

How concepts of behavioral finance finance essay

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Introduction

The purpose of this dissertation is to explore how concepts of Behavioral Finance could be applied to institutional investors in the stock exchange represented by mutual funds. As a major player in any capital market, mutual funds and other institutional investors act as guarantors for maintaining the market efficiency since they represent the body of aware and informed investors who should, through their trading, restore the balance to the market that might be shaken by biased individuals' trading. But institutional investors are also prone to several behavioral biases. This research will target to review and investigate documented behavioral biases to which mutual funds are prone, namely, overconfidence, momentum, self-attribution bias and asset allocation puzzle. Then it will test for overconfidence in the Egyptian mutual funds industry through the use of independent t-test. The fund's manager attitude towards risk based on his/her previous performance level measured by the return he/she achieved compared to peers will indicate if best or worst performing funds' managers behave in a different manner. Finally it will use panel data of quarterly holdings of mutual funds for the period that starts in 2007 till 2011 to construct a model that explains mutual funds' managers' behavior indexed by their allocation of funds among different economic sectors. The model suggests that there is a strong relation between the manager decision to allocate funds to different sectors and three variables: (a) the return on that sector in the previous quarter, (b) the risk of that sector in the previous quarter and (c) the funds allocated to that sector in the previous quarter.

Problem Background

The behavioral finance literature was built on the anomalies literature that emerged in 1990s (Olsen 2001). Thus, it served the gap between what the efficient market hypothesis dictated and what actually happened in the market. It offered an alternative paradigm to explain investors' biases like overconfidence (Ritter 2003), mental accounting (Statman 1999), framing and feelings of regret (Ricciardi and Simon 2000). It explained that individuals could behave in a way that would reduce the anxiety and confusion they suffer due to the complexity of the investment problem and thus they use shortcuts that were labeled by Tversky and Kahneman (1979) as Heuristics mostly visible in the form of representativeness, availability, adjustment and anchoring (Faboozi 2008). Most of the literature focuses on individual investor decision making and in that respect one could understand the rationale of using behavioral finance principles rather than standard finance ones. This goes back to the complexity of the process and the difficulty of the optimization problem that an individual has to solve to be a rational investor. The market has always been categorized into informed and uninformed investors, with individual investors acting as the uninformed and institutional investors acting as the informed. And a big part of the literature argued that the irrationality of individual investors is neutralized by the arbitrage activities performed by the institutional investors and thus no significant effect should exist on asset prices and consequently on market efficiency. But what if those institutional investors are similarly prone -even at a lesser extent- to these behavioral biases mentioned before? These institutional investors represented by mutual funds, pension funds, insurance companies, and hedge funds ...etc. trade significant amount of assets and <https://assignbuster.com/how-concepts-of-behavioral-finance-finance-essay/>

can therefore affect assets' prices if they happen to be biased which threaten the market efficiency in a way that can't be denied. And though there are many theoretical frameworks to look at this problem, each of which targets a different objective. It starts with Tversky and Kahneman's prospect theory (1979). They proposed an alternative to the Von-Neuman Morgenstern utility theory and suggested that the utility theory will not hold for all investors because of three effects that they labeled as certainty, reflection and isolation effects. The theory assigns value to gains and losses rather than final assets and replaces probabilities with decision weights. The value function is suggested to be concave for gains and convex for losses and is generally steeper for losses resulting in the famous S-shaped curve. Decision weights are believed to be lower than the corresponding probabilities except in the range of low probabilities. Overweighting low probabilities makes it attractive to allocate money to insurance and gambling that are at odds by their very nature. This contradiction between gambling and insurance caught the attention of many scientists starting with Friedman and Savage (1948) who called the phenomenon Friedman and Savage Puzzle, which remained a challenge to the Mean-variance portfolio theory of Markowitz (Shefrin and Statman 2000). Roy (1952) followed with his Safety-first portfolio which aimed primarily at minimizing the probability of ruin. He assumed that an investor would be ruined if his wealth level falls short of a predetermined subsistence level. The principal of safety triggered Lopes (1978) to develop her psychological theory of choice under uncertainty called SP/A theory. It is a general choice framework rather than a theory of portfolio choice. Her notion of security is analogous to safety in safety-first, a general concern about avoiding low levels of wealth. Her notion

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of aspiration relates to a goal, and generalizes the safety-first concept of reaching a specific target value such as S . Potential relates to a general desire to reach high levels of wealth. In this framework, the emotions of fear and hope operate on the willingness to take risk. Roy and Lopes theories were the basis for Behavioral finance theory developed by Shefrin and Statman (2000). They presented two versions, a single mental account version and multiple mental accounts version. The second version is the most important. Its basic premise is that most investors have low and high aspirations at the same time. According to Shefrin and Statman (2000), investors want to avoid poverty, but they also want a shot at riches. Portfolios that combine low and high aspirations are often depicted as layered pyramids where investors divide their current wealth between a bottom layer, designed to avoid poverty, and a top layer, designed for a shot at riches. Those previous theories were primarily decision theories that looked into the decision of individual investors. When research began to tap the area of institutional investors and look into possible behavioral biases (Shefrin and Statman, Enquist and Shoven, Putz and Ruenzi, Grinblatt et al, Chiang and Huang), there started to evolve theories that had to do with the behavior of institutional investors. Taylor (2003) affected by Chevalier and Ellison work (1997) testing if mutual funds managers' risk is affected by their previous performance, analyzed the issue in a slightly different manner. His studies evaluated manager behavior through a strict tournament competition framework. Taylor developed a model of how fund managers with unequal midyear performances compete for new cash. Using his model of comparing competing managers, he found that when one manager becomes viewed as an exogenous benchmark (his or her portfolio becomes

