

國立交通大學

企業管理碩士學位學程

碩士論文

Thesis

Motivated Reasoning and Mutual Fund Selection

探討動機推理對選擇共同基金之影響

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中華民國一百年九月

Motivated Reasoning and Mutual Fund Selection

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管理學院
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碩士論文



A Thesis
Submitted to Master Degree Program of Global Business Administration
College of Management
National Chiao Tung University
In partial Fulfillment of the Requirements
For the Degree of
Master
in
Business Administration

August 2011

Hsinchu, Taiwan, Republic of China

中華民國一〇一年九月

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Abstract

Retirement planning was previously the responsibility of governments and companies, but that is currently changing. In the United States, most companies have moved or are moving from the traditional fixed benefit retirement plans to fixed contribution plans. The primary investment vehicle of these retirement plans are mutual funds, and their importance is seen in the fact that more than USD \$2 trillion from retirement plans were invested in mutual funds. Generally speaking, mutual funds can be divided into two categories: actively managed ones and passively managed funds. Within the passively managed category, there is a subcategory of funds called index funds. Index funds are made to copy the performance of stock exchanges such as the S&P 500. While actively managed funds dominate the mutual fund market, their long term performance has been disappointing. A recent study showed that only 0.6% of actively managed funds could beat the overall market over a 30 year period. While mutual fund performance versus general market performance is an area with a long history of research in the financial community, its results are mostly unknown to the general public.

In addition to ignorance, investors often fall victim to motivated reasoning that changes their evaluation of information. A commonly held belief is that that funds which have a recent record of outperforming the market will continue to do so in the future, and so investors look for funds with higher performance. Unfortunately, this popular assumption is false. When the ignorance about actively managed mutual fund performance is combined with mutual fund advertising and investors' motivated reasoning, the results could be detrimental to retirement planning. However, financial regulations assume that investors are rational and will choose the best option when information is made available to them, but is this prerequisite assumption valid? The purpose of this study is to determine whether people can overcome motivated reasoning and make choices that incorporate newly presented information. The results from this study show that the subjects were unable to make use of the financial information presented to them. The implications of these findings show that changes in mutual fund advertising practice and in investor education should be implemented to protect investors in the new world of retirement planning.

Acknowledgement

I would like to thank my advisor, Professor Chia-Chi Chang, for her effort and help throughout this process. Further, I would like to thank Professor Chak Wong for his invaluable advice and expertise that he imparted during many teleconferences.

I would also like to thank my family without whose support and encouragement I would not have been able to make it.

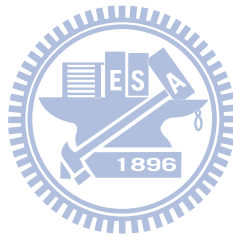


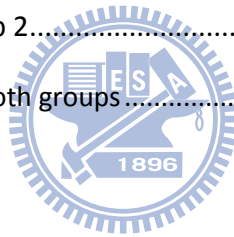
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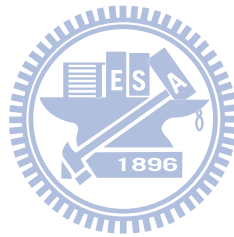


Abbreviations

EMH : Efficient Market Hypothesis

IRA : Individual Retirement Account

USD : United States Dollar



I. Introduction

1.1 Overview

Today's world of retirement planning is much different than the one faced by the previous generation. Fifty years ago, people worked faithfully for large companies that promised health and retirement benefits. Today, employees are expected to save and provide for their own retirement through savings accounts known as Individual Retirement Accounts (IRA) or 401K plans that are sponsored by their employers (employers often contribute to these 401K accounts as a benefit for their employees). What separates these retirement plans from the pension plans of the past is that the returns from the account are not guaranteed. The traditional pension plans offered a guaranteed benefit to the employee. This benefit was often measured as a percentage of income to be received after a certain number of years with the company (for example, 50% of one's annual salary at the time of retirement after 30 years of service to the company).



Today's retirement plans, however, are very different. Many companies offer 401K plans which are special retirement plans sponsored by the company. Employees are allowed to contribute a percentage of their income into the account, and they do not have to pay income taxes for the contributed amount. Additionally, companies may offer to match an employee's contribution so that an employ who contributes 5% of their annual salary to the plan would receive a matching contribution from their employer, thus allowing the employ to save an amount that is equivalent to 10% of their salary. The funds in the account are invested with the expectation of growth in the financial markets. Most plans offer a variety of mutual funds from which the employee can choose; thus, the benefits that an employee receives upon retirement are dependent upon the vicissitudes

of the market.

With such important decisions about retirement being left to individuals (who often have no training concerning investments), what should the average person do in order to invest? How should they choose the right mutual funds or portfolio of funds that will best guarantee the safety of their capital and offer the opportunity for growth?

In order to solve these problems, an entire industry of financial advisers, personal financial consultants, stock brokers, and fund managers has grown to help people manage their money for retirement. They advertise the ability to choose stocks that will produce huge returns for their clients or the right portfolio to protect against loss, but the performance of this industry of money managers compared against the rise and fall of the stock market is not promising. A recent study in the *Journal of Finance* showed that only 0.6% of mutual funds truly achieved alpha (a return greater than the market after fund fees have been charged), 75.4% of funds were even with the market after their funds have been deducted, and an amazing 24% of funds lost money when compared to the overall market.

