

## Louvain School of Management

# The development and future of European active exchange-traded funds

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With the view of getting respectively the degree in  
**Master 120 crédits en sciences de gestion, à finalité spécialisée**

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Academic Year 2017-2018



## Acknowledgement:

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I would like to thank my family and my friends for their support during the writing of my thesis. I wish to express my gratitude to my mentor to help me and to put me on the right path whenever I would lose my way while I was carrying out my thesis. I also thank the UCL and the LSM for their support and the quality of the programme they offered me during all these years.



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## I. Introduction

Until today, exchange-traded funds have been the most innovative tradable vehicle on the market. They have experienced a surprising growth and their popularity has been continuing to increase since the creation of the first product named SPIDER in 1993. An ETF is in short, an investment vehicle whose shares are traded on exchange throughout the day just like traditional stocks. Due to the tradability on a daily basis, it gives the ETF a better liquidity than traditional mutual funds which are only tradable after the close of the market. The ETF shares are regulated by the mechanism of creation and redemption in function of the demand. ETFs have a lower expense ratio than mutual funds thanks to that mechanism. By investing in an ETF, an opportunity of wide diversification is provided because an ETF is a basket of stock which can be either equity, bonds, currency, real estate, commodities or fund of funds. These features are perfect examples of the recent growing popularity of ETFs.

ETFs were initially created to passively replicate an index. Moreover, their simplicity and transparency were keys to the success of ETFs. In order to respond to investors' requirements and to market trends, the industry of ETFs diversified into new types of ETFs and that is why smart-beta ETFs, leveraged ETFs and actively managed ETFs appeared. Active ETFs thus made their first steps in 2008 in the United States following the SEC agreement. There are currently not many active ETFs on the global market and they are considered as a niche market.

However, the potential development of actively managed ETFs and their future in the European ETF industry remain uncertain. The aim of the thesis is to shed light on crucial points in order to clarify the potential issues concerning the future of active ETFs in Europe. We will then discuss several important issues which will clarify the development of active ETFs as well as their future.

In the first part, we will pay attention to the principal characteristics of the exchange-traded fund such as the mechanism of creation and redemption that plays a significant role in the success of ETFs. We will also give a brief timeline of the introduction of ETFs

on the market and then compare actively managed ETFs to other investment vehicles such as active mutual funds and passive ETFs.

In order to better understand the differences existing between active and passive ETFs, we will define what the active management is and compare it to the passive management. Then we will review the three theories which are the efficient market theory, the portfolio theory and the capital asset pricing method. Indeed, these theories show the importance of the diversification and the importance of availability of information on the market. We will also analyze the research previously led on the performance of active ETFs. That was mainly conducted by a financial analyst named Rompotis. He wanted to compare actively managed ETFs to their passively managed counterparts and also to compare their performances to their benchmarks and to their main competitors in the market, which are mutual funds.

The second part will mainly focus on regulations. It is important to underline that the only studies that were carried out on the subject were all performance-based. Given the new European regulations recently released on ETFs in January 2018, we chose to use another perspective in order to assess the development and the future of actively managed ETFs because these regulations rise many relevant questions about the subject. We will go through the most applied guidelines which are the MIFID II, PRIIPS and UCITS directives. This will give an overview of the European requirements and show if they turn out to be in line with the good development of actively managed ETFs. We will also analyze the established market structure in Europe by asset class, providers and investors in order to understand the current state of its development and compare it to the development of the global market and more specifically of the US market. Indeed, there are many differences between these markets like the fact that the European market is fragmented while the US market is consolidated.

In the last section, we will underline the fact that European investors rather choose the over-the-counter market and that regulators have still not resolved the issue of categorization between the different types of ETFs. We will also discuss the introduction of a consolidated band on the market which would aim to harmonize it. We will then shed light on the European retail investors' behavior and their tendency to rely on advisors for

their investments. Indeed, the future of actively managed ETFs will depend on the investors' interest. The decisions made by the advisors and the bank concerning the different investment vehicles are also a sign of a tendency that could significantly favor actively managed ETFs compared with mutual funds.

Finally, we will discuss the issue of transparency for the managers and list the pros and cons of the daily disclosure, the arbitrage and the front-running. However, depending on the regulators' decisions concerning the managers' and investors' expectations about transparency, it may be possible to witness the introduction of exchange-traded mutual funds or non-transparent active ETFs in Europe in the future.

## II. Part 1: Theoretical framework and literature review

### 1. Chapter 1: Theoretical framework

This chapter will give an overview of exchange-traded funds. It will take into account the definition and the main characteristics of ETFs which are the following: trading flexibility, cost efficiency and transparency. It will briefly compare ETFs and the other types of investment vehicles as well as a timeline of the emergence of passive, smart-beta and active ETFs. We will also enlighten the creation and redemption mechanism that differentiate the ETFs from other types of investment vehicles.

#### 1.1 Exchange-traded funds: definition

In order to correctly define the scope of this thesis, we will first characterize the exchange-traded-fund in a global way. we choose to specify three type of ETFs which are actively managed, passively managed and smart-beta ETFs. An explanation of each type of ETFs will be given first and then the London Stock Exchange definition for the passive and active ETFs will be used to define more precisely these two types.

An Exchange Traded Fund is an open-end fund investment vehicle which is on exchange and traded like shares throughout the day. An ETF allows the investor a wide diversification because a share represents a basket of stocks, bonds or other assets.

The majority of ETFs are passively managed. They are designed to track an underlying index and seek to achieve the same performance as the index based on an asset allocation strategy known as the rules-based investment strategy. The index can be a country or specific regions and be based on emerging markets, developed markets, fixed income, money markets and many other asset classes. This kind of ETF uses two types of replication, physical and synthetic replication, in order to track the index. The physical replication holds all the securities of the underlying index in the same proportion as the constituent securities of the index. This kind of replication avoids counterparty risk and provides more transparency than the other type. Synthetic replication or swap-based

method goes through financial derivatives like swaps in order to replicate the index. There is a counter-party risk because this kind of replication use collateral and people agree to pay the return on the benchmark to the fund. Synthetic ETFs are generally more specific in tracking the performance of the index and, as a result, may have a reduced tracking error. The downside of synthetic ETFs is that it is a complex structure and, therefore, does not offer the same transparency as physical ETFs (Wiandt & Mc Clatchy, 2011).

An Actively managed ETF works also like its passive counterpart. It aims to replicate the performance of an underlying benchmark, where the benchmark is the performance of an actively managed fund. According to Madhavan (2016), actively-managed ETFS differ of the rules-based investment strategies generally associated to passive ETFs. Indeed, Active ETFs seeks to outperform an index, or a benchmark, or to create a return based on a strategy. The goal of those ETFs is to achieve an “alpha”, which is a return that is not attributed to the market volatility. The performance of an active ETF is not only based on the asset allocation strategy but also on the investments made by the manager of the underlying fund. The active part is referred to the management style and the strategy of the fund manager. The fund manager of such a product has full discretion on the portfolio composition once it is within the scope of the fund’s investment objectives and regulatory framework.

The term smart-beta refers to an improved form of passive management. A “smart-beta” ETF is one of the newest forms of passive ETF and offers the potential for enhanced index returns. While a “rules-based” investment strategy is applied, smart-beta is similar to active ETFs because it goes beyond the limitations of a traditional, market-cap weighted index to add value to returns. Indeed, the majority of stock indexes are designed on the basis of capitalization where the more a company has a large capitalization, the higher its weight is in the index. Smart-beta or advanced beta strategies are based on index constructed, for example, following the valuation of the company (value approach), equipping capitalization (the same weight for all the values) or depending on the volatility. Smart-beta differs from active ETFs in the fact that no individual is actually making the decisions – they are fully made by computer models that have decades of historical data on which to base their investment strategies (Madhavan 2016). Briefly,

Smart-beta ETFs use a rules-based-methodological approach. This category use factors such as volatility factor, momentum factor or also value factor.

	"Traditional ETF" Index-tracking Equity ETF	"Strategic Beta" ETF	(Transparent) Active-equity ETF
Potential diversification benefit of owning a whole portfolio in one listed security	X	X	X
Daily transparency of ETF holdings	X	X	X
Tax efficiency due to create/redeem process	X	X	X
Intraday trading	X	X	X
No minimum investment amount	X	X	X
Its goal is to track an index	X	X	

Figure 1 - Comparison between traditional, smart-beta and active ETFs (Mann, D., 2017)

The London Stock Exchange defines ETF as following: *"instruments which track an index. Index can be a country or region specific and based on emerging markets, developed markets, fixed income, money markets and many other asset classes. These instruments give investors instant diversification as one unit represents an investment in multiple companies and sectors. ETFs are listed on exchange and are traded like shares. Market makers are committed to provide two-way prices throughout the trading day."*

The London Stock Exchange defines an actively managed ETF as following: *"Typically, ETFs are designed to track an underlying index for a range of asset classes such as Equities, Fixed Income, Commodities and many others. They are known as passive ETFs as they are structured to only follow an index and match its performance. They do this by holding all of the stocks underlying the benchmark, with the correct weighting or by entering a swap based contract to guarantee the returns of the index. Either way, there is no 'active management' involved. The principle of an active ETF is much like its passive counterpart. It aims to replicate the performance of an underlying benchmark, where the benchmark is the performance of an actively managed fund. The performance of an active ETF is based on the investments made by the manager of the underlying fund rather than a portfolio allocation strategy. It is referred to as "Active" due to the management style of the underlying. Portfolio will have no predefined sector or asset class allocation but will follow the strategy of the fund manager."*

## 1.2 Exchange-traded funds: characteristics

### 1.2.1 Transparency efficiency

ETFs are more transparent than index funds. The composition of the ETF is published on a daily basis which allows the investors to be aware of all the changes. The net asset value (NAV) of the ETF is also regularly calculated and published during the trading hours of the market. The transparency is one of the biggest growth drivers of the ETF market, compared to the mutual fund industry, where several scandals arose due to the investment fees. Indeed, while there are clearly available on the ETF market, this is not the case on the mutual fund industry. We will return to the transparency for European active ETFs at a later stage because that raises many questions and uncertainty for the future (SFAMA 2017).

### 1.2.2 Cost efficiency

A second important characteristic of the ETF is that it offers the same advantages as an index funds but at a lower cost. Indeed, there are less charges in the ETF market than in actively managed index funds. Moreover, even though ETFs involve commissions like stocks, their lower costs may make them more attractive than traditional index funds. It should be underlined that a passive management will be more efficient in terms of cost than an active management style. The structure of an ETF, which is based on the creation and redemption mechanism, allows them to charge less than other investment vehicles (Blackrock, 2018).

Active ETFs are globally more expensive than their passive counterpart's due to higher expenses dedicated to the research and the strategy developed by the asset manager or the portfolio manager. However active ETFs can still offer substantial savings over active mutual funds, thanks in part to the elimination of certain administrative functions by the use of the exchange-traded structure (Cummins, 2015).

### 1.2.3 Trading flexibility

Trading exchange-traded funds is very easy and that can be explained by two factors, their transparency and their liquidity. Due to the important size of the ETF market, a large amount of these funds can be traded without having impacts on the market. The major difference between a mutual index fund and an exchange traded fund is the 'in-kind' creation. The exchange traded fund can be traded like a share of a company on a regular market throughout the day and that gives more flexibility to the ETF than a mutual fund which is traded only when the market close (Vanguard, 2016).

A mutual fund can only be bought or sold at the end of the day when the NAV of this mutual fund is calculated. There is no secondary market for mutual funds. Because of that, the liquidity of an exchange-traded fund is higher because the investor can buy or sell a share at the current price based on market supply and demand during the trading hours of the market. This characteristic underlines a higher degree of liquidity than a traditional index fund. Furthermore, on the ETF market, any kind of order employed in the trading of stocks can be used and gives a quick access to different types of asset classes (Vanguard, 2015).

### 1.3 Exchange-traded funds structure: the mechanism of creation and redemption

The structure of an ETF differs from the structure of a mutual fund. There is a significant difference in the way their shares are created, redeemed and traded. The mechanism of creation and redemption is the process of serving the growing demand of an ETF and vice versa. Due to the fact that an ETF does not have a fixed number of shares, it is evolving in function of the demand.

The creation-redemption process allows ETFs to get the majority of their liquidity from their underlying securities. As long as authorized participants (APs) can trade the securities of the ETF basket, they can adjust the equity offerings of the ETF on the secondary market as needed in order to meet the investor's demand. The AP plays a critical role in the liquidity of the ETF because that person links the primary market, where the underlying assets are traded, with the secondary market which concerns the

ETFs shares. It is important to underline that, depending on the size of the ETF, there can be more than one AP (Hill, J. M.; Nadig, D. & Hougan, M., 2015).

### 1.3.1 Primary market

The ETF asset manager or administrator has to get in touch with an AP to interact with the capital markets. An ETF can be only created by an Authorized Participant and that can be institutional investors, a broker/dealer or trading houses. Therefore, the administrator of the ETF with the Aps can purchase or redeem creation units, known as large blocks, in exchange of cash or a basket of securities.

The issue price of shares / units acquired by the authorized participant is a predetermined fractional value of the underlying asset which is essentially the “original issue price” of the shares / units. In some cases, the ETF will permit “in-kind” transactions in which authorized participants pay for “in-kind” shares / units by delivering a basket of securities that accurately reflects the composition and the weight of the securities in the index. (AMF, 2017)

### 1.3.2 Secondary market

When the ETF share or unit is created/acquired by the AP, this share will be tradable on an exchange such as the LSE (London Stock Exchange). On this market, the share can be purchased and sold. The ETF share value will be in line with the value of its underlying assets. If there is a significant difference between the ETF and the NAV (net asset value) that would create an opportunity arbitrage and APS will take advantage of the situation. Private investors cannot have access to the creation units and can only buy ETF shares on the secondary market via the stock exchange (AMF, 2017).

