

MIMICKING ABILITIES OF EXCHANGE-TRADED FUNDS

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Resumo

Este estudo analisa a capacidade dos *Exchange-Traded Funds* (ETFs) em replicar três dos mais conhecidos índices accionistas: FTSE 100, DJ Eurostoxx 50 e S&P 500.

Os resultados mostram que os ETFs que replicam proporcionalmente os índices acima descritos apresentam valores relativos ao alfa positivos, embora dificilmente estes sejam estatisticamente significativos, enquanto os ETFs que replicam de forma alavancada e inversa os mesmos índices accionistas apresentam alfas negativos, embora não estatisticamente significativos. Os ETFs que replicam o S&P 500 fazem-no de forma mais precisa do que os ETFs que replicam o Eurostoxx 50 ou o FTSE 100. Os ETFs que replicam proporcionalmente o Eurostoxx 50 parecem evidenciar maior dificuldade em replicar o índice de referência. Os betas apresentam uma dispersão elevada, sobretudo para os ETFs que replicam o FTSE 100 e o Eurostoxx 50, o que implica que os valores de *Tracking Error* sejam igualmente dispersos.

Os ETFs que replicam proporcionalmente o FTSE 100 tendem a negociar a prémio enquanto os ETFs que replicam proporcionalmente o Eurostoxx 50 tendem a negociar a desconto. Os ETFs que replicam de forma alavancada e inversa um índice tendem a negociar a prémio. Os Betas e os *Tracking Errors* não são consistentes ao longo do tempo.

No final do estudo, é comparada a capacidade demonstrada pelos ETFs em replicar um determinado índice com a capacidade demonstrada por Fundos de Investimento tradicionais em replicar o mesmo índice. Conclui-se que, em geral, os ETFs tendem a replicar melhor um determinado índice do que os Fundos de Investimento tradicionais.

Palavras-Chave: Exchange-Traded Funds, Capacidade de replicar índices, Tracking Error, Fundos de Investimento

Abstract

This work analyses the mimicking abilities of Exchange-Traded Funds (ETFs) that track three well-known stock market Indexes: the FTSE 100, DJ Eurostoxx 50 and the S&P 500.

The results show that equity index ETFs present positive alphas, although hardly s.s., while leveraged and inverse ETFs present negative alphas although not statistically significant. ETFs that track the S&P 500 index, do it more precisely than ETFs that track Eurostoxx 50 and FTSE 100 index. The equity index ETFs that track the Eurostoxx 50 seems to be the worst into track their benchmark. Betas present a large dispersion mainly for FTSE 100 and Eurostoxx 50 ETFs' which implies that tracking errors are also larger for these ETFs.

Equity index ETFs that track the performance of the FTSE 100 index tend to be traded at a premium and equity index ETFs that track the performance of Eurostoxx 50 index at a discount. Leveraged and inverse ETFs tend to be traded at a premium. Beta and tracking errors are not consistent over time.

On the final of the paper I compare the tracking abilities of ETFs with indexed mutual funds. I find that, on general, ETFs tend to track better the benchmark than Traditional mutual funds.

Keywords: Exchange-Traded Funds, Tracking ability, Tracking Error, Mutual Funds

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Sumário Executivo

Desde o seu aparecimento, os *Exchange-Traded Funds* cativaram não só os investidores, pela forma como criaram um novo veículo de investimento que possibilita, de forma simples, diversificar um portefólio, mas também a classe académica, que cedo começou a explorar esta nova forma de investimento, suas características, vantagens e eficiência. No primeiro ponto deste estudo, procurou-se descrever a evolução que este produto financeiro tem experimentado ao longo dos últimos anos.

No segundo ponto, e no seguimento do interesse gerado em torno dos *Exchange-Traded Funds*, habitualmente designados ETFs, este estudo pretendeu investigar a capacidade evidenciada pelos ETFs em replicar três dos mais conhecidos índices accionistas: FTSE 100, Eurostoxx 50 e S&P 500. No estudo foram incluídos não só ETFs que replicam na mesma proporção o seu *benchmark* mas também os que replicam de forma alavancada e inversa a *performance* de um índice. Assim, procurou-se avaliar a magnitude do alfa e do beta para cada um dos ETFs em análise, através de uma regressão linear onde a variável dependente é o ETF em estudo e a variável explicativa é o seu *benchmark*. De seguida, estudou-se igualmente o desvio médio do retorno de cada ETF relativamente ao retorno do seu *benchmark*, através do cálculo do *Tracking Error*. Seguindo os estudos anteriormente realizados por Ackert e Tian (2000), Elton et al (2002) e Lin e Chou (2006), procurou-se adicionalmente analisar se os ETFs negociam a prémio ou a desconto relativamente ao seu *Net Asset Value* (NAV). Por fim, estudou-se a consistência dos alfas, betas e *Tracking Error* ao longo do tempo.

O último ponto do estudo centrou-se numa abordagem comparativa, onde se procurou relacionar a capacidade dos ETFs em replicar o seu *benchmark* com a capacidade dos Fundos de Investimento tradicionais em replicar o mesmo *benchmark*, sendo que para tal foram igualmente aplicados os processos relativos às regressões lineares e *Tracking Error*.

Os resultados mostraram que os ETFs que replicam proporcionalmente os índices anteriormente descritos apresentam valores relativos ao alfa positivos, embora tendencialmente não sejam estatisticamente significativos, enquanto os ETFs que replicam de forma alavancada e inversa os mesmos índices accionistas apresentam alfas negativos, igualmente não estatisticamente

significativos. Adicionalmente, foi possível observar que os ETFs que replicam o índice S&P 500, fazem-no, geralmente, de forma mais precisa do que os ETFs que replicam o índice Eurostoxx 50 ou o FTSE 100. Os ETFs que replicam proporcionalmente o Eurostoxx 50 parecem evidenciar maior dificuldade em replicar o índice de referência. Os betas apresentam uma dispersão elevada, sobretudo para os ETFs que replicam o índice FTSE 100 e o índice Eurostoxx 50, o que implica que os valores de *Tracking Error* sejam igualmente dispersos.

Os Betas e os *Tracking Errors* não se apresentam consistentes ao longo do tempo, demonstrando mesmo, em alguns casos, desvios consideráveis. Os ETFs que replicam proporcionalmente o índice FTSE 100 tendem a negociar a prêmio enquanto os ETFs que replicam proporcionalmente o índice Eurostoxx 50 tendem a negociar a desconto. Os ETFs que replicam de forma alavancada e inversa um índice tendem a negociar a prêmio.

Relativamente ao último ponto, concluiu-se que, em geral, os ETFs tendem a replicar melhor um determinado índice do que os Fundos de Investimento tradicionais.

I. Introduction

Holding the market portfolio is one of milestones of the modern finance theory. The attempts to trade large portfolios in a single transaction started in late 1970s and early 1980s with a program trading that was able to trade often a portfolio with 500 stocks like the S&P 500 index, with a single order placed at a major brokerage firm. The Exchange-Traded Funds' (ETFs) history starts in 1989 with Index Participation Shares (IPS), a proxy for the S&P 500 traded on the American Stock Exchange (AMEX) and Philadelphia Stock Exchange (FSE). More similar to futures contracts than the current form ETFs, the new financial instrument draw the attention of market participants. It was settled on cash and tracked the benchmark index very closely. The increasing popularity of the new financial vehicle threatened futures trading, pressing the U.S. Securities and Exchange Commission (SEC), which approved the product before, to force the AMEX and the FSE to stop the sales of the product in the US Market.¹

A few months later, a similar product, the Toronto Index Participation Shares (TIPS), was launched on the Toronto Stock Exchange (TSE). The TIPS were a warehouse receipt-based instrument designed to track the TSE 35 and TSE 100. TIPS traded actively and attracted a substantial cash-flow from Canadian and international investors. The success of those financial products, led the AMEX to try again, and develop a product that could satisfy SEC regulation in the US market.

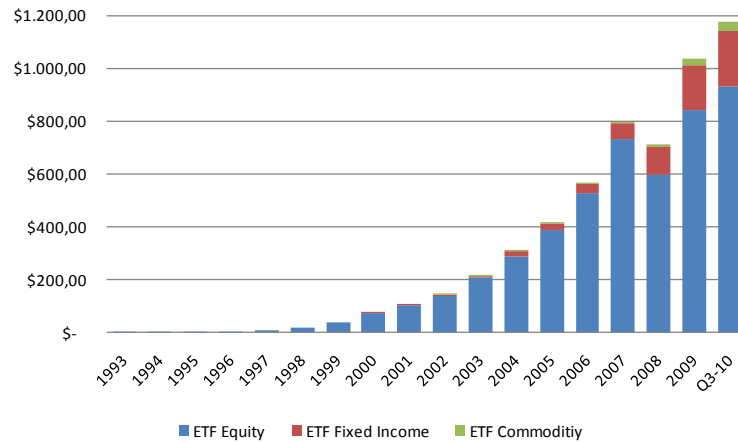
In 1992, the AMEX request the first authorized stand-alone index based Exchange-Traded Fund (ETF). That petition was approved and in January 1993 appeared the S&P Depository Receipts Trust Series 1, known as SPDR. SPDR tracks the performance of the S&P 500 index and became the first commercial successful ETF. Later on, other ETFs have been launched to track other well-known US indexes such as the Nasdaq and Dow Jones Industrial Average.

¹ Wiandt, J., and McClachy, W., 2002, *Exchange Traded Funds: An Insider's Guide to Buying the Market*. Index Funds.

After the success of ETFs in the US market, the 2000's are marked by the introduction of ETFs in Europe and Asia (iShares launched, on April 2000, the first ETF to track the performance of the Eurostoxx 50).²

The industry of ETFs has experienced a significant growth, the data from the 3Q10 shows that there are 2379 ETFs, representing USD 1181.3 bn, from 129 providers on 45 exchanges around the world. The growing importance of ETFs is expressed by the numbers of the first 9 months of 2010, where the Assets Under Management (AUM) increased by 14%, the number of ETFs by 22.3% and the ETF's average trading volumes by 14.7%. Besides the innovations introduced by ETF's industry, this new financial product started to capture market share to the traditional mutual funds, which in the first 7 months of 2010 registered a decrease on net sales value by USD 221 bn, while net sales of ETFs increased by USD 81,6 bn.³

Figure I
Evolution of ETFs' AUM between 1993 and the 3Q10, grouped by classes

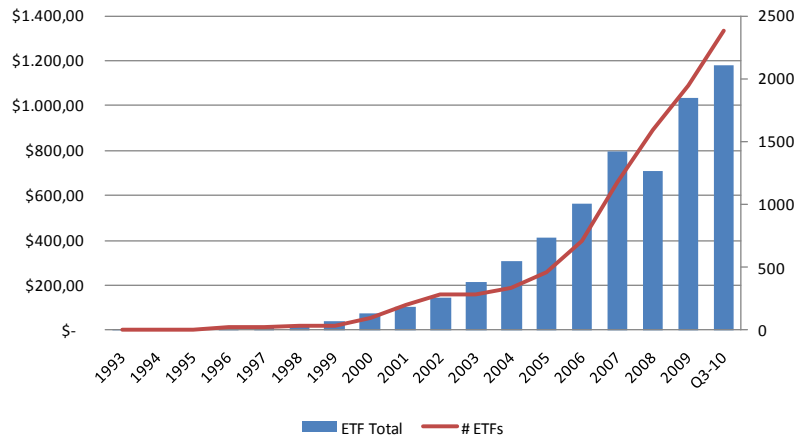


Source: BlackRock

² Barclays, Stockbrokers

³ ETF Landscape, Industry Highlights, End 3Q 2010, BlackRock

Figure II
Evolution of AUM and number of ETFs since 1993 until 3Q10



Source: BlackRock

On figures I and II, we can observe the exponential growth of ETF, in terms of both number and AUM. We can also see the growth of other classes of ETFs like Fixed Income and Commodity ETFs.

The most significant innovation that ETFs brought to us was the possibility of an investor to have access to a pool of securities with only a single vehicle, identical to traditional mutual funds, with the advantage of trading like shares that can be bought and sold throughout the trading session on a securities exchange through a broker-dealer. If in early days ETFs were traded mostly by institutional investors for use in sophisticated trading strategies like hedging, today the demand for ETFs by non-institutional investors is quite significant, which was helped by the growing ability of individuals to access financial information or advice, that gave them the ability to invest in products about which they might not have been previously aware.

This work will evaluate the mimicking abilities of ETFs, i.e., the capacity of a specific ETF into track the performance of its benchmark. The focus on equity index ETFs was motivated by the history of ETFs, where ETFs were created with the goal of coping a certain market index. Nowadays there is a wide range of styles (besides market index ETFs we have Commodity, Fixed-Income and Currency ETFs) but equity index ETFs also present advantages like longer history and more liquidity.

Differently from previous works, I study also leveraged and inverse ETFs besides equity index ETFs, due to the significant importance that this specific financial product has assumed over the last years.

On a second part, I cross the previous results with the liquidity of the last 6 month of trading, the values of the fees and the tracking error result for each ETF. This additional analysis try to understand if exist a relation among those parameters and the tracking capacity of the ETFs.

The last objective will be compare the result of the ETFs analysis' with traditional mutual funds, too see if a much recent investment vehicle like ETFs is so efficient as the traditional mutual funds into track the benchmark's performance.

II. Literature Review

The first academic studies on ETFs appeared in the end of the 90's motivated by the high degree of acceptance of the product among investors. The researchers began studying not only the ETF as a specific investment vehicle but also began comparing them with traditional mutual funds.

Gastineau (2001) discusses some of the advantages and innovations brought by ETFs, the low expense ratios of ETFs and how ETFs manage to avoid significant capital gains contributions. Dellva (2001) describes how the redemption processes provide the ETFs with significant tax efficiencies and finds that tax deferred, long-term retirement investors have little or no advantage from using ETFs as opposed to traditional mutual funds. Fuhr (2001) points out that ETFs' characteristics make them a viable alternative to trading futures for investors looking to increase or reduce their exposure to countries, sectors, industries, and styles. ETFs allow investors the flexibility to use them for numerous applications, which can be appealing to both individual and institutional investors.

Dellva (2001) applies a cost comparison among the primary trackers of S&P 500 Index, SPDRs and Barclays' iShares S&P from the bundle of ETFs and the Vanguard index mutual fund. The results shows that transaction costs limit ETF attractiveness for small investors. The in-kind creation and redemption process of ETFs provide significant tax efficiencies. Finally, the study

finds little or no ETF advantage for the tax deferred, long-term retirement investor. Poterba and Shoven (2002) compare the pre-tax and after-tax returns on the largest ETF, the SPDR trust and Vanguard Index 500, which both track the S&P 500 Index, concluding that these funds substantially present the same performance, and in a more precise view, the after-tax and the pre-tax returns on the fund were slightly greater than those on the ETF. Gastineau (2004) suggests that the pre-tax performance of benchmark index ETFs is usually lagging than the index mutual funds which use the same indexes. He justifies that low return with the lack of aggressiveness for a portion of ETFs managers and with the process of ETFs creation and redemption that restricts managers' ability to follow accurately, immediately and inexpensively the adjustments of the tracking indexes. Also Miffre (2004) list some advantages of ETFs over the traditional mutual funds. More recently, Svetina and Wahal (2008) found that the majority of ETFs that track indexes do not have a corresponding index mutual fund and when they have a real competitor mutual fund they usually deliver a slightly better performance.

The performance of ETFs and how well they track the benchmark was also an issue of interest among the academic research. Frino and Gallagher (2001) pointed the inevitability of tracking error in index fund performance due to market frictions. The authors highlight the difficulties faced by index funds and showed that S&P 500 index funds, on average, outperformed active funds after expenses over the sample period. Elton et al (2002), document that the SPDR underperforms both its underlying index and conventional S&P 500 index funds. Rompotis (2005) examines the performance of 16 ETFs and index funds in pairs tracking the same index, and reports that they substantially produce similar returns and tracking errors. Gallagher and Segara (2005) investigate the ability of the Index ETF into track the performance of the Australian Stock Exchange, showing that ETFs track efficiently the underlying benchmark before costs, have lower tracking errors than index managed funds and difference between trading price and NAV is small and not occur with frequency. Milonas and Rompotis (2006) examine the performance and the trading characteristics of a sample of 36 Swiss ETFs. They find that Swiss ETFs underperform their benchmark indexes while having investors exposed to greater risk.

Another issue investigated is whether ETFs are traded at premium or discount, i.e., ETFs trading price relative to their NAV. Ackert and Tian (2008) examined pricing in the market for SPDR's, showing that they do not trade at economically significant discounts, unlike closed-end mutual funds. The same conclusion is not also applicable to MidCap SPDRs that report a larger economically significant discount. Delcours and Zhong (2007) concluded that iShares ETFs trade at economically significant premiums even controlling the transaction costs and time-zone measurement errors. However, they showed after that the deviations of most iShares' price and NAV are not persistent and tend to zero within two days. Also Jares and Lavin (2004), show that the non overlapping of ETFs that trade on US exchanges but provide exposure to foreign markets, in this case iShares ETFs that are exposed to Japan and Honk-Kong markets, increase the existence of discrepancy among price and NAV. Elton et al (2002) studied the deviation of trading price from NAV, proving that this difference is negligible due to the ability of investors to create or delete Spiders at the end of every trading day.

III. Data

This paper focuses on equity index ETFs that track three major stock market indexes: S&P500, EUROSTOXX 50 and FTSE 100. From Datastream, I identified several ETFs that track those indexes. I chose both equity index ETFs as well as leveraged and inverse ETFs, where the latter also mimic an equity index but have a multiplier like -1 or 2.

To avoid currency issues, I chose ETFs that are quoted on the same currency as the benchmark.

The Bloomberg's ticker of the ETF identifies the ETF and the exchange where it is traded. This means that the same ETF can be traded in different exchanges. Therefore, I eliminated ETFs that are repeated, i.e., that are quoted on different markets (stock exchanges) by choosing the same market as the benchmark index, with the exception of ETFs that track the Eurostoxx 50, which are a special case. Thus, ETFs that track FTSE 100 index have LN on Bloomberg's ticker, that correspond to a product that trade on London Stock Exchange and the ETFs that track S&P 500 have always US designation, which represent ETFs that are traded on the US market. For ETFs that track Eurostoxx 50 index, like the index contain the 50th shares with the highest

capitalization from different European indexes, we have ETFs that are traded on different stock exchanges like FP and NA, which means that the ETF is traded on Euronext Paris and on Euronext Amsterdam, GY which means that the ETF is traded on Deutsche Börse (Xetra) and SM which means that the ETF is traded on Madrid Stock Exchange.

From Lipper, I selected index mutual funds whose benchmark was also the selected stock market indexes: S&P500, EUROSTOXX 50 and FTSE 100.

Daily prices and net asset values of the ETFs and mutual funds were taken from Bloomberg as well as additional information such as currency, inception date and fees.

One problem that I faced on the construction of the database was the different lifetime of ETFs (some are very recent), which led to a different number of observation among the ETFs.

The final sample has 20 indexing ETFs and 16 Leveraged ETFs. More specifically, the final database includes 5 equity index ETFs and 3 leveraged and inverse that track the performance of FTSE 100, 13 equity index ETFs and 6 leveraged and inverse ETFs that track the performance of Eurostoxx 50 and 2 equity index ETFs and 7 leveraged and inverse ETFs that track the performance of S&P 500.⁴ Notice that the sample size in other studies has varied from one fund to twenty. For instance, Poterba and Shoven (2002) and Elton et al (2002) focus on one ETF (SPDR) while Jares and Lavin (2004) examine two funds (iShares Japan and Hong Kong funds) or even Delcours and Zhong (2007) study 20 international ETFs traded on US exchanges.

By company, we can find the biggest ETFs' providers as BlackRock through the iShares, State Street Global Advisors through SPDR, Deutsche Bank through db x-trackers and Lyxor Asset Management through Lyxor ETFs.

⁴ See annex I, II and III for ETFs' summary statistics

Table I
Data Description of equity index ETFs

Name	Issuer	Ticker Bloomberg	Benchmark	Currency	Inception date	Obs.	Expense Ratio	Average Vol. 6MTH	Current Market Cap.
HSBC FTSE 100 ETF	HSBC ETFs	HUKX LN	FTSE 100	GBP	25-08-2009	342	n.a.	37749,4	138095400
ISHARES FTSE 100	iShares	ISF LN	FTSE 100	GBP	27-04-2000	2699	n.a.	6462963,0	3595096000
MULTI UNITS LUXEMBOURG LYXOR ETF FTSE 100	Multiunits	LYUK LN	FTSE 100	GBP	06-11-2009	289	n.a.	4253,6	16693870
SOURCE MARKETS (LON) FTSE 100 SOURCE	SourceMarkets	S100 LN	FTSE 100	GBP	07-09-2009	260	n.a.	43739,7	54072370
LYXOR ETF FTSE 100	Lyxor AM	L100 LN	FTSE 100	GBP	15-05-2007	920	0,3	542513,6	358142500
HSBC.EURO STOXX 50	HSBC ETFs	50E FP	Eurostoxx 50	EUR	n.a.	275	n.a.	30407,3	72112300
BBVA DJ STOXX EURO 50	BBVA	BBVAE SM	Eurostoxx 50	EUR	30-10-2006	1081	0,15	38202,9	179039900
CS ETF EURO STOXX 50	db x-trackers	SXRT GY	Eurostoxx 50	EUR	10-03-2010	210	0,2	98774,2	127131000
UBS ETF DJ EURO STOXX 50	UBS	E50EUA GY	Eurostoxx 50	EUR	19-03-2002	2290	0,36	8953,2	359303400
ISHARES DJ (FRA) EUROSTOXX 50	iShares	EUN2 GY	Eurostoxx 50	EUR	03-04-2000	2793	0,15	454334,3	2767590000
AMUNDI ETF DJ.ESX.50	Amundi IS	C50 FP	Eurostoxx 50	EUR	23-09-2008	576	n.a.	76503,1	663993000
LYXOR DJ EUROSTOXX (FRA) 50	Lyxor AM	LYSX GY	Eurostoxx 50	EUR	29-11-2002	2107	n.a.	61735,7	5192584000
DBX ESTX50 1C	db x-trackers	XSC FP	Eurostoxx 50	EUR	27-05-2009	413	0,15	27151,4	719769700
ISHARES DJEURSTOXX50	iShares	GXE FP	Eurostoxx 50	EUR	26-09-2001	2604	n.a.	50959,4	3541516000
ISHARES EURO STX50	iShares	EUEA NA	Eurostoxx 50	EUR	03-04-2000	2596	0,35	153438,8	2770005000
ISHARES DJ E50 A	iShares	IEUA NA	Eurostoxx 50	EUR	23-03-2010	202	0,35	10638,7	128975000
LYXOR ETF ES 50	Lyxor AM	MSE FP	Eurostoxx 50	EUR	21-03-2001	2549	n.a.	1484808,0	5197098000
UBSETF BB E STOXX50	UBS	FRE FP	Eurostoxx 50	EUR	29-01-2003	2064	0,16	0,2	378010700
SPDR S&P 500 ETF TST.	SPDR ETFs	SPY US	S&P 500	USD	22-01-1993	4515	0,0945	170809904,0	89772330000
ISHARES S&P 500	iShares	IVV US	S&P 500	USD	19-05-2000	2670	0,09	3007015,0	26728270000

On table I, on the first column we have the name of the equity index ETFs, on the second the issuer and on the third column the Bloomberg's Ticker. The fourth column represents the benchmark. We see that the final sample has 5 equity index ETFs that track the FTSE 100, 13 that track the Eurostoxx 50 and 2 that track the S&P 500. On column five we can confirm that all equity index ETFs traded in the same currency as the benchmark. Regarding the inception date we can see that equity index ETFs that track S&P 500 have the oldest inception date, which it is not a surprise considering the history of the ETFs. The next column presents the number of observations that, as we can see, varies considerably among the equity index ETFs. Despite the efforts, it was not possible to collect expenses ratios for all ETFs due to the lack of information regarding fees. It is also presented the average trading volume in the last 6 months and the current capitalization of the equity index ETFs. These two last features confirm that SPDR, also known as the Spyder, is the largest ETF in the world. An interesting point is the more

discrepancy observed among the average volume of the last 6 month that occurs on equity index ETFs with less competitors, equity index ETFs that track S&P 500 and FTSE 100, which is justified by the concentration of the demand for ETFs.