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the standard) both the winners and losers gamble. However, when both managers are actively investing, the winning manager is more likely to gamble, especially when he or she possess a high gap in mid-year performance over the other manager or when stocks offer high returns with low volatility. Taylor's work reflected on possible overconfidence for winning managers which led to Choi and Lou' Model (2010). The contribution of Choi and Lou was their attempt to introduce the self-serving behavioral bias into the data and their production of a stylized model with the purpose of testing if at the end of T periods, there will be a deviation of the agent's portfolio from his benchmark index, reflecting the agent's (over) confidence in his private signal and that this deviation is monotonically increasing in both the total benchmark-adjusted portfolio return and the sum of positive benchmark-adjusted portfolio returns over the T periods. All the previous research has been conducted in developed markets where trading is very active and the number of institutional investors is vast. There isn't however, to the best of our knowledge, a model that was developed for underdeveloped emerging markets, nor a model that directly address the holding structure of mutual funds within the behavioral finance framework. The research done in Egypt on mutual funds is mostly remote from behavioral finance investing principals. Hassan (1999) conducted research on activating capital market in Egypt by developing financial instruments in the market, namely stocks, bonds and mutual funds. He concluded that mutual fund managers committed a number of mistakes in forming the funds' portfolios. In addition, the mutual fund manager decisions are of supreme importance due to their effect on the performance of the funds. Finally, he suggested that including the risk factor in evaluation of the funds' <https://assignbuster.com/how-concepts-of-behavioral-finance-finance-essay/>

performance make a great difference and does affect the rankings. Another research by Fathy (2000) investigated the role of mutual funds in supporting the economic reform program. She discussed the development of securities market and the evolution of the mutual fund industry in Egypt under the economic reform program. In addition, she illustrated evaluation techniques for mutual funds' performance, their types, advantages, forms and monitoring strategies. She concluded that mutual funds can play an important role in supporting the economic reform program through funding new investments. It can also play a major role in enhancing the banking sector role through allowing banks to establish mutual funds and broadening the investor base. She also indicated that mutual funds can activate the capital market and add a new investment vehicle to the already existing ones. Hafez (2000) on the other hand has studied the negative phenomena that described the performance of mutual funds including low returns, net asset values, share values as compared to nominal values and diminished appetite for underwriting in new issues by small investors. Asran (2004) has conducted a comparison study between open-end and closed-end mutual funds in which he examined the effect of capital market variables on mutual funds' performance. He concluded that closed-end mutual funds achieve lower degree of total and systematic risk in volatile markets. In addition, the author found that some funds achieve a higher degree of risk than the target identified in their investment strategies. Hashem (2007) has studied the role of mutual funds in directing investments in the Egyptian stock market. In this research, the author has illustrated the capital market role and all the financial instruments and institutions playing within the capital market and then she focused on the role of mutual funds and concluded that most

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mutual funds in Egypt are open-end mutual funds and that investment of these funds are concentrated in few high quality stocks. She also found that the number of mutual funds is constantly increasing in Egypt indicating increased demand from investors, which positively contributes to stock market stability and directing investments to the capital market provided that enough attention is given to legal, tax and marketing aspects. Similar to our stand before and after reviewing domestic literature on the topic, we are still missing the behavioral finance perspective when addressing funds' allocation decision and attitude towards risk because as evident in the previous studies, the focus is on studying the mutual funds' portfolios under the standard mean-variance portfolio theory rules and not within a behavioral context. This, in fact, is the primary motive for this research. The researcher wanted to address the behavioral biases present in an emerging market like Egypt and how could these biases affect the holding structure of mutual funds.

Research Problem

This research investigates if the mutual funds' managers' behavior in the Egyptian market is subject to similar behavioral biases documented for individual investors or not. The target is to reach an explanatory model for the behavior of mutual funds' managers when taking the investment decision among various economic sectors.

Purpose of the Study

The research intends to address this problem through 2 techniques, first a t-test to investigate if mutual funds' managers attitude towards risk is affected by their previous performance and ranking among peers. This part should <https://assignbuster.com/how-concepts-of-behavioral-finance-finance-essay/>

reflect on biases like overconfidence, conservatism and get evenitis. And second, the research aims to construct a model based on panel data analysis of mutual funds quarterly holding for a period of 5 years in different economic sectors to derive factors that mostly affect the decision.

Hypotheses

Using the t-test technique, the researcher will measure fund's manager attitude towards risk by the change in risk in the last quarter of a year (Q4) versus the first quarter of the same year (Q1). The assumption is that funds' managers who are believed to have achieved better returns than their peers will be overconfident and thus will increase their risk levels in Q4 versus Q1. And that funds' managers falling behind in ranking among peers will be conservative and thus will decrease their risk in Q4 as compared to Q1 because of fear to decline further in rankings if they did take more risk. In addition, average performers are not believed to alter their risk attitude significantly from the beginning of the year to the end of the year. Thus: H0: Risk Q4/Risk Q1 for top 5 performers = Risk Q4/Risk Q1 for average performers
 H1: Risk Q4/Risk Q1 for top 5 performers > Risk Q4/Risk Q1 for average performers
 H0: Risk Q4/Risk Q1 for top 5 performers = Risk Q4/Risk Q1 for average performers
 H2: Risk Q4/Risk Q1 for bottom 5 performers < Risk Q4/Risk Q1 for average performers
 H0: Risk Q4/Risk Q1 for average performers = 1
 H3: Risk Q4/Risk Q1 for average performers \neq 1
 Then using panel data analysis, the researcher believes that previous performance does affect allocation decision taken by funds' managers in future periods thus we the following model has been suggested to explain the managers' asset allocation decision:

H4:

Where: Y_{it} : asset allocation decision performed by mutual funds' managers, α_0 is the constant, α_1 is the coefficient of the independent variable, $X_{1(t-1)}$: the return on every sector, $X_{2(t-1)}$: the risk associated with investment in every sector, $Y_{(t-1)}$: the asset allocation decision in a previous period, ϵ_{it} : the error of the regression model

H_0 : There is no relation between variables

The researcher also believes that managers will be more sensitive to losses than they are to gains and thus:

H0:**H4:****Significance of the Study**

The findings from this research should reflect on the degree of rationality of mutual funds present in the Egyptian market. They should also direct our attention to the most important variables that affect the managers' decision in the allocation of funds.

Research Design

The research will be conducted on a population of 33 open-end mutual funds that were established before January 2007. All the population funds will be used to conduct the t-test to investigate if rank among peers based on performance affect attitude towards risk in later periods or not. As for the second part of the dissertation pertaining to constructing a model for explaining mutual funds managers' behavior when taking the funds' allocation decision among different sectors. Only equity funds were used from the previous total 33 funds which represent 26 funds. A sample of 14

funds will be used to test that explanatory model. Holding data of funds are not publically available, nor can be obtained from the Egyptian Stock Exchange or the Egyptian Financial Supervisory Authority given that there are no legal requirements that would make the mutual funds' managers disclose or report such information. The data was obtained through directly contacting several fund managers to provide the data in a time series. Once holding data for the 14 funds were collected, they were combined in one portfolio weighted based on Net Asset Values of the individual funds. The combined portfolio allocation among different sectors will be used to test the model previously referred to in Hypothesis 4 of the Hypothesis section.

Assumptions

Data collected from fund managers are correct and truly reflect their allocation among sectors. Portfolio formed from the 14 open-end equity mutual funds represents all other similar mutual funds. Behavior of mutual funds represents behavior of other institutional investors in Egypt.

