Investment Performance Analysis of Managerial Expertise: Evidence from Malaysian-Based International Equity Unit Trust Funds

(Analisis Prestasi Pelaburan Berasaskan Kepakaran Pengurus: Bukti dari Dana Unit Amanah Ekuiti Antarabangsa di Malaysia)

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ABSTRACT

This paper evaluates the investment performance of Malaysian-based international equity funds. The results on the overall fund performance using Jensen's (1968) model indicate that, on average, international funds have significant negative risk-adjusted returns over the study period from 2008-2010. Since the model ignores market timing activity, it implicitly attributes the overall negative return to manager's poor stock selection ability. However, the performance breakdown results on managerial expertise using the models of Treynor and Mazuy (1966) and Henriksson and Merton (1981) show evidence of positive selectivity and negative market timing returns. Taken together, the highly significant negative timing returns suggest that, on average, international fund managers have perverse market timing ability. The paper finds little evidence that Malaysian investors achieve diversification benefits from investing in overseas equity markets.

Keywords: International equity funds; market timing; security selection; fund performance

ABSTRAK

Kajian ini menilai prestasi pelaburan dana ekuiti antarabangsa yang berpengkalan di Malaysia. Untuk prestasi keseluruhan berdasarkan model Jensen (1968), dapatan kajian menunjukkan bahawa, secara purata, dana ekuiti antarabangsa menjana pulangan negatif selepas penyelarasan risiko untuk tempoh kajian dari 2008-2010. Memandangkan model ini mengabaikan kewujudan aktiviti pemasaan pasaran dalam kalangan pengurus dana amanah, ia menganggapkan bahawa keseluruhan pulangan negatif untuk dana tersebut adalah disebabkan oleh kelemahan pengurus dari segi kemampuannya memilih saham. Walau bagaimanapun, keputusan kajian berdasarkan kepada pecahan prestasi kepakaran pengurus dengan menggunakan model Treynor dan Mazuy (1966) dan Henriksson dan Merton (1981) menunjukkan prestasi pemilihan yang positif dan prestasi pemasaan yang negatif. Secara keseluruhannya, pulangan negatif pemasaan yang signifikan mencadangkan bahawa secara puratanya, pengurus dana antarabangsa tidak mempunyai keupayaan pemasaan pasaran yang baik. Penyelidikan ini juga menunjukkan bukti yang sedikit bahawa pelabur-pelabur Malaysia memperolehi faedah kepelbagaian daripada pelaburan dalam pasaran ekuiti luar negara.

Kata kunci: Dana ekuiti antarabangsa; pemasaan pasaran; pemilihan sekuriti; prestasi dana

INTRODUCTION

The investment performance of domestically managed funds has been widely researched. While international equity funds have become a popular avenue for investors to gain exposure to equity investment outside the home country, there exists relatively little research on the performance of internationally managed equity funds. Within this strand of the literature, the returns of international funds have been compared to various benchmarks that include domestic and world equity indices, and self-constructed indices. These performance studies also examine market timing and security selection ability of international funds managers. The overall performance results of internationally managed equity funds are broadly consistent with those of domestically managed funds. That is, international equity funds generally do not outperform world equity indices (e.g., Cumby & Glen 1990; Eun et al. 1991; Droms & Walker 1994; Tkac 2001; Engström 2003; Gallagher & Jarnecic

2004). However, mixed findings are reported when returns are measured against domestic equity and self-constructed indices (e.g., Cumby & Glen 1990; Eun et al. 1991; Redman et al. 2000; Fletcher & Marshall 2005). Varied conclusions are also observed when the investment performance is decomposed into selectivity and market timing components.

In recent years, Malaysian-based international equity funds have become an important channel for investors to gain access to overseas equity markets. While the benefits of international equity investing are widely recognized, these benefits may not be realized if significant financial and economic barriers exist. In a globalized financial market, and as part of its on-going initiatives, the Central Bank of Malaysia (Bank Negara Malaysia) has announced several liberalizations of the foreign exchange administration rules with effect from 1 April 2005. For unit trust management companies, the rules on investment abroad have been progressively relaxed in 2005 and 2007, and following such liberalizations, Malaysian unit trust companies have

started to invest in overseas equity markets. The fact that the availability of international funds did not begin until the year 2005 could possibly explain the remarkably little research on the performance of international funds that invest in foreign equity markets. This paper remedies that deficiency by providing empirical evidence on the performance of a sample of 26 Malaysian-based international equity funds over the period from January 2008 to December 2010. Firstly, the paper evaluates the overall performance of international funds and secondly, the paper decomposes the overall performance into selectivity and market timing components. By breaking down the performance components, this paper provides a complete picture of fund performance that is based on a manager's expertise and identifies which of the two managerial activities of security selection and market timing is more rewarding to investors. So far, the existing empirical evidence on security selection and market timing performance measures in Malaysia is limited to domestic equity funds only. Since a manager's security selection and market timing activities are important elements that affect a fund's return, this paper enhances understanding of the Malaysian-based international funds by decomposing the overall performance into separate performance components. The findings expand existing scarce literature on international fund performance in Malaysia. Additionally, given that investors can diversify their fund holdings into foreign equity markets this paper also analyzes the potential of achieving diversification benefits when international equity funds are added into a well-diversified portfolio of domestic equity.