Table II
Data Description of leveraged and inverse ETFs

Name	Issuer	Style	Ticker Bloomberg	Benchmark	Currency	Inception date	Obs.	Expense Ratio	Average Vol.6MTH	Current Market Cap.
ETFX FTSE 100 SUP SHRT ST 2X	ETFx Indexes	2x short	SUK2 LN	FTSE 100	GBP	15-06-2009	388	n.a.	39191,5	45342410
DB X-TRACKERS FTSE 100 SH DA	db x-trackers	short	XUKS LN	FTSE 100	GBP	17-06-2008	643	0,5	162110,2	70269020
ETFX FTSE 100 LEVERAGED 2X	ETFx Indexes	2x long	LUK2 LN	FTSE 100	GBP	15-06-2009	388	n.a.	11648,8	15232420
AMUNDI ETF LEV E50	Amundi IS	2x long	C5L FP	Eurostoxx 50	EUR	29-06-2009	388	n.a.	1578,4	13148690
EASYETF EU ST 50 DB SH-CAP	Easy ETF - BNP Paribas	2x short	EZD FP	Eurostoxx 50	EUR	25-02-2009	473	n.a.	10650,9	18009670
ETFX DJ EURO STOXX 50 LEV 2X	ETFx Indexes	2x long	LEU2 GY	Eurostoxx 50	EUR	18-08-2009	351	0,4	9155,7	14603090
ETFX DJ EURO ST 50 DBL SH 2X	ETFx Indexes	2x short	SEU2 GY	Eurostoxx 50	EUR	18-08-2009	351	0,6	17533,3	21822270
DB X-TRACKERS EU STXX 50 SHR	db x-trackers	short	XSSX GY	Eurostoxx 50	EUR	15-06-2007	908	0,4	322487,1	362324400
LYXOR ETF XBEAR STXX 50	Lyxor AM	2x short	BXX FP	Eurostoxx 50	EUR	04-04-2007	956	n.a.	132419,3	124708500
RYDEX 2X S&P 500 ETF	RydexShares ETFs	2x long	RSU US	S&P 500	USD	07-11-2007	792	0,71	62056,0	84822750
RYDEX INVERSE 2X S&P 500 ETF	RydexShares ETFs	2x short	RSW US	S&P 500	USD	07-11-2007	792	0,71	71688,7	57136000
PROSHARES ULTRASHORT S&P500	ProShares	2x short	SDS US	S&P 500	USD	13-07-2006	1125	0,91	28260000,0	2341238000
PROSHARES SHORT S&P500	ProShares	short	SH US	S&P 500	USD	21-06-2006	1140	0,95	2444338,3	1721099000
PROSH ULTRAPRO SHORT S&P 500	ProShares	3x short	SPXU US	S&P 500	USD	25-06-2009	383	0,95	5837329,0	314265000
PROSHARES ULTRA S&P500	ProShares	2x long	SSO US	S&P 500	USD	21-06-2006	1140	0,95	13457015,0	1733209000
PROSHARES ULTRAPRO S&P 500	ProShares	3x long	UPRO US	S&P 500	USD	25-06-2009	383	0,95	2530194,0	251192000

Table II shows the sample characteristics of leveraged and inverse ETFs, starting by the name and the issuer. The style is described on column (3). Basically, some funds track the index in the same direction (long) others in the opposite (short), where the level of leverage is given by the multiplier. The range of multipliers goes from 1 to 3. Three ETFs track the FTSE 100, six the Eurostoxx 50 and seven the S&P 500. We have more leveraged and inverse ETFs that track the S&P 500 than equity index ETFs that track the same index, which is justified by the more competitiveness among the providers on leveraged and inverse ETFs, which is not seen on equity index ETFs due to the position that SPDR assumes in the market. Leveraged and inverse ETFs were launched more recently, the oldest is from July 2006, which led to a smaller number of observations when comparing with equity index ETFs. Fees are larger for leveraged and inverse ETFs, which is reasonable considering the complexity of tracking leveraged and inversely the

performance of an index. Finally, I highlight that the leveraged and inverse ETFs that track the performance of the S&P 500 index have, in average, a much significant volume than the other leveraged and inverse ETFs due to the larger demand for S&P 500 related products.

IV. Empirical Results

(i) Tracking Abilities

In this section, I start by evaluate the capacity of the ETFs into track the performance of the benchmark index. For that, I first compute the daily returns of the ETFs by applying the following equation (I):

$$R_t = \frac{Price_t}{Price_{t-1}} - 1 \quad (I)$$

Where, R_t refers to the percentage return of ETF on day t, $Price_t$ refers to the trading price of ETF on day t and $Price_{t-1}$ refers to the trading price of ETF on day t-1.

Then, I use the following regression (Equation II):

$$R_{i,t}^{ETF} = \alpha_i + \beta_i R_t^{Benchmark} + \varepsilon_t \quad (II)$$

Where $R_{i,t}^{ETF}$, is the daily return of ETF i on day t and $R_t^{Benchmark}$ refers to the percentage return of Benchmark on day t. The alpha, α , is the constant of the model and Beta, β , represents the capacity of the ETF into track the performance of the benchmark as they propose itself to do.

I start by analyze the equity index ETFs. Our expectation is that, since they copy the benchmark, $\beta_i = 1$ and $\alpha_i=0$, as well as the R^2 be high. Therefore, these two hypotheses will be tested.

On Table III, we can see the results of the time-series regression for each equity index ETF. The alpha assumes a small positive value for commonplace equity index ETFs and it is only statistically significant with 95% confidence level for one ETF. Regarding the beta, it tends to be close to 1 in the majority of the cases, however, on CS ETF EURO STOXX 50 and UBSETF BB E STOXX 50 the beta is abnormally low. The R^2 shows that almost all equity index ETFs in this analysis are fully invested on the benchmark index constituents. Finally, the F-Test shows that

only HSBC FTSE 100 ETF on FTSE 100 benchmark index and SPDR S&P 500 ETF TST on S&P 500 benchmark index do not reject the null hypothesis, showing that the beta of those ETFs are equal to one. However, three ETFs reject the null hypothesis on Eurostoxx 50 benchmark index, HSBC EURO STOXX 50, ISHARES DJ (FRA) EUROSTOXX 50 and ISHARES DJ ES50.

Table III
Tracking ability of equity index ETFs

Name	Ticker Bloomberg	Benchmark	Currency	Inception date	Obs.	Alpha *100	p-value	Beta	p-value	R ²	Teste F Beta=1	p-value
HSBC FTSE 100 ETF	HUKX LN	FTSE 100	GBP	25-08-2009	342	0,012	0,007	1,003	0,000	0,995	0,34	0,540
ISHARES FTSE 100	ISF LN	FTSE 100	GBP	27-04-2000	2699	0,013	0,314	0,914	0,000	0,768	10,31	0,001
MULTI UNITS LUXEMBOURG LYXOR ETF FTSE 100	LYUK LN	FTSE 100	GBP	06-11-2009	289	0,022	0,429	0,853	0,000	0,810	8,61	0,004
SOURCE MARKETS (LON) FTSE 100 SOURCE	S100 LN	FTSE 100	GBP	07-09-2009	260	0,020	0,332	0,907	0,000	0,900	5,42	0,021
LYXOR ETF FTSE 100	L100 LN	FTSE 100	GBP	15-05-2007	920	0,015	0,567	0,917	0,000	0,796	11,23	0,001
HSBC.EURO STOXX 50	50E FP	Eurostoxx 50	EUR	n.a.	275	0,014	0,202	0,9962	0,000	0,986	0,20	0,659
BBVA DJ STOXX EURO 50	BBVAE SM	Eurostoxx 50	EUR	30-10-2006	1081	0,01	0,550	0,9652	0,000	0,907	10,13	0,002
CS ETF EURO STOXX 50	SXRT GY	Eurostoxx 50	EUR	10-03-2010	210	0,011	0,892	0,4581	0,000	0,272	22,41	0,000
UBS ETF DJ EURO STOXX 50	E50EUA GY	Eurostoxx 50	EUR	19-03-2002	2290	0,01	0,609	0,7989	0,000	0,633	64,11	0,000
ISHARES DJ (FRA) EUROSTOXX 50	EUN2 GY	Eurostoxx 50	EUR	03-04-2000	2793	0,01	0,309	0,9855	0,000	0,908	2,39	0,123
AMUNDI ETF DJ.ESX.50	C50 FP	Eurostoxx 50	EUR	23-09-2008	576	0,029	0,615	0,7360	0,000	0,496	13,58	0,000
LYXOR DJ EUROSTOXX (FRA) 50	LYSX GY	Eurostoxx 50	EUR	29-11-2002	2107	0,014	0,419	0,8742	0,000	0,735	45,36	0,000
DBX ESTX50 1C	XSC FP	Eurostoxx 50	EUR	27-05-2009	413	0,013	0,509	0,9529	0,000	0,924	4,35	0,038
ISHARES DJEURSTOXX50	GXE FP	Eurostoxx 50	EUR	26-09-2001	2604	0,004	0,798	0,8577	0,000	0,705	65,26	0,000
ISHARES EURO STX50	EUEA NA	Eurostoxx 50	EUR	03-04-2000	2596	0,009	0,466	0,9261	0,000	0,859	40,25	0,000
ISHARES DJ ES50 A	IEUA NA	Eurostoxx 50	EUR	23-03-2010	202	0,014	0,155	1,0170	0,000	0,993	3,00	0,085
LYXOR ETF ES 50	MSE FP	Eurostoxx 50	EUR	21-03-2001	2549	0,011	0,100	0,9748	0,000	0,958	8,55	0,004
UBSETF BB E STOXX50	FRE FP	Eurostoxx 50	EUR	29-01-2003	2064	0,023	0,423	0,3438	0,000	0,132	391,67	0,000
SPDR S&P 500 ETF TST.	SPY US	S&P 500	USD	22-01-1993	4515	0,008	0,067	0,99916	0,000	0,951	0,01	0,909
ISHARES S&P 500	IVV US	S&P 500	USD	19-05-2000	2670	0,007	0,097	0,97202	0,000	0,975	28,01	0,000

On table IV, we can see the results of the time-series regression for each leveraged and inverse equity index ETF.

Contrary to equity index ETFs, the alpha tends to be negative although not statistically significant. The betas tend to be close to the goal they proposal. However, we can see, by

analysing the result of the F-Test, that leveraged and inverse ETFs that track the S&P 500, track worse its benchmark than leveraged and inverse ETFs that track others benchmarks. The F-Test, on table V, shows that any leveraged and inverse ETF that track the S&P 500 index reject the null hypothesis, contrary to equity index ETFs. Finally, the R^2 shows that almost all ETFs, excluding DB X-TRACKERS FTSE 100 SH DA, are fully invested on the benchmark index constituents, according to the specific strategy of each leveraged and inverse ETF.

Table IV
Tracking ability of leveraged and inverse ETFs

Name	Style	Ticker Bloomberg	Benchmark	Currency	Inception date	Obs.	Alpha *100	p-value	Beta	p-value	R ²
ETFX FTSE 100 SUP SHRT ST 2X	2x short	SUK2 LN	FTSE 100	GBP	15-06-2009	388	-0,058	0,227	-1,936	0,000	0,826
DB X-TRACKERS FTSE 100 SH DA	short	XUKS LN	FTSE 100	GBP	17-06-2008	643	-0,010	0,841	-0,827	0,000	0,581
ETFX FTSE 100 LEVERAGED 2X	2x long	LUK2 LN	FTSE 100	GBP	15-06-2009	388	0,027	0,334	2,046	0,000	0,940
AMUNDI ETF LEV E50	2x long	C5L FP	Eurostoxx 50	EUR	29-06-2009	388	0,021	0,389	2,040	0,000	0,981
EASYETF EU ST 50 DB SH-CAP	2x short	EZD FP	Eurostoxx 50	EUR	25-02-2009	473	-0,054	0,470	-1,745	0,000	0,757
ETFX DJ EURO STOXX 50 LEV 2X	2x long	LEU2 GY	Eurostoxx 50	EUR	18-08-2009	351	0,022	0,804	1,724	0,000	0,770
ETFX DJ EURO ST 50 DBL SH 2X	2x short	SEU2 GY	Eurostoxx 50	EUR	18-08-2009	351	-0,049	0,525	-1,886	0,000	0,815
DB X-TRACKERS EU STXX 50 SHR	short	XSSX GY	Eurostoxx 50	EUR	15-06-2007	908	-0,002	0,907	-0,989	0,000	0,959
LYXOR ETF XBEAR STXX 50	2x short	BXX FP	Eurostoxx 50	EUR	04-04-2007	956	-0,021	0,361	-1,866	0,000	0,958
RYDEX 2X S&P 500 ETF	2x long	RSU US	S&P 500	USD	07-11-2007	792	0,002	0,946	1,885	0,000	0,963
RYDEX INVERSE 2X S&P 500 ETF	2x short	RSW US	S&P 500	USD	07-11-2007	792	-0,019	0,469	-1,896	0,000	0,957
PROSHARES ULTRASHORT S&P500	2x short	SDS US	S&P 500	USD	13-07-2006	1125	-0,016	0,369	-1,908	0,000	0,965
PROSHARES SHORT S&P500	short	SH US	S&P 500	USD	21-06-2006	1140	-0,007	0,608	-0,973	0,000	0,924
PROSH ULTRAPRO SHORT S&P 500	3x short	SPXU US	S&P 500	USD	25-06-2009	383	-0,034	0,098	-2,930	0,000	0,985
PROSHARES ULTRA S&P500	2x long	SSO US	S&P 500	USD	21-06-2006	1140	-0,007	0,578	1,894	0,000	0,979
PROSHARES ULTRAPRO S&P 500	3x long	UPRO US	S&P 500	USD	25-06-2009	383	0,0212	0,210	2,930	0,000	0,990

Table V
Tracking ability of leveraged and inverse ETFs (cont.)

Name	Style	Benchmark	Test F Beta=-2	p-value	Test F Beta=-1	p-value	Test F Beta=2	p-value	Test F Beta=-3	p-value	Test F Beta=3	p-value
ETFX FTSE 100 SUP SHRT ST 2X	2x short	FTSE 100	1,90	0,169								
DB X-TRACKERS FTSE 100 SH DA	short	FTSE 100			2,51	0,1136						
ETFX FTSE 100 LEVERAGED 2X	2x long	FTSE 100					1,97	0,161				
AMUNDI ETF LEV E50	2x long	Eurostoxx 50					5,92	0,015				
EASYETF EU ST 50 DB SH-CAP	2x short	Eurostoxx 50	13,97	0,00								
ETFX DJ EURO STOXX 50 LEV 2X	2x long	Eurostoxx 50					15,70	0,000				

Name	Style	Benchmark	Test F Beta=-2	p- value	Test F Beta=-1	p- value	Test F Beta=2	p- value	Test F Beta=-3	p- value	Test F Beta=3	p- value
ETF DJ EURO ST 50 DBL SH 2X	2x short	Eurostoxx 50	2,40	0,122								
DB X-TRACKERS EU STXX 50 SHR	short	Eurostoxx 50			0,79	0,3753						
LYXOR ETF XBEAR STXX 50	2x short	Eurostoxx 50	25,92	0,000								
RYDEX 2X S&P 500 ETF	2x long	S&P 500					18,41	0,000				
RYDEX INVERSE 2X S&P 500 ETF	2x short	S&P 500	24,03	0,000								
PROSHARES ULTRASHORT S&P500	2x short	S&P 500	47,46	0,000								
PROSHARES SHORT S&P500	short	S&P 500			11,18	0,0009						
PROSH ULTRAPRO SHORT S&P 500	3x short	S&P 500							10,92	0,001		
PROSHARES ULTRA S&P500	2x long	S&P 500					39,87	0,000				
PROSHARES ULTRAPRO S&P 500	3x long	S&P 500									17,49	0,000

(ii) Tracking Errors

As, for instance, Frino and Gallagher (2001), Rompotis (2005), and Gallagher and Segara (2005) did, I compute the tracking error (TE) value for each equity index and leveraged and inverse ETF. The literature presents several measures to compute the tracking error of the ETFs, which represents the deviation of the performance of the ETF from the performance of the corresponding benchmark index.

The first method computes the tracking error by calculating the average of absolute differences between the returns of ETFs and the corresponding benchmark index (Equation III):

$$TE_1 = \frac{\sum_{t=1}^n |R_{ETF_t} - R_{Benchmark_t}|}{n} \quad (III)$$

Where R_{ETF_t} represents the return of ETF on day t and $R_{Benchmark_t}$ represents the return of its benchmark on the same day t.

The second method to computes the standard deviation of return differences between ETFs and their benchmark over n days (Equation IV):

$$TE_2 = \sqrt{\frac{\sum_{t=1}^n [(R_{ETF_t} - R_{Benchmark_t}) - (R_{ETF} - R_{Benchmark})]^2}{n-1}} \quad (IV)$$

Where R_{ETF} represents the return of ETF and $R_{Benchmark}$ represents the return of its benchmark.

The last method computes the tracking error using the standard error of the regression computed previously (Equation II).

Finally, and to reinforce the analysis, I also compute the semi tracking error, where the standard deviation is only computed for the times the ETF does not beat the benchmark (Equation V):

$$S-TE = \sqrt{\frac{\sum_{n=1}^N \text{Min}(R_{ETF} - R_{Benchmark}, 0)^2}{N}} \quad (V)$$

To make easy the interpretation, I annualized all daily tracking errors by using the following equation (Equation VI):⁵

$$TE_{Annual} = TE_{Daily} 250^{0.5} \quad (VI)$$

Table VI presents the results of the tracking errors and semi-tracking error, for each equity index ETF.

We can conclude that, in general, equity index ETFs that track the S&P 500 index, do it more precisely than equity index ETFs that track Eurostoxx 50 and FTSE 100 index. The equity index ETFs that mimic the Eurostoxx 50 seems to be the worst into track their benchmark.

Notice that, tracking errors vary considerably. For instance for those who track FTSE 100 it goes from 1.26% to 12.14%, while for ETFs that track the Eurostoxx 50 vary from 2.15% to 22.03%.

Table VI
Tracking Errors and Semi-Tracking Errors of equity index ETFs

Name	Ticker Bloomberg	Benchmark	Currency	Inception date	Obs.	TE1	TE2	TE3	Semi TE
HSBC FTSE 100 ETF	HUKX LN	FTSE 100	GBP	25-08-2009	342	0,86%	1,26%	1,26%	1,40%
ISHARES FTSE 100	ISF LN	FTSE 100	GBP	27-04-2000	2699	4,16%	10,65%	10,50%	13,86%
MULTI UNITS LUXEMBOURG LYXOR ETF FTSE 100	LYUK LN	FTSE 100	GBP	06-11-2009	289	2,48%	7,62%	7,19%	10,62%
SOURCE MARKETS (LON) FTSE 100 SOURCE	S100 LN	FTSE 100	GBP	07-09-2009	260	2,36%	5,47%	5,06%	7,89%
LYXOR ETF FTSE 100	L100 LN	FTSE 100	GBP	15-05-2007	920	4,15%	12,33%	12,14%	17,33%

⁵ I assume i.i.d. returns and 250 week days in a year

Name	Ticker Bloomberg	Benchmark	Currency	Inception date	Obs.	TE1	TE2	TE3	Semi TE
HSBC.EURO STOXX 50	50E FP	Eurostoxx 50	EUR	n.a.	275	1,75%	2,78%	2,78%	3,40%
BBVA DJ STOXX EURO 50	BBVAE SM	Eurostoxx 50	EUR	30-10-2006	1081	3,43%	8,47%	8,43%	12,02%
CS ETF EURO STOXX 50	SXRT GY	Eurostoxx 50	EUR	10-03-2010	210	10,54%	22,46%	18,23%	33,88%
UBS ETF DJ EURO STOXX 50	E50EUA GY	Eurostoxx 50	EUR	19-03-2002	2290	8,96%	16,04%	15,23%	22,82%
ISHARES DJ (FRA) EUROSTOXX 50	EUN2 GY	Eurostoxx 50	EUR	03-04-2000	2793	4,21%	7,80%	7,80%	11,21%
AMUNDI ETF DJ.ESX.50	C50 FP	Eurostoxx 50	EUR	23-09-2008	576	8,78%	23,36%	22,03%	33,19%
LYXOR DJ EUROSTOXX (FRA) 50	LYSX GY	Eurostoxx 50	EUR	29-11-2002	2107	7,63%	12,51%	12,17%	17,25%
DBX ESTX50 1C	XSC FP	Eurostoxx 50	EUR	27-05-2009	413	2,74%	6,36%	6,28%	8,47%
ISHARES DJEURSTOXX50	GXE FP	Eurostoxx 50	EUR	26-09-2001	2604	8,46%	14,39%	13,95%	20,36%
ISHARES EURO STX50	EUEA NA	Eurostoxx 50	EUR	03-04-2000	2596	5,70%	9,64%	9,46%	13,63%
ISHARES DJ ES50 A	IEUA NA	Eurostoxx 50	EUR	23-03-2010	202	1,38%	2,19%	2,15%	2,52%
LYXOR ETF ES 50	MSE FP	Eurostoxx 50	EUR	21-03-2001	2549	2,73%	5,22%	5,19%	7,29%
UBSETF BB E STOXX50	FRE FP	Eurostoxx 50	EUR	29-01-2003	2064	14,09%	25,25%	20,24%	33,84%
SPDR S&P 500 ETF TST.	SPY US	S&P 500	USD	22-01-1993	4515	2,86%	4,37%	4,39%	5,96%
ISHARES S&P 500	IVV US	S&P 500	USD	19-05-2000	2670	2,35%	3,44%	3,38%	4,76%

On Table VII, we have the results of the tracking error and semi-tracking error, for each leveraged and inverse ETF. We can see that the values obtained are generally larger than the values obtained by the equity index ETFs, which is an expected result due to the complexity of leveraged and inverse strategies. The conclusions seem to be similar, since the leveraged and inverse ETFs that track the S&P 500 track better their benchmark.

Table VII
Tracking Errors and Semi-Tracking Errors of leveraged and inverse ETFs

Name	Style	Ticker Bloomberg	Benchmark	Currency	Inception date	Obs.	TE 1	TE 2	TE 3	Semi TE
ETFX FTSE 100 SUP SHRT ST 2X	2x short	SUK2 LN	FTSE 100	Gbp	15-06-2009	388	4,23%	15,40%	15,38%	22,49%
DB X-TRACKERS FTSE 100 SH DA	short	XUKS LN	FTSE 100	Gbp	17-06-2008	644	5,10%	20,18%	19,61%	28,26%
ETFX FTSE 100 LEVERAGED 2X	2x long	LUK2 LN	FTSE 100	Gbp	15-06-2009	388	3,28%	8,99%	8,97%	10,01%
AMUNDI ETF LEV E50	2x long	C5L FP	Eurostoxx 50	EUR	29-06-2009	388	3,92%	6,53%	6,47%	8,30%
EASYETF EU ST 50 DB SH-CAP	2x short	EZD FP	Eurostoxx 50	EUR	25-02-2009	473	10,20%	25,52%	24,73%	33,21%
ETFX DJ EURO STOXX 50 LEV 2X	2x long	LEU2 GY	Eurostoxx 50	EUR	18-08-2009	351	10,86%	22,44%	21,57%	31,90%
ETFX DJ EURO ST 50 DBL SH 2X	2x short	SEU2 GY	Eurostoxx 50	EUR	18-08-2009	351	9,06%	20,70%	20,57%	29,94%
DB X-TRACKERS EU STXX 50 SHR	short	XSSX GY	Eurostoxx 50	EUR	15-06-2007	908	3,61%	6,01%	6,01%	8,27%
LYXOR ETF XBEAR STXX 50	2x short	BXX FP	Eurostoxx 50	EUR	04-04-2007	956	6,27%	11,75%	11,12%	16,77%
RYDEX 2X S&P 500 ETF	2x long	RSU US	S&P 500	USD	07-11-2007	792	6,24%	11,53%	11,00%	16,60%

Name	Style	Ticker Bloomberg	Benchmark	Currency	Inception date	Obs.	TE 1	TE 2	TE 3	Semi TE
RYDEX INVERSE 2X S&P 500 ETF	2x short	RSW US	S&P 500	USD	07-11-2007	792	5,21%	12,34%	11,95%	19,24%
PROSHARES ULTRASHORT S&P500	2x short	SDS US	S&P 500	USD	13-07-2006	1125	4,56%	9,77%	9,49%	17,04%
PROSHARES SHORT S&P500	short	SH US	S&P 500	USD	21-06-2006	1140	2,26%	7,27%	7,24%	13,71%
PROSH ULTRAPRO SHORT S&P 500	3x short	SPXU US	S&P 500	USD	25-06-2009	383	3,03%	6,56%	6,45%	9,64%
PROSHARES ULTRA S&P500	2x long	SSO US	S&P 500	USD	21-06-2006	1140	4,43%	7,73%	7,24%	11,82%
PROSHARES ULTRAPRO S&P 500	3x long	UPRO US	S&P 500	USD	25-06-2009	383	3,09%	5,43%	5,30%	7,67%

(iii) Premium/discount analysis

Following Ackert and Tian (2000), Elton et al (2002) and Lin and Chou (2006), I try to analyze if the ETFs' price traded at a premium or at a discount relatively to their NAV. To compute that, I use the formula below (Equation VII):

$$\alpha_t = \frac{Price_t - NAV_t}{NAV_t} \quad (VII)$$

Where the α_t counts for the deviation of the price relatively to the benchmark. If $\alpha_t > 0$ the ETF trades at a premium on day t, if $\alpha_t < 0$ the ETF trades at a discount on day t.

However, in my analysis, I use the average of α_t for each ETF, by summing N α_t and dividing the result by N. See equation VIII.

$$\alpha = \frac{\sum_{t=1}^n \alpha_t}{n} \quad (VIII)$$

On table VIII, we can see if the equity index ETF is trading at a premium or a discount, i.e., how the price of ETF tracks the corresponding NAV. We can conclude that the equity index ETFs that track the FTSE 100 traded most of the time at a premium, while the equity index ETFs that have the Eurostoxx 50 as a benchmark traded generally at a discount. For the equity index ETFs that track the S&P 500, we cannot make a real analysis due to the reduce number of the sample that we have.

Table VIII
Premium/Discount analysis on equity index ETFs

Name	Issuer	Ticker Bloomberg	Benchmark	P/D
HSBC FTSE 100 ETF	HSBC ETFs	HUKX LN	FTSE 100	0,57%
ISHARES FTSE 100	iShares	ISF LN	FTSE 100	0,35%
MULTI UNITS LUXEMBOURG LYXOR ETF FTSE 100	Multiunits	LYUK LN	FTSE 100	0,02%
SOURCE MARKETS (LON) FTSE 100 SOURCE	SourceMarkets	S100 LN	FTSE 100	0,02%
LYXOR ETF FTSE 100	Lyxor AM	L100 LN	FTSE 100	-0,03%
EUROSTOXX 50				
HSBC.EURO STOXX 50	HSBC ETFs	50E FP	Eurostoxx 50	n.a.
BBVA DJ STOXX EURO 50	BBVA	BBVAE SM	Eurostoxx 50	-0,04%
CS ETF EURO STOXX 50	db x-trackers	SXRT GY	Eurostoxx 50	0,16%
UBS ETF DJ EURO STOXX 50	UBS	E50EUA GY	Eurostoxx 50	-0,15%
ISHARES DJ (FRA) EUROSTOXX 50	iShares	EUN2 GY	Eurostoxx 50	-0,01%
AMUNDI ETF DJ.ESX.50	Amundi IS	C50 FP	Eurostoxx 50	-0,06%
LYXOR DJ EUROSTOXX (FRA) 50	Lyxor AM	LYSX GY	Eurostoxx 50	-0,12%
DBX ESTX50 1C	db x-trackers	XSC FP	Eurostoxx 50	-0,01%
ISHARES DJEURSTOXX50	iShares	GXE FP	Eurostoxx 50	-0,03%
ISHARES EURO STX50	iShares	EUEA NA	Eurostoxx 50	-0,02%
ISHARES DJ ES50 A	iShares	IEUA NA	Eurostoxx 50	-0,05%
LYXOR ETF ES 50	Lyxor AM	MSE FP	Eurostoxx 50	-0,04%
UBSETF BB E STOXX50	UBS	FRE FP	Eurostoxx 50	-0,65%
S&P 500				
SPDR S&P 500 ETF TST.	SPDR ETFs	SPY US	S&P 500	-0,02%
ISHARES S&P 500	iShares	IVV US	S&P 500	0,01%

On table IX, I make the same analysis but for leveraged and inverse ETFs. Notice that we have a lack of data on leveraged and inverse ETFs that track the performance of FTSE 100, while on leveraged and inverse ETFs that mimic the performance of the Eurostoxx 50 and S&P 500 we can conclude that, in average, the ETFs traded at a premium.

