The University of Osaka
Institutional Knowledge Archive

Title	Investment Style of Mutual Funds : How is it Useful in Communicating Economic Trends to Investors
Author(s)	Lau, Wee-Yeap
Citation	大阪大学経済学. 2006, 55(4), p. 139-156
Version Type	VoR
URL	https://doi.org/10.18910/20186
rights	
Note	

The University of Osaka Institutional Knowledge Archive : OUKA

https://ir.library.osaka-u.ac.jp/

The University of Osaka

Investment Style of Mutual Funds: How is it Useful In Communicating Economic Trends to Investors[§]

Wee−Yeap Lau[**]

Abstract

From the perspective of microeconomics theory, the existence of principal−agent relationship in financial market inherently breeds information asymmetries between fund managers and investors. Without the information of investment styles, investors face the issue of mismatch between their investment objectives and funds' profiles. Style analysis by Sharpe (1988, 1992) is used to decompose the funds into style and selection components, and reclassify the funds into growth and value styles in order to mitigate the misclassification of fund objectives. Although the sample periods from May 1997 to May 2002 were during the onset of Asian financial crisis and post−crisis periods, this study shows that the information of investment style does communicate economic trends to unit trust investors. This study concludes that: First, during the period of economic recovery, value style funds recover faster from distressed economic environment than growth style funds. Second, growth style funds are more sensitive to negative economic events than value style funds. Third, during sustainable economic recovery periods, growth style funds exhibit recovery momentum better than value style funds. This study highlights the importance of investment styles in the context of Malaysian fund management industry.

Keywords: style analysis, equity style management, mutual fund, investment style, economic trends
JEL classifications: G11, G18, G23

INTRODUCTION

The Asian financial crisis in 1997−98 caused great financial distress to mutual fund investors. In the aftermath of the Asian financial crisis, the size of the unit trust fund industry was reduced from RM60 billion to RM34 billion, or a loss of 44.01 percent of its net asset value (NAV). It was not until in 2002 where the NAV had managed to resume to RM54 billion (Table 1), but still, thousands of investors suffered financial losses and incapacitated to make important financial decision as their funds would be sold at losses during this turnaround period if they chose to. Most of NAVs of the funds were below their pre−crisis prices.

From microeconomics theory, the existence of principal−agent relationship in unit trust investment

[§] The author would like to thank Professor Kazuhiko Nishina from the Graduate School of Economics, Osaka University for his kind comments and suggestions. The author takes responsibility for any remaining errors.
[**] Email: bg038LWY@srv.econ.osaka−u.ac.jp

Table 1 Statistics On The Malaysian Unit Trust Industry and Bursa Malaysia

	1995	1996	1997	1998	1999	2000	2001	2002
Industry								
Units in Circulation (billion units)	31.94	38.94	42.25	46.54	52.63	63.85	71.39	84.53
No. of Accounts ('000)	6,850	7,964	8,263	8,588	8,910	9,582	9,990	10,175
Net Asset Value (RM billion)	44.13	59.96	33.57	38.73	43.26	43.30	47.35	53.70
KLSE								
KLSE Composite Index	995.17	1237.96	594.44	586.13	812.33	679.64	696.09	646.32
Market Capitalization (RM billion)	565.63	806.77	375.8	374.52	552.69	444.35	464.99	481.62
NAV to Market Capitalization (%)	7.80	7.43	8.93	10.34	7.83	9.74	10.18	11.15

Source: PNB (2001) and Federation of Malaysia Unit Trust Managers.
Available from http://www.fmutm.com.my [cited 5 March 2004]

inherently breeds information asymmetries between fund managers and investors. Three sources of such information asymmetries could be identified. First, ambiguous asset allocation policies are presented in the interim / annual reports. For this instance, asset allocations of portfolio are not clearly identified with detailed break–down of specific asset classes. Second, the information on investment styles of unit trust funds such as value style or growth style investing is not provided by the asset management companies. Third, the time–lag of a few weeks to months between the financial year–end reporting and the actual interim or annual reports are received by mutual fund investors. These information asymmetries directly distort the risk–reward profile of mutual fund investors, and compromise their risk taking activities.

On the other hand, the exposition of style analysis by Sharpe (1988, 1992), together with the advent of 'equity style management' in 90s have created the awareness among the investors of mutual funds on the importance of asset allocation, and brought new development from asset consulting to designing performance measures in fund management industry of the developed financial markets This new trend of classifying mutual funds based on their respective assets allocation is a logical development for fund management industry considering that if unit trust funds were to invest in various investment vehicles, the expected risk and return of these funds would not be the same.

The above discussion underscores the importance of investigating the investment styles of the respective mutual funds. The different investment styles provide for opportunities and risks in different economic cycles. Henceforth, investors should be aware of the asset allocation made by their fund managers with respect to investment styles. Could investors investigate the investment styles of their funds given the limited information available? Alternatively, could the investors gauge the behaviour of their mutual funds given the changes in economic cycle?

This study intends to investigate the investment style of the mutual funds by decomposing the funds into style and selection components, and reclassify them into growth and value styles in order to mitigate the misclassification of fund objectives. Subsequently, this paper contrasts the empirical evidence on the economic trends of MSCI Malaysian Growth and MSCI Malaysian Value Indices against the trends of alpha performance of funds, as measured against the respective market and style

benchmarks. The contribution of this paper is threefold. First, this study presents empirical evidence on the behavior of Malaysian fund managers with respect to value and growth style investing, based on MSCI Malaysian Growth and Malaysian Value Indices developed by Morgan Stanley Capital International (MSCI). Second, this study provides empirical evidence that upon classification of investment styles, investors are able to mitigate one form of information asymmetry. Third, based on the knowledge of the growth and value style funds' characteristics and existing economic cycle, investors are able to gauge the behaviour of their funds, and these lead to better investment decision making.

The paper is organized as follow. The second section briefly reviews the literature on equity style classification, Malaysian mutual funds, theoretical framework on investment styles, economic trends, style and market benchmarks. The third, four and fifth sections are on data, methodology and results respectively. In final section, with respect to findings obtained from this study, this paper evaluates the implementation of current fund classification, the relationship between investment styles and decision making, and policy implication to Malaysian fund management industry.

LITERATURE REVIEW

Equity Style Classification

With the advent of the concept of a fund's 'effective asset mix' and 'attribution analysis' by Sharpe (1988, 1992), there have been a number of proponents for style analysis with each of them demonstrated usefulness of this analysis with respect to equity style classification (Tierney & Winston, 1991; Bailey, 1992; Bailey & Tierney, 1993; Coggin, 1998). This analysis has also been used to link the investment returns and asset allocation policies in some of recent research (Brinson et. al., 1991; Ibbotson and Kaplan, 2000).

