CHAPTER 3

THEORETICAL AND LITERATURE REVIEW

3.1 Introduction

This chapter discusses the financial theories and empirical literature related to this thesis. First, explain the theoretical development. Then, explain three major theories found in the finance literature concerning the risk, return, and flows. Since the major mutual fund is working under the umbrella of the fund family, the three major theories underlining the mutual fund and fund families studies are the Modern Portfolio Theory (Markowitz 1952), Efficient Market Theory (Fama 1970, 1991), and the Behavioural Finance Theory (Kahneman & Tversky 1979). This chapter offers a background for the understanding of latest works in mutual fund and fund family strategy, performance, and flows, as well as the necessary guidance for the methodological choices that will be employed in this thesis.

3.2 Theoretical Development

As fund families are a managed portfolio of stocks, bonds, and money market tools, the modern portfolio theory is the main theory in this thesis to shape the main hypotheses and evaluating the results of the risk and return of fund families. The key issue in portfolio management is the portfolio performance estimate, which is divided into two distinct features. First, the managers' ability to boost portfolio performance by predicting the funds future prices. Second, the managers' ability to reduce the portfolio risk through by diversification. In addition to the behavioural finance theory to forming the main hypotheses and evaluating the results of the investor's investment behaviour,

the behavioural theory helps to understand results that deviate from those expected by the classical theories. Behavioural finance explains the behaviour of financial market players' vis-à-vis the impact of psychological factors, and how these factors may contribute to their decision making. The efficient market theory is also discussed to evaluate performance persistence, which is also a test on market efficiency. When the market is efficient there should be no signs of performance persistence, and a random walk pattern will accompany the fund prices. The efficient market theory and the behavioural finance theory are two contrasting theories of the stock market. Such theories provide the understanding of a rational person, market theoretical research, and what can result from a reasonable person's behaviour.

A fund family encompasses a wide range of funds to attract investors with different investment goals, thus offering investors the opportunity to diversify investment across fund family. Diversification is the most important investment element that investors seeking to reduce risks consider. The investment's goal is to obtain the maximum potential return with the lowest possible risk, and then the investors have to agree on the most suitable asset allocation. However, if investors direct all investments into funds managed by the same fund family, it may not be sufficiently diversified. Therefore, fund families are making strategies to launch new funds within the category (fund proliferation) or by developing funds across various categories (proliferation categories) that will provide sufficient diversification for investors. Fund proliferation can help funds hide poor-performing funds, the poor-performing funds fade away; they will then seek to substitute those funds by introducing new ones. Category proliferation include low-cost switching options for investors. Since launching new funds has a positive effect on the growth of the fund family, it means that when they launch more funds, it becomes relatively more attractive for investors.

Because new funds are still not well known to investors, reputation, performance, and attributes of fund families become important factors affecting investor decisions.

Further explanations are given regarding the role of fund families in deciding their strategy to issue new funds. The fund families with higher excess returns are more likely to set up new funds, suggesting that such fund families tend to improve their reputation by providing funds with higher positive returns before increasing their range of funds. Launching new funds is also linked to fund family size and fund family experience in that large funds and seasoned families are more likely to issue new funds than small families and less experienced ones. Then, the high positive returns have a positive relationship with the flow, as the primary incentive for a high positive return is to draw inflows to funds and families. This strategy will provide greater benefits to families when investors are respond to positive performance but are not as open to poor performance funds. So, the presence of high fund performance provides a strong signal to investors about the reputation of a fund family.

3.2.1 Modern Portfolio Theory

The modern portfolio theory proposed by Markowitz (1952) provides the basis of all the investment models we have today, including those in mutual fund research. Markowitz provided a vision into individual investors' portfolio decision-making procedures, demonstrating that investors should select their portfolio to depend on both portfolio risks and returns, rather than selecting securities based on the asset's individual characteristics. The modern portfolio theory is a philosophy of making security selection choices based on portfolio expected returns and risks, and using the diversification rationale to mitigation the risk. By owning more assets which are not completely positively correlated, investors may mitigate portfolio risk. Investors have

to own securities with returns that are moving in an opposite direction. Negative returns of certain portfolio assets may be offset by the positive returns of others. Therefore, it's safer than having two or more properties that are negatively linked by investors. This portfolio will yield a similar return with a significantly lower risk, as measured by the standard deviation, called diversification.

The portfolio selection hypothesis provided by Markowitz (1952), however, challenges the conventional one. The conventional theory states that the maximisation of returns can be achieved through the diversification of assets that provide the highest expected return. As a response to this model, Markowitz argued that portfolio variance is attributed to the variability of its return; thus, to reduce risks, an investor should avoid securities with high covariance. He emphasised the importance of the co-movement of each asset in a given portfolio.

The portfolio variance is the cumulative individual variances of assets multiplied by the square of their weight plus another concept called covariance. The covariance is a very important factor in the risk assessment of an asset portfolio. Covariance is a statistical measure of the correlation between the fluctuations of two different variables observed over the same period of time. Generally, covariance is determined between the return rates of various investments and the association of their year-to-year return volatility is evaluated. The risk is split into two components: market and non-market risk, or individual risk (Sharpe 1972). The market or the systemic risk is a fraction of the overall variance, which is demonstrated by the market return variance. This occurs because it is hard to predict the future price of a security. This risk relies on the extent to which the security price is sensitive to movement in the market. The non-market risk or the individual risk is the unknown variance, that is, the portion of the overall variance attributable to the peculiar feature of the stock. This is free of market movement.

Markowitz assumed that investment decisions were based on only two factors, the expected yield rates, and the expected risk. It would also choose a portfolio with the highest expected return for a defined level of risk. The efficiency of a fund in selecting outperforming stocks is measured using various models. The efficient selection of such stocks enables funds to obtain higher gains at lower risks. Treynor & Mazuy (1965), and Sharpe (1966) suggested models that can aid accurate stock selection and obtain diversification efficiency. Treynor (1965) proposed new performance predictors for the mutual funds. Sharpe (1966), extending Treynor's work and combining the capital theory, provided new model for fund performance estimation. Portfolio analysis portrays the beneficial strategies for portfolio selection depend on the best-predicted performance. The expected risk and return are bearing in mind in the portfolio analysis. The function of portfolio analysts is to foretell portfolio performance based on securities' performance and to select the most efficient portfolio between a large numbers of portfolio.

3.2.2 Performance Measurements

Different measurements have been used to quantify the returns by past researchers to analyse the managers' performance. Estimating performance of the fund family needs an understanding of the composition of the returns. The usually used performance measures in financial researches are briefly described below. These techniques of performance estimation of managers use the risk-reward ratios by Treynor (1965), Sharpe (1966), and Jensen (1968). These are the ratios calculating the excess return over the borrowing rate or lending rate adjusted for risk.

After that, the risk-adjusted non-regression approach is used. The first measure of portfolio performance that included risk is provided by Treynor (1965). This

performance measure is relevant to all investors, regardless of their personal risk profiles.

$$Treynor = \frac{R_p - R_f}{\beta_p}$$

(3.1)

where, R_p is the portfolio return, R_f is the risk-free rate of return, β_p is the portfolio beta. The high Treynor ratio indicates better performance relative to the benchmark, and the low Treynor ratio indicates poor performance relative to the benchmark. Treynor Ratio is one of the tools to assess and manage systematic risk. This ratio is the best measure for a diversified portfolio, a returns vs Risk evaluation. In addition, helps to assess and analyze the performance of each security in the portfolio. In the opposite, Treynor ratio has some disadvantages. It is based on the past performance of the securities. It takes into account the past volatility behaviour of the market. Treynor Ratio has no dimensions of ranking as to "how much higher Treynor Ratio is better."

The second measure of portfolio performance that included risk is provided by Sharpe (1966). The Sharpe ratio (1966) is quite similar to the Treynor measure. The only difference is the risk measure. It measures the risk adjusted measure of the asset performance, which calculates a portfolio's mean excess return, in excess to the risk-free return. The main benefit of the Sharpe ratio is the standardization of the relationship between risk and return. In fact, using the Sharpe measure makes comparing different classes of assets much simpler. In the opposite, one of the main criticisms of this measure is the lack of objectivity in identifying a risk-free tool. Additionally, the Sharpe ratio does not take into account returns fluctuations.

$$Sharpe\ Ratio = \frac{R_p - R_f}{\sigma_p}$$

(3.2)

After that, the risk-adjusted regression approach is used. The first measurement is a single-factor model. Jensen (1968), who developed a risk-adjusted model for stock selection, argued that Sharpe and Treynor's ratios are built on relativity. Jensen presented a model that uses a standard absolute measure of performance. The Jensen ratio measures how much of the portfolio's rate of return is attributable to the manager's ability to deliver above-average returns, adjusted for market risk. The higher the ratio, the better the risk-adjusted returns. A portfolio with a consistently positive excess return will have a positive alpha while a portfolio with a consistently negative excess return will have a negative alpha. Advantages of Jensen's alpha, it helps to select the portfolio which gives an excess return in relation to the market return. It helps to measure the performance of hedge funds. In the opposite, the disadvantages, it uses a single-factor model that is CAPM which only considers the market risk. It does not consider the unsystematic risk related to firm-specific.

The result of this equation comes in the form of alpha. Jensen's alpha is defined as follows:

$$Jensen = R_p - R_f = \alpha_p + \beta(R_m - R_f) + \varepsilon$$

(3.3)

where R_p is the fund's realised return, R_f is the return's risk-free rate, R_m is the market return, and β is the sensitivity between the excess return of the market benchmark with the fund. A positive Jensen alpha indicates that managers have the potential to predict.

It is only significate if it is used to compare two portfolios with similar betas. A negative alpha represents the portfolio's performance, which is below its benchmark.

The second measurement is the multi-factor model. Extending Jensen's model, Fama & French (1993) introduced the three-factor model, incorporating the firm size and the book-to-market ratio into the model. The model is:

$$R_p - R_f = \alpha_p + \beta_1(R_m - R_f) + \beta_2 SMB + \beta_3 HML + \varepsilon \quad (3.4)$$

where, $\alpha_p$measures fund under or over performance (stock-selection), $R_p - R_f$ excess fund return, $R_m - R_f$ excess market return (CAPM), SMB the difference in return between a small cap portfolio and a large- cap portfolio at time *t*, and HML the difference in return between a portfolio high-book-to-market stock portfolio and a low-book-to market stock portfolio at time *t*. The Fama-French Three-Factor Model provides a highly useful tool for understanding portfolio performance, measuring the impact of active management, portfolio construction, and estimating future returns. In the opposite, the disadvantages of using Fama-French Model, no theoretical model and not clear whether HML and SMB capture risk or just persistent mistakes by investors and it is difficult to apply.

