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What are the Risks of European ETFs?

January 2012

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Executive Summary

Exchange-traded funds have traditionally been perceived as vehicles combining the diversified exposure of mutual funds with the low-cost, flexibility, ease and liquidity of trading enjoyed by publicly listed stocks, while also offering lower-expense ratios and better tax-efficiency relative to mutual funds. Most ETFs are passive, index-tracking investment vehicles, which as such, have transparent economic exposure and simple payoffs.

Product innovation in the ETF industry has led to the development of inverse and leveraged passive vehicles, of vehicles tracking strategies, and of outright active vehicles; these new forms of ETFs represent less than 5% of overall assets under management in the ETF industry.

The growth of ETFs and the legal limitations imposed on the fund structure in most jurisdictions, notably those relating to diversification and eligible assets, have also lured products structured as debt obligations to exchanges. As notes, these exchanged-traded products (ETPs) tracking the performance of a single asset, a basket of assets or an index need not comply with fund rules and expose investors to the credit risk of their issuers.

While ETFs are natural building blocks for investment by retail investors, the European ETF market is mostly institutional; retail participation is under-developed, not least because distributors have long been allowed to channel investors towards products with high commissions. However, European and country-level initiatives aimed at removing or disclosing conflicts of interest in retail distribution are expected to fuel investor interest in ETF markets.

Against this backdrop and in the context of the diversification of the ETP landscape, regulators have voiced concerns about the ability of retail investors to understand differences in product types, investment strategies and risks.

More generally, the rapid growth and innovations in the ETF market has led financial stability organisations and regulators to start looking into the potential risks of ETFs as a matter of precaution. The key areas highlighted for attention have been counterparty risk, liquidity risk, systemic risk and possible detrimental impacts of ETFs on their underlying markets, potential risks of innovations such as leveraged and inverse ETFs, and the possibility of confusion between ETFs and other ETPs.

To the extent that such a debate can promote a better understanding of the ETF market and lead to improvements in terms of risk management practices by ETF providers and investors, it is useful. It is necessary, however, that any debate be based on facts or a sound theoretical framework, and that the bigger picture not be obscured by biases or undue fixation on the selected issues of the day.

Unfortunately, we feel that the debate on the risks of ETFs has started off on the wrong foot and that the initial confusion has been amplified and compounded by competing interests jockeying for position, with adverse impacts not only for the ETF industry but also for the ultimate goals of sound regulation.

We have looked into the aforementioned issues and concerns and conclude that a number of clarifications regarding the risks of ETFs are in order.

i. ETFs are a sliver of the fund management industry and UCITS ETFs are highly-regulated; the overarching objectives of the European regulator would be better served by generalising the high standards of protection afforded by

UCITS and MiFID to the products that make up the bulk of retail investors' portfolios;

Almost all European ETFs abide by the provisions of the Undertakings for Collective Investment in Transferable Securities (UCITS) Directives – these impose rules of conduct upon UCITS managers to require, *inter alia*, that management acts in the best interest of the fund and prevents or mitigates conflicts of interests; they entrust the assets of the fund to an independent depositary whose role is to safeguard the assets and ensure that applicable law and fund rules are respected; they constrain the fund's investment policies in terms of eligible assets and minimum diversification, leverage, and risk management; they entail initial and ongoing disclosure requirements. UCITS authorisation is recognised globally as a guarantee of high and effective standards of investor protection and the European Commission regards UCITS standards of disclosure as the benchmark for all retail products. In addition to UCITS rules, UCITS ETFs have to comply with exchange listing requirements.

ETFs are only a sliver of the fund management industry. Retail investor access to the financial markets in Europe takes place mostly through Packaged Retail Investment Products (PRIPs), which represent a market the European Commission has estimated to be about forty times larger than the overall size of the, mostly institutional, ETF market.

It is thus surprising to see so much regulatory interest being concentrated on a segment of the European investment management industry that is not only very narrow but also already the most highly regulated. We feel that the overarching objectives of the European regulator i.e., to achieve a level-playing field and a high-level of retail investor protection across the industry, would be better served by staying on its initially charted course of harmonising regulation to generalise the high standards of protection afforded by UCITS and the Markets in Financial Instruments Directive (MiFID) to all PRIPs and the institutions and individuals involved in their distribution.

We also feel that the vertical approach adopted by the European Securities and Markets Authority (ESMA) which focuses on UCITS products listed on regulated exchanges, runs contrary to the promotion of a horizontal approach to regulation calling for a coherent treatment of economically equivalent products irrespective of their legal form or channel of distribution. The current "patchwork of regulation" in the European retail investment market already offers rich pickings for regulatory arbitrage; using a silo approach to tighten product rules in the most regulated segment of the industry is likely to add further incentives to this practice.

ii. The counterparty risk of UCITS ETFs is limited, in particular when it arises from OTC derivatives transactions;

The recent debate on counterparty risk within the investment industry has initially focused on the over-the-counter (OTC) derivatives operations of synthetic replication ETFs, but the securities lending transactions that are an essential source of revenues for physical replication ETFs are now being scrutinised; this is fair since these are economically equivalent operations.

The use of OTC derivatives and securities lending are not only legal but also legitimate to the extent that they facilitate the implementation of a fund's strategy or generate ancillary revenues that benefit investors. However, these activities entail

assuming counterparty risk. In the case of OTC derivatives, this risk is strictly limited by UCITS to 10% of the fund's net asset value. Counterparty risk arising from securities lending does not benefit from such a high level of scrutiny at the European level but is limited to 20% through the issuer concentration limit of UCITS.

The association of counterparty risk with ETFs may have misled investors into believing that the issues raised were specific to ETFs, or even worse, to synthetic-replication ETFs. In fact all UCITS can engage in OTC derivatives and securities lending transactions within the same limits. More importantly, non-UCITS funds and other products available to retail investors may engage in the same transactions without affording the same high levels of counterparty risk mitigation and disclosure as UCITS. From an investor-protection or a regulatory arbitrage mitigation standpoint, the wisdom of frightening investors away from the most regulated segment of the investment industry is not immediately apparent.

Provided the counterparty risk arising from securities lending is properly mitigated, which appears to be the case in practice, we consider that it makes little sense to pit physical-replication against swap-based replication and that the negative allegations made by providers on both sides of the replication divide about the risks in each other's products are a disservice to the index-tracker industry and the UCITS ETF brand.

In particular, we find that portraying synthetic replication vehicles as presenting counterparty risk not present in physical replication vehicles to be misleading since, unlike the former, the latter commonly engage in securities lending activities through which they can legally take on more unmitigated counterparty risk than what is allowed in the context of OTC derivatives transactions, and because, as a group, managers of physically-replicated ETFs provide investors with significantly less transparency on counterparty risk and counterparty risk mitigation than managers of synthetically-replicated ETFs. It is thus most surprising to find physical replication providers denouncing the counterparty-risk or lamenting the opacity of their synthetic replication competitors.

iii. If anything, counterparty risk mitigation should be harmonised based on the CESR rules applying to the use of OTC derivatives by UCITS; in any case, investors should be provided with the appropriate disclosures to be in a position to assess the counterparty risk assumed by UCITS and other investment vehicles;

We believe that there should be EU-wide consistent regulation of counterparty risk mitigation. First and foremost, limits on counterparty risk should apply to all transactions giving rise to such risk and not simply to OTC derivatives. The Committee of European Securities Regulators (CESR) guidelines related to the collateralisation of OTC derivatives by UCITS could also be used as a reference to improve collateralisation of all transactions, exposing UCITS and non-UCITS investment vehicles to counterparty risk, notably securities lending, repurchase agreements and other economically comparable operations.

Furthermore, there should be industry-wide standards of transparency with respect to counterparty risk assumed allowing investors to assess the risks taken on in these contexts against the benefits derived.

If self-regulation fails, the regulator should impose harmonised disclosure and presentation standards.

iv. It makes little sense to classify instruments according to the tools they use to generate their payoffs - classifications should derive from the economic exposure;

Drawing on the counterparty risk from OTC derivatives transactions, BlackRock (2011e) has suggested to the European regulator that the method of index replication be used as a basis to identify ETFs.

We find that creating an artificial distinction between physical and synthetic replication ETFs would introduce confusion. When associated with a communication about the risks of derivatives, such distinctions could lead to misselling.

We consider that the index replication method(s) used and the specific risks each method gives rise to, should be suitably disclosed, but we do not regard methods or tools as a viable criteria for product classification.

When it comes to categorising funds, the focus needs to be on the economic exposure achieved or the payoff generated and not on the methods or instruments used to engineer this exposure or payoff. Surprisingly, this is also the position defended by BlackRock (2011f) in its exchanges with the US regulator. In such instances, the use of Emerson's most famous quote is recommended as an awe-inspiring smokescreen: "A foolish consistency is the hobgoblin of little minds".

v. The advanced nature of the tools employed to deliver a payoff should not be confused with the complexity of the payoff itself; it is relevant to contrast UCITS tracking financial indices with other UCITS when considering restrictions on retail distribution; when drawing distinctions between products, a focus on the tools and techniques may create a false sense of security and exacerbate adverse selection and moral hazard phenomena;

Should European authorities decide to name some UCITS complex – which we would see as detrimental to the UCITS brand – or treat categories of UCITS as a priori complex in the context of the MiFID revision – which is their current inclination, we strongly feel that this should be on the basis of the complexity of the payoff rather than that of the portfolio management techniques (e.g. scientific diversification) or investment tools (e.g. derivatives) employed.

In this case, UCITS tracking financial indices–according to the definition provided by CESR-should remain simple products, whatever their replication technique.

We consider it key to recognise the difference between passive UCITS which track a financial index and other funds. With the former, investors choose a linear and constant exposure to an index, which is managed in a transparent and systematic manner and boasts a published track record. With the latter, the payoff depends on risk-taking and portfolio management models that may neither be systematic nor transparent.

Simplicity, and *a contrario* complexity, should be understood as the investor's ability to understand the source of performance and the systematic character of the exposure to an index. This, rather the use of derivatives or securities lending by UCITS, could serve as basis for distinctions.

By disregarding the nature of the payoff generated by the fund to focus on the instruments it holds to generate this payoff, regulation could create a false sense of security vis-à-vis "simple", "plain-vanilla" or "mainstream" products which in fact can include large and, more worryingly, hard to predict extreme risks. This could reduce the incentives for investors to perform effective due diligences on the actual risks of products and exacerbate adverse

selection and moral hazard phenomena, whose mitigation should be a major and ongoing preoccupation for the regulator.

vi. Investors need more transparency and disclosure consistency with respect to the revenues and costs from ancillary activities;

While more disclosures on risk and risk mitigation are required to allow investors to perform their due diligences; more transparency and consistency on revenues and costs from ancillary activities are also needed for cost-benefit analyses.

Disclosure of total returns and total costs is one way to mitigate conflicts of interest and promote value enhancement for investors. For example, how costs and fees are shared between the ETF and its agents in the context of securities lending programmes or tax-optimisation operations should be disclosed and there should also be transparency on how fees collected compare to relevant performance indicators in the industry.

On the back of the momentum for higher levels of transparency, we recommend the promotion of a new measure allowing investors to measure what share of the total return generated through the risks assumed on their behalf by funds is passed through to them. The calculation of this Total Return (pass-through) Ratio (TRR) would capture the returns to counterparty risk arising from securities lending operations. By highlighting the share of returns that does not accrue to the investor, such a ratio would permit an assessment of the true cost of asset management, beyond the picture given by the total expense ratio.

vii. In the case of index-tracking instruments, investors need more information on the type of index that is tracked and how effectively it is being tracked.

In the context of the acceleration of the growth of passive investment, we regret that the European regulator has, for the time being, focused its attention on how an index is tracked while largely ignoring the need for a minimum level of disclosure and standardisation with respect to what index exactly is tracked and how effective the tracking.

Long overdue are a definition of what constitutes an index-tracking instrument, higher levels of disclosure on the indices tracked, a standardised measure of tracking error and tracking error limits to funds replicating indices, and mandatory disclosures on the quality of replication.

viii. ETFs reflect the liquidity of the underlying to which they give exposure; as all open-ended funds, they are subject to liquidity risk, but the investment policy restrictions and liquidity risk management requirements of UCITS limit the risk and severity of liquidity crises;

ETFs should not be blamed for reflecting the liquidity of the underlying assets to which they give exposure. Furthermore, the possibility that large redemptions will create stress on the underlying markets is not at all specific to ETFs, but is common to any open-ended investment fund. UCITS need to manage liquidity risk to ensure that they are able to meet redemptions and asset eligibility rules limit the extent to which UCITS funds, as open-ended funds, can provide maturity transformation, precisely to mitigate the risk and severity of liquidity crises.

It is thus surprising to single out ETFs for issues that are common to all open-ended funds and happen to be mitigated by UCITS.

Likewise, the fears that synthetic replication and securities lending would

exacerbate liquidity risk appear overblown. UCITS are subject to strict counterparty risk limits in the context of OTC derivatives transactions and to asset eligibility rules that would mitigate the consequences of a counterparty falling to a liquidity crisis. While mitigation of counterparty risk arising from securities lending is not specifically regulated at the European level, UCITS asset eligibility rules still apply.

At any rate, regulators and investors alike should recognise that it is not possible to guarantee the liquidity of open-ended funds invested in illiquid underlying via asset eligibility or diversification rules and explore closed-end funds as the natural vehicles to access illiquid assets or strategies.

ix. There is little basis to be concerned by systemic risk in relation to ETFs; financial stability organisations should determine what system-wide disclosures they need to better assess systemic risk and identify problem areas rather than express vague concerns about segments of the financial industry that develop rapidly and require institutions active on those segment to dispel these concerns and clear up the confusion created amongst investors; the empirical evidence on the impact of ETFs on their underlying markets points to positive, rather than detrimental, effects;

Recent reports by regulators and international organisations concerned with financial stability have trumped up the systemic risks of ETFs. On closer inspection, the case is woven from broad brush parallels and dubious assumptions and there is little in the way of a sound theoretical framework, let alone supporting empirical evidence.

The assets controlled by ETFs are but a sliver of the assets under management in the fund management industry. They are dwarfed by the capitalisation of listed equity, by the notional amount of equity futures and swaps, and their securities lending activities are marginal relative to the size of this industry. In this context, it is doubtful that risks specific to ETFs could cause systemic disruptions on equity, derivatives, or securities lending markets.

This notwithstanding and to the extent that securities lending and OTC derivatives transactions, while typically collateralised, increase the connectedness of financial institutions with one another, we believe that improved disclosure about counterparties, exposures, and risk mitigation would be useful to improve the monitoring of systemic risk. However, we suggest such disclosures be implemented across the board rather than in a piecemeal way.

With respect to the fears that the development of ETFs may have hurt the underlying markets, we find that a rich theoretical and empirical literature points in the opposite direction in terms of liquidity and price efficiency.

x. Leverage and inverse ETFs deliver a multiple of the index they track at a prescribed horizon, typically a day, and are not buy-and-hold products for long-term investors; additional disclosures on their leverage policy and a caveat on the consequences of holding these products beyond their prescribed horizon would probably be sufficient protections for retail investors; the contention that the rebalancing activity of these funds has significantly added to the end-of-the-day volatility in their underlying markets is not borne out by currently available empirical evidence;

Providers, regulators, and academics have underlined that leverage and inverse

ETFs are not long-term buy-and-hold investment tools, but aim at achieving daily returns that correspond to a targeted multiple of the index they track. Concerns about leveraged and inverse ETFs are linked to the possibility of investors ignoring the information that they have received from the ETF providers and mistaking these short-term trading and hedging tools for long-term buy-and-hold products. One should not confuse this with issues of operational risk. The limits of inverse and leveraged ETFs have been extensively discussed, and there is a wide consensus as to when they are suitable and how they should be used.

Should additional disclosures be required to warn investors about the dangers of leveraging, these could be included in the fund's prospectus, Key Investor Information Document (KIID) and marketing material. Should restrictions on retail distribution be contemplated in the European Union, the suitability and appropriateness tests provided for by MiFID would be the right way to implement limitations.

However, rather than distribution restriction, we are in favour of better disclosure. Against this backdrop, we find perfectly reasonable the policy orientations outlined by ESMA requiring disclosure of the leverage policy, how it is achieved and the risks associated with it as well as a *caveat* on holding these products over the medium to long term and the costs involved. For consistency, we consider these higher levels of disclosure about leverage should apply at least to all UCITS.

Last but not least, the contention that the rebalancing activity of this small segment of the ETF market has significantly added to the end-of-the-day volatility in their underlying markets, it is not borne out by currently available empirical evidence.

xi. There is indeed a risk of confusion between different sorts of exchange-traded products (ETPs) and specifically, a risk that retail investors assume that all ETPs provide them with the same protections as UCITS ETFs; addressing this risk should be a priority for regulators and the idea of a product marker indicating UCITS compliance has merit.

ETFs and exchange-traded notes (ETNs) have too often been presented as one and the same thing. When ETFs are used as UCITS wrappers, investors enjoy high standards of protection in terms of governance, custody of assets, investment and risk management policies, and disclosure. Other ETPs cannot be UCITS and do not provide investors with the protections of UCITS. The grouping of ETFs with other ETPs, intended or not, is problematic and action needs to be taken to correct the perception that all ETPs available in Europe enjoy the protections of UCITS and clearly draw distinctions between UCITS and non-UCITS products.

We believe that, in view of the growth of the non-UCITS ETP market and its retail investor appeal, making sure that clear distinctions are made between products that do not enjoy the same level of protection should be a priority for financial regulators and international organisations concerned by the promotion of high levels of investor protection and a level-playing field across the investment industry.

By this respect, we find merit in the ESMA (2011) proposal for an identifier to be used in an ETF name, rules, prospectus and marketing material to signal that it is UCITS compliant. From an investor protection standpoint, all UCITS compliant funds should be clearly identified to signal their high level of protection.

