DETERMINANTS OF MUTUAL FUND PERFORMANCE: EVIDENCE OF FOREIGN INVESTMENT FUND IN THAILAND

BY

MISS SORAYA SINGSUKSRI

AN INDEPENDENT STUDY SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE PROGRAM IN FINANCE (INTERNATIONAL PROGRAM) FACULTY OF COMMERCE AND ACCOUNTANCY THAMMASAT UNIVERSITY ACADEMIC YEAR 2016

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was approved as partial fulfillment of the requirements for
the degree of master of science (Finance)

on 01 MAY 2017

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Independent study title	DETERMINANTS OF MUTUAL FUND PERFORMANCE: EVIDENCE OF FOREIGN INVESTMENT FUND IN THAILAND
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Academic year	2016

ABSTRACT

The study objective is that how investors use public information to interpret determinants of foreign investment fund performance in Thailand to their investment decision. This research uses quarterly data set to examine the influences of mutual fund performance during 2011 to 2016 which indicated only in foreign equity investment fund registered in Thailand. The results show negative correlation between past fund performance, fund size in last period and subsequent abnormal return. In contrast, this research illustrates a positive relationship of fund inflows/ outflows and foreign investment fund performance. However, the study finds that it has no evidence of a statistically significant coefficient between previous market return and generated alpha of the funds in Thailand. Furthermore, this research also studies the influences of fund performance in aspect of asset management company as a parent company or group of commercial banks in Thailand, Morningstar style box and group or category of investment specified by Morningstar Thailand.

Keywords: Determinants, Mutual Fund Performance, Foreign Investment Fund

ACKNOWLEDGEMENTS

I would like to express my special thanks of gratitude to my Advisor Sakkakom Maneenop, Ph. D. who always support me and understand my situation in busy job which helped me a lot to complete this Research as well as Associate Professor Pantisa Pavabutr, Ph. D. who also gave me valuable suggestions in this project and I came to know about so many new things I am really thankful to them.

I would also like to thank my parents and friends especially Mr. Sakda Thirasophon who helped me a lot of in Econometrics technics exploring in this project within the limited time frame.

Miss Soraya Singsuksri

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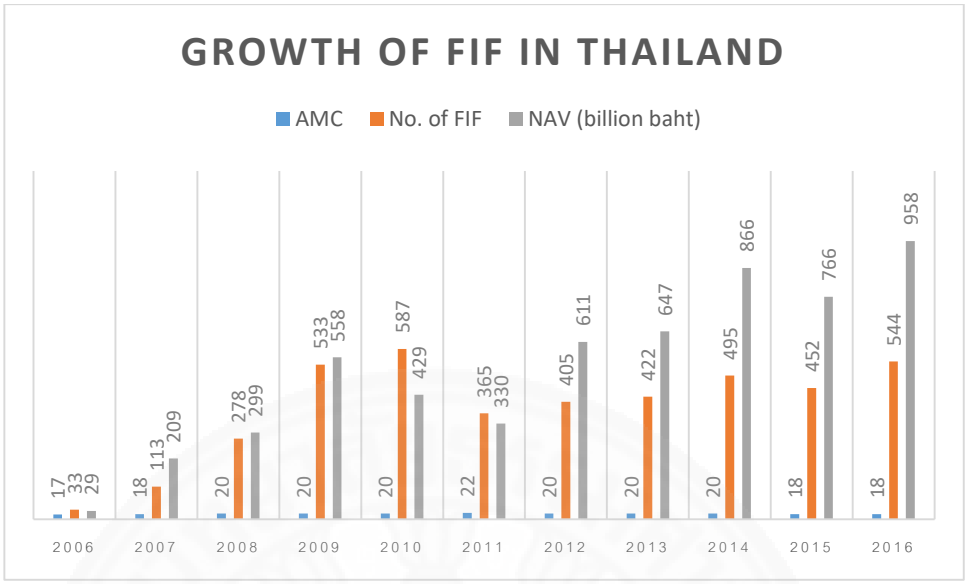
CHAPTER 1
INTRODUCTION

This paper examines determinants of mutual fund performance from well-known Morningstar indicators that helping individuals or financial professionals who serve them plan, save, and invest to reach financial goals. This research extraordinary study in foreign investment fund registered in Thailand, the Foreign investment fund (FIF) refers to a mutual fund with a policy to invest the pooled funds in securities overseas. FIF adds another variety of investment choice to investors and can be used as a diversification tool for their investment risk to a certain level. Investors should, however, bear in mind that there are risks involved in foreign investment such as foreign exchange risk (risk arising from the fluctuation of exchange rates) and market risk of the country of investment (Types of mutual fund (Sor Nor. 22/2552) from SEC).

In 2015, total of net asset value (NAV) of mutual funds in Thailand hold at 4.063 trillion baht which slightly growth only 6.67% in 2015 compare to NAV growth of 23.82% in 2014 effected from fluctuations in world economy. Investors start moving investments to three of the most popular fund types mainly to low-risk asset means money market funds (Money Market) as well as short-term bond and mid/long-term bond with net inflow in 2015 are 171,151 and 135, 536 and 121,972 million baht respectively.

FIF in Thailand increase greatly since 2009 in terms of number of fund and NAV, although it was slightly difference in number of Asset Management Company (AMC). In 2015, there are 18 AMCs managed totally 452 foreign investment funds with net asset value over 760 billion baht.

Figure 1.1: Growth of Foreign Investment Fund in Thailand during 2006 - 2016



Meanwhile, the NAV of the Foreign Investment Funds (FIF) in Thailand have dramatically grown from 28.88 billion baht in 2006 to 765.94 billion baht in 2015 which is over 2500% for 10 years. These shown that foreign investment fund industry in Thailand is equivalent to a variety of funds abroad. With continuously increasing of foreign investment fund industry in Thailand, investors should be aware of substantial information concerning the determinant factors that influence foreign investment fund performance before initial investment or re-allocate their foreign investment portfolio by choosing "winner FIF".