This study is organized as follows. The related literature is discussed in Section 2 and Section 3 describes the data and methodology employed. Findings are reported and discussed in Section 4. Section 5 concludes the study.

LITERATURE REVIEW

Empirical evidence on the performance of actively managed equity funds is abundant. However, the literature consists mainly of domestic funds, and there are not many studies that examine the performance of international equity funds. Collectively, prior studies on the performance of international funds generally indicate that these funds could not provide investors with returns that surpass those of international equity indices. Nevertheless, when the fund performance is measured relative to domestic equity indices and self-constructed benchmarks, mixed findings are reported.

Over the period from 1982-1988, Cumby and Glen (1990) examines the performance of 15 U.S.-based internationally diversified mutual funds relative to the Morgan Stanley World Index, and a benchmark portfolio comprising the World Index and an equally-weighted portfolio of Eurocurrency deposits. The results show that international funds as a whole or

individually could not outperform world equity index and the benchmark portfolio. However, there is some evidence that international funds outperformed the U.S. index, proxied by the Morgan Stanley Index for the U.S. The findings of Droms and Walker (1994) indicate that international funds underperform both the U.S. domestic market proxied by Standard and Poor's 500 (S&P500) Index, and the international market proxied by the World index and the Morgan Stanley Europe, Australia, and Far East (EAFE) Index. Eun et al. (1991) show no evidence that international funds provide investors with returns that are higher than that of the Morgan Stanley World Index based on a sample of 19 U.S-based international funds over the period from 1977 to 1986. However, when performance is measured against the S&P 500 Index and a self-constructed index of U.S. multinational firms, majority of the international funds outperform the two benchmarks. The results of Gallo and Swanson (1996) provide conflicting performance evidence for 37 U.S-based international funds that is dependent on the type of performance evaluation models employed over the 1985-1993 period. When the index model is employed, there is no evidence that international equity funds outperform the MSCI World Index. In contrast, the results of the international arbitrage pricing theory (IAPT) based model indicate that international funds outperform the market benchmark.

Redman et al. (2000) show that the risk-adjusted returns of international funds differ across the period examined. For a full sample period from 1985 to 1994, and over the early sample period from 1985 to 1989, international funds are shown to outperform both the U.S. stock market proxied by Vanguard Index 500 mutual fund and an equally weighted index consisting of U.S. equity mutual funds. However, over the sub-period from 1990 to 1994, the risk-adjusted returns of these funds are shown to be lower than those of the U.S. stock market and the portfolio of domestic mutual funds. Engström (2003) examines European-based international funds in Sweden over the period from 1993 to 1998 that invest either in Asia or Europe equity markets and finds that these funds on average underperform the market benchmarks. Gallagher and Jarnecic (2004) examine Australian-based international funds and find that both institutional and retail funds show no evidence of earning superior risk-adjusted returns relative to the MSCI World (excluding Australia) Index. In their study of U.K. international unit trusts, Fletcher and Marshall (2005) find that international funds, with the exception of the European sector, do not produce superior risk-adjusted returns relative to the domestic benchmarks. The result of Tkac (2001) indicates that majority of the managers of well-diversified international funds has superior performance relative to the MSCI Index over the period from 1990 to1999. However, such observation does not extend to the managers of regional and country funds. For the well-diversified funds, as noted by Tkac (2001), the positive Jensen alphas could possibly imply selection

and market timing abilities on the part of international fund managers.

Several of the existing performance studies also investigate the security selection and market timing ability of international fund managers. The two commonly employed models to derive the selectivity and market timing measures are the models of Treynor and Mazuy (1966) and Henriksson and Merton (1981). Cumby and Glen (1990) examine market timing performance using the Treynor and Mazuy's (1966) model and find clear evidence that international fund managers have poor market timing ability. Eun et al. (1991) examine the separate performance components of security selection and market timing using the Henriksson and Merton's (1981) model and find that majority of the funds have selectivity and market timing estimates that are not significantly different from zero. In Gallo and Swanson (1996), the market timing results derived from the Treynor and Mazuy's (1966) model indicate that, on average, managers of international funds have positive selectivity performance but they are generally poor market timers. Detzler and Wiggins (1997) find no evidence of security selection ability on the part of international fund managers. Kao et al. (1998) examine the overall performance of international funds based on the Jensen's (1968) and decompose the performance components into selectivity and market timing components using the model of Henriksson and Merton (1981). For a sample of 97 international equity funds over the 5-year period from 1989 to 1993, the results show that international fund managers have good selectivity ability and there is weak evidence that the managers are poor market timers. Consistent with prior findings on domestic mutual funds, Kao et al. (1998) also find that selectivity and market timing performance measures are negatively correlated. In Gallagher and Jarnecic (2004), the results of the market timing model of Treynor-Mazuy (1966) indicate that managers of Australian-based international funds, on average, do not exhibit superior selectivity and market timing performances. Engström (2003) obtains selectivity and market timing measures based on both the models of Treynor and Mazuy (1966) and Henriksson and Merton (1981), and notes that the results to a certain extent depend on the choice of market timing measure. The overall result suggests that funds that invest either in Asia or Europe markets have poor selectivity returns. However, the overall result shows no evidence that international fund managers have negative market timing ability.

