AN EVALUATION OF THE MARKET-TIMING AND SECURITY-SELECTION PERFORMANCE OF MUTUAL FUNDS: THE CASE OF MALAYSIA

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ABSTRACT

In this article, we examine market-timing and security-selection performance of a sample of Malaysian mutual funds. We used Jensen’s (1968; 1969) model to test for the overall fund performance and employed the model developed by Merton (1981) and Henriksson and Merton (1981) to highlight the separate contributions of market-timing and security-selection performance to the overall fund’s return. Consistent with most previous research, we find evidence that the funds provide investors with overall negative return performance. Since such performance evaluation ignored the existence of timing activities among fund managers, it attributed the overall negative performance exclusively to the manager’s security-selection efforts. When we model timing and selectivity simultaneously using the Henriksson and Merton’s (1981) model, we find evidence of negative market-timing performance by fund managers. Perhaps more importantly, our results suggest that after accounting for the manager’s market-timing ability, the manager’s security-selection ability no longer contributes significantly to the overall fund performance. That is, the overall negative return performance of the fund is driven by the poor timing ability of the fund manager. The evidence presented highlights the importance of considering both the market-timing and the security-selection abilities of the fund manager when evaluating the performance of mutual funds to avoid erroneous conclusions regarding the fund performance.

ABSTRAK


INTRODUCTION

The mutual fund industry or more popularly known as the unit trust industry in Malaysia, began in 1959 and the first three decades in the history of this industry were characterized by a period of slow growth. The period during the 1990s marked the fastest growth of the unit trust industry and it has continued to grow rapidly in recent years despite the slowdown in economy and volatile stock market conditions. This growth is evidenced by the increasing number of funds managed by the unit trust management companies. As at 31 January 2003, there were 39 unit trust management companies managing a total of 188 unit trust funds as compared with 31 unit trust management companies managing only 84 funds as at December 1997 and the percentage of the net asset value of the unit trust industry to the Kuala Lumpur Stock Exchange’s market capitalization has grown from 8.93% as at December 1997 to approximately 11.37% as at 31 January 2003. In developed countries, the investment performance of mutual funds has been a vast topic of research in the literature of finance. Evidence about the performance of fund portfolios is certainly of great interest not only to practitioners or investors but also to academics alike. To the investors, such information is helpful for making decisions on the allocation of investment funds in the marketplace. Furthermore, investors may also be attracted to mutual fund investing based on a popular belief that
professionally managed funds are able to generate superior returns. On the other hand, to the academics, the finding of superior performance of such funds has important implications for the theory of finance relating to efficient market hypothesis. This study is organized as follows: Section II provides discussions on previous studies. Section III presents the data and the methodology employed in the study. Section IV discusses the results of the study. Concluding remarks are offered in Section V.

LITERATURE REVIEW

Over the decades, the investment performance of mutual funds has attracted substantial research in the literature of finance. In a classic article, Jensen (1968) evaluated the aggregated performance of 115 open-end mutual funds for the period 1945-1964 and concluded that most funds performed at a level inferior to that of the market. Similar results were reported by Sharpe (1966), Carlson (1970), McDonald (1974), Firth (1977) and Lehmann and Modest (1987). In addition, studies on the investment performance of international mutual funds such as Cumby and Glen (1990) and Droms and Walker (1994) also suggest a lack of superior performance by fund managers. In general, most previous studies, with a few exceptions, have found either negative performance or no performance for the average mutual funds.