Table IX
Premium/Discount analysis on leveraged and inverse ETFs

Name	Style	Ticker Bloomberg	Benchmark	Currency	Inception date	Obs.	P/D
ETFX FTSE 100 SUP SHRT ST 2X	2x short	SUK2 LN	FTSE 100	GBP	15-06-2009	388	-0,03%
DB X-TRACKERS FTSE 100 SH DA	short	XUKS LN	FTSE 100	GBP	17-06-2008	644	1,05%
ETFX FTSE 100 LEVERAGED 2X	2x long	LUK2 LN	FTSE 100	GBP	15-06-2009	388	-0,04%
AMUNDI ETF LEV E50	2x long	C5L FP	Eurostoxx 50	EUR	29-06-2009	394	0,04%
EASYETF EU ST 50 DB SH-CAP	2x short	EZD FP	Eurostoxx 50	EUR	25-02-2009	482	0,09%
ETFX DJ EURO STOXX 50 LEV 2X	2x long	LEU2 GY	Eurostoxx 50	EUR	18-08-2009	358	0,05%
ETFX DJ EURO ST 50 DBL SH 2X	2x short	SEU2 GY	Eurostoxx 50	EUR	18-08-2009	358	0,08%
DB X-TRACKERS EU STXX 50 SHR	short	XSSX GY	Eurostoxx 50	EUR	15-06-2007	926	0,01%
LYXOR ETF XBEAR STXX 50	2x short	BXX FP	Eurostoxx 50	EUR	04-04-2007	977	0,13%
RYDEX 2X S&P 500 ETF	2x long	RSU US	S&P 500	USD	07-11-2007	822	0,00%
RYDEX INVERSE 2X S&P 500 ETF	2x short	RSW US	S&P 500	USD	07-11-2007	822	0,01%
PROSHARES ULTRASHORT S&P500	2x short	SDS US	S&P 500	USD	13-07-2006	1166	0,01%
PROSHARES SHORT S&P500	short	SH US	S&P 500	USD	21-06-2006	1182	0,02%
PROSH ULTRAPRO SHORT S&P 500	3x short	SPXU US	S&P 500	USD	25-06-2009	396	0,00%
PROSHARES ULTRA S&P500	2x long	SSO US	S&P 500	USD	21-06-2006	1182	-0,04%
PROSHARES ULTRAPRO S&P 500	3x long	UPRO US	S&P 500	USD	25-06-2009	396	-0,05%

(iv) Time Consistency of Tracking abilities

In this section, I try to understand the evolution of the alpha, beta and tracking error for each equity linear ETF in the time frame in analysis. I compute alpha, beta and the tracking errors using moving windows of 60 observations. Because I am interesting in the mimicking abilities of the ETFs I use the NAV of the ETFs in this analysis.

So, on the figures below (Figure III, IV, V, VI, VII and VIII), we can see the value of the alpha and beta for each ETF, grouped into benchmarks. We can see that the alpha of equity index ETFs that track the Eurostoxx 50 are, in average, more volatile than the equity index ETFs that track the FTSE 100 and S&P 500. Additionally, the evolution of the beta shows again that, equity index ETFs that track the Eurostoxx 50 have, in average, more difficult into track its benchmark than the equity index ETFs that track other benchmarks.

Figure III

Evolution of the alpha of equity index ETFs that track the FTSE 100

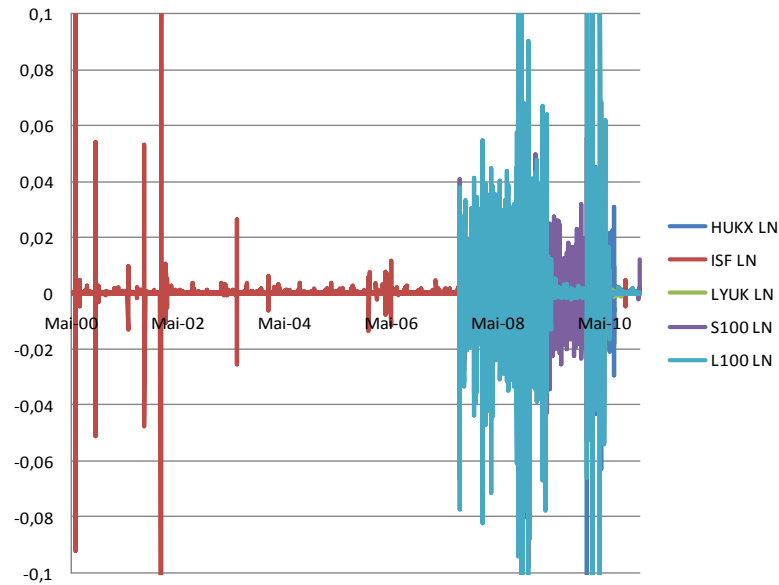


Figure IV

Evolution of the alpha of equity index ETFs that track the Eurostoxx 50

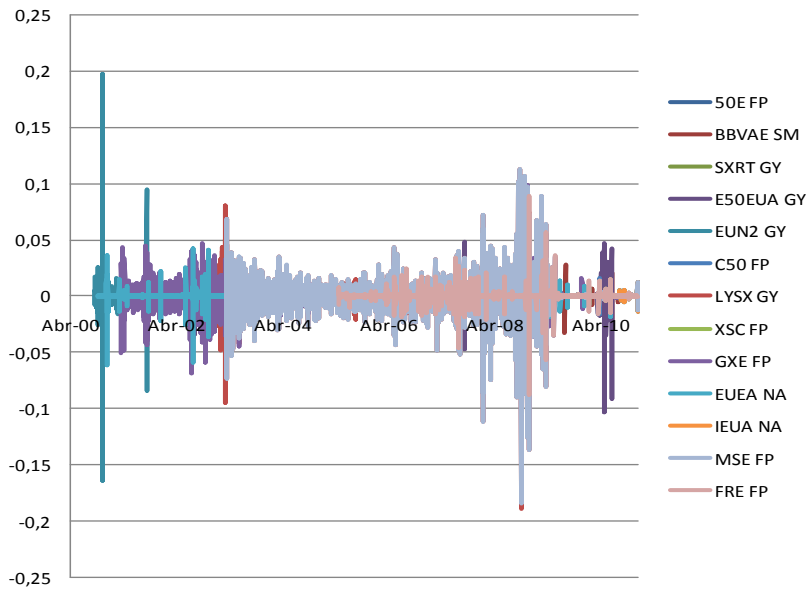


Figure V

Evolution of the alpha of equity index ETFs that track the S&P 500

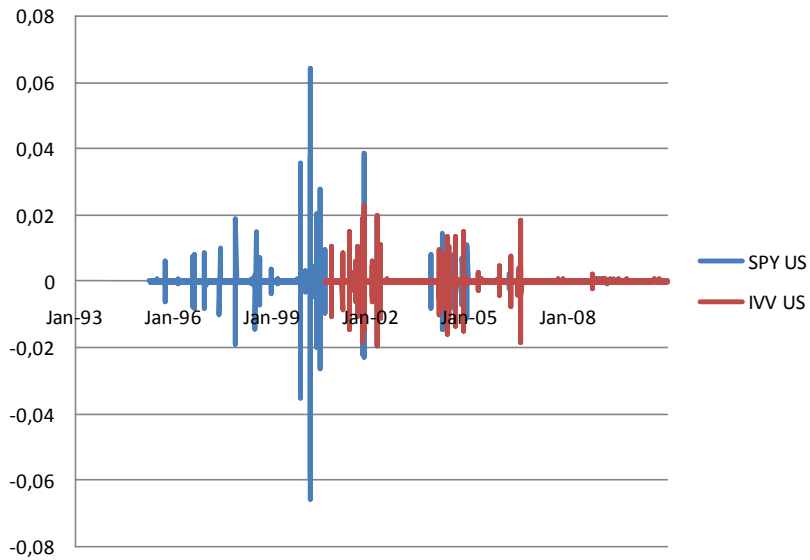


Figure VI

Evolution of the beta of equity index ETFs that track the FTSE 100

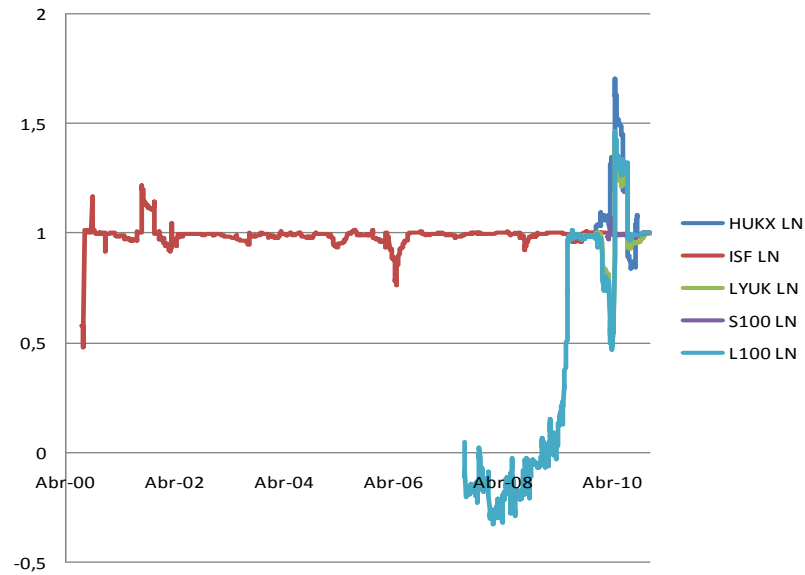


Figure VII

Evolution of the beta of equity index ETFs that track the Eurostoxx 50

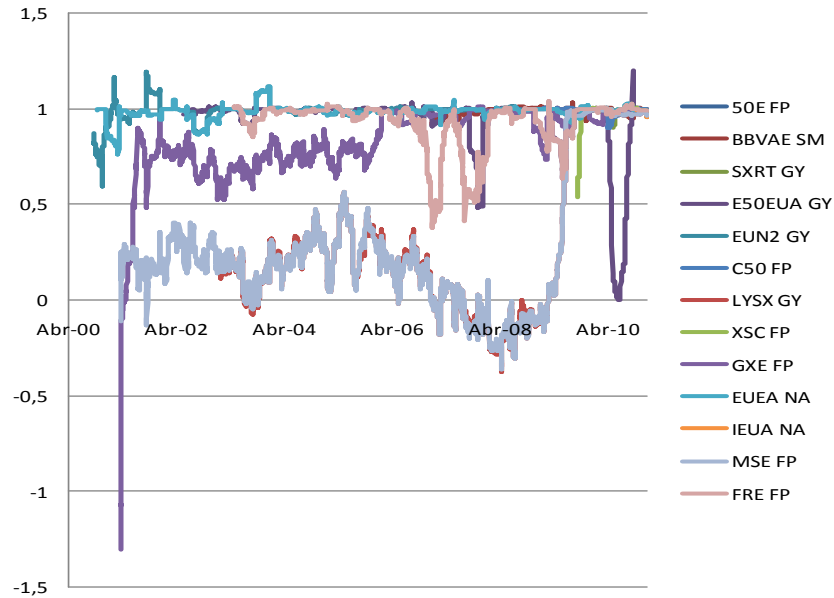
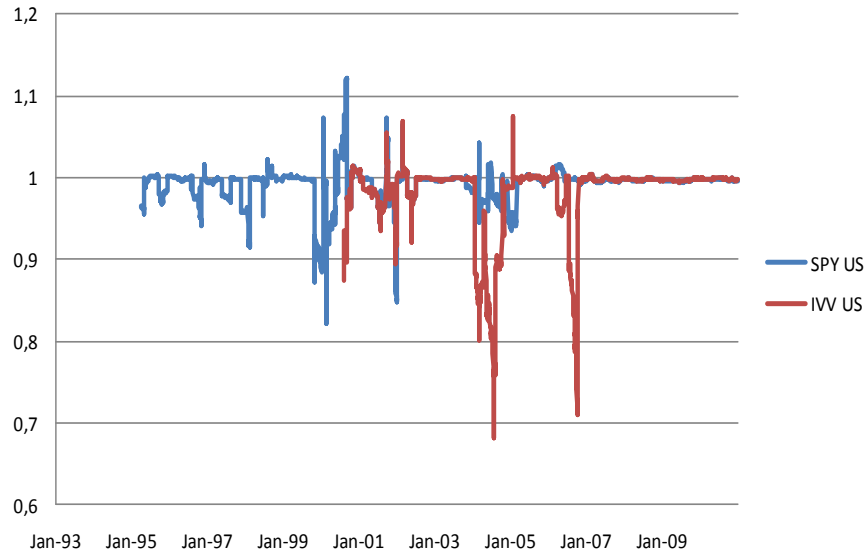


Figure VIII

Evolution of the beta of equity index ETFs that track the S&P 500



On figures IX, X and XI, we can see the value of the tracking error (computed by the second method) for each equity index ETF, from the three benchmarks, during the time frame in analysis. We can see that the tracking errors of ETFs that track the Eurostoxx 50 assume, in

average, a higher value, so, a high divergence with the benchmark. Again, the ETFs that track the S&P 500 present a higher capacity into track the performance of their benchmark.

Figure IX

Evolution of the TE of equity index ETFs that track the FTSE 100

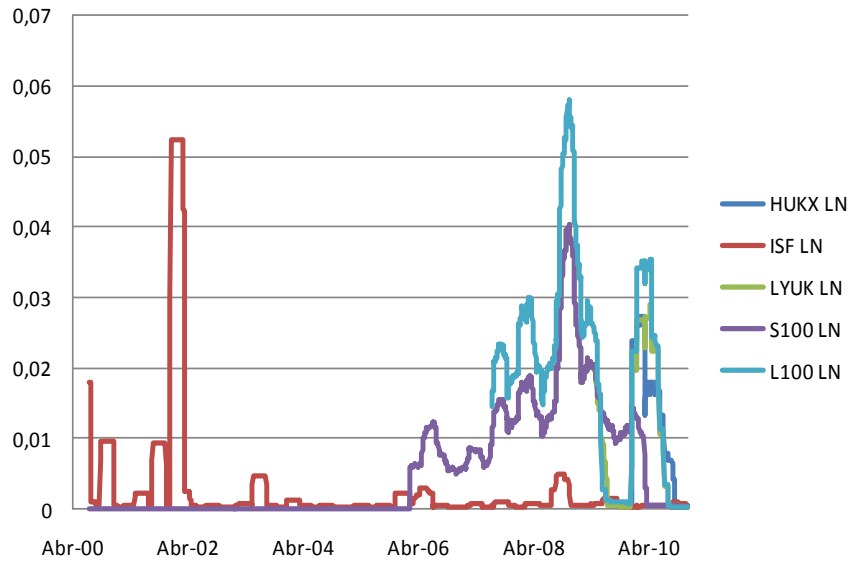


Figure X

Evolution of the TE of equity index ETFs that track the Eurostoxx 50

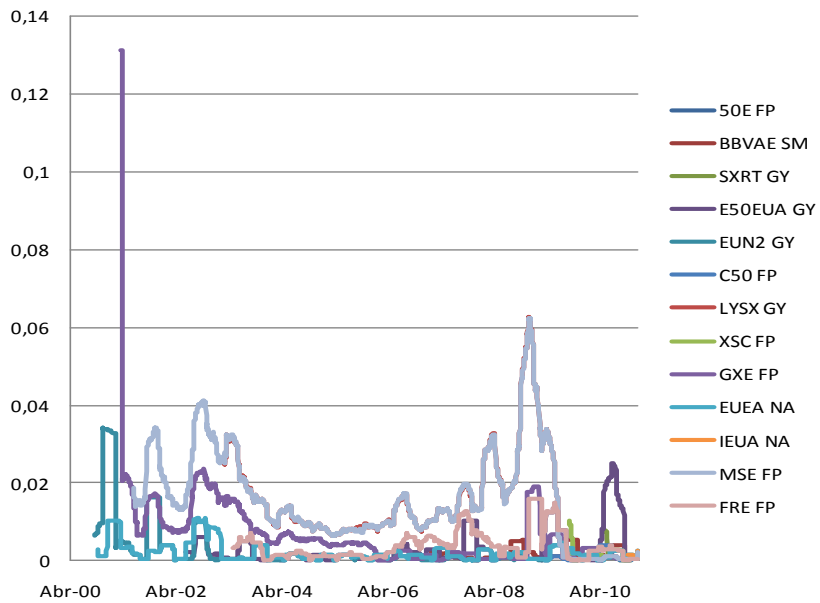
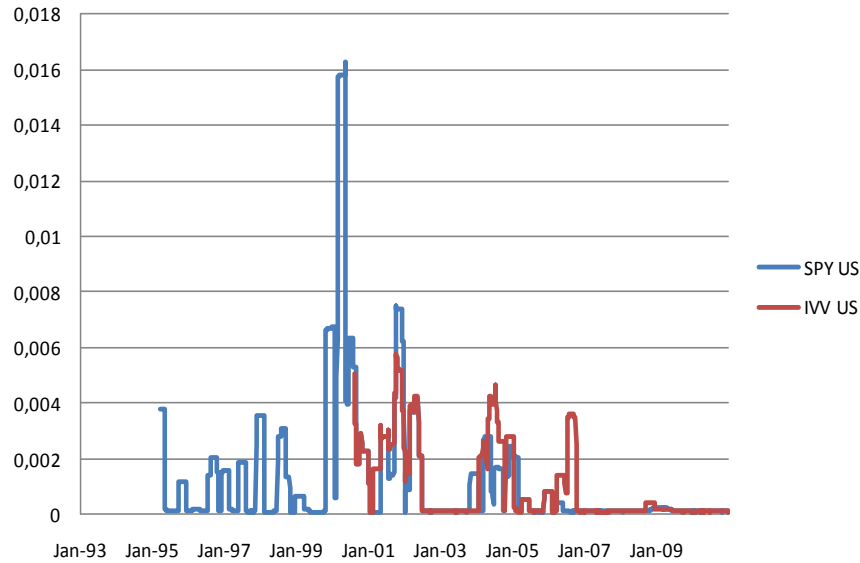


Figure XI

Evolution of the TE of equity index ETFs that track the S&P 500

**(v) Main conclusions***Equity index ETFs*

Linking the information regarding equity index ETFs, we can see that there is no parallelism between the number of observations, which is obviously related with the inception date, and the value of the beta for each equity index ETF. So, in this case, it is not true that usually the ETFs that have oldest inception date are the same that have the larger tracking capacity, i.e., that have the beta closer to 1. Additionally, the average volume of the last 6 month is not explained by the beta of the ETF, i.e., the average volume is not explained by the tracking ability of the ETF. The same conclusion can be applied to the fees, since fees are not explained by the tracking ability of the ETF. Thus, an ETF with a highest fee is not always the same that has the highest tracking capacity. Finally, we can see that the relation between beta and tracking error is not linear, the ETFs with low tracking errors are not always the ETFs that have a beta closer to 1. However, the ETFs that reject the null hypothesis on the F-Test are usually the same that have a beta closer to 1 and lower TE.

In sum, to choose an ETF, the investor should decided what feature he considers to be the most important one, which feature makes an ETF preferable to the other that track the same index, that have the same benchmark.

Leveraged and inverse ETFs

In a cross analysis, we can see a relation among the average volume, tracking error and beta on two ETFs that tracks 2 times the performance of the S&P 500, where the ETF with the highest average volume is the same with the lowest tracking error and with the beta closer to 2. However, on the ETFs that track 2x the performance of the Eurostoxx 50, the same conclusion is not applicable. On ETFs that track 2x the inverse of the S&P 500 index, we can see through the average volume, tracking error and beta that, again, the ETF with the highest volume, is the same with the lowest tracking error and beta closer to -2, while on the ETFs that track 2x the inverse of the Eurostoxx 50 index, we cannot see that relation.

(vi) *Comparison with Mutual Funds*

Mutual Funds

For mutual funds, after extracting from Lipper a series of mutual funds information, I restricted the provisional database by filtering some of them. I started by choosing only open-end indexed mutual funds, and by eliminating ETFs that possibility could be among the information extracted. Then, I selected only mutual funds that are primary flag and that declare as having as benchmark the FTSE 100, Eurostoxx 50 and the S&P 500. Finally, and to complete the process, I chose only mutual funds with an ISIN code, in order to extract the additional data from Bloomberg. Notice that, in the final I organized mutual funds in three sets, since each set account for one benchmark index, as I did for ETFs.

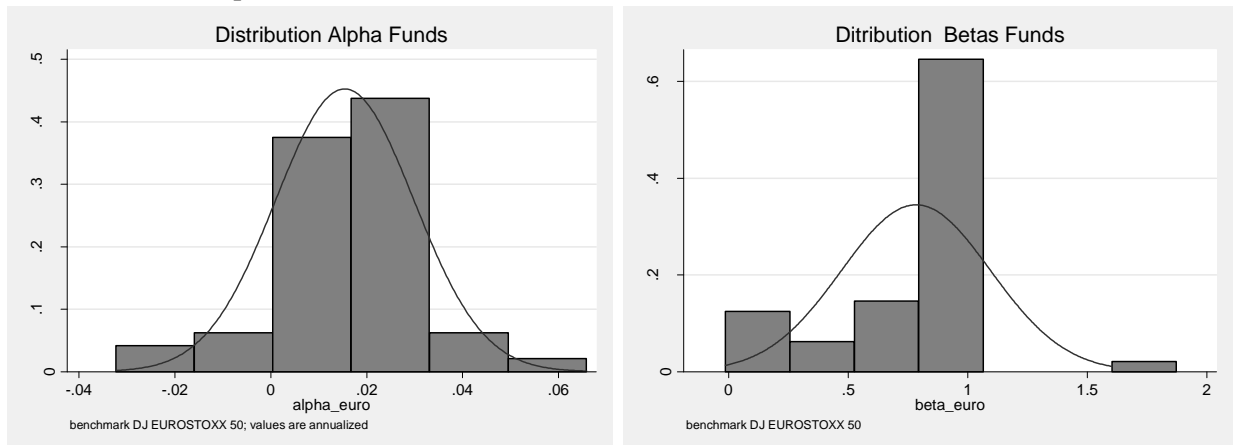
On annex IV, V and VI, I present the summary statistics and on annex VII, VIII and IX, I present the detailed information about the of my final database. We can see that mutual funds, that track the S&P 500 index, have the largest number of observations and the largest sample (number of

mutual funds). Mutual funds that track the FTSE 100 index present more observations than the mutual funds that track the Eurostoxx 50 index, while in terms of ETFs' sample, we have the opposite. Additionally, by making a simple average of the information about the fees for each benchmark mutual funds, we can conclude that, the mutual funds that track the performance of S&P 500 present, in average, the lowest fees, while the mutual funds that track the performance of Eurostoxx 50 present, in average, the highest fees.

On annex X, we can see the results of the time-series regression for the set of Mutual Fund that track the performance of the Eurostoxx 50 index. The alpha assumes a small value for commonplace mutual funds and there is only statistically significant with 95% confidence level for one mutual fund, ING Direct Fondo Naranja Euro Stoxx 50, FI. The average Beta rounds 0.8, which shows that, in average, mutual funds have not significant deviations from the benchmark. Among all the observations, only two Betas are not statistically significant, the Argenta actions UEM and Euro Indiciel LCF (see also Figure XII).

Figure XII

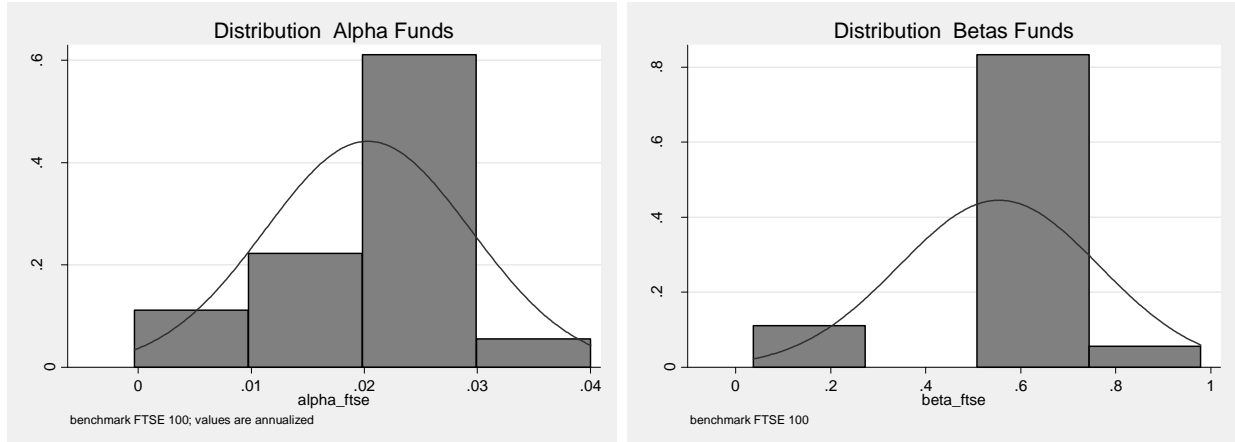
Distribution of Alpha and Beta values for Mutual Funds that have the Eurostoxx 50 as the benchmark



Annex XI shows the same information as annex X but for mutual funds that track the performance of FTSE 100. Like in the previous set of mutual funds, the alpha assumes a small value for the majority of mutual funds and it is not statistically significant. The average beta is lower than on mutual funds presented on annex X, showing that mutual funds that track the FTSE 100 index have significant difficult into track its benchmark and, in this case, only one mutual fund has a beta significant closer to 1, EMIF UK Index Plus B C (Load). Among the set

of mutual funds in analysis, two betas are not statistically significant, the Marks & Spencer UK 100 Companies Acc and Scottish Widows UK Tracker A Acc (see also Figure XIII).