Tierney and Winston (1991) supported the use of return−based style analysis to analyze the asset mix of a portfolio manager. Using a four equity style portfolios produced by Wilshire Asset Management as generic portfolio for style−point analysis, they concluded that creation of a custom benchmark is the best way to address the style issue. Christopherson (1995) linked the crucial relationship among past return patterns, portfolio characteristics and future returns and pointed out that the reason for studying investment style was not so much concerned with the past returns, but to anticipate future returns.

It is inevitable for the problem of asymmetric information between fund manager and investors to exist as timely mutual fund holdings are not readily updated even in the developed market as discussed by Lucas and Reipe (1996). Furthermore, they identified style analysis to be a useful tool for investors to comprehend a trust fund's investment policy and objective. In another study, TerHorst, Nijman and DeRoon (2004, p. 30) stated that while the estimated portfolio may indeed differs from actual portfolio holdings, but ". . . if the aim is to predict future fund returns, factors exposures seem to be more relevant than actual portfolio holdings, and return−style based style analysis performs better than holding−based style−analysis".

Mutual Funds in Malaysia

Chua (1985) with exclusive samples of 12 Malaysian mutual funds between 1974 to 1984, concluded that funds outperformed the market proxy and performance was fairly consistent over time. High performance funds tend to relate to those with low expense ratio, low asset size and low portfolio turnover.

In a subsequent study, Ewe (1994) utilized a sample of 37 funds and a period between 1988−1992, with test of performance by Jensen's Alpha Measure and Sharpe Index Measure, reported that while risk adjusted returns overall were less than those of stock market implying that the managers had low forecasting ability. Shamsher and Annuar (1995) found a similar result with Ewe (1994), where the returns on investment in 54 funds for the period 1988−1992 were below risk−free and market returns. Besides the performance is inconsistent over time, the degree of diversification of the portfolios was below expectation.

In addition, the studies conducted with respect to the performance measurement of Malaysian unit trust funds have utilized market benchmarks such as Kuala Lumpur Composite Index (KLCI) and EMAS Index (Leong and Aw, 1997; Ch'ng and Kok, 1998). These researchers have advocated for more than one kind of market benchmarks for performance measurement. All the prior studies before 1997 have concentrated on using the broad market index i.e. KLCI as the single yardstick.

In another study by Shamsher and Annuar (2001), using a sample size of 41 non−government based mutual funds from 1995 to 1999, they reported that based on risk−adjusted returns basis, both active and passive funds performed equally well, but underperformed the market portfolio. They concluded that choice of active or passive funds was irrelevant given equal performance, but growth funds should be prioritized over income if investors preferred actively managed funds over passive funds and vice versa.

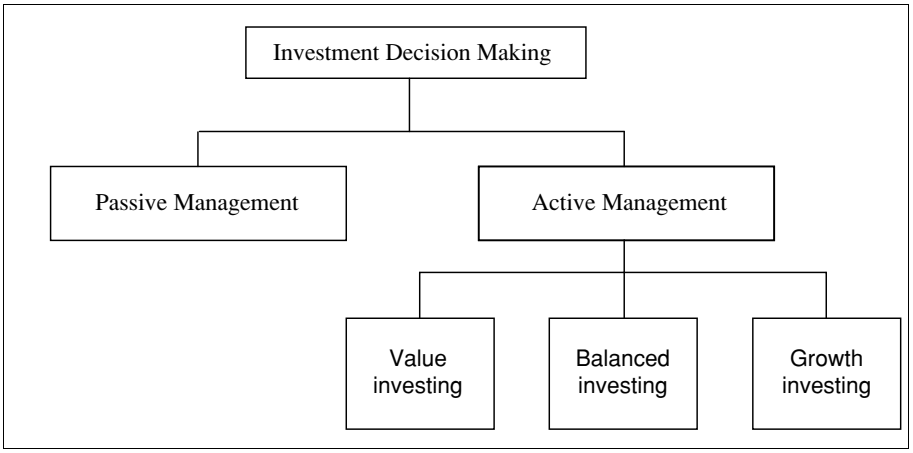
Using the return−based style analysis with a sample size of 42 funds from February 1996 to January 2001, Lau (2002) noted that, in addition to the usual market benchmark comparison, the performance of funds can also be compared against their respective peer groups. It was also noted that the level of passive management for index funds were indistinguishable from other types of fund.

Theoretical Framework on Investment Styles

Figure 1 shows an overview of investment decision making model used by asset management companies. Investment styles have been emphasized by asset management companies in developed markets. According to Farrell (1997, p.307), styles investing are a variety of investment strategies pursued by pursued by investment managers in equity market. Two popular styles are growth stock investing and non−growth investing, or better known as value stock investing. In addition, Farrell (1997, p.312) adds that growth stocks can be broadly characterized as those expect to grow at superior rates, whereas value stocks can be characterized as growing at a rate in line with the economy.

From another perspective, Strong (2003, p.269) states that value investor focuses on firm's earning history and its balance sheet, and financial ratios such as price/earning ratio and price/book ratio. P/E ratio is the firm's stock price divided by its earning per share. Value investors prefer firms with low

Figure 1 An Overview of Investment Decision Making In Investment Management



Source: Author's own sketch

stock price and high earnings. P/B ratio is the firm's current stock price divided by its book value per share. Value investor prefers a low price to book ratio. In contrast, Strong (2003, p.273) states that growth investors prefer price momentum or stocks that are in favour and whose prices have been advancing.

As discussed in an earlier section, the non–disclosure of investment styles or ambiguous disclosure of asset allocation by asset management companies compromise the risk taking activities of investors. The lack of distinctive classification of investment styles causes the mismatch of risk–reward profiles between the funds and investors. As the performance of funds is inseparable from macroeconomic environment, the lack of information on styles incapacitates investors from making sound investment decision.

Economic Trends, MSCI Style and BMCI Market Benchmarks

Figure 2 shows the trends of BMCI, MSCI Value and MSCI Growth Indices from May 1997 to May 2002. BMCI started with 1104.83 points on May 30th, 1997 and ended 741.76 points on May 31st, 2002 while MSCI Growth and Value started at 100 points on May 30th, 1997 and ended with 39.901 and 109.754 points respectively on May 31st, 2002.

It could be observed that despite both style indices differ from BMCI by scales of measurement, all the three indices have general trends of down swing from May 1997 to August 1998, followed by up swing from September 1998 to April 2000, and followed by another down swing to June 2001, and another up swing from there onwards.

