-period. Thus, there is no significant difference in the performance of the 3 categories of funds in the whole period and in the period of advancing market. However, the results show that there is a significant difference in the performance of the 3 categories of funds in a declining market, caused mainly by different performances of balanced funds and growth funds.

Since the two sub-periods correspond roughly to a period of advancing market and a period of declining market, we would expect funds that performed better in an advancing market to perform worse in a declining market but this was not so. Although the Pearson correlation coefficients and the Spearman rank correlation coefficients are negative for all 3 performance measures, they are not significant.

One of the benefits of investing in the unit trusts is the reduction of risk through diversification in a large portfolio of securities. Table 8 presents the risk diversification of all the funds as measured by R-square. The values of R-square range from 0.1853 to 0.7927 and have a mean of 0.5665 for the whole period which is comparatively lower than that of Tan (1995) but higher than that of Shamsher and Annuar (1995). Twenty-two out of 34 funds (65%) are reasonably well diversified with R-square values above 0.5. This is again much higher than that obtained by Shamsher and Annuar (1995). Among the 3 categories of funds, balanced funds are the most diversified with 15 out of 21 funds having R-square values greater than 0.5. This is followed by income funds. The least diversified are the growth funds. Similar results are obtained for the first and the second sub-periods except that as many as 7 out of 8 growth funds are well diversified in the second sub-period. Computed F-statistics and Kruskal-Wallis test statistics (not reported here) show no significant difference in risk diversification among the 3 categories of funds for the whole period and the 2 sub-periods. Results of paired t test show an increase in risk diversification for only growth funds ($t=2.91$) from the first sub-period to the second sub-period.

Table 7: F test and Kruskal-Wallis test results for comparison of performance of unit trusts funds of different categories

	Adjusted Sharpe Index	Treynor Index	Adjusted Jensen's Alpha
Whole period: Jan 1991-June 1997			
F-statistic	1.8400	1.9079	2.8628
Kruskal-Wallis test statistic	1.9274	1.0345	2.6817
First sub-period: Jan 1991-Dec 1993			
F-statistic	0.4501	0.4105	0.4562
Kruskal-Wallis test statistic	0.7539	0.8155	1.0638
Second sub-period: Jan 1994-June 1997			
F-statistic	3.7722*	4.3125*	5.0948*
Kruskal-Wallis test statistic	5.3260	6.4988*	6.7913*

*significant at 5%

Table 8: Risk diversification of unit trusts funds (R-square)

Fund Number	Category of funds	Whole period Jan 91 to Jun-97	Sub-period Jan 91 to Dec-93	Sub-period Jan 94 to Jun-97
		R-square	R-square	R-square
1	Income	0.404808	0.425280	0.382273
2	Income	0.709252	0.742572	0.697547
3	Income	0.707450	.653668	0.736724
4	Income	0.762964	0.734747	0.791127
5	Income	0.194570	0.156832	0.311330
Income funds' mean		0.555809	0.542620	0.583800
6	Balanced	0.670700	0.730386	0.625742
7	Balanced	0.660458	0.701231	0.634467
8	Balanced	0.686175	0.675475	0.691504
9	Balanced	0.548327	0.428196	0.633809
10	Balanced	0.471847	0.753662	0.341920
11	Balanced	0.687549	0.747030	0.647121
12	Balanced	0.662680	0.735760	0.619934
13	Balanced	0.518827	0.699911	0.445768
14	Balanced	0.693830	0.688155	0.692139
15	Balanced	0.733745	0.762312	0.724757
16	Balanced	0.713201	0.700421	0.727102
17	Balanced	0.649096	0.647353	0.639299
18	Balanced	0.636536	0.698511	0.629728
19	Balanced	0.792651	0.703218	0.845413
20	Balanced	0.402236	0.153028	0.458598
21	Balanced	0.385562	0.312970	0.474484
22	Balanced	0.607603	0.525045	0.633870
23	Balanced	0.563135	0.652203	0.524012
24	Balanced	0.417112	0.351921	0.453540
25	Balanced	0.185251	0.073370	0.542332
26	Balanced	0.475221	0.477550	0.494969
Balanced funds' mean		0.579131	0.581796	0.594310