Ordinarily, fund Performance indicated by abnormal return or alpha which explained in term of securities selection and market timing. There are two aspects shown ex-post and ex-ante abnormal fund performances respectively only when Efficient Markets Hypothesis (EMH) to be applied. First, an ex-post abnormal fund performance to be created by selecting winner or false stocks which reflect fund performances or fortunate fund managers. Second, an ex-ante abnormal fund performance, show how fund manager can be excellently predicting the securities cycle and then rebalancing portfolio to maintain fund performance persist. (Cuthbertson et al. (2010))

However, nowadays mutual fund industries not only in Thailand but also in Global Market are highly competitive environment and widespread information. To

raise or produce abnormal fund performance, some fund managers may manipulate fund performance by abating operating fees such as management fee and registrar fee etc. result to increase of fund performance. Others case is that created of higher NAV by marketing technique to assemble investment volume from high-net-worth investors. There are also produce extra-alpha in fund performance, but not contribute actual worth to the funds.

This study examines fund performance of foreign investment fund not only private information and manager expertise but also consider to other determinant factors as fund attributions (Ferreira et al. (2012)). Fund Attributions for instant past performance, fund tenor, fund size, fund flow, management fee, operating fee and loaded fees. Moreover, this research expands estimated variable to indicated market return which categorized by fund classification from Association of Investment Management Companies ("AIMC") and complied to Morningstar Category as well. There are reasons to believe that the mentioned variables are importance to foreign investment fund performance in Thailand. This study explains that how investors choose performed foreign investment funds between funds are launched more than five years and some funds are located a few years ago, or fund ages have no relationship to manager performance. Some implication believe that the bigger fund size or inflow amount should be the importance factors to the funds creating more return than the smaller one? Most of investors consider to mutual fund past performance, they imply that producing abnormal return in the future comes from previous outcome (Is it applicable for foreign investment fund in Thailand). For fees as fund expenses which to be collected from the fund result to dilute of NAV, or the higher fee rate to be paid for Manger's ability?

Furthermore, this study also extends the estimation to the difference types of Asset Management Company as a parent group of commercial bank or not. Well-known that commercial banks in Thailand have already captured investors from bank transactions and especially wealth banking which high net worth individual. This benefit can be created extra opportunity to advantage fund manager to rise their abnormal return comparing to disadvantage manager. Another determinant which this study aims to find evidence of performance persistence is that Morningstar style box, the estimation target to track alpha from the box type which vary easily noticed and

published in Morningstar website. Finally, this study pursues to examine group of investments as one of most relevant to foreign investment fund performance because the group are specified by market return which referenced to Modern Index Strategy Indexes (MSCI) that also applicable noticed by investors.

This paper is organized as follows. Section 2 shows Literature Reviews in parts of determinants of mutual fund performance and fund performance. In Section 3 describes data and methodology which specified benchmark and variables. In Section 4 presents the empirical results. Section 5 Conclusion.

CHAPTER 2
REVIEW OF LITERATURE

2.1 Determinants of Mutual Fund Performance

Sometime funds with good performance in the past may delude investors to acquire more investment on the funds. More inflows create economic scale resulting to good performance existence and in the future short- term performance of funds persistence, these called “smart money” effect (Ferreira et al. (2012)).

Some study shown empirical evidence that fund managers with active stock selection characteristics for example picking stock by value-growth (Chan et al. (1996), LaPorta et al. (1997), and Lakonishok (2004)) and choosing security from market momentum (Jegadeesh and Titman (1993), (2001), Chan et al. (2000), Hon and Tonks (2003)) and market timing strategies (Pesaran and Timmermann (1994), (1995), (2000), Ang and Bekaert (2007)). There be able to earn alpha by adjusting of risk and transaction fees.

The studies indicate that most of fund managers as above evidence applying active strategies may take advantage from less informed investors in market. However, the studies were not clearly explained to other fund attributions whether related to abnormal performance.

(Khorana, Servaes and Tufano (2005)) describe the evidence that country characteristics as large countries with strongly protected investors laws, rules and regulations. People in the countries has well- planned in pension funds than other counties are not.

(Ferreira et al. (2012)) published the Determinants of Mutual Fund Performance: A Cross- Country Study shows that both of fund characteristics and country idiosyncrasies describe to abnormal return of fund performance. The study demonstrates that large fund incline to explore more good performance because economic scale. For new fund also tend to create higher performance especially investment in foreign country. Surprisingly, fund with higher fees grant more abnormal performance which costly fund expense to be paid for more experience managers. Moreover, country distinctions also reflect to fund performance with more stock liquidity in developed

county that strong rules and regulations to protect investors. However, the study has no explicit correlation of fund performance with exchange rate uncertainty.

The determinants study by Ferreira et al. (2012) because also concern about fluctuations of foreign currency on investment countries. With parts of recognized performance is gain or lose from exchange rates which also decided by fund managers as well. These will exhibit abnormal performance with ability of managers to prediction of market timing or luckily effect from market event on that country or regional.

This study presents the alpha calculated abnormal return and attractive fund factors from Morningstar Thailand because there is well-known data provider for individual investors and professional institutions and be also available and easy to access data which most of them are for free.

This paper focuses on aspect of determinant that reflect fund performance of Foreign Investment Fund in Thailand only in fund attributions for example Fund Size, Expenses, Fee Loads, Fund Flow, Past Performance including Market Returns and dummy variables as Bank or Non-Bank AMC, Fund Styles and Group of Investments.