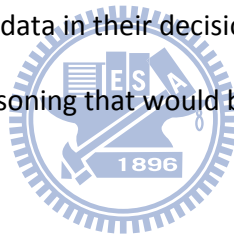
In 1973, Burton Malkiel published his revolutionary investment guide *A Random Walk Down Wall Street*. He proposed that the best way for the average person to invest is to buy a portfolio of stocks that represent the whole market. By taking this approach, an investor can be exposed to all possible areas of growth in the market, and also, they can mitigate their risks by not being overly invested in an area that has steep declines. Soon after his book was published, the mutual fund company Vanguard began offering index mutual funds. An index mutual fund is a fund that has all of the

companies of a market exchange in its portfolio. Examples of such funds would be an index fund for the S & P 500, the Dow Jones' Industrial Average, or the Russell's 2000 Small Cap Exchange, and all of these funds would mimic the performance of their respective exchange.

1.2 Problem Statement

The performance of these index funds (net of fees) compared to managed mutual funds is quite impressive. With such a long history of research touting the superiority of index funds over managed funds, why are index fund not chosen more often than managed funds?

Questions about the financial knowledge levels of the general population and the focus of advertising on managed funds are quite complex. This experiment will try to determine if people will willfully ignore established financial data in their decision making. It will also examine the vulnerability of people to motivated reasoning that would be to their detriment.



1.3 Study Significance

This study is significant because it has important implications for the realm of finance and also financial regulation. Both of these areas assume that investors are rational actors that will make decisions based on available information. Consumer behavior, however, knows that motivated reasoning can influence decisions and cause people to act irrationally. If motivated reasoning causes people to act irrationally and make poor investing decisions, the underlying assumption for the majority of financial regulations must be reconsidered.

II. Literature Review

2.1 Mutual Funds

A mutual fund is an investment company that allows many investors to invest in financial assets together as a group. With the power of group buying, an individual can purchase a mutual fund share that represents a portion of a group of equities, bonds, money-market instruments, securities or even cash. This opportunity provides the investor with diversification that could not be achieved by buying individual securities. Additionally, the fund is managed by a registered investment adviser that takes responsibility for the management of the fund's assets so that the individual is not burdened with choosing the right time to buy or sell the appropriate security. Another advantage for mutual funds is that the fund shares are redeemable and can be sold back to the fund at the current value minus the fund fees, and this attribute makes them a very liquid asset. [1]



Generally speaking, mutual funds can be divided into two broad categories: actively managed funds and passive funds. Actively managed funds have managers that decide which investment vehicles are bought by the fund and also decide when to purchase or sell the securities. Passive funds are designed to copy the performance of a selected index of securities. The manager of a passive fund is only responsible for monitoring the flow of money into the fund and maintaining the prescribed balance of securities for the index of the funds. A special subset of passive funds is called *index funds*. Index funds are designed to perfectly mimic the performance of a selected market index such as the S & P 500. [2]

The importance of mutual funds for the average American investor cannot be overstated. At the end of 2009, U.S. registered mutual funds managed approximately USD\$11 trillion in assets.[3] Personal retirement accounts collectively held USD \$2 trillion dollars in mutual funds alone as investments for the future. Among the range of investment choices, mutual funds comprised the single largest component of retirement accounts followed by individual securities [3]. Therefore, choosing the right mutual fund for the future is of paramount importance for an individual's future retirement.

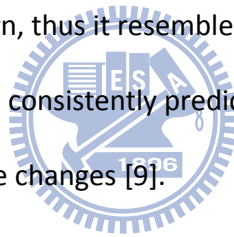
One would expect that with highly educated professionals making the decisions for mutual funds that these funds would be successful investments, but, despite the use of professional money managers, the risk adjusted performance of active mutual fund managers has actually been quite disappointing. This lack of investment success was outlined by Burton Malkiel, a Princeton University economics professor, when he published the investment guide *A Random Walk Down Wall Street*. The basic premise of the book was that “a blindfolded chimpanzee throwing darts at the Wall Street Journal can do as well as the experts” [4] . After ten editions covering almost 40 years, Professor Malkiel still holds to his original advice from 1973: no fund manager can consistently outperform the market over a long term basis. There may be years when certain managers may achieve great results, but these years of outperformance are often balanced by following years of significant underperformance over the long term [5].

2.2 Efficient Market Hypothesis

The idea that no one can consistently beat the market is based on the Efficient Market Hypothesis which states that markets fully reflect all available information about a security through the

security's price [6]. Because all known information is already reflected in the price, an amateur investor who creates a diversified portfolio can achieve equal performance with a professional investor because the professional does not have any additional knowledge that can give them a significant advantage [7].

The early history of the Efficient Market Hypothesis can be traced to the Random Walk Theory, which is a mathematic theory. The Random Walk Theory involves the idea of a drunk who is left to wander on his own in a field. In all likelihood, he may stop wandering at a point that is closer to his starting point than at any other point during his journey[8]. When computers made more complex study of stock market returns possible, researchers began to realize that the wide variation in returns did not have a discernible pattern, thus it resembled the random walk of a drunken man. There was not a clear pattern that could consistently predict when the market would go up or down, nor could it predict the magnitude of the changes [9].



