

ETF Liquidity, Securities Finance and Collateral Management

Maximising the role of European Exchange Traded Funds

This white paper examines the key issues involved with secondary market liquidity of European ETFs with a specific focus on the role and usage of ETFs in securities lending and collateral transactions. It identifies issues and makes a series of recommendations for change at both an individual firm level as well as for the industry as a whole.

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Who should be interested in this paper and why?

Increased use of European ETFs across the securities finance spectrum would have benefits for the following interested parties:

ETF Investors

- Higher fees from increased lending of ETF shares
- Risk reduction through the appropriate use of ETFs as collateral
- Reduced buying/selling spreads when trading ETFs

Market Makers and Traders

- Improved funding costs for long positions
- Enhanced ability to short ETFs
- Greater trading volume

Hedge Funds

- Better ability to take short positions
- Reduced funding costs for long positions

Prime Brokers

- More lending to ETFs to cover shorts
- Improved funding access and rates

Agent Lenders

- New asset class for lending – and one that is growing
- Risk reduction through the use of ETFs as collateral where suitable
- Higher fees for agents and clients in a difficult market environment focused on intrinsic value lending

Cash Repo Lenders

- New asset class with considerable high quality collateral positions

Triparty providers

- Higher fees through the wider acceptance of a large and growing collateral pool

Exchanges

- Increased trading volumes on both the long and short side help drive spreads lower and encourage trading
- Significant increase in hedge fund participation stimulating further increased participation by institutional and retail investors

Acknowledgements

The idea for a white paper that addresses exchange traded funds and securities finance on a holistic basis has been with the authors for a number of years. As we took the idea to the wider community we were pleased with universal recognition that such a paper was needed and would be welcomed by the industry. The development of the paper benefited from the input and support provided by all those individuals and firms who contributed their time and effort in interviews, completing the survey and reviewing our material. Foremost amongst this group are our sponsors, without whose support it would not have been possible to produce the paper. While the white paper has benefited greatly from their guidance, the opinions, commentary and recommendations it contains are solely those of the authors and may not necessarily reflect the views of the sponsors.

Introduction

From modest beginnings in 2000, Exchange Traded Funds (ETFs) listed in Europe have developed into a significant element of the European fund management industry. At June 30, 2012, 39 issuers listed 1,304 ETFs with assets under management (AUM) of €215 billion.

ETFs can be considered one of the more successful innovations in fund management over the last decade, combining the diversification characteristics of open-ended fund structures with the trading access and flexibility of listed securities. The hybrid nature of ETFs (effectively a listed trading wrapper for open-ended funds) means that ETFs display some unique characteristics and are not always identical to listed securities. These unique characteristics (both real and perceived) impact the role of ETFs in securities finance.

The interactions between ETF investment and trading and securities finance/collateral management are complex and not always fully clear. Market participants point to a relatively low level of liquidity in European ETFs as compared to the US ETF market and to potential linkages with the relative underdevelopment of securities finance and collateral management in relation to European ETFs.

From 2011 a series of regulators and international financial stability organisations have focused attention on European ETFs,

culminating in a consultation paper from the European Securities and Markets Authority (ESMA) in early 2012 and publication of guidelines in July, 2012. Issues related to securities finance are prominent among the concerns addressed by the ESMA consultation paper and guidelines. We have not addressed the latest ESMA document released in July 2012 as the focus of this document is on the trading and operational mechanics related to the lending, borrowing and financing of ETFs, which are separate and distinct from the issues that receive attention in the ESMA paper.

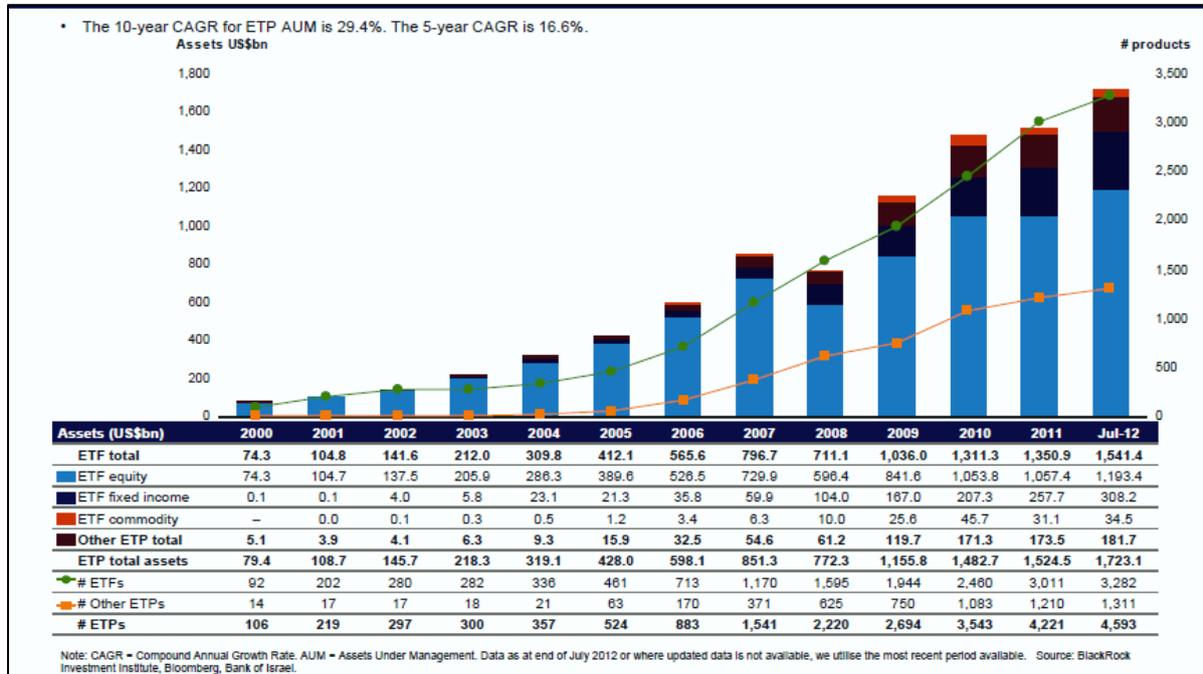


Figure 1 Global Exchange Traded Product multi-year asset growth ¹

Activity in US ETFs predicts the future for European ETFs and provides a possible roadmap. Some US ETFs are amongst the most actively traded listed securities in the world; there is a deep supply of ETFs available for loan; the fees payable by borrowers are in line with equity borrowing costs with a similar *supply/demand* ratio; and it's all supported by a wider audience of ETF collateral takers. This is a model that works. European ETFs present a different picture, but the influencing factors are the same and the potential for substantial growth remains.

¹ Source: BlackRock ETP Landscape Industry Highlights July 2012

Executive Summary

The interactions between ETF investment and trading and securities finance/collateral management are complex and not always fully clear. Market participants point to a relatively low level of liquidity in European ETFs as compared to the US ETF market and to potential linkages with the relative underdevelopment of securities finance and collateral management in relation to European ETFs. Our research indicates that after adjusting for unreported over the counter (OTC) transactions, European ETFs are approximately 3X less liquid than US ETFs. Fragmentation and the lack of a developed lending market for European ETFs are the primary drivers of this “transatlantic gap”. We support the view that ETF markets are influenced by the liquidity of the assets tracked - this is not a direct reflection and European ETF liquidity is further influenced by the lack of ETF share lending; further, our review indicates that European ETF trading markets are not more fragmented than equity trading markets.

Lending underlying securities from a physical replication ETF is an established market practice, however, it is the lending of ETF shares which impacts the liquidity of ETF markets. The lack of development in securities lending is a major factor in the relative illiquidity of European ETF markets. Our review finds that application of current industry standard measurements, including liquidity and diversification measures, fails to recognise the characteristics of ETFs and inappropriately restricts the availability of ETFs to lend. Equally, demand (largely represented by hedge fund participation) is restricted through lack of European ETF availability for borrowing to cover shorts and inability to finance long positions for both hedge funds and their prime broker service providers.

Similarly, European ETFs are generally not accepted as collateral. Restrictions include: liquidity and diversification requirements which are inappropriate in the case of ETFs and merit reconsideration; arbitrary rejection of synthetic ETFs as collateral, based on transparency concerns; and the inconsistent application of the equivalent asset test so that underlying securities are accepted as collateral when a (diversified) ETF is rejected. Our review indicates that ETFs offer significant advantages as collateral instruments, requiring a more objective evaluation of collateral acceptance criteria.

AUTHORS' RECOMMENDATIONS FOR CHANGE

1. INDIVIDUAL FIRMS

- Increase the use of ETFs as collateral
- Increase lending ETF shares themselves
- Increase borrowing demand for ETFs

2. INDUSTRY WIDE

- Establish ETF Classification System
- Define Best Practice for Lending ETFs
- Define Best Practice for use of ETFs as Collateral

The changes required to promote development of an active securities lending market in European ETFs, driving improved liquidity in ETF trading, are interdependent, involving management of ETFs as collateral, availability of ETFs for lending purposes and demand for ETFs for borrowing purposes. While the individual changes required are manageable (though in some cases, significant), co-ordinated action on a market level is required to facilitate transformational success. With this need for concerted, co-ordinated action in mind, the authors make a series of recommendations as outlined in the sidebar and later in the paper.

Objectives of the study

This is a practical rather than an academic study and is based on interviews with the study sponsors and other key market participants as well as on original research and review of the extensive range of analyses and commentaries relevant to the ETF markets.

The primary objectives of this study can be summarised as follows:

- Examine the widely held market perceptions that (1) ETFs are generally illiquid in comparison to other listed instruments and (2) European listed ETFs are substantially less liquid than US listed ETFs, and address the factors potentially driving this situation. Assess the potential impact of an underdeveloped securities lending and collateral management function on secondary market liquidity in relation to European listed ETFs.
- Explain the relevance of securities lending in the ETF context and analyse the risks inherent in the forms of securities lending applicable to European listed ETFs as compared to other forms of securities lending.
- Examine the reasons for the relative underdevelopment of securities lending and collateral management in the context of European listed ETFs.
- Recommend changes to market practice with the potential to remove barriers to the development of securities lending and collateral management in relation to European listed ETFs. Assess the potential for an increased use of European listed ETFs as trading instruments by investment banks and hedge funds through improved effectiveness as a component of firms' trading inventories.