Past international fund research has also documented the diversification benefits of foreign equity investments (e.g., Cumby & Glen 1990; Eun et al. 1991; Bailey & Lim 1992; Chang et al. 1995). Eun et al. (1991) find that, on average, the U.S. equity market has a lower explanatory power than the world equity market in explaining the fluctuation in international fund returns, hence suggesting the potential diversification benefits of investing in international funds. In their evaluation of the desirability of combining international funds with a well-diversified equity domestic portfolio proxied by the S&P 500, Eun et al. (1991) show that with the exception of one fund, U.S. investors can gain diversification benefits by adding any of the sample international funds to their portfolios of domestic equity. Similarly, the findings of Detzler and Wiggins (1997) also indicate that international investing provides investors with diversification benefits. Redman et al. (2000) find that in the sub-sample period from 1990 to 1994, the U.S. stock market explains a small percentage of the variation in excess returns of international funds, hence also suggesting potential diversification benefits of adding these funds to the portfolios of domestic mutual funds. The results of Engström (2003) indicate that investment in Asia funds do not provide diversification benefits to investors while Europe funds do provide investors with such benefits.

In the Malaysian context, while the investment performance of domestic equity funds has been commonly studied, there is remarkably little evidence on the performance of Malaysian-based international funds. This is because Malaysian unit trust companies had only started to invest abroad following several liberalizations of the foreign exchange administration rules in 2005. On domestic equity funds performance, the collective empirical findings indicate that on average, funds underperform the market benchmarks (e.g., Mohamed & Nassir 1995; Low & Ghazali 2005; Low 2007; Taib & Isa 2007; Low & Chin 2013). On performance of Malaysian-based international equity funds, the first study is conducted by Abdullah and Abdullah (2009) and the study compares the performance of unit trusts funds that invest in domestic equity markets versus those that invest in international markets over the period from June 2005 to May 2008. Consistent with the findings of prior studies, the results indicate that on average, domestic funds underperform domestic equity index. The sample of international funds that invests globally also indicates underperformance in relation to the MSCI World Index. The results based on Sharpe and Jensen performance measures show no evidence of significant differences in performance between the two groups. The study of Abdullah and Abdullah (2009) focuses on evaluating the overall fund performance and does not distinguish between performance due to selectivity and market timing ability of international fund managers. This is not surprising since most studies that examine domestic fund performance in Malaysia focus the research on evaluating the overall fund performance. There are limited studies that investigate the separate performance components of selectivity and market timing and these studies have somewhat reached varied conclusions (e.g., Nassir et al. 1997; Low & Ghazali 2005; Low 2012). Since a fund's overall performance could be driven by a manager's security selection and or market timing efforts, it is important that the separate performance components be empirically analyzed when evaluating fund performance.

DATA AND METHODOLOGY

The sample in this study comprises 26 Malaysian-based international equity funds over the period from January 2008 to December 2010. The data employed are weekly returns of international equity funds and weekly returns of domestic and international equity market indices. The domestic equity market index is the FTSE Bursa Malaysia Kuala Lumpur Composite Index (FBM KLCI) and the world equity market index is the Morgan Stanley Capital International World Index (MSCI World Index). The proxy for risk free rate is 3-month Klibor (Kuala Lumpur Inter-Bank Offer Rate). To be consistent with the weekly returns of international equity funds and market indices, the weekly equivalent of the annualized yield is estimated as $(1+\text{annualized yield})^{1/52} - 1$. The data on MSCI World Index and FBM KLCI are retrieved from Data stream. The weekly returns of international equity funds are sourced from Lipper Database and the websites of unit trust management companies. Data on the 3-month Klibor are gathered from http://bondinfo.bnm.gov.my/portal/server.pt

The overall risk-adjusted returns of international equity funds are evaluated using the Jensen's (1968) model. The separation of the overall performance into selectivity and market timing components is assessed using the two commonly employed models of Treynor and Mazuy (1966) and Henriksson and Merton (1981). In Jensen's (1968) model, the excess return of a fund is regressed on the excess return of a market portfolio as shown in the following regression specification:

$$R_{it} = \alpha_J + \beta_i R_{mt} + \epsilon_{it} \qquad (1)$$

where R_{it} is excess weekly returns on the ith international equity fund, R_{mt} is excess weekly return on equity market index, β_i is systematic risk coefficient of fund i, α_J is Jensen's alpha of the ith international equity fund and is interpreted as a fund's under-or over-performance relative to the market proxy; and ϵ_{it} is random error term.