While the investment performance of mutual funds has been studied extensively in developed countries, there is remarkably little evidence about the performance of fund portfolios in developing nations. The performance of unit trusts funds in Singapore as reported by Chua, Koh and Koh (1985) and Koh, Koh and Chang (1987) concluded that the funds were unable to outperform the market. In the context of Malaysia, Mohamed and Nassir (1995) studied the performance of unit trust funds during the period of 1988-1992. Their results indicate that the investment performance of unit trust funds in Malaysia also show evidence of under-performance in relation to the market. Similar findings were reported by Tan (1995) and Taib, Shahnun and Lee (2002). Leong and Aw (1997) in their study of mutual funds performance using different benchmarks, concluded that the total performance of the funds was inferior to that of the market regardless of the choice of a market benchmark. Collectively, these empirical findings indicate that not only the actively managed portfolio could not beat the market, but some even perform at a level inferior to that of the market.
The objective of the study is to determine the separate contributions of market-timing and security-selection performance to the overall fund’s performance. In the past, most empirical studies that examined the performance of mutual funds in developed countries focused the research on evaluating the overall or aggregated fund’s performance and many of these studies have typically used an evaluation method based on Jensen’s (1968,1969) model. The Jensen’s performance model assumes that the systematic risk of the managed portfolio is stationary through time. However, in reality the risk level of a managed portfolio is not constant over time. Fund managers frequently attempt to alter the risk composition of their portfolio in anticipation of broad market movements. Thus, when predicting a bull market condition, these fund managers will adjust the risk of their portfolio by changing their portfolio holdings to high risk securities since such securities tend to earn more than the market average during a rising market. Conversely, if a bear market condition is forecasted, these managers will position their portfolio accordingly by switching their portfolio compositions to low-risk securities which tend to decline less than the market average during a downmarket. Given the assumption of stationarity in systematic risk, Jensen’s model therefore, ignores the ability of fund managers to time the market movements. Fama (1972) addressed this issue by suggesting a better breakdown of performance when the risk level of the portfolio is non-stationary, that is, fund managers’ forecasting abilities have two distinct components: market-timing and security-selection. Market-timing or also known as macro-forecasting ability refers to the ability of the fund managers to forecast the broad stock market movement. Security-selection involves micro-forecasting, i.e., the ability of fund managers to identify securities which are under- or over-valued relative to the market in general. Since it is important that fund managers be evaluated on both the security-selection ability and the market-timing skill, attention of the research has since shifted toward studies that decompose the overall performance ability of fund managers into these two separate components.

Numerous studies have since picked up on that point, examining the market-timing and or selectivity performance of mutual fund managers and these studies have reached mixed conclusions. Evidence on the timing performance of mutual funds are provided by Merton (1981), Henriksson and Merton (1981), Veit and Cheney (1982), Kon (1983), Chang and Lewellen (1984) and Henriksson (1984). In general, these studies indicate that fund managers have poor timing and poor overall performance. Similarly, more recent empirical findings also suggest that on average, fund managers do not have special information to time the return of the market portfolio successfully. Studies by Grinblatt
and Titman (1989b), Cumby and Glen (1990), Connor and Korajczyk (1991), Chen, Lee, Rahman, and Chan (1992), Coggin, Fabozzi, and Rahman (1993), Kao, Cheng, and Chan (1998), Volkman (1999) and Rao (2000) found evidence of negative market-timing skills on the part of the fund managers. In addition to finding no evidence of superior timing ability, Volkman (1999) in his study of mutual fund performance during high volatile market period of the 1980s, also show that the average mutual fund did not exhibit a significant ability to pick undervalued securities during periods of high market volatility. Nevertheless, at the individual fund level, several studies show that some funds do demonstrate either superior security selection ability or a significant ability to time major market movement successfully. (examples, see Kon (1983), Lehmann and Modest (1987) and Lee and Rahman (1990)).

The findings of Coggin et al. (1993) relating to selection ability suggest that pension fund managers are on average better stock pickers than market timers. However, their findings also indicate that when managers are grouped by investment styles, their stock selection and market-timing abilities appear to be sensitive to the choice of benchmarks used. In addition to these findings, many studies report a negative correlation between fund managers’ stock selection and market-timing abilities (examples, see Kon (1983), Henriksson (1984), Chang and Lewellen (1984), Connor and Korajczyk (1991), Coggin et al. (1993), Bello and Janjigian (1997) and Volkman (1999)). As noted by Coggin et al. (1993), the correlation between the market-timing and the selectivity measures remains an unresolved question in the literature. Their findings indicate that when the sampling errors of both the selectivity and the timing estimates are taken into account, both the estimates become “largely uncorrelated.” Volkman (1999) argues that the negative correlation between the fund’s timing and selectivity performance could arise from the manager’s attempt to maximize his stock selection performance at the expenses of timing performance. Jagannathan and Korajczyk (1986) suggest that the negative correlation between the measures of security-selection and market-timing occurs due to the differential leverage of firms in the market portfolio and those invested in by the fund managers. Lee and Rahman (1990) found positive correlation between selectivity and market-timing. On the other hand, Lehmann and Modest (1987), (footnote 33), found no evidence of “substantive correlation” between measures of timing and security-selection of fund managers.