ETFs on the radar of international financial stability organisations and regulators

Exchange-traded funds have traditionally been perceived as vehicles combining the diversified exposure of mutual funds with the low-cost, flexibility, ease and liquidity of trading enjoyed by publicly listed stocks, while also offering lower-expense ratios and better tax-efficiency relative to mutual funds. Most ETFs are passive, index-tracking investment vehicles, which as such, have transparent economic exposure and simple payoffs.

Product innovation in the ETF industry has led to the development of inverse and leveraged passive vehicles, of vehicles tracking strategies, and of outright active vehicles; these new forms of ETFs represent less than 5% of overall assets under management in the ETF industry.

The growth of ETFs and the legal limitations imposed on the fund structure in most jurisdictions, notably those relating to diversification and eligible assets, have also lured products structured as debt obligations to exchanges. As notes, these exchanged-traded products (ETPs) tracking the performance of a single asset, a basket of assets or an index need not comply with fund rules and expose investors to the credit risk of their issuers.

While ETFs are natural building blocks for investment by retail investors, the European ETF market is mostly institutional; retail participation is under-developed, not least because distributors have long been allowed to channel investors towards products with high commissions. However, European and country-level initiatives aimed at removing or disclosing conflicts of interest in retail distribution are expected to fuel investor interest in ETF markets.

Against this backdrop and in the context of the diversification of the ETP landscape, regulators have voiced concerns about the ability of retail investors to understand differences in product types, investment strategies and risks.

More generally, the rapid growth and innovations in the ETF market has led financial stability organisations and regulators to start looking into the potential risks of ETFs as a matter of precaution.

Recently, the risks of exchange-traded fund (ETF) structures have been discussed by financial regulators and international organisations.

In February 2011, the United Kingdom Financial Service Authority (FSA) noted (as part of its review of current, emerging and potential risks that could impact retail investors) that innovation in ETPs "creates the risk that consumers do not understand the difference between product types in terms of investment strategy, tax status and risk". The FSA reported having heightened its vigilance[1] and listed a number of concerns: the growing diversity of scope (by country and sector) and types of payoff structures of ETFs; the risk of confusion between ETFs and Exchange Traded Notes (ETNs) amongst Exchange Traded Products (ETPs); the counterparty and collateral risks of ETPs;[2] [3] potential

1 ETFs were one of several "complex investment products" appearing with six other market developments as new causes of concern since the FSA March 2010 Financial Risk Outlook exercise and thus included in the "emerging risks or potential concerns".

2 In a footnote, the FSA underlined that the UCITS underlying ETFs have to comply with UCITs requirements in terms of investment and counterparty risks, which is not the case of ETNs.

3 The growing market share of synthetic replication ETFs was highlighted and the FSA noted that the use of swaps was introducing additional counterparty risk vis-à-vis physical replication ETFs.

conflicts of interests in the structuring of ETPs; potential differences between the investor protection and compensation schemes applicable in the EU Member State in which the fund underlying the ETF is domiciled and those in force in the investor's country of residence; and possible lack of adequate risk disclosure in the marketing collaterals for ETPs targeting retail investors.

In April 2011, the Financial Stability Board (FSB) published a note on ETFs, the Bank for International Settlements (BIS) released a working paper on ETFs, and the International Monetary Fund (IMF) included an annex on ETFs and their risks in its bi-annual Global Financial Stability Report. These purported that in light of the growth and fast pace of innovation in the ETF markets, a close examination of their potential vulnerabilities and the risks they may pose to financial stability was warranted.

In May 2011, the French regulator, in its annual mapping of risks and trends, dedicated a section to the growth of passive investing in which it presented recent market developments and summarised areas that had attracted the attention of regulators.[4]

The June 2011, Financial Stability Review of the European Central Bank (ECB) contained a box that echoed some of these concerns[5] and ended with a mention that ETFs were facilitating investment flows into emerging markets and commodities, with possible implications for volatility as well as bubble formation and market crashes. The June 2011 Financial Stability Report of the Bank of England also included a box on ETFs and noted that global banks were exposed to ETF markets through their roles as swap counterparties, securities lenders and market makers and that its interim Financial Policy Committee (FPC) implied that ETFs could be involved in opaque funding structures comparable to collateral swaps[6] and called for close monitoring of such transactions by the FSA; the FPC also stated that the use of structured derivative transactions had "become a material source of funding for some European banks", and called for the FSA to continue to work with the European Securities and Markets Authority (ESMA) and other international authorities to strengthen the risk standards applied to ETFs, "particularly concerning improved characterisation and disclosure requirements and collateral and liquidity management."

4 Risk of comprehension problems with respect to the nature of returns and factors affecting performance (e.g. replication method, treatment of dividends, transaction costs); lack of risk awareness esp. counterparty risk and conflicts of interests; management of large-scale redemptions by physical replication ETFs when their portfolios do not contain the assets whose performance is being replicated due to securities lending activities; risks to price formation when demand is concentrated on narrow markets or over short periods of time or heavy algorithmic activity is recorded; potential risks for market integrity created by the arbitrage activity around the most liquid ETFs or the liquidity management of ETFs. The AMF notes that risks are heightened in the case of non-UCITs ETPs such as ETNs and Exchange Traded Vehicles, not least Exchange Traded Commodities (ETCs). It concludes with a philosophical musing on the risks to price formation that passive investment entails.

5 The ECB, however, did not seem to be cognisant of the securities lending activity undertaken by funds and mentioned only the counterparty risks from swap based index replication structures (while also remarking that UCITS requirements limited this risk to a maximum of 10% of the value of the fund).

6 This is described as an arrangement by which banks borrow securities which are eligible for regulatory liquid asset buffers in exchange for less liquid collateral plus a fee. The committee is concerned that this could be "less reliable than owning highly liquid assets outright."

The ESMA policy orientations

In late July 2011, ESMA announced that, responding to the concerns voiced by the FSB and BIS, it had reviewed the regulatory regime applicable to ETFs covered by the Undertakings for Collective Investment in Transferable Securities (UCITS) Directives and "structured UCITS", concluded that it was not sufficient to "take account of the specific features and risks associated with these types of funds," and had decided to start developing new guidelines for these funds and examine the relevance of new measures to mitigate the risk that "particularly complex products, which may be difficult to understand and evaluate, are made available to retail investors." ESMA laid out its policy orientations in a discussion paper and invited reactions from the industry. With respect to general policy orientation, ESMA surveyed the industry on the retailisation of complex products and the need to explore restrictions on the distribution of certain complex products; the criteria that could be used to determine what is a 'complex' product and whether the complexity of portfolio management techniques employed could be used as a criterion; potential measures, e.g. distribution restrictions and warnings, to avoid inappropriate UCITS being bought by retail investors; the scope of UCITS i.e. whether some currently qualifying funds should be excluded due to some of their characteristics; unidentified systemic risk issues; the need to generalise UCITS guidelines to regulated non-UCITS funds available to investors in the European Union and; the need to approach issues with a view to avoiding regulatory gaps.

Focusing on UCITS ETFs, ESMA identified the following areas for the development of guidelines:

(i) identifier, specifically whether ETFs should be singled out using an identifier in their designation, fund rules, prospectus, marketing collateral and the Key Investor Information Document (KIID) introduced by the latest revision of the UCITS directives; whether further naming distinctions were required to distinguish among index-replicating ETFs on the basis of their replication method, and for actively managed ETFs;

(ii) index-tracking issues: ESMA is concerned that investors do not receive sufficient information about the index being tracked (including its constituents), the replication mechanism used and its limits; the policy of the ETF vis-à-vis the tracking error including its maximum level;

(iii) synthetic ETFs and counterparty risk: ESMA believes that the prospectus should include information about the underlying of the investment portfolio or index, the counterparty(ies), collateral, and the risk of counterparty default and its impact on returns. Likewise, it believes the annual report should include information about the exposure obtained through financial derivatives instruments, counterparties, and collateral held to reduce counterparty risk. ESMA asks stakeholders whether they support such disclosure proposals; whether collateral held by synthetic-replication trackers should more closely match the tracked index or comply with UCITS diversification rules;

(iv) securities lending activities: ESMA believes that a fund should inform investors in the prospectus of its intention to engage in securities lending, include a detailed description of the risks involved and the impact on tracking error where relevant, describe the policy in relation to collateral, disclose fee sharing arrangements and whether the securities lending agent is a related party the investment manager or a connected party to the manager. ESMA

also considers that the collateral received in the context of securities lending activities should be subjected to the same rules as the collateral received in the context of OTC derivatives;

(v) actively-managed ETFs: since the majority of UCITS ETFs are passive index trackers, ESMA believes that active funds should clearly inform investors of their nature, of their investment policy including how it will be implemented and what its risks are, of the policy regarding portfolio transparency and of how the indicative net asset value is computed;

(vi) leveraged UCITS ETFs: ESMA remarks that all UCITS are allowed to engage in leverage subject to the same limits, that leveraged and inverse ETFs typically use financial derivatives to achieve their stated objectives and that these objectives are defined for a specific time basis and do not hold for longer periods of time. It recommends that the prospectus for leveraged and inverse UCITS ETFs should disclose the leverage policy, how this is achieved and its risks and that this should include a description of how the periodic resetting of leverage impacts on investors' returns over the medium to long term, as well as details of the costs involved;

(vii) secondary market investors: ESMA is concerned that the market participants who acquire creation units from the ETF and then split them up to sell the individual units on the secondary market may be the only recognised investors in the ETF so UCITS rules designed to protect unit holders will not necessarily apply to secondary market investors, who should be made aware of their status and rights and warned that by transacting on the secondary market, they will incur fees and pay more (receive less) than the fund's net asset value when buying (selling) units. An alternative, could be to give secondary market investors the right to redeem their units directly from the fund. ESMA is also concerned about the possibility of secondary market prices deviating significantly from the fund's net asset value.

The ESMA consultation also covered structured UCITS, where it identified the need for specific safeguards with the use of total return swaps and strategy indices.

In this paper, we shall outline our positions on the main concerns underlined by these reports: counterparty risk, liquidity risk, confusion between ETFs and other ETPs, risks associated with special types of ETFs, and potential impact of ETFs on the underlying markets and systemic risks. Our focus is solely on European ETFs, the bulk of which are regulated by UCITS Directives. Prior to looking at the potential risks of ETFs, we will present ETFs and size-up the European ETF landscape.

ETFs defined

Exchange-traded funds (ETFs) are open-ended investment funds traded on a stock exchange. As such, they combine the diversification of funds and the trading ease and flexibility of stocks listed on exchanges. While traditional open-ended funds can typically be purchased or redeemed once a day at a price close to their Net Asset Value (NAV), shares in ETFs can be traded on the market throughout the trading day, using the whole gamut of order types. Depending on the jurisdiction, shares in ETFs may be also be bought on margin or sold short, and used as collateral.

Most ETFs are passive instruments designed to track, as closely as possible, the performance of a financial index. Leveraged and inverse ETFs seek to achieve a return that is a multiple, the inverse, or an inverse multiple of the return of a given index over a set period. More complex structured payoffs, e.g. including a capital guarantee, may also be wrapped in ETFs. Finally, actively managed ETFs pursue active management strategies, with or without a benchmark.

ETFs give investors access to a wide array of asset classes and investment strategies. They are asset wrappers and not an asset class.

The European ETF market

The first ETF was born in the United States in 1989 and ETFs started trading in Europe in 2000. At the end of November 2011, 2,982 ETFs worldwide were managing USD1,348bn; the assets under management (AUM) within the 1,226 funds constituting the European ETF industry were USD273.5bn, representing 20.3% of the global market.[7] In terms of allocation to various asset classes, 66% of these assets were invested in equity products, 21% in fixed income products and 12% in commodity products.[8] [9]

According to the BIS (2011a) and FSB (2011), the European ETF market is mostly institutional and only about 20% of the AUM are held directly by retail investors; Deutsche Bank (2011) estimates the market to be 90% institutional. ESMA Securities and Markets Stakeholder Group (2011) notes that while ETFs are a "very low cost alternative" to other UCITS funds, they are "very rarely, if at all, marketed for European individual investors" due to "differences in remuneration of the distribution channels."

In continental Europe, retail distribution has traditionally been controlled by banks, and to a lesser extent insurance companies, these have used their sales to market almost exclusively their in-house products. Two-thirds of the assets under management in the European fund industry are controlled by captive distribution channels (Arzeni and Collot, 2011). In the United Kingdom, independent financial advisors (IFA), who can receive commissions from funds (at least until the Retail Distribution Review regime becomes effective), dominate the retail market. These institutions and intermediaries have no incentive to promote ETFs, which by nature do not pay them commissions, unlike comparable unlisted vehicles, UCITS included.

7 The United States concentrated 69% of the market share, the rest of the Americas 3.9%, and Asia (excluding the Middle-East) 6.6%.

8 Non ETF ETPs, which had AUM of USD195.6bn globally and USD34.8 in Europe, are primarily invested in commodities (to the level of 82.2% globally).

9 All of these figures are taken from BlackRock (2011d) or computed from figures therein.

A recent study commissioned by EFAMA provides some information about the fees rebated to distributors. Across all distribution channels, UCITS fund managers retain 42% of Total Expense Ratio, retrocede 41% of the TER to distributors and use the balance for operating services such as custody and administration. The average TER was 175 basis points (bps) for a retail equity fund shareholder and 117bps for a retail bond fund shareholder. Looking at the annual management charges, managers retain 45% of these when the fund is distributed by an insurance company, 47% when it is a bank, 54% when it is a platform, and 56% if the fund is distributed by an IFA (Strategic Insights, 2011).

The ETF industry represents but a fraction of the fund management industry: at the end of the first half of 2011, the AUM in the ETF industry represented 2.7% of those of the overall fund management industry in Europe and 5.6% globally.[10] In Europe, it represented 3.5% of the capitalisation of listed equity at the end of November 2011 and the total ETF turnover conducted

Concentration in the global and European ETP market

Providers as of November 2011 (US$bn)	AUM	% market share
iShares	597.7	38.7
State Street Global Advisors	268.5	17.4
Vanguard	174.3	11.3
PowerShares/Deutsche Bank	58.3	3.8
db x-trackers/db ETC	45.8	3.0
Lyxor Asset Management	37.0	2.4
ETF Securities	27.6	1.8
ProShares	24.5	1.6
Van Eck Associates Corp	24.3	1.6
Nomura Asset Management	18.3	1.2
Others (182 providers)	266.8	17.2
Total	1,543.1	100

Source: BlackRock(2011d).

Providers as of November 2011 (US$bn)	AUM	% market share
iShares	104.6	33.9
db x-trackers/db ETC	44.8	14.5
Lyxor Asset Management	36.6	11.9
ETF Securities	22.9	7.4
Credit Suisse Asset Management	16.2	5.2
Zurich Cantonal Bank	15.4	5.0
UBS Global Asset Management / UBS AG	13.8	4.5
Amundi ETF	8.5	2.8
Source Markets	7.6	2.5
Commerzbank	7.5	2.4
Others (36 providers)	30.6	9.9
Total	308.3	100

Source: BlackRock(2011d).

10 Computed from fund management statistics provided by EFAMA (2011) and ICI (2011) and ETF market statistics provided by BlackRock (2011). Using figures provided by Deutsche Bank lead to similar results. In the United States, the AUM in the ETF industry were 8% of those in the mutual fund industry at the end of the first half of 2011 (USD973.5bn out of USD12,228bn).

on-exchange via the electronic order book was 8.5% of the equity turnover.[11]

The Exchange Traded Product (ETP) industry is highly concentrated: while close to two-hundred providers vie for the global market, the top three players control over two thirds of the AUM and the top ten players over four-fifths of the AUM. In Europe, there are close to fifty providers present and less concentration at the very top with the first three players controlling 60% of the AUM. Charges measured by Total Expense Ratios (TERs) in the European market tend to be significantly lower than in the United States: according to Deutsche Bank (2011), the average cost of investing in an ETF is 40 basis points per annum in Europe and 55 basis points in the United States.

Dominance of plain-vanilla index trackers

ETFs are usually equated with passive, plain-vanilla, index tracking products, although they may be actively managed, include structured payoffs, and may not be tied to an index. This is because ETFs with structured payoffs and actively managed ETFs represent less than 5% of the industry's AUM in Europe as in the US.[12] Leveraged and inverse exchange traded products, which have focused the attention of regulators of late, represented a mere 3.1% of the European ETF industry (or equivalently, less than 0.1% of the European fund management industry) at the end of June 2011.[13]

With respect to index tracking method, 64% of the funds in Europe use derivatives to replicate the index performance and 36% use one type of physical replication method, but with the bulk of the market leader's funds being replicated physically, 60% of the AUM are managed physically and 40% synthetically.[14] The choice of the replication technique used depends on the legal (e.g. ability to actually own the underlying assets that an index tracks) and market (e.g. direct and indirect execution costs) constraints affecting the index being replicated, but also the habitat, economics, and marketing proposition of the ETF provider: physical replication is generally used by asset managers while investment banks prefer derivatives-based replication.

UCITS as the state-of-the-art of fund regulation

Three quarter of the assets under management in the European fund management industry are held in UCITS. All European ETFs, except those that are based in Switzerland, are structured as UCITS.

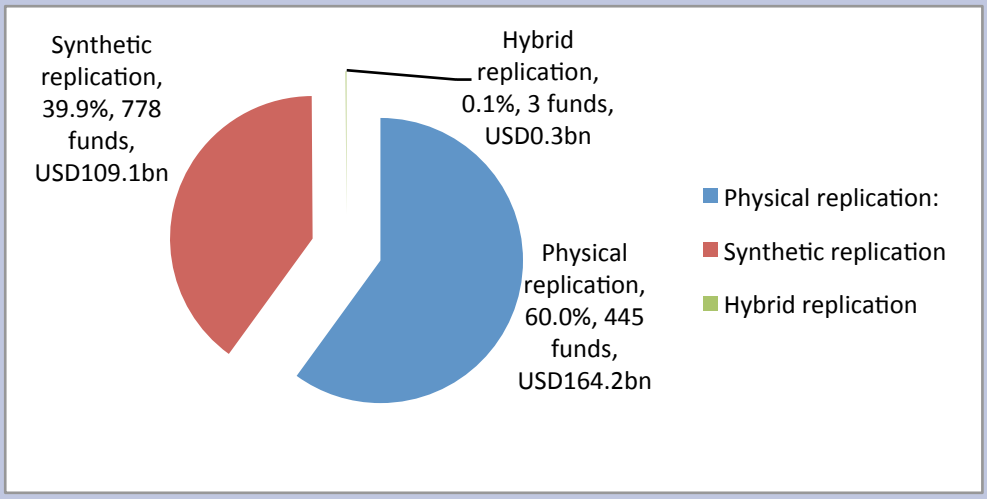
11 Computed from FESE (2011) statistics.