Carhart (1997) improved Fama and French's three-factor model by adding the one year momentum factor, with reference to two studies (Jegadeesh & Titman 1993; DeBondt & Thaler 1985). Carhart four factor model uses momentum of an asset, is an interesting economic concept that can provide benefits for predicting future asset returns. The Carhart model is defined as follows:

$$R_p - R_f = \alpha_p + \beta_1(R_m - R_f) + \beta_2 SMB + \beta_3 HML + \beta_4 MOM + \varepsilon$$

(3.5)

where $R_p - R_f$ denotes excess fund returns, $R_m - R_f$ excess market returns (CAPM), and MOM the difference in return between high and low momentum (prior one year return) at time *t*.

After that, the market timing model illustrates the ability of fund managers to move from one asset class to another at an appropriate time to yield gains and avoid losses. An important model for market timing was introduced by Treynor & Mazuy (1966). The TM model depicts a quadratic nonlinear relation between fund and market returns. This model is illustrated in the following equation:

$$TM = R_p = \alpha_p + \beta_p R_{m,t} + \gamma_p r^2{}_{m,t} + \varepsilon_{p,t}$$

(3.6)

where γ_p measures market timing (gamma term), R_p is fund returns, $R_{m,t}$ is market returns, and $r^2{}_{m,t}$ is squared market returns.

Henriksson & Merton (HM 1981) introduced another market timing model, and cited that the TM model may provide more quality in its approach. In the HM model, a dummy variable separates between the positive and negative market returns. The HM model identifies macro forecasters, and is given in the following equation:

$$HM = R_{p,t} = \alpha_p + \beta_p R_{m,t} + \gamma_p I_t R_{m,t} + \varepsilon_{p,t}$$

(3.7)

where $I_t$is a dummy variable that equals one if the market return is positive and zero otherwise. Here, $R_{p,t}$ is fund returns, $R_{m,t}$ is market returns, and γ_p represents market timing. Hence, a successful forecaster would obtain positive and significant results.

3.2.3 Market Efficiency Theory

In 1900, the concept of market efficiency was described in a PhD thesis in mathematics by Bachelier, where it was detected that commodity prices fluctuate randomly; however, this work was not given any attention for half a century. Several decades later, works by Cowles (1933) and Jones (1937) concluded that US stock prices fluctuate randomly. From 1956, the theory of price behaviour became an important topic in economic research. Mandelbrot (1963) presented a new model of price behaviour where he used the natural logarithm of prices and Pareto distribution. Samuelson (1965) presented the concept of martingale and proved that prices fluctuate randomly.

The efficient market hypothesis is related to the concept of the random walk theory, which was developed by Kendall & Hill (1953), in which the data behaves like a wandering sequence. This theory has become the foundation of the later Market Efficiency Theory. The foundation of the random walk is that information is expressed immediately in stock prices.

Fama (1965) proposed the market efficiency concept, and concluded that stock market prices follow a random walk. Roberts (1967) made a distinction between weak, semi-strong, and strong forms of market efficiency, which was furthered by Fama (1969). He described market efficiency in terms of information efficiency, that is, a market in which prices always fully reflect available information is called efficient. In

addition, Malikel (1973) claimed that stock prices commonly show a random walk, and that it is impossible to consistently outperform the market.

Following the research that supported the random walk behaviour of prices, several studies emerged to argue for the weakness of the market efficiency hypothesis (Beja 1977; Grossman & Stiglitz 1980; LeRoy & LaCivita 1981; Lo, 1988; Lehmann 1990; Jegadeesh 1990). In the last few decades, the market efficiency hypothesis was the subject of much debate. Several researchers found anomalies that distort market efficiency and create opportunities to generate trading rules (Ariel 1987; Cooper et al. 2006; Agrawal & Tandon 1994; Cadsby & Torbey 2003). DeBondt & Thaler (1985) showed that stock prices tend to overreact. Meanwhile, Jegadeesh & Titman (1993) found that contrarian strategy brings abnormal returns, while Haugen (1995) found evidence of market inefficiency as a short-term overreaction that leads to long-term reversal.

The positive abnormal return that investors receive can only come up by chance. The existence of investors capable of making abnormal market gains indicates that the market is not completely informationally efficient. Hence, the question discussed here is why the industry of mutual funds has grown so fast when not all the professional portfolio managers, can beat the market. Clear support for the existence of the Efficient Market Hypothesis was recorded in developing countries (Fama 1970; and Jensen 1968). Fama (1970), generally believed that securities markets were extremely efficient in reflecting information about individual stocks and about the stock market as a whole. He indicates that when information arises, the news spreads very quickly and is incorporated into the prices of securities without delay. Thus, neither technical analysis, which is the study of past stock prices in an attempt to predict future prices nor even fundamental analysis, which is the analysis of financial information such as asset

values, etc., to help investors select “undervalued” stocks, would enable an investor to achieve returns greater than those that could be obtained by holding a randomly selected portfolio of individual stocks with comparable risk. The economic condition that leads to market efficiency is that investors have to be rational. EMH states that after taking into consideration the risk, no fund manager can consistently outperform the market.

Mutual fund returns can be expected to vary because of the different risk categories. Many funds' investments can be more effective than others as managers can effectively diversify, thereby generating more returns for a given level of risk. Yet the fund’s persist is unlikely to continue. Carhart (1997) indicated that there is some persistence in performance, but after controlling for the four-factors of Carhart, the average net of fee returns of funds becomes zero or even negative; most of the persistence can be explained by the loading of the fund on the four-factors. The explanation of why poor fund performance persistence is a large amount of expense by fund managers on the continuous hunt for wrongly priced securities. Evaluation of the presence and persistence of managerial performance of mutual funds, in general, is a critical test of the Efficient Market Hypothesis. Evidence of performance persistence would support the rejection of an efficient market in a semi-strong form. The advocates of an efficient market theory claim that persistence is solely due to chance and is not due to the abilities of the managers.

3.2.4 Behavioural Finance Theory

Behavioural finance attempts to explain the behaviour of financial market players’ vis-à-vis the effects of psychological factors, and how these factors may lead to their decision-making in the market. It offers a scientific explanation to rebut market efficiency. It attempts to do so by substituting conventional behaviour assumptions with

models that integrate the systematic, observable human dimension. Bias among investors is brought about primarily by their humanistic proclivity of overconfidence, and, secondly, by their desire to avoid future regrets (Barber et al., 1999).

Belsky & Gilovich (2010) defined behavioural finance as behavioural economics and asserted that the field is born from the interweaving of economics and psychology whose purpose is to investigate the underlying psychological reasons behind the financial decisions of an investor. Meanwhile, Shefrin & Statman (2000) defined the science as "a rapidly growing area that deals with the influence of psychology on the behaviour of financial practitioners." Another definition of behavioural finance as proposed by Sewell (2007), is "the study of the influence of psychology on the behaviour of financial practitioners and the subsequent effect on markets."

The primary scope of this nascent field is the development of theories concerning the behaviour of investors, as well as their decision-making process. Behavioural finance accommodates the possibility of psychological biases as the underlying reason for irregularities in the stock market rather than considering them as mere chance, an argument purported by the market efficiency hypothesis (Fama, 1998). Information structure and the distinct characteristics of each market participant are expected to affect individual investors and market results (Banerjee et al. 2011).

The rational expectation theory is based on such quantitative models as the modern portfolio theory (MPT), capital asset pricing model (CAPM), and arbitrage pricing theory (APT). These theories have yet to be confirmed in existing investment data, in spite of the substantial amount of studies conducted on the subject (Barberis & Thaler 2003). Barber & Thaler (2003) maintained that the traditional framework is insufficient in explaining even some basic facts concerning individual trading behaviour, cross-section average returns, and the aggregate stock market. In response

to this apparent weakness of the traditional paradigm, behavioural finance begins to surface. Behavioural finance argues against the full rationality assumption proposed by the traditional view. It contends that, contrary to the traditional model's claims, agents do in fact, first, fail to properly update their beliefs upon receiving new information, and, second, make normatively questionable investment choices (Kishore 2004).

Behavioural finance has three main building blocks. The first block is the limit to arbitrage, which argues that it is a difficult task for rational traders to undo displacements brought upon by less rational traders (R. J. Shiller 2003). Thus, potentially, the irrational behaviour of market agents has a significant, long-term effect on market prices (Schindler 2007). The second block is psychology. Behavioural finance refers to cognitive psychology evidence concerning biases that are related to an individual's beliefs and preferences, and how his or her decisions are made on those beliefs or preferences. The final block is sociology, which argues that social interaction influences investment decisions. This block disputes the traditional assumption that external factors do not affect financial decisions (R. J. Shiller 2003).

There is some key literature in behavioural finance. Festinger et al. (1956) and Kahneman & Tversky (1979) are considered to be the fathers of behavioural finance. Festinger et al. (1956) assumed that stock prices were partly predictive based on past stock price trends and some important basis for valuation. Behavioural finance sought to predict the financial market implications of psychological decision-making processes. It relates market phenomena to individual behaviour. Kahnneman & Tversky began collaborating in the 1970s. Their initial step was to create more real-life scenarios for psychological experiments on decision theory. They distinguished between normative solutions and real-life subjective responses in their experiments. Both of these academicians' individual research lines ultimately meet at a common ground.

"Belief in the Law of Small Numbers", the first paper published by Kahneman & Tversky, suggests that the laws of chance are highly misunderstood by individuals; the authors based this contention on the respondents' belief that randomly selected samples accurately represented their population, when in fact they did not (Tversky & Kahneman 1971). In the following year, their second article, "Subjective Probability: A Judgment of Representativeness", discussed biases in representativeness. This was followed up by "On the Psychology of Prediction", which asserted the significant role of representativeness in an individual's institutive predictions (Kahneman & Tversky 1971, 1973).

One of their more prominent works, "Judgment under Uncertainty: Heuristics and Biases", proposes three heuristics: representativeness, availability, and anchoring. The authors maintained that during uncertainties, better judgment and decision-making could be achieved by understanding these heuristics and the biases relating to each. Their most important work, "Prospect Theory: An Analysis of Decision under Risk", was published in 1979. Through this paper, Kahneman & Tversky proposed the prospect theory, which is an alternative to the expected utility theory. Additionally, Tversky & Kahneman (1981) introduced the framing effect. This effect states that the presentation of a problem influences the decision of an individual.

Many hypotheses in behavioural finance tend to do their hardest to clarify a wide range of results. Throughout the decision-making method, behavioural finance combines psychology, finance, and economics into the study of human experience. Behavioural finance is a field that attempts to explain financial-market anomalies. Behavioural finance also poses the conventional theory with a challenge that markets are efficient, and investors are rational without bias. Investors may be qualified to check

for successful marketing information, temperament, cognition and emotion, and their final decision will be affected by the human and social factors.