Most previous evidence on timing and selectivity is based on the findings in the developed countries. While there are several studies
that investigate the overall investment performance of the mutual funds or better known as unit trust funds in Malaysia, there is remarkably little evidence to distinguish between the performance due to selectivity and the market-timing abilities of the fund managers. One such study is provided by Nassir, Mohamed and Ngu (1997). Using the Treynor and Mazuy Model (1966), Nassir et al. (1997) found evidence of negative timing performance and positive selectivity performance during the period from July 1990 through August 1995. This paper extends the understanding of the unit trusts performance by providing further empirical evidence on the separate performance measure for a sample of the Malaysian unit trust funds.

DATA AND METHODOLOGY

The data in this study consists of monthly returns for a sample of forty unit trust funds with complete data for the entire period of study from January 1996 through December 2000. The monthly returns for each fund is calculated as follows:

\[ R_t = \frac{NAV_t - NAV_{t+1} + \text{DIST}_t}{NAV_{t+1}} \]

where \( NAV \) is the net asset value of the fund and \( \text{DIST} \) is the income and capital gain distributions of the fund. The price records and distributions information were obtained from the local newspapers, fund prospectus and annual reports of the fund management companies. The sample of forty funds includes twenty five income funds, ten growth funds and four balanced funds. Monthly returns on the Kuala Lumpur Stock Exchange (KLSE) Composite Index served as a proxy for the market’s returns. This information was gathered from the Investors Digest published by the KLSE. The proxy for risk-free rate is a three-month Treasury bill rate gathered from the Monthly Statistical Bulletin, published by Bank Negara Malaysia (Central Bank of Malaysia). Since the reported Treasury bill rate is an annualized holding period yield on a three-month Treasury bill, this rate was converted to a monthly equivalent, consistent with the monthly returns of the unit trust funds and the market’s returns.

While there are several methods available for calculating the risk-adjusted returns, most empirical studies that examined the performance of managed portfolios have employed the most widely-used Jensen’s model (1968,1969) with the following regression specification:

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$R_p - R_f = \alpha_f + \beta_f (R_m - R_f) + \epsilon_p$  \hspace{1cm} (1)

where $R_p$ is the rate of return of the fund at time $t$; $R_f$ is the contemporaneous rate of return on a risk-free asset; and $R_m$ is the rate of return for the market portfolio at time $t$. $\beta_f$ is an estimate for the systematic risk level of the fund, $\alpha_f$ is the Jensen’s performance coefficient, indicating the risk-adjusted performance of the fund, and $\epsilon_p$ represents the random error term.

In this regression equation, the systematic risk level of the fund, $\beta_f$, is assumed to be stationary over time. Such an assumption has ignored the existence of timing ability on the part of the fund manager and therefore, attributed the fund’s performance solely to the manager’s security-selection ability. Accordingly, a statistically significant positive (negative) value of $\alpha_f$ indicates a superior (inferior) security-selection performance by the fund manager. Note that if the manager has superior information relating to security-selection but has no timing information, Jensen’s measure gives an accurate performance evaluation of the fund. However, when the fund manager does engage in market-timing activities, obviously there exists a potential for misinterpretation of the performance estimate, $\alpha_f$ in Equation (1). For example, if the fund manager has the ability to successfully time the market movements and this ability is not accounted for by Equation (1), the resulting estimate of $\alpha_f$ in Equation (1) will overestimate the security-selection ability of the successful market-timing manager. On the other hand, if the manager is an unsuccessful market timer, his poor timing skill will cause a downward bias to the estimate of $\alpha_f$ and as a result, his security-selection ability will be underestimated.\textsuperscript{10} Hence, it is important to consider timing and selection abilities simultaneously in evaluating fund performance.

In addressing the possibility that fund managers may engage in market-timing activities, Merton (1981) and Henriksson and Merton (1981) developed an alternative performance evaluation model that attempts to break down the overall performance ability of the fund manager into two separate components i.e., market-timing and security-selection abilities. Their model highlights the separate contributions of market-timing and security-selection performance to the overall fund’s return and the model can be expressed by the following regression equation:

