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COMPARISON OF MUTUAL FUNDS COST ADJUSTED RETURNS AND THEIR BENCHMARK BETWEEN 1999-2008

GRADUATION THESIS

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INTRODUCTION

In this project the fund performances that administrated by fund managers are measured, and it is seen that the fund manager performances are not good enough. The performance of the benchmark is providing more yield compared with the fund performances between the years 1999 – 2008 considering the Sharpe Index.

İstanbul, June 2010   Oylun Erdem

ABSTRACT

In this project, the performance of mutual funds between 1999 – 2008 has been evaluated. Firstly the funds have been grouped in two main brands; A and B. After in the two branches, the funds are partitioned against their components. The expense, free return of mutual funds, costs, benchmark and standard deviation of mutual funds are calculated.

Only 47 of the 203 mutual funds with 8 years history outperformed the benchmark.

ÖZET

Projede, yatırım fonlarının 1999 - 2008 yılları arasındaki performansları değerlendirilmiştir. Öncelikle ana türlerine sonrada türevlerine ayrıştırılmış olan fonlar üzerinde harcamaları, maliyetleri, serbest getirileri, standart sapmaları gözönünde bulundurularak karşılaştırmalı olarak hesaplamalar yapılmış ve bu hesaplamaların sonucunda ekte yer alan tablolar elde edilmiştir. Kısaca çıkan sonuca 8 yıl boyunca 203 çeşit fonun 47 tanesinde göstergenin üzerinde performans gözlemlenmiştir.

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ABBREVIATIONS

CMB	Capital Markets Board
CML	Capital Market Law
CT	Corporate Tax
CTL	Corporate Tax Law
IFPC	Investment Fund Participation Certificates
ISE	Istanbul Stock Exchange
IT	Individual Tax
NRIF	Non-Resident Investment Fund
R	Asset Return
R_f	Risk Free Return
Rmf	Return of Mutual Fund
WHT	Westside Energy Corp.

1 LITERATURE REVIEW

1.1 INVESTMENT FUNDS

1.1.1 Brief Definition

A collective investment scheme basically means a way of investing money with others to participate in a wider range of investments. Terminology varies in country-base but collective investment schemes are often referred to as mutual funds, investment funds, managed funds, or simply funds. Depending on the country there is normally a bias towards the domestic market to reflect national self-interest as perceived by policymakers, familiarity, and the lack of currency risk. Funds are often selected on the basis of these specified investment aims, their past investment performance and other factors such as fees. (http://en.wikipedia.org/wiki/Collective_investment_scheme)

Around the world large markets have developed for investment objectives.

1.1.2 History of Investment Funds

Investment fund history goes back to 13th century. Funds were first established in the thirteenth century in the United Kingdom, predominantly by converting trusts into unit trusts. (http://en.wikipedia.org/wiki/Collective_investment_scheme) Currently, investment funds are mainly formed to manage the small-size investor's savings in a low risk environment for transforming these saving amounts into investment as an input of economic cycle.

1.1.3 Turkish Investment Fund Market

In Turkey, the number and volume of investment funds, mainly managing security portfolios, has shown a huge increase since they were first introduced in 1986. Due to their liquidity, Investment Fund Participation Certificates ("IFPC") are generally preferred by the majority of small to large size investors. Turkish investment funds established in accordance with the Capital Market Law ("CML") are deemed as corporations and are subject to Corporate Tax ("CT") on their worldwide income. On the other hand, the portfolio investment income of investment funds is exempt from CT for the purposes of improving the capital markets in Turkey. However, a Withholding Tax is applied on their corporate tax exempted income

either at the rate of 0% or 10% depending on their portfolio structure. Furthermore, with respect to portfolio investment income generated by their transactions in Turkey, foreign investment funds that are eligible for the so-called non-resident investment fund ("NRIF") status are also subject to the same tax treatment as Turkish investment funds based on certain requirements that are extended with the aim of increasing the foreign currency inflow to the country. Such foreign investment funds, whether or not they sell their IFPCs in Turkey, are defined as NRIFs and may benefit from the NRIF status. (www.pwc.com/en_TR/tr/assets/ins-sol/publ/investmentfunds.pdf)

1.2   HOW TO MANAGE INVESTMENT?

Risk management is a service that is performed by financial institutions. Capital market instruments such as securities, treasury bills, government bonds, repurchase agreements consisting portfolio of the fund in accordance to international regulations are managed through portfolio managing departments of the banks by professional fund managers.