Limitations

The research focuses on the behavior of institutional investors only, represented by mutual funds and thus the results cannot be generalized to individual investors. The time series of this study extends over a period of 5 years only starting in January 2007 and ending in December 2011 which might challenge the use of the model for forecasting purposes. Having different investment strategies within the equity funds' group is not being considered. Money market funds are not addressed by this model.

Chapter Two: Literature Review

During the 1990s, a new field known as behavioral finance began to emerge, however the foundations of the behavioral finance can be traced back over 150 years. Originally published in 1841, MacKay's "Extraordinary Popular Delusions and the Madness of Crowds" presented a chronological timeline of the various panics and schemes throughout history. The contribution of Mackay's work is identifying how group behavior could be applied to financial markets. Following this was Selden's 1912 book *Psychology of The Stock Market*, which was one of the first books to apply the field psychology directly to the stock market. (Ricciardi and Simon 2000) The main attack against behavioral finance was that it is not scientific because it doesn't have a dominant paradigm; it draws from other disciplines in an ad hoc fashion; and it is focused on short-lived and emergent phenomena. Only with the rise of the "Anomalies Literature" in the last 15 years has behaviorally oriented financial research begun to gain more applause (Olsen 2001). But Olsen (2001) thinks that behavioral finance is currently in an early stage, but still scientific stage that has been common to all new sciences. The reason it gained such applause is that it served the gap between what the efficient market hypothesis dictated and what actually happened in the market. It offered an alternative paradigm to explain investors' biases like overconfidence (Ritter 2003), mental accounting (Statman 1999), framing and feelings of regret (Ricciardi and Simon 2000). It explained that individuals could behave in a way that would reduce the anxiety and confusion they suffer due to the complexity of the investment problem and thus they use shortcuts that were labeled by Tversky and Kahneman (1979) as Heuristics mostly visible in the form of representativeness, availability, <https://assignbuster.com/how-concepts-of-behavioral-finance-finance-essay/>

adjustment and anchoring (Faboozi 2008). The uniqueness of behavioral finance is its integration of many different schools of thought and fields. The researcher thinks of behavioral finance as interplay between three disciplines: psychology, sociology, and Finance. (Refer to Fig. 1)Figure : Interdisciplinary Relationships that integrate BF

Source: Researcher's design

Behavioral finance attempts to explain and increase understanding of the reasoning patterns of investors, including the emotional processes involved and the degree to which they influence the decision-making process. Essentially, it attempts to explain the what, why, and how of finance and investing, from a human perspective. (Ricciardi and Simon 2000) It is the paradigm where financial markets are studied using models that are less narrow than those based on Von Neumann-Morgenstern expected utility theory and arbitrage assumptions. Specifically, behavioral finance has two building blocks: cognitive psychology and the limits to arbitrage. (Ritter 2003) Behavioral finance, like standard finance, is constructed with few tools that have many uses. Some of the tools of behavioral finance are identical to those of standard finance, but some are different because they reflect a different model of human behavior. The tools of behavioral finance include susceptibility to frames and other cognitive errors, varying attitudes toward risk, aversion to regret, imperfect self-control, and preferences as to both utilitarian and value-expressive characteristics. (Statman 1999) There are many causes for cognitive biases, the most important of which are the theory of cognitive dissonance and Heuristics. Under the theory of cognitive dissonance, it is difficult for our minds to hold two views that cannot easily

be reconciled. In other words, when faced with conflict, our minds unconsciously seeks better balance and tend to forget or discard the perception or attitude that least fit that balance (Fabozzi 2008). This phenomenon was labeled cognitive dissonance reduction by Festinger (1957). Festinger's theory states that people feel internal tension and anxiety when subjected to conflicting beliefs. As human beings we attempt to reduce our inner conflict in one of two ways: we either change our past values, feelings, or opinions, or we attempt to justify or rationalize our choice (Ricciardi and Simon 2000). This can operate at such low levels that we may never notice it or perceive it. This phenomenon has special importance when applied to investors, because it may cause them to hold on to a position long after disconfirming facts are available. This is evident from research that confirms that investors hold too long on losing investments and sell winners too fast (Shefrin and Statman 1985). In addition, it makes us vulnerable to sources of information that confirm our preexisting ideas. Heuristics is simply another manifestation of humans' limited cognitive abilities. They were first introduced by Tversky and Kahneman (1974) who explained that people rely on a limited number of heuristic principles -rules of thumb- that reduce the complex tasks of assessing probabilities and predicting values to simpler judgmental operations. In general, these heuristics are quite useful, but sometimes they lead to severe and systematic errors. Herbert Simon emphasized empirical research on human decision making and modeled any decision by computer, and in doing so, he concluded that real decisions differ from the Von Neumann-Morgenstern model of rationality. He found out that people satisfice rather than optimize -as indicated by traditional finance. That's when individuals use shortcuts i. e. Heuristics to face the complex

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decisions they have to make. (Faboozi 72) Kahneman and Tversky (1974) identified three basic heuristics, which include representativeness, availability and Adjustment and Anchoring. Representativeness was explained by Tversky and Kahneman (1974) to indicate situations when people are judging the probability that a certain object belongs to a certain class depending on the degree to which this object is representative of the class, that is, by the degree to which the object resembles the class. Thus, if the object under question is highly representative of the class, the probability that the object originates from the class is judged to be high. In essence, it is reasoning by stereotype. (Faboozi 72) They explain, however, that this judgment rule leads to serious errors because similarity or representativeness is not influenced by several factors that should affect judgments of probability. Some of the problems are the insensitivity to prior probability of outcomes, the insensitivity to sample size and misconception of chance. People expect that a sequence of events generated by a random process will represent the essential characteristics of that process even when the sequence is short. A locally representative sequence, however, deviates systematically from chance expectation: it contains too many alternations and too few runs. A final problem is misconception of regression. Although, one encounters many instances of regression towards the mean, people seem not to develop correct intuitions about this phenomenon. (Tversky and Kahneman 1974) This concept of insensitivity to predictability has a lot of application when addressing the mutual funds industry. Barber, Odean and Zheng (2000) examined a dataset of investments of 78, 000 households in mutual funds over the period from January 1991 through December 1996, where they suggested that investors use their