DATA

Sample Periods

In order to comprehend the economic trends behind the MSCI Style Indices and BMCI, the sample

Figure 2 The Graphs of MSCI Style Benchmark and BMCI

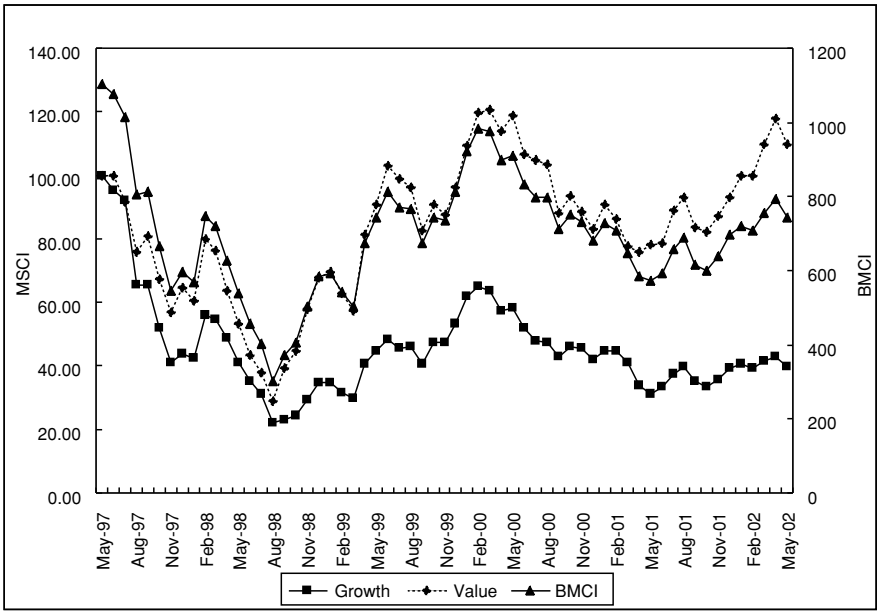


Table 2 Sample Periods and Economic Events

In–Sample	Period 1	Period 2	Period 3	Period 4
May 1, 1997–May 31, 2002	June 1, 1997–August 31, 1998	September 1, 1998–November 30, 1999	December 1, 1999–February 1, 2001	March 1, 2001–May 1, 2002
Economic Events during this period	Asian financial crisis hit capital markets and caused volatitity in many of currencies.	The capital control imposed on the flow of local currency.	The burst of dot.com bubble in the U. S. markets.	The 911 Event in the U. S. affected the tourism, hotel, logistics & aviation industries.

periods of 60 months are divided into four periods of 15–month interval each as shown in table 2. It could be observed that during those periods, a number of significant economic events that have taken place in Malaysian economy resulting in the upward and downward swings shown by those indices.

Data Selection

The fund data comprises of 60 month–end net asset value (NAV) of the equity funds listed on daily newspapers. The sample period starts from May 1997 to May 2002. The sample period is chosen with the purpose to match the commencement of MSCI Malaysian Growth and Value Indices, which started in May 1997. NAV is selected as the measure of a mutual fund's value as it reflects the actual amount fund managers have to invest with.

A total of 41 funds from growth, income and balance categories are chosen for this study. While the asset management companies ("AMC") define their own fund objectives as shown in table 3, a more detailed break–down of these funds into different sub–types such as index funds, small company

Table 3 Criteria of Fund Classification

Fund Classification	Description
Income Funds	Malaysian–domiciled unit trust funds which mainly invest in Malaysian equities and on regular basis, approximately half of the total returns are distributed to unitholders in the form of income
Growth Funds	Malaysian–domiciled unit trust funds which mainly invest in Malaysian equities and on regular basis, more than half of the total returns are in the form of capital gain (increased unit price or bonus units)
Balanced Funds	Malaysian–domiciled unit trust funds which only invest up to a maximum of 60 percent in Malaysian equities, and the balance in fixed interest securities

Source: The Edge Daily, dated on 1 April 2002

funds and others can be seen in table 6.

Dependent Variables

The continuous compounding return for the fund is used as the dependent variable. It is calculated as

$$R_{j,t} = \text{In}\left(\frac{P_{j,t}}{P_{j,t-1}}\right)$$

$$R_{m,t} = \text{In}\left(\frac{I_{m,t}}{I_{m,t-1}}\right)$$

$$R_{f,t} = \text{In}(1 + r_{f,t})$$

Where:

$R_{j,t}$ = the continuous compounded return for j unit trust fund at time t

$R_{m,t}$ = the continuous compounded return for m benchmark portfolio for the month t

$R_{f,t}$ = the continuous compounding risk free rate of interest for month t

$P_{j,t}$ = the net asset value for j unit trust fund at time t

$I_{m,t}$ = the asset class index at the end of month t

$r_{f,t}$ = the discount rate of the 90–day T–Bill for month t as the proxy for the risk free rate of interest

In = the natural logarithm

Independent Variables

Independent variables are returns series of asset classes invested by fund managers. The asset classes that represent the investment universe are shown in table 4. These asset classes are chosen after careful examination on literatures such as Choong (2001) and fund prospectuses. Out of 41 funds in our sample, three funds that also invest in foreign stocks have six asset classes as their independent variables.

As stated by Sharpe (1992) ". . . while not strictly necessary, it is desirable that such asset classes should be 1) mutually exclusive, 2) exhaustive and 3) have returns that 'differ', . . . and the asset

Table 4 Asset Class Indices

Asset Class	Description
Growth Stocks	Represented by MSCI Malaysian Growth Index* quoted in local currency.
Value Stocks	Represented by MSCI Malaysian Value Index* quoted in local currency.
Cash	A proxy for short−term Ringgit money market instruments. Represented by Kuala Lumpur Inter−bank Offer Rate (KLIBOR). KLIBOR 1−month deposit rate is used.
Government Bonds	Represented by MGS−bond all tenure Index#, which account for MGS with value above RM100 million on issues for maturity greater than one year.
Corporate Bonds	Represented by RAM Listed Bond Index#, which account for all bonds and loan stocks listed on KLSE a term to maturity of more than one year. A proxy for listed private debt securities.
International Stocks	Represented by MSCI World Index*. A proxy for all international stocks index.