$R_p - R_f = \alpha_s + \beta_s X_s + \beta_t Y_s + \epsilon_p$  \hspace{1cm} (2)

where $X_s = R_m - R_f$, $Y_s = \max [0, - (R_m - R_f)]$, and $\alpha_s$ is the abnormal component of the fund’s return attributed to the manager’s security-
selection ability, after filtering out his market-timing ability. $\beta_s$ is the measure for the manager’s market-timing ability and it represents the change in the fund’s risk when the manager restructures the composition of the fund as the direction of the market changes. A successful market-timing manager is able to correctly assess the direction of the market and adjust the portfolio’s risk accordingly. The manager’s ability to successfully (unsuccessfully) time the market will be revealed by a significant positive (negative) estimate of $\beta_s$. While Equation (2) provides an estimate for the timing performance of the manager, it does not explicitly show the separate risk levels of the fund during an upmarket or downmarket conditions. Henriksson and Merton (1981) went on to suggest that the up-market and down-market conditions can be identified in an alternative version of Equation (2). Through a linear transformation, Henriksson and Merton (1981) indicate that Equation (2) is shown to be equivalent to the following alternative regression specification:

$$R_{pt} - R_f = \alpha_s + \beta_{UP}X_{at} + \beta_{DOWN}X_{dt} + \epsilon_{pt}$$

(3)

where $X_{up} = \max\{0, R_{mt} - R_f\}$, $X_{dt} = \min\{0, R_{mt} - R_f\}$, $\beta_{UP}$ and $\beta_{DOWN}$ represent the up-market and down-market Beta respectively. A good market-timing manager should have an up-market beta greater than the down-market beta. As pointed out by Henriksson and Merton (1981), since both Equations (2) and (3) are related to each other econometrically, the test for the manager’s market-timing ability as shown by the estimate of $\beta_s$ in Equation (2), is equivalent to testing whether the up-market beta and the down-market beta in Equation (3) are significantly different from each other ($H_0 : \beta_{UP} = \beta_{DOWN}$).\[11\]

In this study, we employed the popular Jensen’s model as represented by Equation (1) to provide an estimate for the overall performance of mutual funds ($\alpha$). A good (poor) overall performance can be driven by the manager’s good (poor) selection-ability, a good (poor) timing-ability or a combination of both abilities. Since previous studies have clearly demonstrated the importance of taking into account the existence of market-timing activities among fund managers, we utilized both Equations (2) and (3) to analyze empirically the separate contributions of market-timing and security-selection performance to the overall fund’s return. The coefficient estimates of Equation (3) will indicate the selection-ability of the manager ($\alpha_s$) and the fund’s risk-levels in an up-and down-market conditions ($\beta_{UP}$ and $\beta_{DOWN}$ respectively). We then used Equation (2) to provide an estimate for the manager’s market-timing ability ($\beta_s$) and this market-timing estimates represent a test of whether $\beta_{UP}$ and $\beta_{DOWN}$ in Equation (3) are
significantly different from each other. A fund managed by a good market-timing manager should have an up-market beta that is significantly greater than the down-market beta, that is, the estimate of $\beta_2$ should be positive. The estimate of $\alpha_2$ in Equation (2) and (3) measures the manager’s selection-ability after filtering out his market-timing ability. We then examined the possible relationship between the components of fund performance by computing the pair-wise Pearson correlation coefficients of market-timing ability ($\beta_{up} - \beta_{down}$), security-selection ability ($\alpha_j$) and Jensen’s performance coefficient ($\alpha_i$) for the entire and subsamples of the funds under study.

**EMPIRICAL RESULTS AND DISCUSSIONS**

Panel A of Table 1 presents summary statistics of the regression estimates from Equation (1), (2) and (3) for the full sample of unit trust funds and Panel B provides information for subsamples of the funds grouped by investment objectives. We report in Table 2 the frequency counts of both positive and negative regression estimates. Note that the Jensen performance coefficient, $\alpha_j$ measures the fund manager’s overall performance and it is the intercept term from Equation (1). The selectivity performance coefficient, $\alpha_j$ is the intercept term from Equation (3) and it measures the selection ability of the manager after taking into account the impact of his market-timing activities. This estimate indicates the manager’s ability to select under-valued investments. On the other hand, the manager’s market-timing ability is captured in the timing performance coefficient, $\beta_2$ produced by Equation (2). This timing coefficient also represents a test for the differences in an up-market and down-market beta ($\beta_{up} - \beta_{down}$) from Equation (3). Thus, a significant positive (negative) value for the differential of $\beta_{up} - \beta_{down}$ would imply a superior (inferior) market-timing ability on the part of the fund manager.

As apparent from Panel A in Table 1, the full sample of 40 funds has a mean risk-adjusted return of -0.00671 ($\alpha_i$ in Equation (1)), and the mean return is significant at the 0.01 level. Furthermore, from Table 2, 33 out of the 40 funds report negative overall performance ($\alpha_i$), 8 of which are statistically significant at the 0.05 level. The remaining 7 funds have positive overall performance but none is statistically significant. The results suggest that these fund managers seem to exhibit poor overall investment performance.