27	Growth	0.702007	0.578110	0.766710
28	Growth	0.612273	0.608813	0.615956
29	Growth	0.636889	0.604718	0.669453
30	Growth	0.425554	0.489947	0.377516
31	Growth	0.280811	0.189819	0.524700
32	Growth	0.488378	0.317617	0.628820
33	Growth	0.675018	0.500901	0.791014
34	Growth	0.498388	0.287491	0.653978
Growth funds' mean		0.539915	0.447177	0.628518
All funds' mean		0.566474	0.544359	0.600813

McDonald's (1974) findings show that the mean beta of the growth funds is higher than that of balanced funds and the latter is higher than that of income funds. The reason is that growth funds usually invest in risky stocks which have high capital gains potential while the income funds invest mainly in more secure stocks or government bonds. However, the results in Table 9 show that, while the mean beta of growth funds is the highest, the mean beta of income funds is higher than that of balanced funds for the whole period. This result is partially contradictory to McDonald's (1974) empirical findings. Similar result is also obtained in the second sub-period. The more surprising result is that in the first sub-period the mean beta of income funds is the highest among all categories of funds. This finding is consistent with that of Tan (1995) and Shamsheer and Annuar (1995) for the Malaysian unit trusts funds. However, F statistics and Kruskal-Wallis test statistics do not show significant difference in the mean beta of the 3 categories of funds in any period. It may be noted that the mean beta of each category of funds is greater than the figure of 0.55 obtained by McDonald (1974). But, all funds have beta values less than unity, thereby implying that they are invested in defensive portfolios. This result confirms the notion that investing in unit trust is less risky than investing directly in the stock market for investors with limited capital. However, paired t test value of 2.40 shows a significant increase in the systematic risk of the funds from the first sub-period to the second sub-period.

Table 9: Systematic risk (Beta) of unit trusts funds

Fund Number	Category of funds	Whole period Jan 91 to Jun-97	Sub-period Jan 91 to Dec-93	Sub-period Jan 94 to Jun-97
		R-square	R-square	R-square
1	Income	0.685083	0.685588	0.679618
2	Income	0.799801	0.720415	0.856873
3	Income	0.794703	0.775996	0.800314
4	Income	0.678659	0.585180	0.749295
5	Income	0.417790	0.510662	0.354702
Income funds' mean		0.675207	0.655568	0.688160
6	Balanced	0.631361	0.651441	0.617375
7	Balanced	0.667967	0.646258	0.685437
8	Balanced	0.738837	0.672279	0.784628
9	Balanced	0.688583	0.639086	0.714979
10	Balanced	0.665510	0.742216	0.610457

11	Balanced	0.668932	0.665631	0.671528
12	Balanced	0.702505	0.686178	0.715902
13	Balanced	0.709530	0.671654	0.731033
14	Balanced	0.787945	0.752409	0.812000
15	Balanced	0.804970	0.708330	0.866917
16	Balanced	0.814182	0.696820	0.893227
17	Balanced	0.671953	0.655124	0.673564
18	Balanced	0.696531	0.530763	0.749969
19	Balanced	0.738517	0.713417	0.755696
20	Balanced	0.554016	0.288909	0.621424
21	Balanced	0.592159	0.644182	0.549222
22	Balanced	0.415750	0.445188	0.394191
23	Balanced	0.696557	0.672049	0.709936
24	Balanced	0.531299	0.445753	0.589452
25	Balanced	0.568732	0.495218	0.600870
26	Balanced	0.594757	0.727743	0.493362
Balanced funds' mean		0.663838	0.626221	0.678151
27	Growth	0.742674	0.682586	0.766366
28	Growth	0.746370	0.665283	0.792276
29	Growth	0.625698	0.692144	0.571887
30	Growth	0.479715	0.536329	0.433002
31	Growth	0.730047	0.811395	0.685470
32	Growth	0.640029	0.533747	0.718419
33	Growth	0.821972	0.640906	0.951063
34	Growth	0.712248	0.504088	0.861639
Growth funds' mean		0.687344	0.633310	0.722515
All funds' mean		0.671041	0.632205	0.690062