1.2.1   Certificates of Participations

Investor must have public participation certificates. This shows the percentage participation of the owner of to the investment fund consisting of several types of fund trading in markets and make profit/loss depending on the daily performance of its own portfolio.

1.2.1.1 Pricing of Certificates of Participations

The following procedures are followed in the calculation of the unit price of certificate of participation:

- Determination of the value of all assets that taken apart in the portfolio fund with respect to the daily market price that they are traded,
- Determination of the net value of the assets by adding up the receivables and subtracting of the debts of the funds,
- Dividing the net value of the assets to the shares circulates in the value date.

For example; if 1.000 TL is invested to the fund amounting 10 TL for each a certificate of participation in net, 100 units of certificate of participation can be bought. If the unit value of the fund for this certificate of participation decreased down to 9 TL (considering the investor still have 100 units of certificate of participation), investment value will be decreased down to 900 TL. Inversely if the value of the fund for this certificate of participation increased up to 11 TL, the value of the investment will be 1.100 TL.

(www.gpy.com.tr/yatirim-fonlari-yonetimi/yatirim-fonu-nedir.html)

1.2.2 Basic Principles of Investment Funds

1.2.2.1 Distribution of Risk Policy

The principle of mutual funds through which individuals cannot provide themselves with the extent of the risk is distributed. Suppose you have TL 100 million. With this money, you may diversify your risk within several companies that you cannot afford by yourself (because certain amount of stocks are traded below price)

1.2.2.2 Professional Management

Security markets are technical markets requiring specific knowledge and have to be monitored closely. Because of this special feature the management must be done by trained people, in other words professionals.

1.2.2.3 Administration of Stock Exchange

Investment funds by having some restrictions may also allow funding to cash and other worthy materials such as gold. The major principle of the funds is to gain income from the interest and profit share of the mentioned items above at the end of purchasing or selling activities.

1.2.2.4. Fiduciary Ownership

Launcher of the fund must have this feature. Fund savers/holders give all the responsibility/authorization of transactions to the launchers which are protected by internal fund regulation. Therefore the launcher must behave on behalf the fund saver/holder.

1.2.2.5 Asset Protection

Funds have a legal personality, although the founders of the fund are separate from the assets. Accordance with the Capital Market Law, the funds are non-pledged assets, collateral can be subject to attachment by third parties.
(www.kocportfoy.com.tr/investment_funds/about.asp)

1.3 FUNDS

There are two different types of mutual funds in Turkey; Type A and Type B. Type A mutual funds are required to invest at least 25% of their assets in equities (funds) that are issued by Turkish companies. Mutual funds that have no such obligations are classified as Type B mutual funds.

1.3.1 Trading of Funds

Funds are trading in the markets within the specific time schedules and transactions. With respect to the type of the funds these schedule and transactions are differ:

1.3.1.1 B Type Fund (Liquid Fund is excluded)

Buy or sell orders that are posted before 14.00 are executed within the same day. Order posted after this hour are executed from the prose of the next trading day. If the market is closed on the day the order is posted the first closing posted price is used to calculate the price when available. Same day purchase and sales are prohibited.

In liquid funds; trading orders posted between 9.00 and 14.00 are executed within that day. Between 14.00 and the time of new price entrance, only selling back orders is available.

Between the times of the new price entrance up to 24.00, the selling back orders based on daily prices and purchasing orders based on new day prices can be made.

1.3.1.2 A Type Fund

Buy or sell orders that are posted before 13.30 are executed within the same day. Order posted after this hour are executed from the prose of the next trading day. There is no spread between the sell/buy prices only value date differs. In other words, purchasing orders value date is 1 work day differently 2 work days in selling orders (www.kocportfoy.com.tr/investment_funds/about.asp)

1.3.2   Major Turkish Investment Fund Types

Funds can be formed also in different styles according to their investment criteria. In this category, mutual funds are classified according to their asset allocations such as Variable, Balanced/Mixed, Affiliate Companies, Sector, Equity, Private, Index, Notes and Bonds, Liquid and Foreign Securities Funds. (Tokaç, 2006)

Bonds and Bills Funds

Funds with 51% of the portfolio, permanently invested in public and private debt instruments.

