# CHAPTER IV

# RESARCH RESULTS

## Investment Performance

Table 4.1 below shows the overall risk adjusted performance measures, mean monthly return, beta value and coefficient of determination of the funds as a whole and those of the market portfolio (KLSE CI).

**Table 4.1 : Overall Results**

| Investment Type | Mean Monthly Return (%) | Beta | Coefficient of Determination | Adjusted Sharpe Index | Treynor Index | Adjusted Jensen's Alpha |
|---|---|---|---|---|---|---|
| Unit Trust Funds | 0.7307 | 0.711824 | 0.723203 | 0.049041 | 0.004319 | -0.008211 |
| Market Portfolio | 1.6692 | 1.0 | 1.0 | 0.149659 | 0.012290 | 0 |

As can be seen from Table 4.1, the unit trust funds as a whole performed worse than the market portfolio as the performance measures of the unit trust funds such as the Adjusted Sharpe Index, Treynor Index and the Adjusted Jensen's Alpha are all lower than those of the market portfolio. Even the mean monthly return of the funds of 0.7307% is less than that of the market portfolio of 1.6692%.

Table 4.2 shows the the results of the individual unit trust funds. When the funds are ranked according to the Adjusted Sharpe Index (Table 4.4), the best performer is Fund 13 with a value of 0.128701 while the worst performer is Fund 19 with a value of -0.117405. When ranked using the Treynor Index (Table 4.4), the best performer is Fund 21 with a value of 0.011655 while the worst performer is Fund 16 with a value of -0.013148. In the case of the Adjusted Jensen's Alpha (Table 4.3), the best performer is Fund 13 with a value of -0.000703 and the worst performer is Fund 16 with a value of -0.025460. As can be observed, all the funds performed worse than the market portfolio. Funds 14, 15, 16, 17, 18 and 19 all have negative Adjusted Sharpe Index and Treynor Index. This means that these funds earned lower returns than the risk free rate. It is interesting to note that all these funds are managed by the same management company namely Asia Unit Trust Bhd. The best performing five funds (Funds 13, 3, 11, 6 and 7) ranked according to the Adjusted Sharpe Index and Adjusted Jensen's Alpha comes from the same management company namely ASM Unit Trust Management Bhd. However the best performing fund using the Treynor Index is Fund 21 which is managed by Kuala Lumpur Mutual Funds Bhd.

As can be observed, the different ranking methods produced slightly different performance rankings. Spearman Rank Correlation Coefficients were calculated for the different ranking methods namely : (1) between Treynor Index and Adjusted Jensen's Alpha - Table 4.3 (2) between Treynor Index and Adjusted Sharpe Index - Table 4.4 and (3) between Adjusted Jensen's Alpha and Adjusted Sharpe Index - Table 4.5. In all the above cases, the Spearman Rank Correlation Coefficients exceeds 0.9 and all of them are significant at the 0.05 level. This means that all the ranking methods produces significantly similar performance rankings and that any of these methods could be used for ranking purposes without substantial discrepancies.

**Beta Values**

Table 4.1 shows that the unit trust funds as a whole has a beta value of 0.711824 which is lower than 1.0 of the market portfolio. This means that unit trust funds are less risky than the market portfolio.

Table 4.2 shows that the fund which has the highest beta value is Fund 17 with a value of 0.89476 while the fund with the lowest beta value of 0.593173 is Fund 3. It