Behavioural finance took part in the essential work done by Markowitz (1952), Fama (1970), and Sharpe (1964), claiming that people are rational. Behavioural finance checks and relaxes the exemplary behavioural presumptions, and makes it more rational. Further specific financial market decision-making views are included. Without the existence of behavioural finance certain aspects of the financial market cannot be fully understood. Behavioural finance claims that the majority of decisions are taken unreasonable because of fear of failure. It also contradicts the arbitrage-based Efficient Market Theory, as it is too risky for investors. Financial market imperfections are recognised as a combination of cognitive biases, such as representative bias, overconfidence, information bias, overreaction, and some other individual errors in logical thinking and analysis as well as information processing.

Major principles in behavioural finance, such as Prospect theory (loss aversion, and regret) and heuristics theory (representativeness, anchoring, overconfidence, over and under reaction, and herd behaviour), have been established as contributing factors to irrational and sometimes harmful financial decision-making.

Prospect Theory

Kahneman & Tversky (1979) suggested the Prospect Hypothesis suggests that people judge gains and losses differently and that they value gains more than losses, known as the impact of certainty. When one is given two equivalent choices, with a possible benefit option and a potential loss option, their decision would be based on the expected benefit rather than the loss, even though both options produce identical economic results. Kahneman & Tversky (1979) gave a survey and proved irrational

behaviour. They found that most subjects chose the safe benefit alternative and at all costs avoided a certain loss. This suggests that people are risk-averse.

Prospect Theory and utility theory are two models of decision-making processes that predict how people make decisions. Utility theory bases its beliefs upon individuals' preferences. It is a theory postulated in economics to explain the behaviour of individuals based on the premise people can consistently rank order their choices depending upon their preferences. Each individual will show different preferences, which appear to be hard-wired within each individual. Then can state that individuals' preferences are intrinsic. Prospect Theory shows that the decision-making outcome under conditions of gains and losses is not symmetrical and that these are sometimes irrational decisions. The theory suggests people are assessing a prospect of gains and losses rather than final assets. Separately, they view gains and losses. The disposition effect; investors keep winning stocks too long and sell losing stocks too early, is explained in the Prospect Theory in terms of loss aversion.

Loss Aversion

Loss Aversion is the tendency of people to prevent losses, rather than get gain. Past studies suggested that losses were twice as powerful as gains in psychological terms (Kahneman & Tversky 1979). Losing one dollar is twice as traumatic as the pleasure of a dollar gain (Kahneman & Tversky 1991). Loss aversion happens when people are more prone to their wealth declining than the increase. This helps understand investors' propensity to sell winning stocks too quickly when keeping the loss-making stocks.

Regret theory

The Regret Theory is a theory that has to do with people's ability to experience the pain of remorse for the mistakes they made. Therefore, people change their behaviour and become irrational because of the fear of regret, which makes investors either risk-averse or seek risks. Cognitive dissonance is a mental conflict that leads to a feeling of uncomfortable when their belief is wrong. It is the creed of regret over mistakes. Afterward, people change their attitudes, beliefs, and actions and act irrationally. According to Goetzmann & Peles (1997) investors who have made mistaken decisions and invested in losing stocks are unwilling to admit their mistake and therefore hold on to it. That leads to a positive convex relationship between past performance and flows.

Heuristics Theory

Heuristic is a way of solving problems by trial and error; conversely, judgment means evaluation. Heuristics refer to a sophisticated guess, an insightful judgment or just common-sense decision, which use to breakdown a complex problem to some simplistic concepts. Trial and error commonly lead to the establishment of a rule of thumb; but, it also leads to other errors, according to Shefrin (2002). There are four types of heuristics will discuss in the following sub-sections.

Representative

Representativeness is a form of heuristic. The Representative Heuristic Theory notes that if individuals interpret the current occurrence as symbolic of past events, they appear to categorize similar events and group them together. When such knowledge is used to make decisions about a larger issue, there is a risk. However, due to a lack of

information, one may resort to decision-making based on this representative information.

Overconfidence

Overconfidence is a behaviour that tends to overestimate people's knowledge and underreact to new information. This will lead investors to make a mistake because they do not know that they are at a knowledge disadvantage; they also tend to trade more frequently. In psychological research, Odean (1998) believed that an overconfident investor would underestimate the risk. Barber & Odean (2001) subsequently found that men are more overconfident in financial decisions than women.

Overreaction and Underreaction

Kahneman & Tversky (1982) contended that a representative investor, who never knows the exact result, tends to overreact to recent data. Bondt & Thaler (1985) examined whether markets were overreacting and found that portfolios that made losses always outperformed the market index, while the winning portfolio underperformed that index. The authors established a trend in which the previous extreme winners appear to be undervalued and then become losers, while past extreme losers appear to be overvalued and then become winners. This is due to the overreaction of investors. Investors overreact to bad news in the losing case and stock prices tumble down. Investors realise these losers have been under-priced and after some time they begin to rebound.

Herd Behaviour

Herd behaviour shows how people in a group will act together without any strategy. The explanation that herd behaviour happens may be the product of the social pressure of consistency because humans usually want to be accepted by a group, so one approach is to stick to the decision of the community. People usually have more trust in friends, relatives, and colleagues than the media (Shiller & Pound, 1986). In addition, individuals think a large group judgment could not be wrong. As such, even though people are convinced that the plan is misguided or wrong, they still obey the crowd, assuming the group knows something they does not.

3.3 Empirical Literature Review

This section provides a review of the prior empirical literature relating to the topic of this thesis. It presents the most important methods and models used in these studies, in addition to the most important findings of the studies. It begins with a review of studies on selectivity and timing ability, continued by previous studies on mutual fund performance. Then, a review of studies on performance persistence. After a review of studies on fund flows and fund attributes, it continues with a review of studies on spillover and smart money effect, and, finally, a review of studies on the fund family strategies.

3.3.1 Selectivity and Timing Ability

Investment in mutual funds has been rising rapidly in the developed and emerging markets. Fund performance estimation is a mechanical part of investment management and will include investor input for decision-making purposes. The management seeks to exploit potential market inefficiencies with the goal of optimizing returns and

mitigating risk through various strategies, such as stock-picking; selectivity of securities and market timing; price anticipation. This active strategy of management seeks to outperform the market, taking competitive positions towards a benchmark. Several studies have been attempted in the past to investigate the fund's performance, timing ability, and fund selectiveness. In the literature, enough research has been done on this topic in the general context and in the developed financial markets.

A large number of academic works have recorded a wide field of interest in developing countries regarding portfolio management [Sharpe (1966); Jensen (1968); Carlson (1970); Firth (1977); Lehmann & Modest (1987)]. Since the implementation of the Capital Asset Pricing Model (CAPM), Sharpe (1966), and Jensen (1968) have led to effective measurements of portfolio performance using the trading attributes between the return and the specified risk level. Several studies provide empirical evidence on portfolio management that supports both previous models and the use of data around the world. Sharpe (1966) showed that the performance of the mutual funds is no greater than the usual average performance, and, in the period from 1954 to 1963, they also indicated outperforming some mutual funds. Otten & Bams (2002) showed the same findings between the years 1991 to 1998 in the United Kingdom (UK) funds. Jensen (1968) concluded that the open-end mutual fund performs on average and does not perform effectively in trading. In addition, there is no proof of superior output in excess of overall costs, which is supported with the later evidence by Carlson (1970), Firth (1977), Lehmann & Modest (1987), and Fletcher & Marshall (2005). Effective fund management is not the only malfunction in producing excess returns but exhibits correspondingly substantially lower efficiency.

Similarly, Treynor & Mazuy (1966) proposed a quadratic method of regression analysis to calculate the timing efficiency of the 57 fund managers over the period 1983

to 1995. They just revealed one fund that had a statistically important ability to timing the market. The other 56 funds did not have any substantial timing capability facts. Such writers have not found evidence that fund managers can exceed market efficiency. The work of Treynor & Mazuy (1966) made significant contributions to the literature on performance-based portfolio risk-return evaluation, which distinguishes a manager's ability to act on information and the ability to predict systematic risk premiums and adjust the portfolio. Their research has produced a great deal of literature. Bollen & Busse (2001) assessed the performance of 230 mutual funds using the model proposed by Treynor & Mazuy (1966). The authors used both daily and weekly data. They also found that mutual funds offer higher market timing capabilities in shorter periods of study. The results of this research are to draw attention to a relevant point of view. The high return on funds is to produce a cash inflow that could present an investment obstacle to attain comparable return rates. This suggests that the dynamics of the investor cash flow may have a negative effect on the performance of mutual funds. Despite many studies that have been applied to developed markets, in the comparative perspective of Islamic and conventional funds, and more precisely in the emerging economies, the effort has been extremely limited. Following sub-sections will focus on the literature in emerging countries; Malaysia, Saudi Arabia, Indonesia, Pakistan, and studies at fund family level.

Malaysia

For the Malaysian market, most researchers have suggested a similar outcome to Jensen (1968). Due to a lower degree of diversification and incoherent return to risk, Annuar et al. (1997) reported an underperformance return of 31 funds in Malaysia. Together with her later research series, using the Jensen model, Low (2007), Low

(2012), and Low & Azlan (2005) consistently concluded a substantial negative overall performance for the period 1996 to 2004 due to weak investment selection and market timing. Fauziah & Mansor (2007) further confirmed this finding after most funds' output falls below the market and risk-free return. When comparing local funds with global funds in Malaysia, Abdullah & Abdullah (2009) found there was a significant difference between the performances of domestically versus internationally focussed funds. While, Rahim et al. (2019) found that the locally focused funds prove to be superior to the internationally-focused funds both in terms of returns and risks.

Nevertheless, following the work of Abdullah et al. (2007), and Kassim & Kamil (2012), some of the researchers discovered somewhat mixed results in the performance comparison, thereby suggesting that the IMFs perform better during bearish or economic downturn rather than when the markets are bullish. Abderrezak (2008) used the Sharpe ratio, the Capital Asset Pricing Model (CAPM), the Jensen's Alpha, and the three-factor model to analyse the performance of 46 IMFs for the 1997-2002 period, and concluded that, on average, the IMFs were not only underperforming against their benchmarks but also demonstrated weak selection capability. Boo et al. (2016) analysed 448 Malaysian funds over the period 1996 to 2013, of which 131 were Islamic. The findings indicate that conventional peers do not have clear-cut superior performance in Islamic mutual funds (IMFs). Islamic funds have, however, massively outperformed CMF in the recent financial crises. The study further suggests that Islamic mutual funds have better risk management compared to conventional funds. Abdul-Rahim et al. (2019) analysed 833 *Sharia* and conventional funds in 6 emerging market included Malaysia and Pakistan. Jensen's alpha and Sharpe's results show that *Sharia* funds slightly outperform their conventional counterparts particularly in the case of Malaysia,

Pakistan, and South Africa. However, using Henriksson–Merton model the results indicates that fund managers' performance depend on their stock selection skills.