2.2 Fund Performance

Many studies explain extra mutual fund performance by using alpha that deviate from benchmark portfolio called Jensen's alpha (1968, 1972) determined that managers exploring superior performance with ability of stock selections and market timing. Creating value to managed portfolio, managers should use private information that mostly unobserved in publication.

Many researches study about well-known Morningstar indicator, Christopher R. Blake and Matthew R. Morey (1999) study about correlation between Morningstar Ratings and Mutual Fund Performance which also compare the predictive qualities of the Morningstar rating system with those of alternative predictors as historical average monthly returns, Alphas, and Sharpe ratios. The results indicated that low ratings from Morningstar generally indicate relatively poor future performance and there is little statistical evidence that Morningstar's highest-rated funds outperform the next-to-highest and median-rated funds. Morningstar ratings, at best, do only slightly better than the alternative predictors in terms of predicting future fund performance.

Paul Gerrans (2006) studies about Morningstar Rating and future fund performance in Australia also explains about relationship of them in special environment in Australia Market. Diane Del Guercio and Paula A. Tkac (2007) study about the effect form on Mutual Fund Flow that Morningstar star rating changes result to substantial influence on the investment allocation decisions of retail mutual fund investors. It is the discrete change in the star rating itself, and not the change in the underlying performance measures that drives flow.

Morningstar has many indicators not only star ratings, but also alpha, best-fit alpha and sharp ratio. Rashiqa Kamal (2013), applied its Alpha to illustrate correlation between Morningstar ratings and future fund performance.

To simplify investors access to abnormal return of foreign investment fund performance and to estimate their investment decision, this study will be complied to alpha of preferred funds from infamous Morningstar.

CHAPTER 3
RESEARCH METHODOLOGY

3.1 Sample Descriptions

The research data on foreign investment fund in Thailand to be mainly assembled from Morningstar Thailand. To precise the study, data are restricted to opened- end equity funds, and illustrate the most recent year data, there will be conducted by extant abroad investment fund performance during January 2011 to December 2016 with quarterly data resulting to research sample of 198 foreign investment funds with minimum frequency at 3 periods, lagged data minimum of 2 periods, and maximum at 24 periods. Generated fund data from Morningstar Thailand are not only Alpha, but also studying variables as Fund Age, Expenses, Loads and Past Performance including dummy variables as Morningstar Thailand' s category or group of investments and Fund Styles.

Table 3.1: Foreign investment fund in Thailand active between 2011 and 2016 which can be classified by Morningstar Thailand's group of investments shown as Table 3.1

Group of Equity Investment	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**
Asia Pacific ex-Japan	19 6,872	21 7,230	22 8,648	30 17,979	36 26,157	39 22,760
China Equity	8 6,119	8 6,927	10 8,156	12 12,995	18 27,893	18 24,454
Global Emerging Market	10 6,257	12 6,863	12 7,050	12 5,157	12 5,522	12 5,629
Europe Equity	2 475	2 414	4 3,955	13 17,045	23 34,154	27 22,370
Global Equity	17 4,748	17 3,994	19 4,235	25 6,581	36 14,889	45 21,710
Global Health Care	1 26	1 14	1 15	6 12,333	18 53,969	18 45,148
Japan Equity	1 230	1 242	4 1,892	11 9,328	18 29,647	21 25,379
US Equity	4 1,323	8 1,932	12 6,262	12 11,938	15 15,905	18 15,466
Total Fund ***Total NAV(Million Baht)***	62 26,050	70 27,616	84 40,213	121 93,356	176 20,8136	198 18,2916

The group of equity investment in foreign markets shown in Morningstar Thailand also mainly reference from Association of Investment Management Companies ("AIMC") in Thailand which conduct a principal of fund classification and investment policy for members, Asset Management Company ("AMC"). There are slightly different to AIMC category, Morningstar Thailand combines India Equity, ASEAN Equity and Asia Pacific ex-Japan to group of Asia Pacific ex-Japan only.

This study principally references quarterly fund size from the Securities and Exchange Commission, Thailand ("SEC"). We found some mismatch information between Morningstar Thailand and SEC result from fund classes. While Morningstar Thailand illustrated abnormal return together with concerning information in fund class individually, such as class-A (Auto-redemption) or class-D (Dividend Payment) etc., SEC shown only entire fund size. Accordingly, no evidence shown exactly proportion size in each fund class, so various fund class of foreign investment fund will be disposed of studying sample. Moreover, the funds that be closed or merged to other fund will also excluded because there has no substantial information for study, for example Morningstar Style Box and Group of Investment which no longer exist in Morningstar Thailand system.

The research also illustrates Morningstar Style Box which one of tools providing investors to depict their investment styles recommenced by Morningstar Thailand. The study cites only Equity Morningstar Style Boxes which relative to Foreign Equity Investment Fund, the Box is two nine-square grids in Table 3.1, in horizontal from left to right are Value, Blend and Growth shares; and in vertical from upper to lower are Large, Mid (Middle) and Small size. The number of fund in each style shown in Table 3.1 and Morningstar Style Boxes for foreign equity investment fund consisted of nine equity management styles as below:

1. VL: Value equity style with Large fund size
2. VM: Value equity style with Middle fund size
3. VS: Value equity style with Small fund size
4. BL: Blend equity style with Large fund size
5. BM: Blend equity style with Middle fund size
6. BS: Blend equity style with Small fund size

7. GL: Growth equity style with Large fund size
8. GM: Growth equity style with Middle fund size
9. GS: Growth equity style with Small fund size

Table 3.2: Morningstar Style Box shown the fund invests in Growth equity and Middle fund size

