

**Potential financial stability issues arising from recent trends in
Exchange-Traded Funds (ETFs)**

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Potential financial stability issues arising from recent trends in Exchange-Traded Funds (ETFs)

Introduction

As part of its mandate, the Financial Stability Board (FSB) monitors market developments and advises on their implications for regulatory policy¹. In doing so, it seeks to identify potential vulnerabilities and the actions that may be needed to address them. The recent rapid growth and innovation in the market for Exchange Traded Funds (ETFs) is a development that the FSB believes warrants increased attention by regulatory and supervisory authorities, as well as by the ETF industry, including providers, market-makers and investors. This note highlights a number of recent developments that call for such attention.

ETFs were created in the early nineties, initially as a plain-vanilla equity product, and provide investors with the flexibility and cost-efficiency of exchange-traded products, together with the diversification benefits of mutual funds. Although most of the ETF market remains plain-vanilla, there has been an increase in product variety and, in some cases, complexity, albeit with some differences across regions and markets.

While the growth in ETF markets is at an early stage in a number of countries, the speed and breadth of financial innovation in the ETF market has been remarkable in some large financial systems over the past five years, and has brought new elements of complexity and opacity into this standardised market. There are a number of disquieting developments in some market segments which call for closer scrutiny. ETFs have branched out to other asset classes (fixed-income, credit, emerging markets, commodities) where liquidity is typically thinner and transparency lower. The increased popularity of “synthetic” ETFs (which use derivatives) as well as the more intensive recourse to securities lending by ETF providers of plain-vanilla ETFs raises new challenges in terms of counterparty and collateral risks. In addition, the expectation of on-demand liquidity may create the conditions for acute redemption pressures on certain types of ETFs in situations of market stress, which could in turn affect the liquidity of the large asset managers and banks active in this market.

Therefore, the drivers and implications of the recent wave of financial innovation in ETF markets warrants closer surveillance of potential vulnerabilities by financial stability authorities to ensure that the market grows in a sustainable and safe way.

1. ETFs: a fast-growing market, underpinned by strong innovation

ETFs are investment vehicles that track an index (e.g. S&P 500), trade continuously on exchanges—in contrast with traditional mutual funds which are valued only once a day—and are redeemable daily. Thus, their main advantage is to combine the low-cost diversification benefits of index-linked and basket products with the high liquidity and tradability of individual stocks. In normal times, plain-vanilla ETFs can also offer an additional source of liquidity for the underlying markets in which they trade.

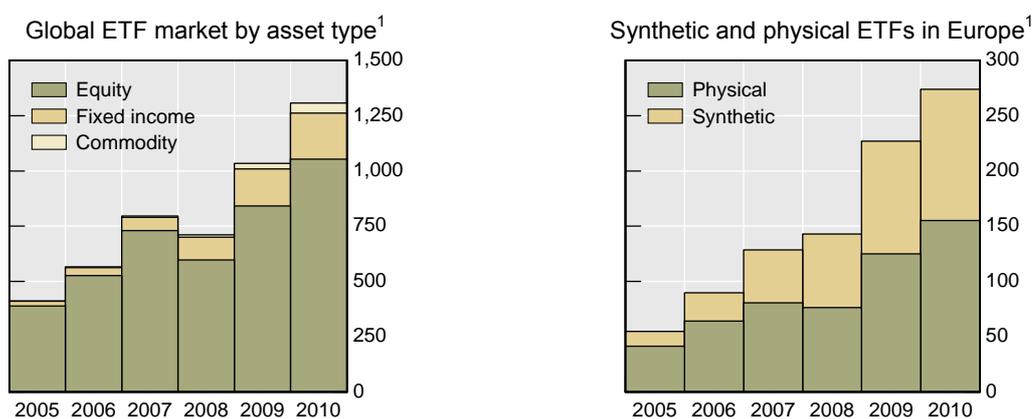
¹ FSB Charter, available on http://www.financialstabilityboard.org/publications/r_090925d.pdf

At the end of Q3 2010, the global ETF industry had \$1.2 trillion in assets under management, 85% in plain-vanilla ETFs referenced to equity indices (Graph 1), which is equivalent to 5% of global mutual fund assets and 2% of global equity market capitalisation. The industry has grown at an average of 40% a year over the past 10 years, which dwarfs the growth rate of both global mutual funds and equity markets (around 5% a year). Most ETFs are listed on US and European exchanges, but they provide exposure to a much more diverse range of markets (e.g., two of the three largest ETFs worldwide track emerging market indices).

Over time, the ETF market has grown in size, complexity and diversity (Graph 1 shows the dynamics and relative importance of different asset classes and characteristics). There are broadly speaking two main structures for ETFs. Physical ETFs are “plain-vanilla” products that replicate the index by simply reconstituting the basket of physical securities underlying the index (e.g. the basket of S&P 500 stocks) with appropriate weights². They are the dominant form of ETF, especially in the US and are mainly provided by large independent asset managers. Synthetic ETFs obtain the desired return through entering into an asset swap, i.e. an OTC derivative, with a counterparty, instead of replicating the index physically (see section 2). They have developed very rapidly in Europe to reach 45% of that market (Graph 1), and are also growing in some Asian markets. They are typically provided by asset management arms of banks. One factor supporting their growth resides in the synergies created within banking groups if the derivative trading desk acts as swap counterparty to the asset management arm providing the ETF. Another factor is the more liberal stance of European regulation on the use of derivatives in investment funds, while the US regulator has adopted a more conservative approach, limiting de facto the development of synthetic ETFs³. While institutional investors are dominant in European ETFs, the investor base for US ETFs is evenly balanced between retail and institutional investors.