In Jensen's model, a fund's systematic risk coefficient β_i is assumed to be stationary over time, implying that fund managers do not engage in market timing activities. In other words, the model ignores a manager's market timing ability and attributes a fund's overall performance solely to a manager's stock selection ability. That said, the Jensen's alpha represents a fund's overall performance which comprises only the selectivity performance component. If a manager has no timing information, then the Jensen's measure provides a good indication of a fund's selectivity performance. However, if a manager has superior timing information and engages in market timing activity, there is a potential for misinterpreting the performance estimate of α_J since Equation (1) ignores the timing performance component. For example, on the one hand, if a manager can successfully time market movement and this market timing ability is not being accounted

for in Equation (1), the resulting α_J would over estimate the stock selection ability of the manager. On the other hand, if a manager is a poor market timer and because the timing aspect is not captured in the model, this would create a downward bias to the estimate of α_J and thus underestimate the manager's selectivity performance. In reality, the risk levels of actively managed funds are not stationary over time because managers engaging in market timing activities would change the composition of their funds in anticipation of broad market movements.[1] If a bullish market condition is forecasted, managers would adjust the systematic risk of their funds upward by switching their holdings to high risk securities since these securities earn higher returns than the market. On the contrary, if a down market condition is anticipated, managers would restructure the composition of their funds to low risk securities to minimize the loss in fund values. Hence, when evaluating fund performance, it is important to take into consideration the market timing and security selection ability of managers. In this paper, the models of Treynor and Mazuy (1966) and Henriksson and Merton (1981) are employed to empirically analyze the separate contribution of market timing and selectivity returns to the overall fund performance.

Treynor and Mazuy (1966) argue that if a manager frequently makes changes to the systematic risk levels of the fund in anticipation of market movements, the fund return is no longer a linear function of the market return. Instead, the fund return represents a convex function of the market return with the addition of a quadratic term, i.e., the square of the excess market return to capture the timing performance component. The Treynor and Mazuy's (1966) model decomposes fund performance into selectivity and market timing components and the return component attributed to a manager's market timing ability is captured by a quadratic term in the model. The separate contribution of security selection and market timing components to a fund overall performance in Treynor and Mazuy's (1966) model is shown as follows:

$$R_{it} = \alpha_{TM} + \beta_1 R_{mt} + \beta_2 (R_{mt})^2 + \epsilon_{it} \qquad (2)$$

where R_{it} is excess weekly returns on the ith international equity fund, R_{mt} is excess weekly return on equity market benchmark, α_{TM} is selectivity performance component of fund i and it represents manager's security selection ability after filtering out market timing ability. A significant positive (negative) coefficient estimate of α_{TM} provides indication of good (poor) security selection ability of manager after controlling for market timing ability. β_2 is the market timing performance component of fund i. A significant positive (negative) coefficient estimate of β_2 indicates good (poor) market timing performance for international equity fund. ϵ_{it} is the random error term. The selectivity performance measure α_{TM} obtained from the Treynor and Mazuy's (1966) model is more accurate than the α_J estimated from the Jensen's (1968) model because the estimate α_{TM} is a timing-filtered selectivity measure

whereas the coefficient α_J is a selectivity performance estimated based on the assumption that there exists no market timing activity.

In Henriksson and Merton's (1981) model, the breakdown of selectivity and market timing performance components is shown in the following regression specification.

$$R_{it} = \alpha_{HM} + \beta_1 R_{mt} + \beta_2 Max(0, -R_{mt}) + \epsilon_{it} \qquad (3)$$

where R_{it} is excess weekly returns on the ith international equity fund, R_{mt} is excess weekly return on equity market benchmark, α_{HM} is selectivity performance component of fund i and it represents manager's security selection ability after filtering out the market timing ability, β_2 is an estimate of market timing performance and it represents the change in the risk level of a fund when manager restructures the fund's composition as the direction of the market changes. A manager's ability to successfully time the market is indicated by a significant positive estimate of β_2, and ϵ_{it} is the random error term.

Additionally, this paper also explores the potential diversification benefits of investing in international equity funds. To diversify their holdings, investors can construct a portfolio that comprises both domestic and international funds. This paper evaluates whether Malaysian investors should add international funds to a well-diversified of domestic equity in a setting similar to that of Eun et al. (1991) using a methodology developed by Elton et al. (1987). According to Elton et al. (1987), the addition of an asset would result in a gain when the Sharpe ratio of the added asset for example, an international fund ($SHRP_I$) exceeds the results of the multiplication between the Sharpe ratio of existing domestic portfolio ($SHRP_D$), and the correlation between the added asset and domestic portfolio (ρ_{ID}). In other words, investors will achieve diversification benefits from investing in international fund if [$SHRP_I$ – ($SHRP_D$ x ρ_{ID})] is greater than zero.