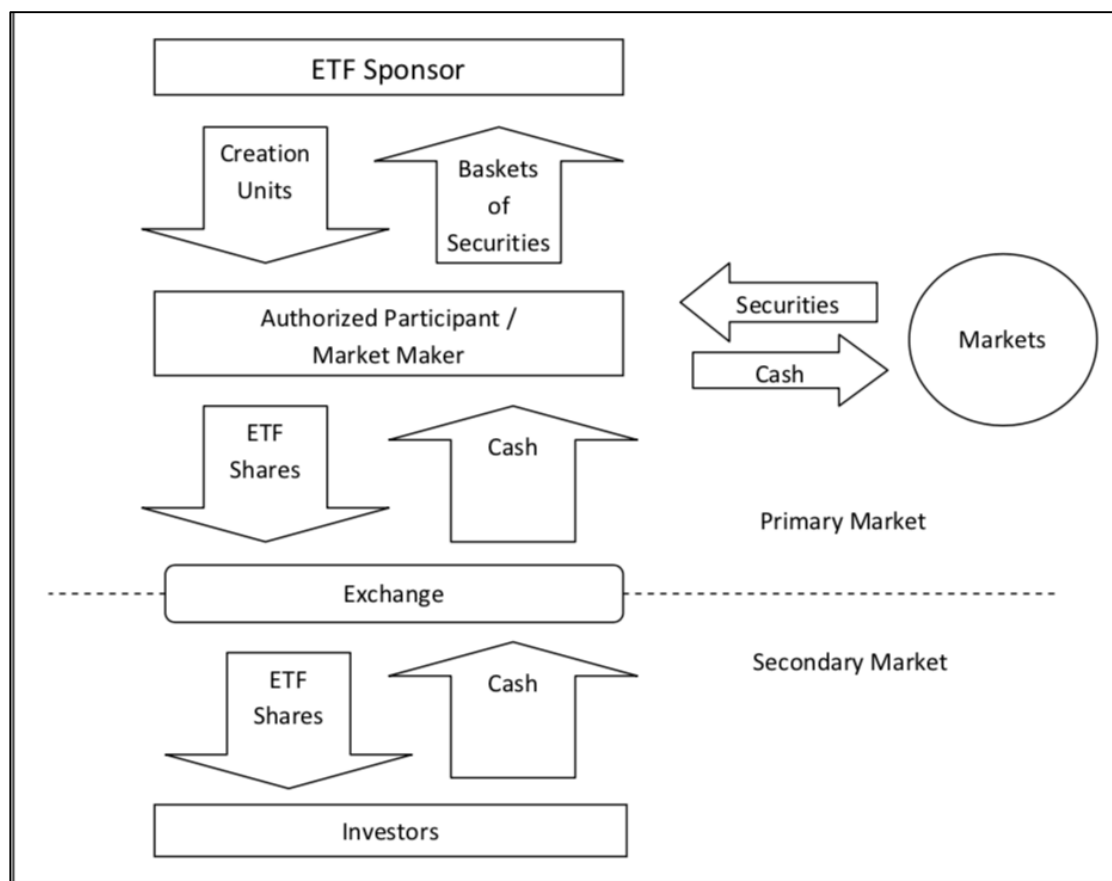


Figure 2 - The mechanism of creation and redemption (Ramaswamy, 2011)

## 1.4 History and Timeline

### 1.4.1 Passively managed ETF

The first exchange traded fund was created in 1989, was launched in Canada on the S&P 500 and was called “Index Participation Shares”. The main issue was that there were not enough investors and this exchange traded fund has rapidly been judged by the court of Chicago that this fund was working like futures contracts. The second attempt was on the Toronto Stock Exchange in 1990 and this one was called “Toronto 35 Index Participation Units”. (Meziani, 2016)

In 1993 the American Stock Exchange released The Standard and Poor Depositary Receipt, pronounced SPIDER. It is the first ETF launched in the US. The purpose of this

first ETF was to track the S&P 500's yield performance. All companies of the S&P 500 evenly participated and their common stock composed this first "American" ETF.

With the increasing popularity of ETFs, ETFs were listed on the European market in the nick of time. Indeed, the first European ETF was listed on a market in April 2000. iShares was the precursor of European ETFs. It began with an ETF on the Deutsche Börse on 11 April 2000 called DJ STOXX 50 and an ETF on the London Stock Exchange named iShares FTSE 100 on April 28 of the same year (Meziani, 2016).

#### 1.4.2 Actively managed ETF

With the development of the ETF industry and the changes in investor expectations, the first actively managed ETF was launched in the US market in 2008 and that represented a key moment for the industry. Active ETFs were introduced after that the Securities and Exchange Commission (SEC) granted an exemption to the Investment Company Act of 1940 which governs investment companies in the U.S., fund sponsors could offer fully transparent active ETFs but they had to respect to several requirements. The first actively managed ETF was called "Bear Stearns Current Yield ETF".

In Europe, active ETFs were already launched since 2000 on the Deutsche Börse thanks to the electronic platform Xetra (Meziani, 2016). The DWS Group launched 11 active ETFs in November 2000 but because the portfolio of these ETFs was not disclosed on a daily basis, the SEC authority did not consider them as active ETFs. They were then called "pseudo-active" ETFs. Indeed, the requirements of the Deutsche Börse were different and it was only necessary to provide monthly a detailed investment strategy, which includes the ten largest positions of the fund.

#### 1.4.3 Smart-beta ETF

As we can see, the first category of ETF was axed on a passive strategy and the purpose of that vehicle was to track an index or a Benchmark. The development of ETF is also due to the investors' expectations and can be shown by the creation of smart-beta ETFs. As we saw above, smart-beta uses an alternative construction of traditional market

capitalization such as a passive ETF. smart-beta ETFs are based on specific factors which are the following: momentum, value, size, low volatility and high dividend yield. The creation of the first smart-beta ETFs was observed in the United States in the early 2000s. That kind of investment vehicle allows investors to be exposed only to some factors of the market.

The first smart-beta ETF was created in May 2000, with the so-called iShares Russell 1000 IWF Growth and the iShares Russell 1000 Value IWD being the first and largest smart-beta ETFs of the time. The US market for smart-beta ETFs has grown by leaps and bounds not only under managed asset conditions, but also under market conditions in the US ETF market.

## 1.5 Comparison of different investment vehicles

### 1.5.1 Actively managed ETF versus actively managed mutual funds

First, active ETFs give a tax advantage which is a characteristic of both types of ETFs. Secondly, active ETFs are more transparent when it comes to their daily disclosure requirement. Thirdly, active ETFs have a lower expense ratio. Finally, compared with Actively Managed Mutual Funds which commonly use open-ended funds, active ETFs have enough daily trading liquidity (Daley, 2010). The transparency of the fees is also greater for active ETFs than for Actively Managed mutual funds. The expense ratio is clearly disclosed and transaction costs for the acquisition of shares are largely known.

	Active Mutual Fund	Active ETF
<b>Fees and loads</b>	Can vary but are typically higher than ETFs offering static factor exposures; may charge front-end fees	Common active exposures (e.g., growth/value) are available at low cost
<b>Subscription and redemption costs</b>	Typically paid from fund assets	Paid by broker creating or redeeming the ETF

<b>Transparency</b>	Required quarterly but may be available at higher frequencies	Required daily
<b>Liquidity</b>	All transactions occur at the close and at the fund's NAV	Liquidity available intraday
<b>Access</b>	Requires set up with the mutual fund manager, although can be held in a brokerage account thereafter	Bought or sold from any brokerage account
<b>Taxes</b>	Redemption gains are borne by remaining shareholders in the fund	In-kind transactions do not incur capital gains

Figure 3 – Comparison between active mutual fund and active ETF (Madhavan, 2016)

### 1.5.2 Actively managed ETF versus passively managed ETF

Generally speaking, traditional Passively Managed ETFs will trace a specific index, which base their return by copying the return structure of the relating index. Accordingly, Active ETFs have a higher expense ratio than their indexing counterparts due to higher trading costs. In contrast, portfolio managers who manage Active ETFs are taking active positions to provide excess return over their benchmark return. Therefore, active ETFs will have a higher turnover rate and transaction costs than index ETFs (Nigam, 2010).

## 2. Chapter 2: Literature review

In order to have a better understanding of the active management, we need a review of the relevant literature based on the subject. Indeed, a theoretical approach is imperative to understand the main points to take into account for the development and the future of actively managed exchange-traded-funds. We will handle the active management and make a comparison between passive and active management. Then, we will approach the Efficient Market Theory, the Portfolio Theory and the Capital Asset Pricing Method. Finally, we will look at a slight overview of the actively managed ETF literature mainly focused on performance.

### 2.1 Active management

Active management is the most natural and traditional type of management. It consists of choosing investments whose performance must beat a benchmark. It is therefore a question of adopting a strategy aimed at detecting and exploiting market inefficiencies. This type of management involves taking a bet on stocks which are undervalued and therefore the value of the stocks is not correctly reflected on the index. Such practices run counter to the fact that the market is efficient, a concept defined later. Based on the rejection of this assumption, managers can therefore perform better than the index or the reference portfolio. It is therefore a strategy known as "stock-picking" or "market timing". This selection uses two distinct approaches.

A bottom-up strategy: the manager will look for specific characteristics of each security before looking at the sector of activity or the geographical horizon of the company. It underlines the importance of taking a look at the basics before returning to a much more global view of the market.

A top-down strategy: how investors select securities according to the types of securities and international markets they want to invest in (investment universe). Once the sector is found, both the geographical sector and the sector of activity, the selection of a particular title will take place.

Active management is based on the basic knowledge of companies (fundamental analysis). It has its roots in concrete elements such as the P / E (price earnings ratio), the EBITDA, the quality of the management or visits of the company. This is because the manager believes that the securities will do better than the market he/she chooses. They are therefore underestimated in relation to their intrinsic value. The manager will resell them when he/she thinks that the securities will be valued again at a fair value (EUROINVESTOR, 2012).

Analytical models may significantly vary if the manager wants a portfolio focused on growth or value. Active management is not limited to the purchase of shares or bonds. The portfolio manager can frequently play with derivatives, either for protection or for speculation purposes. Each manager, especially in the field of investment funds, follows a benchmark and tries to beat it.

The risk measurement of an active portfolio is correlated with its volatility. It is normal that the latter is livelier for this type of management than for another type of portfolio. In return, the performance must be higher. As this type of management derives its profits from the volatility of the markets, it requires quick reactions in order not to miss opportunities, whether buying or selling its positions.

## 2.2 Active versus passive management

There are currently two main kinds of strategies of management which are passive management (1) and active management (2). The exchange traded funds will be used to explain the passive and active management strategies.

1. Most of the exchange-traded funds are based on a passive management strategy. The main goal is to replicate the performance of an index. That involves that the market efficiently works and that it is impossible to beat this market. Managers of passive ETF are not required to make any investment decision because they only try to replicate the return of the benchmark by holding all the stocks of the index with the same proportion. They purely replicate the same methodology used for the construction of the index.

2. A part of exchange traded funds has recently been following an active management strategy. That implies the market does not work efficiently and because of that they can beat this one because there are specific inefficiencies in the market that can be exploitable. They will try to add an additional value which is called alpha. The alpha is the difference between the return of the actively managed exchange-traded fund and the return of the benchmark. They try to beat the market by picking stocks or other investments that are likely to outperform a referenced market index (Rompotis 2009).

$$\begin{aligned}
 \text{Total Actual Return} &= [\text{Expected Return}] + [\text{"Alpha"}] \\
 &= \underbrace{[\text{Risk - Free Rate} + \text{Risk Premium}]}_{\text{Passive}} + [\text{"Alpha"}] \\
 &\quad \underbrace{\hspace{10em}}_{\text{Active}}
 \end{aligned}$$

Figure 4 - Difference between active and passive management (Reilly and Brown, 2012).

Reilly and Brown (2012) illustrate the difference between each method by underlining that the alpha is the only factor that differentiates the two management strategies. The Alpha shows how much of the fund's total return is not attributable to its exposure to systematic risk. As such, it is used to evaluate the performance of an active manager against the benchmark that he is striving to outperform. Positive alpha means that the fund has achieved a higher average rate of return than the benchmark on which it is rated, while a negative alpha indicates that the fund has underperformed the same benchmark. In short, the alpha measures the capacity and the skill set of the active manager.

In the current market, passive ETFs have outperformed many active mutual funds. Some risks of the passive management could be mitigated by the use of active management. The active management allows dynamic risk management and opportunities which are not available in passive strategies. If the volatility makes a strong come back into the market, the tide may turn to active management and investors may want to invest in active products. We could use the benefits of the ETF in an active vehicle like an actively

managed ETF. Active ETFs focused on fundamentals can be a great complement to client portfolios.

Passive ETFs may take risks with the market concentration due to the strategy of buying more stocks than others and by making large bets on popular companies or sectors which may conduct to a large exposure. This kind of risk can be eliminated or mitigated by active management.

Managers can also eliminate the risk of overvalued stocks or sectors by fundamental security analysis when they create the ETF or when they monitor or adjust it. They can also find mispriced stocks or sectors in less efficient parts of the market and use them into the portfolio.

### 2.3 The efficient market theory

The question about the efficiency of the capital market has been attracting the interest of investors and portfolio managers over the past years. In 1970, Eugene Fama attempted to develop a theory called “Efficient Market Hypothesis”. His theory was based on the fact that a current market price reflects all the available information about the security and the risk is therefore included in the expected return based on the market price security. He also pointed out the behavior of the investor which is risk averse and fully rational. In doing so the investor expects to gain the maximal return with the lowest risk possible. Fama established three categories of Efficient Market Hypothesis depending on the information available on the market.

The first form is the Weak-Form Efficient Market Hypothesis. This form assumes that the price of the security reflects all historical market information. It includes the historical sequence of prices, rates of return, trading volume data, and all the other market-generated information. Due to the fact that the price reflects already all the available information on the market, this form of efficiency implies that there is no relationship between the future rates of return of the security and the historical data of this security. The future rate of return is therefore independent. If a market corresponds to this form of efficiency, it then means that using technical analysis is inefficient because future price

developments cannot be predicted based on trends and graphical data, since current prices already include all historical information available. In contrast, it refutes this theory if the technical analysis gives significant results.

The second form is the semi-strong form Efficient Market Hypothesis. The second form embraces the first form, which says that a market cannot be efficient intermediate without being efficient weak, by taking into account all the market information such as rates of return, trading volume, stock prices and all the historical data on the market are available. This second form underlines that the price of a security is rapidly adjusted to the release of all public information relayed by the market such as dividends paid, acquisition of companies, management statements and also political or economic news. Therefore, this form includes all the market and the non-market information. This assumption stresses the fact that if the investor bases his investment on important information after its publication, it is likely that he/she will not obtain a return which is potentially higher than the average of the risk-adjusted return. Indeed, the prices of securities are supposed to immediately reflect any new public information. Here, if the fundamental analysis is effective, which means "if gains can be made through the fundamental analysis", this theory is then refuted.

The last form is the strong Efficient Market Hypothesis. This form underlines that the price of a security fully reflects all the public and historical information as in the weak and semi-strong form of efficiency. This form also includes the private information, including the information concerning the assets and the companies, which have not yet been mediated or communicated, and which are still in the private sphere of the initiates. The information is, therefore, free and available to everyone and at any time. Thus investors cannot obtain a so-called monopolistic access to the information to the formation of prices and investors cannot outperform the above-average risk-adjusted rates of return.