Source of data : Rating Agency Malaysia (RAM)−Quantshop, 2004
* Available from http://www.msci.com [cited 5 May 2005]

Table 5 Descriptive Statistics of Returns of Asset Classes

Variable	Observation	Mean	Std. Dev.	Minimum	Maximum
MSCI Growth Index	60	−0.76	12.42	−29.23	35.81
MSCI Value Index	60	1.00	13.46	−23.23	41.81
KLIBOR	60	0.41	0.23	0.23	0.88
MGS Index	60	0.75	1.31	−2.68	6.55
LBI Index	60	2.07	13.83	−12.40	38.62
MSCI World Index	60	0.35	4.72	−14.49	8.11

Table 6 Mean, Standard Deviation, Correlation Coefficients between The Returns of Asset Classes

	MSCI Growth	MSCI Value	KLIBOR	MGS	LBI	MSCI World
MSCI Growth	1.00					
MSCI Value	0.89	1.00				
KLIBOR	−0.24	−0.20	1.00			
MGS	0.16	0.16	−0.07	1.00		
LBI	0.17	0.11	−0.14	−0.07	1.00	
MSCI World	0.43	0.43	0.13	−0.19	0.21	1.00

classes returns should either have low correlations with one another or, in cases in which correlations are high, different level of standard deviations". While style analysis in equation (2) has attempted to capture the investment universe i.e. to include all possible investment products in the model, careful consideration has been taken to ensure that asset classes chosen are not correlated to one another. As shown in table 6, it is found that one pair of correlation coefficients i.e. the MSCI Value and MSCI Growth Indices, has high correlation of 0.89. However, as shown in table 5, the standard deviations of these indices are different i.e. MSCI Growth Index s is 12.42 percent while MSCI Value is 13.46

percent respectively. As such, this fulfills the above requirement. Table 5 shows the summary statistics of returns of asset classes used for style analysis in equation (2).

METHODOLOGY

Return–based Style Analysis

As in Sharpe (1992), this study initially introduces the generic factor model in equation (1) before adapting it into style analysis in equation (2).

$$\tilde{R}_i = \left[b_{i1}\tilde{F}_1 + b_{i2}\tilde{F}_2 + b_{ik}\tilde{F}_k + ... + b_{in}\tilde{F}_n\right] + \tilde{e}_i \quad (1)$$

where:

$\tilde{R}_i$ = return of fund i

$\tilde{F}_k$ = return of factor k for fund i

b_{ik} = sensitivity of fund i to factor k

$\tilde{e}_i$ = non–factor return of asset i of mean zero with the assumption that the non–factor returns are uncorrelated $\sigma_{eiej} = 0$

Style Analysis is the use of constrained quadratic programming for solving the asset allocation problem. This approach incorporates two specific constraints: first, the coefficients must sum to 100 percent and second, coefficients must be positive. Negative coefficients can be interpreted as short positions in asset classes. This type of strategy is rarely used by the funds examined, and prohibiting these coefficients provides better, more usable results[10].

The factor is rewritten as

$$\tilde{e}_i = \tilde{R}_i - \left[b_{i1}\tilde{F}_1 + b_{i2}\tilde{F}_2 + b_{ik}\tilde{F}_k + ... + b_{in}\tilde{F}_n\right] \quad (2)$$

where:

$\tilde{e}_i$ = selection[11]

$\tilde{R}_i$ = return of fund i

$\tilde{F}_k$ = return of factor k for fund i

b_{ik} = sensitivity of fund i to factor k

To obtain the style, minimize variance of residual return $\tilde{e}_i$

Subject to : $\sum_{j=1}^{n} b_{ik} = 1$ for any fund i and asset class k

and $0 < b_{ik} < 1$

With the two specific constraints, the coefficients tabulated in equation (2) will resemble the weights within a portfolio and conveniently displayed as part of the portfolio. The asset class indices in table 4 which represents the factors in equation (1) and the sensitivity of each of the fund's return

series to each of the asset class index factors is used to construct a passive benchmark portfolio return series for performance measurement. In other words, the return of funds will be measured against the style–based, passive benchmark contained as second, bracketed terms in the right hand side of equation (2).

Upon obtaining results from the quadratic programming in equation (2), the proportion of variance 'explained' by the selected asset classes, for fund i can be obtained as below:

$$R^2 = 1 - \frac{Var(\tilde{e})}{Var(\tilde{R})} \tag{3}$$

The second term of the right–hand side of the above equation represents the proportion of variance 'unexplained'' or due to active management (selection). In other words, the return of unit trust fund is decomposed into return on a set of asset classes and residual return. The former is attributed to *style* and represented by the R–square while the latter is attributed to *selection*.

In order to take into account the added (or subtracted) value provided by a fund i.e. its benchmark and the added risk, the monthly mean selection return is divided by the standard deviation of monthly selection returns. This calculation gives a Monthly Selection Sharpe Ratio (MSSR) as stated in equation (4).

The Selection Sharpe Ratio (SelSR) which denotes the valued added (subtracted) through active management per unit of added risk is the annualized MSSR, obtained by multiplying MSSR with the square root of 12 as shown in equation (5).

$$\text{Monthly Selection Sharpe ratio (MSSR)} = \frac{E(\tilde{e}_i)}{\sigma_{\tilde{e}_i}} \tag{4}$$

$$\text{Selection Sharpe Ratio (}\mathbf{SelSR}\text{) = MSSR x } \sqrt{12} \tag{5}$$

The monthly mean selection returns can be measured for its statistical significance using a t–statistic. The null hypothesis is stated as selection return equals to zero.

$$t = \frac{(r_s - \mu)}{S/\sqrt{n}} \tag{6}$$

where:

r_s = the monthly mean selection returns

μ = zero, the null hypothesis

s = the standard deviation of monthly selection return

n = the number of observations

Performance Measurement

The performance measurement is by means of risk–adjusted return measured against two types of benchmark portfolios. The benchmark portfolios are the MSCI style benchmarks i.e. the MSCI Malaysian Value Index for value style funds, and MSCI Malaysian Growth Index for growth style funds. The risk–adjusted performance measurement is the alpha as shown in equation (7).

$$R_p - r_f = \alpha_P + \beta(R_B - r_f) + \varepsilon_t \tag{7}$$

Where

R_p = the monthly equity funds return

r_f = the monthly risk free rate (three–month T–bill return)

α_p = the risk–adjusted excess return on the fund

R_B = the monthly benchmark return

ε_t = residual term with mean zero

Information Ratio

With the regression result from equation (7), an additional performance measurement known as Information ratio (IR) could be obtained. IR is the annualized ratio of residual return to residual risk. It is the ratio of alpha to the standard deviation of residual returns, annualized[1].

$$\text{Information ratio (IR)} = \frac{\alpha_i}{\sigma_{e_i}} \tag{8}$$

The information ratio can be measured for its statistical significance using a t–statistic. The null hypothesis is stated as alpha or excess return equals to zero.

$$\begin{aligned} \text{t–statistic} &= \frac{\alpha_i}{\sigma_{e_i}/\sqrt{T}} \\ &= \frac{IR}{1/\sqrt{T}} \\ &= \sqrt{T}(IR) \end{aligned} \tag{9}$$

Where

T = number of monthly observations

RESULTS

The results of style analysis from equation (2) are shown in table 7. Across the different fund types, it could be observed as the name implied, growth funds have the most substantial holdings of growth stocks of 33.90 percent and value stocks of 26.83 percent. In contrast, income funds have more value stocks of 37.87 percent as compared to growth stocks of 25.82 percent. This study observes that balance funds vary in their holdings of value and growth stocks, with larger share of growth stocks on average.

