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**The Growth of Global ETFs and Regulatory
Challenges**

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Abstract

Exchange traded funds (ETFs) are one of the most innovative financial products introduced on exchanges. As reflected by the size of the market they have become popular among both retail and institutional investors. The original ETFs were simple and easy to understand, however some recent products such as leveraged, inverse, and synthetic ETFs, are complex and have additional dimensions of risk. The additional risks, complexity, and reduced transparency have resulted in heightened attention by regulators. Concerns related to systemic risk and excess volatility, suitability for retail investors, lack of transparency and liquidity, securities lending and counterparty exposure, among others have been raised. These concerns are being addressed by a shift towards multiple counterparties, overcollateralization, and disclosure of collateral holdings and index holdings. The appropriate regulatory and market reforms can ensure the continued success of ETFs.

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The Growth of Global ETFs and Regulatory Challenges

I. Introduction

Exchange Traded Funds (ETFs) are similar to mutual funds but unlike mutual funds they are listed on an exchange and trade throughout the day, similar to stocks. ETFs often have lower expense ratios and certain tax efficiencies compared to traditional mutual funds, and they allow investors to buy and sell shares at intra-day market prices. Moreover, investors can sell ETF shares short, write options on them, and set market, limit, or stop-loss orders. The shares of ETFs often trade at market prices close to the net asset value (“NAV”) of the shares, rather than at discounts or premiums.

ETFs are one of the most innovative and successful products introduced on exchanges and have grown tremendously over the years. The original ETFs were simple, providing diversification benefits at a low cost and allowing intra-day trading. More recently, complex products with additional risks have been introduced, attracting the attention of regulators. Regulatory concerns have focused around the issues of risks, transparency, lack of liquidity, complexity and suitability, counterparty risk, and the lending market in ETFs. Although ETFs did not cause the “Flash Crash” of May 6, 2010, the event did raise regulatory concerns about the potential role of ETFs on days of high volatility. This paper aims to closely examine the enormous growth in market size and complexity of ETFs as well as the regulatory concerns raised by them. We also examine efforts by the industry to address some of the criticisms.

The rest of the paper is organized as follows: Section II explains the types of ETFs and the recent trends in ETFs including leveraged, inverse, synthetic and actively managed ETFs; Section III discusses regulatory concerns raised by policy makers in different countries; Section IV summarizes the response to the regulatory framework in the US and Europe, Section V examines the role of ETFs in emerging markets using the case of India and Section VI concludes.

II. ETFs: Evolution and Recent Trends

ETFs provide an alternative to derivatives and stocks when investors are looking to increase or decrease exposure. They can be used for a buy and hold strategy or for market timing purposes. Institutions, such as some pension funds, that have restrictions on investing in derivatives can invest in ETFs. Other institutions find them to be an alternative to futures that have margin requirements and expiration dates. Hedge funds can use them to take long or short positions. They are also used to temporarily park cash during transitions in investment strategy or change in management. ETFs are increasingly being used by institutional investors for both strategic and tactical purposes; they are also popular among retail investors. These products are generally bought on a commission basis and investors pay brokerage commissions when they buy or sell. Similar to stocks that trade on an exchange, ETFs can be bought on margin. In comparison to mutual funds, the tax efficiency of ETFs arises because mutual funds need to sell shares for investors' redemption, and this can result in capital gains. These capital gains have to be distributed to investors, hence investors may incur taxes. ETFs don't have to sell shares to meet redemptions. The ETF itself and also the underlying stocks are lendable and as discussed later there is considerable activity in ETF lending. They are being used for active and passive strategies. Liquidity, expense ratios and tracking error are important factors for investors investing in ETFs. ETFs are registered with the securities commissions and are generally organized as open-end investment companies, sometimes they are also organized as unit investment trusts. ETF shares are purchased and redeemed directly from the fund sponsor, in large blocks called "creation units." Appendix A provides details on the creation and redemption process.

Arbitrage activity in ETF shares is facilitated by the transparency of the ETF's portfolio. Each day, the ETF publishes the identities of the securities in the purchase and redemption baskets, which are representative of the ETF's portfolio. Each exchange on which the ETF shares are listed typically discloses the current value of the basket on a per share basis ("Intraday Value") at 15 second intervals throughout the day and, for index-based ETFs, disseminates the current value of the relevant index. This transparency can contribute to the efficiency of the arbitrage mechanism because it helps arbitrageurs determine whether to purchase or redeem creation units based on the relative values of ETF shares in the secondary

market relative to the securities contained in the ETF's portfolio. Arbitrage activity in ETF shares is also affected by the liquidity of the securities in an ETF's portfolio.