The efficient market theory is at the heart of the debates concerning the active and the passive management. The market efficiency assumption is that a market is efficient when "asset prices fully reflect, at all times, all available and relevant information". If a market is efficient, at least active investment strategies work. Some factors may influence the efficiency of the market and we will go over some of them in review:

1. The price adjustment time (random walk): as soon as the information is incorporated, the market becomes more efficient. In our markets, the price adjustment time is pretty radical. There is a difference between the market value of a stock and its intrinsic value which is that the more the intrinsic value is close to the market value, the more the market will be efficient.
2. Transaction costs and information costs: when the market is not efficient, there are arbitrage opportunities. So, if in one market, one stock is quoted at 100 but in another market, it is listed at 101, we will be able to buy it at 100 to sell it at 101. By doing this, the price will have to rise on the first market and go down on the second market. Thus, we can say that arbitrageurs contribute to efficiency. However, transaction costs can negate the urge to resort to arbitration. These frictions will play a quite important role because when they are significant, they will reduce the efficiency of the market because they will dissuade investors from buying and selling their positions. Not being able to arbitrate is therefore rather problematic for market efficiency.
3. Other factors: if the market is composed of a few players, it will be less competitive and there may also be restrictions or information asymmetry. That impacts the market transparency which plays an important role in the efficiency of the market.

A study led by Thao Chen, Karen H.Y Wong and Masayuki Susai (2016), in which they compared active ETFs and passive ETFs in the context of market efficiency, assessed the importance of active management by taking into account the fact that information is reflected in prices by certain indicators (random walk, transaction costs and also profits of trading strategies). Overall, actively-managed ETFs deviate less from a random walk, earn lower returns based on contrarian and momentum strategies, and incur smaller transaction costs relative to passively-managed ETFs. This finding motivates us to believe the significance of active management in the improvement of market efficiency. In addition, such a result sends a useful message to practitioners, as they should add more active-management elements when designing, establishing, and managing respective ETFs.

## 2.4 The portfolio theory

In 1952, Markowitz developed the concept of the portfolio theory or mean variance analysis. Markowitz is one of the pioneers of the famous saying “Do not put all the eggs in the same basket” which led to the diversification of the portfolio. The purpose of his studies was to present the most efficient portfolio possible by having the higher return as possible without incurring a higher risk by analyzing the expected return of the assets on the basis of their variance and their correlation.

The Markowitz model is based on several assumptions regarding the investor's behavior which are (1) Investors consider each investment alternative as being represented by a probability distribution of expected returns over some holding period. (2) Investors maximize the one-period expected utility, and their utility curves demonstrate a diminishing marginal utility of wealth. (3) Investors estimate the risk of the portfolio on the basis of the variability of expected returns. (4) Investors solely base their decisions on expected return and risk, so their utility curves are a function of expected return and the expected variance (or standard deviation) of returns only. (5) For a given risk level, investors prefer higher returns to lower returns. Similarly, for a given level of expected return, investors prefer less risk to more risk.

The diversification of the portfolio allows to mitigate the risk of each security at the individual level and therefore to eliminate the idiosyncratic risk. Markowitz considered in his hypothesis that investors were risk averse, rational and that the information of the market was lacking of asymmetry. The construction of the portfolio is done by using the past return information and also the expected return information of each security.

We can illustrate the theory with an example. An investor will prefer a portfolio with a higher return (A) than a portfolio with a lower return (B). We also know that an investor will prefer a portfolio with certainty (A) than a portfolio with uncertainty (B). Therefore, the portfolio A will be preferred to the portfolio B because it allows a higher return with a lower degree of uncertainty. We can thus conclude that an efficient portfolio is a portfolio that has the highest return for a constant risk, or the lowest risk for a given portfolio return depending on the investor's preferences (Sharpe, 1970).

## 2.5 The capital asset pricing method

In 1964, Sharpe created the CAPM theory by using the Modern Portfolio Theory and the concept of diversification defined by Markowitz. His theory helped to understand the relation between the risk and the return for common stocks. The aim of the CAPM theory is to provide the most efficient way to calculate the relation between risk and the expected return of the portfolio. The risk is differentiated in two distinct drivers: (1) the systematic risk and (2) the unsystematic risk.

1. The systematic risk corresponds to the risk of the market and is captured by the Beta which corresponds to the sensitivity of the return of the security to the market. This kind of risk cannot be mitigated or eliminated by the diversification of the portfolio. It could be an economic change, an interest rate change or all the risks that are unpredictable or impossible to mitigate.
2. The unsystematic risk corresponds to the individual risk of the securities of the portfolio which can be mitigated or controlled by an efficient diversification of the portfolio. In other words, any type of unsystematic risk is unrewarded by financial markets and should be eliminated by rational investors through diversification.

Sharpe put forward 3 main assumptions, which are:

1. Each investor acts according to his/her forecast about the future performance of their assets which is expressed in terms of expected returns, standard deviation of returns, and the correlation between different returns of assets.
2. Each investor composes a portfolio and takes Markowitz's theory into account. According to this theory, an investor prefers a higher return to a lower one and prefers certainty over uncertainty.
3. An investor can borrow or also lend at the risk-free rate. Indeed, the CAPM theory considers both risky and risk-free assets.

CAPM combines all of the information discussed above into a simple equation:

$$E(R_i) = R_f + \text{risk premium}$$

The expected return of any risky asset  $E(R_i)$  equals the risk-free rate ( $R_f$ ) plus an expected risk premium for investing in the risky asset. The risk premium component of the equation does not consider unsystematic risk, which can be eliminated through proper diversification. The risk premium only captures systematic risk, which can further be broken down into the following equation:

$$\text{risk premium} = \beta_i (R_m - R_f).$$

The risk premium is equal to the beta ( $\beta_i$ ), which measures the systematic risk, multiplied by the risk of the market minus the risk-free rate.

A share of an ETF is a fractional ownership of a fund. The fund's assets can be composed by a plethora of different assets, which would be shares of the underlying securities (e.g. stocks for a stock index ETF). In theory, when someone invests in a wide index (including through an ETF), that person eliminates the unsystematic risk through diversification. For example, if someone invests in an ETF with a large number of stocks (of equal allocation) and if a company goes bankrupt, your investment might be not greatly affected. It happens because the money is diversified across other stocks, which are not affected by the fraud.

Accordingly, we consider that index funds (including ETFs) are less risky than the fact of investing in an individual security. In addition to maintaining sufficient diversification, investors must also make sure that their portfolio risk matches their investing time horizon, and they must at least rebalance into a less risky portfolio once a year in order to ensure that they are not facing large losses at the wrong time. The optimum portfolio diversification is to own a number of individual investments large enough to nearly eliminate unsystematic risk but small enough to focus on the best opportunities.

Most investors have experienced the poor results of over diversification. This is because many institutional vehicles (i.e. diversified mutual funds, pension funds, equity index funds, ETFs, etc.) are over diversified and therefore lack of ability to focus on quality instead of quantity. We can assume that active ETFs avoid the unsystematic risk more than individual stock through its diversification and also are less over diversified than passive ETFs due to active management, which consists of stock picking and not merely replicating the index.

## 2.6 Literature on actively managed exchange-traded funds performance

Rompotis (2009) studied the market timing skills of fund managers in three actively managed ETFs. According to Rompotis, active ETF managers do not show any significant competence to delay the market. The study used data from the first three ETFs actively managed between 01/05/08 and 28/11/08. This period involves the highly volatile period of the financial crisis and the insignificant results suggest that active managers have failed to foresee the consequences of the financial crisis and to invest accordingly.

In their studies, Thirumulai (2004) and Rompotis (2010) show that active ETFs have a lower bid-ask spread than passive ETFs. In 2011, Rompotis led another study on the performance of actively managed ETFs. He first compared the performance of active ETFs versus the S&P 500 index. The results showed that active ETFs underperformed the S&P 500. He then compared three active ETFs with their passive ETFs peers with the same index by using Sharpe ration and Treynor ratio for the comparison of their performances. He shed light on that fact that active ETFs underperform their own benchmarks and also their passive ETFs peers on the same benchmark.

Schizas (2014) analyzed five active ETFs and their five passive ETFs counterparts. He put forward that active ETFs did not outperform passive ETFs while their volatility was higher than passive ETFs. He also compared these five active ETFs with five mutual funds and five hedge funds using the same strategy. He noticed that active ETFs had no superior excess return compared to mutual funds or hedge funds.

In 2013, Rompotis led another study based on previous works. In his first study, in 2011, Rompotis used active ETFs and compared them with the S&P 500. In this study, he focused on active ETFs with the same benchmarks. In his second study, he used only three active ETFs. He expanded his sample to eight and also expanded the duration until 2011. The results of these studies are summarized as follows: as for raw return, active ETFs present lower returns than the passive ETFs. At the same time, active ETFs are found to be riskier than their passive counterparts. Considering risk-adjusted performances, we find no evidence of active ETF managers achieving material excess returns with respect to the

average market returns and risk-adjusted performance of the passively managed ETFs, which, in any case is not supposed to deliver any excess return.

The underperformance of active ETFs is also explained by the lowest ratings they receive relatively to the passive ETFs. They received a total return and also a Sharpe ratio lower than their passive counterparts. In addition, we find no systematic relationship between the performance of active and passive ETFs and factors related to size and value of stocks listed in the U.S. market. The findings about risk-adjusted performance may suggest that the U.S. ETF market is efficient enough to provide managers insignificant opportunities of gaining abnormal returns. On the other hand, the results can be interpreted as an indicator of the managers' lack of selection skills. This indicator implies that the active ETF managers fail to detect and to select the stocks that are undervalued.

In 2012, Houweling investigated fixed-income ETFs, both in Europe and in the United States. He used ETFs that included treasury bonds or corporate bonds in order to recount their benchmark between 2002 and 2010. He chose to focus on the net total return to be able to compare these ETFs with their respective benchmark. The results of the study showed that treasury bonds track their benchmarks while corporate bonds outperform them. Finally, he assumed that treasury bonds track their benchmark better than corporate bonds because of a higher liquidity and lower costs.

### **III. Part 2: The scope of European regulation and the exchange-traded funds industry**

#### **1. Chapter 1: Analysis of the European exchange-traded funds regulation**

Wednesday 25 July 2012 will always be a landmark date for the European securities lending industry. The European Securities and Markets Authority (ESMA) published these "Guidelines on ETFs and other UCITS issues" in which the Authority put into place standardized regulations for the lending of securities on UCITS funds, an activity included in the efficient portfolio management techniques. The European Securities and Markets Authority (ESMA) is the EU body that aims to protect investors and ensure the integrity, stability and smooth functioning of financial markets. ESMA regulations must be applied to each of the EU markets (AMF, 2016).

As it is often the case, the development of a new investment vehicle occurred prior to the development of regulatory oversight rules. While European ETFs show signs of steady growth, the regulatory spotlight on this critically important investment vehicle type will only grow stronger in 2018. While recent regulatory shifts such as an increased cost transparency, sales commission bans and the investors' protection have favored ETFs, regulators will likely add additional ETF-specific safeguards in. Global ETF providers do need to proactively work with policymakers to help shape the future (Brown Brothers Harriman, 2018).

Moreover, the European ETF market is heavily fragmented. The settlement of the ETF is done locally in the jurisdiction where it is traded. It means that, for each country or jurisdiction in Europe, the requirements that have to be followed are not necessarily the same, which makes it more difficult for some ETFs that are traded on several exchanges. The same principle applies for the reporting because in function of the jurisdiction of the ETF establishment the reporting requirements will be lighter or heavier. For example, on the LSE, the reporting is lighter because they have no requirements of the iNAV.

<b>Stock Exchange</b>	<b>Portfolio disclosure required</b>
Irish Stock Exchange	No (for both active and index tracking ETFs).
London Stock Exchange	No (for both active and index tracking ETFs).
Deutsche Börse	Yes (all ETFs to disclose top 20 positions on a daily basis and on a monthly basis disclose full portfolio with a 1-month delay).
Borsa Italiana	No (for index tracking ETFs). For active ETFs, the portfolio must be available at least once a day.
Euronext	Yes, daily.
Swiss Stock Exchange	Yes (full portfolio disclosure with maximum 4-week delay).
BATS Europe	No.

*Figure 5 - European exchanges' ETF portfolio disclosure requirements (ICB discussion paper, 2017)*

### 1.1 Undertaking for Collective Investment in Transferable Securities Directive

The Undertaking for Collective Investment in Transferable Securities Directive also called UCITS directive was created to protect the investor through high and effective standards disclosure. The UCITS directive was approved in 2009 in Europe. From this moment, ETFs are mainly established as UCITS in Europe and seek to respect the UCITS directive requirements. The UCITS directive is a European Union legal framework that aims to harmonize the European market.

UCITS ETFs established and authorized in a jurisdiction on an exchange are allowed to be traded across all the other exchanges of the EU without any additional requirement. This directive allows the manager of the fund only to establish one ETF in one jurisdiction for the rest of the EU and not to create his/her fund on a jurisdiction by jurisdiction basis.

This passport capacity is particularly important for ETFs because it facilitates the registration and the listing of shares on various stock exchanges in Europe (ESMA,2012).

### 1.1.1 The UCITS directive in Ireland

In Europe, there is a significant difference between domicile and listing places of ETFs. Ireland and Luxembourg are the principal domiciles in Europe with respectively 50% and 18% of ETFs. (Deloitte 2017) The UK and Germany are the two countries where most of ETFs were listed with 731 in the UK and 626 in Germany. The works of Matheston (2016) and Dillon Eustace (2015) will help us review the jurisdiction applied in Ireland to explain the UCITS directive as Ireland is the domicile of most ETFs in Europe. Due to the fact that the UCITS directive can be accommodated by each country, the disclosure requirements as well as the general requirements imposed by the Central Bank of Ireland with UCITS will be discussed.

#### 1.1.1.1 *The 20% and 35% rule and diversification*

According to the rules of the UCITS Directive, no more than 20% of the net assets can be invested in the same share or in the same debt security for reasons of diversification. It aims to ensure effective weighting in order to minimize risk. It is only when the market conditions differ or when the central bank of Ireland agrees that an exception can be considered. That exception has a limit of 35% of the share.

#### 1.1.1.2 *Index replication*

The central bank of Ireland, by replicating the composition of an equity index and a debt instrument, intends to replicate the composition of the underlying assets of the index. It also refers to specialized portfolio management that uses specific management techniques and also instruments such as derivatives as long as they are recognized by the UCITS directive. This must be referred to an adequate benchmark. In other words, the methodology used by the issuer must be recognized and must not sideline a significant issuer of the market index to which it refers to the construction of its portfolio.