Graph 1

The ETF market: main characteristics and recent trends



¹ Assets Under Management, in billions of US dollars.

Sources: Blackrock; Bloomberg.

² To limit transaction costs due to the rebalancing of index components, physical ETFs generally hold a sample of the securities composing the index rather than the full basket. The resulting basis risks related to the physical ETFs’ index tracking quality are generally managed from the revenues that the ETF derives from securities lending.

³ In Europe, ETFs are covered under [UCITS III regulation](#) which allows the use of derivatives within certain limits not only for hedging purposes but for investment purposes as well. In the US, the SEC [announced](#) in March 2010 that it is conducting a review to evaluate the use of derivatives by ETFs, and has therefore deferred consideration of new and pending requests for authorisation of ETFs that would make significant investments in derivatives.

2. Potential financial stability risks in some corners of the ETF market

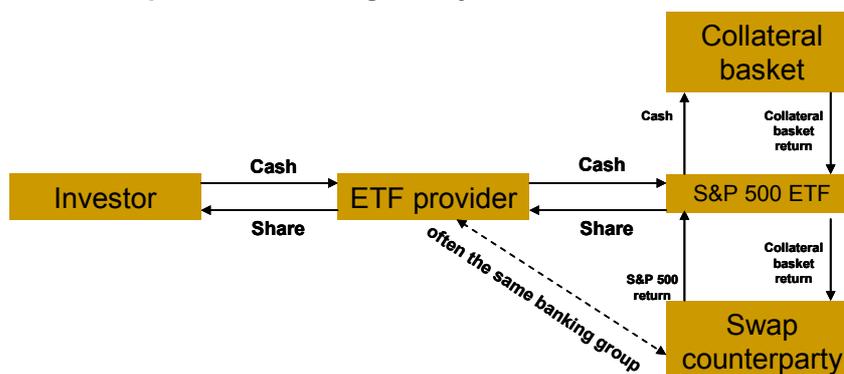
While ETFs bring a number of benefits to investors and market participants, including cost efficiency, diversification and easier access to specific asset classes or risk exposures, they may also generate new types of risks, linked to the complexity and relative opacity of the newest breed of ETFs. The impact of such innovations on market liquidity and on financial institutions servicing the management of the fund is not yet fully understood by market participants, especially during episodes of acute market stress.

Increase in complexity and opacity; Synthetic ETFs

Product innovation has recently flourished in the ETF market, as well as in the market for close substitutes of ETFs such as ETNs or ETVs, which are essentially debt products (while ETFs are funds⁴), extending the asset class beyond its initial plain-vanilla standardised nature. Some new products are archetypes of this trend (leveraged ETFs, inverse ETFs, and leveraged-inverse ETFs⁵), although as yet they represent only a tiny fraction of the market, around 3% of total. The first ETF of speculative grade corporate loans was also recently launched. The complexity and opacity characterising these innovations warrants closer surveillance as it may leave investors exposed to risks they have not anticipated.

Among recent innovations, a specific trend warranting closer scrutiny is the recent acceleration in the growth of synthetic ETFs on some European and Asian markets. In this type of ETF, the provider (typically a bank's asset management arm) sells ETF shares to investors in exchange for cash, which is then invested in a collateral basket, the return of which is swapped by the derivatives desk of the same bank for the return of an index (e.g. S&P 500, see Diagram 1).

Diagram 1
Simplified functioning of a synthetic ETF on the S&P 500



⁴ Exchange-traded notes (ETNs) are listed debt products issued by financial institutions. ETNs may be very similar to ETFs in a number of respects, but are not subject to fund requirements such as diversification rules. Exchange-traded vehicles (ETVs) are debt securities similar to ETNs but issued by SPVs, and thus entailing more counterparty risk. ETFs, ETNs and ETVs are generally designated as exchange-traded products (ETPs).

⁵ Leveraged ETFs aim to deliver a magnified performance of a particular index, while inverse (or short) ETFs track the opposite performance of an index. Leveraged-inverse ETFs are a combination of both. The most popular leveraged ETFs provide exposures of +/- 2x or 3x the daily returns of an index.

Since the swap counterparty is typically the bank also acting as ETF provider, investors may be exposed if the bank defaults⁶. Therefore, problems at those banks that are most active in swap-based ETFs may constitute a powerful source of contagion and systemic risk.