Since the regression specification in Equation [1] ignores the existence of timing-activities among fund managers, the estimated intercept $\alpha_i$,
Table 1  
Summary Statistics for Unit Trust Fund Performance

Panel A: Full Sample  
(40 Funds)

<table>
<thead>
<tr>
<th>Statistics</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Maximum</th>
<th>Minimum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jensen’s Performance ($\alpha_1$)</td>
<td>-0.00671*</td>
<td>0.00605</td>
<td>0.00408</td>
<td>-0.01928</td>
</tr>
<tr>
<td>Selectivity Performance ($\alpha_2$)</td>
<td>-0.00071</td>
<td>0.01021</td>
<td>0.01754</td>
<td>-0.02670</td>
</tr>
<tr>
<td>Up-Market Beta ($\beta_{up}$)</td>
<td>0.59024*</td>
<td>0.23324</td>
<td>1.17445</td>
<td>0.13276</td>
</tr>
<tr>
<td>Down-Market Beta ($\beta_{down}$)</td>
<td>0.73908*</td>
<td>0.21276</td>
<td>1.18640</td>
<td>0.27584</td>
</tr>
<tr>
<td>Timing Performance ($\beta_j$)</td>
<td>-0.14833*</td>
<td>0.28294</td>
<td>0.44487</td>
<td>-0.59498</td>
</tr>
</tbody>
</table>

Panel B: Subsamples

<table>
<thead>
<tr>
<th>Type of Fund: Income (25 Funds)</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Maximum</th>
<th>Minimum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jensen’s Performance ($\alpha_1$)</td>
<td>-0.00885*</td>
<td>0.00592</td>
<td>0.00408</td>
<td>-0.01928</td>
</tr>
<tr>
<td>Selectivity Performance ($\alpha_2$)</td>
<td>-0.00078</td>
<td>0.01060</td>
<td>0.01754</td>
<td>-0.02670</td>
</tr>
<tr>
<td>Up-Market Beta ($\beta_{up}$)</td>
<td>0.60218*</td>
<td>0.23265</td>
<td>1.17445</td>
<td>0.13276</td>
</tr>
<tr>
<td>Down-Market Beta ($\beta_{down}$)</td>
<td>0.79681*</td>
<td>0.19603</td>
<td>1.18640</td>
<td>0.48826</td>
</tr>
<tr>
<td>Timing Performance ($\beta_j$)</td>
<td>-0.19463*</td>
<td>0.28513</td>
<td>0.37780</td>
<td>-0.59498</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of Fund: Growth (11 Funds)</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Maximum</th>
<th>Minimum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jensen’s Performance ($\alpha_1$)</td>
<td>-0.00160</td>
<td>0.00383</td>
<td>0.00331</td>
<td>-0.00829</td>
</tr>
<tr>
<td>Selectivity Performance ($\alpha_2$)</td>
<td>0.00080</td>
<td>0.00969</td>
<td>0.01144</td>
<td>-0.01591</td>
</tr>
<tr>
<td>Up-Market Beta ($\beta_{up}$)</td>
<td>0.61625*</td>
<td>0.17669</td>
<td>0.87230</td>
<td>0.39356</td>
</tr>
<tr>
<td>Down-Market Beta ($\beta_{down}$)</td>
<td>0.68033*</td>
<td>0.20329</td>
<td>0.91741</td>
<td>0.39256</td>
</tr>
<tr>
<td>Timing Performance ($\beta_j$)</td>
<td>-0.06408</td>
<td>0.28569</td>
<td>0.44487</td>
<td>-0.47790</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of Fund: Balanced (4 Funds)</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Maximum</th>
<th>Minimum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jensen’s Performance ($\alpha_1$)</td>
<td>-0.00738**</td>
<td>0.00329</td>
<td>-0.00368</td>
<td>-0.01092</td>
</tr>
<tr>
<td>Selectivity Performance ($\alpha_2$)</td>
<td>-0.00439</td>
<td>0.01086</td>
<td>0.00711</td>
<td>-0.01907</td>
</tr>
<tr>
<td>Up-Market Beta ($\beta_{up}$)</td>
<td>0.44409</td>
<td>0.37147</td>
<td>0.99798</td>
<td>0.21231</td>
</tr>
<tr>
<td>Down-Market Beta ($\beta_{down}$)</td>
<td>0.53978**</td>
<td>0.22339</td>
<td>0.76877</td>
<td>0.27584</td>
</tr>
<tr>
<td>Timing Performance ($\beta_j$)</td>
<td>-0.09569</td>
<td>0.26586</td>
<td>0.22920</td>
<td>-0.41862</td>
</tr>
</tbody>
</table>