EMPIRICAL FINDINGS AND DISCUSSION

Table 1 reports summary statistics of weekly returns from January 2008 to December 2010. On average, Malaysian-based international equity funds have returns that are lower than those of the domestic and the world equity indices. The mean return of international funds is -0.065

TABLE 1. Descriptive statistics of weekly rate of return (January 2008-December 2010)

No.	Funds	Mean	Standard Deviation	Minimum	Maximum
1	Alliance Global Equities	-0.031	2.918	-15.470	7.960
2	AmGlobal Agribusiness	0.012	3.972	-22.150	12.500
3	AmGlobal Climate Change	-0.087	3.610	-18.780	13.530
4	AmGlobal Enhanced Equity Yield	-0.112	2.915	-18.280	9.866
5	CIMB-Principal Global Growth	-0.120	3.142	-18.320	10.580
6	CIMB-Principal Global Titans	-0.082	1.979	-8.430	6.550
7	HLG Global Healthcare	0.013	2.727	-16.410	8.966
8	HLG Global Resources Income	-0.013	2.642	-8.814	5.588
9	HLG Global Value	-0.055	2.325	-14.260	5.590
10	HWANGDBS Absolute Return II	0.115	2.355	-7.000	10.688
11	HWANGDBS Environmental Opportunities	0.001	3.179	-17.080	9.860
12	HWANGDBS Global Infrastructure	-0.084	3.174	-22.020	11.040
13	HWANGDBS Global Opportunities	-0.227	3.022	-16.000	9.820
14	OSK-UOB Global Equity Yield	-0.120	2.717	-15.840	8.680
15	OSK-UOB Global New Stars	-0.249	2.664	-14.100	6.350
16	Pacific Global Stars	0.010	2.397	-14.430	7.890
17	PB Euro Pacific Equity	-0.118	2.798	-11.280	10.160
18	PRUglobal basics	0.034	4.151	-19.520	11.670
19	PRUglobal emerging markets	0.067	3.612	-17.228	15.345
20	PRUglobal equity blend	-0.228	3.593	-18.620	12.330
21	PRUglobal leaders	-0.104	3.864	-20.480	14.270
22	Public Far-East Consumer Themes	0.245	2.182	-7.180	7.5740
23	Public Global Select	-0.086	2.271	-12.030	6.3420
24	RHB Global Fortune	-0.094	2.649	-17.880	9.340
25	RHB Global Themes	-0.055	3.207	-19.580	10.410
26	TA Global Utilities	-0.328	2.767	-16.880	6.524
	Average				
	All Funds	-0.065	2.955	-15.695	9.593
	MSCI World	-0.057	3.57	-16.066	14.675
	FBM KLCI	0.047	2.202	-8.133	5.832
	3-month KLIBOR	0.054	0.012	0.040	0.070

TABLE 2. Overall Jensen Performance Measure using international and domestic equity market
benchmarks (January 2008-December 2010)

No.	Funds	FBM KLCI			MSCI WORLD INDEX		
		Jensen's Alpha	Beta	R2	Jensen's Alpha	Beta	R2
1	Alliance Global Equities	-0.079	0.886	0.447	-0.012	0.656	0.644
2	AmGlobal Agribusiness	-0.035	1.052	0.341	0.057	0.895	0.647
3	AmGlobal Climate Change	-0.134	0.854	0.272	-0.045	0.862	0.727
4	AmGlobal Enhanced Equity Yield	-0.163	0.548	0.172	-0.099	0.613	0.563
5	CIMB-Principal Global Growth	-0.169	0.694	0.237	-0.095	0.715	0.66
6	CIMB-Principal Global Titans	-0.133	0.462	0.265	-0.084	0.469	0.716
7	HLG Global Healthcare	-0.038	0.368	0.089	0.012	0.479	0.394
8	HLG Global Resources Income	-0.063	0.535	0.199	-0.015	0.474	0.411
9	HLG Global Value	-0.106	0.406	0.149	-0.061	0.435	0.446
10	HWANGDBS Absolute Return II	0.065	0.522	0.239	0.105	0.391	0.351
11	HWANGDBS Environmental Opportunities	-0.048	0.698	0.234	0.025	0.706	0.629
12	HWANGDBS Global Infrastructure	-0.132	0.778	0.292	-0.061	0.694	0.609
13	HWANGDBS Global Opportunities	-0.276	0.738	0.29	-0.206	0.679	0.643
14	OSK-UOB Global Equity Yield	-0.17	0.563	0.209	-0.110	0.579	0.578
15	OSK-UOB Global New Stars	-0.298	0.603	0.249	-0.267	0.325	0.189
16	Pacific Global Stars	-0.040	0.513	0.223	0.012	0.509	0.574
17	PB Euro Pacific Equity	-0.165	0.977	0.592	-0.112	0.546	0.485
18	PRUglobal basics	-0.013	1.023	0.295	0.083	0.935	0.647
19	PRUglobal emerging markets	0.041	0.979	0.354	0.096	0.832	0.680
20	PRUglobal equity blend	-0.277	0.717	0.193	-0.194	0.800	0.632
21	PRUglobal leaders	-0.152	0.868	0.245	-0.054	0.945	0.763
22	Public Far-East Consumer Themes	0.209	0.648	0.424	0.232*	0.410	0.453
23	Public Global Select	-0.135	0.662	0.412	-0.080	0.540	0.719
24	RHB Global Fortune	-0.144	0.548	0.208	-0.082	0.592	0.637
25	RHB Global Themes	-0.103	0.815	0.314	-0.025	0.759	0.714
26	TA Global Utilities	-0.377	0.571	0.207	-0.325*	0.514	0.441
	Average	-0.113	0.693	0.275	-0.050	0.629	0.575
	t-statistics	-4.748			-2.153		

Note: ***, **, and * denote significance at the 1 percent, 5 percent, and 10 percent levels respectively.

percent compared to the mean returns of 0.047 percent and -0.057 percent for the FBM KLCI and MSCI World Index, respectively. The average total risk of international funds is 2.955 percent which is higher than the total risk of domestic equity market but lower than that reported for the world equity market. Over the sample period, the lowest and highest returns of international funds are -22.15 percent and 14.27 percent, respectively.