Liquidity in ETF Trading

- **The liquidity of an ETF relates to the liquidity of the underlying securities and cannot be assessed purely on trading volume; much less on exchange-displayed trading volume**
- **Adjusted for unreported OTC volume, European ETFs are 3X less liquid than US ETFs**
- **Fragmentation and the lack of a developed market for lending ETF shares are the primary drivers of the “transatlantic gap”**
- **While ETF markets are influenced by the liquidity of the assets tracked this is not a direct reflection and European ETF liquidity is further influenced by the lack of ETF lending**
- **European ETF trading markets are generally not more fragmented than markets in European equities**

In this section we examine two common market perceptions: first, the perception that the secondary markets for ETFs are illiquid and second, that European listed ETFs are relatively illiquid in comparison to US listed ETFs.

1. Primary and Secondary Markets for ETF Trading

Liquidity in ETF markets is frequently regarded as questionable by potential investors, based on limited trading volumes displayed on-screen by the listing exchanges. However, the unique structure of ETFs (effectively a listed trading wrapper for open-ended funds) lead to a situation in which, while displaying some of the characteristics of listed equities such as transparency and continuous market-maker pricing, ETFs also display unique trading characteristics.

Of fundamental importance, ETFs are open-ended funds, meaning that Authorised Participants (A/Ps), who are typically also Market-Makers, are able to access an ETF creation/redemption process throughout the trading day. As a result, trading takes place in both the Primary (create and redeem) market and the Secondary (On-exchange and Over The Counter “OTC”) market, as Figure 2 (below) illustrates:

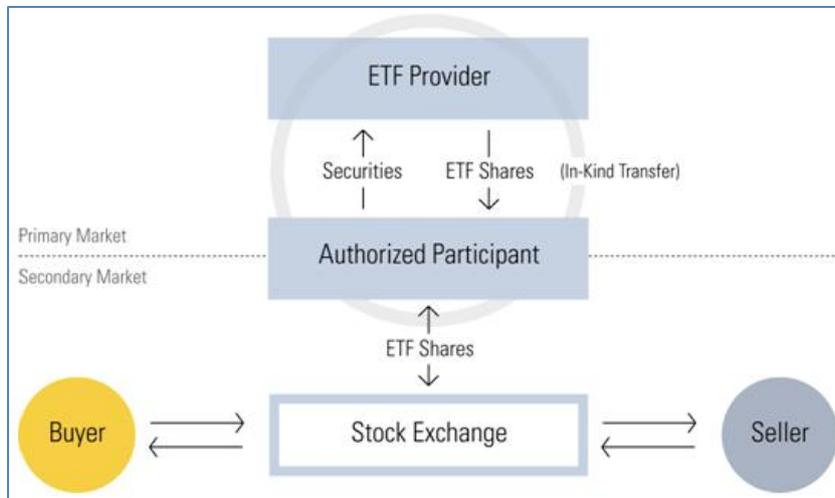


Figure 2 Creation and Redemption Process²

Note: the AP/ETF Provider exchange (creation/redemption) may be based on cash or securities (in kind transfer) or (increasingly) a combination of cash and securities. APs are able to create or redeem ETF shares on an intraday basis by depositing an appropriate basket of shares (details on the required composition supplied daily by physical replication ETF issuers) or cash (synthetic ETF) or a combination of cash and securities equivalent to the value of an ETF creation unit.

The ability of APs to regulate supply through creation or redemption of ETF shares throughout the trading day at net asset value (NAV) has significant implications for both pricing and liquidity. In terms of pricing, APs are able to utilise the creation/redemption process to minimise secondary market price divergence from a ETFs NAV as Figure 3 (below) illustrates:

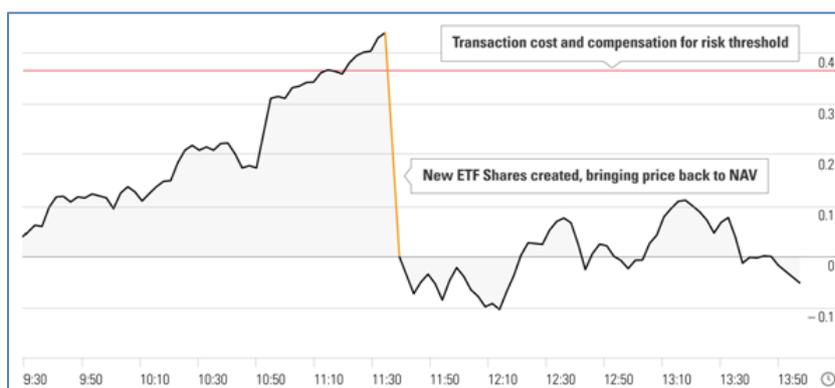


Figure 3 Arbitrage Mechanism³

²Gordon Rose, “The Bid-Offer Spread Through an ETF Trader’s Eyes” Morningstar 19-04-12

³ Gordon Rose, “The Bid-Offer Spread Through an ETF Trader’s Eyes” Morningstar 19-04-12

The linkage to the underlying securities being tracked (through the creation/redemption process) means that the liquidity of an ETF relates to the liquidity of the underlying securities and cannot be assessed purely on trading volume; much less on-exchange displayed trading volume. Liquidity of the underlying securities being tracked by the ETF provides a superior measure. Through the create /redeem process in the primary market, APs are able to transact large trades without significant impact on an ETF's NAV while the ETF displays a relatively thin level of secondary market trading.

2. The US /European comparison

Industry statistics support the widely held view that European listed ETFs are relatively illiquid in comparison to US listed ETFs. According to the BlackRock ETP Landscape June 2012, Average Daily Volume (ADV) for European listed ETFs for the month of June was \$2.9 billion (€2.3 billion) with Assets under Management (AUM) \$273.0 billion (€215.5 billion). This equates to an ADV/AUM ratio of 1.09%.

In contrast, ADV for US listed ETFs for the same period is reported as \$52.6 billion (€41.5 billion) with AUM of \$1,056.6 billion (€834.1 billion), generating an ADV/AUM ratio of 4.98% for US listed ETFs. By this measure, US listed ETFs are more than 4.5 times more liquid than European listed ETFs.

There is a significant caveat to apply before examining the reasons behind this striking disparity. The ADV statistics referred to above are based on exchange volumes plus *reported* OTC volumes. In the US market OTC transactions are reported through The Depository Trust & Clearing Corporation (DTCC) whereas in Europe OTC transactions are presently reported only on a *voluntary* basis with most transactions unreported. Readers should note the proposed changes under MiFID II are expected to apply a mandatory post-trade reporting regime to ETFs. Estimates for the share (by value) of transactions traded OTC range from 50-90% of on-exchange volumes. Taking a mid-point of 70% and assuming that 75% of this value is unreported increases the ADV for European listed ETFs by 52.5% to \$4.42 (€3.49 billion) and increases the ADV/AUM ratio to 1.7%. On this adjusted basis, US listed ETFs are still approximately 3 times more liquid than European ETFs.

3. Drivers of the Transatlantic liquidity gap

In addition to the OTC reporting issue addressed above, the relative illiquidity of European listed ETFs is ascribed to two principal causes by market participants and confirmed by responses to the market survey associated with this white paper.

First, in relation to US ETFs, European ETFs are fragmented, both in terms of the ETFs themselves (where multiple ETFs track the same underlying index) and in terms of ETF trading markets.

At June 30, 2012 European listed ETF AUM of \$273 billion (€215 billion) comprised 1,304 ETFs with 4,372 listings from 39 providers, generating an average AUM of \$ 200 million spread over an average of 3.4 listings per ETF.

The comparable US figures are total AUM of \$ 1056 billion (€833 billion) comprising 1,186 ETFs with 1,186 listings from 32 providers, generating an average AUM of \$890 million *single listed*.

In addition to the fragmentation in European ETF listings, market analysts point to fragmentation of trading venues and related clearing and settlement services, regulatory regimes and tax rules across European securities markets.

While a significant difference in average AUM (US average AUM 4.4 times greater than European) and an average of 3.4 listings per ETF in Europe compared to single listing in the US must be expected to have some impact on liquidity in European ETFs, it should be remembered that this situation is not unique to ETFs and reflects the overall structure of the funds industry and the equity trading markets in Europe.

A comparison of relative *overall* equity liquidity between the two US exchanges most relevant to ETF listings (NYSE and NASDAQ) to the six leading European exchanges (leading in terms of overall volume and ETF listings: LSE Group, NYSE Euronext, Deutsche Börse, SIX, NASDAQ OMX and BME Spanish Exchanges) provides an answer to the question “Are listed securities generally more liquid in the US as compared to Europe?”