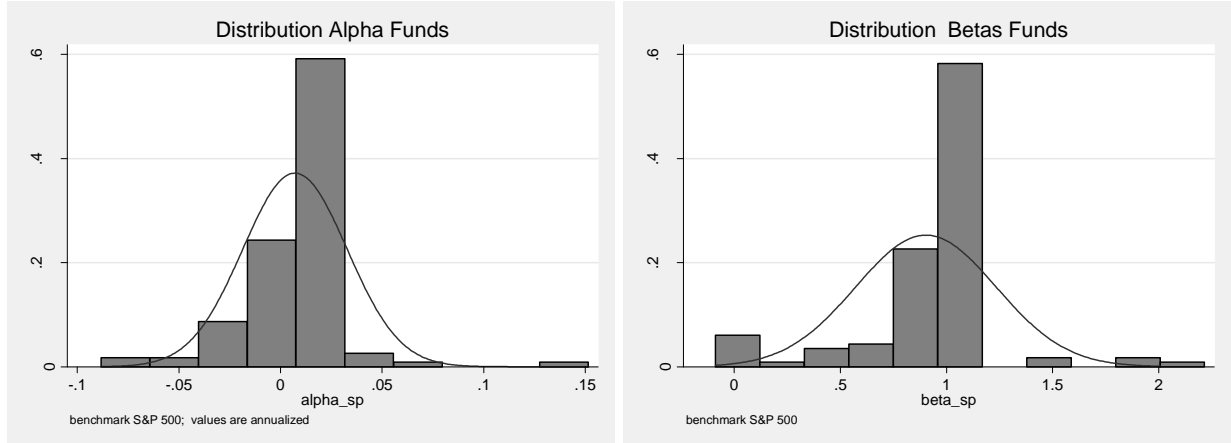
Figure XIII
Distribution of Alpha and Beta values for Mutual Funds that have the FTSE 100 as the benchmark



Finally, annex XII, shows information about mutual funds that track the S&P 500. Contrary to ETFs data, the set of mutual funds where the S&P 500 index is the benchmark is the one with the highest sample. The alpha's value is low for commonplace mutual funds and lower, in average, than on the previous two sets of mutual funds in analysis. It is not statistically significant for the majority of mutual funds but in this case we have a larger number of alphas that are statistically significant with 95% confidence level, 44 in 90. The average beta assumes the highest value among the 3 sets of mutual funds in analysis (mutual funds that track the FTSE 100, the Eurostoxx 50 and the S&P 500), 0.96, showing that mutual funds that track the S&P 500 are very efficient into track the bechmark (see also Figure XIV).

Figure XIV

Distribution of Alpha and Beta values for Mutual Funds that have the S&P 500 as the benchmark



On annex VII, VIII and IX we have the results of the tracking error, computed in 3 different ways, for each set of mutual funds, in the same way that I did previously for ETFs. We can conclude that the mutual funds that track the S&P 500 presents, in average, the lowest value for tracking error computation, followed by mutual funds that track the Eurostoxx 50 and finally mutual funds that track the FTSE 100, which lead to the same conclusion of beta's analysis, i.e., mutual funds that have as a benchmark the S&P 500 are, in average, the mutual funds that best track the performance of the benchmark index, followed by Eurostoxx 50 mutual funds and FTSE 100 mutual funds (see also Figure XV, XVI and XVII).

Figure XV

Distribution of tracking errors for Mutual Funds that have the Eurostoxx 50 as the benchmark

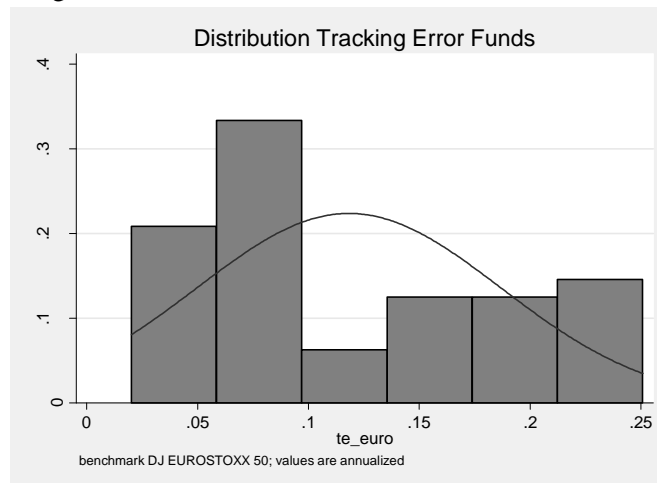


Figure XVI

Distribution of tracking errors for Mutual Funds that have the FTSE 100 as the benchmark

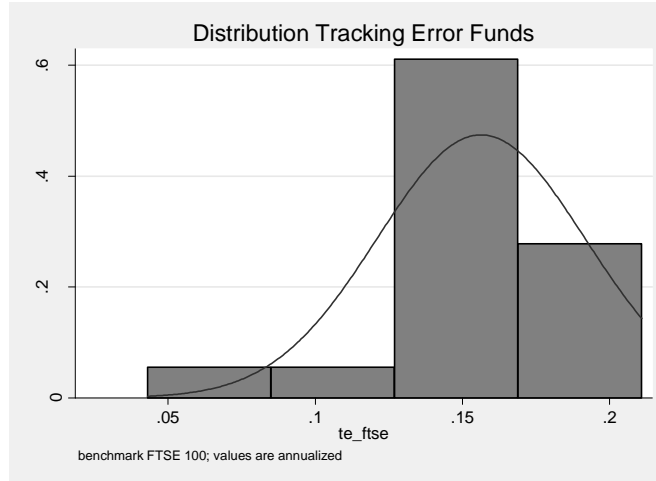
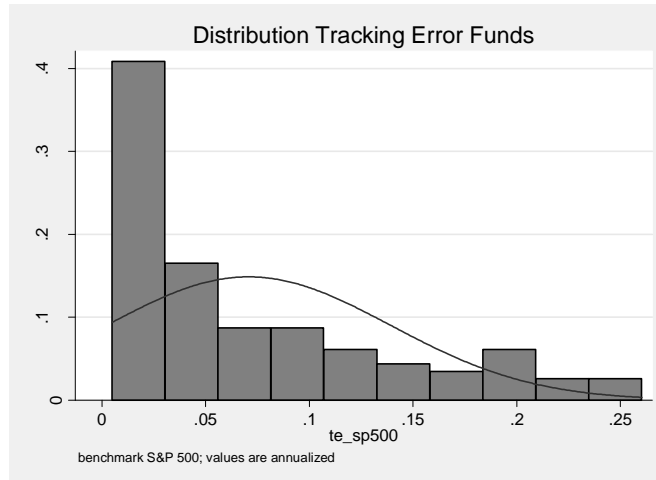


Figure XVII

Distribution of tracking errors for Mutual Funds that have the S&P 500 as the benchmark



ETFs and Mutual Funds

It is important to highlight some conclusions regarding the relation between ETFs and mutual funds in the final of this extensive analysis. First, as the mutual funds are an older investment vehicle than ETFs, they present usually a higher history, so, a larger number of observations. Second, it seems that the ETFs track better their benchmarks than mutual funds do, presenting higher beta and lower tracking error. This is particularly evident when the benchmark is the

FTSE 100. Third, and in spite the lack of information, seems that the majority of mutual funds present higher fees than ETFs, which can be justified by the design of the mutual fund as a financial product.

V. Conclusion

In the final of this paper, we can highlight some of the main conclusions of the study. ETFs seem to track efficiently their benchmarks. Equity index ETFs present positive alphas, while leveraged and inverse ETFs present negative alphas, although hardly statistically significant for both cases. ETFs that track the S&P 500 index, do it more efficiently than ETFs that track FTSE 100 index and Eurostoxx 50 index, the betas are closer to one and the tracking errors are smaller. However, I note that the number of equity index ETFs that track the S&P 500 is reduced due to the dominant position of the SPDR in this specific segment of ETFs (first-mover advantage).

Contrarily the F-test for leveraged and inverse ETFs showed that ETFs that track leveraged and inversely the S&P 500 index have more difficult into meet its objective. Among equity index ETFs, those which track the Eurostoxx 50 present more difficulty into meet its target.

Betas present a large dispersion mainly for ETFs that track FTSE 100 and Eurostoxx 50 which implies that tracking errors are also larger for these ETFs.

Equity index ETFs that have as the benchmark the FTSE 100 index tend to be traded at a premium while those which have the Eurostoxx 50 index as a benchmark tend to trade at a discount. Leveraged and inverse ETFs tend to be traded at a premium. Beta and tracking errors of equity index and leveraged and inverse ETFs are not consistent over time.

The inclusion of the mutual funds in this study allowed me to show that the ETFs in analysis are, in average, more efficient than traditional mutual funds with the same benchmark index, tracking better the target and presenting lower fees.

One last note for the different lifetime of ETFs in analysis, which is justified by the relatively recent history of this type of investment vehicle that made the analysis more difficult and limited more homogeneity among the sample.

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www.stockbrokers.barclays.co.uk/ provides information of ETFs history in Europe.

Annex

Annex I

Summary Statistics of linear equity index ETFs

Name	Issuer	Ticker Bloomberg	Benchmark	Currency	Inception date	Obs.	Mean	Std. Dev.	Min	Max
HSBC FTSE 100 ETF	HSBC ETFs	HUKX LN	FTSE 100	GBP	25-08-2009	342	0,07%	1,10%	-3,17%	5,27%
ISHARES FTSE 100	iShares	ISF LN	FTSE 100	GBP	27-04-2000	2699	0,02%	1,38%	-14,98%	9,74%
MULTI UNITS LUXEMBOURG LYXOR ETF FTSE 100	Multiunits	LYUK LN	FTSE 100	GBP	06-11-2009	289	0,06%	1,04%	-4,32%	2,91%
SOURCE MARKETS (LON) FTSE 100 SOURCE	SourceMarkets	S100 LN	FTSE 100	GBP	07-09-2009	260	0,07%	1,05%	-3,18%	3,11%
LYXOR ETF FTSE 100	Lyxor AM	L100 LN	FTSE 100	GBP	15-05-2007	920	0,02%	1,70%	-9,26%	9,22%
FTSE 100 Index	n.a.	n.a.	n.a.	n.a.	n.a.	2699	0,01%	1,32%	-8,85%	9,84%
HSBC.EURO STOXX 50	HSBC ETFs	50E FP	Eurostoxx 50	EUR	n.a.	275	0,02%	1,47%	-4,43%	10,37%
BBVA DJ STOXX EURO 50	BBVA	BBVAE SM	Eurostoxx 50	EUR	30-10-2006	1081	-0,01%	1,74%	-8,36%	11,03%
CS ETF EURO STOXX 50	db x-trackers	SXRT GY	Eurostoxx 50	EUR	10-03-2010	210	0,01%	1,35%	-4,76%	6,75%
UBS ETF DJ EURO STOXX 50	UBS	E50EUA GY	Eurostoxx 50	EUR	19-03-2002	2290	0,01%	1,59%	-12,06%	10,67%
ISHARES DJ (FRA) EUROSTOXX 50	iShares	EUN2 GY	Eurostoxx 50	EUR	03-04-2000	2793	0,00%	1,63%	-8,29%	11,28%
AMUNDI ETF DJ.ESX.50	Amundi IS	C50 FP	Eurostoxx 50	EUR	23-09-2008	576	0,05%	1,96%	-12,90%	10,91%
LYXOR DJ EUROSTOXX (FRA) 50	Lyxor AM	LYSX GY	Eurostoxx 50	EUR	29-11-2002	2107	0,02%	1,49%	-8,50%	10,82%
DBX ESTX50 1C	db x-trackers	XSC FP	Eurostoxx 50	EUR	27-05-2009	413	0,05%	1,44%	-4,46%	10,58%
ISHARES DJEURSTOXX50	iShares	GXE FP	Eurostoxx 50	EUR	26-09-2001	2604	0,00%	1,62%	-11,07%	12,39%
ISHARES EURO STX50	iShares	EUEA NA	Eurostoxx 50	EUR	03-04-2000	2596	0,00%	1,59%	-7,37%	11,08%
ISHARES DJ ESSO A	iShares	IEUA NA	Eurostoxx 50	EUR	23-03-2010	202	0,01%	1,59%	-4,50%	10,77%
LYXOR ETF ES 50	Lyxor AM	MSE FP	Eurostoxx 50	EUR	21-03-2001	2549	0,01%	1,59%	-8,18%	11,36%
UBSETF BB E STOXX50	UBS	FRE FP	Eurostoxx 50	EUR	29-01-2003	2064	0,03%	1,37%	-13,56%	25,88%
Eurostoxx 50 Index	n.a.	n.a.	n.a.	n.a.	n.a.	2793	-0,01%	1,57%	-7,88%	11,00%
SPDR S&P 500 ETF TST.	SPDR ETFs	SPY US	S&P 500	USD	22-01-1993	4515	0,04%	1,25%	-9,84%	14,52%
ISHARES S&P 500	iShares	IVV US	S&P 500	USD	19-05-2000	2670	0,01%	1,35%	-9,16%	11,10%
S&P 500 Index	n.a.	n.a.	n.a.	n.a.	n.a.	4535	0,03%	1,22%	-9,03%	11,58%

Annex II
Summary Statistics of linear equity index ETFs (based on NAV)

Name	Issuer	Ticker Bloomberg	Benchmark	Currency	Inception date	Obs.	Mean	Std. Dev.	Min	Max
HSBC FTSE 100 ETF	HSBC ETFs	HUKX LN	FTSE 100	Gbp	25-08-2009	342	0,08%	1,83%	-12,17%	13,95%
ISHARES FTSE 100	iShares	ISF LN	FTSE 100	Gbp	27-04-2000	2699	0,02%	1,56%	-23,11%	32,87%
MULTI UNITS LUXEMBOURG LYXOR ETF FTSE 100	Multiunits	LYUK LN	FTSE 100	Gbp	06-11-2009	289	0,09%	1,75%	-9,69%	12,74%
SOURCE MARKETS (LON) FTSE 100 SOURCE	SourceMarkets	S100 LN	FTSE 100	Gbp	07-09-2009	260	0,07%	1,19%	-5,12%	5,48%
LYXOR ETF FTSE 100	Lyxor AM	L100 LN	FTSE 100	Gbp	15-05-2007	920	0,02%	1,96%	-12,56%	14,58%
FTSE 100 Index	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0,01%	1,32%	-8,85%	9,84%
HSBC.EURO STOXX 50	HSBC ETFs	50E FP	Eurostoxx 50	EUR	n.a.	275				
BBVA DJ STOXX EURO 50	BBVA	BBVAE SM	Eurostoxx 50	EUR	30-10-2006	1081	-0,01%	1,73%	-7,85%	10,62%
CS ETF EURO STOXX 50	db x-trackers	SXRT GY	Eurostoxx 50	EUR	10-03-2010	210	0,03%	1,71%	-7,70%	10,27%
UBS ETF DJ EURO STOXX 50	UBS	E50EUA GY	Eurostoxx 50	EUR	19-03-2002	2290	0,01%	1,56%	-11,26%	11,00%
ISHARES DJ (FRA) EUROSTOXX 50	iShares	EUN2 GY	Eurostoxx 50	EUR	03-04-2000	2793	0,00%	1,67%	-17,44%	18,92%
AMUNDI ETF DJ.ESX.50	Amundi IS	C50 FP	Eurostoxx 50	EUR	23-09-2008	576	0,02%	2,03%	-7,86%	11,01%
LYXOR DJ EUROSTOXX (FRA) 50	Lyxor AM	LYSX GY	Eurostoxx 50	EUR	29-11-2002	2107	0,02%	1,45%	-7,94%	10,98%
DBX ESTX50 1C	db x-trackers	XSC FP	Eurostoxx 50	EUR	27-05-2009	413	0,04%	1,21%	-4,64%	10,33%
ISHARES DJEURSTOXX50	iShares	GXE FP	Eurostoxx 50	EUR	26-09-2001	2604	0,04%	2,50%	-7,79%	101,22%
ISHARES EURO STX50	iShares	EUEA NA	Eurostoxx 50	EUR	03-04-2000	2596	0,01%	1,69%	-7,86%	33,96%
ISHARES DJ ESSO A	iShares	IEUA NA	Eurostoxx 50	EUR	23-03-2010	202	0,03%	1,11%	-2,69%	3,53%
LYXOR ETF ES 50	Lyxor AM	MSE FP	Eurostoxx 50	EUR	21-03-2001	2549	0,01%	1,58%	-9,67%	10,98%
UBSETF BB E STOXX50	UBS	FRE FP	Eurostoxx 50	EUR	29-01-2003	2064	0,03%	1,46%	-7,86%	11,00%
Eurostoxx 50	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	-0,01%	1,57%	-7,88%	11,00%
SPDR S&P 500 ETF TST.	SPDR ETFs	SPY US	S&P 500	USD	22-01-1993	4515	0,04%	1,29%	-9,02%	11,56%
ISHARES S&P 500	iShares	IVV US	S&P 500	USD	19-05-2000	2670	0,01%	1,37%	-9,01%	11,56%
S&P 500 Index	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0,03%	1,22%	-9,03%	11,58%

Annex III

Summary Statistics of non-linear equity index ETFs

Name	Style	Ticker Bloomberg	Benchmark	Currency	Inception date	Obs.	Mean	Std. Dev.	Min	Max
ETFX FTSE 100 SUP SHRT ST 2X	2x short	SUK2 LN	FTSE 100	GBP	15-06-2009	388	-0,24%	2,33%	-10,87%	8,05%
DB X-TRACKERS FTSE 100 SH DA	short	XUKS LN	FTSE 100	GBP	17-06-2008	643	-0,02%	1,91%	-10,12%	10,97%
ETFX FTSE 100 LEVERAGED 2X	2x long	LUK2 LN	FTSE 100	GBP	15-06-2009	388	0,21%	2,31%	-6,86%	12,45%
FTSE 100 Index	n.a.	n.a.	n.a.	n.a.	n.a.	643	0,02%	1,76%	-8,85%	9,84%
AMUNDI ETF LEV E50	2x long	C5L FP	Eurostoxx 50	EUR	29-06-2009	388	0,11%	2,98%	-8,84%	21,55%
EASYETF EU ST 50 DB SH-CAP	2x short	EZD FP	Eurostoxx 50	EUR	25-02-2009	473	-0,21%	3,17%	-19,33%	19,44%
ETFX DJ EURO STOXX 50 LEV 2X	2x long	LEU2 GY	Eurostoxx 50	EUR	18-08-2009	351	0,07%	2,84%	-8,68%	19,94%
ETFX DJ EURO ST 50 DBL SH 2X	2x short	SEU2 GY	Eurostoxx 50	EUR	18-08-2009	351	-0,10%	3,02%	-21,66%	12,71%
DB X-TRACKERS EU STXX 50 SHR	short	XSSX GY	Eurostoxx 50	EUR	15-06-2007	908	0,03%	1,86%	-10,63%	8,42%
LYXOR ETF XBEAR STXX 50	2x short	BXX FP	Eurostoxx 50	EUR	04-04-2007	956	0,03%	3,44%	-20,77%	15,63%
Eurostoxx 50 Index	n.a.	n.a.	n.a.	n.a.	n.a.	956	-0,03%	1,81%	-7,88%	11,00%
RYDEX 2X S&P 500 ETF	2x long	RSU US	S&P 500	USD	07-11-2007	792	0,00%	3,62%	-20,32%	22,75%
RYDEX INVERSE 2X S&P 500 ETF	2x short	RSW US	S&P 500	USD	07-11-2007	792	-0,01%	3,66%	-23,36%	18,43%
PROSHARES ULTRASHORT S&P500	2x short	SDS US	S&P 500	USD	13-07-2006	1125	-0,04%	3,19%	-22,44%	18,07%
PROSHARES SHORT S&P500	short	SH US	S&P 500	USD	21-06-2006	1140	-0,02%	1,66%	-12,81%	9,41%
PROSH ULTRAPRO SHORT S&P 500	3x short	SPXU US	S&P 500	USD	25-06-2009	383	-0,29%	3,28%	-13,10%	11,45%
PROSHARES ULTRA S&P500	2x long	SSO US	S&P 500	USD	21-06-2006	1140	0,02%	3,13%	-17,29%	22,41%
PROSHARES ULTRAPRO S&P 500	3x long	UPRO US	S&P 500	USD	25-06-2009	383	0,28%	3,27%	-11,46%	12,97%
S&P 500 Index	n.a.	n.a.	n.a.	n.a.	n.a.	1140	0,01%	1,64%	-9,03%	11,58%

Annex IV
Summary Statistics of Mutual Funds that track the Eurostoxx 50

Name	Bloomberg Ticker	Benchmark	Currency	Inception date	Obs.	Mean	Std. Dev.	Min	Max
Ahorro Corporacion Euro Stoxx 50 Indice, FI	ACES50 SM Equity	Eurostoxx 50	EUR	11-11-2002	2084	0,02%	1,48%	-8,23%	11,68%
Allianz Actions Indice Euroland R	FR0000401507 Equity	Eurostoxx 50	EUR	04-02-1983	2812	0,00%	1,64%	-9,17%	11,10%
Allianz RCM Euro Equity Index - A - EUR	ADEIAX LX Equity	Eurostoxx 50	EUR	24-02-2003	2014	0,03%	1,39%	-12,12%	8,44%
Amundi Index Euro I C	CINXUC FP Equity	Eurostoxx 50	EUR	10-05-2005	1448	0,02%	1,56%	-8,46%	11,02%
Argenta Actions UEM	ARG5006 LX Equity	Eurostoxx 50	EUR	07-07-1998	2812	0,00%	1,39%	-13,60%	16,52%
BBK Bolsa Euro, FI	BBKBEUR SM Equity	Eurostoxx 50	EUR	03-01-2000	2812	0,00%	1,56%	-8,51%	11,21%
BBVA Bolsa Euro Quant, FI	EUROQUA SM Equity	Eurostoxx 50	EUR	23-02-2005	1500	0,01%	2,51%	-16,59%	19,48%
BBVA Bolsa Indice Euro, FI	ARGFBIB SM Equity	Eurostoxx 50	EUR	20-06-1997	2812	0,00%	1,59%	-7,86%	10,61%
BK Indice Europeo 50, FI	BKINE50 SM Equity	Eurostoxx 50	EUR	28-11-2000	2580	0,00%	1,58%	-8,49%	11,20%
BKCP Invest BKCP Euro Trackers	BKC7147 BB Equity	Eurostoxx 50	EUR	02-04-2001	2494	0,00%	1,60%	-20,37%	32,87%
BNP Paribas Indice Euro P	BNPINEP FP Equity	Eurostoxx 50	EUR	24-10-2007	808	-0,02%	1,90%	-8,46%	11,01%
Caja Ingenieros Bolsa Euro Plus, FI	CAJINGI SM Equity	Eurostoxx 50	EUR	08-06-1998	2812	0,00%	1,86%	-33,73%	42,56%
Caja Madrid Indice Euro Stoxx50, FI	FNBEURO SM Equity	Eurostoxx 50	EUR	13-08-1997	2812	-0,01%	1,62%	-19,14%	19,08%
CAM Bolsa Europa, FI	ABBBS2 SM Equity	Eurostoxx 50	EUR	21-02-1997	2812	-0,02%	1,52%	-14,44%	11,19%
CMI (Lux) Euro Equity Index Tracking	CMIEITI LX Equity	Eurostoxx 50	EUR	01-06-1999	427	0,05%	1,37%	-4,33%	4,40%
DBV-Win Fund EURO STOXX 50	DBVWESI LX Equity	Eurostoxx 50	EUR	01-06-1999	2812	0,00%	1,58%	-7,87%	11,00%
DJD IndexTracker PLUS - DJ Euro Stoxx 50	DJDITES LE Equity	Eurostoxx 50	EUR	15-07-2005	1400	0,01%	1,44%	-20,80%	19,16%
Elan Euro Indice C	ELEURIC FP Equity	Eurostoxx 50	EUR	29-02-2000	2763	0,00%	1,68%	-10,87%	13,20%
Elite 1818 Euro Index	FR0007031117 Equity	Eurostoxx 50	EUR	05-03-1999	1662	0,02%	1,48%	-8,62%	12,03%
EMI Index Euro	FR0007031000 Equity	Eurostoxx 50	EUR	01-04-1999	2812	0,00%	1,66%	-9,00%	12,13%
Euro Indiciel LCF	FR0007030838 Equity	Eurostoxx 50	EUR	18-03-1999	2812	-0,01%	1,00%	-11,75%	13,51%
Fidelity Funds - Euro Stoxx 50 A EUR	FIDDAXI LX Equity	Eurostoxx 50	EUR	13-09-1996	2812	0,00%	1,62%	-8,28%	11,16%
Foncaixa Privada Euro Indice, FI	ABEUIND SM Equity	Eurostoxx 50	EUR	15-12-1998	2593	0,00%	1,59%	-8,03%	11,50%
FondEspaña Eurobolsa, FI	ES0122058037 Equity	Eurostoxx 50	EUR	17-01-2000	2531	-0,01%	1,62%	-7,97%	11,13%