The overall performance results using the Jensen's model are presented in Table 2. When domestic equity index is used as a benchmark, the result shows that international equity funds on average, yield a Jensen's alpha of -0.113 (*t*-stats = -4.748) versus -0.050 (*t*-stats = -2.153) when the performance is measured against the MSCI World Index. That is, on average, the negative fund return is more than doubled when the performance is measured against the domestic equity index. At individual fund level, 3 funds exhibit positive risk-adjusted returns when the domestic equity market is employed, versus 8 funds when the world market equity index is used as benchmark. It is important to note that the Jensen's model ignores a manager's market timing

ability and thus implicitly attributes a fund's overall performance to a manager's stock selection ability. Accordingly, the negative Jensen's alpha values indicate that on average, international equity fund managers have poor stock selection ability. That is, managers do not possess the ability to select stocks that outperform the returns of domestic and international equity indices. A comparison of the R-squared values indicates that world equity market index yields higher explanatory power than the domestic equity index in explaining the fluctuation of returns in international equity funds. The MSCI World Index, on average, explains 57.5 percent of the return variability in international funds, versus 27.5 percent explained by the FBM KLCI. While the beta values of international funds are generally comparable regardless of the benchmarks used, the higher R-squared obtained when performance is measured against the MSCI World Index indicates that the resulting beta values are more reliable. At individual fund level, 24 of the 26 international equity funds report higher R-squared values when the MSCI World Index is employed.

The performance decomposition results based on the Treynor and Mazuy's (1966) market timing tests are presented in Table 3. The performance is measured against the MSCI World Index since it provides higher explanatory power than the domestic equity index in explaining the return variability of international equity funds. After filtering out managers' market timing activities, on average, there is a weak evidence that international equity funds have positive selectivity returns of 0.038 percent (*t*-stats = 1.657). The market timing measure suggests that, on average, international equity fund managers are poor market timers with an average timing return of -0.007 percent (*t*-stats = -7.189). The finding of poor market timing skill is consistent with the results of Cumby and Glen (1990), Gallo and Swanson (1996), Kao et al. (1998), among others. Individually, 9 of the 26 funds have negative market timing estimates that are significant at 1 and 5 percent levels.

Table 4 presents the selectivity and market timing results based on the Henriksson and Merton's (1981) model where performance is also measured against the MSCI World Index. Consistent with the market timing results reported using the Treynor and Mazuy's (1966) model, the results based on the Henriksson and Merton's

(1981) model suggests that, on average, managers of international equity funds are poor market timers with an average timing return of -0.116 percent (*t*-stats = -6.728). The timing-filtered selectivity measure indicates that international equity funds, on average, yield positive selectivity returns of 0.092 percent (*t*-stats = 3.460) versus 0.038 percent (*t*-stats = 1.657) when the Treynor and Mazuy's (1966) model is employed as reported earlier. The overall selectivity and market timing results in Tables 3 and 4 point out that managers of international equity funds have positive security selection ability but perverse market timing ability. In the Jensen's (1968) model, the alpha estimate (α_J) is a measure for the overall fund performance. When the market timing activity is ignored in the Jensen's (1968) model, the model attributes the fund's overall performance entirely to a manager's security selection skill. However, when the overall performance is decomposed into selectivity and market timing components, it becomes clear that it is the poor market timing performance that is driving the negative fund performance observed in the Jensen's (1968) model. This shows that the presence of market timing activity, if not properly accounted for, would lead to erroneous conclusions about fund performance.

TABLE 3. Treynor and Mazuy's (1966) Model – Selectivity and market timing performance components from January 2008 to December 2010

No.	Funds	Selectivity	Market Timing	R2
1	Alliance Global Equities	0.060	-0.006	0.648
2	AmGlobal Agribusiness	0.255	-0.016***	0.663
3	AmGlobal Climate Change	0.058	-0.008*	0.732
4	AmGlobal Enhanced Equity Yield	0.049	-0.012**	0.58
5	CIMB-Principal Global Growth	-0.008	-0.007	0.665
6	CIMB-Principal Global Titans	-0.076	-0.001	0.716
7	HLG Global Healthcare	0.164	-0.012**	0.414
8	HLG Global Resources Income	-0.008	-0.001	0.411
9	HLG Global Value	0.056	-0.009**	0.462
10	HWANGDBS Absolute Return II	0.121	-0.001	0.351
11	HWANGDBS Environmental Opportunities	0.122	-0.008	0.635
12	HWANGDBS Global Infrastructure	0.155	-0.017***	0.639
13	HWANGDBS Global Opportunities	-0.166	-0.003	0.644
14	OSK-UOB Global Equity Yield	-0.038	-0.006	0.582
15	OSK-UOB Global New Stars	-0.093	-0.014**	0.216
16	Pacific Global Stars	0.06	-0.004	0.577
17	PB Euro Pacific Equity	-0.061	-0.004	0.487
18	PRUglobal basics	0.190	-0.009	0.651
19	PRUglobal emerging markets	0.095	0.000	0.68
20	PRUglobal equity blend	-0.159	-0.003	0.633
21	PRUglobal leaders	0.029	-0.007	0.766
22	Public Far-East Consumer Themes	0.220	0.001	0.453
23	Public Global Select	-0.016	-0.005*	0.724
24	RHB Global Fortune	0.035	-0.009**	0.65
25	RHB Global Themes	0.113	-0.011***	0.725
26	TA Global Utilities	-0.177	-0.012**	0.459
	Average	0.038	0.583	0.583
	t-statistics	-1.657	-7.189	