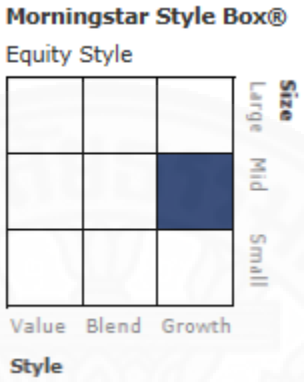


Table 3.3: Number of fund and Total fund size in each Morningstar Style Box between 2011 and 2016

Morning Style Box	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**
VL	17 8,077	18 8,772	20 9,763	27 16,283	31 28,940	31 24,830
VM	2 292	2 219	3 317	3 2707	4 2450	5 2133
VS	0 0	0 0	0 0	0 0	0 0	0 0
BL	29 13,600	31 13,815	34 15,631	47 22,557	62 43,042	70 41,431
BM	1 375	1 404	2 2,458	4 6,310	5 4,922	6 4,571
BS	0 0	0 0	0 0	1 142	2 135	2 223
GL	12 3,581	16 4,281	24 11,507	35 38,773	66 106,708	74 89,462
GM	1 126	1 124	1 539	2 3152	4 12310	7 13576
GS	0 0	0 0	0 0	2 3,433	3 9,630	3 6,690
Total Fund ***Total NAV (Million Baht)***	62 26,050	70 27,616	84 40,213	121 93,356	176 20,8136	198 18,2916

This study intent to illustrate how each fund characteristic response to foreign investment fund performance. In general, the greater of fund size earns more abnormal return evidence in the determinants of mutual fund performance: a cross-country study (Ferreira et al. (2012)) state that except in U.S. mutual fund generate extra alpha including mutual fund in emerging market alike Thailand. For fund family, bank industry in Thailand has major participants about 5 banks which also having asset management company (AMC) as a parent company. Furthermore, sizable bank has private wealth services that easily pass-through investment amount into the fund under management by their umbrella AMC, also accumulate grater fund size than others. Fund styles or investment strategy patterns have momentum to mutual fund performance Russ Wermers (1997) which also state in Chan et al. (1996) the momentum effect in stock return. Fund Expenses and Fund Fee Loads are consequence to mutual fund performance with lower its fees, the funds have chance to implicate more abnormal return to mutual fund. This paper also concerns about fund inflow and outflow, and correlation of foreign investment fund performance and negative market return.

Moreover, Asset Management Company ("AMC") in Thailand can be categorized into bank and non-bank as a parent company. The study explores how it can be raised foreign mutual fund performance in fund's opportunities point of view to generate extra performance from faithfulness of bank group or selling agent etc. From data summary in Table 3.4, illustrate that non-bank's AMCs generate fund performance better than group of bank AMCs, while fund size and number of fund of Bank's AMCs is bigger than almost 9 times and 4 times respectively. This research studies why the bank's AMCs perform their performance less than non-bank AMCs, although bank's AMCs have ability to acquire investment volume from investors directly from bank channel such as bank branch or wealth banking.

Table 3.4: Data descriptive for AMC as a parent company of commercial bank

Bank / Non-Bank	**Mean**	**Max**	**Min**	**Number of Fund***	**NAV* million baht**	**%**
Bank	.6821032	44.08	-34.20	160	164,350.64	89.85
Non-Bank	.8654050	18.94	-30.79	38	18,569.39	10.15
Total	.7298823	44.08	-34.20	198	182,920.03	100.00

***Data as of December 2016**

For fund registration date, fund operation fees, and fund subscription and redemption fees, the study are compounding of information from Morningstar Thailand and SEC in parts of fund factsheet and fund annual report purposing of data reconciliation. This study categorizes fund fees to two main variables, operating fees consisting of management fee and trustee fee which raise from fund size and fund activities that indicated in fund prospectus; and load fees containing of front-end fee and deferred fee or subscription and redemption fees. Data summary shown in Table 3.5

Table 3.5: Data descriptive for front-end fee and deferred fee or subscription and redemption fees

	Mean	Max	Min	Range
Age	1.980444	11.36	0.36	11.00
Operating Fee	1.423434	2.78	0.39	2.39
Load Fee	.9810606	2.00	0.00	2.00

Moreover, this research considers to the mentioned fees which relatively constant along study period and slightly different in fee rate among the funds, so there has no examine in front-end fee and deferred fee as variables which determinants of foreign investment fund performance.

3.2 Fund Performance from Morningstar

This study estimates foreign mutual fund performance using estimated alpha from Morningstar measuring of the difference between a fund's actual returns and its expected performance, given its level of risk as measured by beta. (www.Morningstar.com). Alpha is dependent on the accuracy of beta: If the investor accepts beta as a conclusive definition of risk, a positive alpha would be a conclusive indicator of good fund performance. Of course, the value of beta is dependent on another statistic, known as R-squared. (Alpha, beta, and R-squared statistics are all provided on Morningstar.com.)

For Alpha vs. the Standard Index, normally Morningstar performs its calculations using the S&P 500 as the benchmark index or market return for equity funds. Morningstar deducts the current return of the 90-day T-bill from the total return

of both the fund and the benchmark index. However, Morningstar platform also allows user to setup parameter manually, both of market return and risk-free rate that facilitate users complying the model with the most suitable indicators which available in its system.