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representativeness heuristic when doing the purchase decision in mutual funds. The research was conducted within the Capital Asset Pricing Model framework using Jensen's alpha to measure the manager's abnormal return. They focused solely on U. S. equity funds as most of the studies tackling mutual funds industry. They concluded that investors believe that recent performance of the mutual fund is overly representative of the fund's manager skills and consequently the future potential of achieving higher returns than the market. This is also reflected in investor's interest to purchase funds that are actively managed rather than passive ones despite the superior performance of the latter. They posed a question, however, if chasing past performance was not completely rational and the answer was given in a research by Carhart (1997) where he explained after examining mutual funds annual returns from 1963 till 1993 that past winners are expected to outperform the market but only for a period of one year after the ranking. This short term outperformance could be explained by short term momentum effects in stocks. (Jagadeesh and Titman 1992)The irrationality of investors, however, will affect the funds' managers. Fund managers need to chase new flows because their compensation is tied to them. This poses an agency issue as Chevalier and Ellison (1997) and Brown, Harlow and Starks (1996) explained that the convex relationship between cash flows and performance may lead managers to focus on obtaining top performance status rather than focusing on maximizing risk-adjusted expected returns. The second heuristic is availability, which is a useful clue for assessing frequency or probability, because instances of large classes are usually recalled better and faster than instances of less frequent classes. However, availability is affected by factors other than frequency and

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probability. In the same way, as investors we tend to give more weight to extreme or recent events as typical, because they are most easily remembered. (Faboozi 73) Availability bias has many implications when looking into the investment arena. Individual investors are expected to react based on the available information to them through media reports or experts' reports. A good example for this phenomenon is growth stocks which harvest high demand just for selling a story. This was evident in a survey of 350 respondents in the Indian stock market conducted by Chandra and Kumar (2011). Note though, that questionnaire as a tool-despite its frequent use to tackle behavioral problems- is prone to biased results because respondents are asked based on hypothetical situations which may not represent their actual behavior. Even for institutional investors like mutual funds, the bias can still be traced. A common manifestation of availability bias is the home bias that characterizes investments of mutual funds that invest internationally. Chan, Covrig and Ng (2005) analyzed the holdings of 20, 000 mutual funds in 26 developed and developing countries in the years 1999 and 2000 to explore the allocation to domestic markets and they concluded that all 26 countries exhibited domestic bias: the share of mutual fund holdings in the mutual fund's domestic market is much larger than the world-market capitalization weight of the country. The relative bias, however, differed substantially across countries. And they added that the two main determinants of the existence of that bias is the degree of market development and familiarity with the domestic market (availability). Similar results were found when exploring the same bias in the U. S. across states and the conclusion was that managers tend to invest more in states with which they are familiar whether because of informational advantage (Coval <https://assignbuster.com/how-concepts-of-behavioral-finance-finance-essay/>

and Moskowitz 1999) or because of the manager's inexperienced, resource-constrained or just spending more time at home states (Pool et al 2011) Finally, adjustment and anchoring heuristic refers to situations where people make estimates by starting from an initial value that is adjusted to yield a final answer. Whether the initial value is suggested by the formulation of the problem or is the result of a partial computation, adjustments are typically insufficient. Different starting points yield different final outcomes, which are biased toward the initial value. Because of anchoring, people will tend to underestimate the probabilities of failure in complex systems. Kahneman and Tversky (1974) highlighted that also experienced researchers are prone to the same biases when they think intuitively. It is not surprising that useful heuristics such as representativeness and availability are retained, even though they occasionally lead to errors in prediction or estimation. What is perhaps surprising is the failure of people to infer from fundamental statistical rules as regression toward the mean, or the effect of sample size on sampling variability. However, it is worth mentioning that the effect of this bias is expected to differ between experienced and non-experienced individuals. A study by Kautsia et al (2008) conducted three controlled experiments on 300 Scandinavian financial advisers and other professionals where the subjects were asked about their stock return expectations, while varying the information that is first provided to them through a questionnaire. The time frame extended from September 2004 through March 2007. They found that experience reduces behavioral biases. Anchoring effects seemed to be more salient for students than they are for professionals. Other behavioral biases that affect decision-making and perception include overconfidence,

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momentum, mental accounting, framing and regret. According to Ricciardi and Simon (2000), human beings have tendency to overestimate their own skills and predictions for success. Shefrin (2002) further explains that when people are overconfident, they set overly narrow confidence banks. They set their high guess too low and their low guess too high. Hence they get surprised more frequently than they anticipated. Overconfidence manifests itself in a number of ways whether within the context of individual investors or institutional ones. One example that apply on both contexts is too little diversification, because of a tendency to invest too much in what one is familiar with. Also men tend to be more confident than women. (Ritter 2003) Barber and Odean (2001) tested this hypothesis and found after examining 35, 000 household accounts during the period from February 1991 till January 1997 that men trade 45% more than women. Men's tendency to be more confident is still applicable when tested on specialized highly educated professionals like funds' managers. Neisen and Ruenzi (2006) through using data on open-end equity funds through the period from January 1994 till December 2003 concluded that female fund managers take less risk than male managers. They also follow less extreme investment styles that are more consistent over time. And finally they are less overconfident and therefore trade less. However, the fact that trading is a good measure of overconfidence was questioned by Deaves el Al (2008) and through the use of experimental tests they found that it is, but they found little evidence that gender influence trading. Overconfidence can be explained by the self-attribution bias. This bias makes investors attribute good past performance to their own skills and bad performance to chance (Miller and Ross 1975). Putz and Ruenzi (2009) applied this concept to the context of professional

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money managers, namely, mutual funds managers and they found that fund managers that experience past good performance will have high turnover ratio indicating more trading activity. They also found this relationship to be non-linear indicating that worst performing managers tend to change their investment strategy. A challenge to this approach, however, is the Bayesian learning hypothesis. This would attribute the increased trading activity to the initial unawareness of a fund's manager with his skills that makes him/her update their beliefs based on the signal they receive from their past records (Putz and Ruenzi 2009). In that context, Choi and Lou (2010) presented their model based on Daniel, Hirshleifer and Subrahmanyam (1998) model to introduce the self-serving behavioral bias into the data. They wanted to test if at the end of T periods, there will be a deviation of the agent's portfolio from his benchmark index (active share), reflecting the agent's overconfidence in his private signal and that this deviation is monotonically increasing in both the total benchmark-adjusted portfolio return and the sum of positive benchmark-adjusted portfolio returns over the T periods. Choi and Lou (2010) suggested that when fund managers can only learn about the unobserved quality of their private signals through noisy feedbacks, they tend to overestimate their ability to gather and process information, and revise the perceived precision of their private signals upward too much, relative to the Bayesian benchmark, upon observing confirming public signals. In contrast, they revise their perceived precision downward too little with disconfirming public signals. Testing this stylized model on domestic equity mutual fund holdings during the period 1985-2006, the authors found that mutual fund managers accumulate unwarranted confidence as they take too much credit for success and too little blame for failure. They also