As theories of price formation matured, it became clear that it was possible for the market to behave as random walk. This behavior is due to the fact that there are buyers and sellers who are all working for their own self interest. If they know something about a product, then they will use it in their price negotiation. The accumulated negotiations of the individuals in the market set the market price based on the individual interpretations of what the future price will be. Thus, if someone knows that the price of something will rise *tomorrow*, they will begin to bid a higher price until the object reaches tomorrow's price today. Since the future is unknown, prices can fluctuate randomly as new information and events are incorporated into the price. This explanation shows

why the market behaves as a random walk and is able to incorporate all known information about the future into the price of an object [10].

In 1970, the application of the Random Walk Theory to the analysis of securities returns led to the clear outline of the Efficient Market Hypothesis which was explained by Eugene Fama in his article “Efficient Capital Markets: A Review of Theory and Empirical Work”. The practical implications of EMH are that it is impossible to beat the market without taking additional risk because no one has a true advantage in information[11].

Research into the Efficient Market Hypothesis can be divided into three categories: return predictability, event studies, and tests for private information. Each form has its own specific implications for investing. Return predictability examines the prediction of future returns based on past returns and other variables like dividend yields, earnings/price ratios, and term structure variables. Event studies examine the speed of the market’s reaction to new information. Finally, the tests for private information look for abnormal returns that may be the result of inside information that may not be available to the public at large. While some of the research has shown that some short term returns of the market can be predicted, excess returns that are generated from these predictions are insignificant compared to the transaction costs (brokerage fees, taxes, management fees, etc.) of acting upon the information, thus acting upon these short-term predictions cannot beat a long-term buy and hold strategy. Therefore, the EMH is a practical reality for investors[12].

2.3 Mutual Fund Performance

The implication of this research is shown in real world results. An analysis of the performance of

actively managed mutual funds over a 31 year period (1975-2006) showed that only 0.6% of 2,076 funds actually had a return that was greater than the market after all of their fees had been deducted. Also, out of the 2,076 funds, 24% actually returned less than the market. The remaining funds showed a return that was roughly equivalent to the market net of fees [13]. It seems that choosing the “right” mutual fund for long term investment, statistically speaking, is a matter of pure luck.

In addition to performance, the fees charged by managed funds must also be considered as a factor for individual investors. A typical fee for an actively managed fund is about 150 basis points (1.5%) of the amount that is invested, and this does not include the transaction costs that are incurred due to the manager’s trading activity. In contrast, an index fund can be operated at an expense of less than 20 basis points (0.2%)[14]. As an example, if a managed fund returned 6% in a year, approximately a quarter of that return is taken in management fees, and this is taken before transaction costs are considered. An index fund with a fee of 0.2% would only take .03% of the return, thus giving a greater return to the investor net of fees. This discrepancy in fees between active funds and passive funds is even exacerbated by a rather counterintuitive finding which showed that worse performing managed funds (on a before fee basis) actually charged higher fees than the better performing funds[15].

If some funds do outperform the market for a period of time, then a logical assumption would be for investors to choose those funds, but even choosing the high-performing funds for a short period of time is a risky strategy. In the four years from 1995 to 1999, the top twenty mutual funds had an

average annual total return of 39.81% compared to the Vanguard S&P 500 Index fund which returned 26.35%. The following four years were quite different. Between 1999 and 2003, the previously top 20 funds generated a negative return by losing an average 15.10% while the index fund lost 5.34%[14]. The disclaimer “Past performance is no guarantee of future performance,” that is printed on every fund prospectus is a statement that should be taken seriously. If highly educated, well trained mutual fund managers are unable to consistently make the correct choice of when to buy or sell securities, then what chance does the average person have in choosing the right time to buy or sell mutual funds?

With the statistical odds of choosing the right mutual fund so low, the problem facing the average investor is complicated, but Professor Malkiel also proposed a solution to this problem in his book. In his book, Professor Malkiel made the proposition that the best way for an individual to invest would be to invest in the whole market. He proposed the idea of a fund that would invest in all of the companies of a market. Following the publication of *A Random Walk*, 1976, Vanguard introduced the first index fund of the S & P 500 Stock Exchange in 1976 [6]. At the end of 2009, 359 index funds managed USD \$837 billion in assets [3].

The performance of index funds has been impressive. Over the period 1973 to 2003, an S&P 500 Index fund out performed 90% of managed equity funds. Even more impressive was that the index fund outperformed the average return of managed equity funds by 2.24%[14].

With more than 30 years of research and observations of real world performance behind it, the Efficient Markets Hypothesis and the idea of index investing stands on solid academic and practical ground.

2.4 Mutual Fund Advertising

According to traditional financial theory, mutual funds and all other investments should be evaluated on the basis of risk and return. If higher risk is taken, then a higher return should be expected for the additional risk [16]. However, in actual practice, retail level mutual fund purchasers do not follow this behavior. Studies have shown that performance rankings and investment performance track records are the primary criteria used by investors for selecting a mutual fund [17]. This method of choosing immediately violates the warning, “Past performance is no guarantee of future performance”.



This violation of economic theory occurs because the average mutual fund buyer is not an expert in mutual funds or economic theory. They often do not understand the wide range of options available to them, and they are not trained in how to properly analyze the fund [17]. Yet, despite this inexperience and lack of knowledge, they are still expected to use mutual funds as the primary investment option for personal (or company sponsored) retirement plans. Without proper knowledge, training, or the time to acquire either, investors often rely on heuristics for their decision making instead of statistical analysis. Due to the use of anchoring heuristics that set a baseline expectation, investors are easily influenced in their expectations of future returns by the information that they receive from advertising [18].