### *1.1.1.3 Publication*

The index must be accessible to the public for reasons of transparency for investors. In addition, the index provider must be independent of the UCITS investment vehicle replicating the index or an arrangement must be in place to exclude any possible conflict of interest.

### *1.1.1.4 Eligibility of assets*

If an ETF wishes to track an index by directly holding index constituents (rather than using derivatives to gain a synthetic exposure to the constituents of the index), then, as a UCITS investment vehicle, such an ETF could only target indexes with eligible assets for UCITS investments. This would exclude, for example, commodity indices. Because it has to comply with certain requirements of the Central Bank, an Irish UCITS fund may be exposed - only via derivatives - to a financial index composed of non-eligible assets.

### *1.1.1.5 Disclosure requirements*

In accordance with the guidelines of the European Securities and Markets Authority ("ESMA") on ETFs and other UCITS, a UCITS that replicates a stock or debt index must include a proper declaration in the prospectus and in any other promotional material. In addition, the prospectus of an index UCITS must include:

1. A clear description of the index, including information on the underlying elements or details of the website where the exact composition of the index is published.
2. Information on the follow-up of the index (for example, whether it will follow a complete physical replication model or based on a sample or a synthetic replication model) and the implications of the method chosen for the shareholders in terms of underlying exposure to index and counter-party risk. This information should also be summarized in the key investor information document.

3. Information on the anticipated level of tracking error under normal market conditions.
4. A description of the factors that could affect the ability of the UCITS to track the performance of the index, such as transaction costs, small non-liquid components or dividend reinvestments.

## 1.2 Key information documents for packaged retail and insurance-based investment products

The above information should also be disclosed in summary form in the UCITS Key Investor Information Document (KIID). The annual and semi-annual reports of an index UCITS must indicate the size of the tracking error at the end of the reporting period. The annual report must provide an explanation of any discrepancy between the anticipated and actual tracking error for the relevant period and must also indicate and explain the annual tracking difference between the performance of the UCITS and the performance of the monitored index.

As part of the EU wider drive to enhance transparency and investor protection in financial markets, January 1, 2018 saw the advent of the Packaged Retail and Insurance-based Investment Products (PRIIPS) regulation. The PRIIPS covers all investment products and contracts in which consumers invest money – directly or indirectly – in the capital markets, or where its repayment is otherwise linked to the performance of certain securities or reference values (Dillon Eustace, 2015)

In order to help investors to make an informed choice, PRIIPS introduced a common standard for retail investment information in the shape of the Key Information Document (KID), setting out risks, rewarding profile and costs; this is to be provided prior to investment. UCITS will continue to use their own UCITS Key Investor Information Document until 2019 (Kelliher, 2017).

UCITS KIID	PRIIPS KID
Two pages	Three pages
Risk indicator based on market risk	Risk indicator based on market risk and credit risk
No inclusion of transaction costs	Inclusion of transaction costs
Past performance indicator	Forward-looking performance scenarios (no past performance) including stress, unfavorable, moderate and favorable.

Figure 6 - Differences between UCITS KIID and PRIIPS KIDs (ICB discussion paper, 2017)

### 1.3 The market in financial instruments directive

The Markets in Financial Instruments Directive is also called MiFID. It was first implemented in 2007 and its aim was to be “a regulatory framework for the provision of investment services in financial instruments by credit institutions and by investment firms and for the operation of regulated market by market operators” (Directive 2004/39/EC.). A new regulatory framework was adopted on the 3rd of January 2018 and it is called MIFID II.

#### 1.3.1 The market in financial instruments directive II

Before MIFID II, there was not any special requirement concerning ETF transactions because they were not under the rules of the first MIFID directive. The second MIFID Directive came into force on 3 January 2018. It is applied to investment firms and credit institutions that are in connection with investment services relating to MIFID II products. MIFID II is also applied to UCITS management companies, which are mentioned above, and to AIFMS management companies which is also a directive like UCITS with the same

objectives. Therefore, the MIFID Directive is not directly applied to ETFs but rather indirectly via the UCITS and AIFMS management companies in the context of management or portfolio distribution services to MIFID investment firms, which are directly impacted by the MIFID rules.

By imposing strict controls on the financial advisors' inducements for their clients, the MiFID II European directive has relaunched the confrontation between the two sides of the management world in recent years. Active management, which is based on the selection of securities by a manager and their adjustment according to market conditions, suffers from an increasingly fierce competition against passive management, which is carried out automatically, without human intervention. Inducements received by a MiFID firm in providing investment services to an ETF cannot be retained unless they are designed to enhance the quality of the service to the ETF and they do not impair compliance with the MiFID firm's overriding duty to act honestly, fairly and professionally in accordance with the best interests of the ETF. MiFID firms providing investment advice on an independent basis or portfolio management services to an ETF cannot accept nor retain inducements from third parties that are related to the services provided to the ETF. Some minor non-monetary benefits can be retained, when they are disclosed to the ETF. Similarly, when a MiFID firm provides investment advice on an independent basis or portfolio management services to an investor, that firm is prohibited from receiving any inducement from third parties. It is important to underline that these restrictions will dissuade intermediaries to choose a fund product that pays commission and that is expected to enhance the size of the EU ETF market considerably (ESMA, 2014).

Taking into account the lessons of the financial crisis and the technological evolution of financial services, the MiFID II which complements a text that aims to harmonize capital markets should accelerate the movement. A whole section of the directive imposes new rules designed to protect investors by offering them greater transparency, particularly in terms of management fees. The investor will have to know precisely all costs and fees associated with the service that is offered and have a simulation of the impact of these costs on the financial product that is concerned. The investor's protection mainly involves the reform of inducements, that is to say, the fees received by financial advisors from the funds they choose for their clients' investments, also known as distribution fees. Deprived

of this valuable source of revenue, advisors who often act as intermediaries with management companies may be tempted to recover the shortfall by raising their fees, thus to increase the appeal of more accessible products such as index funds. These fees, which will not completely disappear, will be highly regulated. In fact, they have already been abolished in the United Kingdom with the RDR (Retail Distribution Review), which immediately resulted in an amplification of the phenomenon of collection on index funds, starting with ETFs.

Among other things, the manufacturer is required to make available all appropriate information on the investment product and on the product approval process to distributors, including the identified target market and one-off and ongoing charges, which, in the context of an ETF, will also include portfolio transaction costs.

The distributor is required to:

1. Determine the actual target market for the product;
2. Have product governance controls in place to ensure that the products and services he/she offers or recommends are compatible with the needs, characteristics and objectives of the identified target market and that his/her distribution strategy is consistent with the identified target market;
3. Ensure it can obtain all the required information from the product manufacturers;
4. Comply with the normal MiFID disclosure, suitability/appropriateness assessment, inducements and conflicts of interest rules.

*Figure 7 - The requirements for the distributor (Kelliher, 2017)*

MIFID II will also be required to have a post-trading reporting activity at the secondary market trading level of ETFs. By increasing transparency, investors will be in a better position to assess the level of liquidity as well as the level of trading. This could stimulate the actual European ETF market. Transparency could also stimulate the ETF loan market,

which would then be more readily accepted as collateral or available for potential lending. Currently only 5% of European ETFs are used for this purpose compared to 30% in the US. This increased transparency will help maintain the strong growth of ETFs and improve market liquidity (London Stock Exchange Group, 2017).

#### 1.4 The impact of the regulation on the European exchange-traded funds market

The growth and innovation of ETFs have already been impacted by the regulatory and tax environment, for better or for worse. Among survey respondents across North America, Europe and Asia & Oceania, almost 90% of respondents believe that regulations and taxes have had either a significant or moderate impact on ETF growth and innovation. This is in accordance with our point of view concerning the fact that regulations and taxes have an impact on the growth and innovation of actively managed ETFs and that impact is likely to continue in the future (PWC, 2016).

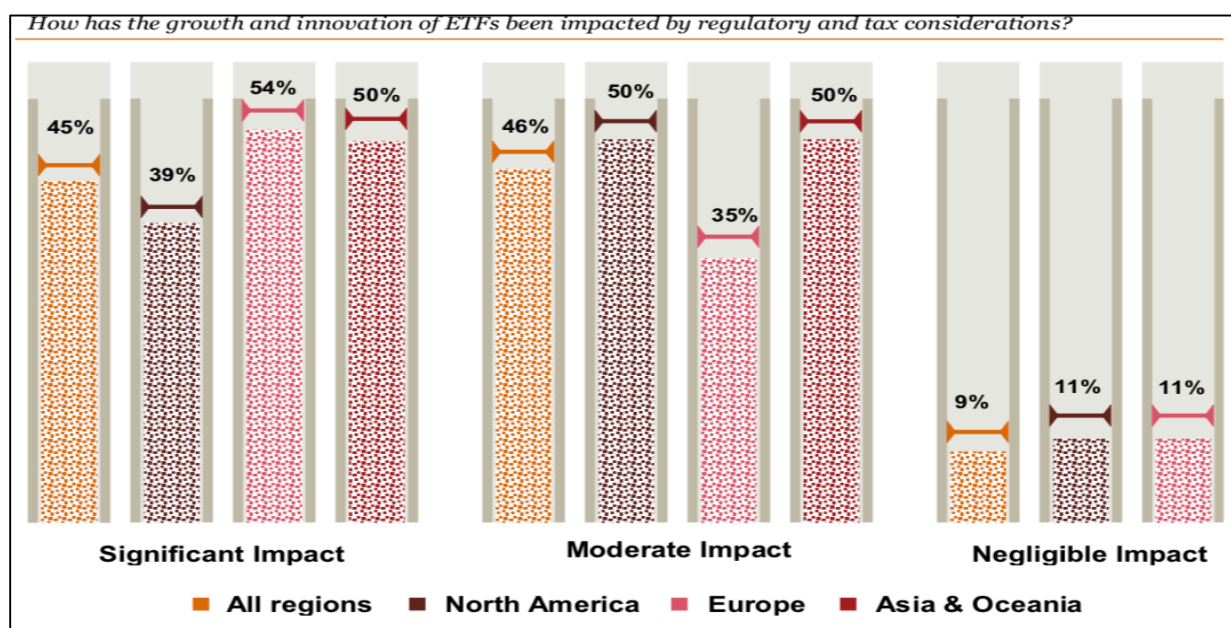


Figure 8 - Impact of regulations and taxes on ETFs (PWC, 2016)

#### 1.5 Conclusion

In conclusion, MIFID II will provide a better pre-and post-transparency all across Europe. That will help investors which have poor understanding of the trading and the liquidity

of ETFs and will also help to avoid paying commissions to the advisors because they sell products to the investors. PRIIPS intends to give a better understanding the investment product, assist the investor in the choice of the product and provide an information document which includes all the important aspects to take into consideration. As an ETF has the “label” UCITS, it can be traded and cross-listed all across Europe and the label facilitates its registration in each country and on each exchange where the ETF is traded. Due to the fact that the directive is accommodative, there is not any legal requirement in Europe. Furthermore, because the ETF is cross-listed, it will respect the requirements of the most stringent exchanges it is traded in.

## 2. Chapter 2: Study of the exchange-traded funds industry

In the last decade, the global ETF industry has significantly grown. Between 2007 and 2017, the amount of assets managed under ETFs has increased from €0.8 trillion to €4.7 trillion and the market increased of 37% just between 2016 and 2017. In addition, the market has risen on a yearly average rate of 18% both in Europe and in the US. In 2017, the turnover of the European market increased by 63% in comparison with the turnover of 2013 which reached €721 billion. However, it only represents 5.5% of the US market turnover, which reached €13.2 trillion (Apostolos, 2018).

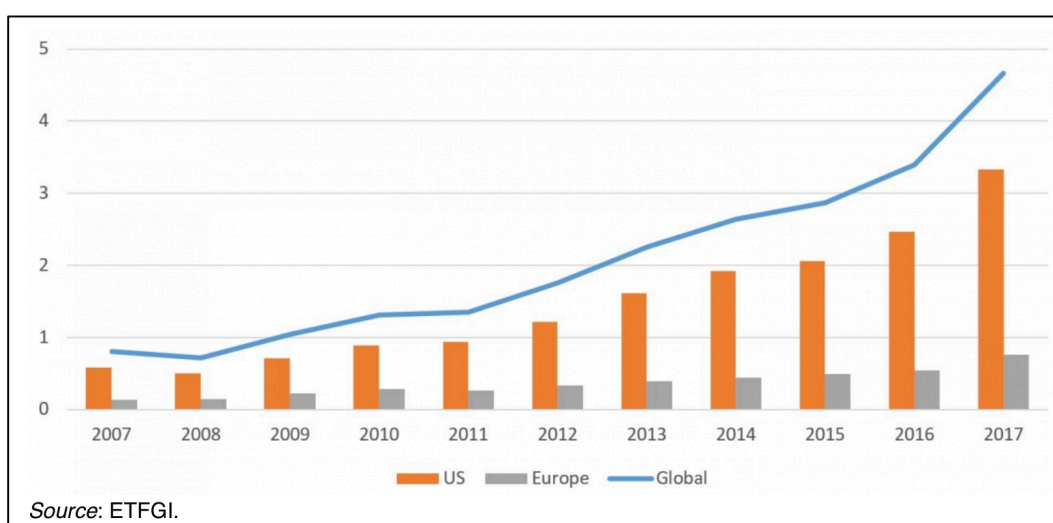


Figure 9 - ETFs' assets under management (€ trillions) (Thomson Reuters Lipper, 2017)

Since 2004, the European ETF market has grown continuously and its growth has been impressive these two last years. In May 2018, the market reached a number of 1,679 ETFs with 6,432 listings. The amount of assets worth \$777bn. There were 56 providers on 26 exchanges (ETFGI,2018).