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document that manager overconfidence is associated with future underperformance. In addition, the underperformance is largely driven by managers' poor portfolio choices, particularly by their decision to place more active bets in industries that they are unfamiliar with. This evidence supports the notion that even sophisticated investors like active mutual fund managers are susceptible to behavioral biases. (Choi and Lou 2010) Another documented phenomenon of individual and institutional investors related to overconfidence is momentum. A study by Grinblatt et al (1995) analyzed the extent to which mutual funds purchase stocks based on their past performance. The study provides empirical evidence on the trading patterns of fund managers by examining the quarterly holdings of 155 mutual funds over the 1975-1984 period. The measure used for momentum measure was given by:
$$M_j = \frac{1}{N} \sum_{j=1}^N w_{jt} \left(\frac{R_{jt} - R_{jt-k}}{R_{jt-k} - R_{jt-k+1}} \right)$$
 Where: w_{jt} is the portfolio weight in security j at date t , and R_{jt} is the return of security j ($j= 1, \dots, N$) from date $t-k$ to date $t-k+1$, the historical benchmark period. This statistic is designed to measure the degree to which a fund manager tilts his portfolio in the direction of stocks that have experienced high returns in some historical benchmark period, and away from stocks that have experienced low returns. A positive measure means that, on average, the fund's current portfolio had higher returns than the portfolio that the fund would have held had no portfolio revisions been made. (Grinblatt, Titman and Wermers 1995) This study concluded that mutual funds have a tendency to buy stocks based on their past returns and that those funds following momentum strategies realized significant excess performance, while contrarian funds realized virtually no performance. (Grinblatt, Titman and Wermers 1995) Another important bias is mental accounting. People often keep their portfolio money in separate mental

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accounts or "pockets." Some money is retirement money, some is fun money, some is college education money, and some is vacation money. Markowitz tried to teach investors to consider covariance between their mental accounts and integrate them all into an overall portfolio, but he was not entirely successful. Many investors still divide their money into a mental account for downside protection (containing cash and bonds) and a mental account for upside potential (containing stocks, options, and lottery tickets). (Statman 1999) Mental accounting in financial decision making can be observed in the way investors or fund managers choose to form portfolios (Rockenbach 2002). According to the rational portfolio theory that is based on the expected utility theory, investors should care about the utility that the whole portfolio achieve for them but not the specific components of that portfolio (Von-Neumann and Morgenstern 1947, Savage 1954), but evidence shows that this is not strictly true for all investors (Tversky and Kahneman 1974). The first challenge to the mean-variance portfolio theory is the Friedman-Savage puzzle (1948). That had to do with the phenomenon of investors holding insurance and lottery tickets at the same time. This phenomenon goes along with the idea that investors tend to split their investments into safe accounts, made primarily to secure the minimum wealth level required, and a risky account, that would achieve potential of high returns. Splitting investments into secure and risky accounts was captured by many theories. Among which are Roy's Safety-first portfolio theory (1952) which aimed primarily at minimizing the probability of ruin. He assumed that an investor would be ruined if his wealth level falls short of a predetermined subsistence level. The principle of safety triggered Lopes (1978) to develop her psychological theory of choice under uncertainty <https://assignbuster.com/how-concepts-of-behavioral-finance-finance-essay/>

called SP/A theory. It is a general choice framework rather than a theory of portfolio choice. Her notion of security is analogous to safety in safety-first, a general concern about avoiding low levels of wealth. Her notion of aspiration relates to a goal, and generalizes the safety-first concept of reaching a specific target value such as S . Potential relates to a general desire to reach high levels of wealth. In this framework, the emotions of fear and hope operate on the willingness to take risk. Shefrin and Statman (2000) introduced in light of these facts the Behavioral Portfolio Theory (BPT). Within that context, there is an efficient frontier, which was compared to the mean-variance efficient frontier and showed that they do not coincide. That in fact implies that portfolios on the BPT efficient frontier are not on the mean-variance efficient frontier. Mean-variance portfolio optimizes return at a certain level of risk given by the variance and these are the only two criteria it considers. On the other hand, behavioral portfolio theory's investors choose portfolios by considering expected wealth, desire for security and potential, aspiration levels, and probabilities of achieving aspiration levels. According to Shefrin and Statman (2000), the optimal portfolios of CAPM investors based on Markowitz portfolio theory combine the market portfolio and the risk free security, while the optimal portfolio of behavioral portfolio investors resemble combinations of bonds and lottery tickets. They introduced two versions of BPT; one with a single mental account under which investors integrate their portfolios into a single mental account similar to mean-variance investors. But the real contribution was the multiple mental accounts version in which investors segregate their portfolios into mental accounts and overlook covariance among mental accounts. Portfolios that combine low and high aspirations are often depicted

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as layered pyramids where investors divide their current wealth between a bottom layer, designed to avoid poverty, and a top layer, designed for a shot at riches. In this multilayered portfolio, each layer represents a separate mental account (Rockenbach 2004). Mental accounting, when applied on portfolio formation, is not only concerned with the layers structure referred to above, but also has to do with the evaluation period of the portfolio. The problem was first introduced by Samuelson (1963) to illustrate the investor's problem when choosing among a bet that is done once and repeating it for many times. The idea was employed by Benartzi and Thaler (1993) in the context of the equity premium puzzle. They explained that this huge unexplained equity risk premium is due to risk aversion and also due to the frequent evaluation of investors to their portfolios- at least annual- which often confront them with painful losses (Byrne and Brooks 2008). They labeled this combination of risk averseness and short evaluation horizons with myopic loss aversion. They also suggested that the same concept applies for organizations like pension funds with supposedly long term investment horizon. A related puzzle to the portfolio choice theory is the asset allocation puzzle. According to Tobin's mutual fund separation theorem, each investor will have a utility maximizing portfolio that is a combination of the risk-free asset and a tangency portfolio M. All risky portfolios other than the portfolio M are inefficient. According to the theorem, more risk-averse investors should hold more of their portfolio in the riskless asset. The composition of risky assets, however, should be the same for all investors (Tobin 1958). According to Canner, Mankiw and Weil (1994), popular financial advisors don't seem to follow Tobin's theory. They actually recommend more complicated strategies than indicated by the theorem.