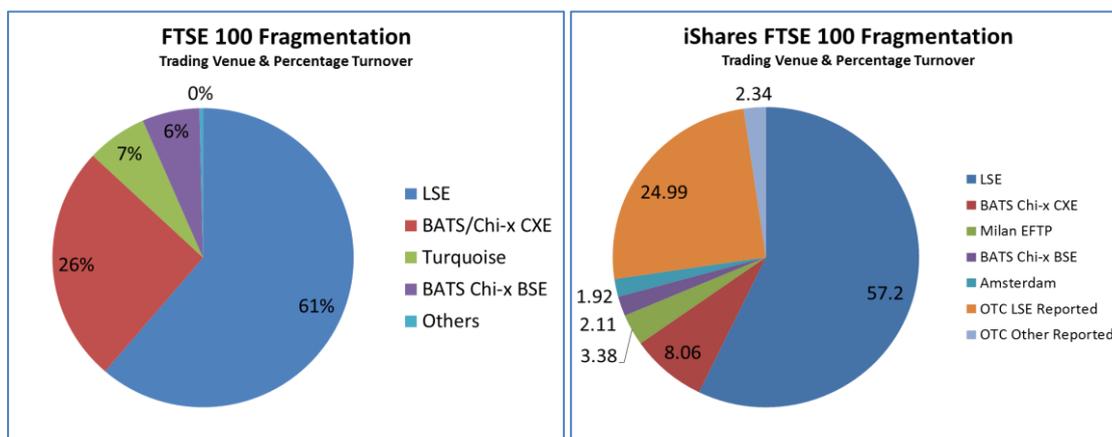
World Federation of Exchanges (statistics at June 30, 2012)	NYSE, NASDAQ aggregated equity turnover	LSE, NYSE Euronext, Deutsche Börse, SIX, NASDAQ OMX, BME aggregated equity turnover
Capitalisation (millions)	\$17,502,653	\$7,909,285
Turnover: 5 months to 31/5/12 (billions)	\$12,588,375	\$4,000,843
Turnover/capitalisation ratio	71.9%	50.6%
No. of listings	4,970	8,973 ⁴

Figure 4: Capitalisation and turnover data from exchanges which lead in ETF listings

In broad terms, US exchange liquidity approaches 1.5 times that of the European exchanges, with little more than 50% the number of listings. Specifically, in relation to fragmentation among trading venues, the Fidessa Fragmentation Index (FFI) facilitates a comparison between fragmentation in the trading of indices and fragmentation in the trading of ETFs tracking those indices. Through this comparison we are able to answer the question: "Is trading in European ETFs more fragmented than overall trading in European listed securities?"

Taking two examples, we compare trading in the FTSE 100 and the DAX against trading in the iShares FTSE 100 and the iShares DAX.

First, the FTSE 100 and the iShares FTSE100, based on trading during the week ending July 20 2012:

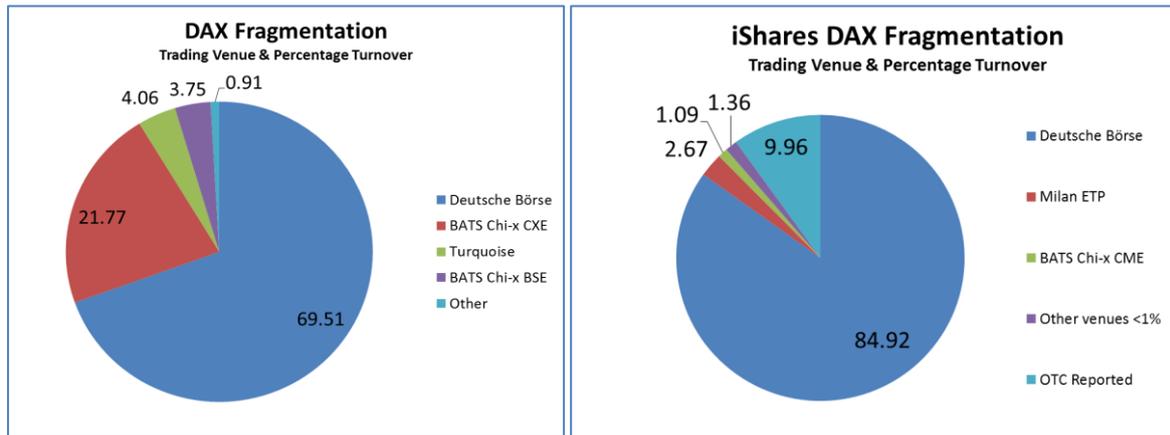


Figures 5 and 6: Fragmentation in FTSE 100 shares and iShares FTSE 100 ETF⁵

⁴ Source: World Federation of Exchanges

The FTSE 100 index and the iShares FTSE 100 trading venues display broadly similar levels of fragmentation, albeit for different underlying reasons. In the case of the FTSE 100 index, fragmentation is driven by competition among secondary trading venues, whereas in the case of the ETF, fragmentation is driven by the significant element of OTC trading. Nonetheless, both the index and the ETF display a concentration of trading (at around 60% of total trading) on the primary venue, in this case the London Stock Exchange (LSE).

Second, the DAX and the iShares DAX based on trading during the week ending July 20 2012:



Figures 7 and 8: Fragmentation in DAX and iShares DAX ETF⁶

As with the FTSE 100 comparison, the ETF fragmentation is comparable to the DAX index level of fragmentation. Indeed, trading in the DAX ETF is arguably less fragmented than trading in the DAX index, with 85% of ETF trading on the Deutsche Börse compared to 70% of DAX index constituents trading on the Deutsche Börse.

Our conclusion is that (1) fragmentation in the trading (and related clearing/settlement and other factors) of ETFs is broadly comparable to other listed instruments in Europe.(2) As with other listed instruments, European ETFs are relatively illiquid compared to US ETFs as a result of relatively small size and fragmentation across trading venues. In relation to the US/European ETF 3:1 liquidity ratio, fragmentation is estimated to drive approximately half the transatlantic liquidity gap.

The second principal driver of relatively low liquidity in European listed ETFs is the lack of a developed securities lending market in ETF shares, adversely affecting the ability to short sell European ETFs. In turn, difficulty in shorting European listed ETFs discourages market participation from hedge funds who wish to gain either long or short exposure to market segments. Statistics provided by Sungard Astec Analytics show US ETF shares on loan aggregating \$37.3 billion (€29.8 billion) at May 31, 2012 compared to European ETFs on loan of \$0.9 billion (€0.7 billion) at the same date. This equates to 3.67% of US listed ETF AUM and only 0.34% of European listed ETF AUM on loan at May 31, 2012.

There is broad recognition that a lack of ability to sell-short is detrimental to a market's efficiency and liquidity. Similarly, a low level of hedge fund participation restricts market liquidity and has a negative impact on other market users and potential market users.

⁵ Data taken from Fidessa Fragmentation Index, Authors' charts

⁶ Data taken from Fidessa Fragmentation Index, Authors' charts

The absence of a developed securities lending market in European ETF shares is estimated to account for approximately half of the US/European 3:1 liquidity gap, in line with market participants' input to the market survey associated with this white paper.

European listed ETFs and Securities Lending

- **Lending underlying securities from a physical replication ETF is an established market practice, following standard securities lending practices and complying with UCITS requirements. This form of lending has been subjected to regulatory scrutiny and market debate.**
- **It is the lending of ETF shares which impacts the liquidity of ETF markets: lack of development in securities lending is a major factor in the relative illiquidity of European ETF markets.**
- **Application of industry standard measurements, including liquidity and diversification measures, fails to recognise the characteristics of ETFs and inappropriately restricts the availability of ETFs to borrow.**
- **Hedge fund participation is restricted through lack of European ETF availability for borrowing to cover shorts and inability to finance long positions.**

In this section we examine securities lending practices in relation to European listed ETFs. We analyse restrictions limiting the development of securities lending and identify the scope for positive changes in market practice.

What are the opportunities for securities lending in European ETF markets? In order to understand the relationships between ETFs and securities lending we need to examine the structures applicable to European ETFs. At May 31, 2012 62% (by value) of European listed ETFs were categorised as "Physical" ETFs and 38% (by value) as "Synthetic" ETFs. The distinction arises from the methodology used by the ETF to replicate the performance of the underlying index tracked by the ETF.

ETFs' Six Areas of Impact on Securities Finance

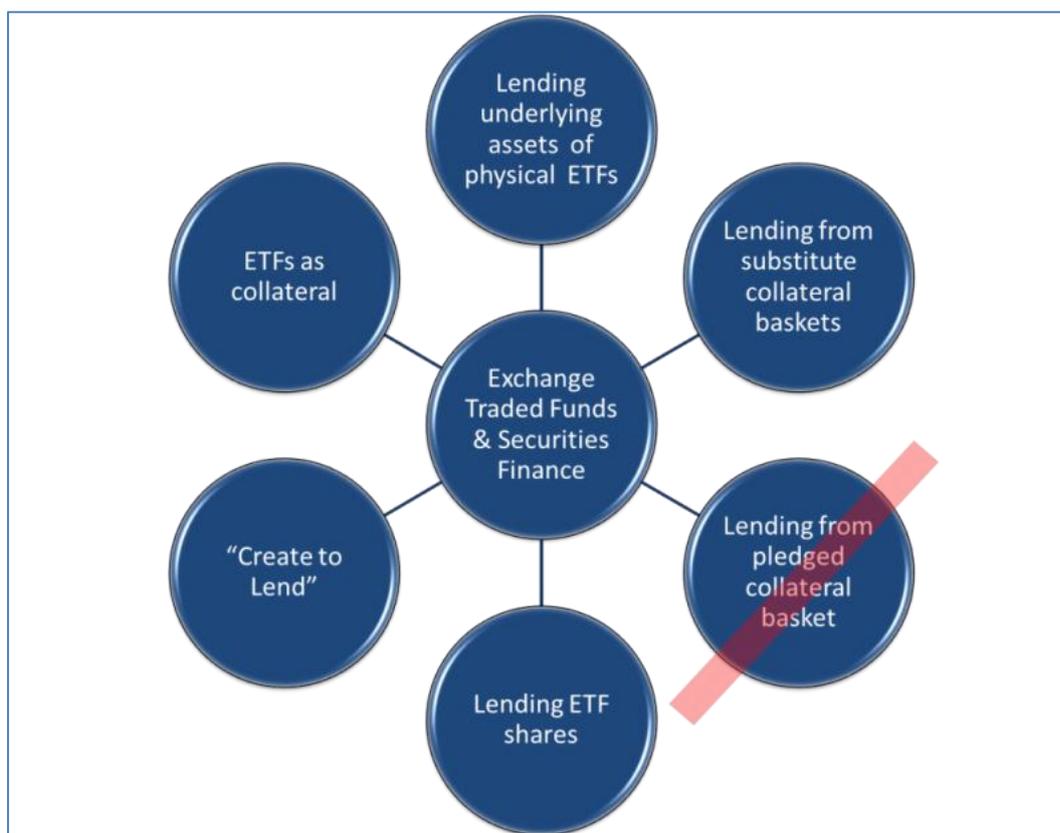


Figure 9: ETFs and their uses in Securities Finance⁷

Figure 9 depicts the six areas in which European ETFs impact or potentially impact securities finance activities. Each of the six areas is reviewed in the following section.