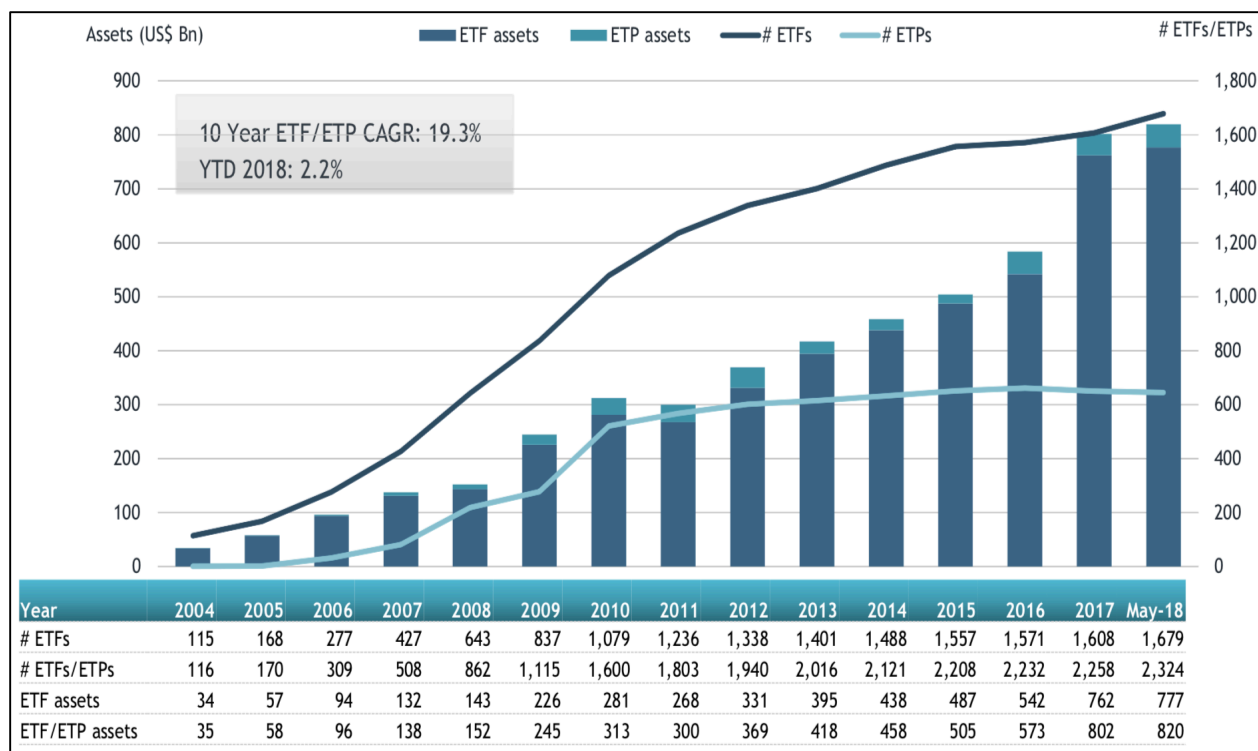


Figure 10 - Evolution of the European ETPs/ETFs (ETFGLI, 2018)

## 2.1 The comparison between the mutual funds market and the exchange-traded funds market

This is best demonstrated by the cumulative fund flows of equity markets funds, both active and ETFs. During the current bull, market growth of assets under management (AUM) in ETFs has dominated the investment environment and active managers of mutual funds found it increasingly difficult to attract client money. In fact, while equity market ETFs have seen close to \$2 trillion inflows since 2005, active managers have seen outflows of more than \$1.2 trillion over the same period. In a market shaped by low or negative interest rates and particularly low volatility, these investors are increasingly unwilling to pay high fees for a very little outperformance potential. ETFs then have a substantial cost advantage versus the active investment community. This may have been one, if not the most important, reason behind the consolidation in asset managers space in recent years (Kettner,2018).

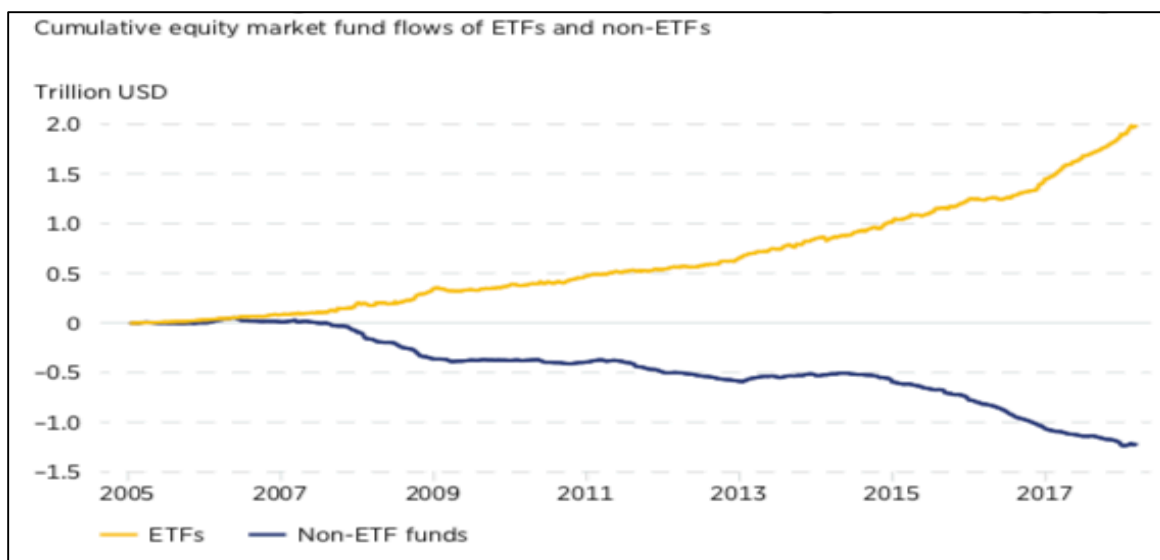


Figure 11 - Market growth of ETFs while active managers are struggling (Commerzbank, 2017)

## 2.2 Analysis of the exchange-traded funds' assets by region

Even though ETFs had already been adopted all around the world (Bloomberg, 2018), the illustration demonstrates that US dominates the market with a total of 70.4% of the world's ETF assets. The ETF market seems to be very concentrated. Europe is following the US with 16.7% of the total ETF assets. Then come Japan with a total of 6.0%, Asia Pacific with 3.6% and Canada with 2.4% of the world's ETF assets. The remaining percent is attributed to the Middle East & Africa (0.8%) and Latin America (0.2%). Altogether the US and the European represent 87.1% of the total market.

Region	# OF ETFs/ETPs	Assets	Total
<b>U.S.</b>	2,181	\$3.5T	70.4%
<b>Europe</b>	2,281	\$835B	16.7%
<b>Japan</b>	210	\$297.5B	6%
<b>Asia Pacific</b>	1,219	\$178.2B	3.6%
<b>Canada</b>	584	\$116.9B	2.4%
<b>Middle East &amp; Africa</b>	816	\$39.3B	0.8%
<b>Latin America</b>	46	\$7.7B	0.2%

Figure 12 - ETF/ETP assets by region (Wealth Management, 2018).

It is also interesting to notice that the number of ETFs/ETPs is more important in Europe (2,281) than in US (2,181). However, in term of assets, the US market is 4.2 times bigger than the European market. In the early years of the ETF industry, growth was faster in Europe than in the United States in terms of assets, number of products, and providers. The main difference in the evolution of the ETF industry between Europe and the US lies in the structure of the market. Unlike the US market, which is a large and homogeneous market, the European market is totally fragmented.

This difference in the market structure is reflected in the offering approach of the ETF products adopted by the providers across the US and Europe. In the US, there are at least 3 ETFs based on the same benchmark or index. On the other hand, ETF providers in Europe operate in a very different way. Indeed, each of the providers will try to offer ETFs on different benchmarks. Similar products based on the same benchmarks result from that process.

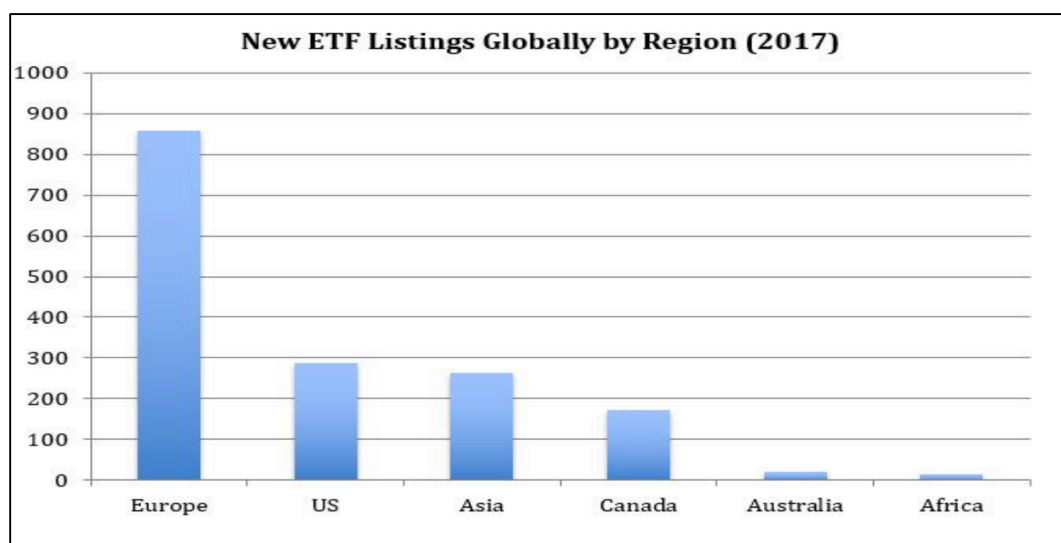


Figure 13 - New ETF listings globally by region (Ullal, A., 2018)

As shown in Figure 13, 859 of the 1614 new ETFs listed on the global ETF market were located in Europe and that includes cross-listings and currency share class variants. Six hundred twenty of the 859, which represents 72% of the total, were cross-listed or share class variants of existing ETFs. In the US, there were only 286 new ETFs listed while the US market was much larger than the European one. These figures demonstrate that the

assets under management in the European ETF industry were still highly concentrated in 2017.

## 2.3 Analysis of the exchange-traded funds market by assets classes

### 2.3.1 Global market

Since the end of March 2018, there have been a total of \$4.95 trillion of assets invested in ETFs all around the world. As it is shown on Figure 14, the majority of assets are unsurprisingly invested in traditional passive ETFs which account for \$4.258 trillion of assets or 86% of the global ETF market. The second biggest category is the smart-beta ETFs which account for 9.8% of the market and are worth \$4.258 trillion of assets, which is a significant portion. Indeed, the assets invested in smart-beta ETFs represent 5.6 times the amount of assets invested in active ETFs which account for \$87.042 of assets or 1.75% of the market and 6 times the assets of inverse/leveraged ETFs which represent \$81.057 or 1.63% of the global ETF market. The rest is classified as 'other' and only represents 0.81% of the market with \$40,314.

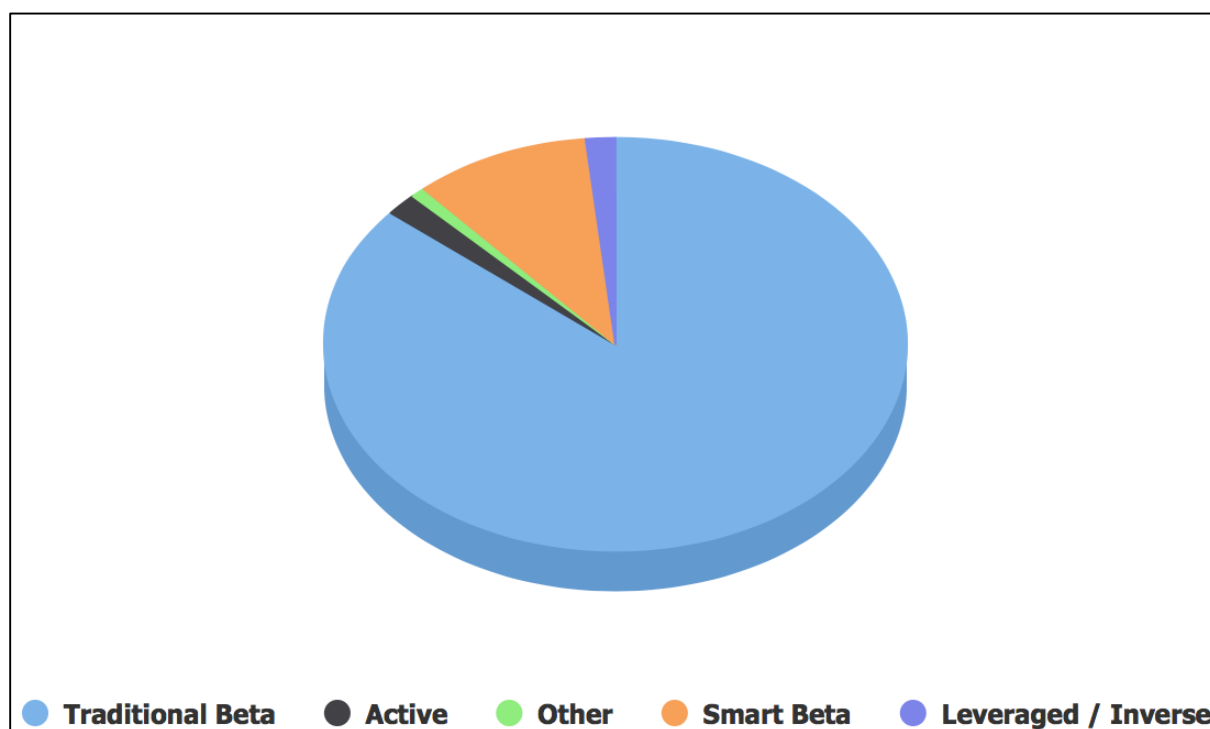


Figure 14 - Repartition of ETFs by assets (Wealth Management, 2018)

As we can see, the most part of smart-beta ETFs are established in the equity asset class while this class is mostly based on a traditional index-based investing method. Over 12 percent of global equity ETF assets are smart-beta ETFs while there is only 0.6 percent of them that is active equity ETFs and 1.6 percent of them that fit in the leveraged and inverse category. The category of active ETFs is mainly established in bonds or fixed-income ETFs accounting for 5.7 percent of bond ETF compared to only 1.4 percent of assets for smart-beta ETFs in this category. In commodities, on the contrary, there are more assets in leveraged and inverse ETFs than in active or smart-beta ETFs. This is a category in which institutional investors tend to take unequivocal decisions and use leveraged or inverse ETFs to implement them.

	Active	Leveraged and Inverse	Smart-beta	Traditional	Other	Assets by Class (\$M)
<b>Bonds</b>	5.7%	1.2%	1.4%	91%	0.7%	851,689
<b>Commodities</b>	1.4%	3.9%	3.7%	91%	0%	148,066
<b>Equities</b>	0.6%	1.6%	12.1%	85.6%	0.1%	3,846,459
<b>Other</b>	12%	2%	3%	55%	29%	106,095

Figure 15 - Breakdown by asset classes globally (Wealth management, 2018)

Equity ETFs are still the lion's share of the total AUM of the ETF industry (Thomas, Juergen, & Thomas, 2018). Equity ETFs represent 77.7% of the industry which amounts to \$3,846,459. On the other hand, the aggregate asset under management of fixed-income ETFs is still below USD 1 trillion (at the end of March 2018, it was worth \$851 billion). Nevertheless, inflows into fixed-income ETFs have been much faster than inflows into equity ETFs in the last few months. Since the beginning of 2015, inflows invested in assets under management into fixed-income ETFs have been twice faster than equity ETFs. Even since 2017, when equity ETFs enjoyed substantial inflows, fixed-income ETFs have grown better than the other categories.