Stock Funds

Funds with 51% of the portfolio, permanently invested in stock of corporations established in Turkey, including the ones that shall be subject to privatization.

Sector Funds

Funds with 51% of the portfolio, permanently invested in securities of corporations in a certain sector.

Participation Funds

Funds with 51% of the portfolio, permanently invested in securities issued by the participations defined in the CMB.

Group Funds

Funds with 51% of the portfolio, permanently invested in securities of a certain group.

Foreign Securities Funds

Funds with 51% of the portfolio, permanently invested in foreign public and corporate sector securities.

Gold and other Precious Metals Funds

Funds with 51% of the portfolio permanently invested in gold and other precious metals and capital market instruments based on these metals traded on national and international exchanges.

Composite Funds

The funds with the entire portfolio consisted of at least two instruments. Gold and other precious metals and capital market instruments based on these and provided that the value of each item is not less than 20% of the total portfolio.

Liquid Funds

Funds with the entire portfolio consisting of capital market instruments with less than 90 days maturity.

Variable Funds

Funds with the entire portfolio not included by any of the fund types mentioned above with respect to portfolio limitations.

Index Funds

Funds with 80% of the portfolio permanently consisting of securities included in an index approved by the CMB or a sampled selection of them, where the correlation coefficient is at least 90% between the unit share value of the fund and value of the index.

Private Funds

Funds with participation certificates privately placed to individuals. Among the types of investment funds mentioned above, the types that are most frequently used in Turkey are bonds and bills funds, stock funds and composite funds.
(www.noyabilgisayar.net/ao_dersleri/3.sinif/Finansal_Yonetim/unite07.pdf)

1.3.3 Scope of Fund Activities

An investment fund is an asset established with funds collected from the public in return for participation certificates for managing a portfolio consisting of the following instruments in accordance with the principles of risk diversification and fiduciary ownership, on behalf of the investors:

i) Shares of corporations established in Turkey including the ones that shall be subject to privatization, public and corporate sector debt instruments,

ii) Foreign public and corporate sector debt instruments and stocks that can be sold and purchased within the framework of the provisions on the Protection of the Value of Turkish Currency,

iii) Gold and other precious metals traded on national and international exchanges and capital market instruments based on these and traded on exchanges,

iv) Other capital market instruments approved by the CMB, repo, reverse repo, futures, options and forward contracts. Investment funds cannot engage in any business other than

investing in the portfolio consisting of the above instruments. Moreover, there are some limitations stated in the CMB in relation to scope of activity of the funds. Some of the significant limitations are listed below:

- It is obligatory that the sale and purchase of assets traded on the stock exchange be performed through the stock exchange.
- The funds, with the purpose of hedging of fund portfolio, may engage in futures, options and forward contracts with the underlying assets of either foreign currency, gold or capital market instruments. However, the total price paid as premium for such derivative instruments should not exceed 5 % of the fund's portfolio value. • Only Type A funds may engage in repo transactions on the Istanbul Stock Exchange ("ISE") Repo and Reverse Repo Market in order to meet the cash requirement emerging from the redemption of participation certificates, not exceeding 10% of the market value of securities in their portfolio that may be subject to repo transaction.
- The funds are not permitted to undertake short sales and margin trading. (www.pwc.com/en_TR/tr/assets/ins-sol/publ/investmentfunds.pdf) (Brigham and Houston, 2004)

1.4   LIMITATION OF FUNDS

1.4.1   Limitations on the Management of the Portfolio

The manager is obliged to protect the interests of each fund in its charge and must not realize transactions against the interests of an investment fund or investors in favour of another fund or investor under his management.

The manager cannot buy assets above market value for the fund's portfolio and sell assets under market value from the fund's portfolio.

The manager cannot buy or sell assets in the fund portfolio for either personal advantage or that of third parties. The manager is obliged to be attentive and prudent while placing orders in the name of the fund. In purchases and sales in the name of the fund, the general fund strategies determined by the portfolio management contract and general decisions of the founder shall be applicable.