Saudi Arabia

For the Saudi Arabia market, Merdad et al. (2010) used the Sharpe ratio, Treynor ratio, Jensen alpha, and Treynor and Mazuy model to test 28 mutual funds. They noted that during both the full and bullish times, the Islamic funds underperform conventional funds but outperform during the times of bearish and financial crisis. In addition, they concluded that the Islamic fund managers are excellent at displaying the timing and selectivity skills during the bearish period and their counterpart shows those skills better during the bullish period. Ashraf (2013) tested 159 mutual funds from 2007 to 2011 using the CAPM and Treynor & Mazuy models, and concluded that, on average, during the economic downturn, the IMF performed better than the CMF did. However, the findings on selection capacity suggest that the managers of Islamic mutual funds hold superior stock selection capabilities to conventional mutual fund (CMFs) managers.

El-Masry & Diala, (2016) evaluated the 21 mutual funds between 2005 and 2011 using CAPM, downside CAPM, and the 3-factor Fama & French, and concluded that, on average, the IMF outperforms CMF and the market portfolio. Al Rahahleh & Bhatti (2017) evaluated 25 IMF and 14 CMF from 2007 through 2016. Based on non-risk adjusted returns, they concluded that Islamic funds produced significantly higher returns than their benchmark in 2014, and significantly lower returns than their benchmark in 2016. Nevertheless, the IMF has marginally underperformed its target based on the risk-adjusted measures.

Indonesia

For the Indonesian market, Rachmayanti (2006) carried out a study of the performance of an Islamic stock portfolio on the Jakarta stock exchange in 2001 and 2002. The findings showed that *Sharia*'s portfolio performance in 2001 outperformed conventional portfolio performance in various metrics, except for the Jensen Index. The study's findings also demonstrated that the *Sharia* portfolio performance in 2002 outperformed conventional portfolio performance in different criteria: Sharpe index, Treynor index, and Jensen index. Waridah & Mediawati (2016) analysed the *Sharia* equity mutual fund instruments using the output assessment system Sharpe Ratio during the period 2010–2014. Overall, the Sharpe ratio value of all *Sharia* mutual funds in the study resulted in a negative Sharpe ratio during the observation period, meaning the return produced by the mutual funds in the sample was not greater than their risk-free return. During the period 2011–2013, Lestari (2015) used the Sharpe ratio test. Overall, during the observation period, the Sharpe ratio value of all *Sharia* mutual funds in the study resulted in a positive Sharpe ratio, thereby meaning that the return produced by the mutual funds in the sample was greater than their risk-free return. Hilman (2017) had the same results. Ariswati et al. (2021) aimed to analyse the effect of market timing ability and stock selection skills on the performance of stock mutual funds during the Covid-19 pandemic in Indonesia. Trenor Mazuy Unconditional Model and Trenor Mazuy Conditional Model are used to calculate market timing ability and stock selection skill, considering the account macroeconomic variables named inflation and the rupiah exchange rate. The sample included 55 stock mutual funds with assets above IDR 500 billion. The data analysis technique used is multiple linear regressions using STATA 16 analysis tool. The result shows that market timing ability and stock selection skill unconditional model have a significant effect on the performance of stock mutual

funds. The calculation of the unconditional model produces a positive value. Investment managers of equity mutual funds in Indonesia do not yet have good market timing skills, while the ability to choose stocks is better. The conditional model shows insignificant results on the performance of equity mutual funds.

From 2007 to 2014, Agussalim et al. (2017) studied four CMFs and five IMFs and identified that CMFs performed better than IMFs on the basis of the level of returns, while the IMFs outperformed CMF when compared with the level of risk. By using the Treynor test, in 2010, Sunarsih & Andriyanto (2015) found that BNI Dana Sariah Funds had the best performance among *Sharia* mutual funds and the lowest performance was MNC Dana Sariah. While, in 2011, Mandiri Investa Dana Sariah had the highest performance for *Sharia* mutual funds and Haji Sariah had the lowest performance. Different findings were also found in 2012, where MNC Dana Sariah had the best performance, and Haji Sariah had the lowest performance.

Pakistan

For the Pakistan market, Shah & Hijazi (2005) assessed the performance of the mutual fund and concluded that the funds were generally underperforming due to the diversification problem. In addition, they noted that the achievement of Pakistan's mutual fund industry depends on the comprehensive position of regulatory bodies and fund industry efficiency. After that, the researchers carried out various studies on the performance assessment of mutual funds in Pakistan. Sipra (2006), and Afza & Rauf (2009) used traditional measures of performance, including Sharpe, Treynor, and Jensen Alpha. Sipra (2006) conducted research to examine mutual fund performance and found that the market outperforms fund performance and only a few were able to outperform the market. However, the findings showed that the correlation between the funds and

the market is weak. The weak correlation indicates a lower degree of investment diversification (Afza & Rauf, 2009). In their research, Bilawal et al. (2016) analysed the closed-ended mutual fund performance between January 2009 and December 2013 using five different measures. Fund performance shows mixed results, while the information measures and Treynor ratio showed that other measurements of performance indicated consistent underperformance. Nawas et al. (2019) examined the disparity between the "net asset values" (NAVs) returns of open-ended and closed-ended mutual funds between 2006 and 2011. The return of NAVs was determined by the natural log function of (LN). Initially, the normality test was performed and then the Kolmogorov-Smirnov and Shapiro-Wilk test were applied, the results of which showed that the data were not normally distributed. The Mann-Whitney U test and the Kruskal Wallis were performed to search for the variations in the independent variables between these two classes. It showed that the net asset value returns of the open-ended and closed-ended mutual funds differed.

Studies at Fund Family Level

Unlike the widespread literature on performance at the fund level, studies at the fund family level are very limited and focus on developed markets. Previous studies of mutual fund family performance consider an overall return as the measure of performance. In 1996, Barron provided the first- ranking based on their performance of fund families in USA. The Barron ranking takes five investment groups into consideration – domestic equity, world equity, mixed equity (stocks and bonds), taxable bonds, and tax-exempt funds – and examines how each fund performs in the same group among the other ones. Barron gets the return of each fund family in the five categories weighted on the size of the individual funds and then takes the average as the fund

family's performance measure. Barron provides the rank of fund family in 2018, the first fund family is American Century investment management. In addition to provide the rank in the last five and ten years, the first fund family is Vanguard group and Pimco, respectively.

Tower & Zheng (2008) examined the relative performance of the families of mutual funds. They analysed the performance of 51 US mutual fund families for the period from 1994 to 2005 and ranked them according to a trading index designed with 11 market indices, Wilshire 5000 index returns, and historical portfolio returns, taking into consideration different groups of mutual funds. The pool of mutual fund families is limited to families holding 75% of their assets in diversified equities and not more than 5% of their assets in foreign stocks during their lifetime. The fund family-level analysis is conducted with equally weighted returns of individual funds included in the fund family. They found that families with mutual funds that charge loads, high expenses on their most favoured investors, and high turnover appear to perform poorly. Nonetheless, the gross of reported expenses, managed those families 'portfolios of mutual funds without loads, with low expenses in their least expensive class, and with low average turnover beat the corresponding index.

Premachandra et al. (2012) investigated the performance of 66 large mutual fund families in the US over the 1993–2008 period. They proposed a novel two-stage DEA model that decomposes the overall efficiency of a decision-making unit into two components and demonstrated its applicability by assessing the relative performance. The results revealed that the proposed model is able to highlight the mutual fund families that may have managed their portfolios well during financial crisis periods, as well as which of the two components of operational management or portfolio management may have been the factor contributing to their good or bad performance.

This useful information can help investors make informed decisions and enable administrators of fund families to evaluate how well their portfolio managers have performed relative to their competitors.

Cici et al. (2018) examined how the efficiency of trading desks operated by mutual fund families affects portfolio performance and investment behaviour of affiliated funds by analysing all actively managed US domestic equity funds belonging to their respective fund families from 2000 to 2013. The results concluded that by operating more efficient trading desks, which help reduce trading costs, fund families improve the performance of their funds significantly and also enable their funds to trade more and hold less liquid portfolios.

Summary

Overall, in the four countries under study, the results at the fund level were mixed, whether for Islamic or conventional funds. Most of the results indicate that the Islamic funds perform better in a bear market, but conventional funds perform better during the bull market. The studies in these countries did not analyze the performance at the level of the fund families, although the families of the funds are the ones who control all the funding sources for the funds that operate under their umbrella. Families of funds offer many advantages that all individual funds in the family may benefit from, for this reason, most investors choose the families of funds first and then pick the individual funds from the families that they have chosen. However, the studies at the fund family level are very limited and are mostly focused on the developed markets. Some studies have attempted to provide a ranking for fund families based on their overall performance. Some of them also studied the effect of the advantages offered by the fund family on the performance of individual funds in the fund family. Studies at the fund

family level have not studied the skills of fund family managers directly, that is, through the analysis of selectivity and timing skills. In addition, studies at the fund family level did not distinguish between conventional family and other types, such as fund family that focus on Islamic funds, where Islamic funds and investments are important in the markets of Islamic countries such as the countries under study. So, this thesis will fill the gap by investigating the selectivity and timing ability of Islamic and conventional focused family in four Islamic markets.

3.3.2 Mutual Fund Performance and Fund Attributes

In addition to the ability to selectivity and timing, recent past authors have also attempted to analyse the fund's performance in relation to fund attributes. As with the literature on selectivity and timing ability, the researcher focuses on the developed market in the beginning. Fund performance can be impacted by fund attributes, such as cash flow, size, age, fund family, turnover, and past performance (Cuthbertson et al. 2008). Indro et al. (1999) indicated that the size of the fund, calculated as a natural log of net asset value, has a negative and important effect on the performance of the funds. This means that larger-sized funds have more economies of scale. Likewise, Chance & Ferris (1991) also reported a negative correlation between the size of the fund and its performance. For the period from 1962 to 1999 J. Chen et al. (2004) studied the US mutual equity funds. They were interested in discovering the effect of fund size on the performance of the fund and found an inverse relationship. They also disclosed that liquidity is the explanation for this negative correlation between fund size and performance. The performance of small caps stocks erodes, depending on the liquidity and fund size. In addition, they suggested that large funds are also generally faced with management challenges.

Fund age is one of the main determinants of the performance of funds. Newly born or young funds typically incur considerable costs in the form of early fund publicity, floatation, and printing. Evidence also suggests that the investment learning process also impacts the young mutual funds (Gregory et al. 1997). Barber et al. (2005) suggested that one of the underlying explanations for the underperformance of young funds is that these funds exhibit a higher market risk, which, in effect, invests in loser stocks. They also found that the size of new funds is typically smaller than the existing ones.