They direct more risk-averse investors to hold a higher ratio of bonds to stocks, which contradicts the conclusion that all investors should hold risky assets in the same proportion. They add that one can easily conclude that the fund separation theorem is false because of the existence of a huge number of mutual funds rather than one single fund. However, the existence of many mutual funds can be explained by differences in expectations. If different people have different subjective distributions over future returns, they will combine risky assets in different proportions. They discussed a number of possible explanations for the asset allocation puzzle, including the absence of a riskless asset, utility following a constant relative risk aversion utility function (CRRA) instead of the quadratic utility function and the existence of non-traded assets like human capital and nominal debts. All these explanations failed to explain the popular advice so the authors turned to non-rational explanations that don't fit within the usual range of economic theory. They thus tried to explain the asset allocation puzzle by the money illusion. The existence of money illusion is disputed by monetary economists who contend that people act rationally (i. e. think in real prices) with regard to their wealth. Shafir, Diamond and Tversky (1997) have provided compelling empirical evidence for the existence of the effect and it has been shown to affect behavior in a variety of experimental and real world situations. The set of optimal portfolios generated by the authors given quadratic utility and CRRA utility shows that using nominal returns does seem to do a good job in fitting advice actually given. The greatest discrepancy between the optimal and recommended portfolios occurs when the proportion of stock is high, which can be explained by constraints on borrowing. The optimal portfolios in this range include a short position in

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cash and since actual investors cannot borrow at the Treasury bill rate, then it becomes logical to impose a higher rate on borrowing than lending. In this case, the optimal portfolios would more closely resemble the recommended portfolios. Eventually, if one is willing to accept the assumption of money illusion, popular advice on portfolio allocation is easier to explain. The reason is that the variance-covariance matrix is different for nominal and real returns. (Canner, Mankiw and Weil 1994)Framing was introduced as a part of Kahneman and Tversky's prospect theory. Prospect theory deals with the idea that people do not always behave rationally. This theory holds that there are persistent biases motivated by psychological factors that influence people's choices under conditions of uncertainty (Kahneman and Tversky 1979). The theory assigns value to gains and losses rather than final assets and replaces probabilities with decision weights. The value function is suggested to be concave for gains and convex for losses and is generally steeper for losses resulting in the famous S-shaped curve. Decision weights are believed to be lower than the corresponding probabilities except in the range of low probabilities. Overweighting low probabilities makes it attractive to allocate money to insurance and gambling that are at odds by their very nature. (Ricciardi and Simon 2000)A dividend dollar is different from a capital dollar in prospect theory because the investor places the dollars into two distinct mental accounts. A second part of prospect theory relates to observations that people vary in their attitudes toward risk among various mental accounts. Investors are often highly risk averse with the money in their downside-protection accounts and much less risk averse, even risk seeking, in their upside-potential accounts (Statman 1999). As Friedman and Savage (1948) observed many years ago, people regularly buy both

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insurance policies and lottery tickets. A frame is a description. Frame dependence means that people make decisions that are influenced by the manner in which the information is presented. Frame dependence manifests itself in the way people form attitudes towards gains and losses. Many people make one decision if a problem is framed in terms of losses, but behave differently if the same problem is framed in terms of gains. An important reason for this behavior is loss aversion (Shefrin, 2002). Loss aversion refers to the observed tendency for decision makers to weigh losses more heavily than gains; losses hurt roughly twice as much as gains feel good. (Thaler 1999) Hedonic editing is the practice of choosing frames that are attractive relative to other frames. People with self-control problems often use hedonic editing to help them deal with those problems (Shefrin, 2002). Framing is beneficial to investors with imperfect self-control. Standard finance investors are immune to problems of self-control. They stick to their saving plans and never engage in impulse buying. Behavioral investors are subject to temptation, and they look for tools to improve control. (Statman, 1999) Framing affect the mutual funds industry in many ways. Patel et al (1991) suggested that fund flows into open-end equity funds is affected by three factors that are not predicted and do not fit the other theoretical frameworks of portfolio theory or Arbitrage pricing theory. Those factors are status-quo bias, performance effect and framing/data packaging. Framing in this sense refers to the way performance is being presented in the form of rankings. They suggest that the rankings through raw return data is more effective in fund flows than risk-adjusted data are. Framing effects also affect the way investors react to different fund's expenses. Through the use of univariate analyses and regression, Barber et al (2000) found that the framing <https://assignbuster.com/how-concepts-of-behavioral-finance-finance-essay/>

of fund expenses as operating expenses versus load fees affects the purchase decisions of investors. They suggested that investors are more sensitive to expenses that are seen as a direct charge to an investors account at the time of a trade than they are to operating expense ratios, which affect the net return earned by investors but are not incurred when an investor trades. And thus, mutual fund managers have an obvious incentive to charge their fees in the form of operating expense ratios rather than load fees. Similar results of framing effects were reported by Hastings et al (2011) for a sample of Chilean pension funds. They concluded that the decision to choose a pension fund will be affected by the framing of fees and of investment options. They suggested that investment options framed in terms of gains rather than losses attract investors more. Framing effects could be explained by loss aversion and mental accounting. As mentioned earlier, individuals would be willing to play a lottery 5 times for example, but not once and thus it can be inferred that aggregate framed portfolios are preferred to segregate ones (Steul 2006). This finding has implications for mutual funds and banks that need to put these framing effects into consideration when advising individual investors, when communicating financial products and/or when making new products. Finally, the theory of regret states that an individual evaluates his or her expected reactions to a future event or situation. Regret is the emotion caused by comparing a given outcome or state of events with the state of a foregone choice (Ricciardi and Simon 2000). Investors may avoid selling stocks that have gone down in order to avoid the regret of having made a bad investment and the embarrassment of reporting the loss. That is labeled as the disposition effect. They may also find it easier to follow the crowd and buy a popular stock

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because then if it goes down, it can be rationalized as everyone else owned it. Going against conventional wisdom is harder since it raises the possibility of feeling regret if decisions prove incorrect. This feeling explains the herding behavior that is often observed for individual and institutional investors. Grinblatt et al (1995) explained that if fund managers tend to chase performance, then they have to herd. And through applying the same measure of herding applied by Lakonishok et al (1992) which examines the proportion of funds trading a given stock that are buyers, they found that mutual funds tend to herd, i. e. buy and sell the same stocks at the same time especially when the sample is small and include a subgroup of mutual funds with a certain investment strategy. Funds are considered to exhibit herding behavior if stocks tend to have large imbalances between the number of buyers and sellers. Similar results were given by Wermers (2002) by studying a dataset that extended over 20 years. Now moving to the second building block of behavioral finance after the discussing the first one - cognitive biases - the researcher starts exploring the limits to arbitrage concept. According to Ritter (2003) misvaluations of financial assets are common, but it is not easy to reliably make abnormal profits off these misvaluations. Misvaluations are split into two types: first, those that are recurrent and arbitrageable; second, those that are non-repeating and long term in nature. For the recurrent misvaluations, trading strategies can reliably make money. Because of this, hedge funds and others zero in on these, and keep them from ever getting too big. Thus, the market is pretty efficient for these assets, at least on a relative basis. For the long-term, non-repeating misvaluations, it is impossible in real time to identify the peaks and troughs until they have passed. Getting in too early risks losses that