1. Lending underlying securities from a physical replication ETF

Physical replication ETFs hold the securities comprising the replicated index. The index constituents may be held in full or on a sample basis. In the physical replication model the underlying securities are available for lending at the discretion of the ETF issuer. Lending underlying securities is a broadly accepted practice, used to offset the relatively high replication costs and tracking errors inherent in physical replication ETFs. Lending underlying securities follows standard securities lending practice for UCITS funds including over-collateralisation, daily mark to market of both collateral and securities on loan and (potentially) provision of an indemnification from the lending agent.

⁷ Except where otherwise indicated, diagrams are authors'

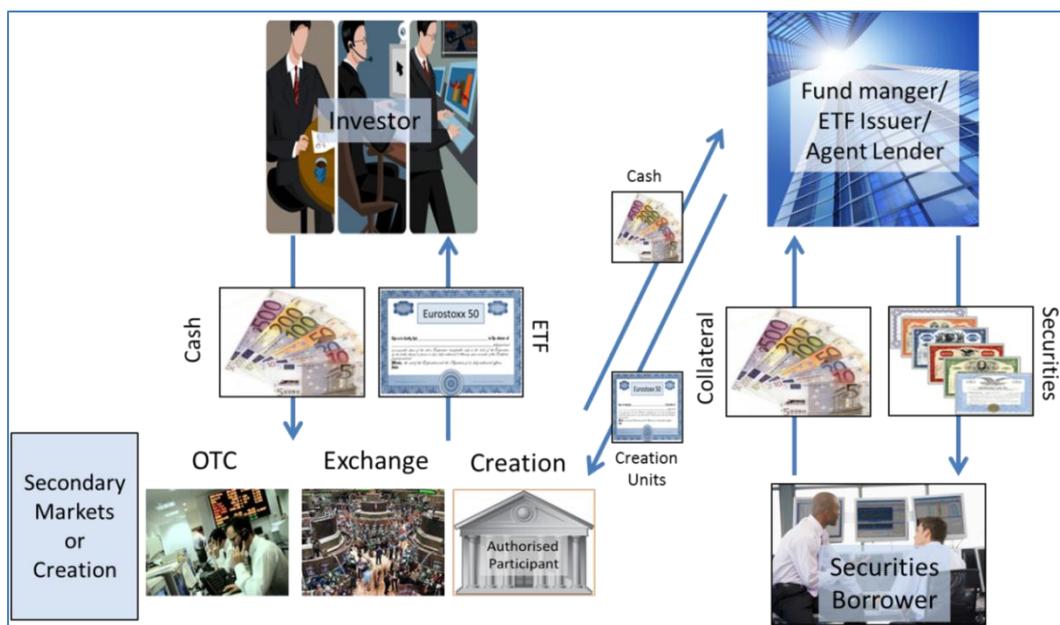


Figure 10: Flows when lending underlying assets from ETFs

Additionally, in common with synthetic (derivatives based) ETFs, the opportunity exists for ETF investors (and their agent lender service providers) to engage in the lending of ETF shares themselves. This is a less developed activity in Europe and is separately reviewed below.

2. Lending from a substitute basket in a synthetic ETF

In a synthetic (derivative based) structure the ETF issuer uses investor cash to enter into a total return swap arrangement with one or more swap counterparties, receiving a basket of securities (substitute basket) from the swap counterparties. In line with UCITS, the assets are held by the ETF on a segregated account basis with a recognised custodian. There is no requirement for correlation with the index being tracked by the ETF; substitute baskets normally comprise high quality liquid assets, meeting UCITS requirements.

In this arrangement, referred to as an *unfunded swap structure* the securities held in the substitute basket are available for lending, at the discretion of the ETF issuer. The substitute basket securities are not defined as collateral (although they are required to comply with UCITS rules).

However, lending from substitute baskets is not a widespread market practice. ComStage ETFs are reportedly most notably engaged in lending from substitute baskets, through an arrangement with Commerzbank, the total return swap provider. It is understood that up to 100% of holdings in the substitute baskets are made available for lending by ComStage. This arrangement apart, the lack of lending from substitute baskets is based on economic considerations; while securities deposited in substitute baskets are required to meet UCITS standards in terms of eligibility, liquidity and diversification, swap counterparties are unlikely to deposit securities with a high or potentially high level of demand for securities finance purposes.

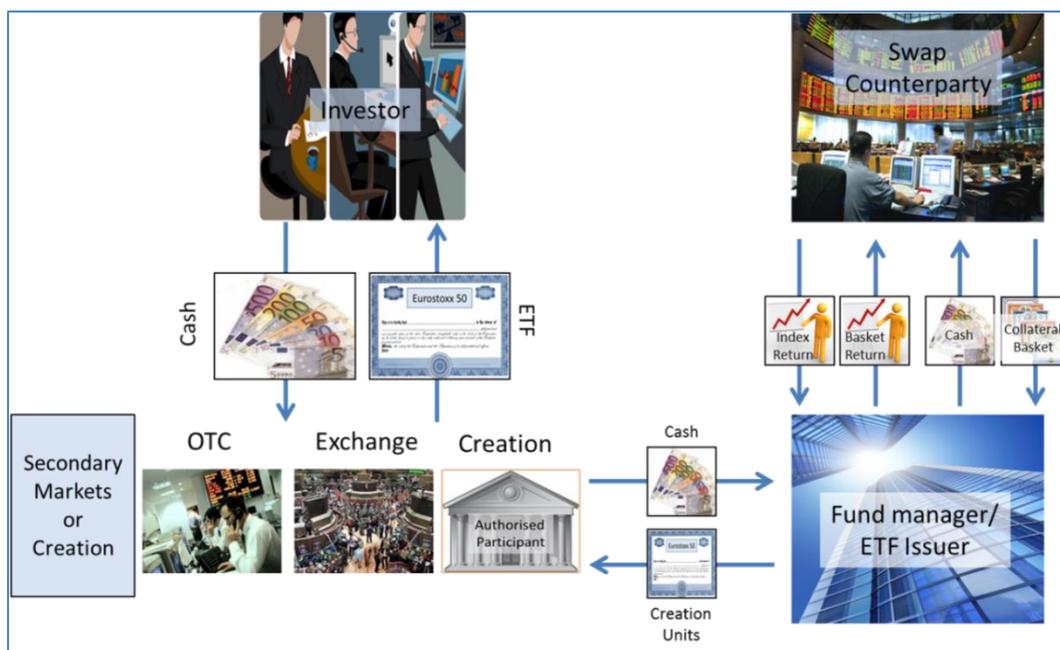


Figure 11: Flows in Unfunded Swap Synthetic ETFs

As with physical replication ETFs, the opportunity also exists for investors in synthetic ETFs (including those with unfunded swap structures) to lend ETF shares, as reviewed below.

3. Lending from a collateral basket in a synthetic ETF

In a *funded swap structure* the swap counterparty posts collateral in a segregated account with a recognised custodian. The collateral is held either in the name of the ETF issuer or in the name of the swap counterparty under pledge to the ETF issuer. In either case, the securities comprising the collateral should not be available for lending. Under standard pledge arrangements, the assets remain under the ownership of the pledging counterparty. Since securities lending transactions result in transfer of title of the loaned assets this should render pledged assets as unavailable for lending. We also understand that some funded swap arrangements utilise a transfer of title structure for the collateral. Where this is the case, the scenario outlined above in unfunded swaps would apply.

Earlier this year a regulator speaking at a conference was quoted in a leading financial journal as saying “... in the case of a synthetic ETF it was normally the swap counterparty that conducted stock lending activities, carried any risks and took most of the fees”. The writers are not aware of any evidence that collateral held under funded swap transactions is made available for lending purposes. Under this arrangement, collateral securities are held by independent custodians either under pledge to the ETF issuer or in the ETF issuer’s name. In common with physical replication and unfunded swap structure ETFs, investors in funded swap structure ETFs have the opportunity to lend ETF shares, as reviewed below.

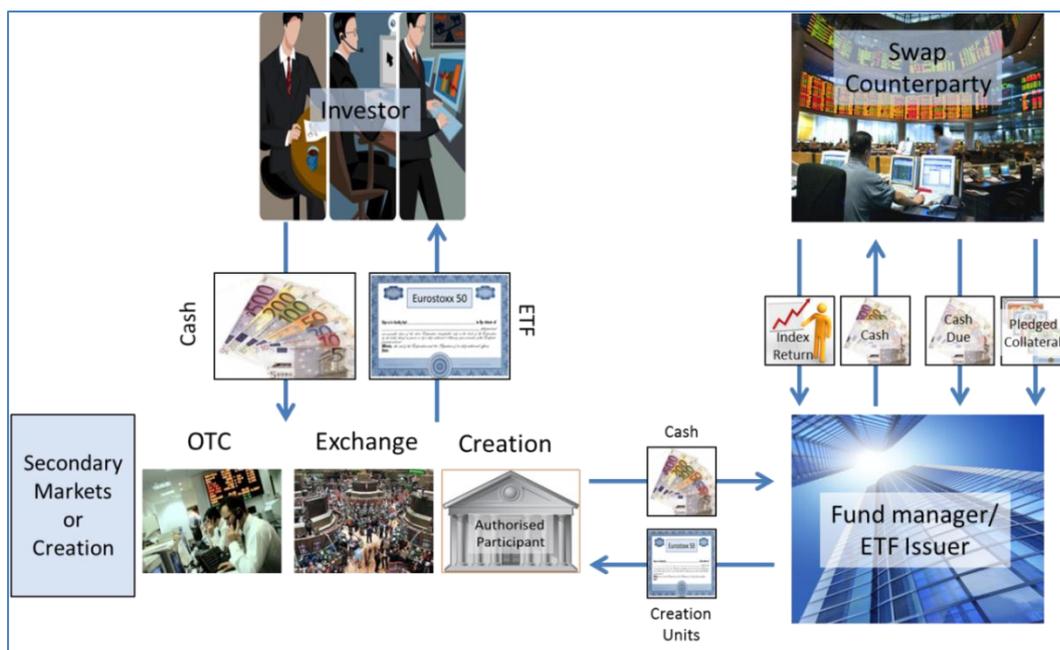


Figure 12: Flows in Funded Swap Synthetic ETFs

4. Lending ETF shares

As outlined in Diagrams 9, 10 and 11 (above) the opportunity to lend ETF shares as distinct from underlying shares, substitute baskets or collateral applies to investors in both physical and synthetic ETFs. In the first section of this paper we highlighted the absence of a developed securities lending market as a major driver of the relative illiquidity of the market for European listed ETFs in comparison to US ETFs.

