CHAPTER II

LITERATURE REVIEW

Introduction

The performance of mutual funds or unit trusts has been an area of frequent research and inquiry since their inception especially in the West. The development of the modern portfolio theory by Markowitz and the Capital Asset Pricing Model (CAPM) by Sharpe, Lintner and Mossin have intensified work in this area.

This chapter highlights the studies and empiral findings of investment performance of unit trusts and mutual funds by researchers in the West, Singapore and Malaysia.

Empirical Studies in the West

Sharpe (1966) studied the performance of 34 mutual funds covering the period 1954 to 1963 in the United States. He developed a risk adjusted measure of performance based on the reward to variability ratio popularly known as the Sharpe Index. He found that 12 funds out of the 34 funds had Sharpe Index above the 0.667 of the Dow Jones Industrial Average (DJIA) while the average of the 34 mutual funds' ratios is 0.633 which is below the DJIA's 0.667. This means that the DJIA was a more efficient portfolio than the average mutual fund in the sample. His results also showed that the differences in performance over time can be predicted although imperfectly

and that no indication on the sources that account for the differences in performance can be obtained. It also does not confirm that past performance is the best predictor of future performance. However, when the reward to volatility ratio ie. the Treynor Index was used, Sharpe showed that for fund that performed reasonable diversification, the Treynor Index may provide better predictions of future performance than the Sharpe Index. Sharpe's study also support the notion that good performance is associated with low expense ratio and that size of the fund per se is an unimportant factor in predicting future performance.

Jensen (1968) studied the performance of 115 open end mutual funds for the ten year period 1955 to 1964. He developed a performance measure called the Jensen's Alpha which could be used to evaluate a portfolio manager's predictive ability of security prices. His study results indicated that on the average the funds were not able to predict security prices well enough to outperform the naive buy and hold strategy and that there was very little evidence that any of the individual fund was able to perform significantly better than which can be expected from mere random chance. On average the funds apparently were not quite successful enough to recoup even their brokerage expenses.

Across the Atlantic ocean in the United Kingdom, Firth (1977) studied the performance of 72 British unit trust funds over the period 1965 to 1975. The results of his study also showed that fund managers have not been able to outperform the naive buy and hold strategy. In addition, there was no statistically significant evidence of any unit trust having superior performance. In fact there was evidence of statistically significant inferior performance. The results hold even when management expenses are added back. It appears that unit trust investment managers do not have superior share price forecasting abilities and thus active management does nothing for performance. His results were similar to those in the United States where researchers have found that mutual funds have not outperformed the market but in fact the British performance has been slightly inferior to the American. A major finding of his study is that the beta value (systematic risks) of the funds are lower than that of the market. Firth also showed that size of the unit trust, the relative number of investment holdings, the relative number of unit holders and the value of beta have no significant effect on the Jensen's Alpha performance measure. The value of the systematic risks cannot also be explained by the other three variables. It suggested that the beta value of individual trusts depends largely on the investment policies of the managers.

Firth (1978) expanded his previous study to include 360 unit trusts in the United Kingdom over the period 1967 to 1975. In addition to the results of his previous

study, he found that there was no consistency in the ranking of unit trust by their Jensen's Alpha over the various time periods ie. there is lack of consistency in performance of the unit trusts. There was also no difference in investment performance betweem the various types of funds. Firth found no significant relationship between the funds financial characteristics such as size, number of unit holders, number of investment holdings, age of the fund, initial and annual managers' charges and liquidity with the dependent variable, Jensen's Alpha. Also no significant relationship between these independent variables and the beta value could be found.

In the United States, Moles & Taylor (1977) conducted a risk return analysis of 86 funds covering a period of ten years. They found that in most cases, the performance variables such as number of units, size of funds and previous yield had weak predictive power for the funds' performance in the subsequent periods and there was little differentiation among the funds inspite of their stated objectives. Moles found that while there was a significant relationship between the funds' performance and some variables such as growth pattern, level of liquidity and type, no strong relationship was noted between their performance and other variables such as fund charges and management group.

Gurney (1976) found that there was a weak correlation between the sizes of the funds and their performance. However, a significant correlation was noted between the yields quoted by the funds in the beginning of the periods and their performance. A positive correlation between performance ranking in the successive years was also found unless market conditions changed considerably. However this could not be generalised to all market conditions.