A lot of studies have reported a positive connection between the fund's performance and turnover (Grinblatt & Titman 1994; Agnesens, 2013). Wermers (2000) recorded a positive relationship between fund performance and turnover. According to him, funds with high turnover typically incur higher transaction costs, and, eventually, charge higher expenses, the managers of such funds keep stocks with a higher return rather than low turnover funds. Dowen & Mann (2004) conducted a performance analysis of the mutual fund in which they reported that high turnover lowers the risk-adjusted performance of the mutual funds. Haslem et al. (2008) investigated the performance of mutual funds in the US. They indicated that superior performance occurs on average among large funds with low expense ratios, low trading activity and no to low front-end loads. Gil-Bazo & Ruiz-VerdÚ (2009) said that lower prices should be paid for funds of higher quality. Pollet & Wilson (2008) denoted that higher expenses; expense ratio and total loads; a mix of front and back-end loads, associated with the funds are significantly negative in terms of returns, but a higher concentration of industry correlated positively with the marginal impact of market capitalisation type of fund. Following sub-sections will focus on the literature in emerging country; Malaysia, Indonesia, Pakistan, and studies at fund family level.

Malaysia

Emerging markets vary from developed markets in terms of market influencers and these markets attract less attention relative to developed markets. Low (2010) studied the Malaysian market using 65 mutual funds in relation to the performance of the funds. The fund attributes, such as fund size, turnover, investment ratio, and age were used for the period from January 2000 until December 2004; the author applied a monthly time-series. The findings showed that the risk-adjusted returns of the funds over the study period were not significantly related to age and fund size. The noteworthy result was that well-performing funds had a negative connection to the turnover of the assets.

Yong & Jusoh (2012), analysed the fund's attributes affecting fund performance by analysing 69 equity mutual funds representing 44 traditional funds and 25 Islamic funds for the period from 2005 to 2009. The attributes analysed included risk, size of the fund, and ratio of management expenses, turnover ratio, and age of funds. The findings showed a higher risk fund yielding a higher return. Those funds that invested more on research spending offered a superior return than those that invested less. The results also showed that young funds had a higher performance than old ones. It has been found, however, that fund size and turnover ratios have no direct relation to fund efficiency.

Fikri & Yahya (2019) researched the fund attributes like fees and expenses structure between conventional and Islamic mutual funds. The sample included 252 open-end mutual funds for the period 2008 through 2015. The findings identified a major difference in Islamic funds-led fees and expenditure structure. They clarified that Islamic funds have high diversification while strong positive growth is linked to

conventional funds, thereby supporting the relationship between fees and expenses and fund results. However, the declining trend in fees corroborates the idea of favourable economies of scale, which contradicts the increasing structure of expenses. Nevertheless, Islamic funds show disproportionate fees and expenditures in providing portfolio management of high and low quality.

Indonesia

On the Indonesian market, Mohammad (2013), analysed the determinants of mutual fund performance, with an emphasis on the investment manager's skill factor. The sample consisted of 37 mutual equity funds for the period from 2008 to 2011. The results concerning the determinants examined (total risk, systemic risk, fund age, size, stock selection, market timing, and expenditure ratio) showed a significant relationship between total risk, fund age, stock selection, market timing, and fund performance. However, there was no significant relationship between systemic risk, fund size, and the performance of the fund.

Wisudanto et al. (2016), examined past performance and fund attributes that affect the performance calculated by Jensen Alpha. The attributes analysed included the size of the funds, age of the funds, net asset value, and growth of the funds. During 2010-2013, this study used 33 mutual fund equities as a sample. The findings showed that the size of the fund has a negative impact on the performance of the equity fund and the growth of the fund has a positive effect on the performance of the equity fund. The results also suggested that the fund age has a positive impact on the performance of the equity fund. The net asset value, however, was found to have no significant impact on the performance of the equity funds.

Gusni et al. (2018) analysed the performance of the mutual equity fund using the risk-adjusted model suggested by Treynor (1965) and explored the factors influencing the model of the mutual funds using the capabilities of investment managers; market timing and stock selection skills, fund size and inflation. A total of 19 mutual equity funds from the 2011-2015 period were selected using a purposive sampling method. The results showed that the performance of the equity mutual funds in Indonesia tended to fluctuate. The performance of equity mutual funds was driven by stock selection ability and inflation, whilst market timing capacity and fund size had no major impact on the performance of equity mutual funds.

Naufal & Nainggolan (2015) tried to find the score for the social performance of conventional equity mutual funds. They assessed this through two Indonesian stock exchange ethical indexes, which are ISSI (Indonesia *Sharia* Stock Index) and SRI-KEHATI. Due to the scarcity of data, this research duration was only in 2012. They also investigated whether there was a relationship between the attributes of fund managers, such as gender and background in education, and social efficiency. The regression findings indicated that there was no relationship between female fund managers and their allocation of assets in high social performing firms. However, the finding also showed that fund managers with a master's degree but not necessarily from overseas universities tended to invest in companies with a high social performance, which indicates that higher degrees may have given them higher concerns about environmental, financial, and governance issues. The findings also showed that older funds prefer to hold socially responsible shares that suggest older funds may be more concerned about their holdings' social performance than their financial performance because of lower market risk and hopes of better success in the future or in the long run.

Pakistan

On the Pakistan market, by applying fixed and random effect models, Nazir & Nawaz (2010), investigated the determinants of mutual fund growth and concluded that turnover, fund family ratio, and expense ratio are positively related to mutual fund growth. In contrast, management fees and risk-adjusted returns were negatively related to growth in mutual funds. However, although Islamic mutual funds tend to be expensive in terms of expense ratio, they gain a higher mean return. Afza & Rauf (2009) suggested that mutual fund investment gives investors an advantage in reducing risk by diversifying the portfolio for which they charge fees using various names, such as management fee, front end load, back-end load, 12b-1 load, and expense ratio.

The fund-specific determinants of conventional and Islamic mutual funds' performance in Pakistan were investigated by Ahmad et al. (2017). The Sharpe ratio, Sortino ratio, Knowledge Ratio, and Jensen Alpha are used for this purpose as measures for the performance of the funds. They used a range of fund attributes, such as fund size, turnover, liquidity, management fee, expense ratio, the new capital, fund age, and fund family. The sample consisted of 100 open-ended mutual funds evaluated between 2011 and 2016. The results showed that turnover and new money for both forms of funds have a major positive effect on the Sharpe ratio. In the case of Islamic funds, liquidity is positively and significantly related to the Sharpe ratio while in the case of conventional fund age the performance of the fund has a significant positive impact. In conventional funds, the expense ratio is negatively correlated with the Sharpe ratio. The results demonstrated that turnover, liquidity, and new money indicate a major positive relationship for conventional funds with the information ratio. In contrast, the performance of Islamic funds worsens with the new money. In both forms of funds, the Sortino ratio is significantly positively affected by the fund family and fund age.

Turnover has a positive effect on the Islamic funds Sortino ratio while the management fees have a negative impact on the Sortino ratio.

Studies at Fund Family Level

Several researchers conducted an analysis of the performance of the mutual fund in relation to the fund families, and their findings indicated that the fund family has a positive and statistically important effect on the performance of the fund in various countries around the world (Agnesens 2013; Ferreira et al. 2012; Massa & Patgiri 2009). The fund family has a potential advantage in terms of economies of scale (Tower & Zheng 2008). Funds with larger fund families will pay special attention to trade commissions and benefit from higher lending charges, larger fund families can use the same economic data and experts to interpret data across many funds, leading to economies of scope and higher returns (J. Chen et al. 2004; Malhotra & McLeod, 1997; Dowen & Mann, 2007; Guedj & Papastaikoudi, 2004). Ferreira et al. (2012) found the same results on 27 countries included Malaysia and Indonesia. Even so, a large fund family may also perform poorly because its managers are unable to optimally manage it (Berk & Green, 2004; Marc-André 2016; Filip, 2018).

On fund family age and their impact on fund performance, Gasper et al. (2006) find statistically significant and positive for old families and statistically significant and negative for young families. This indicates that the established track record of old families allows them to help young funds, while in mostly young families it's the relatively older funds that the fund family wants to favour, presumably in an attempt to create flagship funds. Hunter et al. (2020) find negative relation between the fund family age and performance, but it was insignificant.

On number of funds, a fund family with a large number of funds may offer more investment opportunities at reduced costs, increasing inflows. Guedj & Papastaikoudi (2004) found that the number of constituent funds (which they used as a measure of latitude that a fund family has to unevenly allocate resources among its funds) relates positively to performance persistence. Hunter et al. (2020) and Gasper et al. (2006) and Yaqoob et al. (2017 Pakistan) find a positive relationship between the number of funds and fund performance. Finally, Hunter et al. (2020) examined the impact of having star funds on fund family performance in the USA. They indicated that star fund offerings earn significantly higher abnormal returns, star fund offerings significantly improve fund family returns, fund family managers have a strong incentive to both obtain star funds and to deploy their manageable resources to maintain their star funds' status.

Summary

Overall, the results suggest that investors should concentrate on young funds and pick a fund based on their desired level of risk. Fund managers should consider the attributes that will influence the performance of the funds and develop strategies to improve the performance of their funds. However, studies at the fund family level focused on the impact of fund family attributes on individual fund performance and they indicated that the fund family has a positive and statistically important effect on fund performance. The advantage of having star funds in the fund family is one of the most important strategies used by fund family managers to provide a good image of the family's reputation. It is noted that previous studies did not focus on this feature when analysing the performance of fund family, only one study was conducted in 2020 in the USA and focused on conventional family. So, due to the importance of fund family and

its performance, as explained in Chapter One, this thesis will focus on test the impact of having star funds on fund family performance.

3.3.3 Performance Persistence

Studies on performance persistence examine whether past data on mutual funds' performance is helpful for investors in taking investment decisions. Performance persistence tests also a market-efficacy; if the market is efficient there could be no proof of performance persistence. The prices for the fund will chase a pattern of random walks. Most early fund persistence studies investigated if mutual funds would systematically select asset over a specific period (Treynor 1965; Sharpe 1966; Grinblatt & Titman 1989; Ippolito 1989). The results either showed no persistence or that only weak evidence of performance persistence. A fund manager's track record does not include details about future performance. Most of these studies extend fairly long periods of picking and holding.

Carlson (1970), Lehmann & Modest (1987), and Grinblatt & Titman (1989) applied test for a period of five years. In his analysis, Carlson (1970) found only partial persistence on performance. During the period 1948 to 1967, he analysed 82 mutual equity funds. No performance persistence was found using the ten-year risk-adjusted-performance rating of the Sharpe ratio, whilst some poor evidence was found over the five-year period. Fund performance ranking was analysed by Lehmann & Modest (1987). The study included 130 mutual funds for a five-year period between 1968 and 1982, they found performance persistence.