Mutual fund advertisers have responded to the average investor's heuristics and desire for mutual funds with proven (yet unpredictable) track records. Top performing funds were supported with advertising dollars as a way to appeal to the average investor. Between 1998 and 2001, the median 5-year rank for an advertised fund was the 88th percentile [19]. By advertising only the highest performing funds, advertisers attempt to influence the expectations of investors and have a real effect on the flow of money into the fund.

It seems that the advertisers are having their desired effect in the real world operation of the fund. More concrete evidence concerning the effect of advertising was explained by Jain and Wu (2000) who showed that mutual funds selectively advertised funds with superior performance. After the advertisements, fund flows into the advertised funds were significantly larger than money flowing to funds with similar objectives. The advertising had the intended effect of drawing more money into the fund. It is ironic, however, that in the period after the advertisement, the previously advertised, superior fund underperformed the benchmark S & P 500 Index.

2.5 Motivated Reasoning

Traditional consumer behavior theory posits a process that occurs in every purchase decision. Consumers begin by gathering information on the product class of interest from internal and external sources. After gathering their information, they choose the qualities of the product that are most important to them, and with the list of important qualities, they choose the product for purchase.

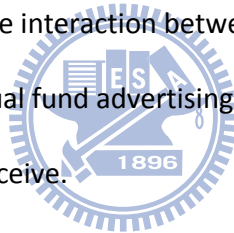
In the information search process, information about products can come from two sources: interpersonal and impersonal communication. Interpersonal communication comes from both informal (friends and family) and formal (organizations) sources. Impersonal communication is mass communication that is not tailored for a specific individual. In the case of mutual funds, impersonal sources include advertising, direct mail, and published fund statistics; informal interpersonal sources are family and friends; and formal interpersonal sources are advisors.

Motivated reasoning occurs in the first stage of the purchase process, the information search. When people search for information and evaluate information in a way that affirms their goals, they are using motivated reasoning [20]. Motivated reasoning especially affects how information is perceived, whether it will be counter argued, and how easily it will be accepted by the receiver. Messages that are consistent with one's beliefs or goals are not as likely to be argued against as information that is not consistent with one's beliefs or goals [21].

In addition to motivated reasoning, hope plays a role in how people view information. Hope can come in two forms: promotion hope and preventive hope. Promotion hope will give people the hope that they can achieve their goals. Preventive hope will give people the hope that they can avoid something that is negative. Promotion hope evokes positive feelings because people like believing that they can achieve their goals in life [22]. However, when people feel that their goals are threatened, they will look for something to help them achieve their goal. At this point, a threatened hope causes people to engage in motivated reasoning as they look for something to help them achieve their goals [23].

The interaction of motivated reasoning and mutual fund purchases is very important. It is a generally accepted principle that most people will prefer more money to less money. Because of greed, people are motivated to choose a fund that they think will give them the best return in the future. Due to the desire to get more money, when consumers begin searching for funds, they usually search for the funds with the best previous performance. In response to this desire, mutual fund advertisers promote their funds with the best performance record without regard to possible future performance (which cannot be accurately predicted).

It is a generally accepted principle that people will always prefer more money to less money; therefore, anything that proposes to help people gain more money (or prevent the loss of money) will elicit feelings of hope. Because of the interaction between hope and motivated reasoning, people may be more vulnerable to mutual fund advertising because they do not think of ways to argue against the messages that they receive.



III. Purpose of the Experiment

3.1 Hypothesis 1

It seems that the average mutual fund consumer is a victim of motivated reasoning and well run marketing campaigns, and this interaction will work to the detriment of most investors. The purpose of this experiment is to see if investors can be educated about the advantages of index funds and avoid falling victim to examining only the past performance of a fund.

H₁: After hearing about managed fund performance versus index fund performance, subjects will choose allocate a greater percentage of money to index funds than to managed funds.

3.2 Hypothesis 2

Even after hearing the facts and research in from the field of finance, people will still be swayed by a “sales pitch” that promises greater returns than the market.

H₂: After hearing about managed fund performance versus index fund performance, people who hear a sales pitch will purchase the fund recommended by the salesmen in greater numbers than those who do not hear the sales pitch.

IV. Experimental Design

4.1 Subjects

The experiment was conducted with 55 graduate level students taking an English language economics class at National Chiao-Tung University in the city of Hsinchu, Taiwan. Roughly a quarter of the participants were between the ages of 20 – 25, about half were between 26 – 30, and the remainder were over the age of 30. Out of the group, 20 participants claimed to have less than six years of investing experience, with the rest claiming a greater amount of experience. Most of these students are relatively young people with little professional experience before joining graduate school. After graduation, many of them will be faced with making their own choices concerning their retirement plans, thus, the information presented to them was personally relevant for their future situations.

4.2 Experiment Implementation

All of the students were given a presentation that introduced them to the basics of the mutual fund industry (see *Appendix I*). The presentation described how a mutual fund operated, differences between managed and passive funds, and how to evaluate a fund based on different criteria. The most important part of the presentation was information summarizing a recent article from the

Journal of Finance. The article, “False Discoveries in Mutual Fund Performance: Measuring Luck in Estimated Alphas”, was published in 2010 [13]. It showed that out of 2,076 actively managed funds, only 0.6% gave a greater return than the general market net of fees, 75.4% gave a return that was roughly equivalent to the market after fees had been deducted, and an amazing 24% of funds performed worse than the market. The funds were analyzed over a 31 year period from 1975 to 2006.