### 2.3.2 European Market

Equity ETFs are also the lion's share of the European ETF asset classes and represent 72% (€475.9bn) of the market. The second most important asset type is Fixed income or bonds ETFs which represent 23% (€155.8bn). Commodity ETFs are worth 3% (€21bn).

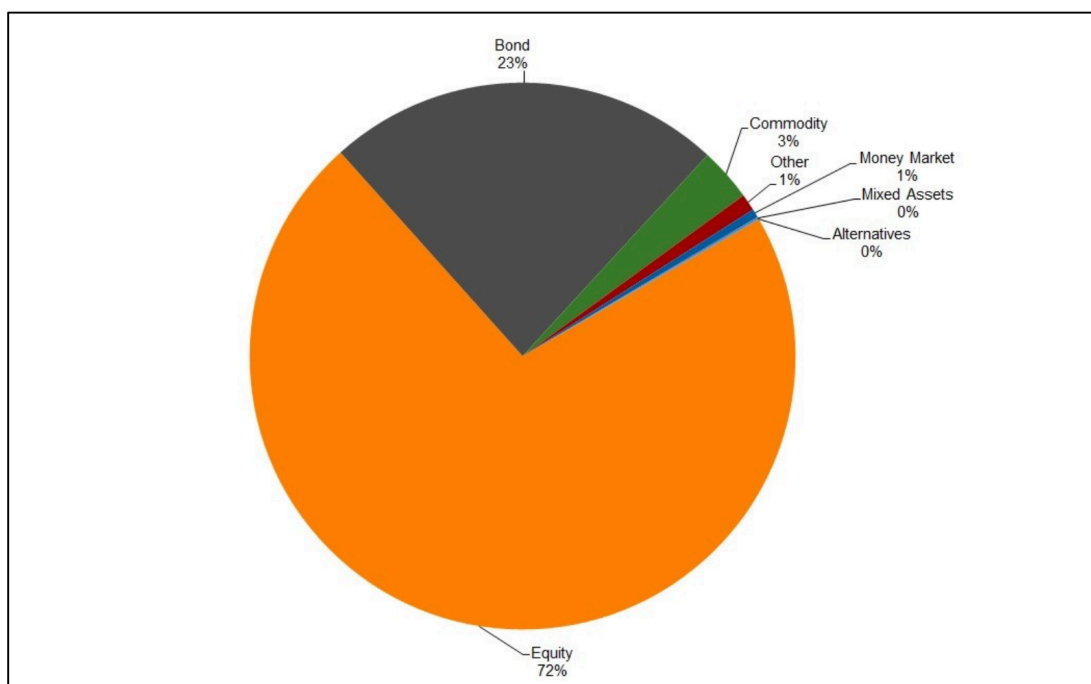


Figure 16 - Repartition of the European ETF assets by classes (Thomson Reuters Lipper, 2018)

As we have seen, most part of active ETFs are based on a fixed-income strategy, which is not surprising considering the regulation currently in place that requires the publication of the portfolio on a daily basis. The fixed-income category does not have concerns about that because there is a panel of different bonds for a given company and it is mostly traded over-the-counter. We will see further that portfolio transparency is a main concern for portfolio managers because of the front-running. We could justify that active managers choose this kind of assets because they have seen the opportunity in the fixed-income category to avoid the front-running while respecting the full portfolio disclosure requirements.

## 2.4 Analysis of the global actively managed exchange-traded funds market

In 2018, actively managed ETFs celebrate the 10<sup>th</sup> anniversary of the first listing of an active ETF on the US market. This kind of product has gained popularity over the years and the demand for these investment vehicles keeps growing. At the end of March 2018, the global active ETF/ETP market was composed of 473 ETFs/ETPs, with 570 listings, assets worth \$82.95bn, from 98 providers on 18 exchanges in 15 countries (ETFGI, 2018).

An increasing number of providers are offering ETFs as well as actively managed ETFs. According to the data provider ETFGI (2018), net inflows into actively managed ETFs and ETPs were worth \$24.9 billion in 2017, while the total asset under management reached its highest value which was \$75.2 billion. Of course, this only represents a tiny fraction of the total industry at the moment. However, given that most inflows have tended to go into actively managed fixed-income ETFs, we believe it is reasonable to expect a steady growth of actively managed ETFs because, as higher global rates and higher volatility are expected, more flexible approaches in fixed income investing may become much more attractive than simply following an index (Thomas, B., Juergen, B., & Thomas, S., 2018).

Active ETFs are still a niche product at the moment. On the global ETF market, this product only represents a bit more than 1% of the total assets invested in the ETF and the ETP industry. According to the ETFGI, the total amount invested in active ETF on the global market worth \$61bn in August 2017. The market is also dominated by the US which represent more than half of the market with a total of \$39.6bn. Canada and Europe respectively represent \$9.5bn and \$8.1bn of the global market and the rest of the market is listed in Asia Pacific for an amount of \$3.8bn. While the assets are relatively small, the growth is strong. Active ETF AUM have grown by 57% between January 2017 and June 2018 with 91 new active ETFs on the market over the same period. The market of active ETF/ETP is mainly based on the bond market and more precisely on fixed-income products that represent 72% of the market (ETFGI,2018).

## 2.5 Analysis of the exchange-traded funds market by providers

### 2.5.1 Global market

In December 2017, the bigger promoter of ETF was Blackrock (Ishares) with 36% of the market shares followed by Vanguard with 19% and State Street (SPDR) with 14%. The three biggest promoters account together for nearly 70% of the global market.

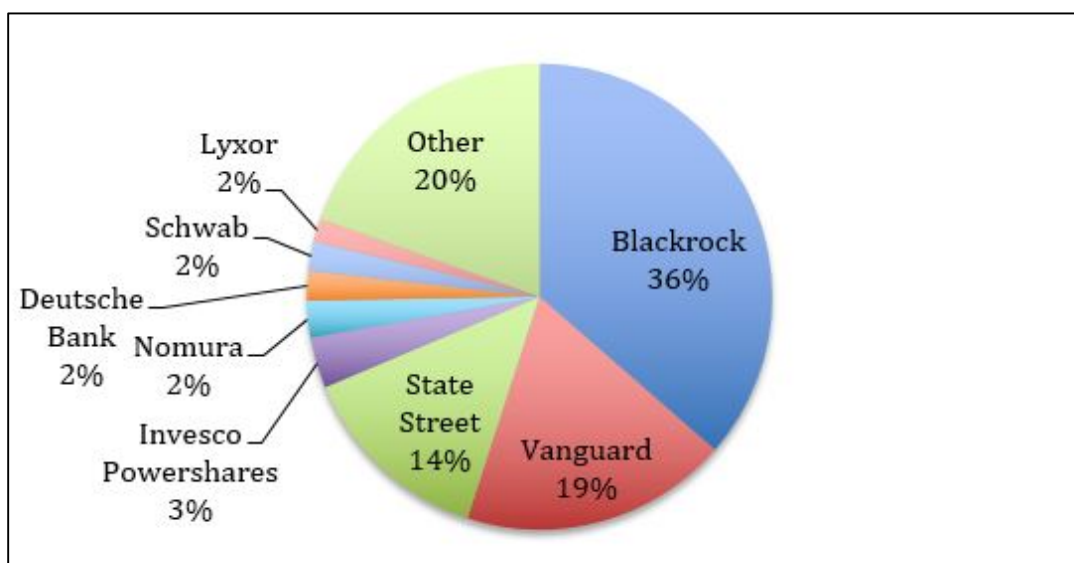


Figure 17 - Distribution of the ETF market by providers (Source: Ullal, A., 2018)

### 2.5.2 European market

According to Bloomberg (2018), in September 2017, on the European market, there were 60 issuers operating in 21 countries across 27 exchanges. The three biggest exchanges that dominate the ETF trading activity are the LSE (London Stock Exchange), Euronext Paris and the Deutsche Börse. On average, these three have generated 85% of the total European ETF turnover.

The market is also dominated by few providers. Indeed, in December 2017, 46.72% of the ETF market in Europe is represented by the giant Blackrock (IShares) with €294bn. It is followed by Xtrackers (€68.1bn) and Lyxor ETF (€64.2bn) which represent a few more

than 20% of the market altogether. The graph above show that the three bigger providers represent more than 65% of the ETF market.

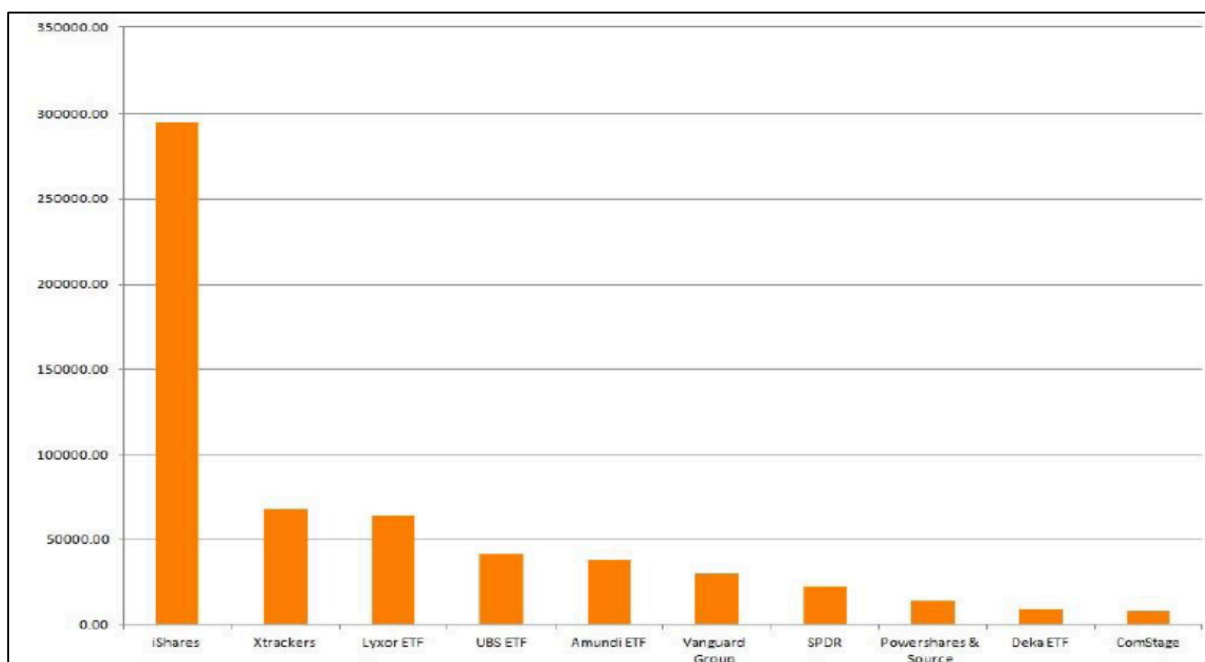


Figure 18 - Ten top Promoters by assets under management (Thomson Reuters Lipper, 2017)

One obstacle is cost. ETFs, like mutual funds, are expensive to operate. Smaller ETF providers, which tend to offer active ETFs and other funds, must charge higher fees to make ends meet. But high fees keep investors away, which hinders those providers from gaining the scale necessary to lower their fees. Providers or companies which have deep resources compared to smaller providers/ companies can afford with more facilities costs due to fundamental research, quantitative analysis or expert trading to outperform their benchmarks. The best example is the creation of actively managed ETFs by Vanguard using factors while the fees are only 0.22%. The fact that some providers can afford such low costs leaves any place for competition. This results in a market with little competition and a very concentrated market shares in terms of providers. In 2017, Thomson Reuters Lipper said that only 18 promoters of the whole European market held €1bn or more assets.

## 2.6 Analysis of the European exchange-traded funds market by investors

It is also important to underline the importance of the type of investors who choose ETFs. The retail segment of the European ETF market is actually experiencing the highest growth rates with nearly constant increases in trade month-on-month, and accumulated inflows of around 70% of the overall turnover per month.

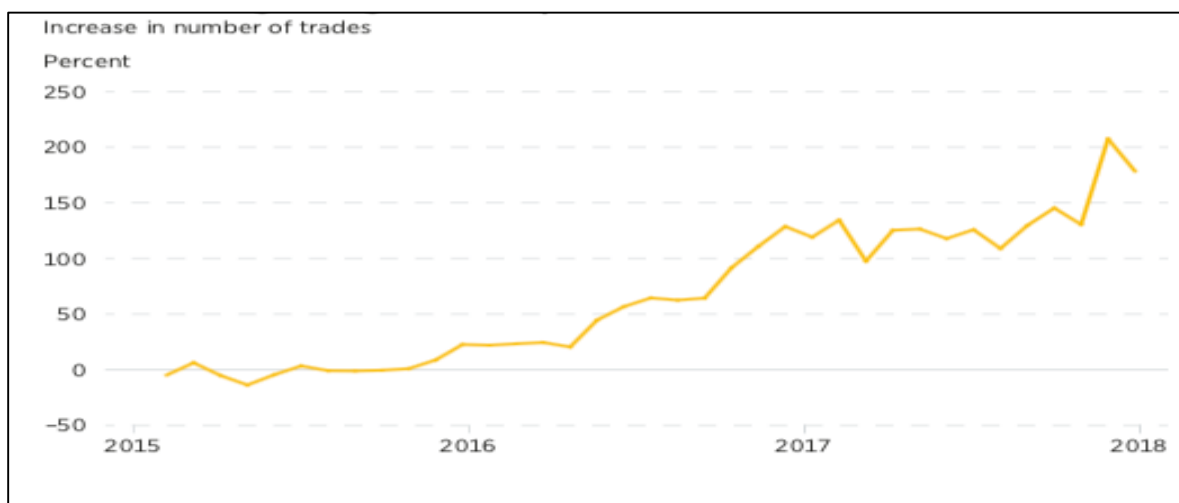


Figure 19 - Fast growing: The European retail ETF market (Commerzbank Research, 2018)

Despite that institutional investors are the main type of ETF investors in Europe, unlike in the US where ETF gained popularity thanks to retail investors. In Europe, the investment from retail investors suffers from a high degree of risk aversion and a heavy reliance on a pay-as-you-go pension system.

