كليــة التـجارة

Behavioral Financing Model in Egypt

نموذج التمويل السلوكي في مصر

A Thesis Submitted in Fulfillment of the Requirements for the Ph.D. Degree in Business Administration

بحث مقدم للحصول على درجة الدكتوراه في الفلسفة في إدارة الأعمال

إدارة مالية

الباحثة

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فبراير 2013

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Acknowledgement

First and foremost thanks to Allah the most merciful for his blessings and support that helped me throughout the way till I reached this stage. Then many thanks to my family, husband and kids.

I would also like to thank **Dr. Shamel El Hamawy** for his valuable and generous assistance. I really appreciate his useful comments and guidance during preparing this thesis. And above all, I am grateful to him for his belief in my potential and for giving me continuous support and self-confidence.

I am thankful to **Dr. HayamWahba** for her help and encouragement that helped me a lot during the preparation process. She has been available for consultations and active discussions that have helped evolve this work immensely.

I would like to extend my thanks to members of the defense panel **Dr. Islam Azzam** and **Dr. Mahrous Hassan** for their precious feedback and comments to boost the quality of the dissertation. In addition, deep gratitude is owed to **Dr. Ahmed Hassan** and **Ms. Eman Eissa** for feedback on the statistical part of this thesis.

There are a lot of people who have helped me especially through the data collection phase. To those people I am very grateful because if it hadn't been for their trust and support, I wouldn't have been able to produce this piece of work. Among the people who helped during this phase was **Mr. Omar Radwan** (HC securities), **Dr. Yasser Hassan** (Watany Bank of Egypt), **Mr. Hassan Abd Allah** (Arab African International Bank), **Mr. Karim Ewis** (Arab African Investment Holding), **Dr. Essam Khalifa** (National Fund Management Co.),**Mr. Karim Shalaby** (ShowMeTheFunds.com),

Ms. Injy Harraz (Credit Agricole Bank), **Mr. Moataz El Etreby** and **Ms. Radwa El Sharkawy** (EFG Hermes Holding).

Dedication

I dedicate this work and achievement to my mother and father who have been the power that supported me and the will that never faded. I know that I can't thank them enough for what they have sacrificed for my sake, but I can promise to spend the rest of my life in hard work to make them proud of me. *Mum and Dad I love you more than anything in the whole world for my world is nothing without you both.*

List of Abbreviations

BPT	Behavioral Portfolio Theory
CAPM	Capital Asset Pricing Model
CRRA	Constant Relative Risk Aversion
EFSA	Egyptian Financial Supervisory Authority
EIMA	Egyptian Investment Management Association
GLS	Generalized Least Squares
GMM	Generalized Method of Moments
OLS	Ordinary Least Squares
SP/A	Safety, Potential and Aspiration

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Summary

Behavioral finance is a newly emerged sub discipline of finance concerned with the study of financial markets and investor decision making within the framework of psychology and sociology. It accepts the fact that investors are human beings and not economic agents. It allows for irrationality in behavior that stems from the complexity of the financial decision making and the challenges that it poses to individuals. It is a broader paradigm that looks into what investors actually do, not what they should do. (Ricciardi and Simon 2000)

The complexity of the financial decision makes investors satsfice rather than optimize. It also makes investors suffer inner conflicts between what the market tells them and what they believe is true and thus to reduce this inner conflict, they apply some shortcuts to decision making, labeled by Tversky and Kahneman as Heuristics. (Faboozi 2008) Heuristics are simple rules of thumb that reduce the complex tasks of assessing probabilities and predicting values to simpler judgmental operations, but they are dangerous because they result in systematic errors.

The dissertation is organized into five chapters. The first chapter introduces the topic, gives a background for the research problem and identifies the research problem. The target is to reach an explanatory model for the behavior of mutual funds' managers when taking the investment decision among various economic sectors. The dissertation has a number of hypotheses testing the overconfidence level of mutual fund managers as portrayed by the change in their risk levels based on previous performance. The other set of hypotheses test the existence of a significant relationship between the manager's sector allocation decision and the return, risk and previous allocation to that sector using panel

data analysis for a sample of 14 equity funds through the period from January 2007 till December 2011.

The second chapter introduces literature review of the topic of mutual funds' managers' behavioral biases worldwide and then gives a background of the mutual funds' industry in Egypt. The chapter concludes that various behavioral biases that were introduced within the behavioral finance context are relevant to the mutual funds industry; that mutual funds are a major participant in the institutional investors market particularly in Egypt. The way such behavioral biases affect the mutual funds industry is important because of the implications it carries for mangers' degree of rationality and their biased influence on securities' pricing. If mutual funds managers are prone to the previously discussed biases, then they can't be trusted to perform their role as the informed participants in the market that achieve the balance in pricing through their arbitrage trading.

The third chapter is the methodology chapter that details the procedure that has been followed to test the research hypothesis. The research, first, conducts an independent t-test for 33 mutual funds operating in Egypt during the period from January 2007 till December 2011 to test the hypotheses that fund managers who perform better than their peers will be overconfident as reflected in an increased risk level as compared to a benchmark and that the worst performers will be conservative and will decrease their risk levels as compared to a benchmark. The second step is to estimate an OLS model for the sector allocation decision performed by the mutual fund manager for every individual sector of the 12 sectors under consideration. And finally, estimate a GLS model for the general sector allocation decision done by the manager regardless of specific sectors using panel data analysis.

The Fourth chapter introduced the data analysis and results and reflected on our major findings. For the t-test, we found that the top performers tend to decrease their risk as compared to other groups thus they are not overconfident, on the contrary, they suffer from conservatism. The average group which was assumed not to shift risk is the group that shifted risk positively indicating their need to catch up with the top performers. The ANOVA tables confirmed the same findings with higher significance levels. In addition, The OLS models of individual sectors and the GLS model for general sector allocation decision were significant indicating that the sector allocation decision depends on the sector return, risk, and allocation in the previous period.

The final chapter sums up the findings from the research and concludes that institutional investors represented by mutual funds in the Egyptian market are prone to behavioral bias. Fund managers were found to shift their risk levels based on their previous performance. They were also found to be more sensitive to losses than they are to gains. And finally some fund managers have a set strategy towards investing in some sectors regardless of their level of risk and return. All these findings question the ability of institutional investors to actually achieve the balance expected from them to make the market efficient.

The research has a few recommendations pertaining to the use of the introduced models in this paper by mutual fund managers to study the sector allocation decision of peers. It also suggests that fund managers should invest in more risky sectors as they suffer from myopic loss aversion. It finally recommends a few policy measures to be taken by mutual fund managers and EFSA to provide for more transparency and disclosure on the mutual fund data.

Chapter One

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