In addition, the incentives behind the creation of synthetic ETFs may not be aligned along the ETF chain, especially as conflicts of interest can arise from the dual role of some banks as ETF provider and derivative counterparty⁷. As there is no requirement for the collateral composition to match the assets of the tracked index⁸, the synthetic ETF creation process may be driven by the possibility for the bank to raise funding against an illiquid portfolio that cannot otherwise be financed in the repo market. For instance, in diagram 1, the collateral basket for a S&P 500 synthetic ETF could be less liquid equities or low or unrated corporate bonds in an unrelated market. In case of unexpected liquidity demand from ETF investors, the provider might face difficulties liquidating the collateral and may be faced with the difficult choice of either suspending redemptions or maintaining them and facing a liquidity shortfall at the bank level. In short, risks increase if the bank considers the synthetic ETF structure as a stable and inexpensive source of funding for illiquid securities. ETF investors may not always have sufficient control over collateral arrangements to enable them to prevent such a situation.

More broadly, investors in synthetic ETFs need to exercise an adequate level of scrutiny and due diligence on collateral selection and arrangements, which in turn depends on the level of transparency made available by ETF providers. Important considerations relate to the rules for selecting the collateral, the screening of its credit quality and its liquidity, valuation practices and haircut determination, and segregation of assets. The existence of regulatory or other limits regarding the derivative exposure would also help contain the risks mentioned above.

Risks for market liquidity; Incentives for securities lending

While benefiting formally from market making arrangements, ETFs may nevertheless experience liquidity disruptions. In principle, ETFs offer on-demand liquidity to investors while they are in some cases based on much less liquid underlying assets. Therefore, in the event of a market sell-off or an unwind in any particular ETF, there is a risk that investors massively demand redemption. Depending on the specific ETF arrangements, redemptions could be made “in-kind” which would alleviate liquidity pressures. However, were redemptions to be made in cash, this could raise issues as to the exit strategies and liquidity risk of ETF providers and swap counterparties. Further study would also be useful for assessing the potential impact of heavy ETF trading on the liquidity and the price dynamics of the referenced securities, particularly if they do not have an active secondary market (e.g. emerging market ETFs).

In the same vein, thin margins on plain-vanilla physical ETFs create incentives for providers to engage in extensive securities lending in order to boost returns. Some ETF providers are said to generate more fee income from securities lending than from their traditional

⁶ Some ETFs give investors the option of selecting a group of banks as swap counterparties instead of a single institution, but given the high level of interconnectedness among major banks, investors would remain exposed to episodes of generalised increase in counterparty risk.

⁷ Other types of conflicts of interest can arise in non-synthetic ETFs as well, for instance if the ETF provider is also involved in the design and/or calculation of the reference index, or also acts as liquidity provider on the secondary market of the ETF.

⁸ Under European UCITS III regulation, the collateral may be selected among OECD equities or bonds.

management fees. Since securities lending is a bilateral collateralised operation, it may create similar counterparty and collateral risks to synthetic ETFs. In addition, it could make the liquidity position of the ETF fragile, by challenging the ability of ETF providers to meet unexpected liquidity demands from investors, particularly if outflows from ETFs become significant under severe stress. A prevalence of securities lending could create a risk of a market squeeze in the underlying securities if ETF providers recalled on-loan securities on a large scale in order to meet redemptions. In addition, the use of ETFs as collateral in a long chain of secured lending and rehypothecation may create operational risks and contribute to the build up of leverage. In this regard, it is worth noting that some jurisdictions impose reporting and disclosure requirements (e.g. on-exchange registration) on securities lending that would contribute to lower risks.

3. Risk implications for authorities, ETF investors and providers

The very strong growth of collateralised structured operations in the context of synthetic ETFs and ETF-based securities lending suggests that there are significant benefits for authorities and ETF market participants alike in improving their understanding of the risks attached, and the ways in which they can be mitigated. The current protracted period of low interest rates provides incentives for re-leveraging in non-standard market segments, which may lead to a build up of financial vulnerabilities, especially as the process of financial repair is not complete. Potential destabilising interactions with other financial innovations (e.g., high-frequency trading⁹) that could amplify negative effects also require attention.

Market and banking supervisors and regulators are in the process of stepping up their monitoring of the ETF market. Work is underway nationally and internationally on assessing how recent innovations in this area can add to financial system risks, what incentives underpin them, and what potential flaws there might be in current risk practices. The interaction of ETF regulatory frameworks with recent innovations as well as the scope for regulatory arbitrage across regions and markets is also being examined. Imposing higher disclosure and reporting requirements as well as regulatory and other limits could help to alleviate the risks emerging in complex instruments, and prevent the emergence of conflicts of interest.

In view of the new challenges raised by recent trends on ETF markets, ETF providers and investors should review the risk management strategies of ETFs, especially in areas such as counterparty risk and collateral management, as well as assessing their exposure to market and funding liquidity risks. Furthermore, ETF providers should consider enhancing the level of transparency they offer to investors on the entire range of ETF products, especially the more complex ones. In particular, they should make publicly available detailed frequent information about product composition and risk characteristics, including on collateral baskets and arrangements for synthetic ETFs and securities lending, to enable investors to exercise their due diligence and promote a better understanding of the ETF market at large.

⁹ See report of the staffs of the CFTC and SEC on “Findings regarding the market events of May 6, 2010”.