## TABLE 4.2 : SUMMARY OF RESULTS OF ALL THE UNIT TRUST FUNDS FOR PERIOD 1984 TO 1993

| FUND ID NO. | MEAN MONTHLY RETURN | STANDARD DEVIATION OF RETURN | BETA | COEFFICIENT OF DETERMINATION | SHARPE INDEX | ADJUSTED SHARPE INDEX | TREYNOR INDEX | JENSEN'S ALPHA | ADJUSTED JENSEN'S ALPHA | OBJECTIVE OF FUND |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.008732 | 0.062339 | 0.668031 | 0.764693 | 0.069463 | 0.069024 | 0.006482 | -0.003889 | -0.005815 | Balance |
| 2 | 0.009878 | 0.057038 | 0.602443 | 0.742870 | 0.096002 | 0.095395 | 0.009089 | -0.001937 | -0.003212 | Balance |
| 3 | 0.011236 | 0.053430 | 0.593173 | 0.820733 | 0.127899 | 0.127092 | 0.011521 | -0.000459 | -0.000773 | Balance |
| 4 | 0.011004 | 0.065829 | 0.737702 | 0.836269 | 0.100286 | 0.099653 | 0.008949 | -0.002470 | -0.003346 | Balance |
| 5 | 0.008940 | 0.072626 | 0.803349 | 0.814785 | 0.062482 | 0.062088 | 0.005649 | -0.005339 | -0.006644 | Balance |
| 6 | 0.011429 | 0.063118 | 0.711406 | 0.845942 | 0.111333 | 0.110629 | 0.009878 | -0.001722 | -0.002419 | Balance |
| 7 | 0.011147 | 0.061176 | 0.697535 | 0.865741 | 0.110260 | 0.109564 | 0.009670 | -0.001834 | -0.002627 | Income |
| 8 | 0.009082 | 0.060433 | 0.648446 | 0.766685 | 0.077442 | 0.076953 | 0.007217 | -0.003299 | -0.005082 | Growth |
| 9 | 0.010475 | 0.064536 | 0.743091 | 0.882874 | 0.094109 | 0.093515 | 0.008173 | -0.003065 | -0.004122 | Balance |
| 10 | 0.010879 | 0.070389 | 0.675253 | 0.612828 | 0.092013 | 0.091432 | 0.009592 | -0.001829 | -0.002706 | Balance |
| 11 | 0.011980 | 0.062849 | 0.710871 | 0.851918 | 0.120573 | 0.119811 | 0.010660 | -0.001167 | -0.001640 | Balance |
| 12 | 0.011165 | 0.073771 | 0.761443 | 0.709448 | 0.091681 | 0.091102 | 0.008882 | -0.002601 | -0.003414 | Balance |
| 13 | 0.012911 | 0.065696 | 0.733991 | 0.831216 | 0.129519 | 0.128701 | 0.011593 | -0.000516 | -0.000703 | Balance |
| 14 | 0.002996 | 0.065125 | 0.650045 | 0.663444 | -0.021582 | -0.021446 | -0.002162 | -0.009386 | -0.014455 | Balance |
| 15 | -0.001104 | 0.078868 | 0.732625 | 0.574621 | -0.069809 | -0.069368 | -0.007515 | -0.014491 | -0.019821 | Growth |
| 16 | -0.004096 | 0.075003 | 0.646309 | 0.494470 | -0.113296 | -0.112580 | -0.013148 | -0.016427 | -0.025460 | Growth |
| 17 | 0.001888 | 0.084739 | 0.894746 | 0.742421 | -0.029671 | -0.029483 | -0.002810 | -0.013505 | -0.015102 | Growth |
| 18 | -0.000962 | 0.081650 | 0.729799 | 0.532001 | -0.065693 | -0.065279 | -0.007350 | -0.014318 | -0.019653 | Growth |
| 19 | -0.005791 | 0.086284 | 0.830271 | 0.628523 | -0.118171 | -0.117405 | -0.012281 | -0.021105 | -0.025441 | Income |
| 20 | 0.009199 | 0.069658 | 0.688823 | 0.651170 | 0.068875 | 0.068440 | 0.006965 | -0.003661 | -0.005320 | Balance |
| 21 | 0.012451 | 0.078148 | 0.688962 | 0.554609 | 0.102754 | 0.102032 | 0.011655 | -0.003216 | -0.004672 | Growth |
| Market | 0.016692 | 0.081603 | 1.000000 | 1.000000 | 0.150610 | 0.149659 | 0.012290 | 0.000000 | 0.000000 | |