Name	Bloomberg Ticker	Benchmark	Currency	Inception date	Obs.	Mean	Std. Dev.	Min	Max
Gerling Euro Star 50	AMPEU50 GR Equity	Eurostoxx 50	EUR	30-11-2000	2578	0,00%	1,60%	-9,62%	10,58%
ING Direct Fondo Naranja Euro Stoxx 50, FI	IDEUR50 SM Equity	Eurostoxx 50	EUR	23-08-2005	1373	0,01%	1,59%	-8,12%	11,21%
KBC Index Euroland Acc	KBCEULK BB Equity	Eurostoxx 50	EUR	25-06-1999	2812	0,00%	1,58%	-8,42%	11,05%
LCL Indiciel Euro	FR0000985137 Equity	Eurostoxx 50	EUR	29-12-2000	2222	0,00%	1,63%	-9,89%	11,04%
Lyxor Index Eurozone Large C 50 IE	SGEUZLC LX Equity	Eurostoxx 50	EUR	24-01-2007	1009	-0,02%	1,77%	-8,08%	11,17%
Lyxor Index Fund Euro	SGINEUR FP Equity	Eurostoxx 50	EUR	31-12-1997	2812	0,00%	1,61%	-8,45%	10,91%
Lyxor Index Fund Euro B	SGIXEUB FP Equity	Eurostoxx 50	EUR	06-04-2000	2745	0,00%	1,75%	-23,88%	28,66%
Lyxor Index Fund Euro Plus	SGINUPL FP Equity	Eurostoxx 50	EUR	07-02-2003	2025	0,03%	1,51%	-8,92%	11,72%
MAM Actions Euro 50	FR0000970956 Equity	Eurostoxx 50	EUR	02-07-1999	2812	0,00%	1,67%	-14,57%	17,97%
Noam Euro Indice	FR0010085167 Equity	Eurostoxx 50	EUR	02-06-1998	2247	-0,01%	1,54%	-8,04%	11,16%
OP EURO STOXX 50-Werte	OPPE50 GR Equity	Eurostoxx 50	EUR	30-03-1998	2812	0,00%	1,60%	-12,38%	10,14%
OP-Euro Indeksi A	OPEURIN FH Equity	Eurostoxx 50	EUR	01-04-1999	1173	-0,01%	1,74%	-15,22%	12,39%
Openbank Euro Indice 50, FI	SCHPEIN SM Equity	Eurostoxx 50	EUR	22-04-2004	1719	0,02%	1,45%	-8,24%	10,88%
Pohjola Euro 50 Plus B	FI0008805833 Equity	Eurostoxx 50	EUR	04-02-2002	1053	0,02%	1,55%	-8,41%	8,53%
SGAM Fund Index Euroland AC	SOGIEAC LX Equity	Eurostoxx 50	EUR	18-08-2004	1635	0,02%	1,48%	-8,21%	11,01%
SGAM Index Opti Euro	FR0007082763 Equity	Eurostoxx 50	EUR	23-04-2003	433	0,05%	0,86%	-3,45%	2,75%
Soprarno DJ Eurostoxx 50	SOPDJES IM Equity	Eurostoxx 50	EUR	09-08-2007	825	-0,02%	1,57%	-6,61%	9,07%
Strategie Indice Europe	FR0000016164 Equity	Eurostoxx 50	EUR	02-01-1997	2812	0,00%	1,63%	-9,00%	11,13%
Strategie Indice Eurostoxx	FR0000443244 Equity ISIN	Eurostoxx 50	EUR	28-03-2000	1530	0,01%	1,50%	-8,63%	12,04%
UniEuroSTOXX 50 A	UNIES50 LX Equity ISIN	Eurostoxx 50	EUR	15-09-1998	2812	0,00%	1,59%	-9,97%	10,84%
Unofi Europe C	FR0007036033 Equity ISIN	Eurostoxx 50	EUR	20-06-2000	2581	-0,01%	1,61%	-10,71%	11,16%
Vital Euro Bolsa Indice, FI	ES0184201038 Equity ISIN	Eurostoxx 50	EUR	24-02-2003	2006	0,03%	1,35%	-7,33%	10,10%
Zanonia-Deep-Fonds	ZANDEEP GR Equity ISIN	Eurostoxx 50	EUR	29-09-2008	579	0,03%	1,58%	-10,50%	9,57%
Zenit Eurostoxx 50 Plus R	IT0003148845 Equity ISIN	Eurostoxx 50	EUR	02-10-2001	2045	0,01%	1,47%	-7,71%	10,52%
Eurostoxx 50	n.a.	n.a.	n.a.	n.a.	n.a.	-0,01%	1,59%	-7,88%	11,00%

Annex V
Summary Statistics of Mutual Funds that track the FTSE 100

Name	Bloomberg Ticker	Benchmark	Currency	Inception date	Obs.	Mean	Std. Dev.	Min	Max
Aviva Investors Blue Chip Tracking SC 1	CUUKIXI LN Equity ISIN	FTSE 100	GBP	30-04-1996	2780	0,01%	1,27%	-8,95%	9,74%
Clerical Medical FTSE100 Tracker	BOSFTSI LN Equity ISIN	FTSE 100	GBP	01-03-1999	2780	0,01%	1,27%	-9,48%	9,97%
Credit Suisse FTSE100 Tracker Retail	CREUKPI LN Equity ISIN	FTSE 100	GBP	30-03-1999	1749	0,01%	1,13%	-7,29%	6,34%
EMIF UK Index Plus B C (Load)	EUMUKPC LX Equity ISIN	FTSE 100	GBP	11-05-1999	2780	0,00%	1,32%	-8,69%	9,88%
engage Investment Growth A Acc	HOMINGI LN Equity ISIN	FTSE 100	GBP	15-01-1997	2780	0,01%	1,28%	-12,08%	9,79%
F&C FTSE 100 Tracker 1 Acc	SUNAUKL LN Equity ISIN	FTSE 100	GBP	13-05-1992	2394	0,00%	1,30%	-9,17%	10,01%
Gartmore UK Tracker Ret Acc	GB0032898404 Equity ISIN	FTSE 100	GBP	19-05-2003	2780	0,01%	1,29%	-9,12%	9,85%
Halifax UK FTSE 100 Index Tracking C	HAFT1CI LN Equity ISIN	FTSE 100	GBP	16-09-2002	2097	0,04%	1,24%	-9,20%	9,94%
HSBC FTSE 100 Index Acc	MIDFOOA LN Equity ISIN	FTSE 100	GBP	30-09-1994	2780	0,01%	1,28%	-9,05%	9,78%
Legal & General (A&L) UK 100 Index Tracker Acc	ALLUKIT LN Equity ISIN	FTSE 100	GBP	06-04-1999	2629	0,01%	1,32%	-9,19%	9,67%
Legal & General UK 100 Index Trust R Acc	LGUKIRA LN Equity ISIN	FTSE 100	GBP	30-08-2005	1347	0,03%	1,36%	-9,31%	9,77%
Liontrust Top 100	RVMTOP1 LN Equity ISIN	FTSE 100	GBP	14-07-1995	2780	0,02%	1,28%	-9,14%	9,76%
Marks & Spencer UK 100 Companies Acc	MRKUK1I LN Equity ISIN	FTSE 100	GBP	01-05-1995	2780	0,01%	1,34%	-8,33%	9,11%
Prudential UK Index Tracker Trust Acc	GB0030313752 Equity ISIN	FTSE 100	GBP	06-04-2001	1614	0,03%	1,37%	-9,67%	10,52%
RBS FTSE 100 Tracker Standard	DLFTSEA LN Equity ISIN	FTSE 100	GBP	20-02-1996	2780	0,01%	1,26%	-11,41%	9,34%
Santander Stockmarket 100 Tracker Growth	ABNSTRA LN Equity ISIN	FTSE 100	GBP	26-03-1999	190	0,03%	1,09%	-2,85%	3,22%
Scottish Widows UK Tracker A Acc	LLDFTSA LN Equity ISIN	FTSE 100	GBP	08-11-1994	2780	0,01%	1,31%	-12,04%	9,69%
Sovereign FTSE 100	GB0008372970 Equity ISIN	FTSE 100	GBP	18-07-1994	1660	0,00%	1,19%	-7,14%	6,37%
FTSE 100 Index	n.a.	n.a.	n.a.	n.a.	2780	0,00%	1,32%	-8,85%	9,84%

Annex VI
Summary Statistics of Mutual Funds that track the S&P 500

Name	Bloomberg Ticker	Benchmark	Currency	Inception date	Obs.	Mean	Std. Dev.	Min	Max
American Century Equity Index Fund;Institutional	ACQIX US Equity ISIN	S&P 500	USD	26-02-1999	3318	0,01%	0,96%	-9,50%	14,37%
Barclays Global Investors S&P 500 Stock Fund	WFSPX US Equity ISIN	S&P 500	USD	02-07-1993	2980	0,02%	1,37%	-8,99%	11,73%
BCGE Synchrony US Equity	SYNUSSB SW Equity ISIN	S&P 500	USD	13-10-1997	4389	0,04%	1,23%	-9,01%	11,79%
BGI US Index	BZWIUSI ID Equity ISIN	S&P 500	USD	12-04-1996	3325	0,01%	1,31%	-21,85%	27,66%
BlackRock Index Equity Portfolio;Institutional	PNIEX US Equity ISIN	S&P 500	USD	20-04-1992	3704	0,03%	1,34%	-9,86%	14,21%
BNY Mellon S&P 500 Index Tracker A USD	MEL500A ID Equity ISIN	S&P 500	USD	23-03-2001	4533	0,04%	1,21%	-8,99%	11,63%
Bridgeway Blue-Chip 35 Index Fund	BRLIX US Equity ISIN	S&P 500	USD	31-07-1997	2457	0,01%	1,38%	-9,03%	11,60%
California S&P 500 Index Fund;Direct	SPFIX US Equity ISIN	S&P 500	USD	20-04-1992	3376	0,03%	1,33%	-8,06%	10,70%
CMI (Lux) US Equity Index Tracking	CMIGUII LX Equity ISIN	S&P 500	USD	31-05-1990	4533	0,04%	1,21%	-8,92%	11,61%
Columbia Large Cap Enhanced Core Fund;Z	NMIMX US Equity ISIN	S&P 500	USD	31-07-1996	4027	0,04%	1,32%	-15,20%	18,30%
Coutts Equator US Equity Index Prgm Srs2	COUNATI ID Equity ISIN	S&P 500	USD	21-01-1999	3543	0,03%	1,35%	-9,08%	12,23%
CSIF US Large Cap Index-Pension Fd D	CH0020618291 Equity ISIN	S&P 500	USD	14-10-2005	3005	0,01%	1,58%	-18,81%	26,86%
DFA Enhanced US Large Company Portfolio;Inst	DFELX US Equity ISIN	S&P 500	USD	02-07-1996	751	-0,02%	1,18%	-8,78%	5,41%
DFA US Large Company Institutional Index Port;Inst	DFUSX US Equity ISIN	S&P 500	USD	23-09-1999	3557	0,03%	1,35%	-9,80%	14,26%
DFA US Large Company Portfolio;Institutional	DFLCX US Equity ISIN	S&P 500	USD	28-12-1990	2696	0,01%	1,37%	-9,03%	11,68%
DJD IndexTracker PLUS - S&P 500	DJDITSP LE Equity ISIN	S&P 500	USD	15-07-2005	4368	0,04%	1,21%	-9,00%	11,60%
Dreyfus BASIC S&P 500 Stock Index Fund	DSPIX US Equity ISIN	S&P 500	USD	30-09-1993	1375	0,02%	1,32%	-18,69%	19,82%
Dreyfus S&P 500 Index Fund	PEOPX US Equity ISIN	S&P 500	USD	02-01-1990	4413	0,04%	1,23%	-9,08%	11,75%
DWS Equity 500 Index Fund;Institutional	BTIIX US Equity ISIN	S&P 500	USD	31-12-1992	4533	0,04%	1,22%	-9,04%	11,65%
DWS S&P 500 Index Fund;S	SCPIX US Equity ISIN	S&P 500	USD	29-08-1997	4533	0,04%	1,22%	-8,99%	11,62%
DWS S&P 500 Plus Fund;S	SSFFX US Equity ISIN	S&P 500	USD	17-05-1999	3268	0,02%	1,35%	-9,02%	11,57%
E*TRADE S&P 500 Index Fund	ETSPX US Equity ISIN	S&P 500	USD	17-02-1999	2914	0,02%	1,33%	-8,34%	11,63%
Evergreen Enhanced S&P 500 Fund;A	US2999097544 Equity	S&P 500	USD	14-02-1985	2496	-0,01%	1,39%	-9,00%	11,58%
Fidelity Four-in-One Index Fund	FFNOX US Equity	S&P 500	USD	29-06-1999	4416	0,03%	1,22%	-9,05%	11,56%

Name	Bloomberg Ticker	Benchmark	Currency	Inception date	Obs.	Mean	Std. Dev.	Min	Max
Fidelity Spartan 500 Index Fund;Investor	FSMKX US Equity	S&P 500	USD	06-03-1990	2843	0,02%	1,12%	-7,88%	10,11%
Fidelity Spartan US Equity Index Fund;Investor	FUSEX US Equity	S&P 500	USD	17-02-1988	4295	0,04%	1,22%	-9,03%	11,62%
Fifth Third Equity Index Fund;Institutional	KNIEQ US Equity	S&P 500	USD	11-08-1998	4533	0,04%	1,22%	-9,06%	11,64%
GE Institutional S&P 500 Index Fund;Investment	GIDIX US Equity	S&P 500	USD	25-11-1997	4533	0,04%	1,22%	-9,00%	11,71%
Green Century Equity Fund	GCEQX US Equity	S&P 500	USD	03-06-1991	3204	0,02%	1,36%	-9,00%	11,59%
GuideStone Equity Index Fund;GS4	GEQZX US Equity	S&P 500	USD	27-08-2001	4533	0,03%	1,34%	-32,80%	10,92%
Homestead Stock Index Fund	HSTIX US Equity	S&P 500	USD	28-10-1999	2349	0,02%	1,38%	-9,16%	11,40%
Huntington Rotating Markets Fund;Trust	HRITX US Equity	S&P 500	USD	01-05-2001	2695	0,01%	1,37%	-9,00%	11,72%
ING Index Plus Large Cap Fund;I	AELIX US Equity	S&P 500	USD	10-12-1996	2401	0,02%	1,31%	-8,17%	9,86%
IQAM Equity US	AMERIDX AV Equity	S&P 500	USD	02-05-2001	3536	0,03%	1,34%	-9,24%	11,66%
JennDry Dryden Stock Index Fund;Z	HLEIX US Equity	S&P 500	USD	02-07-1991	2430	0,00%	1,24%	-7,33%	6,31%
KBC Index USA Acc	SIV2686 BB Equity	S&P 500	USD	08-04-1998	4533	0,04%	1,21%	-9,04%	11,68%
Legg Mason Partners S&P 500 Index Fund;A	SBSPX US Equity	S&P 500	USD	05-01-1998	3203	0,02%	1,36%	-9,05%	11,72%
Lyxor Index US I C USD	LU0278205900 Equity	S&P 500	USD	28-12-2006	3149	0,02%	1,37%	-9,13%	11,64%
MainStay Equity Index Fund	MCSEX US Equity	S&P 500	USD	20-12-1990	1008	0,01%	1,76%	-9,86%	14,15%
MainStay S&P 500 Index Fund;I	US57629E5226 Equity	S&P 500	USD	26-08-1996	4533	0,04%	1,23%	-9,08%	11,87%
MassMutual Select Indexed Equity Fund;S	MMIEX US Equity	S&P 500	USD	01-03-1998	3463	0,03%	1,41%	-9,05%	11,80%
Metropolitan West AlphaTrak 500 Fund	MWATX US Equity	S&P 500	USD	29-06-1998	3220	0,02%	1,36%	-8,98%	11,58%
Morgan Stanley S&P 500 Index Fund;A	US55376T8826 Equity	S&P 500	USD	01-10-1997	3147	0,02%	1,45%	-9,68%	12,27%
Munder Index 500 Fund;Y	US6261297872 Equity	S&P 500	USD	01-12-1991	2860	0,01%	1,35%	-8,92%	11,50%
Mutual of America Equity Index Fund	MAEQX US Equity	S&P 500	USD	30-04-1999	4533	0,04%	1,22%	-9,04%	11,74%
Noam USA Indice	PLUSAIC FP Equity	S&P 500	USD	23-02-1999	2935	0,00%	1,34%	-9,81%	11,62%
Northern Equity Index Portfolio;A	BEIAX US Equity	S&P 500	USD	11-01-1993	2797	0,01%	1,36%	-9,39%	12,52%
Northern Stock Index Fund	NOSIX US Equity	S&P 500	USD	07-10-1996	4527	0,04%	1,22%	-9,13%	11,67%
Payden Market Return Fund	PYMRX US Equity	S&P 500	USD	01-12-1995	3581	0,03%	1,34%	-9,07%	11,67%
PF(LUX)-USA Index-P Cap	PICTUI LX Equity	S&P 500	USD	03-11-1999	3311	0,02%	1,71%	-17,96%	18,21%

Name	Bloomberg Ticker	Benchmark	Currency	Inception date	Obs.	Mean	Std. Dev.	Min	Max
PIMCO Fundamental IndexPLUS Fund;Institutional	PFPIX US Equity	S&P 500	USD	30-06-2005	2806	0,01%	1,37%	-9,02%	11,58%
PIMCO Fundamental IndexPLUS TR Fund;Institutional	PXTIX US Equity	S&P 500	USD	30-06-2005	1385	0,03%	1,80%	-11,33%	14,03%
PIMCO StocksPLUS Fund;Institutional	PSTKX US Equity	S&P 500	USD	14-05-1993	1385	0,04%	1,68%	-11,26%	12,03%
PIMCO StocksPLUS Total Return Fund;Institutional	PSPTX US Equity	S&P 500	USD	28-06-2002	4441	0,04%	1,29%	-11,87%	15,38%
Principal LargeCap S&P 500 Index Fund;R-5	PLFPX US Equity	S&P 500	USD	06-12-2000	2142	0,04%	1,38%	-11,05%	15,83%
ProFunds Basic Materials UltraSector ProFund;Inv	BMPIX US Equity	S&P 500	USD	04-09-2001	2530	0,01%	1,37%	-9,02%	11,64%
ProFunds Bull ProFund;Investor	BLPIX US Equity	S&P 500	USD	01-12-1997	2337	0,08%	2,91%	-20,04%	22,34%
ProFunds Consumer Goods UltraSector ProFund;Inv	CNPIX US Equity	S&P 500	USD	30-01-2004	3291	0,01%	1,36%	-9,21%	11,44%
ProFunds Consumer Services UltraSector ProFund;Inv	CYPIX US Equity	S&P 500	USD	30-01-2004	1737	0,03%	1,57%	-10,67%	13,92%
ProFunds Large-Cap Value ProFund;Investor	LVPIX US Equity	S&P 500	USD	01-10-2002	1737	0,02%	2,06%	-13,56%	17,63%
ProFunds UltraBull ProFund;Investor	ULPIX US Equity	S&P 500	USD	27-11-1997	2069	0,03%	1,45%	-9,73%	11,08%
RiverSource S&P 500 Index Fund;E	ADIEX US Equity	S&P 500	USD	25-10-1999	3292	0,03%	2,72%	-17,82%	22,91%
RS S&P 500 Index Fund;A	GUSPX US Equity	S&P 500	USD	07-08-2000	2501	0,01%	1,38%	-8,86%	11,58%
Rydex Nova Fund;Investor	RYNVX US Equity	S&P 500	USD	12-07-1993	2609	0,01%	1,37%	-8,99%	11,70%
Rydex S&P 500 2x Strategy Fund;H	RYTNX US Equity	S&P 500	USD	19-05-2000	4395	0,04%	1,88%	-13,93%	17,52%
Schwab 1000 Index Fund;Investor	SNXFX US Equity	S&P 500	USD	02-04-1991	2650	0,00%	2,75%	-18,61%	23,38%
Schwab Institutional Select S&P 500 Fund	ISLCX US Equity	S&P 500	USD	01-02-1999	4533	0,04%	1,21%	-9,01%	11,59%
Schwab MarketTrack All Equity Portfolio	SWEGX US Equity	S&P 500	USD	19-05-1998	2647	0,01%	1,38%	-9,10%	11,40%
Schwab S&P 500 Index Fund;Investor	SWPIX US Equity	S&P 500	USD	01-05-1996	3168	0,02%	1,31%	-9,40%	10,82%
SGAM Fund Index US AC	SOGIUC LX Equity	S&P 500	USD	18-08-2004	3352	0,03%	1,33%	-8,94%	11,59%
SMIF - SINOPIA US EQUITY B H (EUR)	SINABUA LX Equity	S&P 500	USD	17-06-1994	1604	0,02%	1,43%	-9,88%	14,10%
SSgA Disciplined Equity Fund	SSMTX US Equity	S&P 500	USD	04-05-1992	4164	0,03%	1,26%	-9,05%	12,57%
SSgA S&P 500 Index Fund	SVSPX US Equity	S&P 500	USD	30-12-1992	4465	0,03%	1,22%	-8,90%	11,92%
State Farm S&P 500 Index Fund;Legacy A	US8568527027 Equity	S&P 500	USD	18-12-2000	4506	0,04%	1,22%	-9,00%	11,63%
StockCar Stocks Index Fund	SCARX US Equity	S&P 500	USD	30-09-1998	2514	0,01%	1,38%	-8,97%	11,64%
T Rowe Price Equity Index 500 Fund	PREIX US Equity	S&P 500	USD	30-03-1990	2942	0,02%	1,24%	-8,11%	11,81%

Name	Bloomberg Ticker	Benchmark	Currency	Inception date	Obs.	Mean	Std. Dev.	Min	Max
Thrivent Large Cap Index Fund;A	AALCX US Equity	S&P 500	USD	01-07-2000	4533	0,04%	1,22%	-9,01%	11,65%
TIAA-CREF S&P 500 Index Fund;Institutional	TISPX US Equity	S&P 500	USD	01-10-2002	2246	-0,01%	1,40%	-8,93%	11,41%
UBS S&P 500 Index Fund;Y	US90263C3043 Equity	S&P 500	USD	31-12-1997	2077	0,04%	1,35%	-9,02%	11,57%
United Association S&P 500 Index Fund;I	UASPX US Equity	S&P 500	USD	01-03-2000	3000	0,02%	1,39%	-9,05%	11,42%
USAA S&P 500 Index Fund;Member	USSPX US Equity	S&P 500	USD	01-05-1996	2707	0,01%	1,37%	-8,97%	11,38%
Vanguard 500 Index Fund;Investor	VFINX US Equity	S&P 500	USD	31-08-1976	3682	0,03%	1,32%	-9,03%	11,66%
Vanguard Institutional Index Fund;Institutional	VINIX US Equity	S&P 500	USD	31-07-1990	4533	0,04%	1,22%	-9,03%	11,58%
Vanguard Tax-Managed Growth & Income Fund;Investor	VTGIX US Equity	S&P 500	USD	06-09-1994	4533	0,04%	1,22%	-9,01%	11,60%
Vanguard US 500 Stock Index Inv USD	VANUIV ID Equity	S&P 500	USD	04-11-1998	4139	0,04%	1,26%	-9,04%	11,64%
Vanguard US Futures USD	VANGUSF ID Equity	S&P 500	USD	01-11-2004	3057	0,02%	1,34%	-9,04%	11,59%
Vanguard Value Index Fund;Investor	VIVAX US Equity	S&P 500	USD	02-11-1992	1552	0,02%	1,40%	-9,29%	11,41%
Vantagepoint 500 Stock Index Fund;I	VPFIX US Equity	S&P 500	USD	01-03-1999	4533	0,04%	1,24%	-9,96%	11,29%
Victory Stock Index Fund;A	SSTIX US Equity	S&P 500	USD	03-12-1993	2979	0,02%	1,36%	-9,01%	11,45%
Wells Fargo Advantage Index Fund;Adm	WFIOX US Equity	S&P 500	USD	05-09-1990	4293	0,04%	1,28%	-9,77%	11,84%
S&P 500 Index	n.a.	n.a.	n.a.	n.a.	2812	-0,01%	1,59%	-7,88%	11,00%

Annex VII
Data Description of Mutual Funds that track the Eurostoxx 50

Name	Bloomberg Ticker	Benchmark	Currency	Inception date	Obs.	Management Fee	Redemption flat	Max Redemption fee	Front Load	Expense Ratio
Ahorro Corporacion Euro Stoxx 50 Indice, FI	ACES50 SM Equity	Eurostoxx 50	EUR	11-11-2002	2084	1	n.a.	n.a.	n.a.	n.a.
Allianz Actions Indice Euroland R	FR0000401507 Equity	Eurostoxx 50	EUR	04-02-1983	2812	n.a.	n.a.	0,5	4	n.a.
Allianz RCM Euro Equity Index - A - EUR	ADEE1AX LX Equity	Eurostoxx 50	EUR	24-02-2003	2014	0,75	0	0	5	0,44
Amundi Index Euro I C	CINXEU FP Equity	Eurostoxx 50	EUR	10-05-2005	1448	n.a.	n.a.	0	2,5	n.a.
Argenta Actions UEM	ARG5006 LX Equity	Eurostoxx 50	EUR	07-07-1998	2812	n.a.	n.a.	0	0	n.a.
BBK Bolsa Euro, FI	BBKBEUR SM Equity	Eurostoxx 50	EUR	03-01-2000	2812	1,65	0	0	n.a.	n.a.
BBVA Bolsa Euro Quant, FI	EUROQUA SM Equity	Eurostoxx 50	EUR	23-02-2005	1500	1,35	n.a.	2	0	n.a.
BBVA Bolsa Indice Euro, FI	ARGFBIB SM Equity	Eurostoxx 50	EUR	20-06-1997	2812	1,1	0	0	1	n.a.
BK Indice Europeo 50, FI	BKINE50 SM Equity	Eurostoxx 50	EUR	28-11-2000	2580	0,6	0	0	n.a.	n.a.
BKCP Invest BKCP Euro Trackers	BKC7147 BB Equity	Eurostoxx 50	EUR	02-04-2001	2494	n.a.	0	0	3	n.a.
BNP Paribas Indice Euro P	BNPINEP FP Equity	Eurostoxx 50	EUR	24-10-2007	808	n.a.	n.a.	0	2	n.a.
Caja Ingenieros Bolsa Euro Plus, FI	CAJINGI SM Equity	Eurostoxx 50	EUR	08-06-1998	2812	1,35	0	0	n.a.	n.a.
Caja Madrid Indice Euro Stoxx50, FI	FNBEURO SM Equity	Eurostoxx 50	EUR	13-08-1997	2812	0,9	1	1	n.a.	n.a.
CAM Bolsa Europa, FI	ABBLS2 SM Equity	Eurostoxx 50	EUR	21-02-1997	2812	1,75	n.a.	2	n.a.	n.a.
CMI (Lux) Euro Equity Index Tracking	CMIEITI LX Equity	Eurostoxx 50	EUR	01-06-1999	427	n.a.	n.a.	0	2	0,72
DBV-Win Fund EURO STOXX 50	DBVWESI LX Equity	Eurostoxx 50	EUR	01-06-1999	2812	1,5	0	0	5	1,36
DJD IndexTracker PLUS - DJ Euro Stoxx 50	DJDITES LE Equity	Eurostoxx 50	EUR	15-07-2005	1400	1	n.a.	0,25	3	n.a.
Elan Euro Indice C	ELEURIC FP Equity	Eurostoxx 50	EUR	29-02-2000	2763	n.a.	n.a.	2	2	n.a.
Elite 1818 Euro Index	FR0007031117 Equity	Eurostoxx 50	EUR	05-03-1999	1662	n.a.	n.a.	0	2	n.a.
EMI Index Euro	FR0007031000 Equity	Eurostoxx 50	EUR	01-04-1999	2812	n.a.	n.a.	0	4	n.a.
Euro Indiciel LCF	FR0007030838 Equity	Eurostoxx 50	EUR	18-03-1999	2812	0,4	0	0	1	n.a.
Fidelity Funds - Euro Stoxx 50 A EUR	FIDDAXI LX Equity	Eurostoxx 50	EUR	13-09-1996	2812	n.a.	0	0	0	1,01
Foncaixa Privada Euro Indice, FI	ABEUIND SM Equity	Eurostoxx 50	EUR	15-12-1998	2593	1	0,25	0,25	n.a.	n.a.
FondEspaña Eurobolsa, FI	ES0122058037 Equity	Eurostoxx 50	EUR	17-01-2000	2531	1,45	n.a.	n.a.	n.a.	n.a.