The process for lending ETF shares is fundamentally the same as that for lending other securities from investment portfolios. Lending is usually conducted through *agent lenders* (custodian banks or third party agents) representing the lenders and *prime brokers* representing hedge funds (end borrowers) or investment banks acting on a principal basis.

Given that lending an ETF share is essentially the same as lending an equity instrument, (and arguably more flexible in the event of default) why is the market for lending European listed ETFs relatively underdeveloped in comparison to the US? As noted in section 1.3 of this paper, statistics provided by Sungard Astec Analytics show US ETF shares on loan equivalent to 3.67% of US listed ETF AUM and European ETF shares on loan equivalent to only 0.34% of European listed ETF AUM, at May 31, 2012.

The factors inhibiting full development of an ETF lending market are complex and encompass both demand and supply-side factors.

First, on the supply side a series of factors influence ETF lending: Investors are not always aware that ETFs offer lending opportunities. To a large extent, this is a function of reservations or lack of informed decision-making on the part of agent lenders. The majority of respondents point to a lack of familiarity with European ETFs as an asset class from a number of angles. Often potential borrowers ask lenders about ETF availability in passing rather than as a focus asset type. This differs from the usual case where borrowers press on agents to open new markets as is currently the case with Brazil. Brazil is a non-standard securities lending market where substantial pent-up or potential

demand exists or has existed in the past and lenders can assess their portfolios to estimate potential returns. If the potential revenue figures merit further investigation the due diligence process is likely to follow with a goal of eventually adding the market to the lending programme. European ETFs on the other hand, tend to be an occasional distraction with little discernible consistent borrowing pattern needing satisfaction. This makes it difficult for agents to identify and prioritise portfolio supply to bring into their respective lending programmes. Unsurprisingly, little incremental availability has been added to most lending programmes, and this is at odds with the general growth in investment in European ETFs.

- Agent lenders typically apply restrictions on the supply of individual stocks available for lending based on each stock's trading ADV for two reasons both related to their ability to buy back stocks. The next two points address why this ADV approach is inappropriate for European ETFs.
- First is to protect against recall risk and the second is in the event of counterparty default. As discussed in the first section of this paper, ADV is not an appropriate measure of the liquidity in ETFs, especially in relation to European listed ETFs and if arbitrarily applied will artificially and inappropriately limit the lending of ETFs. Where a loan is recalled by a lender, the borrower is required to return shares within one normal settlement cycle. Typically a borrower will borrow the security elsewhere and return the shares to the lender. Where it is not able to do so, it must purchase the asset in the market. Where few securities are available for loan, the increased buying demand can trigger a short squeeze, significantly increasing the share price of the security. Ultimately if a borrower cannot or will not execute market transactions, the lender may enforce a buy-in. Here ETF lenders are in a better position as compared to other stocks and bonds on loan. The borrower of an ETF has a number of different options to replace the securities: multiple exchanges to purchase the assets, the OTC market, Creations and borrowing elsewhere.
- In the case of default by a borrower of ETF shares, the lender must replace the ETF shares loaned to the defaulting borrower. Where the lender has loaned conventional stocks or bonds, the agent must place purchase orders in the market, with consideration given to the quantity and timing of orders to minimise market price impact. The lender will be concerned that the increased buying demand will cause a price rise to the asset possibly resulting in a shortfall when compared to the proceeds of collateral sales. The replacement of ETFs however is more straightforward with less risk of price rise impact. The agent would then place a purchase order with an AP. The AP purchases the ETF on the secondary market, probably relying on an OTC execution of the order. In the event there is insufficient secondary market availability, the AP may either purchase the underlying assets or borrow them and create new ETF shares. Market impact on the underlying assets is reduced as the cash proceeds are spread across the various ETF constituents if purchases are made, or where the assets are borrowed or held in inventory, no immediate price impact occurs. For example, a loan of 100 shares of a single stock valued at €1,000 requires a purchase of that number of shares. The acquisition of 100 ETF shares gives lenders the option to buy 100 ETF shares, or if they are unavailable the AP is tasked with buying/acquiring the underlying assets. The €1,000 worth of purchases is spread across multiple underlying assets with reduced or minimised price impact on any individual asset. The price divergence from the previous mark to market valuation will rise or fall in line with the underlying index being tracked by the ETF and be less exposed to wide price fluctuations at a specific security level

which may result from imbalances of buy and sell orders. Within one standard settlement cycle the lender should have the ETF units replaced.

- Agent lenders point to a limited demand for ETF borrowing (this is a chicken and egg situation) and an inconsistent demand profile relevant to ETFs. As a result, potential revenues from ETF lending are difficult to predict and understandably this leads to low prioritisation from agent lenders. The EquiLend data below challenges this assumption.
- The lack of a broadly accepted classification system for ETFs adversely impacts both the ETF lending process and the acceptance of ETFs as collateral. In the case of ETF lending, lack of reliable classification inhibits development of ETF demand profiles by agent lenders.

Second, from the demand side perspective:

- Prime brokers tend to discourage hedge funds' use of European listed ETFs. On the short side this is due to the limited availability of European listed ETFs to borrow and on-lend to their hedge fund clients (the chicken and egg situation again). In respect of long positions European listed ETFs are, for the most part, considered by prime brokers to be "dead assets" in that most securities or cash lenders do not accept ETFs as collateral (see following section of this paper).
- As a result of prime brokers' reluctance or inability to source supply of European listed ETFs in support of short strategies or to finance long positions, hedge funds are restricted in their use of European listed ETFs as investment tools. It is estimated that shorting an ETF in the US typically costs 10-25 basis points while shorting a European listed ETF can cost 100-300 basis points or more. Despite the high intrinsic fee value, the lack of hedge fund and prime broker activity in European listed ETFs reinforces the agent lenders' perception of low demand for borrowing.
- Investment banks face the same issues as hedge funds in relation to European listed ETFs, regardless of whether they operate prime brokerage businesses.

Despite these issues and constraints, it is clear that lending opportunities exist. Data from EquiLend demonstrates clearly that there is consistent and continuous borrowing demand for European ETFs. Through its AutoBorrow service, EquiLend provides borrowers and lenders with a fully automated system that executes trades based on pre-agreed parameters. AutoBorrow captures borrower shorts and is therefore a useful indicator of borrowing activity. The following chart shows European ETF borrow requests through AutoBorrow for the first half of 2012. Two surprising stats arise – there were more than 10,000 borrow requests each month except June (9,197); and the number of different ETFs requested ranged from 165 – 227 per month. Further, even in June, the lowest month, 80 different ETFs had more than 30 borrow requests in the month. This is significant in that it means there is more than one borrower looking for that security. Twenty nine issues all had more than 100 borrow requests with the top 3 securities having more than 300 requests each.

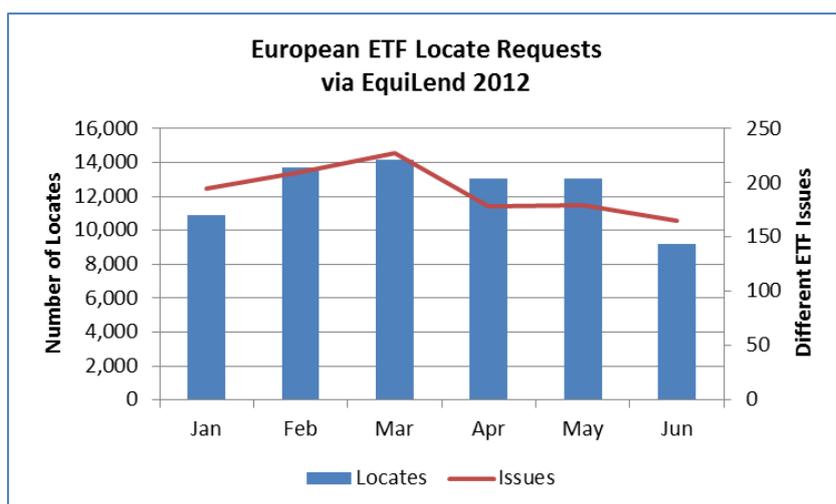


Figure 13: EquiLend European ETF AutoBorrow Data⁸

We have compared the top European ETFs ranked by AUM at the end of June 2012 against the top borrow requests received in EquiLend for the month of June. As can be seen in the data below, 3 of the ETFs with the highest borrow requests were in the Top 10 European ETF AUM. In other words, some of the most widely held ETFs also have the highest borrowing demand. For example, the iShares FTSE 100 had the highest number of EquiLend borrow requests for European ETFs in June. Additionally, despite the large holdings of the iShares FTSE 100 ETF, fees are in the region of 100 basis points per annum. This fee is dramatically higher than the fees earned by lending out the overwhelming majority of underlying FTSE 100 stocks. The borrowing demand is consistent for many of these issues, again using the iShares FTSE 100 ETF, it had over 70 locates each month during 2012 with an April peak of over 700.