Following this presentation, the participants were randomly divided into two groups. Group 1 was shown a presentation from a financial professional, Professor Chak Wong. Professor Wong is a professor of economics at Hong Kong Chinese University with many years of investment banking service for Barclays, UBS, and Goldman Sachs. Professor Wong gave a two-and-a-half minute presentation recommending a mutual fund that specialized in the US Real Estate Market.



Group 2 was taken to another room and was given a different video to watch. Their video was a walkthrough of a house that was for sale. No recommendations for any mutual funds were made.

After watching their videos, both groups were given a survey (*Appendix B*) that measured their appetite for risk, their confidence in their knowledge about mutual funds and investing, and their personal information. The key part of the survey asked them to allocate a mutual fund portfolio that would be invested for their future retirement. The choices offered a wide range of options with different degrees of risk, investment objectives, and investment specialties. The funds were

described by their goals, betas (risk), previous performance, and management teams. Included in the list of funds was the fund recommended by Professor Wong.

4.3 Experiment Expectations

It is expected that Group 1 will respond to the sales pitch and choose the real estate fund in greater numbers than Group 2. This will test the second hypothesis about the effectiveness of the sales pitch in appealing to people's greed. Group 2 will be used to test the first hypothesis to see if they can be persuaded to allocate a larger amount of funds to index funds than to other funds.

V. Results

5.1 Hypothesis 1 Results

The analysis of the results from Group 1 showed that there was not a significant difference in the percentage of funds allocated to S&P Index fund versus the other funds. The average amount allocated to each fund for Group 2 is shown in Table 1.

Table 1: Average percentage allocated for each fund in Group 2

S & P 500 Index Fund	US Value Fund	Municipal Bond Fund	GNMA Fund	Lifestrategy Growth	US Real Estate
0.192	0.173	0.088	0.208	0.133	0.206

Sum of figures may not equal 1 due to rounding.

5.2 Hypothesis 2 Results

To test the second hypothesis, an ANOVA analysis was done on the data to search for a relationship between group assignment and mutual fund selection. It was assumed that subjects in Group 1 would select the US Real Estate Fund in greater numbers. Hearing a sales pitch did not have a

significant effect on the subjects' selection of the real estate fund ($\text{Mean}_{\text{Group 1}} = 0.1534$, $\text{Mean}_{\text{Group 2}} = 0.2058$, $F = 1.36$, $P = 0.249$). It seems that Group 2, which did not see the sales pitch chose the real estate fund in the exact same proportion as Group 1, which did see the sales pitch. Due to the results of this analysis, H_2 must be rejected.

5.3 Additional Findings

While the original hypotheses had to be rejected, some additional observations could be made from the answers given in the surveys. Two of the questions in the survey asked about the reasons why people made the choices that they did. One question asked, "Why did you choose this fund?". The most popular choice for this answer was, "I liked the fund's returns". More than 60% of respondents chose their funds based upon the previous performance of the fund. A second question asked for more clarification of their choice by asking, "What was the most important factor in your choice?". For this question, 72% of respondents reaffirmed the funds Average Annual Return as the most important factor. The use of previous performance as the selection criterion of a fund contradicted the information that was presented to them about mutual fund performance. Despite the presentation of clear evidence, the subjects still ignored the data.

VI. Discussion

6.1 Explanations for Results

The results of this study did not perform as expected. The subjects did not make use of the data that was presented to them in the presentation. There may be some logical explanations such as motivated reasoning, the location of the study, the subjects themselves, or other reasons why this may have happened.

The subjects may have felt that they could still overcome the odds and pick a mutual fund that would perform better than the overall market in the long term. This may mean that their motivated reasoning overpowered the information that was presented to them. This would explain why Group 2 did not choose the index fund as their primary investment. It would also explain why Group 1 did not choose the real estate fund that was promoted by Professor Wong.

The location of the study may also be a factor. This study took place in Taiwan in a class where approximately three quarters of the subjects were Taiwanese, and the remaining students were mostly from developing countries. While mutual funds are a huge industry in the USA, they are still developing in other countries. Due to this difference in market development, it may be harder for investors from less developed countries to imagine the importance and significance of choosing the proper mutual fund. Thus, applying survey results of investors from other countries about investments for US markets may have biased the results.

Finally, another factor may have been their age. A proven method to beat the returns of the market is to invest in things that are riskier than the market. In return for greater risk, one can expect to receive a premium if the risk is successful. However, greater risk also means that you may also lose more money. It is reasonable to assume that younger investors can have a higher risk tolerance than older investors. If a younger investor loses part of their capital early, they have more time and earnings potential to replace their lost capital than an older investor who has less time to save before retirement [6].

While this final explanation of risk and age may be reasonable, it is still illogical. The volumes of data produced by researchers have shown that it is highly improbable for an actively managed fund to beat the general market for a long period of time, especially after fees have been deducted. As Barras, Scallia, and Wermers showed in their article, only 0.06% of actively managed funds beat the market over a 31 year period, a period roughly equivalent for when the majority of subjects could reasonably expect to retire. The chances of an investor choosing a “winning” fund like are extremely slim. Also, if professional money managers are unable to accurately time the proper points to buy or sell securities, it is also unlikely that individual investors will be able to properly time the appropriate buying or selling points for mutual funds.

6.2 Future Research

Future research should try to address some of these issues. A study done with active mutual fund investors in the USA may produce different results because the market for mutual funds is more mature. Also, a study among investment professionals, such as mutual fund salesmen, may be a way to see how motivated reasoning affects the industry from a selling point since the salesmen have a vested interest in selling managed funds with higher fees and commissions.