Grinblatt & Titman (1989), used five-year evaluation intervals between the years 1974 to 1984, to analysed 157 funds. The authors found that some managers of mutual fund were able to reliably receive extraordinary returns before expenses and charges.

Several researchers who found proof of performance persistence in their analyses in the 1990s with the use of shorter periods, including Grinblatt & Titman (1992) they researched performance persistence over five years; Hendricks et al. (1993) examined at even shorter intervals of one and two years, three and six months; Goetzmann & Ibbotson (1994) analysed the sample over two years and one-month; Brown & Goetzmann (1995) used a one-year period in their analysis; and Elton et al. (1996) looked to one until three-year period. All of these researchers reported evidence of the persistence of fund performance.

Harlow & Brown (2006) studied the performance persistence of US funds using a one-year period within the fund classes and even at the cumulative degree for the period from 1981 to 2003. They categorised the fund universe based on a three-factor alpha from Fama and French. The findings reported clear evidence of short-term performance persistence over the holding periods of one month and three months. Sanjay & Manoj (2007), who used four-factor model, showed a short-term performance persistence of 59 funds in daily data for the period from 2000 to 2004 but no proof was found in the monthly data. They suggested the amount of data actually affected the outcome. More recently, during the period 1992–2016, Mateus et al. (2019) conducted research using 817 UK equity funds. They listed the funds that had already registered a good performance in the previous year with the most significant positive alpha. These funds demonstrated persistent performance in parametric as well as non-parametric measurements.

In the emerging markets, many researcher did not find persistence in the performance of funds over time (Christensen 2005; Huang & Mahieu 2012; Rao et al. 2017). Christensen (2005) assessed the performance persistence of 47 Danish funds. Using parametric and non-parametric measurements. They concluded that Danish

mutual funds typically work neutrally, returns are non-persistent and funds lack the timing and selectivity skills. Rao et al. (2017) assessed the equity funds in China. Appling the capital asset pricing model (CAPM) and the four-factor Carhart model, the authors indicated that the equity funds outperformed their benchmark but found no evidence of persistence in the performance of the funds. For IMF performance persistence, the analysis of their performance persistence is relatively limited. At the international level, Khamlichi et al. (2014) reviewed the performance of Islamic mutual funds and their persistence. Using *Sharia* mutual fund data from the Dow Jones Islamic Index from 1999 to 2011. Although they found no persistence of *Sharia* mutual fund performance, their persistence test was relatively limited because it only compared the recession and expansion periods according to the business cycle of the company. Following sub-sections will focus on the literature in emerging countries, and studies at fund family level.

Studies in Emerging Countries

In Malaysia, Low & Ghazali (2007), revealed in 1996–2000 that a short-term relationship existed among Malaysian funds and the stock market. This was due to the mutual fund price is linked to the KLCI market index, which means that fund managers refer to past performance and stock market movement when considering portfolio selection. Contrariwise, Taib & Isa (2007) indicated that the return performance in Malaysia during the 1991–2001 decade was not persistent. The aim of Mansor et al. (2019) was compared the performance and persistence of ethical and conventional funds among two excessive events, the Asian and global financial crises under *Sharia* limitations (1990 to 2006). The study was composed of 129 Islamic mutual funds (IMFs) and 350 conventional mutual funds (CMFs). The average monthly data were

used and represented both periods of market cycles, prior and after a financial crisis. In addition, they employed the persistence performance measures through contingency tables on IMFs and CMFs. The paper's key findings are, on average, all IMF and CMF funds outperformed market performance over the all sample period; none of the funds were superior to the other during the financial crises and before-crisis periods. Over the study period, the IMF outperformed the CMF. This result also concluded that IMFs are more persistent, particularly in the AFC and the GFC periods during and pre-crisis.

In Saudi Arabia, Marwa (2019) compared the market timing, the stock selection, and the performance persistence of Islamic and conventional HSBC Saudi mutual funds. The study used monthly returns for the period from 2011 to 2018. She grouped the sample into five portfolios based on geographical investment basis (locally, Arab, internationally) and *Sharia* compliance (Islamic and conventional). The results give a brief idea about the performance persistence of HSBC Saudi funds. The results confirmed the existence of the persistence performance when the funds do not apply *Sharia* law and when they are instead focused internationally.

In Indonesia, Arifin, (2018) indicated that no mutual funds persisted for five years but found persistence in the shorter term when using the Jensen and Sharpe, but never persistent when using the Treynor. They used data from 2006 until 2011. Meanwhile, for the period 2008-2012, Elviani & Linawati (2013) noticed the persistence of the performance of the mutual funds. Arifin & Mulyati (2017) measured the relative persistence in the short term and absolute short-term persistence for *Sharia* funds. Relative persistence is achieved by evaluating whether the current funds in the top five in a given month will stay in the top five in the months that follow. Absolute persistence is tested with the time series model Autoregressive Moving Average (ARMA). This analysis found the following three points. First, in the early phase of the study year

(2010-2012), equity mutual funds and mixed mutual funds had a fairly high relative-short-term persistence but then declined thereafter, while fixed income mutual funds had an up-and-down persistence. Second, equity mutual funds typically had the highest relative-short-term persistence, followed by mixed mutual funds, and fixed mutual income funds. Third, only fixed income mutual funds had persistent performance when judging from absolute-short-term persistence. Meanwhile, Arifin (2018) found ample evidence for the existence of performance persistence in *Sharia* funds for the period between (2010 to 2016), but the persistence only emerged during the initial study period (2010 to 2011), while it appeared to fade in the latter stages.

In Pakistan, Nafees et al. (2017) examined the strategic behaviour, the selectivity and timing skills of fund managers, and the performance persistence of mutual fund using the data of 33 open-ended funds for the period from 2008 to 2016. The results showed that only a few mutual fund managers either possess significant selectivity or outstanding timing skills. This means that most of the managers of the mutual funds were either speculative or inside traders. Persistence in the performance of mutual funds is not high enough, as the performance of fewer mutual funds exceeds stock market performance.

Studies at Fund Family Level

At the fund family level, there are three studies. Cheng et al. (1999) investigate the performance persistence of fund family in Hong Kong during the period 1992 to 1996, testing the impact of common management strategies and supervision to fund family performance persistence. They find a weak evidence that these fund families has short-term performance persistence. Only two fund families appear to have high return performance in the past periods. Overall, the findings contradict the previous studies on

short term persistence in the U.S funds. Further investigations find that these two fund houses own high number of superior performing funds support the hypothesis that common management strategies and supervision are potential reasons for these abnormal persistence.

Clare et al. (2014) used a large and long sample of US and European mutual funds to examine the strategic and competitive behaviours among fund family and whether this affected performance persistence and risk-taking for the period from January 1999 to December 2009. The results did not show evidence of stronger performance persistence among family funds versus non-family funds. In addition, the results showed some significant differences in the future performance of portfolios of family and non-family funds formed on the basis of past performance.

McCourt & Ramos (2019) argued that prior work demonstrated that decisions made at the fund family level are contributed by a substantial portion of the performance of the individual active fund managers in the fund family. The question then arises as to whether the average fund performance of some fund families is persistently superior or inferior to that of other fund families. Using gross returns, they found that top-decile fund family performance persistence is comparable to that of individual funds, indicating that families do not tend to create conditions for maintaining outperformance. After controlling for noise in the performance measure, they found that, overall, only 3% of fund families are genuinely skilled. Families with higher t-statistics of alpha are much more likely to be truly skilled. Multi-fund families are more likely to be truly unskilled compared to single-fund families. Using net returns, however, they found very little evidence of skill.

Summary

Overall, evidence of performance persistence is mainly found by the previous literature in developed markets, while a few previous studies in emerging markets. Only studies in the USA at the fund family level were found. This thesis seeks to provide new evidence of performance persistence at the fund family level in four Islamic countries, in addition, to compare between Islamic and conventional focused families.

3.3.4 Mutual Fund Flows and Fund Attributes

Beginning from the 1990s, there has been a dramatic increase in the number of empirical studies in the study of the relationship between the mutual fund performance and the subsequent inflows of funds, which also measures the behaviour of mutual fund investors. Fund past performance is one of the most important determinants of investors' money inflows. Investors tend to chase returns. In addition, studies have been done on investor responses to expenses when investing in mutual funds. Following sub-sections will focus on the literature of flow-performance relationship and literature of flows and other determinants.

Flow-performance Relationship

Starting with the developed markets, there have been different studies on fund flows and performance, beginning with Spitz Smith (1978), followed by the studies by Ippolito (1992), Hendricks et al. (1993), Roston & Sturges (1996), and Chevalier & Ellison (1997). Generally, it was found that the performance of the fund and the money flow into these funds was positive and asymmetric. During the 20th Century, Berk & Green (2004) spoke about investors being rational while using past performance as new knowledge about the managerial capacity that would impact the cash flow. Barberis & Thaler (2003) argued about the behaviour of individual mutual funds investors and

clarified the representative heuristics as the asymmetry relationship. They tried to document and understand how investors, both amateurs and professionals, make their portfolio choices. They indicate that there are obviously competing behavioural explanations for some of the empirical facts. In addition, rational modelers have just as many options to choose from, then rationality per se does not yield many predictions.

Sawicki (2001) attributed the convex relationship between flows and performance to the poorly informed or irrational investors, and the cognitive dissonance. It was attributed to the expense of switching, which impedes investment from exiting the low performing funds. This convex relationship between flow and performance is observed when either raw returns or excess returns of performance rankings were used (Fant & O'Neal 2000; Wienold & Christoffersen 2006).

Chen & Qin (2016) looked at the flow-performance relationship of US corporate bond funds for the period from 1991 to 2014. They suggested that the flows of US corporate bond funds are responsive to fund performance, but there is no evidence of sensitive convexity in the relationship between flow and performance. On SRI funds, an analysis of 2,168 US equity funds from 2003 to 2011 found that SRI funds displayed a poorer relationship of flow-performance compared to conventional funds (El Ghoul & Karoui 2017). Also, they found some implication that ethical and traditional investor loyalties are more or less identical. Jiang & Yüksel (2019), for the period from 1993 to 2014, examined the flow-performance relationship in the US. They showed that many stylised empirical patterns were driven by investor sentiment for mutual fund flows. Specifically, when sentiment was high, investors showed a greater tendency to chase past fund performance; fund flows were less sensitive to fund spending, and investors were more drawn to purely visible funds.