It can be observed that MSCI Value index is able to explain the holdings of value stocks as an asset class in income funds. The fact that income funds have large holdings of value stocks implies that income fund may have characteristics similar to the value style index, although both are defined

[1] The monthly alpha estimates are annualized by $(1+\alpha)^{12} - 1$.

Table 7 Results of the Estimation: The Degree of Styles and Selection, Asset Classes Holdings by Different Funds, Selection Return and Style Classification

No	Fund	Fund Objective	Sub–Type	Style	Selection	MSCI Growth	MSCI Value	Cash	Govt Bonds	Corp Bonds	MSCI World	Style Classifi –cation	Monthly Mean Sel Return (%)	t–Statistic (Sel Return)	Monthly Sel Sharpe Ratio
1	Affin Equity	Income	Equity	84.37	15.63	12.29	68.86	18.30	0.00	0.56		Value	0.13	0.21	0.03
2	AM Total Return	Income	Equity	50.98	49.03	32.09	35.65	0.00	28.23	4.03			0.02	0.02	0.00
3	M Berjaya	Income	Equity	91.02	8.99	32.58	54.43	9.63	0.00	3.35		Value	0.46	0.91	0.12
4	M Investment	Income	Equity	92.21	7.79	40.65	43.82	14.25	0.00	1.29			0.12	0.28	0.04
5	ASM 3	Income	Equity	58.73	41.27	13.22	45.79	10.51	25.58	4.89		Value	–0.84	–2.36**	–0.30
6	ASM 4	Income	Equity	47.94	52.06	0.00	64.05	23.98	5.04	6.92		Value	–0.82	–1.53	–0.20
7	ASM 5	Income	Equity	67.34	32.66	48.40	14.24	0.00	32.35	5.01		Growth	–0.73	–1.94*	–0.25
8	ASM 6	Income	Equity	45.92	54.08	28.03	22.21	18.68	25.19	5.90		Growth	–0.83	–2.09**	–0.27
9	ASM 7	Income	Equity	60.71	39.29	24.36	27.51	0.00	43.31	4.82			–0.81	–2.55**	–0.33
10	ASM 8	Income	Equity	50.81	49.19	58.77	9.53	0.00	28.18	3.52		Growth	–0.88	–2.09**	–0.27
11	ASM 10	Income	Equity	87.28	12.72	17.88	72.90	0.00	3.71	5.50		Value	–0.69	–2.35**	–0.30
12	ASM 11	Income	Equity	69.04	30.96	19.25	63.85	0.00	11.48	5.42		Value	–0.29	–0.39	–0.05
13	ASM fpf	Income	Equity	81.99	18.01	31.35	55.43	0.00	7.92	5.30		Value	–0.57	–1.45	–0.19
14	ASM premier	Income	Equity	75.31	24.69	29.86	35.62	0.00	27.81	6.71		Value	–0.71	–2.34**	–0.30
15	ASM ptnb	Income	Equity	80.36	19.64	41.79	42.13	0.00	12.74	3.34			–0.45	–1.06	–0.14
16	Mayban UT	Income	Equity	72.00	28.00	24.32	26.36	37.87	8.79	2.67			–0.71	–2.77**	–0.36
17	Pacific Premier	Income	Equity	72.35	27.65	16.11	43.92	19.68	16.27	4.03		Value	–0.36	–0.86	–0.11
18	BSN	Income	Equity	71.24	28.76	1.10	74.75	17.92	0.00	6.23		Value	–0.36	–0.54	–0.07
19	Public Savings	Income	Equity	47.78	52.22	19.82	15.01	60.91	0.00	4.26			–0.60	–1.77*	–0.23
20	Public Growth	Income	Equity	64.20	35.80	32.32	16.34	49.73	0.00	1.62		Growth	–0.67	–1.84*	–0.24
21	Public Industry	Income	Equity	49.82	50.18	6.72	36.60	50.55	1.74	4.39		Value	–0.67	–1.56	–0.20
22	Public Regular Savings	Income	Equity	43.88	56.12	32.24	2.28	64.48	0.68	0.32		Growth	–0.70	–1.92*	–0.25
23	RHB Dynamic	Income	Equity	87.83	12.17	27.71	31.29	35.78	1.99	3.24			–0.22	–0.71	–0.09
24	TA Growth	Income	Equity	64.12	35.89	28.38	31.35	0.00	36.81	3.46			–0.62	–1.48	–0.19
25	ASM 2	Income	Index	49.13	50.87	29.52	30.15	0.00	34.86	5.46			–0.60	–1.62	–0.21
26	Public Index	Income	Index	76.93	23.07	25.58	23.49	30.08	16.61	4.24			–0.53	–1.74*	–0.23
27	ASN	Income	Federal	76.22	23.78	22.74	35.05	29.53	0.00	12.68		Value	–0.56	–1.45	–0.19
	Income Fund			67.39	32.61	25.82	37.87	18.22	13.68	4.41					
1	ASM dana Growth	Growth	Equity	59.71	40.29	28.87	24.30	41.36	0.00	5.47		Growth	–0.47	–0.99	–0.13
2	SBB Double Growth	Growth	Equity	75.72	24.28	33.39	28.59	21.46	5.60	0.96	10.00	Growth	–0.17	–0.33	–0.04
3	SSB High Growth	Growth	Equity	63.12	36.88	28.89	32.06	28.52	6.83	3.70			–0.09	–0.11	–0.01
4	HLG Growth	Growth	Equity	70.92	29.08	44.87	14.60	27.03	13.24	0.26		Growth	–0.22	–0.44	–0.06
5	MBF Growth	Growth	Equity	79.85	20.15	39.89	46.36	0.00	6.76	6.99		Value	–0.26	–0.49	–0.06
6	Public Aggressive Growth	Growth	Equity	68.24	31.76	36.42	17.27	31.55	12.48	2.28		Growth	–0.52	–1.31	–0.17
7	RHB Capital	Growth	Equity	89.10	10.90	31.52	32.47	12.16	21.44	2.41			–0.33	–1.08	–0.14
8	OSK–UOB Equity	Growth	Equity	79.61	20.39	47.20	16.96	0.00	35.84	0.00		Growth	–0.67	–1.35	–0.17
9	M Progress	Growth	Small Company	78.83	21.17	25.16	37.07	34.60	0.00	3.17		Value	–0.01	–0.03	0.00
10	SBB ECO Growth	Growth	Small Company	64.26	35.74	25.97	29.68	21.17	13.18	0.00	10.00		–0.11	–0.16	–0.02
11	SBB Savings Fund	Growth		74.27	25.73	30.68	15.72	7.39	33.88	2.33	10.00	Growth	–0.43	–1.09	–0.14
	Growth Fund			73.06	26.94	33.90	26.83	20.48	13.57	2.51	2.73				
1	Mayban Balanced	Balanced		46.12	53.88	25.39	0.00	72.99	0.00	1.62			–0.63	–2.26**	–0.29
2	MBF Balanced	Balanced		80.25	19.75	47.36	38.28	0.00	11.41	2.95			–0.34	–0.68	–0.09
3	Public Balanced	Balanced		61.10	38.90	19.53	15.84	61.15	0.00	3.47			–0.63	–2.20**	–0.28
	Balanced Fund			62.49	37.51	30.76	18.04	44.71	3.80	2.68					

Note: ***, ** and * denote level of significance at 1, 5 and 10 percent level respectively.

differently. Likewise, MSCI Growth index is also able to explain the holdings of growth stocks as an asset class in growth funds.