The retail ETF interest significantly varies across regions. For instance, the German landscape is dominated by saving-plan investments. France has a well-formed unit-linked market (insurance contract) which has historically been the preferred access route for French retail investors. Lastly, the UK is led by sophisticated execution-only clients who uses the retail service provider network (RSP). Mark Harris, Capital Markets SPDR ETFs, is considering different approaches to enter regions: *“The market is looking to develop access solutions for retail investors in different ways; as an example, we are seeing strong demand for straight-through process (STP) solutions from the Benelux region with ETF usage on platforms such as FundSettle and Vestima receiving a lot of interest.”* STP describes a way of handling orders with less manual intervention, seeking a fully

automated solution (Cronemeyer, 2018).

## 2.7 The future growth of the exchange-traded funds market

### 2.7.1 The global market

As we can see, EY has predicted that the global market will reach an amount of \$7.6 trillion in 2020. We have seen above that the amount predicted in 2017 has already been exceeded by more than 14,7%. Indeed, the amount predicted was \$4.4 trillion and the final amount for the year 2017 was \$4.7 trillion.

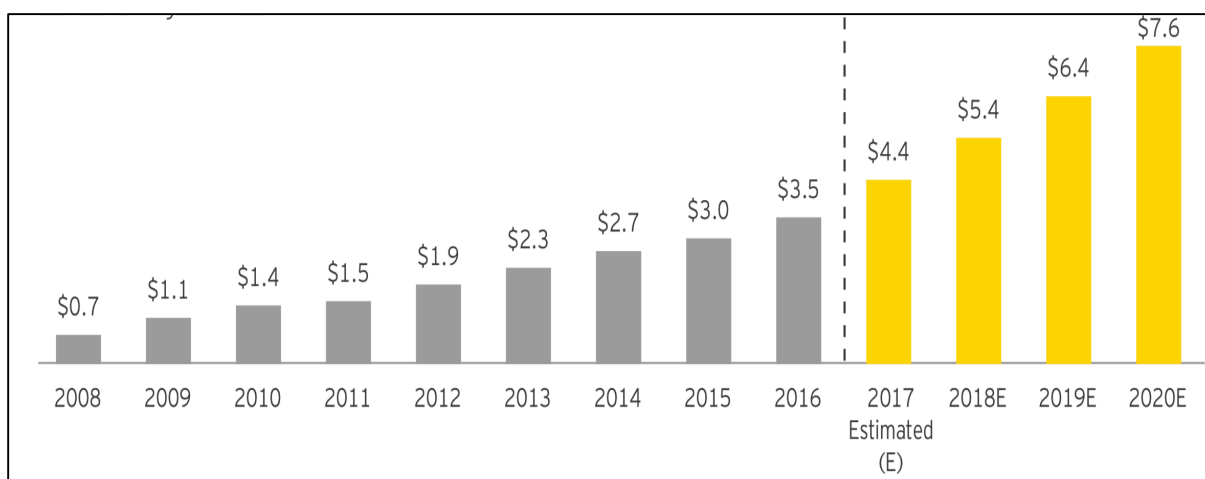


Figure 20 - The future growth of global ETFs: market analysis and forecasts 2017 to 2020, net assets in US\$ trillion (EY, 2017)

### 2.7.2 The European market

As we have seen above, the new regulatory framework MIFID II has made his first steps in the harmonization of the European ETF market by setting rules which aim to seek a higher pre- and post- transparency of ETFs. By increasing transparency and allowing the investors to have a better view of the market, it should increase their confidence in the European ETF market. Eric Balchumas, an intelligence analyst of Bloomberg, demonstrated that the requirement of a greater fee transparency would help to improve the ETF trading volumes. He now predicts that the market will reach an amount of \$2 trillion by 2022 which means an increase of 20% per year for the next five years.

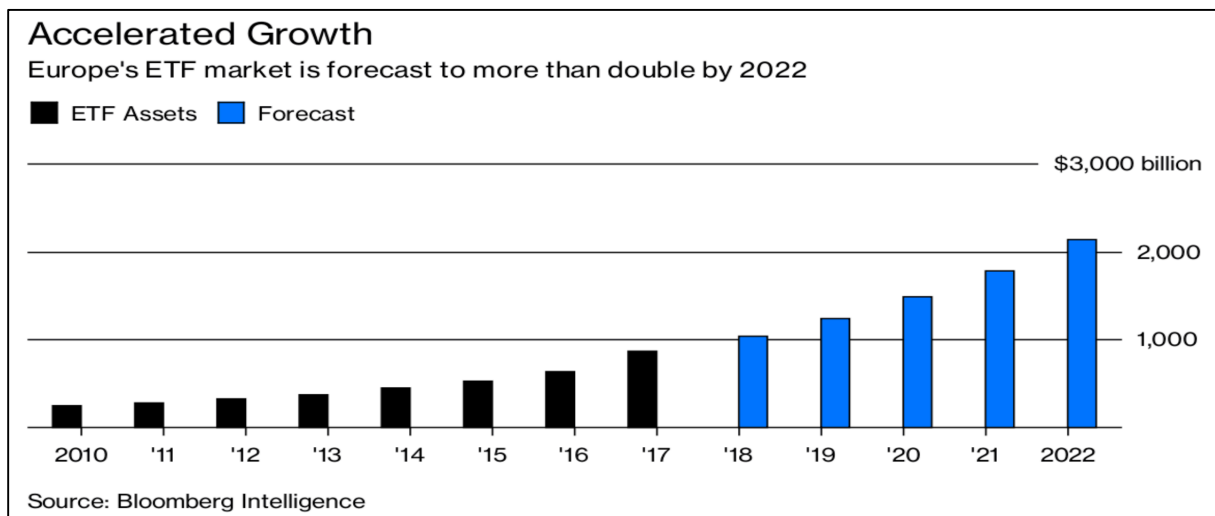


Figure 21 - Growth and forecast of the European ETF market (Bloomberg Intelligence, 2017)

## 2.8 Conclusion

It is clear that the ETF industry has been on a steady rise since its creation. In addition, it is taking over the mutual fund industry which is facing some difficulties and a gradual decline in terms of investors. The fixed income category, which is the second largest asset class, is growing faster than the other categories and that is a good opportunity for active ETFs as they have mainly been focused on this category until now. We can also suppose that the category of equity ETFs is not really popular because of the regulations in force at the moment. Indeed, as explained above, the issue regarding transparency makes the creation of active ETFs less attractive.

Creating an ETF strategy is among the highest priorities of many asset managers. In fact, 67% of respondents to the EY Global Survey (2017) expected most asset managers to acquire active ETF in the short term. Asset managers think there is a business opportunity in industries that registered a growth of over 40% in 2017 and thus seek to develop a range of ETFs that they can offer alongside other structures like mutual funds, structured products, separate managed accounts or investment trusts. The ETF structure is imbued with the asset managers' investment ideas and is a democratic alternative to traditional active structure like those mentioned above.

## **IV. Part 3: Development and future of actively managed exchange-traded funds in Europe**

### **1. Chapter 1: The European market structure: A compulsory step to the harmonization**

#### **1.1 Secondary market : The over-the-count market versus exchanges**

Although an ETF is composed of the word 'exchange', they tend to be traded rather on the over-the-count (OTC) than on an exchange in Europe. It appears that between 50 and 70 % of all the ETF are traded on an OTC basis in Europe. As explained before in the regulation part, due to the fragmentation of the market, ETFs are traded on multiple exchanges, in different currencies and settled across different jurisdictions and requirement systems in function of the market. The European ETF market is seen as an opaque market because of its tendency to use the OTC market. As a result, the market lacks transparency, liquidity and price discovery at the reporting level. Indeed, the ETFs are not reported when they are traded over-the-count.

The US market is very different and is generally characterized by a high degree of on-exchange liquidity and ETFs approximately account for 30% of the total equity market turnover. American ETFs are listed in a single currency, covered by one set of regulations and cleared in a single depository. Furthermore, ETFs are mostly used as retail tools with a retail turnover accounting for approximately 70% of the turnover.

The lack of on-exchange volume and of transparency hinders the growth of the market. Retail investors are generally not aware of how the OTC market works and investors may have difficulties to understand trading costs because of the market structure. That is why Investors opt for another investment vehicles.

The growth in terms of trading volume in the OTC market compared to the volume of the primary market is to be considered. If it grows faster than the primary market, this could affect the transparency and liquidity that MIFID II is trying to put in place. Many issuers of ETFs and exchanges have expressed their wish to increase these two elements by

comparing the higher liquidity in the US with Europe and by pointing out this lack of liquidity as the main consequence of the lack of the investors' interest for ETFs at the European level. A balance between primary-secondary and OTC markets is therefore essential for European ETFs in order to evolve efficiently under the regulations established by MIFID II.

## 1.2 Categorization of the exchange-traded funds structure

Categorizing some types of ETF as simple and transparent products has become inappropriate. Indeed, some ETFs such as active, smart-beta or ETF with a synthetic replication are investment vehicles that are more complex to understand than simple passive ETFs. For the sake of the development of the ETF market, it is important to take into account that considering ETFs as simple and as transparent may hinder its development once providers put into place particular structures or strategies in the future.

The regulation of the ETF industry has to be able to adapt to the structure of each ETF. Indeed, for the well-development of active ETFs, requirements have to be appropriated to their structure and the strategy followed. The current situation regarding the regulation of transparency in the United States or in Europe is a bit peculiar because transparency has been mandatory for a longer period in the United States than in Europe.

On the US market, ETFs under active management have had to follow the rules of transparency since their creation in 2008. However, several providers have been trying to change the opinion of the SEC, which is the regulator in the United States. The SEC considered that portfolio transparency was essential to the good functioning of the arbitrage process and, therefore, a full portfolio transparency was a condition to respect by all ETFs. Providers still wanted to be able to launch so-called non-transparent active ETFs which could change the landscape of ETFs. The SEC then assessed all the requests concerning the exemption of transparency for these ETFs and all the SEC wanted was to make sure that the lack of transparency would not impact the balancing of the share price according to the net asset value.

On the contrary, in Europe, the market underwent a big change. Indeed, ETFs in Europe were recognized in 2018 and have had to disclose theoretically their positions since MIFID II. Nevertheless, this is not yet the case in practice. The discussion on transparency was launched as a result of a discussion paper from the bank of Ireland.

European regulators and exchanges have not tackled the issue of non-transparent ETFs yet and there is little consistency when it comes to conventional ETF disclosure approaches. In fact, the London Stock Exchange and the Borsa Italiana, which are part of the same group, have opposite approaches concerning disclosure. There is a full daily disclosure in Milan while it is the opposite in London.

Regulators also struggle with other issues which are linked to disclosure. Some people fear that Authorized Participants could have access to inside information through the “portfolio composition file”. If they do have that access, there would be a risk of market abuse. However, APs are also subject to regulations, such as the MiFID 2 or the transaction reporting regime, which have given regulators much more data to process and which have allowed them to capture entities that lead to market abuse. Access points routinely receive confidential information and they process this information with controls and internal processes. A solution would also be to redefine the role of APs in the management of non-transparent ETFs by including the role of market maker which would then allow APs to benefit from the market exemption under the MiFID regulation. Issuers would also be able to control the flow of information by limiting its availability to essential trading counterparties. In the next phase of the active ETFs revolution, the focus should be on the asset managers’ concerns. In fact, they want to leverage the power of distribution of ETFs without sacrificing their intellectual participation (McNeil, 2018).

### 1.3 A consolidated market

The introduction of a consolidated band could be a solution to change the current fragmented market. This band would be a sort of single reporting source with real-time data on trading volumes and prices of all active exchanges in Europe. It would give a real-time picture of the European ETFs market and make it easier for investors to obtain product information. The European Securities and Markets Authority (ESMA) stated that

CTPs would collect post-trade information published by trading venues and approved by publication arrangements (APAs) and would consolidate them into a continuous live data stream and make the data available to the public, both for equity and non-equity products.

The CTP is a reporting tool that allows to centralize post-transaction information about the price and volume of transactions made on a security regardless of the place of trading. The consolidated publication system that was put into place must allow the collection of information from trading platforms and from investment firms through publishing devices for transactions outside the trading venues. Authorized Authorities (APAs) have to make them available to market players in the format of an electronic data flow in a timeframe as close to current time as possible. The declaration of transactions must include particulars that identify the concerned customer and the persons that are responsible for the transaction. All market operators may operate an APA and a CTP provided that we make sure these operators will do the same (Marketsmedia, 2017).

This instrument should give a global and clear vision of the ETF market in real time. It will help investors and also give a higher liquidity to the market. As the information is better shared across Europe, as seen in the literature review, the European market will be even more efficient.

#### 1.4 Conclusion

Regulators have not yet tackled the categorization of the different types of ETFs. Indeed, there is no difference between the different type of ETFs and, because of this, active ETFs have to disclose their holdings like traditional passive ETFs. For active ETFs to develop properly, regulators must first take into account their principal characteristics and introduce appropriate adjustments, such as a modification of the daily disclosure requirements. Regulators try to change the current tendency, which is to use the OTC market in Europe, by increasing the requirements of transparency. Investors will have a better understanding of the market and the market will have a better liquidity with the introduction of a consolidated band.

## 2. Chapter 2: The behavior of retail investors

### 2.1 The financial knowledge

In the literature review, it was demonstrated that investors choose their investments in function of their risk appetite and that European investors are mostly risk averse. Therefore, European investors should have been rushing on ETFs. However, retail investors have not yet given a real interest in this type of vehicle investment. Institutional and professional investors are the predominant users of ETFs in Europe. The structure of an ETF might be the reason because it is complex to understand for a retail investor.

Euroclear (2017) says that the future of the ETF industry in Europe will be bright. What the European ETF market needs is a financial education from the retail investors. This responsibility is not only based on them but also, as example, on banks and exchanges. The sector of retail investors is the sector with the most significant growth for the moment and only represents a little part of the European investors. Indeed, retail investors only represent between 10% and 15% of the European type of investors while on the ETF American market they represent 45% of the US investors. With the implementation of the new regulation which will allow to highlight the ETFs in general, we can expect that it will arouse the investors' interest in the short-term. The costs will have to be disclosed in a detailed and separate way in a document under the MIFID 2 rules. The standardized Key Information Document of the PRIIPS will also help the investor to have a clear vision of his/her investment.

Therefore, we will witness a strengthening of the investors' tendency to opt for alternative funds or services at a lower cost at the expense of traditional mutual funds. Active ETFs will be thus theoretically more attractive because this kind of assets has lower client services as well as lower administration requirements than active mutual funds. This would also provide investors a wider choice of investment solutions that can be more efficient compared to other products that also use an active investment strategy. With the changes of the regulatory framework which will lead to more transparency, low fees and good liquidity, we can expect a better knowledge of investors concerning costs incurred

when they choose a fund and their understanding of the impact of costs on net returns. This can only strengthen and attract retail flows on the market.