## TABLE 4.3 : PERFORMANCE RANKINGS BETWEEN TREYNOR INDEX AND ADJUSTED JENSEN'S ALPHA FOR PERIOD 1984 TO 1993

| FUND ID NO. | 1984 TO 1993 | | 1984 TO 1993 | | SQUARED DIFFERENCES |
|---|---|---|---|---|---|
| | TREYNOR INDEX | RANK OF FUND | ADJ. JENSEN'S ALPHA | RANK OF FUND | BETWEEN RANKS |
| 1 | 0.006482 | 14 | -0.005815 | 14 | 0 |
| 2 | 0.009089 | 8 | -0.003212 | 7 | 1 |
| 3 | 0.011521 | 3 | -0.000773 | 2 | 1 |
| 4 | 0.008949 | 9 | -0.003346 | 8 | 1 |
| 5 | 0.005649 | 15 | -0.006644 | 15 | 0 |
| 6 | 0.009878 | 5 | -0.002419 | 4 | 1 |
| 7 | 0.009670 | 6 | -0.002627 | 5 | 1 |
| 8 | 0.007217 | 12 | -0.005082 | 12 | 0 |
| 9 | 0.008173 | 11 | -0.004122 | 10 | 1 |
| 10 | 0.009592 | 7 | -0.002706 | 6 | 1 |
| 11 | 0.010660 | 4 | -0.001640 | 3 | 1 |
| 12 | 0.008882 | 10 | -0.003414 | 9 | 1 |
| 13 | 0.011593 | 2 | -0.000703 | 1 | 1 |
| 14 | -0.002162 | 16 | -0.014455 | 16 | 0 |
| 15 | -0.007515 | 19 | -0.019821 | 19 | 0 |
| 16 | -0.013148 | 21 | -0.025460 | 21 | 0 |
| 17 | -0.002810 | 17 | -0.015102 | 17 | 0 |
| 18 | -0.007350 | 18 | -0.019653 | 18 | 0 |
| 19 | -0.012281 | 20 | -0.025441 | 20 | 0 |
| 20 | 0.006965 | 13 | -0.005320 | 13 | 0 |
| 21 | 0.011655 | 1 | -0.004672 | 11 | 100 |

| | |
|---|---|
| **Sum of squared differences** | **110** |
| **Spearman Rank Correlation** | **0.92857** |
| **t statistic *** | **10.90532** |

* Significant at 0.05 level

## TABLE 4.4 : PERFORMANCE RANKINGS BETWEEN ADJUSTED SHARPE INDEX AND TREYNOR INDEX FOR PERIOD 1984 TO 1993

| FUND ID NO. | 1984 TO 1993 | | 1984 TO 1993 | | SQUARED DIFFERENCES |
|---|---|---|---|---|---|
| | ADJ. SHARPE INDEX | RANK OF FUND | TREYNOR INDEX | RANK OF FUND | BETWEEN RANKS |
| 1 | 0.069024 | 13 | 0.006482 | 14 | 1 |
| 2 | 0.095395 | 8 | 0.009089 | 8 | 0 |
| 3 | 0.127092 | 2 | 0.011521 | 3 | 1 |
| 4 | 0.099653 | 7 | 0.008949 | 9 | 4 |
| 5 | 0.062088 | 15 | 0.005649 | 15 | 0 |
| 6 | 0.110629 | 4 | 0.009878 | 5 | 1 |
| 7 | 0.109564 | 5 | 0.009670 | 6 | 1 |
| 8 | 0.076953 | 12 | 0.007217 | 12 | 0 |
| 9 | 0.093515 | 9 | 0.008173 | 11 | 4 |
| 10 | 0.091432 | 10 | 0.009592 | 7 | 9 |
| 11 | 0.119811 | 3 | 0.010660 | 4 | 1 |
| 12 | 0.091102 | 11 | 0.008882 | 10 | 1 |
| 13 | 0.128701 | 1 | 0.011593 | 2 | 1 |
| 14 | -0.021446 | 16 | -0.002162 | 16 | 0 |
| 15 | -0.069368 | 19 | -0.007515 | 19 | 0 |
| 16 | -0.112580 | 20 | -0.013148 | 21 | 1 |
| 17 | -0.029483 | 17 | -0.002810 | 17 | 0 |
| 18 | -0.065279 | 18 | -0.007350 | 18 | 0 |
| 19 | -0.117405 | 21 | -0.012281 | 20 | 1 |
| 20 | 0.068440 | 14 | 0.006965 | 13 | 1 |
| 21 | 0.102032 | 6 | 0.011655 | 1 | 25 |

| | |
|---|---|
| **Sum of squared differences** | **52** |
| **Spearman Rank Correlation** | **0.96623** |
| **t statistic *** | **16.34557** |