No written or oral guarantee can be provided for a pre-determined amount of return from the fund portfolio. (www.pwc.com/en_TR/tr/assets/ins-sol/publ/investmentfunds.pdf)

Shortly, all basic principles of investment funds are considered as transactions are realized.

1.4.2 Portfolio Investment Limitations

There are percentages limitations as composing the portfolio, all these regulations are for to protect the benefit of the parties'. Below the restrictions are presented:

No more than 10% of the portfolio value of investment funds may be invested in the securities of a single corporation.

A single investment fund cannot hold more than 9 % of the capital or voting rights in any corporation. An investment fund belonging to one founder that is under the management of a manager may not hold more than 20% of the capital or voting rights in any corporation. The total of securities issued by direct or indirect participations of the founder and manager may not exceed 20% of the fund portfolio.

The investment funds may lend at most 25% of the market value of securities in their portfolio at any time or borrow the same amount. Borrowing and lending transactions shall be for a maximum of 90 working days. Lending of the fund portfolio is possible in return for 100% cash collateral (or equivalent amount of domestic government debt instruments) against the lent securities deposited at a blocked account of the fund at the custodian. If the collateral amount is below 80% of the market value of the lent securities, the fund management should ask for the completion of the collateral amount. In borrowing and lending transactions to which the investment fund is a party, it is obligatory to include a provision on unilateral annulment of the agreement by the fund.

The funds are prohibited from any form of participation in the management of corporations whose shares they buy, and may not be represented in the management (www.pwc.com/en_TR/tr/assets/ins-sol/publ/investmentfunds.pdf).

1.4.3   Custodian

The assets in the fund portfolio shall be kept under custody by a custodian within the framework of a custodian agreement.

What advantages are provided by investment funds?

Saving capital is managed by professional and reliable managers. Mutual fund portfolio to fixed income securities that can be taken, such as foreign exchange and equity-indexed with the tools to minimize risk due to diversification is possible.

Valuation and control of securities with a coupon, interest and dividend-term follow-up collection will be held by the fund management, debit transactions, such as requiring the use of time and resources are protected. The value of the Fund Portfolio on a daily basis to reflect increases in portfolio value due saving manager with funds accrued income, as well as much of the need to want it all can turn into cash at the time.

1.5   TAXATION OF FUNDS

In general, individuals are subject to IT whereas corporations are subject to CT in Turkey. The terms "individual" and "corporation" are defined in the relevant laws. Moreover, the taxation method may vary depending on the residence status and type of portfolio investment income.

Individuals

For tax purposes, an individual is considered resident if his/her legal residence is in Turkey or if s/he stays in Turkey for a continuous period of more than six months in calendar year (leaving the country on a temporary basis is not considered as an interruption). On the other hand, individuals who do not have residence in Turkey or do not reside in Turkey more than six months in a calendar year are considered as non-resident.

Corporations

In general, the term "corporations" refers to capital corporations i.e., joint stock companies, limited liability companies and partnership in commendams, the capital which is divided into shares. Corporations that have neither legal nor business centres in Turkey are regarded as non-resident. A legal centre is the centre stated in the articles of association of corporations, whereas a business centre is the place where all activities are coordinated and administered.

1.5.1 Taxation of Investment Funds

In accordance with the CTL, Turkish investment funds that are established in accordance with the CML are deemed as capital corporations with respect to the application of CTL and ITL. Therefore, in principle the investment funds are subject to the same tax regime as corporations in Turkey. On the other hand, there are several tax incentives that have been introduced for the purposes of developing the capital market in Turkey. Accordingly, the portfolio investment income of the investment funds is exempt from CT.

1.5.2 Turkish Investment Funds

The portfolio investment income of investment funds (except for foreign Exchange funds) is exempt from CT, the mainstream rate of which is 33% (for the year 2004). The corporate tax exempted income of investment funds is subject to corporate WHT, the rate of which differs based on the types of the investment funds. Type A funds are subject to 0% WHT, whereas 10% WHT is applied for type B Funds. Portfolio investment income of resident and non-resident investment funds (excluding foreign currency investment funds) is exempted from CT.