This study specified the research sample only of foreign equity funds which indicated fund classification by Association of Investment Management Companies ("AIMC") as Table 3.6

Table 3.6: Fund classification by Association of Investment Management Companies ("AIMC")

Code	**Fund Classification**
EQUS	US Equity (US BM): The fund invests at least 80% of its total net assets in equities of US companies.
EQJP	Japan Equity (JP BM): The fund invests at least 80% of its total net assets in equities of Japan companies.
EQEU	European Equity (European focus BM): The fund invests at least 80% of its total net assets in equities of the companies in continental Europe.
EQCH	Greater China Equity: The fund invests at least 80% of its total net assets in equities of Greater China companies.
EQGL	Global Equity Equity (MSCI World, ACWI): The fund invests at least 80% of its total net assets in equities of developed countries around the world (Country based on MSCI World and ACWI).
EQGEM	Global Emerging marketing (MSCI Emerging based): The fund invests at least 80% of its total net assets in equities of emerging countries around the world (Country based on MSCI Emerging).
EQASxJP	Asia Ex Japan (Asia pac ex Japan benchmark focused): The fund invests at least 80% of its total net assets in equities of Asia-Pacific countries, with less than 10% in Japan.
EQIN	India Equity: The fund invests at least 80% of its total net assets in equities of India companies.
EQASEAN	ASEAN Equity: The fund invests at least 80% of its total net assets in equities of ASEAN companies.

The difference is called the fund's excess return. The exact mathematical definition of alpha that Morningstar uses is listed below.

$$\alpha_{it} = ER_{it} - ((\beta_{it} * (R_{mt} - R_{ft}))$$

where:

ER_{it} = The excess return on fund i in month t

R_m = Total Return of Benchmark Index (can be adjusted manually)

R_f = Return on Three-month Treasury Bill (can be adjusted manually)

This study be assembled to Morningstar method and applicable to registered funds in Thailand, there are applied to Alpha from Morningstar Thailand with appropriated referring to Table 3. 6 as benchmark for foreign investment fund in Thailand which specified as opened-end equity fund and complied to 3 months zero coupon rate from ThaiBMA.

3.3 Evaluating determinants of fund performance

Acquired abnormal return from Morningstar Thailand to be indicated to estimate determinants of fund performance by panel data known as longitude or cross-sectional time series data for quarterly data during January 2010 to June 2016. The determinants separate to fund attributions variables as Fund Size, Expenses, Fee Loads, Fund Flow, Past Performance including dummy variables as Fund Styles, Fund Family, Fund Ages, and Fund Management Team. Determinants of Fund Performance (Ferreira et al. (2012)) to be evaluated by the following:

$$\alpha_{it} = \gamma_{it} + \beta_1 \alpha_{i,t-1} + \beta_2 MarketReturn_{i,t-1} + \beta_3 Flow_{it} + \beta_4 logSize_{i,t-1} + \varepsilon_{it}$$

Where:

α_{it} is estimated alpha from Morningstar Thailand

Fund Attributions:

Variables

Past Performance (%: quarterly)

Market Return (%: quarterly)

Fund Flow (%: quarterly)

$$Flow_{it} = \left(\frac{TNA_{it} - TNA_{i,t-1}(1 + R_{it})}{TNA_{i,t-1}}\right) - Performance_{i,t-1}$$

Fund Size (NAV in million baht: quarterly)

Dummy Variables

Bank and Non-Bank Asset Management Company

Fund Styles (reference to Morningstar category)

Group of Investment (reference to Morningstar category)

3.4 Pearson's Correlation Testing

This study also examines the data sample in the Pearson's Correlation Testing to measure of the strength and direction of association that exists between two continuous variables with coefficient indicated how it different from all these data points are to this line of best fit. Value can range from -1 for a perfect negative linear relationship to +1 for a perfect positive linear relationship. A value of 0 (zero) indicates no relationship between two variables. The relationship between alpha and it variables are shown in Table 3.7

Table 3.7: Pearson's Correlation Testing Result show correlation between estimating variables

	Alpha	**Lag Alpha**	**Market Return**	**Flow**	**Lag Size (log)**
Alpha	1				
Lag Alpha	-0.1349	1			
Lag Market Return	-0.1442	0.7839	1		
Flow	0.1679	-0.0393	-0.0467	1	
Lag Size (log)	-0.0486	0.0091	-0.0099	-0.0307	1

The relation between alpha and other variables are negative relationship that means increasing of its factors generate decreasing of mutual fund performance, except fund flow that having positive correlation to abnormal return of the fund. However, the preliminary results need more examine in research methodology to find statistically a significant coefficient in each determinant to mutual fund performance for validity of result explanations.

CHAPTER 4
RESULTS AND DISCUSSION

Determinants of Mutual Fund Performance

The study examines the determinants of foreign investment fund performance registered in Thailand and focuses only on the equity investment funds.

Table 4.1 shown the results of performance regressions denoted significance of coefficients and t statistics in parentheses as $*p\text{-value} < 0.05$, $**p\text{-value} < 0.01$ and $***p < 0.001$, using alphas from Morningstar Thailand. The research first discusses to the outcome of entire sample funds, and then separates into each studied aspect as Group of Bank or Non-bank as a parent company, Morningstar Style Box and Group of Investment using the most suitable model that represents the observed quantities in terms of explanatory variables treated as if the quantities were non-random, fixed effects model.

Table 4.1: Reports regressions of quarterly performance of foreign equity investment fund registered and managed by asset management company in Thailand during January 2011 to December 2016. There are separated regression result to three main methodology, pooled OLS, random effects and fixed effects.

	Pooled OLS (1)	**Random Effects (2)**	**Fixed Effects (3)**
Lag Alpha	-0.0691* (-2.10)	-0.0691* (-2.10)	-0.1403*** (-4.03)
Market Return	-8.8307* (-2.41)	-8.8307* (-2.41)	-4.7470 (-1.24)
Flow	1.8885*** (7.79)	1.8885*** (7.79)	1.4737*** (5.48)
Lag Size (log)	-0.2288* (-2.06)	-0.2288* (-2.06)	-2.0921*** (-6.75)
Observations	2262	2262	2262

4.1 Foreign Equity Investment Funds

The first part of this study discusses about the determinants of foreign investment fund abnormal return and focuses only on results of fixed effects estimations for foreign equity investment funds shown in Table 4.1 column (3). The first variable is past performance with lagged of one quarter. The second factor is the latest period of market return which is separated by indicating Modern Index Strategy Indexes - MSCI which refers to AIMC's fund classifications. Next variable is fund flow that displays the change of percentage of inflow or outflow in estimated period. The final variable is lagged of fund size which modified to log fund size and the last variable is fund age.