Name	Bloomberg Ticker	Benchmark	Currency	Inception date	Obs.	Management Fee	Redemption flat	Max Redemption fee	Front Load	Expense Ratio
Gerling Euro Star 50	AMPEU50 GR Equity	Eurostoxx 50	EUR	30-11-2000	2578	n.a.	n.a.	0	0	1,24
ING Direct Fondo Naranja Euro Stoxx 50, FI	IDEUR50 SM Equity	Eurostoxx 50	EUR	23-08-2005	1373	0,99	0	0	0	n.a.
KBC Index Euroland Acc	KBCEULK BB Equity	Eurostoxx 50	EUR	25-06-1999	2812	n.a.	0	0	2	0,979
LCL Indiciel Euro	FR0000985137 Equity	Eurostoxx 50	EUR	29-12-2000	2222	n.a.	n.a.	0	1	n.a.
Lyxor Index Eurozone Large C 50 IE	SGEUZLC LX Equity	Eurostoxx 50	EUR	24-01-2007	1009	n.a.	n.a.	n.a.	0	n.a.
Lyxor Index Fund Euro	SGINEUR FP Equity	Eurostoxx 50	EUR	31-12-1997	2812	n.a.	n.a.	0	0	n.a.
Lyxor Index Fund Euro B	SGIXEUB FP Equity	Eurostoxx 50	EUR	06-04-2000	2745	n.a.	n.a.	0	0	n.a.
Lyxor Index Fund Euro Plus	SGINUPL FP Equity	Eurostoxx 50	EUR	07-02-2003	2025	n.a.	n.a.	0	0	n.a.
MAM Actions Euro 50	FR0000970956 Equity	Eurostoxx 50	EUR	02-07-1999	2812	n.a.	n.a.	1	2	n.a.
Noam Euro Indice	FR0010085167 Equity	Eurostoxx 50	EUR	02-06-1998	2247	n.a.	n.a.	0,5	1,5	n.a.
OP EURO STOXX 50-Werte	OPPE50 GR Equity	Eurostoxx 50	EUR	30-03-1998	2812	n.a.	n.a.	0	5	0,69
OP-Euro Indeksi A	OPEURIN FH Equity	Eurostoxx 50	EUR	01-04-1999	1173	n.a.	n.a.	0,3	0	0,48
Openbank Euro Indice 50, FI	SCHPEIN SM Equity	Eurostoxx 50	EUR	22-04-2004	1719	1,1	n.a.	n.a.	n.a.	n.a.
Pohjola Euro 50 Plus B	FI0008805833 Equity	Eurostoxx 50	EUR	04-02-2002	1053	0,63	n.a.	1	n.a.	n.a.
SGAM Fund Index Euroland AC	SOGIEAC LX Equity	Eurostoxx 50	EUR	18-08-2004	1635	0,75	n.a.	0	n.a.	n.a.
SGAM Index Opti Euro	FR0007082763 Equity	Eurostoxx 50	EUR	23-04-2003	433	2	0	0	2	n.a.
Soprano DJ Eurostoxx 50	SOPDJES IM Equity	Eurostoxx 50	EUR	09-08-2007	825	n.a.	0	0	0	n.a.
Strategie Indice Europe	FR0000016164 Equity	Eurostoxx 50	EUR	02-01-1997	2812	n.a.	n.a.	0	0	n.a.
Strategie Indice Eurostoxx	FR0000443244 Equity ISIN	Eurostoxx 50	EUR	28-03-2000	1530	n.a.	n.a.	0	3	n.a.
UniEuroSTOXX 50 A	UNIES50 LX Equity ISIN	Eurostoxx 50	EUR	15-09-1998	2812	n.a.	0	0	4	1,1
Unofi Europe C	FR0007036033 Equity ISIN	Eurostoxx 50	EUR	20-06-2000	2581	n.a.	n.a.	0	2,5	n.a.
Vital Euro Bolsa Indice, FI	ES0184201038 Equity ISIN	Eurostoxx 50	EUR	24-02-2003	2006	1,5	0	0	0	n.a.
Zanonia-Deep-Fonds	ZANDEEP GR Equity ISIN	Eurostoxx 50	EUR	29-09-2008	579	n.a.	n.a.	0	2	1,83
Zenit Eurostoxx 50 Plus R	IT0003148845 Equity ISIN	Eurostoxx 50	EUR	02-10-2001	2045	n.a.	n.a.	n.a.	n.a.	0,859

Annex VIII
Data Description of Mutual Funds that track the FTSE 100

Name	Bloomberg Ticker	Benchmark	Currency	Inception date	Obs.	Management Fee	Redemption flat	Max Redemption fee	Front Load	Expense Ratio
Aviva Investors Blue Chip Tracking SC 1	CUUKIXI LN Equity ISIN	FTSE 100	GBp	30-04-1996	2780	n.a.	n.a.	0	0	0,93
Clerical Medical FTSE100 Tracker	BOSFTSI LN Equity ISIN	FTSE 100	GBp	01-03-1999	2780	0,75	n.a.	n.a.	3,5	n.a.
Credit Suisse FTSE100 Tracker Retail	CREUKPI LN Equity ISIN	FTSE 100	GBp	30-03-1999	1749	n.a.	n.a.	0	3,25	n.a.
EMIF UK Index Plus B C (Load)	EUMUKPC LX Equity ISIN	FTSE 100	GBP	11-05-1999	2780	n.a.	1	1	n.a.	n.a.
engage Investment Growth A Acc	HOMINGI LN Equity ISIN	FTSE 100	GBp	15-01-1997	2780	1	n.a.	n.a.	0	n.a.
F&C FTSE 100 Tracker 1 Acc	SUNAUKL LN Equity ISIN	FTSE 100	GBp	13-05-1992	2394	n.a.	n.a.	n.a.	0	1
Gartmore UK Tracker Ret Acc	GB0032898404 Equity ISIN	FTSE 100	GBp	19-05-2003	2780	n.a.	n.a.	0	0	1,2
Halifax UK FTSE 100 Index Tracking C	HAFT1CI LN Equity ISIN	FTSE 100	GBp	16-09-2002	2097	1,5	n.a.	0	0	1
HSBC FTSE 100 Index Acc	MIDFOOA LN Equity ISIN	FTSE 100	GBp	30-09-1994	2780	n.a.	n.a.	0	0	1,15
Legal & General (A&L) UK 100 Index Tracker Acc	ALLUKIT LN Equity ISIN	FTSE 100	GBp	06-04-1999	2629	n.a.	n.a.	0	0	n.a.
Legal & General UK 100 Index Trust R Acc	LGUKIRA LN Equity ISIN	FTSE 100	GBp	30-08-2005	1347	n.a.	n.a.	n.a.	0	0,25
Liontrust Top 100	RVMTOP1 LN Equity ISIN	FTSE 100	GBp	14-07-1995	2780	n.a.	n.a.	0	0	0,42
Marks & Spencer UK 100 Companies Acc	MRKUK1I LN Equity ISIN	FTSE 100	GBp	01-05-1995	2780	n.a.	n.a.	0	0	1,05
Prudential UK Index Tracker Trust Acc	GB0030313752 Equity ISIN	FTSE 100	GBp	06-04-2001	1614	n.a.	n.a.	n.a.	0	0,5
RBS FTSE 100 Tracker Standard	DLFTSEA LN Equity ISIN	FTSE 100	GBp	20-02-1996	2780	1	n.a.	n.a.	0	n.a.
Santander Stockmarket 100 Tracker Growth	ABNSTRA LN Equity ISIN	FTSE 100	GBp	26-03-1999	190	0,35	n.a.	n.a.	0	n.a.
Scottish Widows UK Tracker A Acc	LLDFTSA LN Equity ISIN	FTSE 100	GBp	08-11-1994	2780	n.a.	n.a.	0	0	1,01
Sovereign FTSE 100	GB0008372970 Equity ISIN	FTSE 100	GBp	18-07-1994	1660	0	n.a.	n.a.	0	n.a.

Annex IX
Data Description of Mutual Funds that track the S&P 500

Name	Bloomberg Ticker	Benchmark	Currency	Inception date	Obs.	Management Fee	Redemption flat	Max Redemption fee	Front Load	Expense Ratio
American Century Equity Index Fund;Institutional	ACQIX US Equity ISIN	S&P 500	USD	26-02-1999	3318	n.a.	n.a.	0	0	0,29
Barclays Global Investors S&P 500 Stock Fund	WFSPX US Equity ISIN	S&P 500	USD	02-07-1993	2583	n.a.	n.a.	0	0	0,05
BCGE Synchrony US Equity	SYNUSSB SW Equity ISIN	S&P 500	USD	13-10-1997	3619	0,5	n.a.	0	2,5	1,64
BGI US Index	BZWIUSI ID Equity ISIN	S&P 500	USD	12-04-1996	3325	n.a.	n.a.	0	0	3,3
BlackRock Index Equity Portfolio;Institutional	PNIEIX US Equity ISIN	S&P 500	USD	20-04-1992	2536	n.a.	n.a.	0	0	0,18
BNY Mellon S&P 500 Index Tracker A USD	MEL500A ID Equity ISIN	S&P 500	USD	23-03-2001	4533	n.a.	n.a.	0	5	1,3
Bridgeway Blue-Chip 35 Index Fund	BRLIX US Equity ISIN	S&P 500	USD	31-07-1997	729	n.a.	n.a.	0	0	0,15
California S&P 500 Index Fund;Direct	SPFIX US Equity ISIN	S&P 500	USD	20-04-1992	3376	n.a.	n.a.	1	0	0,36
CMI (Lux) US Equity Index Tracking	CMIGUII LX Equity ISIN	S&P 500	USD	31-05-1990	4533	n.a.	n.a.	0	2	0,81
Columbia Large Cap Enhanced Core Fund;Z	NMIMX US Equity ISIN	S&P 500	USD	31-07-1996	4027	n.a.	0	0	0	0,5
Coutts Equator US Equity Index Prgm Srs2	COUNATI ID Equity ISIN	S&P 500	USD	21-01-1999	3543	n.a.	0	0	0	0,8
CSIF US Large Cap Index-Pension Fd D	CH0020618291 Equity ISIN	S&P 500	USD	14-10-2005	3005	0	0,1	0,1	0,1	n.a.
DFA Enhanced US Large Company Portfolio;Inst	DFELX US Equity ISIN	S&P 500	USD	02-07-1996	751	n.a.	n.a.	0	0	0,26
DFA US Large Company Institutional Index Port;Inst	DFUSX US Equity ISIN	S&P 500	USD	23-09-1999	3557	n.a.	n.a.	0	0	0,1
DFA US Large Company Portfolio;Institutional	DFLCX US Equity ISIN	S&P 500	USD	28-12-1990	2696	n.a.	n.a.	0	0	0,15
DJD IndexTracker PLUS - S&P 500	DJDITSP LE Equity ISIN	S&P 500	USD	15-07-2005	4368	1	n.a.	0,25	3	n.a.
Dreyfus BASIC S&P 500 Stock Index Fund	DSPIX US Equity ISIN	S&P 500	USD	30-09-1993	1375	n.a.	n.a.	0	0	0,2
Dreyfus S&P 500 Index Fund	PEOPX US Equity ISIN	S&P 500	USD	02-01-1990	4413	n.a.	n.a.	0	0	0,5
DWS Equity 500 Index Fund;Institutional	BTIIX US Equity ISIN	S&P 500	USD	31-12-1992	4533	n.a.	n.a.	2	0	0,15
DWS S&P 500 Index Fund;S	SCPIX US Equity ISIN	S&P 500	USD	29-08-1997	4533	n.a.	n.a.	2	0	0,35
DWS S&P 500 Plus Fund;S	SSFFX US Equity ISIN	S&P 500	USD	17-05-1999	3268	n.a.	n.a.	2	0	0,58
E*TRADE S&P 500 Index Fund	ETSPX US Equity ISIN	S&P 500	USD	17-02-1999	2914	n.a.	n.a.	1	0	0,13
Evergreen Enhanced S&P 500 Fund;A	US2999097544 Equity	S&P 500	USD	14-02-1985	1874	n.a.	n.a.	0	0	0,27

Name	Bloomberg Ticker	Benchmark	Currency	Inception date	Obs.	Management Fee	Redemption flat	Max Redemption fee	Front Load	Expense Ratio
Fidelity Four-in-One Index Fund	FFNOX US Equity	S&P 500	USD	29-06-1999	2087	n.a.	n.a.	0	0	0,08
Fidelity Spartan 500 Index Fund;Investor	FSMKX US Equity	S&P 500	USD	06-03-1990	2843	n.a.	n.a.	0	0	0,1
Fidelity Spartan US Equity Index Fund;Investor	FUSEX US Equity	S&P 500	USD	17-02-1988	4295	n.a.	n.a.	0	0	0,1
Fifth Third Equity Index Fund;Institutional	KNIEX US Equity	S&P 500	USD	11-08-1998	4533	n.a.	n.a.	0	0	0,19
GE Institutional S&P 500 Index Fund;Investment	GIDIX US Equity	S&P 500	USD	25-11-1997	4533	n.a.	n.a.	0	0	0,15
Green Century Equity Fund	GCEQX US Equity	S&P 500	USD	03-06-1991	3204	n.a.	0	2	0	0,95
GuideStone Equity Index Fund;GS4	GEQZX US Equity	S&P 500	USD	27-08-2001	4533	n.a.	n.a.	0	0	0,37
Homestead Stock Index Fund	HSTIX US Equity	S&P 500	USD	28-10-1999	2349	n.a.	n.a.	2	0	0,75
Huntington Rotating Markets Fund;Trust	HRITX US Equity	S&P 500	USD	01-05-2001	4400	n.a.	n.a.	0	0	1,19
ING Index Plus Large Cap Fund;l	AELIX US Equity	S&P 500	USD	10-12-1996	2504	n.a.	n.a.	0	0	0,7
IQAM Equity US	AMERIX AV Equity	S&P 500	USD	02-05-2001	3536	1,75	n.a.	0	5	1,93
JennDry Dryden Stock Index Fund;Z	HLEIX US Equity	S&P 500	USD	02-07-1991	2430	n.a.	n.a.	0	0	0,2
KBC Index USA Acc	SIV2686 BB Equity	S&P 500	USD	08-04-1998	4533	n.a.	0	0	2	1,031
Legg Mason Partners S&P 500 Index Fund;A	SBSPX US Equity	S&P 500	USD	05-01-1998	2367	n.a.	n.a.	0	0	0,59
Lyxor Index US I C USD	LU0278205900 Equity	S&P 500	USD	28-12-2006	3149	n.a.	n.a.	n.a.	0	n.a.
MainStay Equity Index Fund	MCSEX US Equity	S&P 500	USD	20-12-1990	1008	n.a.	n.a.	0	3	0,6
MainStay S&P 500 Index Fund;l	US57629E5226 Equity	S&P 500	USD	26-08-1996	4533	n.a.	n.a.	0	0	0,69
MassMutual Select Indexed Equity Fund;S	MMIEX US Equity	S&P 500	USD	01-03-1998	3463	n.a.	n.a.	0	0	0,43
Metropolitan West AlphaTrak 500 Fund	MWATX US Equity	S&P 500	USD	29-06-1998	3220	n.a.	n.a.	0	0	1,21
Morgan Stanley S&P 500 Index Fund;A	US55376T8826 Equity	S&P 500	USD	01-10-1997	3147	n.a.	n.a.	0	0	0,26
Munder Index 500 Fund;Y	US6261297872 Equity	S&P 500	USD	01-12-1991	2860	n.a.	n.a.	0	0	0,57
Mutual of America Equity Index Fund	MAEQX US Equity	S&P 500	USD	30-04-1999	4533	n.a.	n.a.	n.a.	n.a.	0,52
Noam USA Indice	PLUSAIC FP Equity	S&P 500	USD	23-02-1999	2935	n.a.	n.a.	0,5	1,5	n.a.
Northern Equity Index Portfolio;A	BEIAX US Equity	S&P 500	USD	11-01-1993	2797	n.a.	n.a.	0	0	0,21
Northern Stock Index Fund	NOSIX US Equity	S&P 500	USD	07-10-1996	4527	n.a.	n.a.	0	0	0,25

Name	Bloomberg Ticker	Benchmark	Currency	Inception date	Obs.	Management Fee	Redemption flat	Max Redemption fee	Front Load	Expense Ratio
Payden Market Return Fund	PYMRX US Equity	S&P 500	USD	01-12-1995	1152	n.a.	n.a.	2	0	0,54
PF(LUX)-USA Index-P Cap	PICTUII LX Equity	S&P 500	USD	03-11-1999	3311	n.a.	n.a.	n.a.	n.a.	0,457
PIMCO Fundamental IndexPLUS Fund;Institutional	PFPIX US Equity	S&P 500	USD	30-06-2005	2806	n.a.	n.a.	0	0	0,7
PIMCO Fundamental IndexPLUS TR Fund;Institutional	PXTIX US Equity	S&P 500	USD	30-06-2005	1385	n.a.	n.a.	0	0	0,79
PIMCO StocksPLUS Fund;Institutional	PSTKX US Equity	S&P 500	USD	14-05-1993	1385	n.a.	n.a.	0	0	0,5
PIMCO StocksPLUS Total Return Fund;Institutional	PSPTX US Equity	S&P 500	USD	28-06-2002	4441	n.a.	n.a.	0	0	0,64
Principal LargeCap S&P 500 Index Fund;R-5	PLFPX US Equity	S&P 500	USD	06-12-2000	3974	n.a.	n.a.	0	0	0,42
ProFunds Basic Materials UltraSector ProFund;Inv	BMPIX US Equity	S&P 500	USD	04-09-2001	2530	n.a.	n.a.	0	0	1,73
ProFunds Bull ProFund;Investor	BLPIX US Equity	S&P 500	USD	01-12-1997	2337	n.a.	n.a.	0	0	1,7
ProFunds Consumer Goods UltraSector ProFund;Inv	CNPIX US Equity	S&P 500	USD	30-01-2004	3291	n.a.	n.a.	0	0	1,72
ProFunds Consumer Services UltraSector ProFund;Inv	CYPIX US Equity	S&P 500	USD	30-01-2004	1737	n.a.	n.a.	0	0	1,72
ProFunds Large-Cap Value ProFund;Investor	LVPIX US Equity	S&P 500	USD	01-10-2002	1737	n.a.	n.a.	0	0	1,71
ProFunds UltraBull ProFund;Investor	ULPIX US Equity	S&P 500	USD	27-11-1997	2069	n.a.	n.a.	0	0	1,65
RiverSource S&P 500 Index Fund;E	ADIEX US Equity	S&P 500	USD	25-10-1999	3292	n.a.	n.a.	0,5	0	0,46
RS S&P 500 Index Fund;A	GUSPX US Equity	S&P 500	USD	07-08-2000	2501	n.a.	n.a.	0	3	0,49
Rydex Nova Fund;Investor	RYNVX US Equity	S&P 500	USD	12-07-1993	2609	n.a.	n.a.	0	0	1,28
Rydex S&P 500 2x Strategy Fund;H	RYTNX US Equity	S&P 500	USD	19-05-2000	4395	n.a.	n.a.	0	0	1,81
Schwab 1000 Index Fund;Investor	SNXFX US Equity	S&P 500	USD	02-04-1991	2650	n.a.	0	2	0	0,29
Schwab Institutional Select S&P 500 Fund	ISLCX US Equity	S&P 500	USD	01-02-1999	4533	n.a.	0	2	0	0,1
Schwab MarketTrack All Equity Portfolio	SWEGX US Equity	S&P 500	USD	19-05-1998	2647	n.a.	0	2	0	0,5
Schwab S&P 500 Index Fund;Investor	SWPIX US Equity	S&P 500	USD	01-05-1996	3168	n.a.	0	2	0	0,36
SGAM Fund Index US AC	SOGIUAC LX Equity	S&P 500	USD	18-08-2004	3352	0,75	n.a.	0	5	n.a.
SMIF - SINOPIA US EQUITY B H (EUR)	SINABUA LX Equity	S&P 500	USD	17-06-1994	2253	n.a.	n.a.	n.a.	n.a.	n.a.
SSgA Disciplined Equity Fund	SSMTX US Equity	S&P 500	USD	04-05-1992	2828	n.a.	n.a.	0	0	0,82
SSgA S&P 500 Index Fund	SVSPX US Equity	S&P 500	USD	30-12-1992	4465	n.a.	n.a.	0	0	0,18
State Farm S&P 500 Index Fund;Legacy A	US8568527027 Equity	S&P 500	USD	18-12-2000	4506	n.a.	n.a.	0	3	0,8

Name	Bloomberg Ticker	Benchmark	Currency	Inception date	Obs.	Management Fee	Redemption flat	Max Redemption fee	Front Load	Expense Ratio
StockCar Stocks Index Fund	SCARX US Equity	S&P 500	USD	30-09-1998	2514	n.a.	n.a.	0	0	1,5
T Rowe Price Equity Index 500 Fund	PREIX US Equity	S&P 500	USD	30-03-1990	3519	n.a.	n.a.	0,5	0	0,35
Thrivent Large Cap Index Fund;A	AALCX US Equity	S&P 500	USD	01-07-2000	4533	n.a.	n.a.	0	5,5	0,6
TIAA-CREF S&P 500 Index Fund;Institutional	TISPX US Equity	S&P 500	USD	01-10-2002	2246	n.a.	n.a.	0	0	0,08
UBS S&P 500 Index Fund;Y	US90263C3043 Equity	S&P 500	USD	31-12-1997	2077	n.a.	n.a.	1	0	0,45
United Association S&P 500 Index Fund;l	UASPX US Equity	S&P 500	USD	01-03-2000	1742	n.a.	n.a.	0	0	0,25
USAA S&P 500 Index Fund;Member	USSPX US Equity	S&P 500	USD	01-05-1996	2707	n.a.	n.a.	0	0	0,25
Vanguard 500 Index Fund;Investor	VFINX US Equity	S&P 500	USD	31-08-1976	3682	n.a.	n.a.	0	0	0,18
Vanguard Institutional Index Fund;Institutional	VINIX US Equity	S&P 500	USD	31-07-1990	4533	n.a.	n.a.	0	0	0,05
Vanguard Tax-Managed Growth & Income Fund;Investor	VTGIX US Equity	S&P 500	USD	06-09-1994	4533	n.a.	n.a.	1	0	0,21
Vanguard US 500 Stock Index Inv USD	VANUIV ID Equity	S&P 500	USD	04-11-1998	4139	n.a.	n.a.	0	0	0,38
Vanguard US Futures USD	VANGUSF ID Equity	S&P 500	USD	01-11-2004	3057	n.a.	n.a.	n.a.	0	0,3
Vanguard Value Index Fund;Investor	VIVAX US Equity	S&P 500	USD	02-11-1992	1552	n.a.	n.a.	0	0	0,26
Vantagepoint 500 Stock Index Fund;l	VPFIX US Equity	S&P 500	USD	01-03-1999	4533	n.a.	n.a.	0	0	0,44
Victory Stock Index Fund;A	SSTIX US Equity	S&P 500	USD	03-12-1993	2979	n.a.	n.a.	0	5,75	0,7
Wells Fargo Advantage Index Fund;Adm	WFIOX US Equity	S&P 500	USD	05-09-1990	4293	n.a.	n.a.	n.a.	n.a.	n.a.