12 Deutsche Bank reports that pure passive products represented 96% of the combined US and European ETF Industries at the end of the first half of 2011.

13 European leveraged and inverse ETPs had AUM of USD11bn at the end of June 2011 according to BlackRock while total AUM of ETPs was USD355bn. The figure is comparable in the United States (3.3%).

14 In the United States, the use of derivatives by an ETF requires exemptive relief from the Investment Company Act of 1940. With respect to these reliefs, most ETFs tracking an index on an unleveraged basis have been permitted to use derivatives subject to a low cap (while leveraged/inverse ETFs have not been subjected to this cap.) This is one reason why unleveraged index-tracking ETFs using synthetic replication have not taken off in the United States. In March 2011, however, the SEC suspended review of any applications for exemptions for active and leveraged ETFs "that particularly rely on swaps and other derivative instruments to achieve their investment objectives."

European ETFs by index replication method



Source: BlackRock (2011b)

UCITS need to comply with the requirements set out in the UCITS Directives[15] once registered in the European Union Member State where it is domiciled, a UCITS can be freely marketed across the EU[16] UCITS have become synonymous with a high degree of investor protection worldwide (through strict capital and organisational requirement for the UCITS manager – including a fiduciary duty to act in the best interest of the funds and the requirement to identify, prevent, manage or disclose conflicts of interest; investment limits and risk diversification requirements; explicit exclusion/permission of certain techniques; leverage limits; risk measurement and management requirements; disclosure requirements, liquidity and redemption requirements; as well as asset safe-keeping and oversight by an independent depositary) and a significant share of the growth of UCITS now happens outside of the European Union, in the rest of Europe, the Americas and Asia.

While there have been questions about the distribution of UCITS to retail investors, the latter gain access to the financial markets in Europe through a variety of instrument which the regulator refers to as Packaged Retail Investment Products (PRIPs) Broadly speaking, PRIPs cover investment funds (UCITS or nationally regulated funds), insurance-based investment products, retail structured securities and structured term deposits. Overall, PRIPs represent a market the European Commission has estimated to be worth up to 8 trillion euros (USD10 trillion) at end 2008.

The European Commission is concerned that some PRIPs may be too complex for investors to understand and that those distributing them face conflicts of interests detrimental to investors. It is also worried that the sector/legal-form regulatory approach taken in the past has resulted in "a complex patchwork of regulation" suffering from "inconsistencies and gaps" that "have raised concerns

15 The first UCITS European Directive was introduced in 1985. UCITS IV took effect on 1 July 2011 and repealed all prior UCITS Directives and their amendments, with the exception of the Eligible Assets Directive.

16 Although some Member States may have imposed additional compliance requirements and thus hurt the "passport".

as to the overall effectiveness of the regulatory regime, both in relation to its capacity to protect investors and its ability to ensure the markets work efficiently." Against this backdrop, it has launched the PRIPs initiative to raise standards of protection for retail customers and achieve a single market and level-playing field. To do so, it has vowed to adopt a horizontal/economic nature regulatory approach.[17] This horizontal approach, pioneered by the Markets in Financial Instruments Directive (MiFID), breaks with the silo approach of the past epitomised by the UCITS Directives. The PRIPs initiative is focused on two key areas: pre-contractual product information and the conduct of business and conflicts of interests in the sales or advisory process.

In terms of pre-contractual product information, the European Commission (2009) considers that the UCITS Key Investor Information Document (KIID)[18] is the benchmark for the standard of disclosures sought across all PRIPs.

With regard to conflicts of interest, the European Commission considers that "MiFID has introduced a sophisticated regime for the avoidance, management and disclosure of conflicts of interest." It regards the MiFID framework as a "key element and benchmark of the horizontal approach for the regulation of all sales of PRIPs" (DGMARKT, 2011).

UCITS are subjected to strict rules in terms of investor protection and the UCITS KIID serves as the benchmark for the harmonisation of disclosure for retail investors. It is thus fair to conclude that UCITS ETFs–which by virtue of their listing have to comply with an additional layer of regulation and further oversight[19] – offer the highest level of retail investor protection. Intermediaries distributing UCITS, including ETFs, are subjected to the conflict of interest provisions of MiFID, which are to be used as the yardstick for distribution of all PRIPs in the European Union. Against this backdrop, it is surprising to find that concerns about retail investor protection have focused on ETFs and their distribution rather than on the PRIPs that are lacking in transparency or that are distributed by parties facing conflicts of interests detrimental to investors.

MiFID, UCITS, and the distribution of 'complex' products

The current version of MiFID and its limits

The Markets in Financial Instruments Directive[20] (MiFID), in force since November 2007, establishes a regulatory framework for the provision of investment services in financial instruments by credit institutions and investment firms and for the operation of regulated markets by market operators.

MiFID imposed pre- and post-trade transparency requirements to transactions on shares admitted to trading on a regulated market. MiFID pre-trade transparency rules require publication of current orders and

17 The Commission concluded that it was vital to take steps to improve regulatory protections for retail investors, so that the requirements apply irrespective of the legal form a product takes or how it is sold. The end-goal is that of "a market in which regulatory arbitrage does not drive savings towards particular products." (EC, 2009).

18 This document has replaced the UCITs Simplified Prospectus – the objective was to provide shorter, clearer, and more investor-focused information.

19 These obligations are determined at the exchange level and are not harmonised across Europe to the extent that they go beyond the requirements of MiFID.

20 Framework Directive 2004/39/EC, implementing Directive 2006/73/EC and implementing Regulation No 1287/2006.

quotes and post-trade reporting rules require market operators to promptly make public price, volume and time of all trades in listed shares, even when taking place outside of a regulated market. ETFs, however, were not included, which means that there is little data available on the over-the-counter (OTC) trading of ETFs in Europe.

In the context of MiFID, firms providing investment advice or individual portfolio management need to conduct suitability and appropriateness tests prior to giving any advice, recommendation or offer to a particular client. Such firms are required by MiFID[21] to collect such information as is necessary for it to understand the essential facts about a client and have "a reasonable basis" for believing that a transaction to be recommended, or entered into in the course of portfolio management, (i) meets the client's investment objectives; (ii) does not entail investment risks that would not be financially bearable by the client; (iii) is such that the client has the necessary experience and knowledge to understand the risks involved.[22] [23]

For other investment services, the firm need only determine that the client has the necessary experience and knowledge to understand the risks involved in the field relevant to the specific type of product or service to be provided.[24] In certain circumstances e.g. when a client chooses not to provide the information requested, the firm may still be allowed to provide limited services subject to explicit warnings.

When providing investment services that only consist of execution and/or the reception and transmission of client orders,[25] a firm does not need to make the above determination provided (i) theses services relate to shares listed on a regulated market, money market instruments, bonds or other forms of securitised debt (excluding those embedding a derivative),[26] UCITS and other non-complex financial instruments; (ii) the service is provided at the initiative of the client; (iii) the client has been clearly informed that in this context, the firm is not required to assess suitability; (iv) the firm complies with the conflicts of interest provisions of MiFID.

Self-directed investors are thus allowed to gain direct access, via execution-only platforms, to a variety of instruments without undergoing the suitability and appropriateness tests of MiFID. UCITS ETFs can be accessed this way but also non-listed UCITS and non UCITS products, whether listed or not. All UCITS are thus deemed non-complex.[27]

21 Article 19(4) of Directive 2004/39/EC and Article 35 of Directive 2006/73/EC.

22 If the firm has classified the client as a "professional client" in relation to particular financial instruments as per MiFID, then it is entitled to assume that the client has the necessary experience and knowledge.

23 This is to be understood *lato sensu* i.e. the client should understand not only the portfolio strategy but also the risks of the products that will be used, both in isolation and in the context of their interactions with the rest of the portfolio (DGMARKT, 2008).

24 Article 19(5) of the Directive 2004/39/EC and Article 36 of Directive 2006/73/EC.

25 Article 19(6) of the Directive 2004/39/EC.

26 Note that ETPs other than ETFs (i.e. ETNs and ETVs) are thus complex.

27 Article 3 of Directive 2004/39/EC also allows Member States to exempt of MiFID requirements agents that are not allowed to hold clients' funds or securities and cannot provide other investment services than the reception and transmission of orders in transferable securities and units in collective investment undertakings and the provision of investment advice in relation to such financial instruments. While this exemption is possible only when such agents are regulated at the national level, MiFID has not imposed minimum standards in this case.

Furthermore, there are concerns with respect to the applicability of MiFID when investment firms or credit institutions issue and sell their own securities without providing investment advice.

However, the wider issue from the point of view of retail investor protection may very well be that MiFID covers only a fraction of the financial investment products offered in Europe – insurers are regulated by the Insurance Mediation Directive and structured term deposits are outside the purview of MiFID.

The proposed revision of MiFID

On 20 October 2011, the Commission presented a proposed revision of the MiFID framework via a directive and a regulation[28] (unlike a directive, that needs to be transposed into the law of each Member State, a regulation is directly applicable).

The proposed directive's scope in terms of firms is extended to include data reporting service providers; insurance companies continue to be exempted. It clarifies rules for the provision of services by third country firms.

The proposal imposes identical pre and post trading transparency requirements and almost similar organisational and market surveillance requirements to all regulated markets, multilateral trading facilities and "organised trading facilities". It also imposes specific pre and post trading transparency requirements to systematic internalisers.

It extends the transparency regime to all trading venues for shares and certain equity-like instruments, including ETFs.[29]

The proposal alters the right by Member States to exempt institutions from MiFID,[30] extends MiFID requirements to the advised and non-advised sale of structured deposits by credit institutions, confirms that MiFID also applies to investment firms and credit institutions selling their own securities.

It strengthens investor-protection, notably by requiring firms to disclose whether investment advice is provided on an independent basis or whether it is based on a broad or on a more restricted analysis of the market.[31] When the investment advice is provided on an independent basis, third-party inducements are prohibited. Such inducements are also prohibited for all firms when providing portfolio management. Cross-selling practices are also subjected to controls and disclosures.

Last but not least, the proposed Directive provides clarification on instruments that can be traded via execution-only services; are notably prohibited: shares in non-UCITS collective investment undertakings; shares, bonds and money market instruments embedding a derivative or a structure which makes it difficult for the client to understand the risk involved; and structured UCITS. It also prohibits

28 COM(2011) 656 final and COM(2011) 652 final, respectively.

29 It also extends the principles of transparency rules to bonds, structured finance products, emission allowances and derivatives. Given the OTC nature of the trading in these instruments, this is controversial. Another highly controversial step is to require that, in accordance with G20 decisions, all trading in suitably developed derivatives be transferred to regulated markets, MTFs or OTFs. Likewise, specific regulation of commodity derivatives is put forward, notably in terms of position limits and reporting.

30 First execution-only services can no longer be exempted (firms providing investment advice, with or without the reception and transmission of orders now can), then Member States are required to apply authorisation and conduct of business requirements analogous to MiFID in national legislation to exempted firms.

31 Except if the service is offered as part of a product already subject to other provisions related to credit institutions and consumer credits.

the ancillary provision of leverage in the context of execution-only services.

Structured UCITS are "UCITS which provide investors, at certain predetermined dates, with algorithm-based payoffs that are linked to the performance, or to the realisation of price changes or other conditions, of financial assets, indices or reference portfolios or UCITS with similar features."[32] Some forms of structured UCITS, e.g. capital-protected and guaranteed UCITS, are particularly attractive to retail investors. Structured UCITS are subjected to specific disclosure requirements in the context of the KIID to help investors understand their risk/return profiles.[33]

While UCITS other than Structured UCITS are explicitly mentioned as authorised for distribution via execution-only platforms, the introductory part of the proposal states that since execution-only services entail "a relevant reduction of clients' protections," it is appropriate to exclude the possibility to provide these services in conjunction with the provision of leverage and "to better define the criteria for the selection of the financial instruments" to which these services should relate "in order to exclude the financial instruments, including collective investment in transferable securities (UCITS), which embed a derivative or incorporate a structure which makes it difficult for the client to understand the risk involved."

While this is language that has heretofore been used to describe Structured UCITS, it may leave some scope for interpretation over whether the use of derivatives by UCITS would render them unfit for execution-only distribution in general[34] and whether synthetic-replication UCITS would be excluded, in particular.

It is important to underline that the proposal does not create a complex UCITS category but instead considers Structured UCITS to be *a priori* complex. While this may be questionable,[35] this is consistent with the definition of a complex product that appears in the impact assessment released with the MiFID upgrade proposals[36] as well as with the practice of some Member States.[37]

In this context, the idea of distinguishing between complex and non-complex ETFs has been put forward in the recent debate – any product deemed complex would

32 Article 36 (1) of Commission Regulation 583/2010.

33 Under Article 36 of Commission Regulation 583/2010, the UCITS is required to present prospective performance scenarios showing the expected return under favourable, adverse, or neutral market conditions, and illustrating the full range of possible outcomes according to the algorithm. CESR/10-1318 provides guidelines on the selection and presentation of performance scenarios.

34 A paragraph in the impact assessment paper released by the staff commission substantiates this concern. SEC(2011) 1226 final: "the classification of all UCITS as noncomplex instruments needs to be reviewed in light of the evolution of the regulatory framework for UCITS, notably when assets they can invest in are themselves considered complex under MiFID, for instance derivatives."

35 Many structured UCITS, while using sophisticated techniques, provide high degree of capital protection and/or have payoffs that are relatively easy to understand (AFG, 2011).

36 SEC(2011) 1226 final: "A financial product the structure of which includes different components, often made of derivatives and the valuation of which will evolve in a non-linear fashion. These notably include tailor-made products such as structured products, asset backed securities, and non-standard OTC derivatives."

37 e.g. France, see AMF Position No 2010-05.

no longer be available to self-directed investors,[38] and such a classification could also negatively impact institutional demand. It is thus important to ensure that decisions are made on the basis of relevant facts and with a view to promoting a level-playing field and an appropriate high level of customer protection, rather than on prejudice and artificial distinctions drawn by those in the financial industry who have the most to gain or to lose from such decisions.

In conclusion, it is surprising to see so much regulatory interest being concentrated on a segment of the European investment management industry that is not only very narrow (less than 3% of the overall AUM) but also already the most highly regulated. It appears to us that the overarching objectives of the European regulator i.e., to achieve a level-playing field and a high-level of retail investor protection across the industry, would be better served by staying on the initially charted course of harmonising regulation to generalise the high standards of protection afforded by UCITS and MiFID to all PRIPs and the institutions and individuals involved in their distribution.

We also feel that the vertical approach adopted by ESMA which focuses on UCITS products listed on regulated exchanges, runs contrary to the promotion of a horizontal approach to regulation calling for a coherent treatment of economically equivalent products irrespective of their legal form or channel of distribution.

While some of the issues raised may be worthy of attention, and the rest of this paper will investigate these, we are concerned by the piecemeal nature of the debate. The current "patchwork of regulation" in the European retail investment market already offers rich pickings for regulatory arbitrage; using a silo approach to tighten product rules in the most regulated segment of the industry is likely to add further incentives to this practice.

38 While such investors are currently rare, more retail customers could be drawn to the ETF market in the wake of the implementation of reforms introducing transparency on fees and mitigating conflicts of interest in the traditional fund distribution business. Under the United Kingdom Financial Service Authority Retail Distribution Review, all advisers in the retail investment market will need to explicitly disclose and separately charge clients for their services, describe whether their services are independent or restricted; and adhere to professional standards and a code of ethics. The disclosure requirements put forward in the draft upgrade of MiFID are, unfortunately, less ambitious since they concern only persons providing independent advice.

Section 2: Evaluating the counterparty risk of ETFs

The debate on the counterparty risk present in ETF structures has initially centred on the use of over-the-counter (OTC) derivatives that are required in synthetic replication ETFs prior to engulfing the securities lending activities that are typical of physical-replication ETFs.

Most ETFs are passively managed and replicate indices relying on full replication, sampling replication, and swap-based replication. A fund can employs a full replicating strategy whereby it establishes a portfolio containing all the constituents of the underlying index in the same proportion as the constituent securities of the index. This is straightforward to understand but may be costly and difficult to implement, especially if the index to be replicated is a broad index with a large number of securities and in particular if it involves multiple jurisdictions and/or time zones.[39] [40] These costs and difficulties arise from the management of a large basket of securities (including index turnover from periodic rebalancing and corporate actions), access issues and liquidity problems with index constituents, clearing and settlement problems. They lead to performance deviations between the tracked index and its tracker. Such deviations, which create tracking error, are made larger by differences between the index provider's assumptions relating to the taxation and reinvestment of dividends and the actual conditions faced by the fund in terms of taxation and treasury and cash management.[41]

A widely accepted definition of the tracking error is the standard deviation of the difference between the fund's return and the return of the index it tracks (Fabozzi and Markowitz, 2011).

To reduce the expenses it has to pass on to the investor, an index fund may engage in ancillary performance-enhancing activities. Securities lending is one such activity that is prevalent in ETFs that are replicated physically; a full-replication ETF practising securities lending holds a portfolio that no longer corresponds to the index. While generating fees and possibly also minimising dividend-related withholding tax liabilities, securities lending involves assuming counterparty risk.

To reduce costs, a fund may take a statistical sampling (also known as "representative sampling") approach to physical replication. The fund then invests in a fraction of the index constituents and other securities, which are selected for their overall correlation with the tracked index and their higher liquidity. While less costly than full replication, such an approach results in a higher tracking error due to the trade-offs between liquidity/simplicity on the one hand and correlation on the other, and to the variable nature of correlation.