Therefore, 10% corporate WHT applicable on type B investment funds does not always remain as a final tax burden, depending on the amount of withholding taxes paid at source. (www.pwc.com/en_TR/tr/assets/ins-sol/publ/investmentfunds.pdf)

2   DATA

The data provided for this project are taken from Stock ground Database and Treasury. Time of inception for the funds is different and it is sorted as 1999 – 2008 and used in the research.

In this project 203 mutual funds are analysed daily. First the funds are grouped as their types as A and B type; A type funds are the funds which has to be at least 75% of its equities that have to be traded on ISE on monthly weighted average and B type funds are not subject to restrictions on portfolio composition. They tend to be invested heavily in fixed-income securities, with portfolios varying primarily in their particular mix of terms to maturity.

After the funds grouped according to their types, they are grouped as their contents. The funds that are used in this project is given in the appendix.

3   EMPIRICAL FINDINGS

In this research the fund data between 1999 and 2008 years are used for analyse if they can beat the benchmark when the fund managers are guiding to manage the funds. Firstly the funds are sorted as their types as A and B Type, and each type has subsidiaries as Flexible, Interest, Complex, Private, Exotic, Bond Bills, Liquid and Exotic Bond Bills as their contents. After the classification of the funds done, prices of the equities for 1, 3, 5 and 8 years were found. The benchmarks are calculated from the market prices of them. Such as a fund is composed of 60% KYD DIBS and 40% IMKB 100, it is calculated as;

Fund price = (0,60 * the price of KYD DIBS) + (0,4 * the price of IMKB 100)

Some funds have only two components to calculate the price of it but most of them have more than two components.

By the help of this prices Rmf (return of mutual funds) are calculated as their percentage of equities that they have.

Cost is coming from the operating activities of the fund managers, the price that taken for managing the funds calculated daily for every fund. So that the naked yield of the funds can be obtained and can be compared with the risk free returns. Later 1, 3, 5 and 8 years cumulative costs are calculated.

Below table gives the average percentages returns for grouped fund returns are deducted from their costs.

Table 3.1   Rmf-Cost Table

	Rmf-Cost			
	1	**3**	**5**	**8**
A Type Flexible	13,34%	25,31%	57,06%	20,49%
A Type Interest	21,73%	28,91%	46,75%	12,10%
A Type Complex	16,69%	26,16%	66,59%	39,15%
A Type Private	15,67%	35,66%	66,04%	15,23%
A Type Exotic	-12,23%	-3,30%	-5,77%	211,16%
B Type Bond Bills	13,01%	14,35%	44,99%	98,86%
B Type Liquid	11,11%	19,37%	36,65%	154,18%
B Type Exotic Bond Bills	-10,35%	-0,57%	22,32%	-3,11%
B Type Private	16,58%	-2,73%	-2,73%	-2,73%

In this table it is seen that A Type Exotic funds for 1, 3 and 5 years, B Type Exotic Bond Bills funds for 1, 3 and 8 years and B Type Private Funds for 3, 5 and 8 years are unsuccessful due to high costs.

It is seen that in long time the funds bring more yields. A Type Exotic Funds and B Type Liquid Fund have the highest yields in 8 years time.

In the below table the number of funds that are studied in this project are given and the benchmark calculated by the help of **yearly compounded interest rates of treasury discounted auctions** (taken from Turkish Treasury) table given at the appendix.

The number of funds that beat their benchmark is underlined in this table.

Table 3.2   Funds That Can Beat the Benchmark

	# of funds					(Rmf-Cost)-Rbenchmark > 0			
	1	3	5	8		1	3	5	8
A Type Flexible	29	27	25	17		5	5	4	13
A Type Interest	20	15	13	7		3	5	1	5
A Type Complex	17	16	15	9		0	2	1	8
A Type Private	9	6	4	4		1	3	2	4
A Type Exotic	1	1	1	1		0	0	0	1
B Type Bond Bills	36	0	0	0		0	0	0	0
B Type Liquid	36	33	27	17		2	1	5	16
B Type Exotic Bond Bills	5	2	2	0		0	0	2	0
B Type Private	3	0	0	0		0	0	0	0

In the table it is seen that only few funds have beaten the benchmark. This shows that the fund management is questionable. 0's in the table are the funds that cannot beat the benchmarks and they are unsuccessfully traded.