Note: ***, **, and * denote significance at the 1 percent, 5 percent, and 10 percent levels respectively.

TABLE 4. Treynor and Mazuy's (1966) Model – Selectivity and market timing performance components from
January 2008 to December 2010

No.	Funds	Selectivity	Market Timing	R2
1	Alliance Global Equities	0.100	-0.092	0.646
2	AmGlobal Agribusiness	0.398	-0.279*	0.655
3	AmGlobal Climate Change	0.115	-0.131	0.729
4	AmGlobal Enhanced Equity Yield	0.104	-0.166	0.568
5	CIMB-Principal Global Growth	0.031	-0.103	0.662
6	CIMB-Principal Global Titans	-0.049	-0.029	0.717
7	HLG Global Healthcare	0.252	-0.196	0.402
8	HLG Global Resources Income	0.092	-0.087	0.413
9	HLG Global Value	0.086	-0.121	0.450
10	HWANGDBS Absolute Return II	0.106	-0.001	0.351
11	HWANGDBS Environmental Opportunities	0.217	-0.157	0.632
12	HWANGDBS Global Infrastructure	0.305	-0.300**	0.623
13	HWANGDBS Global Opportunities	-0.131	-0.061	0.644
14	OSK-UOB Global Equity Yield	0.031	-0.115	0.581
15	OSK-UOB Global New Stars	0.011	-0.227	0.200
16	Pacific Global Stars	0.071	-0.048	0.575
17	PB Euro Pacific Equity	-0.007	-0.086	0.486
18	PRUglobal basics	0.331	-0.203	0.650
19	PRUglobal emerging markets	0.007	0.073	0.681
20	PRUglobal equity blend	-0.141	-0.044	0.633
21	PRUglobal leaders	0.091	-0.118	0.765
22	Public Far-East Consumer Themes	0.182	0.041	0.453
23	Public Global Select	0.051	-0.107	0.723
24	RHB Global Fortune	0.064	-0.120	0.640
25	RHB Global Themes	0.177	-0.165	0.718
26	TA Global Utilities	-0.116	-0.171	0.447
	Average	0.092	-0.116	0.578
	t-statistics	-3.46	-6.728	

Note: ***, **, and * denote significance at the 1 percent, 5 percent, and 10 percent levels respectively.

Table 5 presents pair-wise correlation results of performance measures. Panel A shows the correlations of selectivity measures estimated using the models of Jensen's (1968), Treynor and Mazuy (1966), and Henriksson and Merton (1981). The selectivity measures obtained from Treynor and Mazuy's (1966) and Henriksson and Merton's (1981) models are highly correlated with a correlation coefficient 0.919. The correlations between Jensen's selectivity measure and the selectivity measures of Treynor and Mazuy (1966) and Henriksson and Merton (1981) are 0.859 and 0.648, respectively. It is important to note that both of these selectivity measures are timing-filtered selectivity measure whereas the selectivity coefficient in the Jensen's (1968) model is estimated based on the assumption that there exists no market timing activity.

TABLE 5. Correlation analyses of performance components (January 2008-December 2010)

	Jensen	Treynor & Mazuy	Henriksson & Merton
Panel A. Correlation of selectivity measures			
Jensen	1		
Treynor & Mazuy	0.859	1	
Henriksson & Merton	0.648	0.919	1
Panel B. Correlation of timing measures			
Treynor & Mazuy	1		
Henriksson & Merton	0.936	1	
		Selectivity	Market Timing
Panel C. Treynor and Mazuy's (1966) model - correlation between selectivity and market timing measures			
Selectivity	1		
Market Timing	-0.225	1	
Panel D. Henriksson and Merton's (1981) model - correlation between selectivity and market timing measures			
Selectivity	1		
Market Timing	-0.539	1	

As reported in Panel B of Table 5, the two market timing measures of Treynor and Mazuy (1966) and Henriksson and Merton (1981) are highly correlated with a coefficient of 0.936. Panels C and D report correlation coefficients between selectivity and market timing measures. As shown, for both models, the correlation between the two performance components is negative suggesting that there is a trade-off between a fund manager's stock selection and market timing efforts.