Rather than attempting to replicate the underlying index by holding (some or all of) its constituents, a synthetic ETF enters into a swap agreement with a third-party that agrees to deliver the index returns to

39 In some instances, e.g. some emerging markets, access issues will make the full replication approach impossible.

40 In some jurisdictions e.g. the United States, diversification requirements imposed on funds will make it impossible for a fund to hold the index constituents in the proportion of the index.

41 Typically, the index will assume that dividends are paid and reinvested as soon as the stock goes ex-dividend. However, the average time between the ex-dividend date and the payment date is typically in weeks and sometimes in months.

Structure of a swap-based ETF

A synthetic ETF can be structured via an unfunded swap or a funded swap (a.k.a. physical basket and swap overlay a.k.a. substitute basket). The UCITS Directive does not distinguish between these and does not discuss collateral but instead requires that the risk exposure to a counterparty in an OTC derivative transaction shall not exceed 5% of the assets of the fund or 10% if the counterparty is legally a credit institution.[42] [43] [44]

In the unfunded structure (a.k.a. outperformance swap; see figure 1), the ETF provider receives cash from investors and uses this cash to buy a basket of assets (called substitute basket), typically directly from the swap counterparty.[45] These assets are held by the ETF in a segregated account at a custodian,[46] as per UCITS requirements. The assets in the substitute basket are not required by regulations to be the same as those in the underlying index[47] – they do not need to include the constituents of the index which the ETF tracks.

While playing the economic role of collateral, these assets are technically not collateral and as such do not need to comply with the collateral guidelines set out by the Committee of European Securities Regulators (CESR, the former incarnation of ESMA)[48] transposed by the Member State in which the fund is domiciled (RBS, 2011); they nevertheless need to comply with the asset eligibility, liquidity and diversification rules of UCITS as laid out in the Eligible Assets Directive and its CESR guidelines,[49] as well as comply with applicable home domicile law, which may be more stringent than the provisions of CESR regarding collateral.

The ETF provider enters into a two-legged total return swap contract with this counterparty to swap the return of the index tracked by the ETF for the return of the substitute basket. In such a way, ETF providers transfer the tracking error risk to the swap counterparty. At the initiation of the swap contract, the value of the basket of substitute assets is equal to the value of the ETF and the counterparty risk is thus zero. Because the counterparty risk of a UCITS related to OTC derivatives transactions cannot

42 Article 52 of Directive 2009/65/EC (UCITS IV).

43 Distinctions arise at the Member State level due to differences in domestic law and in the voluntary transposition of the relevant CESR guidelines (CESR/10-788).

44 As per article 52 (1) of UCITS IV. The distinction is relevant: investment banks may not be credit institutions, it is notably the case of most of the London-based US investment banks, which are entities regulated under MiFID.

45 This counterparty is usually the investment bank that provides the swap and it may belong to the same group as the ETF provider. Here we assume that a single counterparty is used for the swap, which is not a requirement but is typical. Note that the use of multiple counterparties does not mechanically result in lower counterparty risk unless all counterparties have the same credit standing and all exposures have identical tenor. See Deutsche Bank (2011) for an illustration.

46 The custodian must be an unrelated party or legally ring-fenced from the consequences of a failure of a related party.

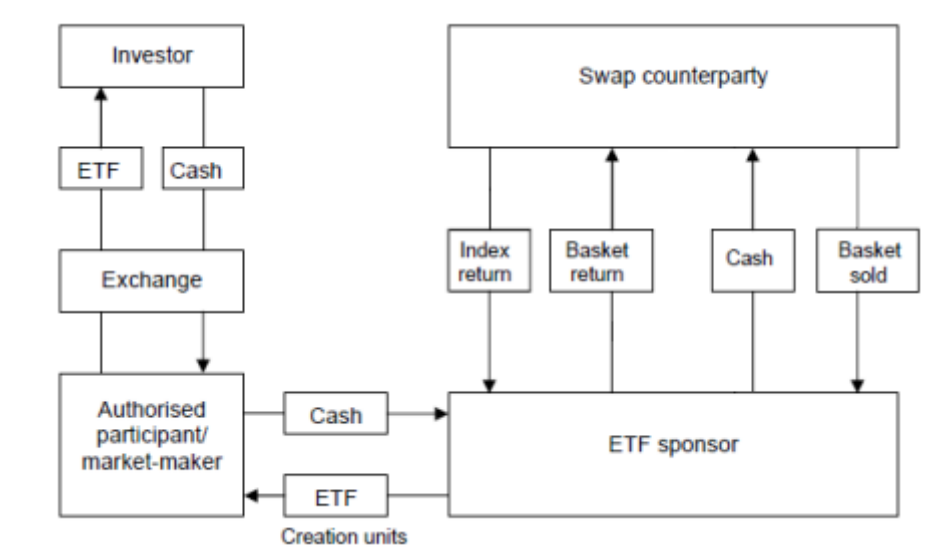
47 This would make the swap redundant.

48 See box 26 in CESR/10-788.

49 CESR/07-044.

exceed (5% or) 10% and OTC transactions entered into need to be subject to reliable and verifiable valuation on a daily basis,[50] the difference in the value of the substitute basket and the index is in practice marked-to-market on a daily basis and the swap is reset to avoid breaching the UCITS limit on counterparty exposure.[51] In the unfunded-swap structure, the ETF is exposed to the risk of the swap counterparty failing to make the payment of the performance differential. If the counterparty defaults, the ETF provider has direct access to the assets in the substitute basket and can liquidate them to address this issue and meet redemptions, where relevant.

Figure 1 Unfunded swap structure (simplified)



Adapted from BIS (2011a).

In a funded[52] synthetic ETF (see figure 2), the ETF transfers the investors' cash to the swap counterparty in exchange for the index return plus the principal when the transaction is terminated. The swap counterparty posts collateral in a segregated account with a custodian either in the name of the ETF or in the name of the swap counterparty, in which case it is pledged to the ETF. The initial collateral is at least equal to the NAV of the ETF and has to comply with the guidelines set out by CESR as transposed by the Member State in which the fund is domiciled and with otherwise applicable home domicile law, which may be more stringent than the provisions of CESR on collateral. The collateral is monitored on a daily basis and, where relevant, additional collateral is deposited by the swap counterparty to keep the agreed-upon level of collateralisation. For counterparty risk to be disregarded, CESR requires the value of the collateral, valued at market price and taking into account appropriate

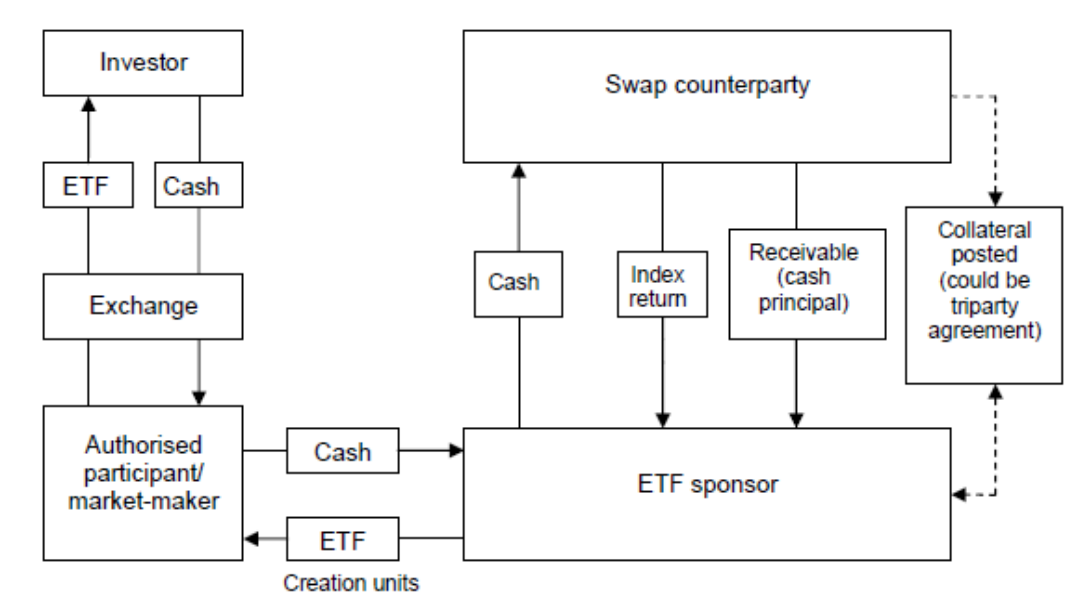
50 As per article 50 (1-g) of UCITS IV. 0 (1-g) of UCITS IV.

51 Different providers use different policies for resetting swaps; from the point of view of minimising (rather than optimising) counterparty risk, the lower or more frequent the reset triggers and the closer to zero the resets the better.

52 It is funded from the point of view of the swap counterparty.

discounts for the risk of value fluctuation, exceeds the value of the amount exposed to risk at any given time. When the collateral is pledged, the ETF is not the beneficial owner of the collateral assets which means that, should the counterparty default, the ETF provider would have to claim ownership of the collateral before it could access it. In theory, collateral under the name of the ETF is directly accessible, but experience has shown that segregation as well as pledge arrangements deserved attention to detail.[53] Under CESR guidelines, the collateral must "be fully enforced by the UCITS at any time without reference to or approval from the counterparty." Funded synthetic structures are typically over-collateralised (by 10 to 20% usually according to BIS, 2011a) to comply with fund domicile law[54] and reduce the risk involved in delayed access to the collateral and/or changing market conditions.

Figure 2 Funded swap structure (simplified)



Adapted from: BIS (2011a).

the ETF in exchange for the returns on a portfolio which is either held by the ETF or held in its name as collateral plus a fee (see the insert: "Structure of a swap-based ETF" for more on the different types of swap structures possible). The ETF holds (a claim to) a portfolio of 'physical' securities that are different from the index constituents, and the swap counterparty delivers the return difference between the physical portfolio and the index tracked by the ETF. Through this arrangement, ETF providers

53 In the Lehman Brothers case, some clients were able to access their monies immediately, others not.

54 Some Member State regulators impose specific rules on collateralisation, e.g. Ireland, which requires that collateral be highly marketable, of a prescribed credit quality or that "conservative haircuts" be applied, marked to market daily, transferred to the UCITS trustee or agent, and be immediately available to the UCITS, without recourse in the event of a default by the counterparty . Non-cash collateral cannot be sold, pledged or re-invested; must be held at the risk of the counterparty; must be issued by an entity independent of the counterparty; and must be diversified to avoid concentration risk in one issue, sector or country. Cash collateral must only be invested in risk-free assets. (Notice 10.7).

transfer the tracking error risk to the swap counterparty and assumes counterparty credit risk, in particular the risk that the counterparty fails to deliver the promised return differential.

Hybrid replication ETFs combine physical and synthetic replication techniques.

We understand that there is counterparty risk associated with synthetic ETFs due to the swap structure. However, it is somewhat surprising that such risk was so heavily emphasised in early reports as it is limited by UCITS (5% or) 10% of the fund's net asset value whatever the swap structure and not at all specific to synthetic replication ETFs since all UCITS funds, the bulk of which are not ETFs, may use OTC derivatives within the same limits.

The use of derivatives by UCITS is not only legal, it is legitimate as it facilitates portfolio management. As underlined by BlackRock (2011f) in a recent letter to the United States Securities and Exchange Commission: "Derivatives allow a fund to increase, decrease or change the levels of risk to which the portfolio is exposed in a manner that may be more cost-effective, tax-efficient or provide greater liquidity than replicating the same exposures through traditional securities."

There is no reason to attach stigma to the use of derivatives by UCITS or US Mutual Funds in general, or in particular when they primarily implement their investment strategies through derivatives. There is likewise no basis to deny ETFs, whether index-tracking or not, the benefits of derivatives usage that UCITS or Mutual Funds enjoy. To quote the market leader again: "BlackRock is an experienced manager of ETFs and does not believe there is anything about the ETF structure or manner of operating that makes such derivative transactions less attractive in ETFs than in mutual funds. (...) Likewise, we do not see a reason that ETFs that do not track an index should be prohibited from using derivatives in ways that are appropriate for their underlying strategies, disclosed to investors and commonly used by open-ended mutual funds that follow similar strategies."

When it comes to naming or marking funds, it would make little sense to disregard a fund's overall exposure and classify it according to the techniques it employs to achieve exposure, or on the basis of the exposure it achieves excluding the derivatives overlay. Differences in naming conventions or markers, if any, should result from differences in economic exposures and payoff structures at the overall fund level. An interesting little known fact is that this is the position defended by BlackRock (2011f) vis-à-vis the SEC:[55] "confusion may exist regarding

55 BlackRock (2011f): "Similar confusion may exist regarding the appropriate naming convention for mutual funds employing derivatives as a primary investment strategy. Section 35(d) of the Act generally makes it unlawful for any registered investment company to adopt as part of the name or title of the company, or of any securities of which it is issuer, any word or words that the Commission finds are materially deceptive or misleading. Rule 35d-l was adopted by the Commission to effectuate the prohibitions of Section 35(d). Rule 35d-l generally requires a registered investment company to adopt a policy to invest at least 80% of its assets (including any borrowings for investment purposes) in the securities suggested by the company's name (collectively, the "Names Rule"). Certain funds hold portfolios consisting primarily of cash equivalents or short-term bonds overlayed with derivatives that provide exposure to equities, currencies or commodities. Such funds may have in excess of 20% of its assets in short-term obligations, notwithstanding economic exposure to the underlying reference assets. It is unlikely that it was intended, or that it would further the purposes of the Names Rule, for such a fund to disregard its economic exposure to the reference assets and suggest in its name that its focus is on short-term investments. We therefore suggest that the Commission clarify that actual economic exposure through reference assets should be used for purposes of determining compliance with the Names Rule."

the appropriate naming convention for mutual funds employing derivatives as a primary investment strategy. (...) We therefore suggest that the Commission clarify that actual economic exposure through reference assets should be used". While this is perfectly sensible, this is hard to reconcile with BlackRock's European position as documented in its contribution to the ESMA consultation (BlackRock, 2011e): "it would be appropriate in our view for the ETF-identifier to clearly identify whether it is a synthetic or physical ETF, which can easily be established through the principal investment policy of the fund." This may be a case of Orwellian doublethink, unless it is simply double-talk dictated by differences in competitive landscapes on each side of the Atlantic.

Moreover, physical replication ETFs, even when they do not use OTC derivatives, may be exposed to similar or higher levels of counterparty risk through their securities lending activities. Indeed, while such ETFs, when they implement full replication, start off with a portfolio that includes the same set of securities as the index, they typically lend these out to increase revenues, receive collateral and depend on the securities borrowers to honour their obligations to hand back these securities. Economically, both mechanisms – synthetic replication and physical replication with securities lending – lead to holding a basket of securities that is different from the index that is being replicated and exposing the investor to comparable levels of counterparty risk.

Overall, this means that synthetic replication ETFs are not linked to any specific counterparty risk that would not also exist in physical replication ETFs or any other UCITS. Let us turn to a more detailed explanation of these points below.

First of all, as mentioned above, counterparty risk arising from OTC derivatives transactions is strictly limited for European UCITS ETFs. UCITS regulation explicitly states that exposure to a counterparty should not exceed (5% or) 10% of the net assets of the fund. To avoid violating this rule, synthetic ETF providers typically start by fully collateralising or over-collateralising the swap exposure via a diversified pool of securities, monitor the counterparty risk exposure on a daily basis, and generally impose safety margins for resetting swaps (posting additional collateral) to stay well below the UCITS limit on counterparty exposure. A survey of European ETF providers conducted by Johnson, Bioy and Rose (2011) concludes that unfunded structures tend to have counterparty risk between zero and 10% of the ETF's NAV and that counterparty risk is *usually* negative in funded structures due to overcollateralisation. Over the second half of 2011, a number of synthetic ETF providers relying on unfunded structures have reduced their counterparty risk exposures, with some announcing daily resetting to 0% counterparty risk.

In the event of a default by the swap counterparty, what really matters is the level of collateralisation and the marketability of the collateral or the assets in the substitute basket. The substitute basket or the collateral are held by a third-party and marked-to-market on a daily basis custodian (as per UCITS and, where relevant, domicile law requirements). Collateral composition and management follow CESR guidelines as transposed and, where relevant, additional Member State requirements. CESR guidelines on collateral concern liquidity, daily valuation, issuer credit quality, correlation with OTC counterparty, diversification, operational and legal risks, third-party custodian, full

enforceability, and investment limits.[56] While CESR rules are high-level principles, they may be complemented by precise Member State standards further mitigating risk. In the case of an unfunded swap, the assets in the substitute basket do not need to follow CESR rules on collateral but still need to comply with the provisions of UCITS, notably on asset eligibility, liquidity and diversification.

Johnson *et al.* (2011) note that great progress has been made with respect to disclosure of information about the composition of substitute/collateral baskets; in a follow up report, Bioy (2011) remarks that: "Most providers employing synthetic replication in Europe now disclose daily swap counterparty risk exposures and collateral composition on their websites." A study of these holdings shows that they contain highly liquid assets. Such high level of transparency provided by synthetic ETFs on their collateral baskets is not typically found in other UCITS funds which also use derivatives or other ETFs that engage in economically equivalent transactions. Bioy (2011) writes: "Ironically, we believe that today as it pertains to counterparty risk there is greater transparency on swap-based ETFs than on physical ETFs. (...) Following the warnings from financial regulators across the globe, it's about time that best disclosure practices are harmonised between synthetic and physical ETFs."

While it is somewhat surprising that synthetic ETFs were singled out in the first place for engaging in transactions allowed to all UCITS and denounced for their opacity when other UCITS provided much less voluntary disclosure, the emergence of higher standards of disclosure across the investment industry as a whole would be a welcome development for investors since they would give investors an option to assess the counterparty risk assumed.