In the emerging market, from January 2000 to December 2016, Leung & Kwong (2018) investigated the flow-performance relationship between mutual funds investing in emerging market economies (EMEs). Such funds demonstrated a convex relationship between flow and performance, thereby indicating that past performance is a significant factor driving fund inflow when the return on the fund is positive, but its effect vanishes when the return is negative. Marzuki & Worthington (2015) in the Malaysian market, studied Islamic and conventional funds for the period 2001-2009. They found that Islamic fund investors are more receptive to poorly performing funds, thus suggesting that when selecting funds these investors are rational decision-makers. In addition, the analysis confirmed both Islamic and conventional funds' asymmetric and convex flow-performance relationships, as well as investors' best-performance-chasing behaviour. SRI funds have shown an asymmetric relationship between flow and performance, that is, the investor's reaction to negative outcomes is not as aggressive as it is to positive returns (Azmi et al. 2018). They also observed *Sharia*-compliant funds asymmetric flow-performance relationship. For the period from January 2002 to December 2013. Their investigation of the global Islamic funds found evidence of such a relationship.

In the Indonesian market, Loeis & Prijadi (2016) investigated the behaviour of open-ended mutual fund investors when they came across several knowledge signals of the historical performance of the mutual fund. The period of study was from February 2010 to February 2015. The results showed that open-ended mutual fund investors were not only sensitive to past performance information signals but also additionally sensitive to multiple information signals being ambiguous. Investors are thinking more about negative information signals and the worst information signal in their investment decisions because of the existence of ambiguities.

Mughal et al. (2017) analysed the mutual fund on the Pakistan market as of September 2007 to December 2013. They noticed a variety of investment conduct between big companies and small and medium-sized investors. When making an investment decision, the former tended to analyse the risks and complete their study, while the latter appeared to be risk-averse and base future investment decisions on past returns. Munir et al. (2019) examined the flow-performance relationship with respect to Islamic equity funds. Panel data regression was employed for the period July 2014 to June 2018 on data from 10 Pakistani Islamic equity funds. The results showed a significant negative relationship between past performance and fund flow, which confirms the flow-performance relationship.

Flows and Other Determinants

Several studies have tried to establish the theories to clarify the relationship between the determinants other than performance and fund flows. Some studies, which used the natural logarithm of fund size and funds total net asset as control variables, indicated that large funds would not grow at the same rate as small funds. They also found consistent results of a negative and highly significant relationship between fund flow and fund size (Sirri & Tufano 1998; Chevalier & Ellison 1997; Kempf & Ruenzi 2008). In addition, some studies used fund age as a control variable, and showed an inverse relationship between fund flow and the fund age. They indicated that as the investor perception of fund quality was based on the historical data of fund performance, flows from the older funds would not be as responsive as the younger funds. (Chevalier & Ellison 1997; Guercio & Tkac 2002; Bergstresser & Poterba 2002). Sirri & Tufano (1998) used risk variable as a control variable and raw returns as the performance measurement. The results showed an insignificant coefficient of this

variable, but their result was robust to the alternative risk and performance measurement, while Ippolito (1992) showed a weak relationship between funds flows and risk.

In more recent studies, Barber et al. (2005) showed an inverse relationship between the fund flows and load fees. Using the Hendricks et al. (1993) model they included the lagged fund flows. The results indicated a significant relationship. Rakowski & Wang (2009) analysed the dynamics of daily mutual fund flows in the USA. They showed that past flows and returns, as well as the time of the month and fund characteristics, are important in explaining the level of daily flows. Jank (2012) investigated the relationship between mutual fund flows and the real economy and found support for the information-response hypothesis, thus meaning that stock market returns and flows of mutual fund investors commonly react to macroeconomic information.

In an emerging market, Fong et al. (2018) identified the major determinants of equity mutual fund flows. They used a novel dataset of individual fund data and a fixed-effect quantile panel data regression. They found that fund flows to global equities outweigh other fund-specific factors, thereby suggesting that, other things being equal, mutual funds' portfolio rebalancing could strongly determine the direction and magnitude of mutual fund flows. Moreover, there were signs that the return-chasing behaviours of fund managers and investors amplified fund flows' volatility in times of financial turbulence, resulting in a much stronger redemption of equity funds during market downturns. Azmi et al. (2018) investigated the flow-performance relationship in socially responsible funds (SRFs) and *Sharia*-compliant funds (SCFs). Using a survivorship bias-free sample of 686 funds comprising 212 SCFs and 474 SRFs they analysed the investment focus in the Asia Pacific, Emerging markets, Europe, and the

Middle East and North Africa (MENA). The findings showed an asymmetric flow-performance relationship for both funds as there were more positive returns compared to the negative returns for the last/current year as well as the last/current month.

In the Malaysian market, Marzuki & Worthington (2015) provided empirical evidence on the fund flow-performance relationship of Islamic equity fund (IEF) investors in comparison with conventional equity fund (CEF) investors. They used panel data on a large sample of Malaysian domestic equity funds from 2001 to 2009. The results showed evidence that IEF investors cared about fund performance in much the same way as CEF investors. There was also weak evidence that IEF investors were more responsive to poor performing funds by withdrawing money from these funds. The results also indicated that IEF investors again exhibit similar behaviour to CEF investors, investing more money into younger, larger, riskier funds as well as funds with higher expense ratios and turnover.

Othman et al. (2018) provided empirical evidence on the fund flows-past return performance relationship by also considering the management expense ratio, the portfolio turnover, the fund size, and the fund age of Islamic equity funds (IEF) investors in comparison with conventional equity funds (CEF) investors. They used panel data from 2011 to 2013, and the sample of Malaysian domestic managed equity funds considered comprised 20 individual funds from the IEF and CEF. The results provided evidence that IEF investors have different factors when choosing funds in comparison to CEF investors. The study found that the key factor influencing the fund flows of IEF is the management expense ratio, whereas for the CEF it is the fund size. The results also showed that all the fund characteristics of IEF and CEF are positively or negatively related to the fund flows.

In Pakistan, Munir et al. (2019) investigated the determinants of mutual fund flows in Pakistan. They found a negative relationship of fund flow with fund size, risk, portfolio turnover, and market return. Pavabutr & Sirodom (2010) investigated the flow-performance relationship in 11 Asian equity markets (Malaysia, Indonesia, China, Japan, Korea, Hong Kong, Thailand, India, Philippines, Singapore, and Taiwan). They used weekly fund flow data for the period from 2002 to 2009. The results concluded that there is a positive cumulative inflow into seven countries (China, Hong Kong, India, Indonesia, Philippines, Singapore, and Taiwan) and a negative cumulative outflow four countries (Japan, Korea, Malaysia, and Thailand). Aleemi et al. (2019) examined the effects of fund size, mainly the induction of new funds and the increase in existing funds managed by the fund family on their AUM for the mutual fund industry of Pakistan for the period between July 2009 and July 2016. The main findings suggest that both existing and new fund size have a positive and significant impact on AUM, and, also, the growth of the fund is strongly associated with fund family growth.

Summary

The previous studies concluded that fund attributes significantly influence fund flows. This relationship, in some countries, was positive and in others negative. The main goal of the fund family is to increase AUM, to achieve this goal fund family uses the strategy of having star funds to attract more investors and then increases the inflow of fund family. It is noted that studies in the countries under study in particular and in emerging countries, in general, did not focus on this strategy and how it might affect the flows of fund families. Studying the impact of the presence of star funds is very important because it will help fund families to develop appropriate strategies to attract investors. Previous studies in developed countries used the performance of star funds to measure the flow-performance relationship at the fund family level and they focus on

conventional family. The funds of the fund family were ranked according to their performance, and then their effects on the flow of funds to the fund family and other funds within the fund family (spillover effect) were measured. These studies will be reviews in the next section. So, this thesis will fill the gap by the focus on the impact of having star funds on the flows of Islamic and conventional focused families in four Islamic countries.

3.3.5 Spillover Effect

There is evidence documenting that fund flows in a fund family are affected by the fund member performance, which is called the positive spillover effect (Weisbenner 2008; Kempf & Ruenzi, 2008; Nanda et al. 2004). This effect becomes useful for funds if the fund family owns one or more superior performance funds; star funds, and then this superior performer helps other funds in the same fund family to attract more flows. In contrast, losers do not experience large inflows of funds in the fund family, which are larger than the expected fund inflows for the fund's own performance. Khorana et al. (2005) notarised that the existence of a star fund in the fund family will have a positive effect on the market shares of families. They used a dummy variable called star dummy, which is calculated by counting the number of funds in the fund family that falls within the top 5 percent of their objective class.

Various previous studies also investigated the fund's spillover effect by using a different methodology and different determinants in the fund flow model in the developed countries such as USA, UK, and Korean market (Ippolito 1992; Sirri & Tufano, 1998; Weisbenner 2008; Benson & Faff 2010; Joo & Park 2011; Adrianto et al. 2019). Some studies investigated whether advertising and marketing have any

spillover effect on new fund cash flows (Jain & Wu 2000; Barber et al. 2005; Gallaher & Starks 2006; Huang et al. 2007).

Nanda et al. (2004) found evidence of a spillover effect on cash flows to non-star performers in families with star funds. They defined star performing funds as funds in the top five percent of fund family adjusted returns. Studying a sample of 141,663 fund-year observations over the period 1992 – 1998, they found that flows to fund families with at least one-star fund are substantially higher than flows to fund families without a star fund. Further, top-performing funds positively contribute to their own flows and to those of their sibling funds. However, there was no evidence of similar spillovers from low ranking funds. Understanding the spillover effect in fund families is crucial to determine how to proportionally treat individual funds within a fund family. Khorana & Servaes (2012) found that the existence of a stellar fund performer provides a positive signal to investors about the reputation of a fund family. New flows were found to travel not only to the star fund itself but also to peer funds in the fund family. They reported that star funds positively affect the market share of the fund family, as demonstrated by an increase in the ratio of assets professionally managed by the fund family with a star performer to the total assets of the mutual fund industry.

Benson et al. (2008) examined whether fund family characteristics do indeed impact fund flows. They used incorporate variables that capture the characteristics of the fund family and the performance status of the individual fund within the fund family. The authors indicated that these fund-family characteristics allow the measurement of the incremental contribution on the flow to the individual fund beyond that generated by the fund's individual performance. This study used annual and monthly data of Australian retail and wholesale equity funds over the period from 1995 until 2006. The results provided evidence that fund family characteristics are also related to flows.

Investors in individual funds care about fund family size, fund family age, and product proliferation. The results also indicated that the top-performing funds within a fund family receive greater flows. They concluded that the fund-level and fund family-strategies are important to the investment decision.