VII. Conclusion

7.1 Implications of research

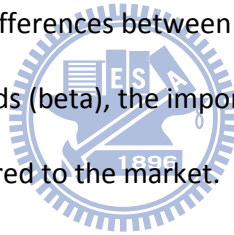
In light of previous findings and this research, it would be wise for financial regulatory agencies around the world to reexamine their guidelines for personal retirement investment. Research has consistently shown that the average individual is ill equipped to make the financial decisions that are necessary to secure their futures. The findings from this experiment, specifically, that the subjects ignored the established financial data regarding mutual funds, shows that the average

person is far from the rational, economic actor that is the prerequisite assumption for most financial regulations.

7.2 Recommendations

Therefore, changes to regulations controlling mutual fund advertising should be made. Such changes should specifically include restrictions regarding the touting of previous performance (a failed indicator of future success) in advertisements. Another change would be to require a greater focus on the performance of a fund after fees have been deducted.

Finally, due to the importance of sound financial planning, greater investor education should be added as a requirement before individuals are allowed to invest in retirement programs. Education programs should include knowing the differences between actively managed and passive funds, training in understanding the risk of funds (beta), the importance of fees, and the historical, average long-term performance of funds compared to the market.



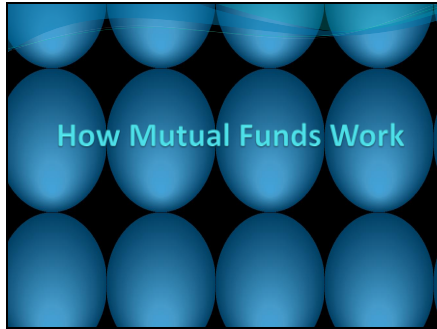
The future of retirement planning and investing is constantly changing. As these changes develop and more responsibility is passed from professionally trained investors to amateur investors, mutual fund companies and regulators will have to change some of their basic assumptions.

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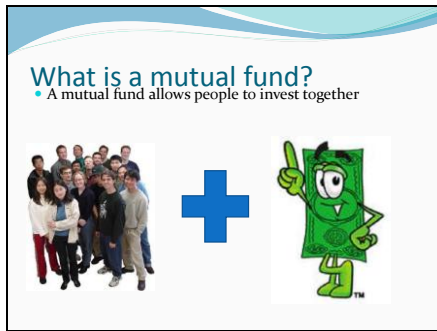
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Appendix 1 – The first presentation given to both groups of the experiment

Slide 1

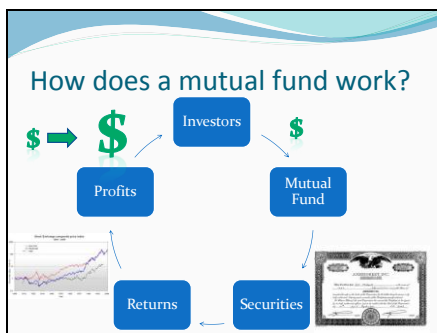


Slide 2



A mutual fund allows people to pool their resources and invest together.

Slide 3



A mutual fund is a pretty simple concept. Investors put money into the fund. The fund takes all of the money together and buys securities with it. When those securities are sold later, the returns go to the fund. The fund charges fees for its buying and selling activity, and if there is a profit, it goes back to the investors.

Slide 4

What are the advantages of mutual funds?

- Diversity
- Professional Management
- Easy to buy or sell
- Records are kept by the fund and easy to use for taxes

A mutual fund has a few advantages over buying stocks or bonds. By pooling resources together, people can have a mutual fund that represents many different companies and reduce their risk compared to owning stock from a single company. A professional management team makes all of the trading decisions and can focus on managing the fund because it is their job. Fund shares can be converted to cash very easily. Finally, the fund keeps all records and sends statements to share holders that are easy to use for tax purposes.

Slide 5

What does a mutual fund invest in?

- Mutual funds invest in almost anything
 - Stocks
 - Bonds
 - Commodities
 - Money markets
 - ??????



- Mutual funds invest in almost anything
 - Stocks
 - Bonds
 - Commodities
 - Money markets
 - ??????

Slide 6

What kinds of mutual funds are there?

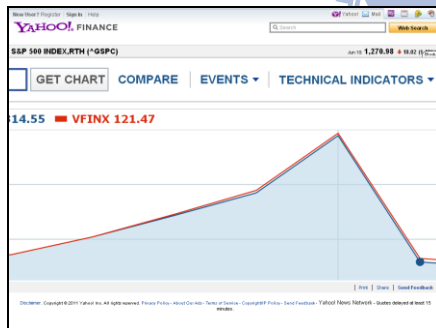
- There are two kinds of mutual funds:
 - Actively managed funds
 - Passively managed funds

Index Funds



There are basically two kinds of mutual funds: Actively managed funds and Passively managed funds. (Click for picture) Actively managed funds have professional manager that choose what to buy and sell and when to do it. A passively managed fund buys stocks from a list and holds them. They only buy and sell enough stocks to keep the balance that their list wants. They could choose any way to select this list. They could choose the top 10 companies in an industry, or just US treasury bonds, or any other thing. The only requirement is that they follow a set formula so that independent decisions are not being made. Finally, there is a special type of passively managed funds, called Index Funds (click again).