Secondly, one should note that synthetic replication is not the only source of the potential counterparty risk in ETFs. Securities lending in which physical replication ETFs[57] engage to boost their returns is a bilateral collateralised operation that creates counterparty risks similar to OTC swap transactions, as observed by the FSB (2011).[58] The Johnson *et al.* study (2011) finds that, with one exception,[59] none of the synthetic ETF providers in Europe engage in any securities lending. The follow up survey by Bioy (2011) finds the mirror image for physical replication ETF providers: only one provider reports not engaging in securities lending.[60] Her report documents securities lending up to 100% of the funds' assets, sometimes on

56 Non-cash collateral cannot be sold, re-invested or pledged and cash collateral can only be invested in risk-free assets.

57 UCITS and non UCITS funds, end-investors such as pension funds and insurance companies, and other professional investors also engage in this practice. Among other things, securities lending is required for short-selling activities, which have been found to improve market quality, see for example Boehmer *et al.* (2010). Securities lending does not appear to impact security prices, see Kaplan, Moskowitz and Sensoy (2011).

58 Note that leaving aside OTC transactions, securities lending and repurchase agreement activities (all of which are secured transactions), counterparty risks also arises from purchases of fixed income securities, certificates, warrants, exchange-traded notes, and contracts for differences (all of which are typically unsecured transactions). See Deutsche Bank (2011).

59 ComStage ETF announces it may lend out up to 100% of the securities held by its ETFs against collateral equivalent to 100% of the loan value.

60 A small provider named Think Capital.

a near-constant basis.[61] Thus in general, issues associated with securities lending will concern the physical replication ETFs but not the swap-based ETFs. In securities lending, portfolio owners (in this case ETF providers) initiate a loan with the broker/dealer (borrower) to lend out part (or all) of the securities underlying the index they track in return for a fee and (cash, or typically non-cash) collateral (see figure 3). The purpose of the transaction is to collect a fee that will be used to partially (or fully) offset the fund's fees and expenses.

Therefore, physical ETFs, which have lent out their shares, are also exposed to the counterparty risk, just like synthetic ETFs. However, the amount of counterparty risk assumed through securities lending operations is not subject to specific limits under UCITS although CESR has clarified[62] that net exposure to a counterparty generated through a stock-lending or a repurchase agreement must be included when calculating the issuer concentration limit of 20%. There again, the exact form taken by counterparty risk mitigation will depend on Member State regulation. Collateral has a central role to play in risk mitigation. Note that, in the context of a securities lending operation, the UCITS does not have to comply with the CESR principles on collateral composition and management as the latter concern only OTC derivative transactions. In the absence of specific prohibitions by Member States,[63] non-cash collateral can thus be sold, re-used or pledged and cash collateral can be freely reinvested.[64]

In case a securities lending counterparty defaults and does not return the securities that were lent, the ETF provider has to sell the collateral the counterparty provided and purchase the tracked securities. Therefore, the ETF provider will normally require haircuts (margins) on the collateral received and mark to market the securities on loan and the collateral to ensure that the value of the collateral exceeds that of the loaned securities.

Here again, what matters is the level of collateralisation and the marketability of the collateral provided. Bioy (2011) notes that the level of investor protection[65] against the counterparty risk resulting from securities lending varies across providers of physical replication ETFs and explains that, with one exception,[66] not enough information is provided on a timely basis to allow investors to assess the counterparty risk assumed.

There is thus counterparty risk associated with the securities lending programmes typically implemented by physical-replication ETFs. This is not surprising since synthetic replication and securities lending are economically equivalent operations; with securities lending, as Bioy (2011) explains: "you start with a perfect basket and you turn it into an imperfect basket by accepting collateral in exchange for the

61 The level of securities lending varies significantly from provider to provider and from fund to fund.

62 CESR 10/788, Box 27.

63 Note that both the Irish and the Luxembourg regulators have drawn up specific guidelines for securities lending programmes by UCITS.

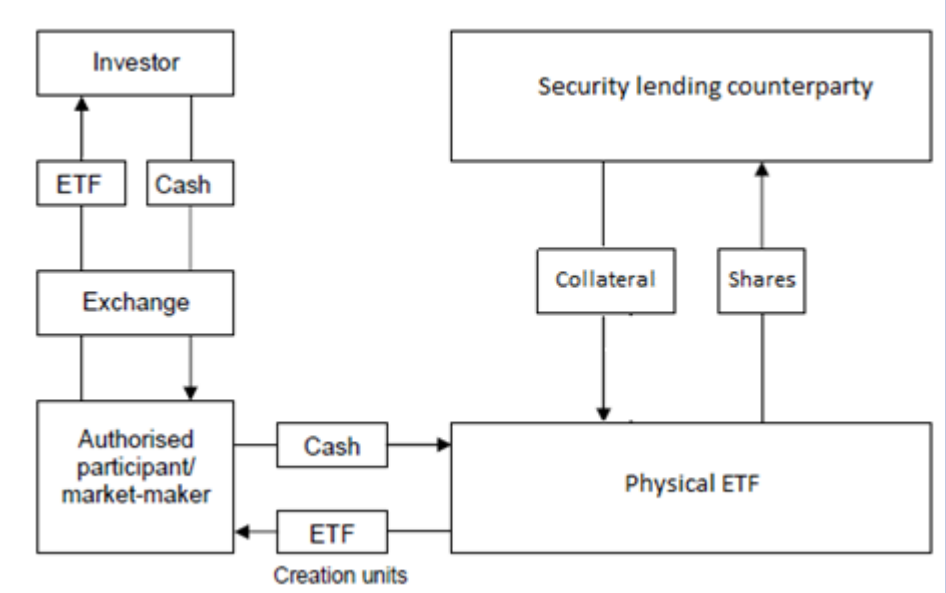
64 We understand that the European regulator is contemplating launching a consultation on securities lending in 2012.

65 e.g. nature of collateral, level of overcollateralisation applied, selection of borrowers, marking of collateral, and borrower default indemnification.

66 BlackRock started disclosing the details of its securities lending activities on a quarterly basis in 2011 and on a daily basis in October 2011.

Structure of a physical ETF engaging in securities lending

Figure 3 Structure of securities lending



Physical replication ETFs hold (all or part of) the index constituents to replicate the index (in full or via sampling), which usually results in higher replication costs and tracking error. In order to offset some of the costs, physical ETFs typically engage in securities lending. Lending out part (or all) of their shareholding in return for a fee and requiring collateral for counterparty risk mitigation. According to the survey by Bioy (2011), equities and government bonds are the most commonly accepted form of collateral and haircuts ranging from 2% to 15% are applied. The collateral received must comply with UCITS criteria but the ETF need not comply with the CESR guidelines on collateral composition, diversification, and management because those relate to OTC derivative transactions only. In the absence of specific restrictions by the fund domicile jurisdiction, this allows cash taken as collateral[67] to be reinvested freely, among other things. Typically, the collateral and the loaned securities will be marked to market daily and additional collateral will need to be posted when needed to ensure that the minimum level of collateralisation is maintained.

In most securities lending transactions, legal ownership[68] (of both the securities on loan and the collateral taken) is transferred between the lender (a.k.a. beneficial owner) and the borrower but transactions are structured so that the economic benefits of ownership, e.g. dividends and other distributions, are transferred back to their original

67 If cash is pledged as collateral, a rebate rate on the collateral is paid. The greater the demand for the security being borrowed relative to the supply, the lower the yield paid to the borrower. Securities in high demand, typically securities in special situations, can command negative rebate rates. See Fabozzi (2004). The difference between the rebate paid on the cash collateral and the yield earned on the reinvestment of the cash benefits the ETF. Taking and reinvesting cash collateral can fairly be interpreted as leveraging the portfolio.

68 This causes the loss of the guarantee provided by the custodian; in some jurisdictions e.g. France, it is immediate and unconditional.

owner. This contractual payment pass-through is termed "manufactured" payment or dividend (Bianconi *et al.*, 2010). The transaction is unwound when the borrowed securities are returned to the beneficial owner i.e., the ETF, and the collateral is returned to the borrower. Typically, the loan has no maturity, which gives the beneficial owner the ability to recall the securities at any time (and vice versa). The securities lending activity exposes the ETF to counterparty risk. In the event of a default by the borrower, the ETF provider has to sell the collateral and buy the tracked securities. The amount of counterparty risk thus assumed is limited to 20% by European law (through the issuer concentration limits of UCITS, as clarified by CESR) but may be restricted further at the Member State level. For example, Ireland has published strict standards for securities lending by UCITS,[69] which in matters of collateral are broadly similar to those it applies to OTC derivatives.

Note that it is customary for lenders to outsource securities lending programmes to specialised agents; outsourcing does not mean relinquishing control over counterparties, collateral and haircuts, which can be set contractually. Agents can also insure against borrower default. As with funded swaps, it is important to ensure that collateral is held by an independent trustee, and is immediately available to the fund, without recourse in the event of a default by the counterparty.

lent securities". Conversely, with synthetic replication: "you start with an imperfect basket and use a swap to receive the performance of a perfect basket."

This counterparty risk is not at all specific to physical replication ETFs: all UCITS funds, the bulk of which are not ETFs, may resort to securities lending within the same limits. The size of the securities lending market dwarfs that of the ETF industry, so any concern about this practice should be dealt with in a horizontal manner.

The recent debate on counterparty risk within the investment industry has first heavily focused on the OTC derivatives operations of synthetic replication ETFs; the attention now appears to be shifting to the securities lending transactions of physical replication ETFs, which is fair since these are economically equivalent operations.

The use of OTC derivatives and securities lending are not only legal but also legitimate to the extent that they facilitate the implementation of a fund's strategy or generate ancillary revenues that benefit investors. However, these activities entail assuming counterparty risk. In the case of OTC derivatives, this risk is strictly limited by UCITS to (5% or) 10% of the fund's net asset value. Counterparty risk arising

69 UCITS 12.5 imposes a minimum of 100% collateralisation plus "conservative" haircuts where the credit quality of the issuer is below A-1 or equivalent, marketability, daily valuation and marking to market. The collateral must be transferred to the trustee, or its agent, and must be immediately available to the UCITS, without recourse to the counterparty, in the event of a default by that entity. Non-cash collateral cannot be sold, pledged or re-invested, must be held at the risk of the counterparty, must be issued by an entity independent of the counterparty, and must be diversified to avoid concentration in one issue, sector or country. Cash collateral can only be invested in ways that are regarded as low-risk.

from securities lending does not benefit from such a high level of scrutiny at the European level, so the investor should pay particular attention to the mitigation mechanisms that may be required by the competent jurisdiction and the specific policies of the fund.

The association of counterparty risk with ETFs may have misled investors into believing that the issues raised were specific to ETFs, or even worse to synthetic-replication ETFs. In fact all UCITS can engage in OTC derivatives and securities lending transactions within the same limits. More importantly, non-UCITS funds and other products available to retail investors may engage in the same transactions without affording the same high levels of counterparty risk mitigation and disclosure as UCITS. From an investor-protection or a regulatory arbitrage mitigation standpoint, the wisdom of frightening investors away from the most regulated segment of the investment industry is not immediately apparent.

This notwithstanding, we believe that there should be EU-wide consistent regulation of counterparty risk mitigation. First and foremost and in the spirit of the ESMA proposal limits on counterparty risk should apply to all transactions giving rise to such risk and not simply to OTC derivatives. The existing CESR guidelines related to the collateralisation of OTC derivatives by UCITS could also be used as a reference to improve collateralisation of all transactions, exposing UCITS and non-UCITS investment vehicles to counterparty risk, notably securities lending, repurchase agreements and other economically comparable operations.

Provided the counterparty risk arising from securities lending is properly mitigated, we consider that it makes little sense to pit physical-replication against swap-based replication and that the negative allegations made by providers on both sides of the replication divide about the risks in each other's products are a disservice to the index-tracker industry and the UCITS ETF brand.

When it comes to categorising funds, the focus needs to be on the economic exposure achieved or the payoff generated and not on the methods or instruments used to engineer this exposure or payoff. Should European authorities decide to name some UCITS complex, which we consider would be detrimental to UCITS brand equity, this should be on the basis of the complexity of the payoff (risk/return profile) rather than that of the investment tools employed. In this case, UCITS tracking financial indices–according to the definition provided by CESR[70]–should remain simple products, whatever their replication technique.

We consider it key to recognise the difference between passive UCITS that track a financial index and other funds. With the former, investors choose a linear and constant exposure to an index, which

70 Article 9 of the Eligible Assets Directive (Directive 2007/16/EC) described the minimum criteria which financial indices need to fulfil for eligibility (sufficiently diversified, adequate benchmark, appropriately published.) National competent authorities were expected to work together to develop common approaches as regards the practical, day-to-day application of those criteria. In practice, these have received very little attention and there is very little in the way of ensuring that index rules are exhaustive, effectively implemented and systematic, which would allow for a clear distinction between actual (passive) indices and active management strategies parading as indices. CESR has issued (non-binding) guidelines limited to hedge fund indices (CESR/07-434), which notably require the index methodology to be based on a set of pre-determined rules and objective criteria and that a due diligence on the quality of the index be carried by the UCITS. In its discussion paper, ESMA (2011) has proposed that these guidelines be applied to all financial indices, which is a step in the right direction.

is managed in a transparent and systematic manner and boasts a published track record. With the latter, the payoff depends on risk-taking and portfolio management models that may neither be systematic nor transparent.[71] A multiclass fund engaging in global tactical asset allocation will have a non-linear track-record, which will be difficult to explain or replicate, and a higher risk to underperform its benchmark in case its tactical bets turn out to be wrong. Likewise, a fund that tries to outperform its benchmark by taking risks of different economic nature than those implicit in its benchmark will exhibit a performance that will be hard to understand or replicate when the investor performs its due diligences.

Simplicity, and a *contrario* complexity, should be understood as the investor's ability to understand the source of performance and the systematic character of the exposure to an index. This, rather the use of derivatives or securities lending by UCITS, could serve as basis for distinctions. We thus consider that the recent ESMA consultation has not approached the problem correctly. By disregarding the nature of the payoff generated by the fund to focus on the instruments it holds to generate this payoff, regulation could create a false sense of security vis-à-vis "simple", "plain-vanilla" or "mainstream" products which in fact can include large and, more worryingly, hard to predict extreme risks. This could exacerbate adverse selection and moral hazard phenomena, whose mitigation should be a major and ongoing preoccupation for the regulator.

The debate on the counterparty risk of ETFs has nevertheless yielded one positive outcome to the extent that it prompted the European ETF industry–at least the synthetic replication providers and the leading physical replication provider at this stage–to improve its disclosure practices.

We believe there should be industry-wide standards of transparency with respect to counterparty risk assumed allowing investors to assess the risks assumed in these contexts against the benefits derived i.e. better performance. The arrangements for counterparty risk mitigation, the list of counterparties and the composition of the baskets of assets whose economic function is to serve as collateral to OTC derivatives transactions, securities lending operations and economically comparable operations, should be made available to investors, with appropriate lags where necessary, and investors should be provided with appropriate metrics to assess counterparty risk mitigation. If self-regulation fails, the regulator should impose harmonised disclosure and presentation standards.

However, to allow investors to perform cost-benefit analyses, more transparency and consistency are also required on revenues and costs from ancillary activities and, in the case of index-tracking instruments, on tracking error.

Disclosure of total returns and total costs is one way to mitigate conflicts of interest and promote value enhancement for investors. For example, how costs and fees are shared between the ETF and its agents in the context of securities lending programmes or tax-optimisation operations should be disclosed and there

71 Furthermore, active funds will, understandably, be reluctant to disclose their holdings to the market at a high frequency. One illustration thereof is given by BlackRock: while advocating greater transparency in the (reading the small print, passive) ETF market, the manager is seeking exemptive relief from the SEC to be allowed to manage non-transparent active ETFs, i.e. ETFs that would not disclose their holdings beyond what is required for open-end mutual funds (BlackRock, 2011c).

should also be transparency on how fees collected compare to relevant performance indicators in the industry.

On the back of the momentum for higher levels of counterparty risk transparency that emerged thanks to regulatory initiatives and best practices self-regulation on the part of the industry, we recommend the promotion of a new measure allowing investors to measure what share of the total return generated through the risks assumed on their behalf by funds is passed through to them. The calculation of this Total Return (pass-through) Ratio (TRR) would capture the returns to counterparty risk arising from securities lending operations. By highlighting the share of returns that does not accrue to the investor, such a ratio would permit an assessment of the true cost of asset management, beyond the picture given by the total expense ratio.[72]

With respect to tracking error, it is startling to realise that while index funds have grown on the back of passive management, there is no legal definition of what it means to be a tracker, no standardised measure of tracking error and no mandated disclosure of the quality of index replication. These central issues have received very little attention in the recent debate and ETF providers have helped focus the attention of investors and regulators on the third-order question of the replication method and purported distinctions about their relative counterparty or liquidity risks.

The regulator should provide a formula for tracking error to be used across all index tracking products, impose a maximum tracking error for a fund to qualify as a tracker (different limits could be applied to different underlying), and enforce initial and ongoing disclosure of targeted and realised tracking error. For UCITS, the KIID should provide details on the type of index that is tracked[73] and the assumptions made with respect to taxes[74] as well as the targeted tracking error range;[75] the prospectus should provide the results of back tests of this objective (including Relative VaR i.e. the potential loss from the deviations of the tracker in respect of the index computed from historical data and Monte Carlo simulations); and the fund's

72 Alternatively, one could require the ongoing charges of the fund–which are to appear in the UCITS KIID before 1 July 2012–to include all fees received (or revenues kept) by affiliates or agents (e.g. the lending agents in securities lending operations) of the fund; however, we find that the latter approach, while also providing more transparency, has the potential to be misleading. It is rational to expect that investors will compare such charges to the performance figures presented in the KIID with a view to assessing net performance. However, since performance figures do not include the part of revenues that remains in the hands of affiliates or agents, such an approach would lead to underestimating net performance.