Empirical Studies in Singapore and Malaysia

Koh and Koh (1987) analysed 19 unit trusts in singapore over a five year period from 1980 to 1984. They found that growth funds that were expected to yield the highest returns and to have the highest risks relative to the other types of funds do no have the highest returns nor do they possess the highest risks measured by both the standard deviation of the returns and the beta value of the fund. Hence it can be concluded that returns and risk characteristics of these unit trusts are not fully consistent with their stated objectives. The Coefficient of Determination (R^2) of the

regression between the fund returns of the 19 funds with respect to the market returns ranged from 0.001 to 0.473 with a mean of 0.2513. Hence this unit trust funds did not achieve a high degree of diversification. By using the Adjusted Sharpe Index (ASI), 16 or 84% of the 19 funds had lower ASI than the SES All Share Index (0.0170). The average ASI value of the unit trusts was -0.0575 which is well below that of the market index. This shows that the unit trusts were unable to outperform the market. Eleven out of the 19 funds have negative ASI which means that they earned return less than the average risk free rate. When the funds were analysed by objective categories, the income fund outperformed the balanced and growth funds. But none of the groupings out performed the market. Both the balanced and growth funds had negative ASI. In this study, the unit trusts were ranked annually using the ASI for the period 1980 to 1984. The Spearman Rank Correlation (R_S) calculated for ech pair of years showed that the performance ranking over the five years period were not consistent except for the period 1981 to 1982. The remaining pair of years have negative but non significant R_S. This means that unit trusts in Singapore were not able to report consistent performance over time.

Lee (1993) did a study on 21 unit trusts in Singapore over a five year period from 1986 to 1990. Her results showed that unit trust funds underperformed the stock market in terms of the average annual returns. Their Sharpe Index and ASI all failed to beat the market with most of the funds recording negative indices while the market shows positive performance. Based on the Treynor Index, all except one fund underperformed the market. However the Jensen and Adjusted Jensen Alpha showed that 8 funds managed to beat the market. When the funds are grouped according to their objectives, the income funds posted the worst results while the special funds (funds that are specialised in certain sectors, industry or commodity) were the best performer. Most of the funds in the sample were inconsistent in their performance for the five years period. There was no significant difference in the risk profile over time for most of the funds with 38% of the funds showing significant difference in risk. The risk profiles were also not consistent with their stated objectives. The relatively low correlations between the performance rankings of any two years indicated inconsistency in their annual returns over time. The funds were also not well diversified with 81% of the funds having adjusted R^2 value less than 0.7.

Chua (1985) did an empirical study that covered a ten year period from 1974 to 1984 of 12 Malaysian unit trust funds managed by two management companies with 9 funds from Amanah Saham Mara and the remaining 3 funds from Asia Unit Trust. On the average, the unit trust outperformed the market with the average Sharpe Index of 0.161 as against the market's value of 0.083. The R_S value for the Sharpe Index for

the two sub periods 1974 to 1979 and 1979 to 1984 was 0.657 and was significant at the 0.01 level. He also reported similar findings when the Treynor Index was used indicating a fairly consistent performance over time. The unit trusts appear to adhere to their stated objectives and had also performed their risk control and diversification tasks reasonably well. Fund characteristics such as size, expense ratio and portfolio turnover had been found to bear influence on the performance. These characteristics were all negatively correlated to performance. Simple regression analysis showed that all fund characteristics studied were reasonably good predictors of the performance measure, Sharpe Index with R^2 value ranging from 0.438 to 0.862. Among the fund characteristics studied, the average portfolio turnover has the highest explanatory power for the performance measure, Sharpe Index and could explain 86.2% of the variation in the Sharpe Index. This means that high performance funds tend to relate to those with low expense ratios, low asset size (net asset value), low portfolio turnover and vice versa. Hence, investment managers can improve performance by reducing expenses, managing smaller funds as well as avoiding active trading which only results in excessive expenses on brokerage. On average, the Jensen's Alpha showed that the unit trust funds were able to predict security prices well enough to outperform the naive buy and hold strategy. All the government backed funds were able to out performed the naive buy and hold strategy while the private sector funds did not show the ability to predict security prices and were not able to do better than the naive buy and hold strategy.