Later studies investigated the benefits of having star performing funds in fund families. Most of these studies reported that having star performers attracts higher cash flows to the fund family through a significant increase in inflows to the star performing funds, as well as through a spillover in the increased flows from those star performers to sibling funds. One such study is Joo & Park (2011) who investigated the contribution of star funds to fund families in the Korean fund market for the period from 2001 to 2009. The results of this study showed that a star fund family that features either star funds or higher relative holdings of star funds attracts more new investment than non-star fund families. The results also showed the existence of a spillover effect from star funds to non-star funds that helps non-star funds and newly launched funds in the fund family to raise fresh capital. In another study on SRI families, using a sample of USA SRI funds for the period from 2000 to 2012, Adrianto et al. (2019) found that spillovers in cash flow to SRI funds within the fund family are due to the existence of a star performing peer SRI fund. The results of this study found a positive spillover effect from having a star SRI fund on the monthly cash flow of their SRI siblings. However, the reverse is not found in the presence of a poor SRI performer.

Summary

As mentioned in the previous section, the strategy of having star funds has an impact on the money flows of the fund family. However, this effect may not be only to the flow of star funds, but to other funds in the family, which is called the spillover effect.

Previous studies on this subject are only available in developed markets, as they did not distinguish between the types of star funds, which may be conventional or Islamic funds. The difference in the type of the fund is important as the characteristics of the funds are different according to the type, such as that investments in Islamic funds are subject to the screening process. In addition to the different goals of Islamic and non-Islamic investors, Islamic investors are interested in the side of the traditional goals to the moral and religious goals. So, this thesis will fill the gap by study the spillover effect of having Islamic and conventional funds in the fund family.

3.3.6 Smart Money Effect

In addition, some studies tested the smart money effects by investigating whether the cash flows would lead to funds' performance in the future period (Gruber 1996; Zhang 1999). The impact of fund flow and fund past performance has been discussed in many earlier studies. Here fund family flow is called new money in the finance literature meaning that when investors put their money into the mutual fund it is called fund inflow and when they put money out of the mutual fund it is called fund outflow. Gruber (1996) and Zheng (1999) found evidence that suggests that mutual fund investors in the US are able to select (avoid) a good (poor) performing fund, which they call the smart money effect. This means that investors are considered smart if they move their money into (out of) good (poor) performing funds.

Zheng (1999) showed that funds that attract new money did significantly better than those funds that did poorly, and that only a portion of this effect could be clarified by following past winners. Past fund flow information can be used in selecting the superior performance of small funds and then earning abnormal returns. This is called the smart money effect. Gruber (1996) showed no significant relationship between cash

inflows and the next good performance. Zheng indicated that the smart money effect was due to the fund-specific information, and small funds mainly earn above their average returns.

In more recent studies, Sapp & Tiwari (2004) are of the view that the smart money effect can be better explained by the momentum factor in the stock returns. Keswani & Stolin (2008) examined the smart money effect in the UK using the money flow monthly data for the period from 1992 until 2000. They showed that the smart money effect existed and was driven by the purchase, and not the sales of funds by either the individual or the institutional investors. The results indicated that UK investors chase high performance. The fund inflows increased with the increase in past returns whilst the cash outflows decreased with a decrease in past returns.

Benson et al. (2010) investigated the smart money effect in the US market. They explored the interrelation between these key indicators of mutual fund outcomes. The results indicated a positive relationship between current returns and current flows, which means that the investors responded rapidly to performance information, but that the current flow did not impact on the current returns. Ferreira et al. (2012) evaluated mutual funds in the US and found mixed evidence. They suggested that fund flows cannot predict the future performance of funds.

In the emerging markets, Feng et al. (2014) on fund flow in the Chinese mutual fund industry, found different results than the US and suggest that, on average, Chinese investors have no selection ability of good performing funds, while the US investors are considered to be able to select good performing funds. In the Malaysian market, Marzuki & Worthington (2017) analysed the smart money effect among Islamic and conventional domestic equity funds. The study sample consisted of 117 Malaysian equity funds, which comprised 34 IEFs and 83 CEFs for the period from January 1999

to December 2008. They found that Islamic equity fund investors are unable to identify funds that will outperform benchmarks in the future. However, these same investors have some ability in identifying poorly performing funds.

In the Indonesian market, Arifin (2018) analysed the smart money effect of the equity mutual funds. The sample included 44 equity mutual funds during the period 2012-2017. The smart money effect was evaluated using regression with a four-factor model as in Carhart (1997). The results showed that there is no smart money effect. Further evidence suggested that investors base their investment decisions on the logarithm of total net assets and quarterly net cash flow.

At the fund family level, there is one study in the Korean market. Joo & Park (2011) examined the smart money effect at the fund family level for the period from January 2001 through to December 2009. The results supported the smart-money effect at the fund-family level as investors put more money into high star fund holding ratio families. Furthermore, there will be a persistency in star fund holdings for high star fund holding ratio families. In general, the fund and fund family flows and performance still remain an interest in mutual funds research. Most past studies found that individual investors chase past winners. Indeed, behavioural finance explains some of the flow-performance relationships.

3.3.7 Fund Family Strategies

In fact, all mutual funds are managed by a management company, these management companies are called “fund families”. Thus, all mutual funds are related to a fund family if mutual funds are managed and operated by fund families; therefore, the mutual funds' issues should be examined at the fund family level. Fund families provide certain advantages, which will reduce fund expenses. In addition, they also do

better in asset management in that large families have larger pools of managerial resources, distribution channels, and more research is carried out. As a fund family has its own goals to achieve, a fund family may also take on different strategies to attract investment. Malhotra & McLeod (1997) concluded that larger families enjoy economies of scale, and, thus, lower the expense ratio and perform better. This is because families learn from experience and operate more efficiently over time. After that, Dowen & Mann (2007) concluded the same results.

Although several studies examined the fund family behaviour and strategies on the developer countries, most studies focused on the US market (Khorana & Servaes 1999; Zhao 2004; Massa 2003; Guedj & Papastaikoudi 2004), while a few analysed the significance of fund family members on the mutual funds (Elton et al. 2007). Khorana & Servaes (1999) presented evidence that fund families launch new funds when the potential to generate additional income is substantial. Fund families attempt to offer more choices to existing investors, and families also launch new funds in strategies in which they already have some existing good-performing funds.

Ippolito (1992), Sirri & Tufano (1998), and Nanda et al. (2004) found that families were oftentimes successful in drawing new flows, although a lot of their current funds were bad performers. Families tended to attract assets to all the funds they offer as long as they have at least one top-performing fund (star fund). Nanda et al. (2004) showed that families attempt to generate a star fund by increasing the number of funds in the fund family, which lowers the cross-fund return correlation. They also concluded that such a strategy is hurtful to the return in the subsequent period and that it would not benefit the investors.

Then, researchers continued to focus on the US market. Massa (2003), Guedj & Papastaikoudi (2004), and Gaspar & Massa (2006) examined how families switched

performance between funds within the fund family. They showed that mutual fund families switched resources across member funds within the fund family to favour those funds that were likely to increase the overall fund family value. Guedj & Papastaikoudi (2004) indicated that those families that centred on their major abilities tended to perform better than families that did not, whilst Massa (2003) showed that fees in mutual fund families could be lowered with many different funds being offered. Due to the wide range of funds offered, investors have many choices in which to invest. Massa argued that the industry structure of mutual funds affected the fund performance and documented some statistically strong evidence. He also explained that, when the number of funds increase, the degree of market segmentation also increases with funds differentiated into different market categories. This will later lead to poor fund performance as segmentation reduces the scope and range of activity of the manager, thereby slowing down the manager's market timing ability.

Gasper & Massa (2006) examined whether mutual fund families strategically switches performance across funds in the fund family to favour certain funds that are expected to increase the profits of the overall fund family and to the high-value funds. They used the top 50 largest fund families in the US from 1991 to 2001. They found strong evidence that the strategies used by families are through the allocation of under-priced initial public offerings and opposite trading across funds in the fund family. The cross-subsidisation evidence was obvious when the low-value fund style was performing relatively better.

Fang et al. (2014) examined the role of fund families in coordinating their fund managers by investigating the association between market efficiency and managerial placement strategies. Based on a sample of 1,869 mutual funds in the United States from 1991 to 2010, the study found that fund families prefer to allocate highly skilled

managers to less efficient funds, the idea being that these managers are more likely to turn around the funds so that higher abnormal returns can be generated. This finding suggests that fund managers are not free from interventions by fund families, and that these interventions seem to aid in improving the overall value of the fund family rather than maximizing the value of their investors' investment.

Using a specific fund family for all actively managed US domestic equity funds that belong to that fund family for the period from 2000 to 2013, Cici et al. (2018) examined how the efficiency of trading desks operated by mutual fund families affects portfolio performance and the investment behaviour of the affiliated funds. The results indicated that by operating more efficient trading desks that help reduce trading costs, fund families improve the performance of their funds significantly; they also enable their funds to trade more and hold less liquid portfolios.

Other research studied the behaviour of individual fund managers within fund families and the intra-firms competition (Kempf & Ruenzi 2007; Kempf & Ruenzi 2008). They concluded that fund managers compete with other fund managers in the same management company for better ranking in the fund family.

In summary, investors tend to react asymmetrically to fund performance. Well-performing funds attract much higher money inflows relative to the low money outflows in poor-performing funds. This convex relationship implies that the assets under the management of a fund family are expected to be larger if it has a star fund and some poorly performing funds than if it has a few average-performing funds. This effect induces the fund family's strategy of generating star fund(s).

Summary

Previous studies indicated that it is possible to take benefit from the advantages offered by the fund family through many strategies that the advantages of the fund family may provide. These strategies can also be used to improve flows to weak funds through coordination with individual fund managers. Fund family is the main controller of all fund resources within the family, so it is important to study the performance and flows at the level of fund family rather than individual funds.

3.4 Overall Summary

Based on the previous literature review, evidence at fund family level is limited compared to the mutual fund level. Most research at fund family level focused on the developed market like the USA and Korea. They used the returns of every fund in the fund family as the measure of performance. Barron's used the performance of families to develop the first fund family ranking in 1996. At the fund level, the studies concluded that Islamic funds perform better during the bear market, but conventional fund perform better during the bull market. So, this thesis seek to fill the gap by study and compare the performance at the fund family level (Islamic focused family and conventional focused family).

Concerning the issue of fund family flows, the literature concluded that fund families use the star fund strategy to attract more inflows. In general, the studies indicate this strategy has been effective, as the presence of star funds in families contribute to increased inflows not only to the star fund, but also to the other funds and fund family. That is, the strategy induces the spillover effect. The previous studies focused on the flows and spillover effect for the conventional fund family. So, this thesis seek to fill

the gap by study the flows of Islamic focused family. In addition, compare the spillover effect between the Islamic star (poor) funds and conventional star (poor) funds.

Concerning issue three, the evidence at fund family level is very limited. There is only one evidence from the Korean market that supports the future performance of star fund family. So, this thesis seek to extend the study about future performance of star families to the Islamic countries.