73 ESMA (2011) suggests that a "clear description of the index including details of the underlying index components" be included. While the provision of details on constituents may be limited by the intellectual property rights of index providers, we believe the index methodology should be described in detail and sufficient information be provided about constituents. We also believe attention should be drawn to the type of index being tracked and the underlying reinvestment and taxation assumptions.

74 Price-return indices exclude dividends. Total-return indices include dividends, but various versions exist with respect to the treatment of taxes. For example, MSCI Total Return Indices are released in two versions: (i) "with gross dividends," where the reinvested amount is equal to "the total dividend amount distributed to persons residing in the country of the dividend-paying company" and excludes tax credits; (ii) "with net dividends," where the reinvested amount is net of withholding taxes, using (for international indices) "a tax rate applicable to non-resident institutional investors who do not benefit from double taxation treaties."

75 We welcome the suggestion by ESMA (2011) that the policy of the tracker regarding the tracking error, including its maximum level, should be disclosed, and are in favour of additional disclosures regarding the risk factors affecting replication, including those arising from the index-replication technology/technologies used, which should be described precisely.

report should disclose the realised tracking errors computed in an unambiguous and standardised manner.

In the context of the acceleration of the growth of passive investment, we regret that the European regulator has, for the time being, focused its attention on how an index is tracked while largely ignoring the need for a minimum level of disclosure and standardisation with respect to what index exactly is tracked and how effective and efficient the tracking is.

Section 3: Assessing the liquidity risk of ETFs

ETFs are often presented as combining the diversification benefits of mutual funds and the transparency, liquidity and regulatory oversight afforded to instruments listed on public markets. Indeed, ETFs can be traded throughout the day at market prices that change from moment to moment, and any type of order used for trading stocks can be used to trade ETFs; however, ETFs are open-ended funds that trade in an arbitrage market.

The liquidity of an ETF stems not only from the exchange's order book and market making activity[76] but also from direct creation and redemption of ETF shares by so-called authorised participants. In the traditional in-kind creation model, which is typical of physical replication ETFs but is also used by their synthetic replication peers, an authorised participant, typically a large bank, will purchase the basket of assets underlying the ETF as specified by the custodian[77] and exchange it with the custodian for the corresponding number of ETF shares – this creates new ETF shares; redemption takes place when the authorised participant exchanges ETF shares for the underlying. In the cash creation model, which is typical of synthetic replication but is also used by physical replicators, the authorised participant exchanges cash for ETF shares. Increasingly, hybrid in-kind/cash models are used.[78] The type of liquidity provided by authorised participants is specific to ETFs. These participants are approved by the ETF and are the only ones who impact the outstanding number of ETF shares. The creation and redemption of shares is central in the arbitrage activity[79] that should keep the traded price of an ETF close to the net asset value[80] of its underlying.[81] For this reason, the price formation of an ETF should not be assumed to be comparable to that of stocks, for which supply and demand forces on the secondary market are the primary determinant of prices. Risk-free arbitrage closely ties ETF prices to the value of their underlying.[82]

The spread on an ETF is determined by the liquidity of the ETF on the secondary market and the liquidity and volatility of

76 Official market making or liquidity provision takes place in the context of contractual agreements with the exchange. Each market venue determines the obligations of the market maker; typically, a market maker will be required to quote bid and ask prices for a minimum amount and keep the bid-ask spread between a set limit.

77 The Portfolio Composition File detailing how shares will be created and redeemed is sent by ETF issuer or the custodian to the authorised participants daily.

78 And in-kind and cash creation models are also evolving.

79 Authorised participants are not under an obligation to act in the interests of buyers and sellers.

80 The indicative value (IV) (aka intraday indicative value IIV or intraday net asset value (iNAV)) is an estimate of the NAV that typically is made available (at 15 seconds intervals typically) to the market throughout the trading day; it is based on the last price available for each component rather than the prevailing bid or ask and it may contain stale prices (e.g. when the underlying is illiquid or is traded on a market that is closed), it should not be mistaken for the real-time fair value.

81 Another activity that may contribute to arbitraging away deviations from the underlying NAV is short-selling of the ETF by market participants; this activity is more developed in the United States than in Europe.

82 Engle and Sarker (2006) show that deviations from fair market value on the US domestic ETF market are "generally small and highly transient, typically lasting only several minutes" with the standard deviation of the deviations being "15 basis points on average across all ETFs and substantially smaller than the bid-ask spread." For international ETFs, they find that deviations are "much larger and more persistent, frequently lasting several days." However, spreads "are comparable with the standard deviation of the premiums." Deviations on ETFs are smaller and less persistent than on closed-end funds. Ackert and Tian (2008) find that the mispricing of country funds is related to momentum, illiquidity, and size effects.

the underlying portfolio. It is perfectly possible for an ETF that has low market volume to display a narrow spread because of the predictable nature of the arbitrage (and vice-versa). The trading volume of an ETF should not be equated with liquidity; here again the stock comparison is misleading.[83]

A number of recent reports have mentioned potential liquidity issues with ETFs. The FSB seems to be concerned with the possibility that massive cash redemptions of ETF shares could cause liquidity problems at ETFs and swap counterparties when the underlying assets being tracked are "less liquid" than the ETF. BIS (2011a) has described a scenario that sees concerns about counterparty risk trigger massive redemptions, that in turn cause liquidity problems that heighten counterparty risk and start a feedback loop.

The first argument itself is in fact confusing because the liquidity of an ETF is determined by the liquidity of the underlying securities. If the underlying securities are illiquid, it is to be expected that the ETF will be illiquid. ETFs are designed to track an underlying portfolio rather than to improve the liquidity of its individual constituents. Besides, the possibility of a liquidity problem arising from maturity transformation as mentioned by the FSB is not specific to ETFs, but is common to all open-ended funds invested in assets with low liquidity when they are faced with large redemptions.[84]

Let us now examine the idea that synthetic replication or securities lending by ETFs would lead to higher liquidity risk. As previously discussed, the effective liquidity of an ETF does not depend on the replication methodology, but rather on the liquidity of the underlying assets; other things equal, the more illiquid the underlying, the larger the bid-ask spread should be.

In the context of the creation and redemption process we described, the ETF must provide the authorised participant with the underlying (or cash) in exchange for the redeemed shares and this is true whether or not an ETF tracks an index, enters into OTC derivatives transactions or engages in securities lending. Assuming the ETF has entered into a swap agreement to track the underlying, it has to unwind the swap. The bank then loses its short position on the tracked underlying and its long position on the substitute/collateral basket; to keep its market position unchanged it will purchase the substitute/collateral basket from the fund and sell the tracked portfolio to the fund – the liquidity of the bank is impacted only at the level of the difference in values i.e. the counterparty risk and it will be typically be hedged against market risk, besides the bank will generally have borrowed the assets in the substitute/collateral basket from a third party, in which case it will simply return them and will not be directly affected by their possible relative lack of liquidity (Lyxor, 2011; BlackRock, 2011a).

Assuming the ETF has engaged in securities lending, it will have to call back the loaned components of its portfolio and return the collateral received. For the ETF provider, returning the physical collateral will be

83 That said, a consolidated tape for trading activity in Europe would help self-directed investors with respect to the choice of venue. This should be approached in a horizontal manner, and is, in the context of the revision of the MiFID framework.

84 UCITS cannot be directly invested in property. The German open-end real estate funds that offered daily liquidity for close to fifty years (see Ducoulombier, 2007) but have been affected by multiple liquidity crises leading to suspensions of redemptions and liquidations over the past six years were not UCITS.

straightforward if it is not encumbered and returning the cash collateral will not be a cause for concern if it has been invested in liquid and low-risk assets; if the physical collateral is itself on loan, then it will have to be called back. In the absence of CESR guidelines applicable to the collateral from securities lending, rehypothecation and reinvestment decisions are made by the ETF provider, which can assume more or less risk and reap the associated returns. Note that some Member States have imposed strict restrictions on the use of collateral from securities lending, e.g. Ireland makes it clear that non-cash collateral cannot be sold, pledged or re-invested and that restricts reinvestment of cash collateral to what is traditionally viewed as low-risk assets. Even in the absence of specific Member State restrictions, UCITS asset eligibility rules still apply to the ETF, limiting liquidity risk. The position of the asset borrower with respect to returning the securities is similar.

Given the modest size of the ETF industry relative to the securities lending market, it is unlikely that such recalls will cause significant stress to the markets and empirical proof to the contrary remains to be provided.

In the worst case scenario i.e. when a swap or securities lending counterparty defaults, the liquidity of the ETF is indeed affected by the extent of collateralisation and the marketability of the substitute/collateral portfolio. For UCITS ETFs, as for all UCITS, there are strict requirements on asset eligibility applying to all holdings and potentially additional CESR requirements on the collateral from OTC derivatives transactions. As mentioned in the previous section, mitigation of counterparty risk (if not outright regulation at the Member State level) will lead ETFs to require risk-based overcollateralisation with different levels of haircuts for different levels of credit or market risk. Such overcollateralisation is meant to protect the ETF against adverse movements in the market while the collateral is being accessed and liquidated.

In summary, ETFs should not be blamed for reflecting the liquidity of the indices they track or the underlying assets to which they are exposed. It would be unreasonable to demand higher effective liquidity than that provided by the underlying itself. Furthermore, the possibility that large redemptions will create stress on the underlying markets is not at all specific to ETFs, but is common to any open-ended investment fund. UCITS need to manage liquidity risk to ensure that they are able to meet redemptions and asset eligibility rules limit the extent to which UCITS funds, as open-ended funds, can provide maturity transformation,[85] precisely to mitigate the risk and severity of liquidity crises.[86] There again, it is surprising to single out ETFs for issues that are common to all open-ended funds and happen to be mitigated by UCITS; if the approach has to be vertical, then the focus should be on open-ended funds outside the purview of UCITS.

85 UCITS stands for Undertakings for Collective Investment in *Transferable Securities* and are required to be open-ended. Asset eligibility rules (UCITS IV, Article 50) restrict UCITS funds to investments in transferable securities and other liquid financial assets.

86 At the moment potential fund suspensions are regulated at the Member State level. The International Organisation of Securities Commissions (IOSCO) is currently developing "Principles on Suspensions of Redemptions in Collective Investment Schemes" – ETFs have not been mentioned as a segment deserving specific attention and IOSCO has underlined the resilience of the open-ended fund industry overall.

At any rate, regulators and investors alike should recognise that it is not possible to guarantee the liquidity of open-ended funds invested in illiquid underlying via asset eligibility or diversification rules. As discussed in earlier work conducted in the wake of the liquidity crises of 2007-2008 (Amenc, 2009), we consider this issue should be addressed through the development of closed-end funds with liquidation horizons that correspond to those of the assets or strategies in which they are invested. Closed-end funds with adequately structured liabilities would be the natural vehicles to access to illiquid assets such as direct real estate or private equity as well as certain hedge fund strategies (Amenc and Sender, 2010). Multilateral trading facilities could be an appropriate habitat for a secondary market in such funds (Amenc, Schoeffler, and Lasserre, 2010).

Likewise, the fears that synthetic replication and securities lending would exacerbate liquidity risk appear overblown. UCITS are subject to strict counterparty risk limits in the context of OTC derivatives transactions and to asset eligibility rules that would mitigate the consequences of a counterparty falling to a liquidity crisis. While mitigation of risk arising from securities lending is not specifically regulated at the European level, UCITS asset eligibility rules still apply. Note that for index-tracking UCITS, the liquidity in case of default by a counterparty ultimately depends upon the existence and quality of the collateral and has little to do with the replication method used. Here again, we find no serious basis to create distinction within index tracking UCITS that would be based on the replication method but recommend a harmonised approach to counterparty risk mitigation.

Summary of risk sources for different replication methods

Table 1 summarises various risk sources for ETFs with different replication methods. Table 1 only focuses on three types of structures: full replication with securities lending, sampling replication with securities lending and synthetic replication without securities lending. We choose these three categories as we believe that they cover the most common practices in the industry. This is consistent with the evidence provided in the two aforementioned surveys of physical and synthetic ETF providers in Europe (Bioy, 2011 and Johnson *et al.*, 2011). Because physical replication includes both full replication and sampling replication (a.k.a. optimisation) and each results in different levels of risk exposure, we separate these two cases. Note that the fact that physical replication without securities lending is not reviewed here should not be seen as an indication that it is devoid of the risks that have been discussed heretofore; for example, a physical replication ETF would be exposed to (typically uncollateralised) counterparty risk if it invested in a bank-issued certificate representing ownership of stock.[87]

Table 1: Summary of risk sources for different types of replications – UCITS ETFs

Risk sources	Full replication with securities lending	Sampling replication with securities lending	Synthetic replication without securities lending
Tracking error risk	• Depends on transaction costs, ease of access to and liquidity of underlying, tax treatment[88] and ease of reinvestment of dividends.[89] • Can be low for the most liquid market and high for less-liquid markets thus making sampling or synthetic replication more attractive.	• Reduced transaction costs relative to full replication and possibly tracking error. However, the sampling approach can cause significant tracking error, particularly in stressed periods.	• Lowest but not necessarily zero, the index performance served needs to be defined to correspond exactly to the performance of the index tracked, and the issue of dividend taxation does not completely disappear.

87 There, too, UCITS limits on counterparty risk would apply.

88 It is not always possible for an ETF to reclaim in full withholding taxes levied by multiple tax jurisdictions. Furthermore, reclaiming such taxes is costly and lengthy.

89 Typically, shareholders do not receive dividends on the day when they go ex-dividend on the market. Some indices, however, assume that dividends are reinvested immediately.

Risk sources	Full replication with securities lending	Sampling replication with securities lending	Synthetic replication without securities lending
Counterparty risk	• Main source : securities lending counterparty/ counterparties		• Main source: swap counterparty/counterparties
	• Counterparty risk arising from OTC derivatives transactions is limited to 10% of the fund's NAV by UCITS. • Counterparty risk arising from other transactions, e.g. securities lending, is not addressed explicitly but is limited by issuer concentration limit of 20% (CESR has clarified that net exposure to a counterparty generated through a stock-lending or repurchase agreement must be considered from the point of view of issuer concentration limit.)		
Collateral risk	• Limited by standard UCITS asset eligibility rules.		• Funded swap: Limited by CESR guidelines as transposed (prescriptions on liquidity, credit quality and prohibitions on rehypothecation and reinvestment.) • Unfunded swap: the assets in the substitute basket are not collateral technically; they need to comply with UCITS asset eligibility, liquidity and diversification rules.
Liquidity risk	• Potential direct or indirect liquidity risk when large redemptions occur and the underlying is relatively illiquid		
	• The fund will call the on-loan securities back – while a squeeze is unlikely, its consequences would be primarily felt by the borrower of the securities, not the ETF.		• The fund will unwind the swap, sell the substitute/ collateral basket to the swap counterparty and buy the index – while a squeeze is unlikely, its consequences would be felt by the bank delivering the securities or the party from which they were borrowed by the bank, not the ETF. Typically, the bank will be hedged.
	• Should the counterparty default, the fund would have to sell the collateral to meet redemptions; if the collateral is relatively illiquid (see collateral risk above), there is a risk. Overcollateralisation is recommended.		
Legal risk (in case of counterparty default)	• Securities lending collateral recourse may be hampered by existence of multiple competent jurisdictions across Member Countries. Use of a master agreement is recommended.		• For funded swaps, differences exist between title transfer and pledge agreements (although in theory collateral should be available without recourse to the counterparty).

Assuming proper collateralisation of securities lending operations, Table 1 shows broadly similar level of risk exposure across replication structures except for tracking error risk. For physical replication, tracking error depends on transaction costs, the ease of access to and liquidity of the underlying assets, and dividend taxation and reinvestment issues – costs, delays, dividend payments and associated taxes, index turnover create tracking error, which can be substantial. Physical-replication typically leads to higher total expense ratios and higher tracking error than synthetic replication. Sampling or optimisation allows physical replicators to reduce their trading costs, e.g. by shunning the least liquid subsets of the index being tracked, but relies on the stability of the correlation between the portfolio that is held (which incidentally may contain assets that do not belong to the index but improve correlation and/or performance) and the index; if the correlation deteriorates, the tracking error can suffer and end up being higher than with full replication (assuming it is feasible). Sampling is particularly popular with ETFs tracking broad indices and emerging markets.

Securities lending generates fees which reduce tracking error but involves accepting counterparty risk (mitigated by UCITS limits on counterparty risk and asset eligibility and, where relevant, additional Member State requirements). The use of derivatives can allow a fund to gain and modify exposure to the underlying in a faster, more cost-effective and at times more tax-efficient way than transaction in the underlying market; it may sometimes be the only possibility. Rather than using derivatives piecemeal to replicate individual holdings, a synthetic replicator will enter into an OTC swap with a counterparty that will guarantee that the ETF receives the index return – the effective quality of the tracking will depend on the costs of the swap and any difference between the index being tracked and the index being used as a reference e.g. arising from differences in the treatment of dividends.

The potential liquidity risk when large redemptions occur with ETFs on relatively illiquid underlying is the same whatever the replication method being used since the liquidity of an ETF in such circumstances depends only on the liquidity of the underlying securities.

Table 1 shows that although ETFs may be constructed in different ways, their risk exposures with respect to counterparty risk, collateral risk and liquidity risk are comparable within the UCITS framework. It is thus rather surprising to see some structures being promoted as significantly safer than others.

Section 4: How the risks in ETFs differ from risks in other ETPs

In addition to mentioning potential issues with the counterparty and liquidity risks of ETFs, financial regulators and international organisations have also expressed concerns about the possible confusion between ETFs and other ETPs. For instance, the French regulator, the AMF (2011), stresses that "the growing range and complexity of products on offer are key reasons why investors might find it hard to understand the ETPs being marketed to them."

As recognised by regulators, there is a difference to be made between ETFs and other ETPs. ETP is a generic term designating a wide array of products that are covered by different regulations and have little in common except that they are listed on exchanges. Within ETPs, only ETFs can be offer the high level of protection afforded by UCITS since other ETPs cannot be UCITS and are distributed in Europe via the much lighter regulatory regime of the Prospectus Directive.