4.1.1 Past Performance

The most easily variable observed by investors is past performance of the prospected fund, Morningstar is one of most well-known website that provides investment information to investors especially mutual fund. Investors interpret those figures for their investments not only searching for new funds with opportunity to generate an abnormal return in the future but also rebalancing to their existing portfolio position. This research first considers to past performance of equity funds that invested in foreign countries, backward for one quarterly periods. The evidence illustrates that alpha is persistence in foreign investment fund registered in Thailand, the poorly performing funds from the last period have a negative and statistically significant coefficient that decrease of past performance one unit is associated with adding of subsequent performance equals 14.03 basis points per quarter of quarterly past performance in Table 4.1 Column (3). The result is consistent to many evidences of performance persistence in US mutual funds (Hendricks, Patel, and Zeckhauser (1993), Grinblatt and Titman (1994), Brown and Goetzmann (1995) and Carhart (1997), Ferreira et al. (2012)). In contrast, Ferreira et al. (2012) show that mutual funds outside US have no economically persistence of past performance. Moreover, Dahlquist, Engstrom, and Soderlind (2000) find statistically insignificant for Swedish fund and also Otten and Bams (2002) show persistence of past performance only in UK funds.

4.1.2 Market Return

This study finds no evidence of statistically significant relation between market return in the last period and performing of subsequence abnormal return of foreign investment fund.

4.1.3 Flows

Fund Flow is determinant of performance persistence in this study, flows of the previous quarterly period has a positive and statistically significant coefficient, increase of one unit inflows is associated with hike of performing alpha in next period over 1.47 units per quarter. Gruber (1996) argument that the smart money hypothesis of investors can detect performance of fund manager and allocate their investment to the funds from a positive correlation to future alphas. Gruber (1996) and Zheng (1999) also find that performance persistence positively when having net inflow from last period. However, Sapp and Tiwari (2004) explain the smart money outcome is described by momentum. While Ferreira et al. (2012) explain that there has no correlation between fund flows and consecutive abnormal return for the sample of mutual fund in USA, but having a positive correlation to fund manager performance outside USA.

4.1.4 Size

Fund size is a variable that still puzzles for researchers and practitioners about the fund size effect to fund manager skilled in stock selections and rebalance portfolios. Some believes that large fund size has more ability to generated abnormal return because fund managers have opportunities to investment that the smaller funds are not allowed. Gruber (1996) ascertain that smart money effect performance predictions which consistent with theoretical models of industry behavior. For obviously example is fund of fund investment with different fund classes, a larger initial amount enjoys a lower fee rate than smaller one. Furthermore, with greater fund size, managers can negotiate better margin in FX transactions or lower commission and transaction fee rates for huge volumes, Brennan and Hughes (1991) and Ferreira et al. (2012) for the result of sample funds outside the USA. Some argue that larger fund sizes encounter to problem in management challenges, and the scale ability of investments is a determinant of performance persistence, Gruber (1996) and Berk and

Green (2004). Fund managers of large funds have more opportunities to maintain abnormal return by managerial skills which becomes dilute implying diseconomies of scale because they have to continue finding new satisfying investment to preserve fund performance while smaller funds that managers can focus on particular investment positions. Chen et al. (2004) explains impact of the liquidity constraints hypothesis that larger mutual fund managers must necessarily trade larger volumes of stock, attracting the attention of other market participants and therefore suffering higher price impact costs. Cremers and Petajisto (2009) shows that small funds are more active, while a significant portion of large active funds are close to index funds.

4.2 Bank or Non-Bank Asset Management Company

In Thailand, most of Asset Management Company ("AMC") have parent company or a part of financial group as Bank totally as of December 2016 are 11 AMCs while non-bank AMCs are 6 AMCs. Non-bank AMCs perform excellence than Bank AMCs almost 20 basis points over the sample period, however Bank AMCs have more advantage opportunities in ability to acquire investment volume from investors directly from bank channel such as bank branch or wealth banking. Table 4.2 compares Bank and Non-Bank AMCs in each determinant of foreign equity investment fund.

Table 4.2: Reports fixed-effect model estimation of quarterly performance of foreign equity investment fund registered and managed by asset management company in Thailand during January 2011 to December 2016. There are separated estimated result to Bank and Non-Bank AMC comparing to Overall Sample.

	Bank **(1)**	**Non-Bank** **(2)**	**Overall** **(3)**
Lag Alpha	-0.1025* (-2.54)	-0.2688*** (-3.82)	-0.1403*** (-4.03)
Market Return	-9.7635* (-2.11)	9.5621 (1.39)	-4.7470 (-1.24)
Flow	1.3421*** (4.49)	2.2789*** (3.45)	1.4737*** (5.48)
Lag Size (log)	-2.1487*** (-5.61)	-1.9086*** (-3.71)	-2.0921*** (-6.75)
Observations	1659	603	2262

Past performances of Bank AMCs and Non- Bank AMC have consistent evidence of a negative statistically significant relation between past performances and correspondingly foreign investment fund performance which relative to overall sample results in Column (3). The estimation shows that decreasing of past performance one unit is identified with improvement in respectively performance of 10.25 basis points approximately for Bank AMCs in Column (1) which like conclusion of all sample funds and almost 27 basis points for Non-Bank AMCs in Column (2).

Market return has negative relationship to manager's performance only in Bank AMCs, not persistence in Non-Bank AMCs which compatible to overall test.