Annex X
Tracking ability of Mutual Funds that track the Eurostoxx 50

Name	Bloomberg Ticker	Benchmark	Currency	Inception date	Obs.	Alpha *100	p-value	Beta	p-value	R2
Ahorro Corporacion Euro Stoxx 50 Indice, FI	ACES50 SM Equity	Eurostoxx 50	EUR	11-11-2002	2084	0,005	0,590	0,963	0,000	0,926
Allianz Actions Indice Euroland R	FR0000401507 Equity	Eurostoxx 50	EUR	04-02-1983	2812	0,003	0,870	0,846	0,000	0,675
Allianz RCM Euro Equity Index - A - EUR	ADEEIX LX Equity	Eurostoxx 50	EUR	24-02-2003	2014	0,017	0,537	0,448	0,000	0,221
Amundi Index Euro I C	CINXEUC FP Equity	Eurostoxx 50	EUR	10-05-2005	1448	0,012	0,130	0,986	0,000	0,960
Argenta Actions UEM	ARG5006 LX Equity	Eurostoxx 50	EUR	07-07-1998	2812	-0,004	0,889	-0,013	0,568	0,000
BBK Bolsa Euro, FI	BBKBEUR SM Equity	Eurostoxx 50	EUR	03-01-2000	2812	0,003	0,730	0,927	0,000	0,892
BBVA Bolsa Euro Quant, FI	EUROQUA SM Equity	Eurostoxx 50	EUR	23-02-2005	1500	0,005	0,719	1,605	0,000	0,958
BBVA Bolsa Indice Euro, FI	ARGFBIB SM Equity	Eurostoxx 50	EUR	20-06-1997	2812	0,007	0,130	0,988	0,000	0,978
BK Indice Europeo 50, FI	BKINE50 SM Equity	Eurostoxx 50	EUR	28-11-2000	2580	0,008	0,312	0,948	0,000	0,931
BKCP Invest BKCP Euro Trackers	BKC7147 BB Equity	Eurostoxx 50	EUR	02-04-2001	2494	-0,004	0,899	0,154	0,000	0,024
BNP Paribas Indice Euro P	BNPINEP FP Equity	Eurostoxx 50	EUR	24-10-2007	808	0,012	0,585	0,942	0,000	0,899
Caja Ingenieros Bolsa Euro Plus, FI	CAJINGI SM Equity	Eurostoxx 50	EUR	08-06-1998	2812	0,008	0,708	0,948	0,000	0,656
Caja Madrid Indice Euro Stoxx50, FI	FNBEURO SM Equity	Eurostoxx 50	EUR	13-08-1997	2812	-0,001	0,914	0,911	0,000	0,803
CAM Bolsa Europa, FI	ABBBS2 SM Equity	Eurostoxx 50	EUR	21-02-1997	2812	-0,017	0,536	0,237	0,000	0,062
CMI (Lux) Euro Equity Index Tracking	CMIEITI LX Equity	Eurostoxx 50	EUR	01-06-1999	427	0,027	0,631	0,502	0,000	0,286
DBV-Win Fund EURO STOXX 50	DBVWESI LX Equity	Eurostoxx 50	EUR	01-06-1999	2812	0,002	0,951	0,480	0,000	0,233
DJD IndexTracker PLUS - DJ Euro Stoxx 50	DJDITES LE Equity	Eurostoxx 50	EUR	15-07-2005	1400	0,014	0,706	0,182	0,002	0,039
Elan Euro Indice C	ELEURIC FP Equity	Eurostoxx 50	EUR	29-02-2000	2763	0,007	0,555	0,983	0,000	0,870
Elite 1818 Euro Index	FR0007031117 Equity	Eurostoxx 50	EUR	05-03-1999	1662	0,008	0,406	0,965	0,000	0,924
EMI Index Euro	FR0007031000 Equity	Eurostoxx 50	EUR	01-04-1999	2812	0,007	0,449	0,992	0,000	0,902
Euro Indiciel LCF	FR0007030838 Equity	Eurostoxx 50	EUR	18-03-1999	2812	-0,008	0,688	0,030	0,057	0,002
Fidelity Funds - Euro Stoxx 50 A EUR	FIDDAXI LX Equity	Eurostoxx 50	EUR	13-09-1996	2812	0,008	0,204	0,997	0,000	0,961
Foncaixa Privada Euro Indice, FI	ABEUIND SM Equity	Eurostoxx 50	EUR	15-12-1998	2593	0,007	0,182	0,985	0,000	0,975
FondEspaña Eurobolsa, FI	ES0122058037 Equity	Eurostoxx 50	EUR	17-01-2000	2531	0,003	0,739	0,966	0,000	0,916

Name	Bloomberg Ticker	Benchmark	Currency	Inception date	Obs.	Alpha *100	p-value	Beta	p-value	R2
Gerling Euro Star 50	AMPEU50 GR Equity	Eurostoxx 50	EUR	30-11-2000	2578	0,002	0,957	0,246	0,000	0,061
ING Direct Fondo Naranja Euro Stoxx 50, FI	IDEUR50 SM Equity	Eurostoxx 50	EUR	23-08-2005	1373	0,008	0,025	0,999	0,000	0,994
KBC Index Euroland Acc	KBCEULK BB Equity	Eurostoxx 50	EUR	25-06-1999	2812	0,007	0,347	0,963	0,000	0,937
LCL Indiciel Euro	FR0000985137 Equity	Eurostoxx 50	EUR	29-12-2000	2222	0,005	0,858	0,569	0,000	0,323
Lyxor Index Eurozone Large C 50 IE	SGEUZLC LX Equity	Eurostoxx 50	EUR	24-01-2007	1009	0,008	0,448	0,978	0,000	0,962
Lyxor Index Fund Euro	SGINEUR FP Equity	Eurostoxx 50	EUR	31-12-1997	2812	0,010	0,166	0,987	0,000	0,946
Lyxor Index Fund Euro B	SGIXEUB FP Equity	Eurostoxx 50	EUR	06-04-2000	2745	0,010	0,535	0,970	0,000	0,778
Lyxor Index Fund Euro Plus	SGINUPL FP Equity	Eurostoxx 50	EUR	07-02-2003	2025	0,006	0,501	0,995	0,000	0,930
MAM Actions Euro 50	FR0000970956 Equity	Eurostoxx 50	EUR	02-07-1999	2812	0,002	0,896	0,889	0,000	0,714
Noam Euro Indice	FR0010085167 Equity	Eurostoxx 50	EUR	02-06-1998	2247	0,002	0,877	0,920	0,000	0,825
OP EURO STOXX 50-Werte	OPPE50 GR Equity	Eurostoxx 50	EUR	30-03-1998	2812	0,005	0,831	0,569	0,000	0,318
OP-Euro Indeksi A	OPEURIN FH Equity	Eurostoxx 50	EUR	01-04-1999	1173	-0,001	0,985	0,643	0,000	0,382
Openbank Euro Indice 50, FI	SCHPEIN SM Equity	Eurostoxx 50	EUR	22-04-2004	1719	0,007	0,405	0,966	0,000	0,946
Pohjola Euro 50 Plus B	FI0008805833 Equity	Eurostoxx 50	EUR	04-02-2002	1053	0,015	0,690	0,622	0,000	0,371
SGAM Fund Index Euroland AC	SOGIEAC LX Equity	Eurostoxx 50	EUR	18-08-2004	1635	0,012	0,588	0,807	0,000	0,651
SGAM Index Opti Euro	FR0007082763 Equity	Eurostoxx 50	EUR	23-04-2003	433	0,008	0,669	0,750	0,000	0,815
Soprarno DJ Eurostoxx 50	SOPDJES IM Equity	Eurostoxx 50	EUR	09-08-2007	825	0,009	0,147	0,819	0,000	0,986
Strategie Indice Europe	FR0000016164 Equity	Eurostoxx 50	EUR	02-01-1997	2812	0,006	0,540	0,969	0,000	0,892
Strategie Indice Eurostoxx	FR0000443244 Equity ISIN	Eurostoxx 50	EUR	28-03-2000	1530	0,004	0,705	0,958	0,000	0,911
UniEuroSTOXX 50 A	UNIES50 LX Equity ISIN	Eurostoxx 50	EUR	15-09-1998	2812	0,007	0,733	0,714	0,000	0,507
Unofi Europe C	FR0007036033 Equity ISIN	Eurostoxx 50	EUR	20-06-2000	2581	0,004	0,683	0,957	0,000	0,914
Vital Euro Bolsa Indice, FI	ES0184201038 Equity ISIN	Eurostoxx 50	EUR	24-02-2003	2006	0,007	0,491	0,880	0,000	0,898
Zanonia-Deep-Fonds	ZANDEEP GR Equity ISIN	Eurostoxx 50	EUR	29-09-2008	579	0,029	0,488	0,606	0,000	0,593
Zenit Eurostoxx 50 Plus R	IT0003148845 Equity ISIN	Eurostoxx 50	EUR	02-10-2001	2045	0,005	0,535	0,877	0,000	0,940

Annex XI

Tracking ability of Mutual Funds that track the FTSE 100

Name	Bloomberg Ticker	Benchmark	Currency	Inception date	Obs.	Alpha *100	p-value	Beta	p-value	R ²
Aviva Investors Blue Chip Tracking SC 1	CUUKIXI LN Equity ISIN	FTSE 100	GBP	30-04-1996	2780	0,009	0,628	0,577	0,000	0,359
Clerical Medical FTSE100 Tracker	BOSFTSI LN Equity ISIN	FTSE 100	GBP	01-03-1999	2780	0,010	0,587	0,590	0,000	0,379
Credit Suisse FTSE100 Tracker Retail	CREUKPI LN Equity ISIN	FTSE 100	GBP	30-03-1999	1749	0,007	0,728	0,599	0,000	0,369
EMIF UK Index Plus B C (Load)	EUMUKPC LX Equity ISIN	FTSE 100	GBP	11-05-1999	2780	0,000	0,927	0,979	0,000	0,958
engage Investment Growth A Acc	HOMINGI LN Equity ISIN	FTSE 100	GBP	15-01-1997	2780	0,010	0,604	0,566	0,000	0,343
F&C FTSE 100 Tracker 1 Acc	SUNAUKL LN Equity ISIN	FTSE 100	GBP	13-05-1992	2394	0,004	0,855	0,562	0,000	0,346
Gartmore UK Tracker Ret Acc	GB0032898404 Equity ISIN	FTSE 100	GBP	19-05-2003	2780	0,009	0,627	0,592	0,000	0,372
Halifax UK FTSE 100 Index Tracking C	HAFT1CI LN Equity ISIN	FTSE 100	GBP	16-09-2002	2097	0,019	0,343	0,621	0,000	0,425
HSBC FTSE 100 Index Acc	MIDFOOA LN Equity ISIN	FTSE 100	GBP	30-09-1994	2780	0,011	0,576	0,587	0,000	0,371
Legal & General (A&L) UK 100 Index Tracker Acc	ALLUKIT LN Equity ISIN	FTSE 100	GBP	06-04-1999	2629	0,008	0,714	0,565	0,000	0,330
Legal & General UK 100 Index Trust R Acc	LGUKIRA LN Equity ISIN	FTSE 100	GBP	30-08-2005	1347	0,019	0,533	0,564	0,000	0,355
Liontrust Top 100	RVMTOP1 LN Equity ISIN	FTSE 100	GBP	14-07-1995	2780	0,013	0,494	0,607	0,000	0,396
Marks & Spencer UK 100 Companies Acc	MRKUK1I LN Equity ISIN	FTSE 100	GBP	01-05-1995	2780	0,015	0,560	0,039	0,210	0,002
Prudential UK Index Tracker Trust Acc	GB0030313752 Equity ISIN	FTSE 100	GBP	06-04-2001	1614	0,022	0,429	0,568	0,000	0,334
RBS FTSE 100 Tracker Standard	DLFTSEA LN Equity ISIN	FTSE 100	GBP	20-02-1996	2780	0,010	0,536	0,700	0,000	0,539
Santander Stockmarket 100 Tracker Growth	ABNSTRA LN Equity ISIN	FTSE 100	GBP	26-03-1999	190	0,015	0,790	0,641	0,000	0,478
Scottish Widows UK Tracker A Acc	LLDFTSA LN Equity ISIN	FTSE 100	GBP	08-11-1994	2780	0,014	0,570	0,037	0,271	0,001
Sovereign FTSE 100	GB0008372970 Equity ISIN	FTSE 100	GBP	18-07-1994	1660	0,000	0,999	0,586	0,000	0,329

Annex XII
Tracking ability of Mutual Funds that track the S&P 500

Name	Bloomberg Ticker	Benchmark	Currency	Inception date	Obs.	Alpha *100	p-value	Beta	p-value	R ²
American Century Equity Index Fund;Institutional	ACQIX US Equity ISIN	S&P 500	USD	26-02-1999	3318	0,002	0,868	0,489	0,000	0,479
Barclays Global Investors S&P 500 Stock Fund	WFSPX US Equity ISIN	S&P 500	USD	02-07-1993	2583	-0,002	0,846	0,871	0,000	0,839
BCGE Synchrony US Equity	SYNUSSB SW Equity ISIN	S&P 500	USD	13-10-1997	3619	-0,003	0,741	0,740	0,000	0,72
BGI US Index	BZWIUSI ID Equity ISIN	S&P 500	USD	12-04-1996	3325	0,003	0,855	0,541	0,000	0,313
BlackRock Index Equity Portfolio;Institutional	PNIEX US Equity ISIN	S&P 500	USD	20-04-1992	2536	0,000	0,981	0,870	0,000	0,787
BNY Mellon S&P 500 Index Tracker A USD	MEL500A ID Equity ISIN	S&P 500	USD	23-03-2001	4533	0,007	0,000	0,998	0,000	0,997
Bridgeway Blue-Chip 35 Index Fund	BRLIX US Equity ISIN	S&P 500	USD	31-07-1997	729	-0,014	0,266	0,978	0,000	0,807
California S&P 500 Index Fund;Direct	SPFIX US Equity ISIN	S&P 500	USD	20-04-1992	3376	0,009	0,067	0,958	0,000	0,952
CMI (Lux) US Equity Index Tracking	CMIGUII LX Equity ISIN	S&P 500	USD	31-05-1990	4533	0,008	0,000	0,992	0,000	0,989
Columbia Large Cap Enhanced Core Fund;Z	NMIMX US Equity ISIN	S&P 500	USD	31-07-1996	4027	0,038	0,068	-0,054	0,052	0,003
Coutts Equator US Equity Index Prgm Srs2	COUNATI ID Equity ISIN	S&P 500	USD	21-01-1999	3543	0,005	0,016	1,004	0,000	0,99
CSIF US Large Cap Index-Pension Fd D	CH0020618291 Equity ISIN	S&P 500	USD	14-10-2005	3005	0,004	0,800	0,964	0,000	0,687
DFA Enhanced US Large Company Portfolio;Inst	DFELX US Equity ISIN	S&P 500	USD	02-07-1996	751	0,007	0,322	0,986	0,000	0,969
DFA US Large Company Institutional Index Port;Inst	DFUSX US Equity ISIN	S&P 500	USD	23-09-1999	3557	0,007	0,147	0,993	0,000	0,959
DFA US Large Company Portfolio;Institutional	DFLCX US Equity ISIN	S&P 500	USD	28-12-1990	2696	0,007	0,000	0,997	0,000	0,997
DJD IndexTracker PLUS - S&P 500	DJDITSP LE Equity ISIN	S&P 500	USD	15-07-2005	4368	0,007	0,000	0,996	0,000	0,998
Dreyfus BASIC S&P 500 Stock Index Fund	DSPIX US Equity ISIN	S&P 500	USD	30-09-1993	1375	0,015	0,666	0,025	0,508	0,001
Dreyfus S&P 500 Index Fund	PEOPX US Equity ISIN	S&P 500	USD	02-01-1990	4413	0,006	0,000	0,997	0,000	0,996
DWS Equity 500 Index Fund;Institutional	BTIIX US Equity ISIN	S&P 500	USD	31-12-1992	4533	0,006	0,000	1,000	0,000	0,999
DWS S&P 500 Index Fund;S	SCPIX US Equity ISIN	S&P 500	USD	29-08-1997	4533	0,005	0,000	0,998	0,000	0,994
DWS S&P 500 Plus Fund;S	SSFFX US Equity ISIN	S&P 500	USD	17-05-1999	3268	0,005	0,003	0,997	0,000	0,995
E*TRADE S&P 500 Index Fund	ETSPX US Equity ISIN	S&P 500	USD	17-02-1999	2914	0,009	0,003	0,968	0,000	0,983
Evergreen Enhanced S&P 500 Fund;A	US2999097544 Equity	S&P 500	USD	14-02-1985	1874	-0,002	0,814	0,932	0,000	0,915
Fidelity Four-in-One Index Fund	FFNOX US Equity	S&P 500	USD	29-06-1999	2087	-0,005	0,842	0,720	0,000	0,431

Name	Bloomberg Ticker	Benchmark	Currency	Inception date	Obs.	Alpha *100	p-value	Beta	p-value	R ²
Fidelity Spartan 500 Index Fund;Investor	FSMKX US Equity	S&P 500	USD	06-03-1990	2843	0,012	0,001	0,809	0,000	0,973
Fidelity Spartan US Equity Index Fund;Investor	FUSEX US Equity	S&P 500	USD	17-02-1988	4295	0,007	0,000	1,000	0,000	0,998
Fifth Third Equity Index Fund;Institutional	KNIEX US Equity	S&P 500	USD	11-08-1998	4533	0,007	0,000	1,000	0,000	0,999
GE Institutional S&P 500 Index Fund;Investment	GIDIX US Equity	S&P 500	USD	25-11-1997	4533	0,006	0,000	0,996	0,000	0,992
Green Century Equity Fund	GCEQX US Equity	S&P 500	USD	03-06-1991	3204	0,007	0,000	1,000	0,000	0,998
GuideStone Equity Index Fund;GS4	GEQZX US Equity	S&P 500	USD	27-08-2001	4533	-0,003	0,755	0,924	0,000	0,707
Homestead Stock Index Fund	HSTIX US Equity	S&P 500	USD	28-10-1999	2349	0,006	0,000	1,002	0,000	0,998
Huntington Rotating Markets Fund;Trust	HRITX US Equity	S&P 500	USD	01-05-2001	4400	0,034	0,082	-0,034	0,210	0,001
ING Index Plus Large Cap Fund;I	AELIX US Equity	S&P 500	USD	10-12-1996	2504	-0,012	0,484	0,700	0,000	0,54
IQAM Equity US	AMERIDX AV Equity	S&P 500	USD	02-05-2001	3536	0,006	0,006	0,993	0,000	0,992
JennDry Dryden Stock Index Fund;Z	HLEIX US Equity	S&P 500	USD	02-07-1991	2430	0,004	0,883	-0,076	0,008	0,007
KBC Index USA Acc	SIV2686 BB Equity	S&P 500	USD	08-04-1998	4533	0,007	0,000	0,997	0,000	0,996
Legg Mason Partners S&P 500 Index Fund;A	SBSPX US Equity	S&P 500	USD	05-01-1998	2367	-0,015	0,583	0,546	0,000	0,243
Lyxor Index US I C USD	LU0278205900 Equity	S&P 500	USD	28-12-2006	3149	0,004	0,001	0,998	0,000	0,997
MainStay Equity Index Fund	MCSEX US Equity	S&P 500	USD	20-12-1990	1008	0,005	0,712	0,991	0,000	0,949
MainStay S&P 500 Index Fund;I	US57629E5226 Equity	S&P 500	USD	26-08-1996	4533	0,011	0,001	0,994	0,000	0,971
MassMutual Select Indexed Equity Fund;S	MMIEX US Equity	S&P 500	USD	01-03-1998	3463	0,002	0,738	1,014	0,000	0,939
Metropolitan West AlphaTrak 500 Fund	MWATX US Equity	S&P 500	USD	29-06-1998	3220	0,007	0,012	0,996	0,000	0,988
Morgan Stanley S&P 500 Index Fund;A	US55376T8826 Equity	S&P 500	USD	01-10-1997	3147	0,007	0,312	1,019	0,000	0,931
Munder Index 500 Fund;Y	US6261297872 Equity	S&P 500	USD	01-12-1991	2860	0,007	0,010	0,987	0,000	0,987
Mutual of America Equity Index Fund	MAEQX US Equity	S&P 500	USD	30-04-1999	4533	0,006	0,001	0,999	0,000	0,992
Noam USA Indice	PLUSAIC FP Equity	S&P 500	USD	23-02-1999	2935	-0,001	0,901	0,897	0,000	0,828
Northern Equity Index Portfolio;A	BEIAX US Equity	S&P 500	USD	11-01-1993	2797	0,003	0,798	0,877	0,000	0,784
Northern Stock Index Fund	NOSIX US Equity	S&P 500	USD	07-10-1996	4527	0,007	0,005	0,996	0,000	0,98
Payden Market Return Fund	PYMRX US Equity	S&P 500	USD	01-12-1995	1152	-0,019	0,696	0,116	0,009	0,013
PF(LUX)-USA Index-P Cap	PICTUII LX Equity	S&P 500	USD	03-11-1999	3311	0,006	0,742	0,992	0,000	0,56

Name	Bloomberg Ticker	Benchmark	Currency	Inception date	Obs.	Alpha *100	p-value	Beta	p-value	R ²
PIMCO Fundamental IndexPLUS Fund;Institutional	PFPIX US Equity	S&P 500	USD	30-06-2005	2806	0,004	0,499	0,974	0,000	0,949
PIMCO Fundamental IndexPLUS TR Fund;Institutional	PXTIX US Equity	S&P 500	USD	30-06-2005	1385	0,014	0,230	1,155	0,000	0,942
PIMCO StocksPLUS Fund;Institutional	PSTKX US Equity	S&P 500	USD	14-05-1993	1385	0,028	0,027	1,066	0,000	0,924
PIMCO StocksPLUS Total Return Fund;Institutional	PSPTX US Equity	S&P 500	USD	28-06-2002	4441	0,009	0,066	1,019	0,000	0,935
Principal LargeCap S&P 500 Index Fund;R-5	PLFPX US Equity	S&P 500	USD	06-12-2000	3974	0,031	0,195	-0,071	0,016	0,004
ProFunds Basic Materials UltraSector ProFund;Inv	BMPIX US Equity	S&P 500	USD	04-09-2001	2530	0,005	0,008	0,995	0,000	0,995
ProFunds Bull ProFund;Investor	BLPIX US Equity	S&P 500	USD	01-12-1997	2337	0,045	0,138	1,822	0,000	0,742
ProFunds Consumer Goods UltraSector ProFund;Inv	CNPIX US Equity	S&P 500	USD	30-01-2004	3291	-0,002	0,272	1,005	0,000	0,992
ProFunds Consumer Services UltraSector ProFund;Inv	CYPIX US Equity	S&P 500	USD	30-01-2004	1737	0,013	0,356	1,049	0,000	0,85
ProFunds Large-Cap Value ProFund;Investor	LVPIX US Equity	S&P 500	USD	01-10-2002	1737	0,000	0,996	1,390	0,000	0,875
ProFunds UltraBull ProFund;Investor	ULPIX US Equity	S&P 500	USD	27-11-1997	2069	0,000	0,933	1,064	0,000	0,974
RiverSource S&P 500 Index Fund;E	ADIEX US Equity	S&P 500	USD	25-10-1999	3292	-0,010	0,013	2,006	0,000	0,993
RS S&P 500 Index Fund;A	GUSPX US Equity	S&P 500	USD	07-08-2000	2501	0,007	0,029	0,998	0,000	0,988
Rydex Nova Fund;Investor	RYNVX US Equity	S&P 500	USD	12-07-1993	2609	0,006	0,000	0,996	0,000	0,997
Rydex S&P 500 2x Strategy Fund;H	RYTNX US Equity	S&P 500	USD	19-05-2000	4395	-0,007	0,081	1,512	0,000	0,982
Schwab 1000 Index Fund;Investor	SNXFX US Equity	S&P 500	USD	02-04-1991	2650	-0,009	0,002	2,004	0,000	0,997
Schwab Institutional Select S&P 500 Fund	ISLCX US Equity	S&P 500	USD	01-02-1999	4533	0,007	0,000	0,992	0,000	0,994
Schwab MarketTrack All Equity Portfolio	SWEGX US Equity	S&P 500	USD	19-05-1998	2647	0,007	0,000	0,995	0,000	0,997
Schwab S&P 500 Index Fund;Investor	SWPIX US Equity	S&P 500	USD	01-05-1996	3168	0,010	0,133	0,920	0,000	0,923
SGAM Fund Index US AC	SOGIUAC LX Equity	S&P 500	USD	18-08-2004	3352	0,006	0,000	0,995	0,000	0,999
SMIF - SINOPIA US EQUITY B H (EUR)	SINABUA LX Equity	S&P 500	USD	17-06-1994	2253	-0,018	0,269	0,911	0,000	0,728
SSgA Disciplined Equity Fund	SSMTX US Equity	S&P 500	USD	04-05-1992	2828	0,004	0,863	0,230	0,000	0,058
SSgA S&P 500 Index Fund	SVSPX US Equity	S&P 500	USD	30-12-1992	4465	0,000	0,904	0,979	0,000	0,968
State Farm S&P 500 Index Fund;Legacy A	US8568527027 Equity	S&P 500	USD	18-12-2000	4506	0,007	0,000	0,999	0,000	0,992
StockCar Stocks Index Fund	SCARX US Equity	S&P 500	USD	30-09-1998	2514	0,004	0,001	0,998	0,000	0,997
T Rowe Price Equity Index 500 Fund	PREIX US Equity	S&P 500	USD	30-03-1990	3519	0,005	0,788	0,801	0,000	0,503

Name	Bloomberg Ticker	Benchmark	Currency	Inception date	Obs.	Alpha *100	p-value	Beta	p-value	R ²
Thrivent Large Cap Index Fund;A	AALCX US Equity	S&P 500	USD	01-07-2000	4533	0,007	0,000	0,999	0,000	0,997
TIAA-CREF S&P 500 Index Fund;Institutional	TISPX US Equity	S&P 500	USD	01-10-2002	2246	0,004	0,031	0,993	0,000	0,995
UBS S&P 500 Index Fund;Y	US90263C3043 Equity	S&P 500	USD	31-12-1997	2077	0,008	0,000	0,994	0,000	0,998
United Association S&P 500 Index Fund;l	UASPX US Equity	S&P 500	USD	01-03-2000	1742	0,007	0,828	0,346	0,000	0,122
USAA S&P 500 Index Fund;Member	USSPX US Equity	S&P 500	USD	01-05-1996	2707	0,007	0,000	0,998	0,000	0,997
Vanguard 500 Index Fund;Investor	VFINX US Equity	S&P 500	USD	31-08-1976	3682	0,006	0,000	0,998	0,000	0,998
Vanguard Institutional Index Fund;Institutional	VINIX US Equity	S&P 500	USD	31-07-1990	4533	0,007	0,000	1,000	0,000	0,999
Vanguard Tax-Managed Growth & Income Fund;Investor	VTGIX US Equity	S&P 500	USD	06-09-1994	4533	0,008	0,000	1,000	0,000	0,999
Vanguard US 500 Stock Index Inv USD	VANUIVI ID Equity	S&P 500	USD	04-11-1998	4139	0,005	0,000	0,999	0,000	0,998
Vanguard US Futures USD	VANGUSF ID Equity	S&P 500	USD	01-11-2004	3057	0,005	0,560	0,935	0,000	0,898
Vanguard Value Index Fund;Investor	VIVAX US Equity	S&P 500	USD	02-11-1992	1552	0,006	0,440	0,942	0,000	0,945
Vantagepoint 500 Stock Index Fund;l	VPFIX US Equity	S&P 500	USD	01-03-1999	4533	0,009	0,055	0,985	0,000	0,934
Victory Stock Index Fund;A	SSTIX US Equity	S&P 500	USD	03-12-1993	2979	0,005	0,034	0,994	0,000	0,989
Wells Fargo Advantage Index Fund;Adm	WFIOX US Equity	S&P 500	USD	05-09-1990	4293	0,006	0,141	1,007	0,000	0,961