## 2.2 Distribution of the ETFs

In Europe, investors tend to rely on advisors who generally promote actively managed mutual funds on which they receive upfront commissions and retrocession. The majority of investment platforms, which have been significantly growing in the past years, only focused on mutual funds too. Some factors lead to change such as the wave of regulation across Europe that transforms the advisory landscape and independent advisors are not able to have a commission-based remuneration anymore. This measure puts ETFs and mutual funds on an equal footing (PWC, 2018).

Some of the online banks think of changing their models once they will have to show all of their costs to their investors because clients will then really see the cost of the product, the cost of the advice, the cost per year and the cost over five years. ETFs are expected to grow significantly as a greater transparency on costs and charges, under the MiFID II, will for sure make investors think of Unit Trusts and ETFs as equals (PWC, 2018).

## 3. Chapter 3: The asset manager's concerns

### 3.1 Seeking an alpha and the rise of smart-beta exchange-traded funds

As we have seen in the performance literature of actively managed ETF, fund managers face some issues when they seek an alpha on the market. Previous studies have shown that managers generally do not reach a positive alpha which means that they do not beat the benchmark. It can be assumed that active ETFs managers are not able to process and identify inefficiencies, which are hypothetically on the market because of the lack of information.

Smart-beta ETFs have taken the lead compared to active ETFs. A shift from active to passive management has been observed. That may be partly explained by the rise of smart beta ETFs and the fact that investors research the lowest fees and costs possible for their

investments. As seen above, smart beta ETF is an advanced form of passive management because it uses an alternative index construction rule rather than a traditional market capitalization based on indices. As actively managed ETFs, smart-beta ETFs use a rule based on a methodological approach which mainly focuses on investment factors and market inefficiencies. Due to the fact that this kind of investment vehicle is based on computer models, the costs incurred by smart-beta ETFs are lower than the costs of actively managed ETFs because the latter also include the strategy put into place and the research done by the manager.

Active ETFs seem to be a more challenging investment fund because of higher costs, lower transparency and also because of all the debates around transparency that convey a certain degree of uncertainty about their future. All these reasons would rather benefit smart-beta ETFs than active ETFs and, as a result, investors would miss an opportunity to seek an alpha. Managers are going to have to find an attractive pricing point for ETF investors so that these ETF stay in the competition on the market.

### 3.2 The daily disclosure

An ETF is traded throughout the day and the price of the ETF may change several times during the day or even during a single hour. Because of that, transparency has a major role to play because that gives investors relevant information and it allows them to trade at a price which is equal or nearly equal to the net asset value. Transparency also gives information about the risk taken by investors when they decide to invest in an ETF which is actively managed (Smith, 2018).

The results that came out of Thirumalai's study, which aimed to analyze active ETFs on the Deutsche Börse, were relevant. It is demonstrated that the lack of transparency does not impact the difficulties of pricing and does not create a wider spread between the NAV and the trading price. Indeed, active ETFs are traded at insignificant deviations from their NAV and passive ETFs at significant deviations from their NAV.

### 3.3 The front-running

The front-running may be defined as a trading opportunity because you anticipate a change in a portfolio and try to trade with this change in order to be benefited from the increase of the price. Front running is a legitimate activity because, in theory, information comes to the market and the market is likely to respond.

Making the portfolio transparent implies that all the information of the portfolio and therefore the strategy established by the manager of the portfolio is available to everyone. By revealing all his/her positions, other investors might replicate and construct their portfolio in the same way without paying any money to the manager who did research and studied to develop this portfolio.

Active ETFs suffer more from the disclosure of its position than passive ETFs because the front running may hinder the outperformance of the index expected by the strategy established by the manager of the active ETF. Indeed, the front-running may turn out to be very expensive. When the manager decides to sell out or to buy a large position on the market, the operation may take a few days. Other investors can simultaneously use this information and trade against the manager and takes advantage of this opportunity.

Lewis (2017) said that “an ETF structure based on daily disclosure is highly susceptible to reverse engineering because once sufficient information can be obtained about changes in portfolio composition, it may become possible to forecast future portfolio changes. This is a significant issue for actively managed funds because it may take more than one trading day to strategically accumulate shares for an active position. This allows sophisticated investors to potentially front-run new positions, eroding “alpha” that should have accrued to shareholders.” (U.S. Securities and Exchange Commission, 2017)

### 3.4 The arbitrage

There is a conflict between the willingness of portfolio managers to reveal their positions and the arbitrage mechanism which is already in place in the secondary market. As previously mentioned, ETF shares can be bought or sold on the primary, also called the

open market, or via the redemption mechanism of the underlying securities. There is arbitrage at the creation unit level. When the set price on the secondary market differs from the holding price, the arbitrageur will trade it by creating or by cashing in creation units in order to make a profit.

The arbitrage mechanism cannot work if the company creating the ETF does not reveal all the information about the underlying holdings. If the company does not do so, the ETF can be traded at a substantial premium or a discount compared to the net asset value of its underlying holdings (Central bank of Ireland, 2017).

#### 4. Chapter 4: The dilemma of transparency and potential prospects for the future

Transparency is probably the most important point concerning the development and the future of active ETFs because it could impact the market both at the level of providers and of investors. There is an on-going debate about providers. On the one hand, some asset managers are against a total transparency because this could affect their investment strategies. On the other hand, asset managers are just not worried at all about it because they feel that their strategies are too complex to be understood and anticipated by other investors and they therefore do not have any objection to reveal the composition of their portfolio.

As a result, it can be assumed that the more information and the more transparency investors will have, the more satisfied they will be. Indeed, their understanding of the product will be better and they will be entirely sure of their investment. Transparency for active ETFs is a real dilemma because on one hand investors want the most disclosure possible so that they can be well-informed once they invest and on the other hand providers of active ETFs want requirements concerning the transparency of active ETFs to be more flexible because they are not willing to give all the information of the fund in order to ensure its security. The balance between an efficient market with liquidity and transparency and a protection of the information to ensure a potential inappropriate market behavior is hard to reach.

A total disclosure of the portfolio for investors may not be necessary in all cases because some actively managed products, that follow a specific and complicated strategy, will not be systematically understood by all investors, even if the portfolio is entirely disclosed. Indeed, these kinds of products are only understood by sophisticated investors such as institutional investors but they are not understood by each retail investor. The daily disclosure requirement of MIFID II may dissuade providers to implement new products on the market due to the fear of not being able to reap the rewards of their own work (Central bank of Ireland, 2017).

An alternative may be a fully disclosure but only for specific market participants. Only selecting a few market participants allows to keep both the market efficiency and a certain degree of security for the managers. According to JP Morgan, this selection of market participants, including authorized participants, market makers and iNAV providers, will ensure an efficient secondary market because these people need this information for their market-making purposes.

#### 4.1 Exchange-traded mutual funds

A solution has been found in the US and it is an investment vehicle called an exchange-traded mutual fund (ETMF), which is a hybrid between an ETF and an open-end mutual fund. It may also be known as an exchange-traded managed fund. An exchange-traded mutual fund is essentially a mutual fund available in the form of an ETF. Exchange-traded mutual funds offer the benefits of both mutual funds and ETFs. They can indeed combine the advantages of investment strategies of an actively managed mutual fund and the performance and tax efficiencies of an ETF (Tuckwell,2018).

However, exchange-traded mutual funds differ from a traditional ETF in many ways. They are not required to disclose their portfolio holdings on a daily basis, which allows them to protect confidential portfolio trading details. Funds are traded in real time using NAV-based trading with prices quoted in terms of premium or discount. Exchange-traded mutual funds use “in-kind” transfers of portfolio securities by redeeming and issuing fund units, thereby saving on transaction costs. Exchange-traded mutual funds can give intraday and short-term traders some arbitrage and speculation opportunities on mutual funds. Funds pay capital gains and offer dividend income for long-term investors. While

they can be bought and sold during the day like ETFs, ETMFs will be priced after the close, like their mutual fund peers (Investopedia, 2018).

In 2016, Nextshares published in their retail investor report: *“This structure may allow the product to provide certain cost and tax efficiencies of ETFs while maintaining the confidentiality of the current holdings similar to mutual funds. By not having to disclose their holdings on a daily basis as ETFs do, ETMFs may have an advantage in trying to outperform their benchmarks over time because they are less susceptible to front running by other investors who would be able to trade on the holdings’ disclosures.”*

#### 4.2 Non-transparent actively managed exchange-traded funds

Non-transparent ETFs are an excellent example to show how the European ETFs industry could use all the attractive characteristics of passive and active investment. Indeed, if these features are combined, we could come up with an innovation solution that meets a real need for investors and asset managers. Cost savings will not be negligible for the end investor. Furthermore, the well-known benefits of ETFs can be preserved in a non-transparent structure. As a result, investors will have, at their disposal, more features, more choice and more flexibility for less costs and less complexity.

ETFs have often been described as democratic investment tools and, in fact, institutional and private investors have access to the same products, the same information and the same trading flexibility. Investors are the big winners of the development of ETFs which help to create highly diversified portfolios at extremely low costs. The phenomenal growth of ETFs and the variety of news ideas launched on the market shed light on the fact that advisors, portfolio managers and end investors want ETFs to help them achieve their investment goals.

Many ETF investors and professional fund managers prefer active ETFs to mutual funds because of their easy integration, their automation of processes and the simplicity of comparisons. If investors and funds selectors want to invest in ETFs but asset managers would rather not opt for active ETFs because of the issue of transparency, then the whole market suffers.

By reinventing a range of products in order to include non-transparent active ETFs, asset managers are able to position themselves to take profit from the ever-growing number of ETF-focused on platforms and the number of distributors. In fact, more than 100 robot-advisors across Europe as well as many brokers, asset managers and banks are now offering model portfolios based on ETFs.

	<b>Index ETFs</b>	<b>Smart- beta ETFs</b>	<b>Transparent active ETFs</b>	<b>Non- transparent active ETFs</b>	<b>Closed- end funds</b>	<b>Exchange- traded mutual funds</b>	<b>Mutual funds</b>
<b>Traded</b>	Intraday	Intraday	Intraday	Intraday	Intraday	Close NAV	Close NAV
<b>Holdings</b>	Disclosed	Disclosed	Disclosed	Hidden	Hidden	Partly Hidden	Hidden
<b>NAV</b>	Intraday	Intraday	Intraday	Intraday	Daily	Intraday IIV	Daily
<b>Arbitrage</b>	Yes	Yes	Yes	Partly	No	Yes	No

Figure 22 - Comparison of the different investment vehicles (KCG, 2016)

## IV. Conclusion

We have seen in the literature that the availability of information plays a major role in the efficiency of markets according to Fama's theory. The more information is known and shared, the better the market is. We also reviewed the regulation in place in Europe. It is dynamic and intends to share information, protect the investors and make it as transparent as possible thanks to UCITS, MIFID II and PRIIPS. We have also highlighted the main characteristics of investors in Europe. It turns out that investors in Europe are poorly informed about investment vehicles such as ETFs. Thanks to the PRIIPS standard and MIFID II, the disclosure of information and the explanatory brochure of the investment vehicle will allow investors to understand it much more easily. MIFID II has also put a total ban on some companies that receive payments from fund managers so that they can sell investment funds to retail clients. This new rule could change the current tendency which involves the use of mutual funds in place of ETFs by advisors and by banks that have received commissions from these funds up to now. In addition, it is predicted that a consolidated band in order to collect information as quickly as possible on the European market to be able to defragment it and make it more efficient will reverse the current tendency to trade on the over-the-counter market.

In Europe, actively managed ETFs should thus be more privileged than mutual funds. This will give investors a better view of the European market and will also boost competition between actively managed mutual funds and active ETFs. In addition, we have also seen that the global mutual fund market is losing ground as the global ETF market is expanding, which also reflects the growing appetite for ETF investment. These observations therefore show us that the development of actively managed ETFs is on the right track. In fact, by reducing the price of active strategies and widen the access by trading on an exchange, active ETFs can convince investors to select them instead of active mutual funds. Indeed, many actively managed ETFs have fees lower than mutual funds and they have the potential to be cost efficient and tax efficient, given their in-kind creation and redemption mechanism.

Theoretically transparency must be respected all across Europe but in practice, it is still not the case because countries can adjust the directives to their needs. However, it is clear

that transparency raises many questions and concerns among investors and asset managers. Regulators must make decisions in order to fulfill everyone's expectations. Indeed, the new regulations do not make any difference between the different types of ETFs. As a result, actively managed ETFs need to be as transparent as passively managed ETFs. A more appropriate regulation, which is in compliance with the categorization of each ETF type, may then be a more efficient solution. For actively managed ETFs to be successful, restrictions on transparency should be brought into line with the functioning of active management. In order to face that situation, a solution must be found to ensure a balance between the ETF liquidity, the access to information, the advantageous trading characteristics of the ETF for investors and the providers' leeway so that they avoid the front-running.

As long as the regulation does not consider a dissociation of active ETFs according to their level of transparency, they will not be able to reach their potential of development. If a distinction is made and if non-transparent active ETFs are granted, investors who want a full transparency would be able to have access to transparent active ETFs and asset managers would be able to go on the European ETFs market without being exposed to front-running through non-transparent active ETFs. We have seen that active ETFs mainly develop in the "fixed-income" asset class because asset managers are less concerned about transparency with this asset class. As a result, non-transparent active ETFs could offer new investment possibilities in other asset classes such as the "equity" or the "commodity" asset class because active ETFs are still not represented in this classes. The disagreement about the regulations on actively managed ETFs significantly slow down their development in Europe.

In the short term, as the regulation does not become more permissive when it comes to transparency, it may be expected to see exchange-traded mutual funds coming on the European market, as it is already the case on the US market, in order to get round transparency requirements imposed by regulations. In Europe, the future of active ETFs is thus uncertain and in the hands of the market regulators.

The access to data and information about actively managed ETFs was the main issue encountered while the thesis was being carried out. Although the interest in ETFs is

growing, actively managed ETFs are still not significantly present in Europe. Indeed, there are very few active ETFs in the global market and even fewer in the European market and because of that there has been few research of the subject and the majority of studies found online have a restricted access. Furthermore, as the new regulations have been implemented in the beginning of 2018, we still have not enough data to review their efficiency on the global ETF market. It would be highly interesting to carry out a long-term analysis which is based on performances and regulations in order to suggest new regulations related to each specific type of ETFs.

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