Notes:  
* denotes statistical significance at the 0.01 level.
** denotes statistical significance at the 0.05 level.

attributes the overall performance of the fund manager exclusively to his selection ability. As such, if there exists a market timer, a generally good (poor) market-timing manager will tend to cause an upward (downward) bias to the estimate $\alpha_1$ and therefore, overestimate (underestimate) the contribution of the manager’s security-selection ability to the overall investment performance of the fund. A more accurate evaluation of the manager’s selection ability is provided by
Equation (3). The estimated intercept, $\alpha$, measures the manager's contribution to the fund performance from his security-selection activities after filtering out his market-timing activities. Results on the selectivity performance indicate that, after filtering out the manager's market-timing ability, the fund earns a mean monthly return of -0.00071 ($\alpha$ in Panel A, Table 1). However, the mean return figure is not significantly different from zero. If a fund manager is simultaneously engaged in both market-timing and security-selection activities, the finding that the mean $\alpha$ of -0.0067067 from Equation (1) has a smaller value than the mean $\alpha$ of -0.00071 suggests that the poor timing-ability of the manager does contribute to making his selection-ability worse off, that is, if the fund manager is generally a poor market timer and his timing ability is ignored as in Equation [1], the fund manager's talent for security selection will be underestimated as shown by a smaller value of $\alpha$.

Table 2
Frequency Counts of Positive and Negative Regression Estimates Representing Overall Fund Performance ($\alpha$), Selectivity Performance ($\alpha_s$) and Timing Performance ($\beta_{up} - \beta_{down}$) of Fund Managers

<table>
<thead>
<tr>
<th>Overall Performance</th>
<th>Selectivity Performance</th>
<th>Timing Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\alpha &gt; 0$</td>
<td>$\alpha &lt; 0$</td>
<td>$\alpha_s &gt; 0$</td>
</tr>
<tr>
<td>Full Sample</td>
<td>7 (0)</td>
<td>33 (8)</td>
</tr>
</tbody>
</table>

Subsamples:
Income Fund | 2 (0) | 23 (8) | 13 (2) | 12 (19) | 11 |
Growth Fund | 5 (0) | 6 (0) | 7 (0) | 4 (14) | 1 (1) | 7 (3) |
Balanced Fund | 0 (0) | 4 (1) | 2 (0) | 2 (1) | 1 (0) | 3 (1) |

Numbers in parentheses are the numbers of coefficient estimates statistically significant at the 0.05 Level.

Results from the frequency counts indicate that the number of funds having positive and negative selectivity performance ($\alpha_s$) is about the same, even though significant negative estimates (4 out of 18) exceed significant positive estimates (2 out of 22). Such a finding implies that for those managers who are engaging in security-selection activities, their selection is about as often in the wrong as in the right securities. Although at the individual fund level there appears to be some evidence of selection ability among the fund managers, the insignificant mean monthly return as shown by $\alpha_s$ indicates that when all the funds are
examined together, there are really not much security-selection activities going on among these fund managers. Interestingly, the findings suggest that after accounting for the manager’s market-timing ability, the manager’s security-selection ability does not seem to contribute significantly to the overall investment performance of the funds. Such findings further support the assertion that the presence of market-timing activities among fund managers, if not accounted for, would lead to inaccurate conclusions regarding the fund performance.