In A Type funds only in 8 years time the A Type Flexibles can beat their benchmarks as 17 funds have operated and 13 of them can beat their benchmark. In B Type funds only in 8 years time the B Type Liquid Funds can beat their benchmarks as 17 funds have operated and 16 of them can beat their benchmarks.

3.1   Sharpe Ratio

The **Sharpe ratio** is a measure of the excess return (or Risk Premium) per unit of risk in an investment asset or a trading strategy, named after William Forsyth Sharpe. Since its revision by the original author in 1994, it is defined as:

$$S = \frac{R - R_f}{\sigma} = \frac{E[R - R_f]}{\sqrt{\mathrm{var}[R - R_f]}},$$

Where R is the asset return, R_f is the return on a benchmark asset, such as the risk free rate of return, $E[R - R_f]$ is the expected value of the excess of the asset return over the benchmark return, and σ is the standard deviation of the asset.

Note, if R_f is a constant risk free return throughout the period,

$$\sqrt{\mathrm{var}[R - R_f]} = \sqrt{\mathrm{var}[R]}.$$

The Sharpe ratio is used to characterize how well the return of an asset compensates the investor for the risk taken, the higher the Sharpe ratio numbers the better. When comparing two assets each with the expected return $E[R]$ against the same benchmark with return R_f, the asset with the higher Sharpe ratio gives more return for the same risk. Investors are often advised to pick investments with high Sharpe ratios. However like any mathematical model it relies on the data being correct. Pyramid schemes with a long duration of operation would typically provide a high Sharpe ratio when derived from reported returns but the inputs are false. When examining the investment performance of assets with smoothing of returns (such as with profits funds) the Sharpe ratio should be derived from the performance of the underlying assets rather than the fund returns.

Sharpe ratios, along with Treynor ratios and Jensen's alphas, are often used to rank the performance of portfolio or mutual fund managers.

Strengths and weaknesses of Sharpe Ratio

The Sharpe ratio has as its principal advantage that it is directly computable from any observed series of returns without need for additional information surrounding the source of profitability. Other ratios such as the bias ratio have recently been introduced into the literature to handle cases where the observed volatility may be an especially poor proxy for the risk inherent in a time-series of observed returns.

While the Treynor ratio works only with systematic risk of a portfolio, the Sharpe ratio observes both systematic and idiosyncratic risks.

While calculating Sharpe ratio the standard deviation of the grouped funds are calculated for 1, 3, 5 and 8 years. The return of the funds (Rmf) has already been calculated and the differences between the risk free rate of return. The ratio between divisions of the Rmf – Rf difference by standard deviation gives the Sharpe ratios of the portfolios.

To rank the fund that used in this project, performance of the portfolios Sharpe ratio is calculated for the funds in the below table:

Table 3.3   Sharpe Ratio

	Sharpe			
	1	**3**	**5**	**8**
A Type Flexible	-0,15	-0,82	-1,43	-9,66
A Type Interest	0,13	-0,5	-1,31	-9,4
A Type Complex	0,02	-1,81	-2,6	-17,8
A Type Private	-0,71	-10,75	-25,34	-212,36
A Type Exotic	-1,31	-2,08	-3,1	-3,43
B Type Bond Bills	-0,05	0	0	0
B Type Liquid	-0,13	-0,37	-0,6	-2,02
B Type Exotic Bond Bills	-87,64	-182,8	-232,02	-649,72
B Type Private	0	0	0	0

In this table it is seen that the how good the performance the return of funds the investors for the risks taken. Higher numbers seen in the table are showing us how better the funds are operated.

4   CONCLUSION

In this project the funds performances are compared. By the help of the tables the fund performances are underlined and it is seen that the fund managers are unsuccessful. The fund cannot beat the benchmarks and the sharpe ratios are very low. If the fund managers have been investigated on government bonds it would be better yield.

It is seen that the funds managed by fund managers cannot beet their benchmarks neither most of them cannot beet their risk free returns.