From table 7, it can be observed that growth funds have higher degree of style of 73 percent compared to income funds of 67 percent. Conversely, income funds have higher degree of selection of 33 percent compared to growth funds of 27 percent. This could be implied income fund managers are active in buying and selling the stocks than average growth fund managers. As such, whether income funds have higher portfolio turnover rate than growth funds is another issue to be verified in further research. It is not surprising to note that the degree of style for balanced funds is lower as balanced funds hold more variety of asset classes other than the equities.

The main purpose of finding the investment style of mutual funds is to address the issue of asymmetric information between fund managers and investors, and as a way to mitigate misclassification of fund objectives. Based on the result in table 7, these funds are re−classified into either growth style or value style funds, as per the result of style analysis.

In order to ensure a level of accuracy in style classification, as a rule of thumb, if the difference

Table 8 Results of the Estimation: Alpha, R−square, Residual Return and Information Ratio, t−statistics and Style Alpha

No Fund	Alphas (Annualized)	R−squared	Residual Return (Annualized)	Information Ratio (IR)	t−Statistic (IR)	StyleAlpha (Annualized)			
						Period 1	Period 2	Period 3	Period 4
1 Affin Equity	−0.11	83.83	0.16	−0.71	−5.52***	−0.134	0.046	−0.107	−0.102
2 M Berjaya	−0.04	88.09	0.14	−0.25	−1.96*	−0.092	0.131	0.010	−0.016
3 ASM 3	−0.22**	56.84	0.21	−1.04	−8.02***	−0.207	−0.157	−0.23	−0.283
4 ASM 4	−0.24*	47.52	0.31	−0.78	−6.05***	−0.185	−0.122	−0.128	−0.372
5 ASM 10	−0.16**	86.09	0.14	−1.12	−8.70***	−0.143	−0.061	−0.156	−0.046
6 ASM 11	−0.14	67.92	0.24	−0.56	−4.34***	−0.114	0.028	−0.156	−0.026
7 ASM fpf	−0.18**	79.36	0.17	−1.02	−7.87***	−0.107	0.042	−0.186	−0.106
8 ASM premier	−0.19**	70.80	0.17	−1.07	−8.32***	−0.271	−0.097	0.283	−0.064
9 Pacific Premier	−0.10	70.92	0.17	−0.59	−4.60***	−0.101	−0.140	−0.027	−0.001
10 BSN	−0.14	71.02	0.21	−0.69	−5.34***	−0.244	−0.048	−0.114	0.046
11 Public Industry	−0.14*	49.07	0.17	−0.83	−6.45***	−0.157	−0.233	−0.071	−0.108
12 MBF Growth	−0.12	75.51	0.21	−0.60	−4.63	−0.306	0.150	−0.124	0.028
13 ASN	−0.17**	69.33	0.17	−0.98	−7.59***	−0.399	−0.286	0.105	−0.090
14 M Progress	−0.08	75.61	0.15	−0.54	−4.17***	−0.240	0.095	−0.146	0.026
Value Style Funds	−0.13	71.16	0.18	−0.70		−0.19	−0.05	−0.07	−0.08
1 ASM 5	−0.06	65.35	0.20	−0.31	−2.38**	−0.089	−0.018	−0.189	0.193
2 ASM 6	−0.13**	43.53	0.25	−0.51	−3.97***	−0.138	−0.057	−0.114	−0.134
3 ASM 8	−0.17	50.48	0.28	−0.60	−4.64***	−0.241	−0.031	−0.206	0.134
4 Public Growth	−0.07	62.83	0.14	−0.51	−3.96***	−0.101	−0.100	−0.088	0.062
5 Public Regular Savings	−0.07	43.98	0.14	−0.50	−3.89***	−1.000	−1.000	−1.000	−1.000
6 ASM dana Growth	−0.08	56.58	0.17	−0.47	−3.62***	−0.069	0.052	−0.103	0.245
7 SBB Double Growth	0.08	72.51	0.16	0.46	3.55***	−0.216	0.149	−0.082	0.214
8 HLG Growth	0.05	69.47	0.17	0.33	2.56**	−0.086	0.007	−0.023	0.200
9 Public Aggressive Grow	−0.02	66.47	0.14	−0.17	−1.33	−0.034	0.070	−0.186	0.027
10 OSK−UOB Equity	0.01	77.48	0.14	0.11	0.82	−0.175	−0.023	−0.189	0.207
11 SBB Savings Fund	0.02	71.47	0.13	0.17	1.31	−0.033	−0.084	−0.102	0.095
Growth Style Funds	−0.04	61.83	0.17	−0.18		−0.20	−0.09	−0.21	0.02

Note: ***, ** and * denote level of significance at 1, 5 and 10 percent level respectively.

between growth and value asset class is equal to or lesser than 4.5 percent, the particular fund will be excluded from reclassification. If the range between two style indices is narrow, it could be implied that the fund has a balanced mixture of asset classes, instead of showing one style is dominant than the other. As a result of applying the rule, table 8 shows 14 value style funds and 11 growth style funds.

Table 8 shows the result of equation (7) where each fund is regressed against its own style benchmarks. The annualized style alpha for the 60−month period is shown in the first column, while the annualized 15−month periodic style alphas are shown in the last four columns.