* Significant at 0.05 level

## TABLE 4.5 : PERFORMANCE RANKINGS BETWEEN ADJUSTED SHARPE INDEX AND AND ADJUSTED JENSEN'S ALPHA FOR PERIOD 1984 TO 1993

| FUND ID NO. | 1984 TO 1993 | | 1984 TO 1993 | | SQUARED DIFFERENCES |
|---|---|---|---|---|---|
| | ADJ. SHARPE INDEX | RANK OF FUND | ADJ. JENSEN'S ALPHA | RANK OF FUND | BETWEEN RANKS |
| 1 | 0.069024 | 13 | -0.005815 | 14 | 1 |
| 2 | 0.095395 | 8 | -0.003212 | 7 | 1 |
| 3 | 0.127092 | 2 | -0.000773 | 2 | 0 |
| 4 | 0.099653 | 7 | -0.003346 | 8 | 1 |
| 5 | 0.062088 | 15 | -0.006644 | 15 | 0 |
| 6 | 0.110629 | 4 | -0.002419 | 4 | 0 |
| 7 | 0.109564 | 5 | -0.002627 | 5 | 0 |
| 8 | 0.076953 | 12 | -0.005082 | 12 | 0 |
| 9 | 0.093515 | 9 | -0.004122 | 10 | 1 |
| 10 | 0.091432 | 10 | -0.002706 | 6 | 16 |
| 11 | 0.119811 | 3 | -0.001640 | 3 | 0 |
| 12 | 0.091102 | 11 | -0.003414 | 9 | 4 |
| 13 | 0.128701 | 1 | -0.000703 | 1 | 0 |
| 14 | -0.021446 | 16 | -0.014455 | 16 | 0 |
| 15 | -0.069368 | 19 | -0.019821 | 19 | 0 |
| 16 | -0.112580 | 20 | -0.025460 | 21 | 1 |
| 17 | -0.029483 | 17 | -0.015102 | 17 | 0 |
| 18 | -0.065279 | 18 | -0.019653 | 18 | 0 |
| 19 | -0.117405 | 21 | -0.025441 | 20 | 1 |
| 20 | 0.068440 | 14 | -0.005320 | 13 | 1 |
| 21 | 0.102032 | 6 | -0.004672 | 11 | 25 |

| | |
|---|---|
| **Sum of squared differences** | **52** |
| **Spearman Rank Correlation** | **0.96623** |
| **t statistic *** | **16.34557** |

* Significant at 0.05 level

can be observed that all the funds have beta values that are less than 1.0 but exceeding 0.5. This results seems to confirm the notion that unit trust funds are less risky than the market portfolio and offer security of capital for investors.

## Risks Diversification

The Coefficient of Determination ($R^2$) of the funds as a whole as shown in Table 4.1 is less than 1.0. This means that the funds are less than perfectly diversified. Nevertheless, the unit trust funds in the sample are quite well diversified portfolios with an overall $R^2$ value of 0.723203.

Fund 9 has the highest $R^2$ value of 0.882874 and is thus the most well diversified portfolio in the sample as shown in Table 4.2. However the least diversified portfolio is Fund 16 with a $R^2$ value of 0.494470. Table 4.2 also shows that twenty out of the twenty one funds in the sample have $R^2$ value in excess of 0.5.

## Results when Funds are Grouped According to their Objectives

If the funds are grouped according to their objectives as shown in Table 4.6, the average mean monthly return of the balanced, growth and income funds are 1.0063%, 0.2877% and 0.2678% respectively. Among them, the income funds post the worst results while the balanced funds are the best performer.

The mean Adjusted Sharpe Index of the balanced, growth and income funds are 0.087341, -0.016288 and -0.003921 respectively. When performance is risk adjusted, balanced funds again are the best performers while the growth funds are the worst performers.

When ranking is by the Treynor Index, the mean values for balanced, growth and income funds are 0.008098, -0.001992 and -0.001306 respectively. Again balanced