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wipe out capital. Even worse, if limited partners or other investors are supplying funds, withdrawals of capital after a losing streak may actually result in buying or selling pressure that exacerbates the inefficiency. Shleifer and Vishny (1997) indicate that efforts of arbitrageurs to make money will make some markets more efficient, but they won't have any effect on other markets. Mitchell et al (2002) documented 82 cases between 1985 and 2000, in which the market value of a company is less than the market value of the company's stake in its subsidiary. This should pose arbitrage opportunity, but the authors found that the price anomaly persisted indicating some barriers to arbitrage. Barberis and Thaler (2003) indicated that limits to arbitrage might be due to the lack of fairly priced close substitutes. He added that even with close substitutes, arbitrageurs might face risk from noise traders or from institutional investors who might be unable to maintain their position in the face of margin calls. This was especially significant during the dot. com bubble, where spun-out subsidiaries of tech companies exceeded that of the parent company that retained a majority stake in the spinout. In these cases, short-selling of spinout was practically very difficult reducing arbitrage opportunities.

(Lamont and Thaler 2003)One important application of the previous behavioral biases is how they affect risk attitudes of investors. Professor Slovic developed a new theoretical framework and scientific approach to the study of risk, which is now known as the Psychometric Paradigm. It used a variety of psychometric scaling techniques to produce quantitative measures of perceived risk, benefits and other aspects of perception. Extensive testing of the paradigm showed that risk is multi-attribute in nature; i. e. it involves feelings of control, dread, and knowledge. In addition, risk perceptions are <https://assignbuster.com/how-concepts-of-behavioral-finance-finance-essay/>

influenced by social and cultural factors such as trust, fairness, and democratic values. And eventually, risk always contains an emotional or affective dimension. (Olsen 2001) It is quite clear, from the previous discussion, the importance and effect behavioral factors have on investor financial decision making. Accepting the fact that investors are not always rational and that they are susceptible to behavioral biases due to different set of factors, forces us to put more effort and analysis into these factors. Awareness of such biases and knowing how to overcome them are two basic ingredients towards a better decision making process. And actually, although departures from rationality are sometimes random, they are often systematic. (Baker and Nofsinger 2002) This biased attitude towards risk can be applied to institutional investors, as well. Every investor in a mutual fund seeks to achieve maximum return while maintaining the same risk profile of the fund. This might not be the same goal for a fund manager for many reasons among which is their compensation packages and the rank of their fund versus other competing funds. Funds that are ranked in advanced position tend to have higher inflows and thus the ranking becomes a goal in itself for the mutual fund manager. In that context Jeff Enquist presented a thesis titled: " Change in Risk of Mutual Fund Managers Portfolios Caused by Behavioral Biases from Previous Performance" based on the work of Brown, Harlow and Starks (1996); Chevalier and Ellison (1997). The aim of this study was to evaluate if behavioral biases toward maximizing their personal profit are affecting managers' portfolio risk levels based upon their year-to-date performance. The author believes that when fund managers' compensation packages are structured with an upper limit for rewards on out-performance and with non-significant punishment for underperformance, managers'

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incentives are actually encouraging them to alter their portfolios' risk level in order to maximize their own personal salary. He suspects that managers who are far ahead of their peers will tend to lower their risk level so that they can ensure maintaining this top-performance level through the end of the yearly period. On the other hand, managers who are far behind their peers will take on excess risk towards the end of the year in order to try to catch up, since there are limited repercussions for falling further behind. Although, the threat of falling further behind does carry the strong disincentive of reduced job security; poor relative fund performance in comparison to peers does increase the probability that a fund manager will be fired (Khorana 1996) it provides incentive for the fund managers who are barely below the index not to take on excess risk and fall further behind. This will likely encourage very bottom performing managers to take on more risk to try to "catch up." (Enquist 2006) Brown, Harlow and Starks (1996) viewed the fund market as a tournament competition where all the funds are competing against each other for new funds. Their hypothesis was that managers desire to maximize their expected compensation, in order to seek the highest level of new fund contributions. They believed that managers sought to achieve this result by manipulating their funds risk levels relative to their previous performance for the year. To test this theory, they focused on growth-oriented mutual funds since those funds were deemed to have the easiest ability to readily adjust their risk levels, and they did their study using monthly data from 1980-1991. In their investigation they found that relative losers do increase portfolio risk to a greater degree than do winners. Chevalier and Ellison (1997) were the next to examine this theory that mutual fund managers' risk is affected by their previous performance. In their study their dataset <https://assignbuster.com/how-concepts-of-behavioral-finance-finance-essay/>

consisted of growth and growth & income funds over the 1982-1992 period. They sought to see if the relationship between flow of new investments and performance creates an incentive for fund managers to either decrease or increase the funds risk exposure based on its recent performance. The flow of new funds based on recent performance can be thought of as an incentive contract since managers' own compensation is based on the amount of funds they manage. Their analysis finds that very large returns bring higher inflows of new capital due to the fact that the fund achieves more publicity by being named one of the top funds of the year and gaining more attention from less informed investors. Like Brown, Harlow and Starks (1996), Chevalier and Ellison (1997) find that fund managers who are slightly behind the market have the incentive to take on excess risk to catch up, and fund managers who are somewhat ahead have the incentive to lock-in their gains. But from their data they found this effect reverses at the extreme positions: Fund managers who are well behind the market reduce their risk while fund managers who have been significantly outperforming the market desire to increase their own risk level. (Enquist 2006) Taylor (2003) analyzed the subject in a slightly different way. His studies evaluated manager behavior through a strict tournament competition framework. Taylor developed a model of how fund managers with unequal midyear performances compete for new cash. Viewing the mutual fund market as a tournament for new cash flow provides an interesting window to evaluate fund managers' decisions. Using his model of comparing competing managers, Taylor (2003) found that when one manager becomes viewed as an exogenous benchmark (his or her portfolio becomes the standard) both the winners and losers gamble. However, when both managers are actively investing, the winning manager