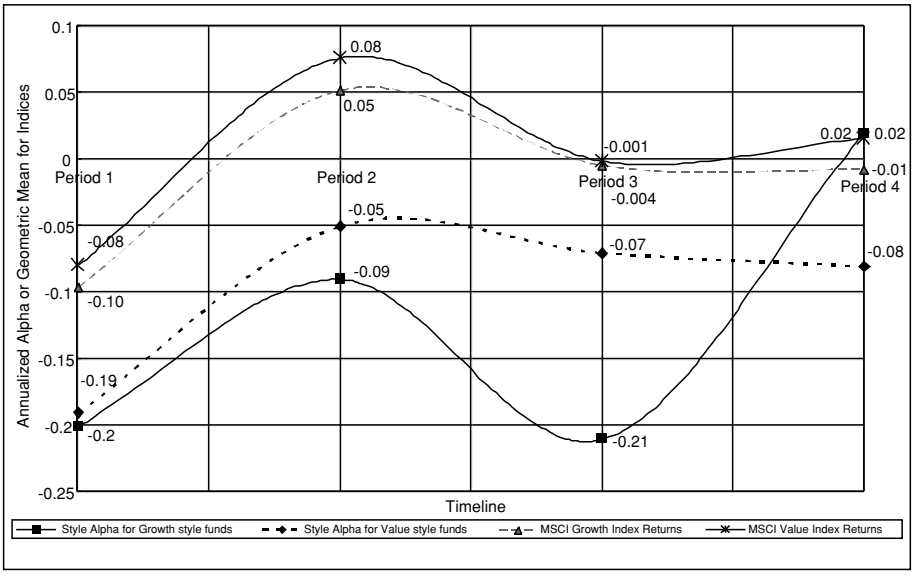
Due to the uncertain macroeconomic environment experienced by Malaysian economy during the 60−month period, the average style alpha for value style funds is −0.13, indicating that value style managers do not manage to add any positive value to the portfolios against the value style benchmark. The information ratios for majority of the funds are negative and statistically significant. As the recorded selection return are generally positive, the minus information ratio recorded are mainly attributed to negative alphas.

From table 8, it can be observed that the average style alpha for growth style funds is −0.04. In other words, during the 60−month period, growth style funds perform relatively better against the growth style benchmark. The information ratios also state the same scenario where growth style funds recorded −0.18.

In contrast, among the samples, four growth style funds i.e. SBB Double Growth, HLG Growth, OSK−UOB Equity and SBB Savings funds, have managed to generate positive alphas and information ratios. It could also be observed that the coefficient of determination or R−squared of 71.16 percent for value style funds as compared to 61.83 percent of growth style funds infers that value style benchmark has higher power of explanation after the reclassification process.

By standardizing the style benchmark returns and style alphas to decimal points as shown on the y−

Figure 3 Economic Trends of Style Alphas and MSCI Style Indices Returns



axis in figure 3, the average style alphas from table 8 can be plotted together with the geometric mean of the returns[2] of MSCI growth and Value Indices. Overall, it could be observed that the economic trends of for both style alphas are similar to the MSCI Value and MSCI Growth Style Indices in all periods except for period four.

In period two, as the result of the capital control imposed from September 1st, value style funds have better recovery of 14 percent compared to growth style funds of 11 percent, against their respective style benchmarks. The rationale behind is that value style funds comprise value stocks of distressed but good–for–value companies that would turnaround faster during economic recovery.

In period three, due to the burst of "dot–com" bubble from April 2000, growth style funds dip further by minus 12 percent against minus 2 percent of value style funds, against their respective style benchmarks. In other words, growth style funds are more sensitive to bad economic news. It could be concluded that during the onset of bad economic event, growth style funds that comprise of growth stocks tend to receive more impact during economic downturn. The rationale is that negative economic growth rate would affect companies' earnings in the following months.

From the economic trends of MSCI Style benchmarks, the 911 event in the US market seems to have different impact on both MSCI style indices. In period four, MSCI Value Index improves 2.1 percent while MSCI Growth Index is worse off by 0.6 percent. In contrast, the value style funds decrease by 1 percent while growth style funds improve sharply by 23 percent against the respective style benchmarks. It could be concluded that growth style funds maintain recovery momentum better than value style funds. In other words, if the economy continue to recover in further period, growth style funds are likely to be the winners. This finding concurs with Strong (2003) that growth investors prefer price momentum.

CONCLUSION

As the empirical evidence has shown, growth style and value style funds have different characteristics, and hence behave differently during economic cycle. Three conclusions are notable. First, during the period of economic recovery, value style funds have more recovery from distressed economic environment than growth style funds. Second, growth style funds are more sensitive to negative economic events than value style funds. Third, during sustainable economic recovery environment, growth style funds exhibit recovery momentum better than value style funds.

As discussed in finance literature, while fund objectives and investment styles co–exist for each fund, they are different in definition and concepts. The current unit trust funds classification based on fund objectives of income, growth and balanced trichotomy are insufficient to provide the function of communicating economic trends to unit trust investors. Inevitably, without the knowledge of actual or true investment styles of a fund, the investors are deprived of the useful tool in predicting or gauging

---

[2] Geometric Mean Returns = $\left[\prod_{i=1}^{n}(1+\tilde{R}_i)\right]^{\frac{1}{n}} - 1$ is used.

the economic trends.

The existence of principal–agent relationship in unit trust investment inherently breeds information asymmetries between fund managers and investors, and the information on investment styles is pertinent for them to make sound investment decision making. If the investors were to know the investment style and understand the characteristics of the styles, they would be in better hands in two manners. First, investment decisions that based on current and expected economic cycles. Second, investment decisions that match their investment goals with the unit trust funds' profiles.

In conclusion, as evidenced by the empirical results, investment style of mutual funds does play the role of communicating economic trends to investors. In accordance to the spirit of disclosure–based regulatory (DBR)[3] regime commenced in the mid 90s, there is a greater responsibility of asset management companies to provide a full disclosure in annual reports and fund prospectuses. The lessons drawn from the Asian financial crisis, pose a greater need for Malaysian fund managers and the regulator——Securities Commission (SC), likewise their counterparts in the developed markets, to place greater focus on investment education to benefit the unit trust investors.

(Graduate Student, Graduate School of Economics, Osaka University)

References

Bailey, J. V. (1992). Are Manager Universes Acceptable Performance Benchmarks? *Journal of Portfolio Management*, 18 (3) : 9–13.

Bailey J. V. and Tierney, D.E. (1993). Gaming Manager Benchmark. *Journal of Portfolio Management*, 19 (4) : 37–40.

Bogle, J. C. (1998). The Implications of Style Analysis for Mutual Fund Performance Evaluation. *Journal of Portfolio Management*. 24 (4) : 34–42.

Brinson, G. P., Hood L. R., and Beebower, G.P. (1986). Determinants of Portfolio Performance. *Financial Analysts Journal*. 42 (4) : 39–48.

Brinson, G. P., Singer, B. D. and Beebower, G.P. (1991). Determinants of Portfolio Performance II: An Update. *Financial Analysts Journal*. 47 (3) : 40–48.

Ch'ng T. L. and Kok, K.L. (1998). Performance of Unit Trusts In An Emerging Market: A Case Study of Malaysia. *Capital Market Review*. 6 (1) : 1–17.

Choong, D. (2001). *Investor's Guide To Malaysian Unit Trusts*. Sage Information Services, Kuala Lumpur.