Slide 7



Index funds copy the performance of the target index. The chart shows the performance of the Vanguard S&P Index 500 compared to the performance of the S & P 500 Index. The performance identical.

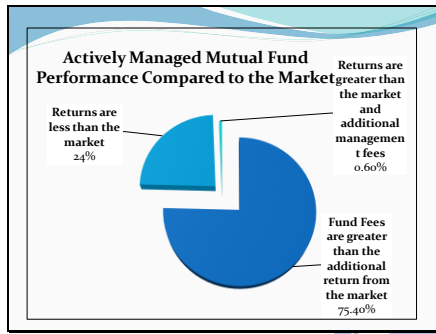
Slide 8

How do mutual funds perform?

- A recent *Journal of Finance* article compared the results of mutual funds.
- Barras, L., O. Scaillet, et al. (2010). "False Discoveries in Mutual Fund Performance: Measuring Luck in Estimated Alphas." *The Journal of Finance* LXV(1): 39.

- A recent *Journal of Finance* article compared the results of mutual funds.
- Barras, L., O. Scaillet, et al. (2010). "False Discoveries in Mutual Fund Performance: Measuring Luck in Estimated Alphas." *The Journal of Finance* LXV(1): 39.

Slide 9

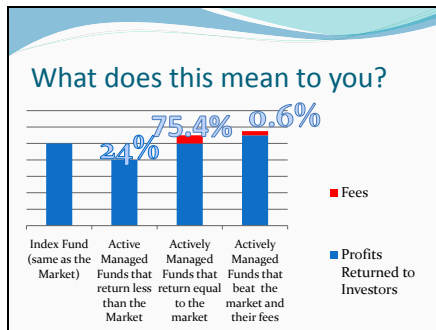


Returns are greater than the market and additional management fees -- 0.60%

Returns are less than the market - 24%

Fund Fees are greater than the additional return from the market - 75.40%

Slide 10




As you saw in the pie chart, only 0.6% of funds provide a return above the market after their fees were deducted. This chart may help you to understand better. The dark blue part shows the amount returned to investors. 24% of managed funds actually returned less than the market did. 75.4% returned an amount equal to the market after their fees had been deducted. Fees are shown in red. Finally, only 0.6% of the actively managed funds returned an amount greater than the market and their fees.

Slide 11

Why is all of this important?

- Mutual funds are the primary investment for most personal retirement plans.
- Choosing the right funds is important for the long-term future of retirement



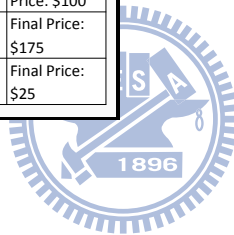
- Mutual funds are the primary investment for most personal retirement plans.
- Choosing the right funds is important for the long-term future of retirement

Slide 12

How do I choose the right mutual fund?

What does Beta Mean?

Market (Beta =1)		Mutual Fund Share (Beta = 1.50)	
Movement	Starting Price: \$100	Movement	Starting Price: \$100
50% ↑	Final Price: \$150	75%↑	Final Price: \$175
50% ↓	Final Price: \$50	75%↓	Final Price: \$25



Slide 13

Intermission

- At this point, we would like everyone to take a short break
- Those with *Group 2* on their surveys need to go to Room A203

Appendix 2 – Presentation given to Group 1

Slide 1

Next We Will have a brief presentation from Hong Kong Chinese University Professor Chak Wong

- Professor in Finance Practice (Oxford University)
- Director, MSc Program in Finance
- Associate Director, MBA Programs
- Director of Business Development, The Asia-Pacific Institute of Business



This slide is to introduce Chak to the Audience. I included the clip of him on CNN to help increase his credibility more quickly because the audience is not familiar with him.

Slide 2



This slide will be for Chak's presentation.



Slide 3

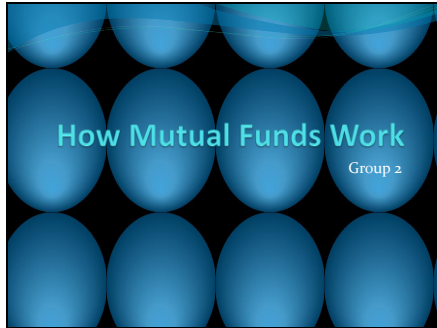
Your Task

- Imagine that you are planning for your own retirement.
- Please open the papers that you have and complete the survey
- Choose a group of mutual funds that you think will be the best for your future.

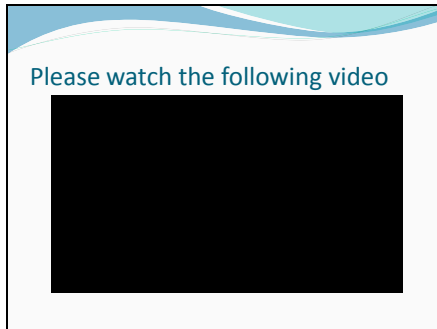
- Imagine that you are planning for your own retirement.
- Please open the papers that you have and complete the survey
- Choose a group of mutual funds that you think will be the best for your future.

Appendix 3 – Presentation given to Group 2

Slide 1

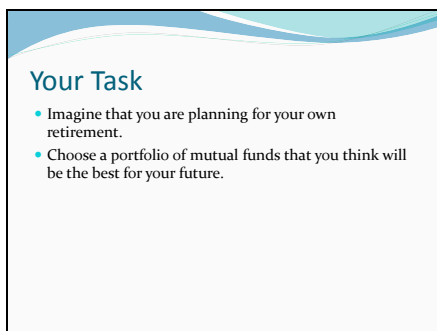


Slide 2



This is the placebo video that Group 2 will watch. This way, they see something related to real estate, but it is not an advertisement for the fund.