## TABLE 4.6 : RETURN, RISK & PERFORMANCE PROFILES OF FUNDS FOR PERIOD 1984 TO 1993

| FUND OBJECTIVE | NUMBER OF FUNDS | MEAN MONTHLY RETURN | STANDARD DEVIATION OF RETURN | BETA OF FUND | COEFFICIENT OF DETERMINATION | ADJUSTED SHARPE INDEX | TREYNOR INDEX | ADJUSTED JENSEN'S ALPHA |
|---|---|---|---|---|---|---|---|---|
| **BALANCE** | | | | | | | | |
| RANGE | 13 | 0.002996 to 0.012911 | 0.053430 to 0.073771 | 0.593173 to 0.803349 | 0.612828 to 0.882874 | -0.021446 to 0.128701 | -0.002162 to 0.011593 | -0.014455 to -0.000703 |
| MEAN | | 0.010063 | 0.065108 | 0.698432 | 0.771399 | 0.087341 | 0.008098 | -0.004198 |
| **GROWTH** | | | | | | | | |
| RANGE | 6 | -0.004096 to 0.012451 | 0.060433 to 0.084739 | 0.646309 to 0.894746 | 0.494470 to 0.766685 | -0.112580 to 0.102032 | -0.013148 to 0.011655 | -0.025460 to -0.004672 |
| MEAN | | 0.002877 | 0.076474 | 0.723481 | 0.610801 | -0.016288 | -0.001992 | -0.014965 |
| **INCOME** | | | | | | | | |
| RANGE | 2 | -0.005791 to 0.011147 | 0.061176 to 0.086284 | 0.697535 to 0.830271 | 0.628523 to 0.865741 | -0.117405 to 0.109564 | -0.012281 to 0.009670 | -0.002627 to -0.025441 |
| MEAN | | 0.002678 | 0.07373 | 0.763903 | 0.747132 | -0.003921 | -0.001306 | -0.014034 |

funds are the best performer while the growth funds are the worst performer. This is consistent with the results when ranking is by the Adjusted Sharpe Index.

The mean Adjusted Jensen's Alpha for balanced, growth and income funds are -0.004198, -0.014965 and -0.014034 respectively. Again similar results as the above two methods of performance ranking is obtained.

The mean beta values of the balance, growth and income funds are 0.698432, 0.723481 and 0.763903 respectively. It appears that the balanced funds have the lowest risks while income funds have the highest risks. This contradicts the fact that income funds should have the lowest risks as they invest mainly in government securities and bonds while growth funds have the highest risks as they invest in risky stocks which have high capital gains potential. The balanced funds have a beta value (0.698432) which is quite close to the value of 0.68 listed in Table 3.2 ie. balanced funds seems to adhere to the funds' stated objectives. The growth and income funds have values that are quite different from those values in Table 3.2 and implies that they do not adhere very well to their objectives.

The $R^2$ value of balanced, growth and income funds are 0.771399, 0.610801 and 0.747132 respectively. This means that balanced funds are the most well diversified whereas growth fund are the least diversified.

**Consistency of Funds Performance**

Table 4.7 shows that when performance ranking is by the Adjusted Sharpe Index, the Spearman Rank Correlation Coefficients ($R_S$) for the periods 1987 & 1988 and 1988 & 1989 are positive and significant at the 0.05 level. This means that funds that performd well in the first year also performed well in the second year ie. the funds are ranked similarly in both years. However for period 1989 & 1990, the $R_S$ value was significantly negative. This means that funds that performed well in 1989 performed poorly in 1990 ie. the performance ranking had been reversed.

Table 4.8 and Table 4.9 both shows that the $R_S$ values using the Treynor Index and the Adjusted Jensen's Alpha are significantly positive for the periods 1985 &1986, 1987 & 1988 and 1988 & 1989. The only difference between these two tables and

## TABLE 4.7 : RANK CORRELATION OF PERFORMANCE RANKINGS FOR ALL THE FUNDS USING THE ADJUSTED SHARPE INDEX

| PERIOD | SPEARMAN RANK CORRELATION COEFFICIENT | T VALUE |
|---|---|---|
| 1984 & 1985 | 0.06316 | 0.26849 |
| 1985 & 1986 | 0.39091 | 1.85124 |
| 1986 & 1987 | 0.41299 | 1.97661 |
| 1987 & 1988 | 0.53506 | 2.76073 * |
| 1988 & 1989 | 0.72338 | 4.56674 * |
| 1989 & 1990 | -0.58961 | -3.18199 * |
| 1990 & 1991 | -0.37662 | -1.77215 |
| 1991 & 1992 | -0.03896 | -0.16996 |
| 1992 & 1993 | 0.12987 | 0.57093 |