Bank AMCs have evidence of positive statistically significant relation between fund flow and subsequent performance, increasing of flow in one unit is related to consequent performance of 1.34 units which similar to overall sample that equals 1.47 units. Moreover, this study finds the conclusion for Non- Bank AMCs that have evidence of a positive statistically significant coefficient indicated to fund flow and abnormal return in the next period in greater number of 2.27 units. So, inflows or outflows have issue to both of Bank and Non- AMCs which explore risk- adjusted managing skill of fund managers.

There is ample evidence of fund size persistence in separately to Bank AMCs and Non-Bank AMCs which likewise total of foreign investment fund sample outcome. There is negative statistically significant relation between fund size and respectively abnormal return, increasing of fund size in one unit is identified with dilute in next fund performance of almost 2.14 units which close to all sample reaction. However, Non-Bank AMC have evidence of more effect from fund size determinant almost 1.90 units illustrated in Table 4.2

4.3 Morningstar Style Box

This study also explains the determinants of foreign equity fund performance separately by Morningstar Box Style, but intentionally indicated only the most of samples are belong to style of large fund size which 175 funds from 198 funds of all sample during studying period. The style components of research explanation are VL (Value equity style with Large fund size), BL (Blend equity style with Large fund size), and GL (Growth equity style with Large fund size). The result shown in Table 4.3

Table 4.3: Reports fixed-effect model estimation of quarterly performance of foreign equity investment fund registered and managed by asset management company in Thailand during January 2011 to December 2016. There are separated estimated result to Morningstar Style Box only in VL, BL and GL comparing to Overall Sample

	VL **(1)**	**BL** **(2)**	**GL** **(3)**	**Overall** **(4)**
Lag Alpha	-0.0967 (-1.23)	-0.2529*** (-3.90)	-0.2455*** (-4.06)	-0.1403*** (-4.03)
Market Return	-2.4037 (-0.26)	2.8991 (0.45)	0.3341 (0.05)	-4.7470 (-1.24)
Flow	1.6779** (2.70)	1.3915*** (3.80)	0.9451 (1.91)	1.4737*** (5.48)
Lag Size (log)	-1.6748* (-2.04)	-1.8836*** (-3.77)	-2.8375*** (-5.39)	-2.0921*** (-6.75)
Observations	502	911	650	2262

Past performances of foreign investment funds registered in Thailand with classified by Morningstar Style Box have evidence of performance persistent in negative relation same as the outcome from overall sample test in Column (4). However, these consistent results are slightly different between Morningstar Style Box, the most impact are BL and GL styles that negative statistically significant relation between latest past performances in Column (2) and Column (3) and correlated to potential of generated next performance 25 basis points approximately when the worst of past performance in 1 unit. For BL style box have evidence of negative relation in past performance which coefficient figure is lower than overall foreign investment funds test, dilute of past performance in one unit is identified to the improvement respectively performance of only 9 basis points.

There has no evidence of statically significant relation between market return and abnormal return in the future both of foreign investment funds that managed by Bank AMCs and Non-Bank AMCs which same as overall result of studied sample. Mean that market return is not the one of factor that demonstrate foreign equity fund performance.

Fund Flows have positive statistically significant coefficient relation between flows and future performance equals 1.67 and 1.39 units for VL and VL Morningstar style box respectively. For GL styles, the change of inflow and outflow have no effect

to fund managers that managed foreign investment fund which deviate from overall sample testing result.

For the part of Morningstar style box examine having evidence of negative relation for all estimated styles which statistically significant relation between fund size and performing of performance in the next period, increasing of fund size in one unit is related to decrease of subsequent abnormal return of 1.67, 1.68 and 2.83 units for VL, BL and GL respectively.

4.4 Group of Investment

The groups or categories of investment fund classified by Morningstar Thailand are another factor that this paper examines

Table 4.4: Reports fixed-effect model estimation of quarterly performance of foreign equity investment fund registered and managed by asset management company in Thailand during January 2011 to December 2016. There are separated estimated result to Group of Investment comparing to Overall Sample.

	Europe Equity (1)	**Global Healthcare (2)**	**Emerging Market (3)**	**China Equity (4)**	**Global Equity (5)**	**US Equity (6)**	**AsiaPacific ex-Japan (7)**	**Japan Equity (8)**	**Overall (9)**
Lag Alpha	0.0960 (0.84)	-0.4971** (-2.85)	0.0263 (0.22)	-0.4580*** (-3.63)	0.0778 (1.29)	-0.2083 (-1.68)	-0.2148*** (-3.37)	-0.2876 (-1.47)	-0.1403*** (-4.03)
Market Return	-38.6364** (-2.70)	0.9699 (0.04)	-0.0438 (-0.00)	21.8706 (1.62)	-22.0893** (-2.71)	-7.5161 (-0.57)	5.4434 (0.92)	24.7727 (1.09)	-4.7470 (-1.24)
Flow	1.5793 (0.86)	1.5433* (2.02)	16.0779*** (5.91)	0.7367 (1.63)	4.3360*** (4.14)	3.8411 (2.66)	1.8872** (2.99)	0.0742 (0.02)	1.4737*** (5.48)
Lag Size (log)	-3.8606*** (-3.30)	-4.3875*** (-4.78)	-0.9278 (-0.97)	-2.0758 (-1.82)	-1.1937 (-1.66)	-1.5696 (-2.43)	-1.7469*** (-3.51)	-2.6992 (-0.79)	-2.0921*** (-6.75)
Observations	189	107	259	255	508	223	573	148	2262

For the overall sample and Global Healthcare, China Equity and Asia Pacific have persistence of fund performance which has a negative statistically significant relation between fund past performance and its subsequent performance. For Europe Equity, Emerging Market, Global Equity, US Equity and Japan Equity are generate different outcome that have no evidence of statistically significant relation between past performance and following abnormal return.