Table 1 also reports the manager’s market-timing ability measure as shown by the timing performance coefficient (β) from Equation (2). We used Equation (2) and (3) to identify and estimate the separate contributions to performance from both the security-selection and market-timing abilities of the fund manager. As reported, the timing performance coefficient has a negative mean value of -0.14833 and is significant at the 0.01 level. The 40 funds exhibit an average up-market beta of 0.59024 which is approximately 20% smaller than its average down-market beta of 0.73908. These findings indicate that, on the average, the fund managers do not possess good market timing ability. From Table 2, the frequency counts show that 29 out of the 40 funds have an up-market beta that is smaller than its down-market beta (72.5%), 15 of which are statistically significant at the 0.05 level. This result suggests that 15 funds have attempted to adjust their portfolio risks in a way that was not in line with the direction of changes in the market conditions. There are 11 funds with positive market-timing estimates, but only 2 are statistically significant at the 0.05 level. Such weak evidence of positive timing ability implies that fund managers who do engage in market-timing activities should reevaluate their efforts because it seems that their predictions are more often in the wrong than in the right direction. In Panel B of Table 1, the fund performance is separately analyzed for subsamples of the fund, grouped by investment objective. For market timing performance, the mean values in Table 1 are negative for each group. For selectivity performance, growth funds are the only group that have positive selectivity estimates. However, as shown by the frequency counts in Table 2, even though almost two thirds (7 out of 11) of the growth funds exhibit positive selectivity estimates, none is significantly different from zero. Consistent with the results reported for the full sample of funds, the findings for the subsamples of funds also indicate that the funds in each group have more unfavorable timing performance than selectivity performance. This finding also seems to suggest that the market-timing and the security selection performances of fund managers are quite similar when the funds are grouped by investment objective.
Table 3
Pearson Correlation Coefficients among the Measure of Overall Fund Performance, Selectivity Performance and Timing Performance of Fund Managers

<table>
<thead>
<tr>
<th>Panel A: Correlation between Overall Performance ($\alpha$) and Selectivity Performance ($\alpha_s$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Sample</td>
</tr>
<tr>
<td>Subsamples:</td>
</tr>
<tr>
<td>Income Fund</td>
</tr>
<tr>
<td>Growth Fund</td>
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<td>Balanced Fund</td>
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<tr>
<th>Panel B: Correlation between Overall Performance ($\alpha$) and Timing Performance ($\beta_{UR-\beta_{BOWN}}$)</th>
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<tbody>
<tr>
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<td>Subsamples:</td>
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<th>Panel C: Correlation between Selectivity Performance ($\alpha_s$) and Timing Performance ($\beta_{UR-\beta_{BOWN}}$)</th>
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Notes: * denotes statistical significance at the 0.01 level.
      ` denotes statistical significance at the 0.05 level.

Table 3 presents the pairwise Pearson correlation coefficients of the 3 performance estimates, $\alpha$, $\alpha_s$ and ($\beta_{UR-\beta_{BOWN}}$) for the full sample and subsamples of funds. In Panel A of Table 3, we observe that the correlation between the overall fund performance ($\alpha$) and selectivity performance ($\alpha_s$) is not significantly different from zero. Consistent with the regression results obtained earlier, the correlation result suggests that the security-selection ability of the fund manager does not seem to have much effect on the overall fund performance. Panel B reports the correlation between the overall fund performance and the timing-ability of the fund manager. The significant positive
correlation between the two estimates indicates that a good (poor) timing ability on the part of the fund manager results in a positive (negative) overall investment performance. A fund’s overall performance could be a result of the selectivity performance, the market-timing performance or a combination of the two performances. The findings that \( \alpha_i \) is not significantly correlated with \( \alpha_s \) but is significantly positively correlated with the timing measure are consistent with the regression results reported earlier. That is, when market-timing is ignored, the manager’s selection ability is assumed to be the sole cause of the negative overall fund performance. However, when timing performance is considered, it turns out that the selectivity performance no longer contributes significantly to the overall fund performance. The correlation coefficients between selectivity and timing performance measures are presented in Panel C of Table 3. The results indicate a strong negative correlation between the fund’s timing and selectivity performance and such findings are consistent with previous studies. The reported correlation results in Panel A through C of Table 3 for the subsamples of funds are quite similar to those of the full sample.

CONCLUSIONS

This paper examined market-timing and security-selection performance of a sample of Malaysian mutual funds. We employed the model developed by Merton (1981) and Henriksson and Merton (1981) to identify the two separate performance components and the Jensen’s model to test the overall fund performance. Consistent with previous studies on Malaysian funds, the empirical results obtained indicate that on the average, the funds exhibit a significant negative overall performance. As demonstrated by previous studies, such results ignored any potential market timing activities by fund managers and thus may not give an accurate picture of investment performance. When we employed models which consider timing and selectivity simultaneously, some interesting results emerged. In addition to finding evidence of negative timing abilities among fund managers, we found that the security selection abilities of fund managers no longer contributes significantly to the overall fund performance. Taken together our results suggest that the poor overall fund performance is driven by the poor timing performance by fund managers. The evidence presented further support the assertion that the presence of timing activities of fund managers, if not properly accounted for, would lead to erroneous conclusions regarding fund performance.
ACKNOWLEDGEMENTS

We would like to thank Han Jie of Universiti Kebangsaan Malaysia for the research assistance provided.