Note : * Significant at 0.05 level

## TABLE 4.8 : RANK CORRELATION OF PERFORMANCE RANKINGS FOR ALL THE FUNDS USING THE TREYNOR INDEX

| PERIOD | SPEARMAN RANK CORRELATION COEFFICIENT | T VALUE |
|---|---|---|
| 1984 & 1985 | 0.04962 | 0.2108 |
| 1985 & 1986 | 0.64286 | 3.65822 * |
| 1986 & 1987 | 0.42078 | 2.02184 |
| 1987 & 1988 | 0.62208 | 3.46326 * |
| 1988 & 1989 | 0.51429 | 2.61389 * |
| 1989 & 1990 | -0.49351 | -2.47331 * |
| 1990 & 1991 | -0.35065 | -1.63207 |
| 1991 & 1992 | -0.01688 | -0.0736 |
| 1992 & 1993 | 0.29091 | 1.32536 |

Note : * Significant at 0.05 level

## TABLE 4.9 : RANK CORRELATION OF PERFORMANCE RANKINGS FOR ALL THE FUNDS USING THE ADJUSTED JENSEN'S ALPHA

| PERIOD | SPEARMAN RANK CORRELATION COEFFICIENT | T VALUE |
|---|---|---|
| 1984 & 1985 | 0.05414 | 0.23001 |
| 1985 & 1986 | 0.62727 | 3.51081 * |
| 1986 & 1987 | 0.42078 | 2.02184 |
| 1987 & 1988 | 0.62208 | 3.46326 * |
| 1988 & 1989 | 0.51429 | 2.61389 * |
| 1989 & 1990 | -0.49351 | -2.47331 * |
| 1990 & 1991 | -0.35065 | -1.63207 |
| 1991 & 1992 | -0.02727 | -0.11892 |
| 1992 & 1993 | 0.28701 | 1.30601 |

Note : * Significant at 0.05 level

## TABLE 4.10 : RANK CORRELATION OF SYSTEMATIC RISKS (BETA) FOR ALL THE FUNDS

| PERIOD | SPEARMAN RANK CORRELATION COEFFICIENT | T VALUE |
|---|---|---|
| 1984 & 1985 | 0.42556 | 1.9952 |
| 1985 & 1986 | 0.33117 | 1.52986 |
| 1986 & 1987 | 0.30779 | 1.41009 |
| 1987 & 1988 | 0.61299 | 3.38182 * |
| 1988 & 1989 | 0.56494 | 2.98435 * |
| 1989 & 1990 | -0.02078 | -0.09059 |
| 1990 & 1991 | 0.45325 | 2.21639 * |
| 1991 & 1992 | 0.25065 | 1.12858 |
| 1992 & 1993 | 0.45974 | 2.25658 * |

Note : * Significant at 0.05 level

Table 4.7 is that an additional period 1985 & 1986 has a $R_S$ value which is significantly positive. Again during these periods, funds that performed well in the first year also performed well in the second year and vice versa. Also in period 1989 & 1990, the $R_S$ value is significantly negative ie. there was a reversal in the performance ranking in 1990 compared to that of 1989.

The above three tables shows conclusive evidence that during the period 1987 to 1989, funds that performed well or poorly in one year repeated their performance in the later years ie. there is consistency of performance. However the trend reversed in the period 1989 & 1990. The three tables also shows that the three methods of performance ranking gave very similar results.

**Stability of Systematic Risks (Beta)**

Table 4.10 shows the $R_S$ values of the funds' systematic risks. It shows that for periods 1987 & 1988, 1988 & 1989, 1990 & 1991 and 1992 & 1993, the $R_S$ values are significantly positive. This means that the funds' beta values that are high in the first year are also high in the following years and vice versa. This means that the relative ranking of the risks does not change considerably and in fact is quite stable in ranking. However in the other years no significant results could be observed although $R_S$ values are positive.

**Forecasting Ability of Investment Managers**

Table 4.11 shows the Jensen's Alpha values which are tabulated in decreasing magnitude. As can be seen from the table, all the values are negative. This means that none of the investment managers have forecasting ability of security prices and that they all performed worse than than the naive buy and hold strategy (market portfolio) which has a value of 0.0.