Ranked by AUM as at End June 2012				
ETP (US\$m)	Country listed	Bloomberg ticker	AUM	1-month ADV
iShares DAX (DE)	Germany	DAXEX GY	14,111	120
iShares S&P 500	United Kingdom	IUSA LN	9,955	63
ZKB Gold ETF (CHF)	Switzerland	ZGLD SW	9,509	30
db x-trackers DAX ETF	Germany	XDAX GY	7,506	41
ETFS Physical Gold	United Kingdom	PHAU LN	7,266	55
GBS Bullion Securities	United Kingdom	GBS LN	6,055	34
iShares MSCI Emerging Markets	United Kingdom	IEEM LN	5,220	48
iShares FTSE 100	United Kingdom	ISF LN	5,154	58
Lyxor ETF Euro STOXX 50	France	MSE FP	4,447	46
iShares EURO STOXX 50	Germany	EUN2 GY	4,030	42

June Borrow Requests	Issue Name
523	ISHARES FTSE 100 ETF *
461	LYXOR EUR STOXX50 ETF *
333	ISHARES FTSE 250 ETF
260	S&P 500 ETF *
223	ISHARES EURO HIGH YIELD ETF
207	LYXOR CAC 40 ETF
204	ISHARES DJ EURO STOXX 50 ETF
176	ISHARES FTSE CHINA 25 ETF
174	ISHARES BAS RES ETF
169	LYXOR ETF RUSSIA ETF
	* - Top 10 European ETF AUM

Figures 14 and 15 June 2012: European ETF AUM⁹ and European ETF Borrow Requests¹⁰

⁸ Source: EquiLend

⁹ Source: BlackRock ETP Landscape June 2012

¹⁰ Source: EquiLend

5. Create to Lend

Earlier in this paper, we examined the unique attributes of the ETF creation /redemption process in relation to the pricing and liquidity of ETF shares. The creation/redemption process is also the basis for “create to lend”, whereby APs create (or redeem) ETF creation units with the specific intent of lending ETF shares.

As with lending ETF shares, the use of create to lend is limited in Europe compared to the US. Factors contributing to a lack of development in Europe include costs inherent in creation and redemption and technical issues around differences in the treatment of dividends between ETFs and individual stocks.

There are potentially three drivers as to why a firm might engage in Create to Lend. First is where a client wishes to short an ETF that is not available for borrowing in the market. This client facilitation function allows the client to execute the short sale.

Second is to generate a profit. To the extent that a firm can create an ETF cost effectively and lend to a client or counterparty at a higher spread, the goal here is pure spread profit.

Third is that where a firm uses underlying long positions to create some, most or all of the ETF, and then that ETF can be loaned out, the firm is not only generating a spread profit, but also getting funding for its long inventory at a profit. In most conventional cases, long positions are used as collateral for other transactions and generally entail a carrying cost, as would be the case in an equity repo transaction. So where a firm can lend out the long position directly or use it to create an ETF that can generate revenues, it has a double positive impact generating a fee and obtaining funding without cost.

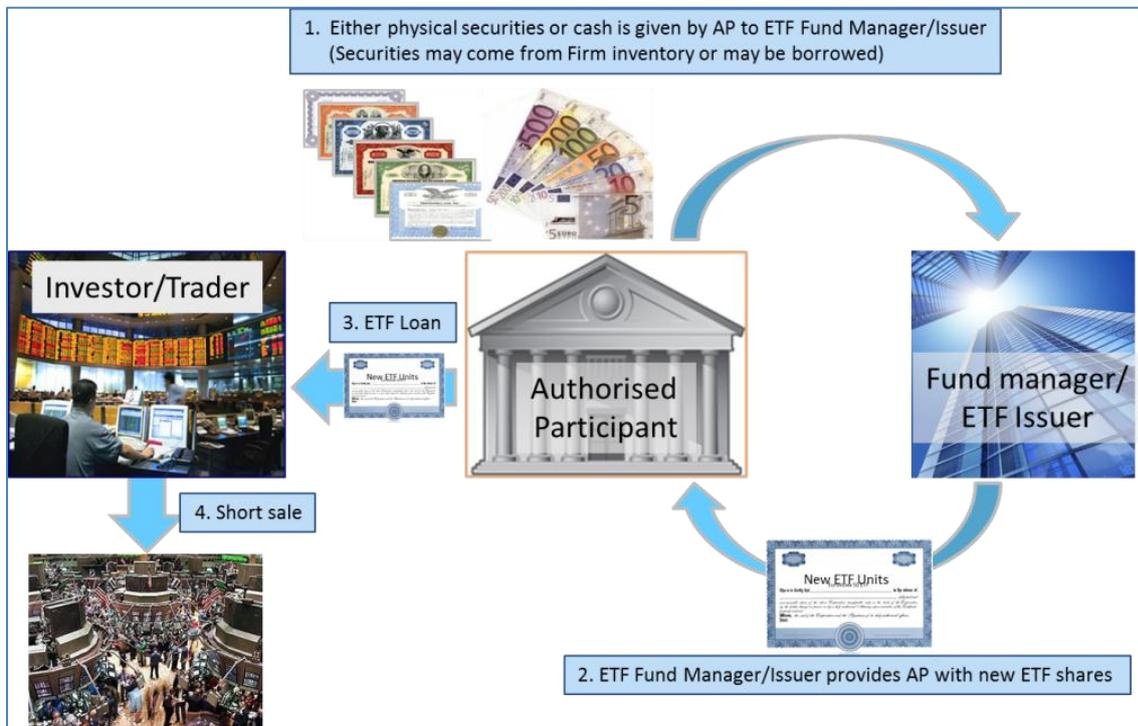


Figure 16: Create to Lend Process

However create to lend has drawbacks that limit its utilisation in Europe. When a new unit is created the fund manager assesses creation charges. These creation charges are based on the

market value of the creation and are an absolute figure. Where a borrower keeps the ETF shares borrowed for an extended period, the creator/lender can earn back the charges. However, where an ETF is returned earlier than originally anticipated, the creator/lender has a dilemma. Aside from possibly not recouping the creation fees, they must do something with the asset. Preferably they would lend it out to another borrower. However in the absence of a continuous lending/borrowing marketplace, it is a random chance as to whether a replacement borrower will be found. Failing that, use of the ETF as collateral might be an equitable parking place while finding another borrower. Here again, the market reality of few takers of ETFs as acceptable collateral limits the holder's options. This results in a premature redemption, possibly incurring additional fees. The "create to lend" issues are a microcosm of the issues faced by the ETF trading and financing industry in Europe. Note that the Financial Transaction Tax that has been proposed or is due to be implemented by certain countries will have a negative impact on the "create to lend" process involving purchases of the underlying assets. As we understand it, borrowed shares will be exempt from FTT under current proposals.

6. European ETFs as collateral

- **European ETFs are generally not accepted as collateral.**
- **Restrictions on European ETFs as collateral include liquidity and diversification requirements which are inappropriate in the case of ETFs and merit reconsideration.**
- **The equivalent asset test is not consistently applied, so that underlying securities are accepted as collateral when a (diversified) ETF is rejected.**
- **Synthetic ETFs are arbitrarily rejected as collateral, based on transparency concerns.**
- **European ETFs are not adequately classified, requiring evaluation on a case by case basis.**
- **ETFs offer significant advantages as collateral instruments, meriting a more objective evaluation of collateral acceptance criteria.**

Our research indicates that few market participants accept European ETFs of any kind as collateral for securities loan, equity repo or other financing transactions. Interviews with market participants that accept ETFs as collateral has provided some interesting feedback. Where ETFs are taken as qualifying collateral, the securities or cash lender tends to follow a set formula for the selection of ETFs and the limitations placed on those ETFs.

a. Equivalent Asset Test

Where a lender accepts a particular asset type as collateral in the underlying, it should also accept the ETF equivalent. For instance, if the equities from the DAX are individually accepted as collateral, then it seems logical that a physically backed DAX ETF also be acceptable. So the beginning point for agents when considering ETFs as collateral should be to search for equivalents to their existing approved schedules. It would be inconsistent for a lender to approve the assets of a given index and refuse to accept an ETF that is comprised of a diversified portfolio of those same assets. Note: for the purposes of this assessment we are referring only to the asset "quality" rather than the issues of disposal which are addressed elsewhere. This extends also beyond market counterparties where an anomaly exists within CREST whereby market participants can opt to receive FTSE stocks as collateral but could not opt to receive a fully replicating, physically backed FTSE 100 ETF.

b. Physically backed ETFs versus Synthetic ETFs

Lenders that take ETFs as collateral tend to focus on physically backed ETFs and the equivalent asset test above supports this approach. There is potentially a difference between fully replicating physically backed ETFs and optimised ETFs that only hold a proportion of the assets. However, optimised ETFs tend to be structured for emerging markets or less liquid assets which themselves are less likely to be accepted under the Equivalent Asset Test.

However, the outright rejection of synthetic ETFs must be called into question. The usual explanation given for a reluctance to approve synthetic ETFs is the perceived lack of transparency. Clearly synthetics do not pass the Equivalent Asset Test as the performance is provided through the use of swap contracts and the “safety net” for the ETFs cash is provided by the provision of collateral. To test the allegations over lack of transparency, we apply the following two tests. First we consider counterparty exposure. Synthetic ETFs make it clear up front as to which firms the ETF could have exposure to and on a daily basis the counterparties to which they do have exposure. This is different to the majority of physically backed ETFs which do not disclose potential counterparty lists nor do they report counterparty exposure as frequently as synthetic ETFs. Counterparty exposure is likely to be concentrated more strongly in some synthetic ETFs, so lenders should take this into consideration in their review process. Having made the point regarding counterparty concentration, lenders should also be aware that counterparty exposure (in either physical or synthetic ETFs) only becomes an issue when a counterparty actually defaults and the collateral held is insufficient to replace the fund’s cash equivalent value and it is only at that stage where losses would start.

With respect to physically backed ETFs where the ETF engages in securities lending, collateral takers should note that the counterparties borrowing the underlying assets may in fact be the same entities that also are the swap counterparties to many synthetic ETFs. Many of the largest borrowers of securities are also included in the leading ranks in various swaps markets. It should be noted however many agent lenders offering securities lending programmes provide borrower default indemnification which mitigates the risk of loss to the ETF in the event of borrower default.