Annex XIII
Tracking Errors of Mutual Funds that the Eurostoxx 50

Name	Bloomberg Ticker	Benchmark	Currency	Inception date	Obs.	TE1	TE2	TE3
Ahorro Corporacion Euro Stoxx 50 Indice, FI	ACES50 SM Equity	Eurostoxx 50	EUR	11-11-2002	2084	3,04%	6,36%	6,30%
Allianz Actions Indice Euroland R	FR0000401507 Equity	Eurostoxx 50	EUR	04-02-1983	2812	6,42%	15,10%	14,61%
Allianz RCM Euro Equity Index - A - EUR	ADEEIA LX Equity	Eurostoxx 50	EUR	24-02-2003	2014	15,76%	22,99%	19,22%
Amundi Index Euro I C	CINXEU FP Equity	Eurostoxx 50	EUR	10-05-2005	1448	0,92%	4,88%	4,87%
Argenta Actions UEM	ARG5006 LX Equity	Eurostoxx 50	EUR	07-07-1998	2812	21,25%	33,30%	21,77%
BBK Bolsa Euro, FI	BBKBEUR SM Equity	Eurostoxx 50	EUR	03-01-2000	2812	4,96%	8,33%	8,12%
BBVA Bolsa Euro Quant, FI	EUROQUA SM Equity	Eurostoxx 50	EUR	23-02-2005	1500	8,91%	16,55%	7,99%
BBVA Bolsa Indice Euro, FI	ARGFBIB SM Equity	Eurostoxx 50	EUR	20-06-1997	2812	1,45%	3,70%	3,69%
BK Indice Europeo 50, FI	BKINE50 SM Equity	Eurostoxx 50	EUR	28-11-2000	2580	3,38%	6,63%	6,50%
BKCP Invest BKCP Euro Trackers	BKC7147 BB Equity	Eurostoxx 50	EUR	02-04-2001	2494	20,47%	32,71%	24,82%
BNP Paribas Indice Euro P	BNPINEP FP Equity	Eurostoxx 50	EUR	24-10-2007	808	1,69%	9,63%	9,48%
Caja Ingenieros Bolsa Euro Plus, FI	CAJINGI SM Equity	Eurostoxx 50	EUR	08-06-1998	2812	4,95%	17,14%	17,10%
Caja Madrid Indice Euro Stoxx50, FI	FNBEURO SM Equity	Eurostoxx 50	EUR	13-08-1997	2812	3,67%	11,46%	11,24%
CAM Bolsa Europa, FI	ABBBS2 SM Equity	Eurostoxx 50	EUR	21-02-1997	2812	19,17%	29,89%	23,04%
CMI (Lux) Euro Equity Index Tracking	CMIEITI LX Equity	Eurostoxx 50	EUR	01-06-1999	427	16,31%	21,44%	18,18%
DBV-Win Fund EURO STOXX 50	DBVWESI LX Equity	Eurostoxx 50	EUR	01-06-1999	2812	13,05%	25,28%	21,70%
DJD IndexTracker PLUS - DJ Euro Stoxx 50	DJDITES LE Equity	Eurostoxx 50	EUR	15-07-2005	1400	18,44%	29,90%	22,10%
Elan Euro Indice C	ELEURIC FP Equity	Eurostoxx 50	EUR	29-02-2000	2763	3,90%	9,99%	9,98%
Elite 1818 Euro Index	FR0007031117 Equity	Eurostoxx 50	EUR	05-03-1999	1662	3,40%	6,43%	6,38%
EMI Index Euro	FR0007031000 Equity	Eurostoxx 50	EUR	01-04-1999	2812	4,58%	8,15%	8,15%
Euro Indiciel LCF	FR0007030838 Equity	Eurostoxx 50	EUR	18-03-1999	2812	18,80%	28,74%	15,70%
Fidelity Funds - Euro Stoxx 50 A EUR	FIDDAXI LX Equity	Eurostoxx 50	EUR	13-09-1996	2812	1,46%	5,03%	5,03%
Foncaixa Privada Euro Indice, FI	ABEUIND SM Equity	Eurostoxx 50	EUR	15-12-1998	2593	2,25%	7,67%	7,37%
FondEspaña Eurobolsa, FI	ES0122058037 Equity	Eurostoxx 50	EUR	17-01-2000	2531	4,30%	10,01%	9,60%

Name	Bloomberg Ticker	Benchmark	Currency	Inception date	Obs.	TE1	TE2	TE3
Gerling Euro Star 50	AMPEU50 GR Equity	Eurostoxx 50	EUR	30-11-2000	2578	20,21%	30,81%	24,30%
ING Direct Fondo Naranja Euro Stoxx 50, FI	IDEUR50 SM Equity	Eurostoxx 50	EUR	23-08-2005	1373	0,85%	1,99%	1,99%
KBC Index Euroland Acc	KBCEULK BB Equity	Eurostoxx 50	EUR	25-06-1999	2812	1,68%	6,30%	6,23%
LCL Indiciel Euro	FR0000985137 Equity	Eurostoxx 50	EUR	29-12-2000	2222	12,92%	23,58%	20,07%
Lyxor Index Eurozone Large C 50 IE	SGEUZLC LX Equity	Eurostoxx 50	EUR	24-01-2007	1009	1,45%	5,44%	5,41%
Lyxor Index Fund Euro	SGINEUR FP Equity	Eurostoxx 50	EUR	31-12-1997	2812	2,35%	5,86%	5,85%
Lyxor Index Fund Euro B	SGIXEUB FP Equity	Eurostoxx 50	EUR	06-04-2000	2745	2,77%	12,90%	12,88%
Lyxor Index Fund Euro Plus	SGINUPL FP Equity	Eurostoxx 50	EUR	07-02-2003	2025	2,32%	6,27%	6,27%
MAM Actions Euro 50	FR0000970956 Equity	Eurostoxx 50	EUR	02-07-1999	2812	6,71%	14,30%	14,02%
Noam Euro Indice	FR0010085167 Equity	Eurostoxx 50	EUR	02-06-1998	2247	6,84%	15,85%	13,58%
OP EURO STOXX 50-Werte	OPPE50 GR Equity	Eurostoxx 50	EUR	30-03-1998	2812	16,27%	23,32%	20,71%
OP-Euro Indeksi A	OPEURIN FH Equity	Eurostoxx 50	EUR	01-04-1999	1173	14,55%	23,44%	21,48%
Openbank Euro Indice 50, FI	SCHPEIN SM Equity	Eurostoxx 50	EUR	22-04-2004	1719	3,13%	5,33%	5,28%
Pohjola Euro 50 Plus B	FI0008805833 Equity	Eurostoxx 50	EUR	04-02-2002	1053	15,98%	24,03%	15,36%
SGAM Fund Index Euroland AC	SOGIAC LX Equity	Eurostoxx 50	EUR	18-08-2004	1635	8,30%	14,41%	13,71%
SGAM Index Opti Euro	FR0007082763 Equity	Eurostoxx 50	EUR	23-04-2003	433	13,13%	21,19%	6,00%
Soprarno DJ Eurostoxx 50	SOPDJES IM Equity	Eurostoxx 50	EUR	09-08-2007	825	4,34%	7,20%	4,33%
Strategie Indice Europe	FR0000016164 Equity	Eurostoxx 50	EUR	02-01-1997	2812	3,26%	8,42%	8,39%
Strategie Indice Eurostoxx	FR0000443244 Equity ISIN	Eurostoxx 50	EUR	28-03-2000	1530	4,45%	8,51%	8,26%
UniEuroSTOXX 50 A	UNIES50 LX Equity ISIN	Eurostoxx 50	EUR	15-09-1998	2812	9,70%	18,90%	17,53%
Unofi Europe C	FR0007036033 Equity ISIN	Eurostoxx 50	EUR	20-06-2000	2581	2,47%	7,45%	7,37%
Vital Euro Bolsa Indice, FI	ES0184201038 Equity ISIN	Eurostoxx 50	EUR	24-02-2003	2006	2,44%	7,39%	6,86%
Zanonia-Deep-Fonds	ZANDEEP GR Equity ISIN	Eurostoxx 50	EUR	29-09-2008	579	12,40%	20,11%	15,84%
Zenit Eurostoxx 50 Plus R	IT0003148845 Equity ISIN	Eurostoxx 50	EUR	02-10-2001	2045	4,49%	10,34%	8,71%

Annex XIV
Tracking Errors of Mutual Funds that the FTSE 100

Name	Bloomberg Ticker	Benchmark	Currency	Inception date	Obs.	TE1	TE2	TE3
Aviva Investors Blue Chip Tracking SC 1	CUUKIXI LN Equity ISIN	FTSE 100	GBp	30-04-1996	2780	12,64%	18,47%	16,20%
Clerical Medical FTSE100 Tracker	BOSFTSI LN Equity ISIN	FTSE 100	GBp	01-03-1999	2780	12,46%	18,04%	15,86%
Credit Suisse FTSE100 Tracker Retail	CREUKPI LN Equity ISIN	FTSE 100	GBp	30-03-1999	1749	13,20%	19,80%	12,92%
EMIF UK Index Plus B C (Load)	EUMUKPC LX Equity ISIN	FTSE 100	GBP	11-05-1999	2780	2,13%	4,36%	4,34%
engage Investment Growth A Acc	HOMINGI LN Equity ISIN	FTSE 100	GBp	15-01-1997	2780	12,60%	18,81%	16,45%
F&C FTSE 100 Tracker 1 Acc	SUNAUKL LN Equity ISIN	FTSE 100	GBp	13-05-1992	2394	12,85%	18,91%	15,85%
Gartmore UK Tracker Ret Acc	GB0032898404 Equity ISIN	FTSE 100	GBp	19-05-2003	2780	12,51%	18,30%	16,18%
Halifax UK FTSE 100 Index Tracking C	HAFT1CI LN Equity ISIN	FTSE 100	GBp	16-09-2002	2097	11,17%	16,85%	14,93%
HSBC FTSE 100 Index Acc	MIDFOOA LN Equity ISIN	FTSE 100	GBp	30-09-1994	2780	12,50%	18,25%	16,06%
Legal & General (A&L) UK 100 Index Tracker Acc	ALLUKIT LN Equity ISIN	FTSE 100	GBp	06-04-1999	2629	13,07%	19,28%	16,77%
Legal & General UK 100 Index Trust R Acc	LGUKIRA LN Equity ISIN	FTSE 100	GBp	30-08-2005	1347	13,79%	19,89%	17,26%
Liontrust Top 100	RVMTOPI LN Equity ISIN	FTSE 100	GBp	14-07-1995	2780	12,17%	17,77%	15,74%
Marks & Spencer UK 100 Companies Acc	MRKUK1I LN Equity ISIN	FTSE 100	GBp	01-05-1995	2780	19,87%	29,22%	21,21%
Prudential UK Index Tracker Trust Acc	GB0030313752 Equity ISIN	FTSE 100	GBp	06-04-2001	1614	13,38%	19,79%	15,28%
RBS FTSE 100 Tracker Standard	DLFTSEA LN Equity ISIN	FTSE 100	GBp	20-02-1996	2780	9,62%	14,97%	13,61%
Santander Stockmarket 100 Tracker Growth	ABNSTRA LN Equity ISIN	FTSE 100	GBp	26-03-1999	190	14,29%	41,15%	36,16%
Scottish Widows UK Tracker A Acc	LLDFTSA LN Equity ISIN	FTSE 100	GBp	08-11-1994	2780	19,75%	28,98%	20,84%
Sovereign FTSE 100	GB0008372970 Equity ISIN	FTSE 100	GBp	18-07-1994	1660	13,89%	20,29%	13,44%

Annex XV
Tracking Errors of Mutual Funds that the S&P 500

Name	Bloomberg Ticker	Benchmark	Currency	Inception date	Obs.	TE1	TE2	TE3
American Century Equity Index Fund;Institutional	ACQIX US Equity ISIN	S&P 500	USD	26-02-1999	3318	1,58%	2,07%	2,07%
Barclays Global Investors S&P 500 Stock Fund	WFSPX US Equity ISIN	S&P 500	USD	02-07-1993	2583	0,41%	1,92%	1,92%
BCGE Synchrony US Equity	SYNUSSB SW Equity ISIN	S&P 500	USD	13-10-1997	3619	8,68%	19,50%	16,92%
BGI US Index	BZWIUSI ID Equity ISIN	S&P 500	USD	12-04-1996	3325	7,56%	14,28%	13,54%
BlackRock Index Equity Portfolio;Institutional	PNIEX US Equity ISIN	S&P 500	USD	20-04-1992	2536	0,54%	0,95%	0,95%
BNY Mellon S&P 500 Index Tracker A USD	MEL500A ID Equity ISIN	S&P 500	USD	23-03-2001	4533	3,69%	11,42%	11,07%
Bridgeway Blue-Chip 35 Index Fund	BRLIX US Equity ISIN	S&P 500	USD	31-07-1997	729	3,25%	4,62%	4,54%
California S&P 500 Index Fund;Direct	SPFIX US Equity ISIN	S&P 500	USD	20-04-1992	3376	0,63%	1,97%	1,96%
CMI (Lux) US Equity Index Tracking	CMIGUII LX Equity ISIN	S&P 500	USD	31-05-1990	4533	19,56%	29,22%	20,43%
Columbia Large Cap Enhanced Core Fund;Z	NMIMX US Equity ISIN	S&P 500	USD	31-07-1996	4027	1,37%	2,08%	2,08%
Coutts Equator US Equity Index Prgm Srs2	COUNATI ID Equity ISIN	S&P 500	USD	21-01-1999	3543	3,00%	13,75%	13,73%
CSIF US Large Cap Index-Pension Fd D	CH0020618291 Equity ISIN	S&P 500	USD	14-10-2005	3005	8,59%	19,72%	11,39%
DFA Enhanced US Large Company Portfolio;Inst	DFELX US Equity ISIN	S&P 500	USD	02-07-1996	751	2,96%	4,25%	4,25%
DFA US Large Company Institutional Index Port;Inst	DFUSX US Equity ISIN	S&P 500	USD	23-09-1999	3557	0,86%	1,09%	1,09%
DFA US Large Company Portfolio;Institutional	DFLCX US Equity ISIN	S&P 500	USD	28-12-1990	2696	0,87%	3,66%	3,58%
DJD IndexTracker PLUS - S&P 500	DJDITSP LE Equity ISIN	S&P 500	USD	15-07-2005	4368	16,67%	30,77%	20,50%
Dreyfus BASIC S&P 500 Stock Index Fund	DSPIX US Equity ISIN	S&P 500	USD	30-09-1993	1375	0,55%	1,18%	1,17%
Dreyfus S&P 500 Index Fund	PEOPX US Equity ISIN	S&P 500	USD	02-01-1990	4413	0,36%	0,58%	0,58%
DWS Equity 500 Index Fund;Institutional	BTIIX US Equity ISIN	S&P 500	USD	31-12-1992	4533	0,32%	1,41%	1,41%
DWS S&P 500 Index Fund;S	SCPIX US Equity ISIN	S&P 500	USD	29-08-1997	4533	0,58%	1,55%	1,55%
DWS S&P 500 Plus Fund;S	SSFFX US Equity ISIN	S&P 500	USD	17-05-1999	3268	1,68%	2,75%	2,67%
E*TRADE S&P 500 Index Fund	ETSPX US Equity ISIN	S&P 500	USD	17-02-1999	2914	2,82%	7,75%	7,27%
Evergreen Enhanced S&P 500 Fund;A	US2999097544 Equity	S&P 500	USD	14-02-1985	1874	0,65%	2,40%	2,37%
Fidelity Four-in-One Index Fund	FFNOX US Equity	S&P 500	USD	29-06-1999	2087	3,45%	4,98%	2,88%

Name	Bloomberg Ticker	Benchmark	Currency	Inception date	Obs.	TE1	TE2	TE3
Fidelity Spartan 500 Index Fund;Investor	FSMKX US Equity	S&P 500	USD	06-03-1990	2843	0,88%	4,15%	4,05%
Fidelity Spartan US Equity Index Fund;Investor	FUSEX US Equity	S&P 500	USD	17-02-1988	4295	0,32%	0,55%	0,55%
Fifth Third Equity Index Fund;Institutional	KNIEX US Equity	S&P 500	USD	11-08-1998	4533	0,59%	1,70%	1,70%
GE Institutional S&P 500 Index Fund;Investment	GIDIX US Equity	S&P 500	USD	25-11-1997	4533	0,72%	1,03%	1,03%
Green Century Equity Fund	GCEQX US Equity	S&P 500	USD	03-06-1991	3204	4,20%	11,33%	11,23%
GuideStone Equity Index Fund;GS4	GEQZX US Equity	S&P 500	USD	27-08-2001	4533	0,70%	1,02%	1,01%
Homestead Stock Index Fund	HSTIX US Equity	S&P 500	USD	28-10-1999	2349	1,01%	2,37%	2,36%
Huntington Rotating Markets Fund;Trust	HRITX US Equity	S&P 500	USD	01-05-2001	4400	4,58%	7,90%	7,52%
ING Index Plus Large Cap Fund;I	AELIX US Equity	S&P 500	USD	10-12-1996	2504	1,31%	1,87%	1,86%
IQAM Equity US	AMERIDX AV Equity	S&P 500	USD	02-05-2001	3536	20,73%	29,86%	19,24%
JennDry Dryden Stock Index Fund;Z	HLEIX US Equity	S&P 500	USD	02-07-1991	2430	0,49%	1,12%	1,12%
KBC Index USA Acc	SIV2686 BB Equity	S&P 500	USD	08-04-1998	4533	2,21%	7,01%	6,90%
Legg Mason Partners S&P 500 Index Fund;A	SBSPX US Equity	S&P 500	USD	05-01-1998	2367	0,69%	1,13%	1,13%
Lyxor Index US I C USD	LU0278205900 Equity	S&P 500	USD	28-12-2006	3149	2,46%	6,14%	6,14%
MainStay Equity Index Fund	MCSEX US Equity	S&P 500	USD	20-12-1990	1008	0,56%	3,26%	3,26%
MainStay S&P 500 Index Fund;I	US57629E5226 Equity	S&P 500	USD	26-08-1996	4533	2,71%	5,43%	5,42%
MassMutual Select Indexed Equity Fund;S	MMIEX US Equity	S&P 500	USD	01-03-1998	3463	0,77%	2,33%	2,33%
Metropolitan West AlphaTrak 500 Fund	MWATX US Equity	S&P 500	USD	29-06-1998	3220	2,66%	5,90%	5,89%
Morgan Stanley S&P 500 Index Fund;A	US55376T8826 Equity	S&P 500	USD	01-10-1997	3147	2,87%	8,33%	7,66%
Munder Index 500 Fund;Y	US6261297872 Equity	S&P 500	USD	01-12-1991	2860	0,64%	1,74%	1,74%
Mutual of America Equity Index Fund	MAEQX US Equity	S&P 500	USD	30-04-1999	4533	2,22%	8,94%	8,67%
Noam USA Indice	PLUSAIC FP Equity	S&P 500	USD	23-02-1999	2935	4,70%	10,78%	10,24%
Northern Equity Index Portfolio;A	BEIAX US Equity	S&P 500	USD	11-01-1993	2797	0,97%	2,68%	2,68%
Northern Stock Index Fund	NOSIX US Equity	S&P 500	USD	07-10-1996	4527	0,90%	3,57%	3,56%
Payden Market Return Fund	PYMRX US Equity	S&P 500	USD	01-12-1995	1152	6,73%	18,16%	17,90%
PF(LUX)-USA Index-P Cap	PICTUI LX Equity	S&P 500	USD	03-11-1999	3311	0,96%	4,85%	4,83%

Name	Bloomberg Ticker	Benchmark	Currency	Inception date	Obs.	TE1	TE2	TE3
PIMCO Fundamental IndexPLUS Fund;Institutional	PFPIX US Equity	S&P 500	USD	30-06-2005	2806	3,94%	7,62%	6,70%
PIMCO Fundamental IndexPLUS TR Fund;Institutional	PXTIX US Equity	S&P 500	USD	30-06-2005	1385	4,67%	7,36%	7,19%
PIMCO StocksPLUS Fund;Institutional	PSTKX US Equity	S&P 500	USD	14-05-1993	1385	2,91%	5,13%	5,11%
PIMCO StocksPLUS Total Return Fund;Institutional	PSPTX US Equity	S&P 500	USD	28-06-2002	4441	4,43%	6,90%	6,78%
Principal LargeCap S&P 500 Index Fund;R-5	PLFPX US Equity	S&P 500	USD	06-12-2000	3974	0,98%	1,53%	1,53%
ProFunds Basic Materials UltraSector ProFund;Inv	BMPIX US Equity	S&P 500	USD	04-09-2001	2530	20,22%	28,88%	22,93%
ProFunds Bull ProFund;Investor	BLPIX US Equity	S&P 500	USD	01-12-1997	2337	0,69%	1,94%	1,94%
ProFunds Consumer Goods UltraSector ProFund;Inv	CNPIX US Equity	S&P 500	USD	30-01-2004	3291	6,72%	9,51%	9,46%
ProFunds Consumer Services UltraSector ProFund;Inv	CYPIX US Equity	S&P 500	USD	30-01-2004	1737	9,96%	14,03%	11,28%
ProFunds Large-Cap Value ProFund;Investor	LVPIX US Equity	S&P 500	USD	01-10-2002	1737	2,50%	3,88%	3,65%
ProFunds UltraBull ProFund;Investor	ULPIX US Equity	S&P 500	USD	27-11-1997	2069	14,36%	21,43%	3,62%
RiverSource S&P 500 Index Fund;E	ADIEX US Equity	S&P 500	USD	25-10-1999	3292	1,86%	2,41%	2,39%
RS S&P 500 Index Fund;A	GUSPX US Equity	S&P 500	USD	07-08-2000	2501	0,95%	1,23%	1,23%
Rydex Nova Fund;Investor	RYNVX US Equity	S&P 500	USD	12-07-1993	2609	7,04%	10,54%	3,92%
Rydex S&P 500 2x Strategy Fund;H	RYTNX US Equity	S&P 500	USD	19-05-2000	4395	14,13%	21,44%	2,27%
Schwab 1000 Index Fund;Investor	SNXFX US Equity	S&P 500	USD	02-04-1991	2650	1,00%	1,48%	1,47%
Schwab Institutional Select S&P 500 Fund	ISLCX US Equity	S&P 500	USD	01-02-1999	4533	2,10%	5,81%	5,57%
Schwab MarketTrack All Equity Portfolio	SWEGX US Equity	S&P 500	USD	19-05-1998	2647	4,19%	5,90%	5,65%
Schwab S&P 500 Index Fund;Investor	SWPIX US Equity	S&P 500	USD	01-05-1996	3168	1,53%	5,18%	4,99%
SGAM Fund Index US AC	SOGIUAC LX Equity	S&P 500	USD	18-08-2004	3352	7,97%	13,65%	13,01%
SMIF - SINOPIA US EQUITY B H (EUR)	SINABUA LX Equity	S&P 500	USD	17-06-1994	2253	4,12%	8,57%	8,36%
SSgA Disciplined Equity Fund	SSMTX US Equity	S&P 500	USD	04-05-1992	2828	2,11%	3,43%	3,41%
SSgA S&P 500 Index Fund	SVSPX US Equity	S&P 500	USD	30-12-1992	4465	0,63%	1,73%	1,73%
State Farm S&P 500 Index Fund;Legacy A	US8568527027 Equity	S&P 500	USD	18-12-2000	4506	0,84%	1,09%	1,09%
StockCar Stocks Index Fund	SCARX US Equity	S&P 500	USD	30-09-1998	2514	6,71%	10,83%	9,65%
T Rowe Price Equity Index 500 Fund	PREIX US Equity	S&P 500	USD	30-03-1990	3519	0,42%	1,11%	1,11%

Name	Bloomberg Ticker	Benchmark	Currency	Inception date	Obs.	TE1	TE2	TE3
Thrivent Large Cap Index Fund;A	AALCX US Equity	S&P 500	USD	01-07-2000	4533	2,70%	6,87%	6,49%
TIAA-CREF S&P 500 Index Fund;Institutional	TISPX US Equity	S&P 500	USD	01-10-2002	2246	0,64%	0,86%	0,85%
UBS S&P 500 Index Fund;Y	US90263C3043 Equity	S&P 500	USD	31-12-1997	2077	1,65%	5,81%	5,68%
United Association S&P 500 Index Fund;l	UASPX US Equity	S&P 500	USD	01-03-2000	1742	0,90%	1,17%	1,17%
USAA S&P 500 Index Fund;Member	USSPX US Equity	S&P 500	USD	01-05-1996	2707	0,52%	0,98%	0,98%
Vanguard 500 Index Fund;Investor	VFINX US Equity	S&P 500	USD	31-08-1976	3682	0,20%	0,49%	0,49%
Vanguard Institutional Index Fund;Institutional	VINIX US Equity	S&P 500	USD	31-07-1990	4533	0,21%	0,53%	0,53%
Vanguard Tax-Managed Growth & Income Fund;Investor	VTGIX US Equity	S&P 500	USD	06-09-1994	4533	0,47%	0,95%	0,95%
Vanguard US 500 Stock Index Inv USD	VANUIV ID Equity	S&P 500	USD	04-11-1998	4139	1,79%	6,83%	6,69%
Vanguard US Futures USD	VANGUSF ID Equity	S&P 500	USD	01-11-2004	3057	1,74%	5,24%	5,08%
Vanguard Value Index Fund;Investor	VIVAX US Equity	S&P 500	USD	02-11-1992	1552	3,28%	4,94%	4,93%
Vantagepoint 500 Stock Index Fund;l	VPFIX US Equity	S&P 500	USD	01-03-1999	4533	0,89%	2,20%	2,20%
Victory Stock Index Fund;A	SSTIX US Equity	S&P 500	USD	03-12-1993	2979	0,86%	3,94%	3,93%
Wells Fargo Advantage Index Fund;Adm	WFIOX US Equity	S&P 500	USD	05-09-1990	4293	0,55%	3,70%	3,70%