This study finds evidence of statically significant relation between lagged of market return and mutual fund performance in Europe Equity and Global Equity. Increasing of market return in last period one unit is associated with reducing of subsequent performance equals 38.63 units per quarter and 22.08 units for Europe

Equity and Global Equity respectively. However, this study has no empirical evidence in overall result of foreign investment fund between last market return and performing fund performance in next period which similar to others, Global Healthcare, Emerging Market, China Equity, US Equity, Asia Pacific Ex-Japan and Japan Equity.

Fund Flows from previous period has a positive and statically significant relation between inflows and consecutive performance but the evidence exists only in Global Health Care, Emerging Market, Global Equity and Asia Pacific Ex-Japan.

Fund size variable in research for group of investments are performance persistent in Europe Equity, Global Equity, Asia Pacific Ex-japan and Japan Equity. For the rest group of investments, there have no evidence of statically significant relation between fund size and subsequent abnormal return. The performance persistence groups provide negative relationship to fund manager performance in the future, especially in Europe Equity and Global Health Care which increase of fund size in one unit is affiliated with dilute of subsequent performance over 3.86 and 4.39 units per quarter accordingly.

CHAPTER 5
CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

This study investigates the determinants of foreign equity investment fund performance registered in Thailand using total of 198 funds over 2011-2016 years. The research finds that past performance is negatively correlated to the subsequent fund performance. The market return from last period has no relationship to abnormal return. For fund flow, this paper also finds a positive relationship with fund performance which support to smart money hypothesis. The evidence supports the hypothesis that liquidity constrains explain the diminishing returns to scale by rising of fund size in last period. Moreover, in separation studies in group of Bank or Non-Bank AMC, Non-Bank AMC, there are evidence on the relationship be between estimated variables and manager's performance similar to all sample although Non-Bank AMC has greater statistically significant coefficient between previous performance, fund flow and fund performance while negatively lower in fund size. In part of Morningstar style box, the study shows that VL has no evidence of correlation between past performance and related performance and GL has no significantly relationship of fund flow to associated fund performance. For Group of Investment, this paper finds only Global Health Care, China Equity and Asia Pacific Ex-Japan equity have evidence of positive relationship between fund performance and past performance. Market Return of Europe Equity and Global Equity have a dramatically negative and statistically significant coefficient which totally different to others sample. Flows to Europe Equity, China Equity, US Equity and Japan Equity have no evidence of relationship to fund performance. And previous fund size has effect to foreign investment funds that invested in Europe Equity, Global Healthcare and Asia Pacific Ex-Japan but complied to overall sample result.

5.2 Recommendations

In summary, determinants of foreign investment fund in Thailand that investors should consider to their investment decision not only general fund attributions as past performance, fund size and fund flow but also type of AMC, Morningstar Box style

and Group of investment which having compare to market return. However, this paper studies all of equity foreign investment fund valid during 2011- 2016, the funds are not separated fund characteristic to equity fund with direct investment, fund of fund or feeder fund which can be expanded to further study.

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APPENDICES

APPENDIX A

THE SUMMARY OF PREVIOUS STUDIES

Study	Period	Fund	Methodology	Empirical Result
M.A.Ferreira et al.,2012 The Determinants of Mutual Fund Performance: A Cross-Country	1997 - 2007	Open-end equity funds • 27000 funds • 27 countries	**Abnormal Return:** • Carhart (1997) four-factor model **Determinants:** • Fund characteristics: 1. Fund and fund family size 2. Age 3. Fee and expenses 4. Front-end and back-end loads 5. Fund flow 6. Past returns 7. Management structure 8. Number of countries where a fund is sold • Country characteristics: 1. Economic development 2. Financial development 3. Quality of legal institutions 4. Law enforcement 5. Mutual fund industry structure	• Large funds in US generate low return than small one, but outside US are not • Fund family size has positive effect on performance in US and elsewhere • Age has no relation in US but outside are not new funds perform better • Expenses have no specific conclusion • No significant relation between performance and loads • Fund Flow has no evidence of significant relation in US but non-US are positive relation • Past Performance is meaningful for US fund but outside not
Mutual Fund Performance: Measurement and Evidence	2005	8,500 funds	• Stochatic discount factor (SDF) approach • Benchmark Portfolio • Factor Models • Style Factors	Review Methodologies

Study	Period	Fund	Methodology	Empirical Result
			• Unconditional Models • Market Timing • Conditional Model • Dynamic Trading Strategies • Characteristic Based Measures	
Performance of Foreign and Global Mutual Funds: The Role of Security Selection, Region-Shifting, and Style-Shifting Abilities	2001-1012	830 foreign funds 368 global funds	• Extended Carhart's (1997) four-factor model	Investor can get higher alpha and total performance in the short-term by taking past winner. But no stated about region-shifting and style-shifting.

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Work position	Manager, Global Transaction Services
	Siam Commercial Bank Public Company Limited
Work Experiences	
	2015-Present
	Manager, Corporate Trust, Global Transaction Services
	Siam Commercial Bank PCL. (SCB)
	2011-2015
	Manager, Agent and Securities Services Department
	TMB Bank PCL. (TMB)
	2009-2010
	Senior Analyst, Market Control Department
	The Stock Exchange of Thailand (SET)
	2007-2008
	Senior Analyst, Market Operation and Supervision
	Thailand Futures Exchange (TFEX)
	2005-2006
	Officer, Back Office Service Bureau
	Thailand Securities Depository Co., Ltd. (TSD)
	2003-2004
	Financial Analyst, Debt Restructuring
	Advance Agro Public Co., Ltd.