Chua, C. P. (1985). *The Investment Performance of Unit Trusts In Malaysia, Unpublished MBA Thesis*, School of Management, University Malaya, Kuala Lumpur.

Christopherson, J.A. (1995). Equity Style Classification. *Journal of Portfolio Management*. 21 (3) : 32–43.

[3] Refer pp 70–76, 152 and 155 of Securities Commission Malaysia (2004)

Coggin, T. D. (1998). Long−Term Memory in Equity Style Indexes. *Journal of Portfolio Management*.. 24 (2) : 37−46.

Ewe, S. J. (1994). *The Performance of Malayan Unit Trusts In the Period* 1988−1992, *Unpublished MBA Thesis*, School of Management, University Sains Malaysia, Penang.

Farrell, James L.,(1997), *Portfolio Management: Theory and Application*, 2nd edition, McGraw−Hill Co., Inc

Federation of Malaysian Unit Trust Managers (1998). *Understanding Malaysian Unit Trusts*. 1st ed., FMUTM, Kuala Lumpur.

Goodwin, T. H. (1998). The Information Ratio. *Financial Analysts Journal*. 54 (4) : 34−43.

Ibbotson, R. G., and Kaplan, P. D. (2000). Does Asset Allocation Policy explain 40, 90 or 100 Percent of Performance. *Financial Analysts Journal*. 56 (1) : 26−33.

Kuala Lumpur Stock Exchange. (2001). *Information Handbook*, Kuala Lumpur.

Lau, W. Y. (2002), "Does Asset Allocation Explain the Styles and Performance of Unit Trust Funds: A Style Analysis with Evidence from Malaysia", *Journal of Malaysian Studies*, vol. XX, no. 2, pp. 1−32.

Leong K. H. and Aw, M.W. (1997). Measuring Unit Trust Fund Performance Using Different Benchmarks. *Capital Market Review*. 5 (2) : 27−44.

Lucas, L., and Riepe, M. W. (1996). The Role of Return−Based Style Analysis: Understanding, Implementing, and Interpreting the Techniques. Ibbotson Associates, Inc., USA.

Permodalan Nasional Berhad, (2001). *Malaysia Unit Trust Directory 2001*. Kuala Lumpur.

Securities Commission Malaysia, (2004). *Capital Market Development in Malaysia: History and Perspective*, Kuala Lumpur.

Shamsher, M. and Annuar, M. N. (1995). The Performance of Unit Trusts In Malaysia: Some Evidence. *Capital Market Review*. 3 (2) : 51−69.

Shamsher, M. and Annuar, M. N. (2001). Investment In Unit Trusts: Choosing Active or Passive Funds. *The Company Secretary*, MAICSA, Kuala Lumpur. 3 : 16−17.

Sharpe, W. F. (1988). Determining a Fund's Effective Asset Mix. *Investment Management Review*, pp. 59−69.

Sharpe, W. F. (1992). Asset Allocation: Management Style and Performance Measurement. *Journal of Portfolio Management*. 18 (2) : 7−19.

Strong, Robert A., (2003), *Portfolio Construction, Management & Protection*, 3rd edition, South−Western Thomson Learning, USA.

TerHorst, J. R., Nijman, T. E. and DeRoon, F.A. (2004). Evaluating Style Analysis. *Journal of Empirical Finance*. 11 (1) : 29−53.

The Edge (2002), The Edge Communications Sdn Bhd, Kuala Lumpur, 1 April.

Tierney, D. and Winston, K. (1991). Using Generic Benchmarks to Present Manager Styles. *Journal of Portfolio Management*. 17 (4) : 33−36.

Appendix 1: List of Unit Trust Funds in the Sample

No.	Plan Sponsors	Fund	Launch Date	Fund Type	Units (Mil)
1	Affin Trust	Affin Equity	93.04.29	Income	300
2	ASNB	ASN	81.04.20	Federal	2500
3	Arab Malaysian	AM First	89.01.10	Income	500
4	Asia Unit Trust	M Progress	70.06.01	Small Companies	300
5	Asia Unit Trust	M Berjaya	76.05.05	Income	50
6	Asia Unit Trust	M Equity	82.02.20	Small Companies	50
7	Asia Unit Trust	M Investment	96.07.18	Income	300
8	Amanah Saham Mara	ASM 2 Index	69.02.19	Index	20
9	Amanah Saham Mara	ASM 3	69.11.01	Income	20
10	Amanah Saham Mara	ASM 4	70.02.02	Income	20
11	Amanah Saham Mara	ASM 5	71.09.03	Income	20
12	Amanah Saham Mara	ASM 6	72.05.05	Income	20
13	Amanah Saham Mara	ASM 7	72.12.28	Income	20
14	Amanah Saham Mara	ASM Growth	72.12.28	Growth	20
15	Amanah Saham Mara	ASM 8	75.07.17	Income	20
16	Amanah Saham Mara	ASM 11	79.10.28	Income	20
17	Amanah Saham Mara	ASM premier	95.06.12	Income	350
18	Amanah Saham Mara	ASM ptnb	95.08.28	Income	50
19	SBB	Double Growth	91.05.15	Growth	550
20	SBB	Emerging Companies	94.05.10	Small Companies	700
21	SBB	Savings Fund	95.08.05	Balanced	500
22	SBB	High Growth Fund	95.09.28	Growth	1000
23	HLG	HLG Growth	95.09.08	Growth	300
24	Mayban	Mayban Unit Trust	92.03.26	Income	500
25	Mayban	Mayban Balanced	94.09.19	Balanced	1000
26	MBF	MBF Balanced	91.05.01	Balanced	750
27	MBF	MBF Growth	95.06.01	Growth	300
28	Pacific Mutual	Pacific Premier	95.08.10	Income	500
29	BSN	BSN	95.01.12	Income	500
30	Public Mutual	Public Savings	81.03.29	Income	500
31	Public Mutual	Public Growth	84.12.11	Income	1000
32	Public Mutual	Public Index	92.03.02	Index	500
33	Public Mutual	Public Industry	93.11.18	Income	1000
34	Public Mutual	Public Aggressive Growth	94.04.25	Growth	500
35	Public Mutual	Public Regular Savings	94.04.25	Income	1500
36	Public Mutual	Public Balanced	92.09.15	Balanced	1000
37	RHB	RHB Dynamic	92.09.15	Income	750
38	RHB	RHB Capital	95.04.12	Growth	500
39	SBB	Premium Capital	95.08.01	Income	500
40	OSK–UOB	OSK–UOB Equity	96.08.08	Growth	750
41	TA Unit Trust	TA Growth	96.07.01	Income	350

Source: FMUTM. Available from http://www.fmutm.com.my [cited 5 March 2004]