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is more likely to gamble, especially when he or she possess a high gap in mid-year performance over the other manager or when stocks offer high returns with low volatility. A theory as to why this occurs is that the winning manager is structuring his or her portfolio to try to anticipate the losing manager's behavior. If a winning manager expects the losing manager to gamble more in the second half of the year, then he/she too will gamble more in order to maintain his or her margin of higher returns. Taylor then hypothesized that the losing manager predicts the winner's behavior and as a result changes his or her action to be more conservative. Enquist (2006) dataset included large-cap growth mutual funds between 2001 and 2004. He eliminated from the data set any mutual fund that has a bond component because the risk characteristics of such funds are different and will thus not be comparable to equity funds which were the focus of the study. He used two types of measurements to test the change in funds' risk: Variance (σ^2) - to compare funds change in their risk over time. Beta (β) - calculated for each fund based on the Russell 1000 growth index which is the best measurement in the large-cap growth space. He first ranked funds by their previous performance through the year, once based on their performance through the third quarter, and again based on their performance through the first half of the year. In the first case he established the first quarter as a base quarter and then analyzed the change in risk level from the first quarter to the fourth quarter based on the funds' previous performance. Similarly, he also evaluated the change in risk from the first three quarters versus the fourth quarter. In looking at the change in risk levels, he decided that it would be more appropriate to utilize the ratio (the end of the year risk / beginning of the year risk). This ratio was chosen as the measurement of change in risk to <https://assignbuster.com/how-concepts-of-behavioral-finance-finance-essay/>

evaluate rather than just the difference (Q4-Q1) because it will account for the fact that different funds even within the same large-cap growth space have different initial risk tolerances. Through the use of independent t-test, he concluded that in comparison to the population of other funds, the funds that are ahead actually increase their risk more than the average fund over the last quarter. Similarly, the managers of funds that are behind the market as a whole actually engage in decreasing their risk level relative to their peers over the fourth quarter. These are shown by the fact that the funds that are ahead of the average generally possess positive t-test values while those that are behind the average possess negative ones. Enquist (2006) rationalized his findings by two behavioral biases, namely, overconfidence and self-attribution bias as mutual fund managers have become overconfident in their stock selection ability due to their superior performance at the beginning of the year which resulted in them increasing the level of risk in their portfolio over the end of the year. On the other front of worst performing managers who were consistently having lower change in risk than that of the other fund managers, Enquist (2006) believes that they were biased by their previous performance and that they were trying to not fall behind even further due to the disincentives they had for coming in at the bottom of their peer group, which reflects conservatism. Now, moving to the mutual funds industry in Egypt, it is clear that mutual funds have not been studied within the behavioral finance context and thus we are going to introduce some of the literature that has studied the mutual funds industry in general. According to Azmi (2008), mutual fund industry started in Egypt in 1994 with the establishment of the first mutual fund by the National Bank of Egypt, despite the issuance of the Capital Market Law (No. 95 for the year <https://assignbuster.com/how-concepts-of-behavioral-finance-finance-essay/>

1992), which organized the establishment of mutual funds, two years before that. An important characteristic of the Egyptian mutual fund industry is the dominant role of banks in terms of the establishment of the funds. The percentage of the mutual funds established in Egypt by banks (both government and private banks) is 89% as only 9 mutual funds are established by non-bank organizations out of a total of 80 mutual funds as at January 26th, 2012. (EIMA. org. eg) Although the number of funds in Egypt is very small compared to established markets, the growth is high with the increasing openness of the Egyptian economy. The following graph shows the evolution of the mutual fund industry through the period 1994-2011 (showmethefunds. com) Figure : Total Number of Funds (1994-2012)

Source: showmethefunds. com

The above graph shows the evolution of the mutual funds industry through the period (1994-2012). It indicates that the number of mutual funds has been increasing at the beginning of the period and it stopped growing during the early 2000, and then started to pick up after 2005 with significant increase in 2010. The reason can be related to the growth in the savings rate during the same period which is shown in the next graph. Figure : Total Domestic Savings

Source: Ministry of Planning and International Cooperation

The domestic savings is continuously increasing during the period with a much faster pace starting 2005 and major surge in 2010. This relationship makes sense as the mutual funds get their inflows from individuals' savings and an increase in the level of savings creates a need for more mutual funds that cater for the needs of the increased demanders for the service. This is <https://assignbuster.com/how-concepts-of-behavioral-finance-finance-essay/>

especially evident in the following graph showing the number of new funds per year during the same period. Figure : Number of New Funds (1994-2012)

Source: showmethefunds. com

Additional funds were established after the first fund in 1994 and then there were no new funds during the period 2000, 2001 and 2002. After that the number of new funds kept increasing with big numbers in 2009 and 2010. The next figure introduces the mutual funds classified by their investment strategy as at January 26th, 2012 (EIMA. org. eg): Figure : Number of Funds according to Investment Strategy It is evident from the previous graph that there are mutual funds targeting all the investment strategies that could cater for all individual investors, however it cannot be denied that there is concentration in three investment strategies, namely, equity funds, money market funds and Islamic funds constituting almost 65% of the total funds. And the author concluded that mutual fund managers committed a number of mistakes in forming the funds' portfolios. In addition, the mutual fund manager decisions are of supreme importance due to their effect on the performance of the funds. Finally, he suggested that including the risk factor in evaluation of the funds' performance make a great difference and does affect the rankings. Hassan recommended then in 1999 that an independent body should monitor the performance of mutual funds and report their returns to the public. Currently, such an organization exists, which is Egyptian Investment Management Association (EIMA). EIMA is a Professional Association established in 2000, to represent Asset and Investment Management companies, under the supervision of the Egyptian Financial Supervisory Authority (EFSA). It is responsible for establishing and applying

standards of conduct for Asset Managers in Egypt, and to help resolve disputes related to the application of these standards. (EIMA. org.

eg) However, it is important to mention that the study has been undertaken during a period of low returns in the stock market and has used the Capital Market Association (CMA) index, then, rather than an index for active stocks in the market. Asran (2004) has conducted a comparison study between open-end and closed-end mutual funds in which he examined the effect of capital market variables on mutual funds' performance. He aimed at:

Determining the difference in the degree of total and systematic risk for both types of funds. Identifying the actual risk level for both types of funds and how much they correlate with the target level of risk. Analyzing mutual funds' ability to diversify under ups and downs in the stock market.

Describing the variance in mutual funds' performance according to Jensen Measure in cases of increased and decreased returns in the stock market.

Quantitatively analyzing the effect of active stocks' movement on stock market performance from one side and closed-end and open-end mutual funds' performance from the other side. The study concluded that closed-end mutual funds achieved lower degree of total and systematic risk in volatile markets. In addition, the author found that some funds achieved a higher degree of risk than the target identified in their investment strategies.

And thus, the author made a few recommendations in light of his findings that can be summed up in the following points: Further analysis to reasons of increased total and systematic risk for open-end funds versus closed-end funds are required. Paying attention to establishing more closed-end funds as they represent 3% only of total mutual fund capital. Encouraging the establishment of mutual funds with multiple objectives and various levels of

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risk that fit these objectives. Encouraging the establishment of mutual funds targeting investment in small companies. Establishing an entity under the supervision of capital market authority (now known as Egyptian Financial Supervisory Authority-EFSA) to monitor diversification index and mutual funds' performance periodically.