We consider that raising the issues with other ETPs at the same time as discussing the risk of ETFs is misleading and contributes to confusion among investors. Describing ETNs and ETVs as "close substitutes of ETFs" as the FSB does (2011) fuels this confusion.

The catch-all ETP acronym refers to ETFs, Exchange Traded Notes (ETNs) and Exchange Traded Vehicles (ETVs). It is useful to underline the differences product categories in more detail.

An ETN is a debt obligation, typically a senior unsecured debt obligation, designed to track an asset, portfolio or index. ETNs can offer investment exposure to asset classes (e.g. commodities, real estate, volatility, currencies), asset sectors (e.g. emerging and frontier countries equity), or even individual assets (e.g. gold) and that may be difficult or impossible to achieve otherwise in a cost-effective manner or in a way that is legally compatible with UCITS[90] or comparable regulation in other jurisdictions. An ETN does not reflect equity ownership of an underlying portfolio of investment the way a UCITS or a US Mutual Fund would:[91] an ETN is a debt obligation. The creditworthiness of an ETN derives from the creditworthiness of the issuer; in other words an ETN investor is exposed to the full uncollateralised credit risk of the issuer i.e. it exposes investors to 100% undiversified counterparty risk (barring emerging collateralised ETNs). Repayment of principal and payment of applicable return at maturity or upon repurchase by the issuer strictly depend on the issuer's credit.

In Europe, Exchange Traded Commodities (ETCs) are debt obligations (notes, certificates) whose performance is linked to a single commodity (e.g. gold) or multiple commodities.[92] They are issued through special purpose vehicles set up by their sponsors or directly by their sponsors as one of their many obligations (ETNs) – they need not be collateralised (see Table 2).[93]

90 Commodities are not a permissible asset under UCITS, but by investing in commodity-related derivatives, it is possible to create commodity UCITS ETFs tracking commodity indices (which need to be sufficiently diversified, adequate benchmarks, published in an appropriate manner, and managed independently from the ETF manager). So-called gold ETFs offered in Europe are non UCITS products; when from the old continent, they typically call Switzerland home because Swiss legislation allows single commodity funds.

91 US ETNs fall under the Securities Act rather than the Investment Company Act. Likewise, European ETNs are not UCITS.

92 In the US, ETCs can also be structured as Exchange Traded Vehicles (ETVs), which are open-ended trusts or partnership units regulated by the Securities Act of 1933.

93 For a detailed look at collateralisation agreements, see Deutsche Bank (2010).

Section 4: How the risks in ETFs differ from risks in other ETPs

Since ETNs are not funds but notes, their investment policies need not comply with the asset eligibility and diversification rules specified in UCITS and comparable legislation in other jurisdictions. Therefore, an ETN could be exposed to a single commodity or a single currency. While the counterparty risk exposure of UCITS ETFs is limited to 20%, ETN investors are exposed to the full credit risk of the ETN issuer; while collateralisation arrangements can be made, this is at the discretion of the issuer and there is no standardisation. The value of an ETN on the secondary market may be adversely impacted by negative changes in the perception of the issuer's creditworthiness and cause the ETN to trade at a discount to its redemption value. While the primary risk factors of an ETF are market risk and where relevant, tracking error risk, the primary risk factors of an ETN are market risk and credit risk.

ETFs and ETNs are separated by more than just a letter, but have sometimes been marketed as one and the same thing. When ETFs are used as UCITS wrappers, investors enjoy high standards of protection in terms of governance, custody of assets, investment and risk management policies, and disclosure. Other ETPs such as ETNs cannot be UCITS and do not provide investors with the protections of UCITS. The grouping of ETFs with other ETPs, intended or not, is problematic and action needs to be taken to correct the perception that all ETPs available in Europe enjoy the protections of UCITS and clearly draw distinctions between UCITS and non-UCITS products.

We believe that, in view of the growth of the non-UCITS ETP market and its retail investor appeal, making sure that clear distinctions are made between products that do not enjoy the same level of

Table 2: Differences between ETFs (UCITS-compliant) and ETNs

Differences	UCITS Exchange-traded funds	Exchange-traded notes
Structure	• Open-ended funds	• Debt instruments
UCITS compliant	• Yes	• No – distribution through the Prospectus Directive
Diversification rules	• Strict diversification requirements under UCITS Articles 52-56	• No diversification requirement • Product could be exposed to a single asset or currency
Counterparty risk	• Independent custodian / depositary holds the fund's assets. • Counterparty risk arising from OTC derivatives transactions is limited by UCITS to 10% of the NAV of the fund. • Counterparty risk, as a whole, including that arising from other transactions, e.g. securities lending, is limited to 20% through UCITS issuer concentration limits.	• Not regulated • Investor is exposed to the credit risk of the issuer • Secondary market price could be affected by perceptions about the credit quality of the issuer
Collateral rules	• All assets must respect UCITS eligibility rules • CESR guidelines as transposed apply to collateral for OTC derivatives transactions	• Counterparty risk need not be mitigated • Terms of collateralisation arrangements, if any, are at the issuer's discretion

protection should be a priority for financial regulators and international organisations concerned by the promotion of high levels of investor protection and a level-playing field across the investment industry.

By this respect, we find merit in the ESMA (2011) proposal for an identifier to be used in an ETF name, rules, prospectus and marketing material to signal that it is UCITS compliant. From an investor protection standpoint, all UCITS compliant funds should be clearly identified to signal their high level of protection.

Section 5: Leveraged and inverse ETFs

In the recent reports by financial regulators and international organisations discussing the risks of ETFs, leveraged and inverse ETFs have received a considerable amount of attention. Such ETFs are pre-packaged products which make use of short selling, derivatives, and/or other techniques together to try and deliver levered (e.g. 2x), inverse (-1x) or inverse levered (e.g. -2x) return of the underlying index on a short term basis (daily, weekly or monthly return, usually daily) (see insert on "Mechanics of leveraged/inverse ETFs").

Mechanics of leveraged/inverse ETFs

Leveraged and inverse ETFs have gained popularity, as tools for hedging or speculation,[94] but have received a fair share of criticism owing to concerns that they may have potential destabilising effects on their underlying markets and fears that retail investors may misunderstand these funds and assume they promise to deliver a multiple of their underlying index over long-term holding periods.

Let us first look at their potential for destabilising the underlying markets. Leveraged and inverse ETFs promising a multiple of the daily return of their underlying must be re-balanced on a daily basis to make good on this promise. A number of market commentators believe that this re-balancing has at times increased the volatility of the underlying around the close.

The size of the potential impact of re-balancing activity by these funds is proportional to their assets under management,[95] the leverage factor applied, and the daily fluctuation of the underlying. The idea that rebalancing could put pressure on the underlying markets was given a theoretical basis by Cheng and Madhavan (2009), whose model we present below.

If A_{t_n} is the fund's NAV at time t_n, the exposure of the ETF needs to be adjusted on day t_{n+1}. This adjustment, denoted by $\Delta_{t_{n+1}}$, is given as follows

$$\Delta_{t_{n+1}} = A_{t_n}(x^2 - x)r_{t_n,t_{n+1}}$$

where is the multiple of the performance and $r_{t_n,t_{n+1}}$ the return of the underlying index from calendar time t_n to time t_{n+1}.

The above shows that the adjustment factor is non linear and asymmetric: (i) the more highly leveraged the ETF is, the greater the amount it needs to adjust; (ii) the adjustment for inverse leveraged ETFs is larger than that for long leveraged ETFs. For example, if comparing the value of $(x^2 - x)$ at $x = -2$ and $x = 2$, it is apparent that the double inversed ETF will have much higher adjustment than a double leveraged ETF.

94 Limited liability caps losses to investor going long these products to 100%.

95 Counter-intuitively, the re-balancing activity is in the same direction as the change in the underlying index, whether the fund is levered or inverse or inverse levered, which means that hedging demand from inverse and inverse levered funds adds to the hedging demand from levered funds. See Cheng and Madhavan (2009) for a proof.

Cheng and Madhavan (2009) conduct a simulation of the impact of a change in the underlying index on hedging demand from the US equity leveraged and inverse ETF segment. They find that a 1% uniform move across all segments of the US equity market would lead to a 16.8% change in the aggregate hedging demand from these trackers, whereas a 5% move would cause 50% more aggregate hedging demand. It is assumed all the rebalancing activity takes place towards close on the underlying markets to minimise the tracker's uncertainty.

We are not aware of any empirical evidence showing that leveraged or inverse ETFs have played a destabilising role on their underlying markets.[96] Let us now turn to the contention that these products have failed their promises. In 2009, the SEC and FINRA (2009b) issued an alert because they feared that investors may be confused about the performance objectives of these funds and incorrectly form expectations that they may meet their performance objectives over the long term. Leveraged and inverse ETFs are not meant as long-term buy-and-hold instruments and are not meant to deliver a multiple of their underlying beyond their daily/weekly/monthly horizon. Their performance when held beyond the horizon will depend on the volatility of the underlying, leverage, costs and charges, but also the path taken by the underlying (see Cheng and Madhavan, 2009 and Avellaneda and Zhang, 2009).

Empirical results trivially confirm that the "long-term" performance of leveraged and inverse ETFs deviates significantly from the multiple targeted at their normal holding period horizon. They also find (e.g. Murphy and Wright, 2010; Rompotis, 2011) that inverse and leveraged ETFs deliver multiples that are close to the promised multiples when used as intended.

In other words, leveraged and inverse ETFs are effective ways to gain their promised exposure to the underlying assets at the corresponding target horizon but they are not the buy-and-hold products that they never claimed to be.

Inverse and leveraged ETFs have attracted a lot of attention since their launch in 2005. With these ETFs, investors can magnify returns, hedge portfolios and manage risk over short term horizons without the operational hassles of margin investing and shorting. By mid 2011, there were 577 leveraged and inverse exchange traded products in the world with assets under management of USD50bn (to be compared with a global ETP market with 3,987 vehicles and USD1,626bn at the same time) – the 261 (231) such products calling Europe (the United States) home totalled AUM of USD11bn (USD36bn), i.e. 3% (3.3%) of the regional ETP market.[97]

96 Grillet-Aubert and Sow (2010) use an approach based on the Cheng and Madhavan methodology to examine the impact of leveraged and inverse ETFs listed on NYSE Euronext Paris at the end of May 2010 and observe negligible re-balancing flows; they then resort to simulating extreme shocks to demonstrate that the growth of this segment may be a case for concern. Trainor (2010) studies the volatility of the S&P500 and does not find evidence that it has systematically increased due to rebalancing by leveraged ETFs.

97 These figures are taken from, or computed from data available in the last half-yearly report on ETPs provided by BlackRock (2011b).

Section 5: Leveraged and inverse ETFs

As the popularity of leveraged and inverse ETFs grows, concerns arise about their "complexity" for retail investors and their inability to deliver their target multiple in a long-run. However, such concerns are not new. In March 2009, the US-based Financial Industry Regulatory Authority (FINRA) reminded financial advisors of their obligations in connection with these products, in particular to ensure that recommendations be suitable and based on a full understanding of the terms and features of the product recommended. In an August 2009 alert issued with the US Securities and Exchange Commission, FINRA underlined that (daily) inverse and leveraged ETFs were typically "designed to achieve their stated performance objectives on a daily basis" and that investors should not expect them to deliver this performance over the long term as well. In addition, effective December 2009, FINRA also put in place an increased maintenance margin[98] for leveraged ETFs.[99]

FSB reignited the debate on these products with its April 2011 note, in which it described leveraged and inverse ETF as "archetypes" of product innovation extending the ETF "asset class (sic) beyond its initial plain-vanilla standardised nature" and it called for closer scrutiny because: "The complexity and opacity characterising these innovations may leave investors exposed to risks they have not anticipated".

It is surprising to find leveraged and inverse ETFs being criticised because investors might invest in these products on the basis of erroneously formed expectations or because investors may be taking potential risks that they may not have anticipated.

Indeed, ETF providers make it clear in their prospectuses and marketing collaterals that such funds seek to deliver a multiple return of the underlying index over a specified holding horizon, and that these funds are more appropriate to sophisticated investors who understand their mechanics and structure. The idea of magnifying or reversing performance is not at all complex and it is hard to understand what is opaque about the payoffs from such products when held as intended; the fact that their management by the ETF provider may appear more complex than that of other trackers, or that the hedging techniques used by the swap counterparty that promises to deliver the leveraged or inverse return are not immediately transparent does not make these products complex or opaque.

These ETFs (see insert on "Mechanics of leveraged/inverse ETFs") need to rebalance at a frequency directly linked to their normal holding period to maintain their properties. These products are not meant for long term buy-and-hold investment and by construction, their long term performance will diverge from the long term performance of their reference index times their short multiple (as observed in practice

98 Leveraged and inverse ETFs are pre-packaged margin products. When they are first designed the margin requirements for going long on and shorting ETFs must be taken into account.

99 Under the old rules, the maintenance margin for any long ETF was 25% of its market value and the margin for any short ETF was 30% of its market value. These requirements were thus unrelated to the target mulitple. Under the new rules, the margin requirements have increased by a percentage commensurate with the leverage of the ETF e.g. a leveraged ETF which promises a return three times that of the underlying index must maintain a margin equal to 75% of the market value.

by Lu, Wang and Zhang, 2009; Little, 2010; Guedj, Li, and McCann, 2010).[100] Also note that, to the extent that they are UCITS products, these leveraged and inverse ETFs are highly regulated; this also means that UCITS leveraged and inverse ETFs cannot leverage beyond 100% of the net asset value, which is why multiples over two are not available to such funds under UCITS (AFG, 2011), whereas multiples of three are observed in the US. Interestingly, BIS (2011a) remarks that while leveraged and inverse ETFs hold only about 3% of ETF assets, they account for nearly 20% of the turnover in ETF assets; this is consistent with shorter holding periods for these instruments relative to other ETFs.[101]

Providers, regulators, and academics have underlined that leverage and inverse ETFs are not long-term buy-and-hold investment tools, but aim at achieving daily returns that correspond to a targeted multiple of the index they track. Concerns about leveraged and inverse ETFs are linked to the possibility of investors ignoring the information that they have received from the ETF providers and mistaking these short-term trading and hedging tools for long-term buy-and-hold products. One should not confuse this with issues of operational risk. The limits of inverse and leveraged ETFs have been widely discussed, and there is a wide consensus as to when they are suitable and how they should be used. Singling out these instruments in a discussion about the operational risks of ETF structures has the potential to be misleading.

We also think it is misguided to term these products complex or opaque when their payoffs at the prescribed investment horizon are straightforward i.e. a multiple of the tracked index. We consider that a product should not be classified as complex or opaque because of the investment techniques or financial instrument it uses. In any case, the terms complexity and opacity should be given precise definitions by the competent authorities so that an informed debate can take place and to promote consistency and predictability of regulation. Should additional disclosures be required to warn investors about the dangers of leveraging, these could be included in the fund's prospectus, KIID and marketing material. Should restrictions on retail distribution be contemplated in the European Union, the suitability and appropriateness tests provided for by MiFID would be the right way to implement limitations. Against the backdrop of the proposed revision to MiFID, it would be consistent to exclude leveraged ETFs of the list of instruments available through execution-only distribution, since the provision of traditional leverage via ancillary services is prohibited in this context. However, rather than distribution restriction, we are in favour of better disclosure. In this context we find perfectly reasonable the policy orientations outlined by ESMA requiring disclosure of the leverage policy, how it is achieved and the risks associated with it as well as a *caveat* on holding these products over the medium to long term and the costs involved. For consistency, we

100 If an investor wants to use these products to achieve a multiple of the reference index over the long term, then frequent rebalancing of the allocation to these products will be required. Such a sophisticated investor will probably find that replicating the targeted exposure directly through derivatives, margin trading and short selling may be more cost effective.

101 While ETFs can be excellent buy-and-hold instruments, they can also be used for short-term exposure and hedging and there is heavy trading in ETFs relative to the number of outstanding shares, which results in short average holding periods, literally few days for the most popular ETFs.

consider these higher levels of disclosure about leverage should apply to at least all UCITS.

Last but not least, the contention that the intense rebalancing activity of this small segment of the ETF market has significantly added to the end-of-the-day volatility in their underlying markets is not borne out by currently available empirical evidence.

Section 6: Systemic risk implications of ETFs and impact of ETFs on their underlying markets

Sections 2 to 5 have discussed some of the main concerns about the risks of ETFs that have been voiced recently. In assessing the different risk exposures, we primarily took the perspective of the investor, which means that the focus was not to assess whether such risks could have an effect on the underlying markets or the financial system as a whole. In this section, the discussion will focus on the possibility that the growth of ETFs may adversely impact underlying markets and the potential systemic risk posed by ETFs and their activities.

Systemic risk refers to the possibility of an ETF specific crisis spilling over to the wider financial system. The key concerns that have been voiced are based on: (i) the assumption that parties to collateralised transactions post hard-to-fund illiquid assets as collateral and that massive ETF redemptions could cause a funding liquidity shock to these swap or securities lending counterparties (FSB, 2011 and BIS, 2011a); (ii) the idea that concerns about collateral composition could trigger a run on ETFs in periods of heightened counterparty risk (BIS, 2011a); (iii) the idea that large scale ETF redemptions could create a squeeze on the underlying market as ETFs recall on-loan securities (FSB, 2011); (iv) the idea that increased complexity might result in an overestimation of market liquidity by investors and that subsequent downward revisions could wreak havoc on the financial system (BIS, 2011a); (v) the idea that because index replication is not the core business of investment banking, swap counterparties co-mingle "tracking error risk with the trading book risk" in a way that "could compromise risk management" (BIS, 2011a); (vi) the idea the use of ETFs as collateral in "a chain of securities lending and rehypothecation may create operational risks and contribute to the build up of leverage" (FSB, 2011).