**TABLE 4.11 : JENSEN'S ALPHA & T VALUES FOR INDIVIDUAL UNIT TRUSTS FOR PERIOD 1984 TO 1993**

| FUND ID NO. | MEAN JENSEN'S ALPHA VALUE | T VALUE | NO. OF OBSERVATIONS |
|---|---|---|---|
| 6 | -0.001973 | -1.011524 | 10 |
| 2 | -0.003104 | -0.980182 | 10 |
| 10 | -0.003108 | -1.775749 | 10 |
| 11 | -0.003252 | -1.41157 | 10 |
| 13 | -0.003252 | -1.463397 | 10 |
| 7 | -0.003515 | -1.675251 | 10 |
| 4 | -0.003606 | -1.863431 | 10 |
| 3 | -0.003628 | -2.300736 | 10 |
| 1 | -0.004515 | -1.578245 | 10 |
| 12 | -0.004595 | -1.517209 | 10 |
| 9 | -0.004796 | -2.101649 | 10 |
| 8 | -0.004798 | -1.498738 | 10 |
| 21 | -0.005111 | -1.677177 | 9 |
| 5 | -0.005113 | -2.207836 | 10 |
| 14 | -0.005319 | -2.509369 * | 10 |
| 20 | -0.005494 | -3.089742 * | 10 |
| 15 | -0.009262 | -2.306946 * | 10 |
| 17 | -0.009872 | -3.201339 * | 10 |
| 16 | -0.010394 | -2.311599 * | 10 |
| 18 | -0.011974 | -3.093338 * | 10 |
| 19 | -0.018907 | -3.660698 * | 10 |

Note : * Significant at 0.05 level

It can be observed that Funds 14, 15, 16, 17, 18, 19 and 20 have significantly negative Jensen's Alpha. This leads to the acceptance of the $H_1$ hypothesis ie. these funds' investment managers have poor forecasting ability. It would be interesting to note that Funds 14, 15, 16, 16, 18 and 19 are all managed by the same management company ie. Asia Unit Trust Bhd.

For the sample used in this study one third of the funds in fact performed poorly consistently although the remaining two thirds of the sample performed better but still could not beat the naive buy and hold strategy.

As far as this sample of unit trust funds is concerned, the result seems to dispel the notion that unit trust managers have superior forecasting ability and in fact could not predict the market.

## Impact of Fund Characteristics on Investment Performance and Systematic Risks

When simple and multiple linear regressions were performed the following significant relationships shown in Table 4.12 are obtained.

**Table 4.12 : Significant Regression Equations**

| No. | Equation | $R^2$ | F Value |
|---|---|---|---|
| 1 | $\alpha = -1.243325\ X_4 + 0.003148$ | 0.27323 | 10.52642 * |
| 2 | $\beta = -0.018606\ X_1 + 0.936996$ | 0.19805 | 6.9149 * |
| 3 | $\beta = 7.408317 \times 10^{-9}\ X_2 + 0.546612$ | 0.52098 | 30.45295 * |
| 4 | $\beta = 5.023057 \times 10^{-9}\ X_3 + 0.557829$ | 0.54847 | 34.01151 * |

Note : * Significant at the 0.05 level

As can be seen in equation 1 in Table 4.12, the Jensen's Alpha is negatively related to the expense ratio albeit the relationship is weak with a $R^2$ value of 0.27323. This confirms the notion that high expense ratio tend to result in lower returns. This is due to the fact that high expenses spent on investment analysis erodes the returns that unit holders can earn.

Equation 2 in Table 4.12 suggest that the riskiness of the funds are negatively related to the age of the funds although the relationship is weak with a $R^2$ value of 0.19805. This means that the older the funds the lower the riskiness. This means that the older funds are more conservative in their fund managment whereas the newer funds are more aggresive and invest in more risky stocks although it did not result in higher returns.

Equation 3 in Table 4.12 suggest that the riskiness of the funds are positively related to the size of the funds with a $R^2$ value of 0.52098 indicating a fairly strong relationship. This equation implies that the larger funds have higher risks and vice versa.

Equation 4 in Table 4.12 shows that the riskiness of the funds is positively related to the portfolio turnover with a $R^2$ value of 0.54847 indicating a fairly strong relationship. This means that funds that practice active trading probably invest in the more speculative stocks of higher risks in an attempt to generate better returns over a shorter time horizon. However not only were they not successful in earning higher returns they only drove up their riskiness.