Table 6 reports the results for diversification gain from adding international equity funds to a well-diversified portfolio of domestic equity. As reported previously in Table 1, the resulting low R-squared of 27.5 percent when domestic equity market index is employed suggests that there is a potential for diversification benefits for investors through the addition of international funds into a portfolio of domestic equity. Overall, there is little evidence that investors would benefit from diversifying their portfolio into foreign equity markets. The diversification benefits from investing in international funds are observable for only 2 funds (HWANGDBS Absolute Return II and Public Far-East Consumer Themes) where the values of [SHRP$_I$ − (SHRP$_D$ x ρ_{ID})] are greater than zero. In other words, investors will gain when these two funds are added into their domestic portfolios proxied by a well-diversified domestic market index, the FBM KLCI.

CONCLUSION

This paper examines the investment performance of 26 Malaysian-based international equity funds over the period from January 2008 to December 2010. While there are numerous studies on the performance of domestic equity funds in Malaysia, there is very little evidence on the performance of funds that invest in overseas equity markets. This is possibly due to the lack of data for international funds given that the Malaysian unit trust companies had only started to invest abroad following several liberalizations of the foreign exchange administration rules in 2005. This paper evaluates the overall fund performance using the Jensen's (1968) model and decomposes the performance into selectivity and market timing components using the two commonly employed models of Treynor and Mazuy (1966) and Henriksson and Merton (1981). Since investors have the options of investing in domestic funds or combining their holdings of domestic funds with international funds, this paper also examines if diversification gains can be attained by adding international equity funds into a portfolio of domestic equity.

The results for the overall fund performance indicate that international equity funds, on average, do not yield positive returns regardless of whether performance is measured against the domestic equity index or the MSCI

TABLE 6. Analysis of diversification benefits

No.	Funds	PI, D	A= PI, D x SHRP$_D$	B = SHRP$_I$	B − A
1	Alliance Global Equities	0.668	-0.002	-0.029	-0.027
2	AmGlobal Agribusiness	0.583	-0.002	-0.011	-0.009
3	AmGlobal Climate Change	0.521	-0.002	-0.039	-0.037
4	AmGlobal Enhanced Equity Yield	0.413	-0.001	-0.057	-0.056
5	CIMB-Principal Global Growth	0.486	-0.002	-0.056	-0.054
6	CIMB-Principal Global Titans	0.513	-0.002	-0.069	-0.067
7	HLG Global Healthcare	0.296	-0.001	-0.015	-0.014
8	HLG Global Resources Income	0.445	-0.001	-0.025	-0.024
9	HLG Global Value	0.384	-0.001	-0.047	-0.046
10	HWANGDBS Absolute Return II	0.488	-0.002	0.026	0.028
11	HWANGDBS Environmental Opportunities	0.483	-0.002	-0.017	-0.015
12	HWANGDBS Global Infrastructure	0.540	-0.002	-0.043	-0.042
13	HWANGDBS Global Opportunities	0.537	-0.002	-0.093	-0.091
14	OSK-UOB Global Equity Yield	0.456	-0.002	-0.064	-0.063
15	OSK-UOB Global New Stars	0.498	-0.002	-0.114	-0.112
16	Pacific Global Stars	0.471	-0.002	-0.018	-0.017
17	PB Euro Pacific Equity	0.769	-0.003	-0.062	-0.059
18	PRUglobal basics	0.542	-0.002	-0.005	-0.003
19	PRUglobal emerging markets	0.594	-0.008	0.004	0.011
20	PRUglobal equity blend	0.439	-0.001	-0.079	-0.077
21	PRUglobal leaders	0.495	-0.002	-0.041	-0.039
22	Public Far-East Consumer Themes	0.650	-0.009	0.087	0.096
23	Public Global Select	0.641	-0.002	-0.062	-0.059
24	RHB Global Fortune	0.455	-0.002	-0.056	-0.054
25	RHB Global Themes	0.559	-0.002	-0.034	-0.032
26	TA Global Utilities	0.454	-0.002	-0.138	-0.136

World Index. It is important to note that since market timing activity is not taken into account in the Jensen's model, the model implicitly attributes a fund's overall performance entirely to a managers' stock selection efforts. This could potentially lead to erroneous conclusion about fund performance if market timing activity exists. When the overall fund performance is segregated into selectivity and market timing components, the results show that, on average, managers of international equity funds have positive selectivity ability and negative market timing ability. Taken together, the results suggest that actively managed international equity funds do not yield positive returns and much of the poor performance is associated with poor market timing returns. On diversification benefits, the finding indicates that investors do not gain from adding international equity funds into a well-diversified domestic equity portfolio. The findings of this paper expand the literature on international fund performance and enhance investors' understanding of fund managers' stock selection and market timing skills in an international environment.

ENDNOTE

Empirical evidence on the non-stationarity of the risk levels of mutual funds over time implies that fund managers adjust portfolio risk in anticipation of market movements and such evidence support the notion that market timing activities do exist. (see among others, Kon & Jen 1978, 1979; Klemkosky & Manes 1978; Fabozzi & Francis 1979; Miller & Gressis 1980).

Other studies that have employed the methodology of Elton et al. (1987) are Ackermann et al. (1999), Edwards and Park (1996), and Polwitoon and Tawatnuntachai (2006).

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