END NOTES

1. Source: Securities Commission, Malaysia.

2. In contrast, several other studies such as findings by Eun, Kolodny and Rasnick (1991) and Kao et al. (1998) show that fund managers have good overall performance.

3. Grinblatt and Titman (1989a) indicated that although some mutual funds may show superior performance based on gross returns, these funds fail to generate above normal performance after considering all expenses. The findings of Malkiel (1995) show that in aggregate, mutual funds underperformed the market benchmark of both net of management expenses and even gross of expenses. For a review on the performance of mutual funds, see Ippolito (1995).

4. See Kon and Jen (1978, 1979), Miller and Gressis (1980), Klemkosky and Maness (1978) and Fabozzi and Francis (1979) for some empirical evidence on the non-stationarity of the systematic risk of mutual funds over time. Such evidence is consistent with the existence of timing activities of fund managers, thus implying that these managers are adjusting their portfolio risk in anticipation of market movements.

5. Findings by Chen et al. (1992) show that although selectivity exists for some fund managers; the evidence is generally weak especially after considering management fees. Eun et al. (1991) found weak evidence that international fund managers are good market-timers.


7. The results of Henriksson (1984) show that the sampling error is unlikely to be the only source of the negative correlation between selectivity and market-timing estimates.
Because the monthly return of the fund is calculated based on the sum of distributions and the change in net asset values over time, the rate of return therefore, reflects net return after the deductions of operating expenses, fees and transaction costs. The return is however, gross of sales fees (load charges). According to Jensen (1968), since the primary focus of the study is to assess the fund performance in terms of the manager’s forecasting ability and not to measure the fund performance from the viewpoint of an investor, the load charges were excluded from the return calculations.

We estimated the monthly equivalent of the annualized yield as a geometric mean, that is \((1+\text{Annualized Yield})^{1/12} - 1\).

Several studies indicate that the estimated intercept \(a_t\) tends to show negative value when there exists market timers (see Jensen (1968), Admati and Ross (1985) and Dybvig and Ross (1985)). The findings of Chang and Lewellen (1984), Henriksson (1984) and Lee and Rahman (1990) indicate that the security-selection performance of fund managers will tend to exhibit a lower value when timing is ignored. Their results are consistent with Grant’s (1977) contention that in the presence of market-timing ability, the estimate of \(a_t\) will be biased downward.

As demonstrated by Henriksson and Merton (1981), when \(R_{m} - R_{p} > 0\), the term \(\beta_i Y_i\) in Equation [2] vanishes and Equation [2] becomes \(R_{m} - R_{p} = a_t + \beta_i X_i + \epsilon_{it}\). Similarly, in Equation [3], the term \(\beta_{\text{DOWN}} X_i\) is dropped and the resulting Equation [3] becomes \(R_{m} - R_{p} = a_t + \beta_{\text{UP}} X_i + \epsilon_{it}\). By comparison, since \(X_i\) in Equation [2] is identical to \(X_{it}\) in Equation [3], technically \(\beta_i = \beta_{\text{UP}}\). On the other hand, when \(R_{m} - R_{p} < 0\), \(X_i = -Y_i\) and through the relevant substitution, Equation [2] becomes \(R_{m} - R_{p} = a_t + \beta_i X_i - \beta_i X_i + \epsilon_{it}\) or \(R_{m} - R_{p} = a_t + (\beta_i - \beta_i) X_i + \epsilon_{it}\). Accordingly, Equation [3] can be rewritten as \(R_{m} - R_{p} = a_t + \beta_{\text{DOWN}} X_i + \epsilon_{it}\). Thus, \(\beta_{\text{DOWN}}\) in Equation [3] is equal to the difference between \(a_t\) and \(\beta_i\) of Equation [2], that is \(\beta_{\text{DOWN}} = (\beta_i - \beta_i)\). Since \(\beta_i = \beta_{\text{UP}}\), \(\alpha_t\) now equals \(\beta_{\text{UP}} - \beta_{\text{DOWN}}\) or \(\beta_i = (\beta_{\text{UP}} - \beta_{\text{DOWN}}).

REFERENCES