The above concerns, some of which have been presented in as many words, are most often vague, highly tentative and hardly ever based on facts. We have discussed points (i)-(iii) above in previous sections. With respect to the possible overestimation of the liquidity of ETFs, we have mentioned earlier that the true liquidity of an ETF ultimately depends on the liquidity of the underlying; we are not aware of stumbling blocks that would prevent the industry from providing the competent authorities with the disclosures it would require for monitoring the risks it is concerned about. As to the suggestion that investment banks cannot properly hedge swaps on indices is downright puzzling and would need to be substantiated. With respect to the use of shares in ETFs as collateral and their possible rehypothecation, we understand that the mention arises because the practice is not possible with units of mutual funds but trust this question should be addressed in the wider context of the regulation of securities lending.

When discussing the systemic importance of the ETF industry, it is useful to compare its size to that of the overall fund management industry and to that of the markets for OTC derivatives and securities lending.

In Europe, the AUM of ETFs represented 2.7% of the overall fund management industry at the end of the first half of 2011, and only 3% of these belonged to leveraged and inverse ETFs (in other words, this segment represented less than 0.1% of the overall fund management industry in Europe).[102]

102 Computed from industry figures provided in BlackRock (2011b) and EFAMA (2011).

A similar picture arises from the comparison of the AUM of synthetic ETFs with the size of the swap markets. According to BIS (2011d) data, the notional amount of equity-linked OTC derivatives outstanding at the end of the first half of 2011was USD6,841bn, about the same as the volume outstanding on exchanges (USD6,426), and almost 1% of the overall OTC derivatives market. The outstanding notional on OTC futures and swaps was USD2,029bn. Assets under management by synthetic and hybrid replication ETFs then totalled USD191.1bn across all asset classes[103] i.e., 9.4% of the outstanding notional amount of equity OTC futures and swaps and 2.8% (1.4%) of the outstanding volume of OTC (and exchange-listed) equity derivatives.[104] According to Data Explorers, there is currently USD1.8 trillion worth of global securities on loan, including USD734bn of equities (Hampson, 2011) and, at the end of September 2011, global ETFs had USD41bn on loan across all asset classes but there was little going on (USD2.5bn) outside of the United States with European ETFs lending only USD1.9bn worth of securities (Dataexplorers, 2011). This is to be compared against AUM of USD1,245.6bn in the global ETF industry and USD267.4bn in the European ETF industry. At the end of the third quarter of 2011, ETFs had 3.3% of their assets on loan globally and 0.7% in Europe,[105] and their operations represented 2.3% of the current volume of assets on loan.[106]

Given the above orders of magnitude, it is doubtful that the realisation of risks *specific* to ETFs could threaten financial stability. This should not be interpreted as meaning that OTC derivatives and securities lending operations do not have relevance for systemic risk assessment – clearly, these increase the connectedness of financial institutions with one another and improved disclosure about counterparties and exposures would be useful for modelling systemic risk and assessing it at multiple levels. This should not be misconstrued either as meaning that the ETF market should benefit from particular exemptions when it comes to systemic surveillance – it is important that risk be assessed across all markets in which institutions deal and that risk accumulation in certain product or economic markets be kept at acceptable levels.

Systemic risk can arise due to exposure to common market risk factors across financial institutions (often referred to as correlation) but also through contagion via counterparty risk or liquidity shocks. Systemic risk involves risk that arises from the structure of the financial system, including the number of institutions, their characteristics (size, health, etc.), their degree of homogeneity, their interactions with one another, etc. Thus size matters, but ruling out the systemic importance of an institution or a market just because of its size would be dangerous.

The recent financial crisis has underlined the importance of contagion effects in systemic risk. It has also highlighted the lack of appropriate metrics–both at the system and the institution level–and data to correctly monitor systemic risk and contagion; efforts by academics, regulators and practitioners to shift from lamenting the uncertainty of the financial system to defining and measuring systemic risk are to be lauded.

103 The ETF market is roughly 80% equity-linked.

104 BlackRock (2011b), Figure 149.

105 In Europe, 41% of the AUM in the ETF industry are managed by providers relying on synthetic or hybrid replication (BlackRock, 2011b) and these, with only exception, do not currently engage in securities lending.

106 Computed from statistics provided in BIS (2011b).

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The size of an institution is not sufficient to assess its systemic importance and attention must be paid to its connectedness to other institutions in the context of network of such connections across all institutions (for a review of the extant literature, see Upper, 2011 and for new metrics, see Cont, Moussa, and Bastos e Santos, 2010.)

While small, the ETF market is highly concentrated; it would make sense to study how the failure of a dominant firm would disrupt the market and what would be the spill over effects so as to improve risk mitigation mechanisms if need be.

As things stand and as mentioned at different points within the paper, the bulk of the European ETFs is regulated by the esteemed UCITS directives. The requirements and constraints of UCITS are the same to all UCITS funds, whether listed or not (see insert "Are the rules applied to UCITS ETFs less stringent than those applied to other UCITS?"). ETFs are not special entities distinct from other UCITS, they are wrappers for UCITS funds that need to comply with additional listing rules set by exchanges. When UCITS regulated funds (including ETFs) use derivatives, they do so within a precise regulatory framework and comply with clear rules which have been approved by market regulators. While securities lending operations do not enjoy the same level of scrutiny, this is not specific to UCITS.

Are the rules applied to UCITS ETFs less stringent than those applied to other UCITS?

The answer to this question is "No". All requirements and constraints that apply to UCITS also apply to UCITS ETFs. We have summarised the relevant rules on the potential risk exposure in Table 3. For instance, UCITS requires that the exposure to any individual counterparty for an OTC derivative contract be limited to 10% if the counterparty is a credit institution. In addition, the collateral backing OTC derivative contracts is subject to liquidity and credit risk criteria defined by CESR guidelines as transposed in Member State law. To respect these rules at all times, UCITS managers (including ETF providers) usually implement stricter requirements.

Furthermore, ETFs are exchange-traded and regulated markets in Europe need to comply with the provisions of MiFID; funds seeking an exchange listing need to comply with the rules set by the exchange, which can go beyond the minimum requirements of UCITS and MiFD (e.g. to comply with additional Member State level rules). For instance, the leading venue for listing ETFs, NYSE Euronext, requires that at least one liquidity provision agreement exists. The liquidity provider undertakes to quote two-way bid and offer prices with a minimum volume size or capital amount and within a minimum price range or spread. The ETF issuer is also required to calculate and disseminate to global data vendors the indicative NAV of each of its ETFs.

Table 3: Comparison of rules applied to UCITS ETFs and other UCITS funds

	UCITS Exchange-traded funds	Other UCITS funds
Applicable UCITS rules: these rules apply to ETFs but also to all other UCITS funds		
Derivatives	• Financial derivative instruments dealt in on a regulated market or over-the-counter (subject to asset and counterparty eligibility, daily valuation and liquidity).	
Counterparty rules	• The risk exposure to a counterparty of the UCITS in an OTC derivative transaction should not exceed either 10% of its assets when the counterparty is a credit institution or 5% of its assets, in other cases. • Overall counterparty risk, including that arising from other transactions, e.g. securities lending, is limited to 20% via UCITS issuer concentration limits and may be further restricted at the Member State level.	

Collateral rules	• The collateral used to reduce counterparty risk exposure in the context of an OTC derivative transaction must satisfy a set of high-level principles defined by CESR guidelines as transposed in Member State Law.
	• Among the CESR guidelines for collateral, one can highlight the following rules:
	  • Liquidity of collateral: The collateral "must be sufficiently liquid" and "valued on a daily basis".
	  • Credit quality of collateral: if a less than 'very high grade' credit rating, haircuts may be used. Haircuts can also be used to deal with volatility of collateral.
	  • Use of collateral: non-cash collateral cannot be sold, pledged or re-invested; cash collateral can only be invested in risk-free assets.	

Diversification rules	• Individual limits: a UCITS shall invest no more than 5 % of its assets in transferable securities or money market instruments issued by the same body with the same issuer, or 20% in the case of deposits. • Issuer limits: a UCITS shall not investment more than 20 % of its assets in a single body via transferable securities, money market instruments, deposits or exposures arising from OTC derivative transactions undertaken with that body. • Exceptions to the above apply in the context master-feeder agreements.	
Disclosure requirements	• For each UCITS, the management company shall publish a prospectus, an annual report for each financial year and a half-year report to cover the first six months of the year. • Member States can require the UCITS to publish a self-contained short document containing key information for investors (UCITS identification; description of investment objectives and policy, past-performance or performance scenarios; ccosts and associated charges; and risk/reward profile, including appropriate guidance and warnings in relation to the risks associated with the investment).	

	UCITS Exchange-traded funds	Other UCITS funds
Applicable listing rules to be listed on exchange e.g. NYSE Euronext		
Market maker	• For the listing of ETFs there must be at least one liquidity provider. • The market maker must display continuous bid and ask prices for a minimum quantity and a maximum spread defined by the exchange.	• Not applicable for UCITS funds not traded on an exchange.
Size of issue	• At the time of admission, the expected market capitalization of the ETF must amount to at least EUR5 million, and at least 25% of the issued capital must be distributed to the public.	• Not applicable for UCITS funds not traded on an exchange.
Disclosure requirements	• In the case of ETFs, the disclosure conditions set for admission to listing have to be met on a continuous basis. • ETFs must be able to compute and need to publish an indicative Net Asset Value throughout the day.	• Not applicable for UCITS funds that are not traded on exchange.

The recent reports on the risks of ETFs, particularly on the topic of systemic risk, contain multiple instances of speculative remarks on liquidity spirals and contagion effects, which are not backed by any theoretical framework or empirical evidence. Higher standards should be expected from international and domestic regulators and any discussion on the systemic risks posed by ETFs should have a sound theoretical base and be backed with empirical evidence.

As to the impact of ETFs on their underlying markets, there is a large body of academic research that exists, and the question of the impact of securities lending has also received attention.

Multiple studies have documented the beneficial role of securities lending on market liquidity, cost of trading and price efficiency. Securities lending facilitates market-making, trade settlement and short-selling.

The bulk of the studies on the theoretical impact of short-selling concludes that *restrictions* on short-selling negatively impact the underlying market either by restricting the participation of optimists (see *inter alia* Miller, 1977) or decreasing the informational content in stock prices (see Diamond and Verrecchia, 1987; Chen, Hong, and Stein, 2002; Bai, Chang, and Wang, 2006). Depending on further hypotheses, this can translate into overpricing followed by reversals (see *inter alia* Miller, 1977 and Chen, Hong, and Stein, 2002 as well as Chen and Stein, 2003 for a link to bubble formation and market crashes) and/or higher volatility (e.g. Bai, Chang, and Wang, 2006).

Empirically, short selling is found to improve price efficiency (Bris, Goetzmann, and Zhu, 2007; Boehmer, Jones, and Zhang, 2008; Boehmer and Wu, 2010) and constraints are found to negatively impact market quality (*inter alia* Chen, Hong, and Stein, 2002 as well as Jones and Lamont, 2002 find that high costs of short-selling or restrictions lead to subsequent stock underperformance; Boehmer, Jones, and Zhang, 2009 show that short-selling bans imposed after 2008 have degraded the market quality for the stocks affected (spreads, price impacts, and intraday volatility) and Lioui, 2011 links these bans with increased index volatility). Saffi and Sigurdsson (2011) study 12,600 stocks from 26 countries between 2005 and 2008 and find a negative relationship between short-sale constraints and stock price efficiency at a stock level all over the world and observe that equity lending supply is an important driver of differences in price efficiency: a higher supply reduces occurrences of extreme price increases but is not linked with extreme price decreases (in contrast to the evidence in Bris, Goetzmann, and Zhu, 2007 who found that short selling could potentially facilitate severe price declines), and they also find that a lower supply and higher loan fees are associated with greater downside risk and total volatility. A recent market experience by Kaplan, Moskowitz, and Sensoy (2011) indicates no adverse effects on stock from securities lending. Altogether, there is a strong academic consensus that securities lending improves market efficiency and no empirical basis for the view that it could destabilise price, quite to the contrary.

More specifically on ETFs, a vast body of academic research has looked at their influence on the price efficiency in the index spot-futures market. Hasbrouck (2003) and Tse *et al.* (2006) show a clear price leadership of the ETF market over the spot market, which suggests that ETFs process information faster than the spot market and contribute to price discovery. Furthermore, there is evidence (Hegde and McDermott, 2004; Madura and Richie, 2007) from the Diamonds and the QQQ funds suggesting that the liquidity of the underlying index market *increased* after ETFs were introduced because of a decline in the cost of informed trading. Deville *et al.* (2009) find that the introduction of ETFs indirectly improves spot-future price linkage by enhancing the liquidity of the underlying stocks. Ackert and Tian (2001), Kurov and Lasser (2002), Deville (2005), Deville and Riva (2007) show that the introduction of ETFs significantly improved price efficiency in the index spot-futures market.

Recent reports by regulators and international organisations concerned with financial stability have trumped up the systemic risks of ETFs. On closer inspection, the case is woven from broad brush parallels and dubious assumptions and there is little in the way of a sound theoretical framework, let alone supporting empirical evidence.

The assets controlled by ETFs are but a sliver of the assets under management in the fund management industry. They are dwarfed by the capitalisation of listed equity, by the notional amount of equity futures and swaps, and their securities lending activities are marginal in comparison to the size of this industry. In this context, it is doubtful that risks specific to ETFs could cause major disruptions to these market segments.

US ETFs and European UCITS ETFs are not less regulated than Mutual Funds and other UCITS, and the tools that index-tracking

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ETFs use to implement their strategies are also available to other funds and products. We thus see no reason to single out these highly-regulated vehicles and attach stigma to their activities.

This notwithstanding and to the extent that securities lending and OTC derivatives transactions, while typically collateralised, increase the connectedness of financial institutions with one another, we believe that improved disclosure about counterparties, exposures, and risk mitigation would be useful to improve the monitoring of systemic risk. However, we suggest such disclosures be implemented in a horizontal rather than piecemeal way.

With respect to the fears that the development of ETFs may have hurt the underlying markets, we find that a rich theoretical and empirical literature points in the opposite direction.

Conclusion

In any competitive field, it is fair practice to try and convince clients of the superiority of one's products. As far as savings and investment products go, superiority cannot be assessed solely by considering raw performance as risk must be taken into account. Since 2007, investors have become increasingly sensitive to risk considerations when making investment decisions. Today's perception of fund risks goes beyond the purely financial risk-return aspects and encompasses operational issues in a broad sense, notably the risk of default by a counterparty relied upon to implement the fund's policy and generate its risk-return profile.

Against this backdrop, a number of providers looking to strengthen their competitive edge on the fast growing and profitable ETF market have "informed" investors and regulators of the counterparty risk arising from the use of OTC derivatives by funds implementing synthetic replication. The same have emphasised the distinction between unfunded and funded swaps suggesting that the latter offered better protection against counterparty risk.

As far as counterparty risk is concerned, it makes little sense to oppose physical replication and synthetic replication products on the one hand, or draw a fine line between unfunded and funded swaps on the other. Both distinctions are largely irrelevant in practice and convey a false sense of "comparative" safety. First, any UCITS can take on more unmitigated counterparty risk through securities lending than via OTC derivatives and physical replication ETFs, unlike their synthetic counterparts, routinely engage in securities lending. Second, UCITS limit counterparty risk from all OTC derivatives transactions; the distinction between funded and unfunded swaps does not exist in the UCITS Directives but arises from the interpretation of CESR guidelines. Since those require transposition by each individual country, distinctions between funded and unfunded swaps need to be based on a country-by-country analysis.

These false distinctions may lead investors to pay less attention to first order issues that determine the effective mitigation of counterparty risk: the quality of the assets performing the economic role of collateral and the ability of the fund to enforce its rights against collateral in the case of default by the counterparty.

Interestingly on these two counts, there is little in the way of European guidelines governing the taking of collateral to mitigate the risk from securities lending and specialists recommend the use of robust standard master agreements to deal with the legal risks arising from the activity.

On the basis of the above, we consider that the massive marketing and media relations campaigns implemented by some ETF providers in an effort to promote counterparty-risk based distinctions between physical and synthetic replication ETFs are misleading.

In this context, one can only hope that regulators, notably ESMA will avoid condoning such false distinctions and steer clear of creating artificial distinctions between ETFs or promoting communication about alleged differences between ETFs that is not based on relevant risk characteristics.

A large body of academic literature has underlined the importance of taking the right regulatory approach to minimise the risk of adverse selection, and more broadly of free-rider problems, which lead

investors to place under trust in rules that falsely appear to protect them. EDHEC-Risk Institute considers that to optimise its intervention, the regulator should ensure that the rules it sets are parsimonious and effective.

With respect to parsimony, we consider it key that the regulator avoids creating categories or condoning communication that would be based on of portfolio management techniques rather than economic differences; such distinctions would promote a false sense of protection.

With respect to effectiveness, we consider it central that the issue of transparency be addressed through clear guidelines on counterparty risk mitigation up to the quality, marketability and diversification assets performing the economic role of collateral and that these apply irrespective of the manner in which counterparty risk is assumed.

For the sake of avoiding ambiguity and erroneous risk assessments, such transparency rules should apply horizontally, that is, to all investment products, whether UCITS or not, marketed in Europe rather than to UCITS ETFs only.

Last but not least, the regulator should be aware that its publicised concerns, information requests, and consultations are also a message sent to investors. By directing their thoughts and attention to the regulatory improvement of counterparty risk mitigation in ETFs or the possible systemic implications of the OTC derivatives and securities lending transactions of ETFs, we believe regulators have overlooked a first-order issue i.e. the comparability of performance amongst ETFs. First, we consider it key that investors be provided with information on the total return generated through the risks assumed on their behalf by funds, including the monetary benefits of securities lending operations. Second, we regard as essential that indexing vehicles be required to disclose tracking error targets and results. It is indeed startling to realise that while index funds have grown on the back of passive management, there is no standardised measure or mandated disclosure of the quality of index replication at the European level.

In the same spirit, we consider that it is critical that regulators give a legal definition of what constitutes an index and decide on the transparency and auditability requirements of indexes... which after all remain the main drivers of the financial risks assumed by ETFs.

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