Slide 3



- Imagine that you are planning for your own retirement.
- Choose a portfolio of mutual funds that you think will be the best for your future.

Appendix 4 – Survey form completed by both groups

Financial Risk Assessment

Imagine that you have the opportunity to pay to play a game. For this game, you get to flip a coin. If you win, you get \$100USD. If you lose, then you get nothing. AT MOST, how much are you willing to pay?

- A. \$10 USD
- B. \$20 USD
- C. \$30 USD
- D. \$40 USD
- E. \$50 USD
- F. \$60 USD
- G. \$70 USD
- H. \$80 USD

Mutual Fund Knowledge

1. How knowledgeable are you about mutual funds?
 - a. I know a lot about mutual funds.
 - b. I know more than average about mutual funds.
 - c. I only know as much as the average person about mutual funds.
 - d. I know less than average about mutual funds.
 - e. I know nothing about mutual funds.
2. Do you know the difference between a managed fund and an index fund?
 - a. Yes
 - b. No
3. How confident are you that you can choose the right things to invest in?
 - a. Very confident
 - b. Confident
 - c. Neutral
 - d. Not Confident
 - e. Very unconfident
4. How often have you made a profit in your investing?
 - a. Very often
 - b. Often
 - c. Seldom
 - d. Never
 - e. I don't invest

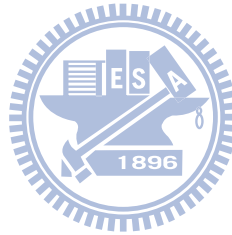
Mutual Fund	Goal	Risk (10-Year Beta)*	Average Annual Return for 10 Years (%)**	Management Team	Allocation Percentage
S & P 500 Index Fund	Copy the performance of the S & P 500 Stock Index	1.00	3.32	Since its purpose is to copy the actions of the index, it does not have a management team.	_____%
US Value Fund	A focus on value stocks that are generally out of favor with investors with lower P/E ratios and higher dividend yields	0.96	4.22	James P. Stetler, Principal of Vanguard. Education: B.S., Susquehanna University; M.B.A. Saint Joseph's University.	_____%
Municipal Bond Fund	Bond fund with a focus on a dollar weighted average maturity of 6 to 12 years. About 75% of the funds are in the top 3 rating categories.	0.00	0.15	Pamela Weishaupt Tynan. Education: M.B.A from Temple University.	_____%
GNMA Fund	80% of its assets are in U.S. Treasuries with a dollar weighted maturity of 1 to 4 years.	0.73	5.58	Managed by the Wellington Management Company. The firm has advised Vanguard GNMA Fund since 1980.	_____%
Lifestrategy Growth	A combination of different mutual funds with 60% in bonds, 20% to short-term fixed income investments, and 20% to common stocks.	1.40	5.10	The LifeStrategy Funds do not employ an investment advisor, but benefit from the investment advisory services provided to the underlying funds in which they invest.	_____%
US Real Estate	Invests in real estate backed derivatives and other investment vehicles.	5 Year Beta	5 Year Average Return	Mr. Worah is head of the Real Return portfolio management team. He has seven years of investment experience and holds a Ph.D. in theoretical physics from the University of Chicago.	_____%
		1.69	15.84		
Total					100%
*Beta is a measurement of the fund's volatility. If Beta is greater than 1, then the fund is more volatile (and more risky) than the market in which it operates, therefore, greater returns should be expected for carrying more risk. If Beta is less than 1, the fund is less volatile than the market in which it operates, therefore, it should be expected that the returns are less.					
**This is an average of the annual percentage returns for the past 10 year history of the fund.					

Wrap-up

1. How confident are you that you made the right choice?
 - a. Very Confident
 - b. Confident
 - c. Neutral
 - d. Not Confident
 - e. Not Very Confident

2. Why did you choose this fund?
 - a. I liked the fund's objective
 - b. I liked the fund's returns
 - c. I felt the management was better
 - d. I liked the video that I watched
 - e. Other reasons (please specify): _____

3. What was the most important factor in your choice?
 - a. Goal
 - b. Beta
 - c. Average Return
 - d. Management Team
 - e. Recommendation from the video



Basic Information

1. Are you a local (Taiwanese) student or international student?

- A. Local (Taiwanese) student
- B. International student

2. What is your program?

- A. ITI
- B. GMBA
- C. Other (Which one? _____)

2. Select your gender:

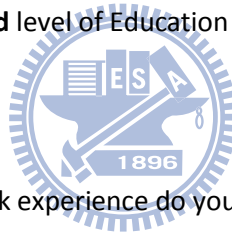
- A. Male
- B. Female

3. Please select your age range:

- A. 20 – 25
- B. 26 – 30
- C. 31 – 35
- D. 36 – or older

4. Please select your **highest completed** level of Education

- A. Bachelor
- B. Master
- C. PhD



5. How many years of professional work experience do you have?

- A. 0 – 5
- B. 6 – 10
- C. 11 – 15
- D. 16 – 20
- E. 21 or more years of experience

5. How many years of investing experience do you have?

- A. 0 – 3
- B. 4 – 6
- C. 7 – 9
- D. 10 – 12
- E. 13 or more years