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APPENDIX

1- Yearly compounded interest rates of treasury discounted auctions

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
January	130,2	38,2	64,9	71,4	56,8	25,5	19,4	14	20,4	16,2
February	124,8	42,1	124,2	69,9	55,3	24	17,6	14	18,9	16,7
March	103,8	39,2	193,7	68,4	59,9	24,4	17	13,9	19,8	17,5
April	100,6	34,4	130,4	58,7	57,4	23,1	17,2	13,9	19,1	18,3
May	100,5	40,5	82,2	55,3	51,1	28,8	17,3	15	18,8	19,6
June	111,5	41,8	88,4	72,3	46	27,5	15,6	18,1	18,5	21,5
July	102,9	35,6	95	72,5	46,1	26,3	16	21,5	17,6	20,5
August	115,2	33,4	92,6	64,2	38,7	24,8	16,1	20,5	18,6	18,9
September	112,1	36	87,4	62,2	32,2	25,4	14,8	21,1	18,3	18,8
October	109,2	38	86,4	64,4	29,3	22,8	14,6	22	16,4	20,6
November	94,6	41	79,3	52,9	28,6	22,9	14,1	20,9	16,2	21,4
December	-	-	74,1	49,8	27,9	23,1	14,2	21,5	16,5	18,6
Annual Average	109,6	36,2	99,6	62,7	46	24,7	16,3	18,1	18,4	19,2

2- Types of Mutual Funds that are used in this project

A Type						B Type			
Flexible	Interest	Complex	Private	Exotic		Bond Bills	Liquid	Exotic Bond Bills	Private
TUD	TYH	TZK	YAA	YAY		TUF	TUL	YBE	YBO
TVY	YHS	VBF	YAR			TVT	TZ3	AOY	YDO
TZ1	AK3	VKA	YAS			TYB	VBL	GAB	GDFBANKA
TZF	APH	YAK	AAM			TZ4	VK6	OBY	
VAF	ASA	YKA	AGF			VBT	YFL	TSE	
YAD	ASPSP	AAK	ASFSABANCI			VK2	YKL	TSU	
YAF	BDJDOW	ACK	BZIINSA			VTE	YLB		
YAP	BZA	BAAALTINENJ	GADBANKA			YBU	ZBL		
ABA	DAH	DZK	TAOALARK			YFB	AAL		
ACD	DJA	ECK				YOT	ADL		
ADD	ECH	EV1				ZBT	AK1		
ADF	FAF	FYK				ABB	ANL		
AN1	FAS	GAK				AK2	BEB		
BAT	GAF	GBK				APT	BPB		
BEA	GHS	GMA				ATT	DLY		
BPA	HVS	HLK				AYF	DMB		
DUA	IAH	TE3				BET	ECB		
DZA	IYE	TKF				BPT	ELF		
EC2	KMH	TKK				DZT	FBF		
EVA	NFI					ECT	FBL		
FAD	OAH					FBT	FI5		
FI2	SMI					FI3	FLF		
FYD	STH					FTB	GA2		
GL1	TAH					GA1	GAL		
GPR	TI2					GAT	GBL		
GYH	TI3					GDU	GYL		
HAF	TSH					GTB	HEF		
HK1						GTF	HLB		
HAS						HLT	HLL		
IHD						HST	HSL		
ISA						HTT	IBL		
IYD						IYT	ILF		
KA2						KDB	KLF		
MAD						OBB	MBL		
NU1						SKB	OBT		
OAF						TBB	OML		
OBA						TBT	RJL		
RJA						TBV	SLF		
RJR						TI6	SMB		
SAD						TIF	TCB		
SMA						TPT	TEL		
ST1							TI1		
TAD							TII		
TAP							TKL		
TCD							TLF		
TEE							TSL		
TI7							TSY		

PERSONAL HISTORY

Oylun Erdem was born in 10.10.1983, İstanbul.

First and Middle School education:

Graduated Kalamış İlköğretim Okulu in 1994
Graduated Doğuş College in 2001.

University education:

Graduated Mining Engineering in İstanbul Technical University in 2007/February.

Anadolu University, Faculty of Business Administration, Department of Business Administration still studying (3rd class)

Business:

Started career in Fortisbank in 2007/April in credits department;

1 year in Financial Analysis Department as Financial Analyst
Still working in Commercial Credits Decision and Allocation Department as Assistant Credit Officer

Attended master degree program in Doğuş University in Financial Economics Department since 2008; in order to enlarge the skills for business life.