Both physically backed ETFs engaged in securities lending and synthetic ETFs hold over-collateralised positions (cash or securities) as risk mitigants. Synthetic ETFs have set the standard for daily disclosure which has yet to be met by the majority of physically backed ETFs. While we are certain investors, regulators and others welcome increased transparency, disclosure itself has limitations and should not be relied upon as a panacea. By definition, reported collateral positions are potentially out of date the moment they are reported. Regular substitutions are a feature of all collateralised businesses and this applies to securities lending activities conducted by physically backed ETFs and synthetic ETFs whether transfer of title to the collateral occurs or it is pledged.

There is also an on-going debate as to whether there should be a requirement for collateral assets held by ETF fund managers to be correlated to the performance of the index to be tracked. This has a clear theoretical appeal, yet in the real world is difficult to achieve, and to the extent that it could be achieved the reality is that it is unlikely that there would be a cost effective trading opportunity for the borrower in the first instance. Diversified baskets of “quality” collateral seems to be the only reasonable approach to take, with concentration limits, liquidity and price predictability as the watchwords with over-collateralisation and daily mark to market valuations as the primary market-risk mitigants. Interestingly, again here, many ETFs seem to satisfy these criteria. A DAX ETF loan

collateralised by a CAC 40 ETF has an appeal for both active ETF traders and collateral takers, but we acknowledge that this type of transaction seldom occurs today.

c. Collateral approval criteria

During our research, ETF collateral takers and tri-party collateral managers all point to the inability to group various ETFs together to establish more general pools of similar assets where the collateral is considered of fungible quality. For example, many lenders will interchangeably accept equities from major indices and/or accept groups of bonds with similar ratings and maturities (including sovereign bonds or investment grade corporate bonds). It must be acknowledged that in these early stages of ETF collateral acceptability, collateral takers usually review and approve individual ETFs on a per-issue basis. This is time consuming and given the significant number of European ETFs, would require resolution in order to achieve dramatic growth in use of ETFs as collateral.

d. ETFs and Agent Lender Collateral Risk Profiles

While settlement and custody issues are straightforward, acceptance of ETFs as collateral entails a different risk profile, particularly for agent lenders. Typically agents provide indemnifications to protect their underlying clients from losses in the event of a counterparty default. In the event of such a default the agent takes possession of the collateral, disposes of the collateral and uses the proceeds to reacquire the assets loaned to the defaulting borrower. Rightly, agents are concerned with the liquidity of the conventional securities they hold as collateral. They make assumptions on the volume and time it will take to dispose of the portfolio of collateral. Our research suggests that it is a standard assumption by many agents that a ten day disposal period is the maximum period required for the sale of the majority of the securities collateral held. A natural consequence of that assumption is that they cap the amount held in any given security to a percentage of the average daily traded volume of the asset. This is a straightforward calculation for exchange traded securities and sovereign bonds. It is more difficult for OTC markets such as corporate bonds. It is equally challenging with respect to European ETFs for the reasons identified elsewhere in this report.

Our research also indicates that agent lenders typically apply standard diversification rules to ETFs, requiring a package of (typically) 10 different ETFs for collateral purposes, paralleling the rules applied to equities and bonds as collateral. Given the diversification inherent in ETFs (see comments below on the liquidation of ETF collateral), imposition of diversification rules designed for equities and bonds seems unduly restrictive.

It is questionable whether this conventional approach based on average daily traded volume and diversification is equally appropriate for ETFs.

Demand is increasing across the financial markets for high quality collateral. Several factors combine to drive and accelerate this demand including increased use of central counterparty for OTC transactions, on-going greater requirement for collateral in bilateral transactions, new liquidity ratios in force in certain markets and due to be imposed under Basel III and a dramatically reducing pool of the highest rated sovereign bonds. European ETFs represent a substantial pool of additional collateral that is currently largely overlooked. While we do not advocate blanket approval of all ETFs, the ability to quickly convert assets to cash commends these assets for consideration.

In order to assess the merits and drawbacks of ETFs as collateral, we examine the scenarios which could arise in the event of a default by a borrower of cash or securities versus ETF shares as collateral.

Here the lender must dispose of collateral to recover cash loaned or use the proceeds to fund the reacquisition of the loaned securities. The lender will be concerned that the additional supply of assets for sale will depress the price of the collateral significantly. Orders are “worked” into the market for sale as above with quantity and timing of orders being an important consideration. ETFs present the same opportunity to dispose of an asset on the secondary market as do other equities and bonds. In the event that there is insufficient market demand for the ETF, an AP can act on the lender’s behalf to obtain either the underlying assets or cash equivalent.

Where the ETF is physically-backed, the lender delivers the ETF units held as collateral to the AP and by one standard settlement cycle, the AP will receive the underlying assets for onward delivery to the lender. Since the lender will know the assets it is due to receive, it can execute sale orders across the underlying assets. Here again, the individual orders are reduced in size to the constituent elements. Whereas a single stock or bond with a value of €1,000 must be sold, a similar value of ETFs will be spread across multiple underlying assets. If the ETF is redeemed for cash, this is straightforward – the lender delivers its units and receives the cash proceeds on settlement date. In many ways, this is far superior to other forms of collateral held by lenders. Where cash collateral is taken in the first instance, the cash gets reinvested into money market instruments. These investments must be sold in order to raise cash. Where other securities are held as collateral, these must also be sold on the market and require sale order management with potential market price impact resulting in a divergence from the last mark to market valuations of those assets.

It should be noted that there is a possibility that the redemption request by the AP may be “gated” in extreme market conditions. When gating occurs the ETF fund manager restricts the amount that can be redeemed at any given point in time and this could extend the period of time until the underlying is received by the lender

Depending on the ETF that is being disposed of, there may be a further tool that aids in crystallising market values. In the event that the ETF tracks an index that also has a futures contract attached to it, the lender can sell futures against its remaining ETF position, locking in prices.

This multi-level cascading effect – secondary market trading, redemption process, futures contract – renders ETFs as a superior form of collateral in many cases. Further, the in-built diversification of physically-backed ETFs automatically achieves one of the risk mitigants inherent in typical lender collateral profiles. This obviates the need for another standard feature of conventional securities lending collateral policy: diversification. Lenders will typically request that a borrower provide a diverse basket of securities – for instance, at least 10 different stocks or bonds, thus reducing a lender’s collateral reliance and exposure to one or a small handful of securities. Physically backed ETFs by definition represent a diverse set of positions. Synthetic ETFs mirror the performance of the targeted index and so achieve equal market-movement diversification, and after all, one of the objectives of having diversification is to have offsetting price movements from different assets.

e. Default by ETF collateral taker

The collateral provider – a borrower of securities or cash – may replace the ETFs provided as collateral. It is likely that the borrower has over-collateralised the lender as part of the standard securities lending or repo process – there is no difference as a result of ETFs being involved in the process. As a result we do not deal with the lender excess exposure in this paper. Depending on the legal agreement governing the transaction, the borrower will offset its obligations to the lender and may choose to replace the ETF. Note that the borrower may simply close out the position rather than reacquire the asset. In the event that they elect to repurchase the ETF, the borrower will execute transactions in accordance with its normal decision making process for trading.

Joining the dots to greater liquidity

In the preceding sections of this white paper we have identified the lack of a developed securities lending market in ETF shares as a major driver of relative illiquidity in ETF trading, examined the factors limiting market development and analysed the related limitations on acceptance of ETFs as collateral. In this section we summarise the changes required to allow (1) broader acceptance of ETFs as collateral, (2) an increased demand for borrowing of ETF shares and (3) an increased supply of ETF shares for lending, leading to (4) a significant increase in the liquidity of ETF secondary trading through increased market participation. The current slow development of securities lending in relation to European listed ETFs represents a “chicken and egg” situation, requiring concerted, co-ordinated action to deliver significant growth.