III. CONCLUSION

This study covers several aspects of the performance of unit trusts funds in Malaysia. Generally, the funds performed better than the market not only over the whole period January 1991 to June 1997 but also in the period 1991-1993 of market advance and the period 1994-June 1997 of market decline. This suggests that the investment performance skill of fund managers is better than an average investor in the market. However, the risk-return characteristics of the different categories of funds are not in congruence with the objectives of the funds. Generally, growth funds outperformed income funds while balanced funds are the worse performers. However, their differences are not significant. Similarly, growth funds have the highest mean systematic risk while balanced funds have the lowest mean systematic risk. But, again, their differences are not significant. However the systematic risk of the funds increased significantly from a period of market advance to a period of market decline.

The majority of the funds are reasonably well diversified. Balanced funds are the most diversified while growth funds are the least diversified. Again, their differences are not significant. There is also no significant difference in risk diversification of the funds between the period of market advance and the period of market decline except for growth funds.

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Appendix I : List of Funds in the Sample

Fund identification number	Name of Fundd	Category off fund
1	Arab-Malaysian First Fund	Income
2	ASM:Kumpulan Modal Bumiputra Yang Ketujuh(Perolehan)	Income
3	BBMB Unit Trust Fund	Income
4	Asia Unit Trusts:Malaysian Investment Fund	Income
5	Asia Unit Trusts:Malaysia Commerce Fund	Income
6	ASM:Kumpulan Modal Bumiputra Yang Pertama	Balanced
7	ASM:Kumpulan Modal Bumiputra Yang Kedua	Balanced
8	ASM:Kumpulan Modal Bumiputra Yang Ketiga	Balanced
9	ASM:Kumpulan Modal Bumiputra Yang Keempat	Balanced
10	ASM:Kumpulan Modal Bumiputra Yang Kelima	Balanced
11	ASM:Kumpulan Modal Bumiputra Yang Keenam	Balanced
12	ASM:Kumpulan Modal Bumiputra Yang etujuh(Pertambahan)	Balanced
13	ASM:Kumpulan Modal Bumiputra Yang Kelapan	Balanced
14	ASM:Kumpulan Modal Bumiputra Yang Kesembilan	Balanced
15	ASM:Kumpulan Modal Bumiputra Yang Kesepuluh	Balanced
16	ASM:Kumpulan Modal Bumiputra Yang Kesebelas	Balanced
17	ASM Warrior / Premier Fund	Balanced
18	ASM First Public Fund	Balanced
19	Amanah Saham Nasional	Balanced
20	DCM-RHB Dynamic Fund	Balanced
21	Kuala Lumpur Saving Fund	Balanced
22	Mayban Unit Trust Fund	Balanced
23	MBf First Fund	Balanced
24	MIC : Amanah Saham Dana Pertama	Balanced
25	MIC : Amanah Saham Dana Kedua	Balanced
26	MIC : Amanah Saham Dana Ketiga	Balanced
27	BBMB Prime Fund	Growth
28	BHLB Pacific Double Growth Fund	Growth
29	Kuala Lumpur Growth Fund	Growth
30	Kuala Lumpur Index Fund	Growth
31	Asia Unit Trusts : Malaysia Progress Fund	Growth
32	Asia Unit Trusts : Tabung Amanah Bakti	Growth
33	Asia Unit Trusts : Malaysia Berjaya Fund	Growth
34	Asia Unit Trusts : Malaysia Equity Fund	Growth