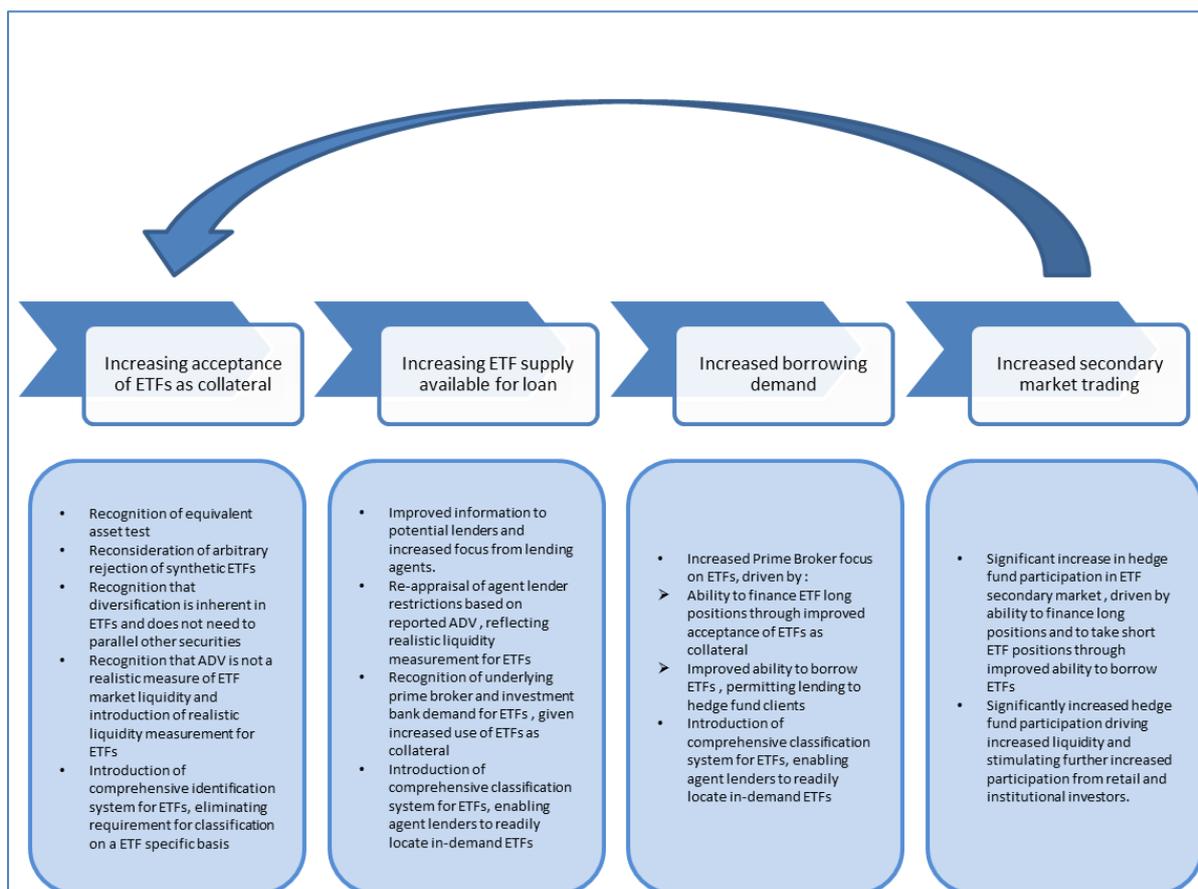


Figure17: The Interdependencies of required changes

As illustrated in Figure 17 (above), the changes required to promote development of an active securities lending market in European ETFs, driving improved liquidity in ETF trading, are interdependent, involving management of ETFs as collateral, availability of ETFs for lending purposes and demand for ETFs for borrowing purposes. While the individual changes required are manageable (though in some cases, significant), co-ordinated action on a market level is required to facilitate significant success. With this need for concerted, co-ordinated action in mind, the authors make the following recommendations:

Individual Firm Recommendations

1. Increase the use of ETFs as collateral

A wider acceptance of European ETFs appears to be both a logical extension of existing collateral profiles and as argued earlier in this paper, they may in many instances be a superior alternative to other collateral types. This decision is within the control of collateral takers and follows thought processes already internally approved (Equivalent Asset Test) and provides additional remedies through the cascading effect that are not available for cash market equities and bonds. Agents should replace traditional reliance on ADV that is appropriate for cash market securities and instead focus on diversification and multiple disposal layers applicable only to ETFs.

This first step of increased use of ETFs as collateral is achievable, sensible and will help ease the path to greater use of ETFs by traders and investors of all types.

2. Increase the lending of ETF shares themselves.

Securities lenders should re-examine their custody pools to establish the available supply of ETFs within their networks. Institutional investment into European ETFs continue to grow at a consistent and solid pace and it would be surprising if leading global custodians did not hold substantial portfolios in custody. Growth in ETFs has been consistent even during the market downturn – this asset type is not only here to stay, it is a vehicle of preference for many and given the massive potential growth of the European retail investor base on top of institutional investor use of ETFs, the AUM will definitely continue to grow. It should be recognised that the conversion process from custody pool into lending program may involve a time lag. The amount of time will vary based on the agent lender's starting position.

- ***Does the agent lend European ETFs?*** If the lender is actively lending European ETFs, it needs to ensure that its clients have reviewed and approved ETFs (if appropriate). If not, commence due diligence. A parallel to Global Depository Receipts (GDRs) has been mentioned by more than one of our respondents and interviewees. In the mid-1990's agent lenders seldom made their GDR supply available for loan, often considering them another asset class and not suited to lending. Further research revealed that for the purposes of securities lending, GDRs were treated in the same manner as equities. ETFs are the same.
- ***Has the beneficial owner approved ETFs as eligible for lending?*** Often beneficial owners enter a lending programme with a fixed set of approved markets and may not consider new markets or asset types. If the agent lender has satisfied itself in the due diligence process, then it should pursue client assets, even in the absence of specific assets that borrowers have in demand. This is a case of "If you build it, they will come." Lenders should in any case be looking to reduce per-unit costs in processing securities lending transactions. Building up the supply of high loan-fee paying ETFs available through low-cost processing methods should increase the ability for traders to implement short-related trading strategies, reinforcing the demand cycle.
- ***Build supply through third-party lending mandates.*** Third-party lending has become a mainstream activity for many agent lenders. Accessing additional ETF supply through these arrangements is also a possibility; however we would add a caveat in terms of the need for low cost per-loan processing. This would seem a particular challenge in the absence of predictable longer term borrowing demand.

- ***Create to lend activity will increase opportunistically for some firms.*** The growth is limited by inability to use ETFs as collateral (wider acceptance will support growth of create to lend); the financial transaction tax (to the extent that it is applied to specific markets); and the general and considerable reduction in proprietary trading positions held by investment banks.
- ***Better usage of transient long positions through the market maker and investment bank community.*** Recent years have seen an increase in dealer to dealer borrowing and lending activity generally and this sector has always been an important source of European ETF supply. The absence of traditional bid/offer-style screen trading is an inhibiting factor which could improve mobility of assets.

3. Increased borrowing demand for ETFs

Hedge funds, market makers and other proprietary traders are currently limited by the lack of supply of European ETFs available for loan. This is partly due to the circular argument that the lack of consistent borrowing demand means that agents can't identify "quality ETF portfolios" to target. Agents can't quantify returns, so feel uncomfortable marketing to prospective lenders. Experience with most securities lending markets strongly supports the concept that a wide and deep pool of supply results in more active involvement from trading firms of all types. It should be noted that trading will not increase dramatically without the improved availability of ETF supply and wider acceptance of ETFs as collateral.

Industry Action Recommendations

1. Establish Industry Classification System

First, action is required on an ETF industry level to define an effective classification system for ETFs, eliminating the time consuming and restrictive need to classify ETFs individually for collateral and securities lending purposes. It is recommended that ETF Issuers provide support to an industry wide initiative to define and implement an effective ETF classification system.

2. Define Best Practice for Lending ETFs

Second, action is required to define best practice in terms of lending ETF shares, addressing liquidity and diversification standards appropriate to ETFs. It is recommended that agent lenders take the initiative in defining best practice, potentially working through the International Securities Lending Association (ISLA).

3. Define Best Practice for Acceptance of ETFs as Collateral

Third, action is required to define best practice in terms of managing ETF as collateral. Consistency with securities lending best practice is integral to this effort; accordingly, we recommend that agent lenders and cash equity repo lenders take the initiative in consultation with tri-party providers, potentially working through ISLA or through a separate initiative

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iShares

iShares is the leading ETF provider globally with over US\$ 650 billion in assets. iShares pioneered making ETFs accessible to all types of investors. With 595 ETFs listed on exchanges worldwide and over 40% market share globally iShares has been championing ETFs as a better way of investing for the past 15 years.

iShares can be used across a multitude of investment strategies, either as stand-alone products, or in conjunction with other portfolio construction instruments. Their modular construction and cost-effective trading characteristics can help investors rapidly and efficiently build and reduce positions across a range of asset classes, geographies and investment styles.

For further information on iShares ETFs visit www.iShares.co.uk

Northern Trust

Northern Trust: services supporting European ETFs

European exchange-traded funds (ETFs) demand servicing capabilities that address the particular dynamics and challenges of this marketplace. A pioneer in the servicing of European ETFs, we build custom service solutions for ETFs that deliver the most efficient cross-border distribution and settlement infrastructure across both primary and secondary markets. We are differentiated by our:

- *Extensive asset servicing capabilities* including custody, fund administration, trustee/depository services, securities lending, financial reporting and authorised participant services. Clients benefit from tailored services and operations for physical, cash and swap-backed ETF dealing methodologies, plus extensive support for a broad range of global assets.
- *Specialist technology* aimed at achieving efficiencies in the dealing, processing and settlement of transactions through automated links to the main market-makers, fund registrars and issuing agents.

- *Expertise and knowledge in servicing ETFs* gained from over a decade's experience of servicing ETF clients and involvement in several industry firsts including involvement in the first major ETFs launched in Europe in 2000.

Susquehanna

Susquehanna International Securities Ltd is a leading specialist ETF market maker. For over 10 years our pricing capabilities, both on- and off-exchange*, have played an integral part in ETFs' success in Europe. We make deep, liquid markets across equity, fixed income and commodity tracking ETFs. According to recent Markit MSA Data for H1 2012, Susquehanna international Securities is the #1 ranked market maker for European ETFs by volumes traded. Please call +353 1802 8018 or visit www.sig.com for more information.

*Susquehanna international Securities provides prices over-the-phone to professional clients only.



The Authors

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Roy Zimmerhansl is principal of FinTuition, the leading training company focussed on Securities Finance, Hedge Fund and Securities Operations education. In addition, he operates a consulting practice advising firms on strategic planning, business structuring, risk management and marketing in Securities and ETF financing businesses. He is also Product Specialist at Trading Apps, a software firm providing solutions to the securities finance and hedge fund community.

With over 30 years in the securities industry, Roy has held senior positions across a range of market leading organisations including proprietary trading firms, prime brokers, a multilateral trading facility, custodian banks and a central depository. It is this unique breadth of experience that makes Roy a sought-after market commentator and thought leader. He is currently a member of the Bank of England Securities Lending and Repo Committee as an independent participant.

Andrew Howieson, Independent Consultant

Andrew Howieson is an Independent Consultant based in London, focused on global capital markets, with expertise in European clearing and settlement, European exchanges/MTF's, crossing networks and dark pools, securities lending and global custody. Andrew co-authored with Roy Zimmerhansl "Good, Bad or Inevitable? The Introduction of CCPs in Securities Lending". Andrew has specialist experience and knowledge of fixed income electronic trading developments and the issues related to liquidity development and buy-side / sell-side market participation.

Andrew established a European presence for Tabb Group, a research and consulting firm, authoring a widely acknowledged paper on European clearing and settlement issues and co-authored a paper on European Equity Markets Structure. Previously, Mr Howieson was the Managing Director of eSecLending (Europe) Ltd and a consultant to PDQ Enterprises, focused on facilities for algorithmic trading. He headed Corporate Strategy and Business Development for State Street and formed a state of the art electronic fixed income exchange. Mr Howieson's prior career included operations and internal audit management assignments for global financial institutions in Europe and Asia and he was based in the US for 15 years.