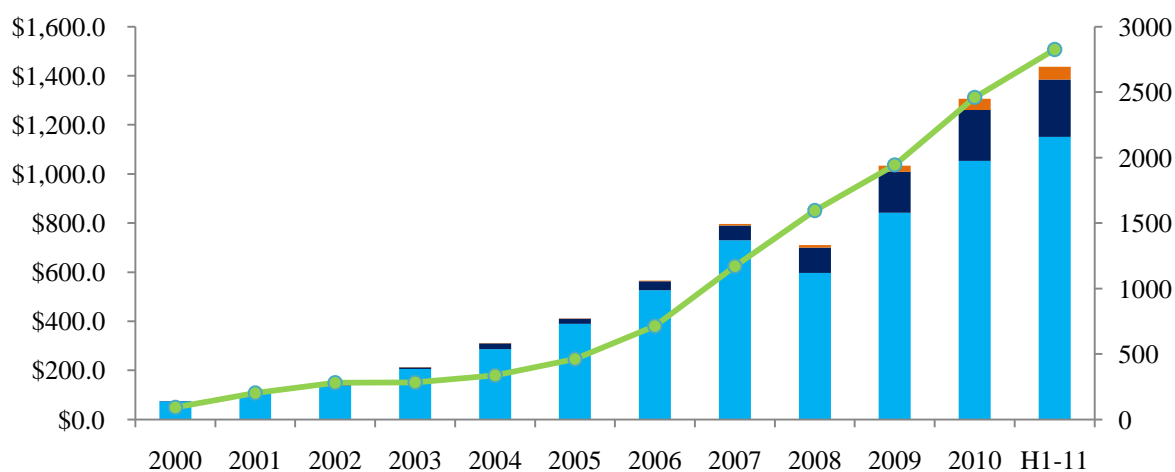
There are no exact figures available about ownership of ETFs. In the U.S., aggregate ETF ownership is estimated to be 50 percent retail and 50 percent institutional investors, however, institutions account for more than 80 percent of trading activity. New ETFs are typically held entirely by institutional investors and retail ownership builds up over time as investors become familiar with the product. In many emerging markets, ETFs are mostly owned by retail investors.

II.A Evolution of ETFs

II.A.1 Growth in ETF Market

The first ETF was introduced in Canada in 1989 as the Toronto Index Participation Fund (TIP 35). In 1993, an ETF was introduced in the U.S. by State Street, the Standard and Poor's 500 Depository Receipts (SPDR) that tracks the broad market index S&P 500. The Hong Kong Tracker Fund was the first ETF in Asia, introduced in 1999, and the first ETF in Europe was Euro STOXX 50 launched in 2001.

Figure 1: Global ETF and ETP Asset Growth, as at end H1 2011



Assets (US\$ Bn)	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	H1-11
ETF equity (LHS)	\$74.3	\$104.7	\$137.5	\$205.9	\$286.3	\$389.6	\$526.5	\$729.9	\$596.4	\$841.6	\$1,053.8	\$1,151.6
ETF fixed Inc (LHS)	\$0.1	\$0.1	\$4.0	\$5.8	\$23.1	\$21.3	\$35.8	\$59.9	\$104.0	\$167.0	\$207.3	\$232.8
ETF commodity (LHS)	-	\$0.0	\$0.1	\$0.3	\$0.5	\$1.2	\$3.4	\$6.3	\$10.0	\$25.6	\$45.7	\$52.3
ETF total	\$74.3	\$104.8	\$141.6	\$212.0	\$309.8	\$412.1	\$565.6	\$796.7	\$711.1	\$1,036.0	\$1,311.3	\$1,442.7
# ETFs total (RHS)	92	202	280	282	336	461	713	1,170	1,595	1,944	2,460	2,825

Source: ETF Landscape – Global Handbook, BlackRock, H1 2011.

At the end of the first half of 2011, there were 2,825 ETFs with 6,229 listings, on 49 exchanges, from 146 providers around the world as shown in Figure 1. The ETFs market has grown from \$66 billion in 2000 to \$1,442.7 billion at the end of H1 2011, and is expected to reach approximately \$2 trillion by early 2012. Investment in ETFs accounts for 40% of the total amount invested in index mutual funds in the U.S. The top 100 ETFs account for 61.8% of total ETF assets.² The top global ETF providers are listed below in Table 1. ETFs in the U.S. make up 25-30 percent of total market volume and have topped 40 percent on some days.³ ETF activity has increased dramatically in the last ten years both in terms of assets and trading volume. Plain vanilla ETFs on broad market indexes account for a large percentage of the activity.

Table 1: Top 10 Global ETF Providers ranked by AUM, as at end H1 2011

ETF provider	# of ETFs	AUM (US\$ Bn)	% total
iShares	474	\$620.7	43.0%
State Street Global Advisors	137	\$204.2	14.2%
Vanguard	69	\$175.5	12.2%
Lyxor Asset Management	163	\$54.4	3.8%
db x-trackers	201	\$52.3	3.6%
PowerShares	142	\$45.7	3.2%
ProShares	107	\$23.5	1.6%
Van Eck Associate Corp	34	\$23.0	1.6%
Credit Suisse Asset Management	58	\$18.3	1.3%
Nomura Asset Management	34	\$16.0	1.1%

Source: ETF Landscape – Global Handbook, BlackRock, H1 2011.

ETFs domiciled in the U.S. account for almost 70% of total activity followed by Europe at 25%. The majority of global ETFs track equity indices (75%), followed by fixed income (15%), and commodities (10%). Fixed income ETFs are linked to money market, government and corporate debt. Commodity ETFs are mostly on precious metals (particularly gold) because of their low storage costs, and non-perishable nature. In May 2011 itself, 36 new ETFs were introduced in the U.S. Exchanges in both developed and emerging markets now list ETFs. ETF issuance in Asia-Pacific has been slow, in March 2011, ETF assets under

² ETF Landscape – Global Handbook, BlackRock, H1 2011.

³ <http://www.indexuniverse.com/sections/features/9681-etf-trading-volumes-spike-amid-correction.html>

management in Asia/Pacific amounted to \$93 billion, growth of 13% in one year. More than one-third of the assets are held in Hong Kong/China (\$38b) and another third in Japan (\$30b). In Asia-Pacific, assets under management have grown from less than \$35b in 2003 to \$93b in 2011.⁴ Every year saw a growth except 2008 that felt the impact of the financial crisis.

II.B Growing Complexity of ETF Products

Since the plain vanilla ETFs were developed, they have evolved over time. The initial ETFs held a basket of securities that replicated the component securities of broad-based stock market indexes, such as the S&P 500. However, many of the newer ETFs are based on more specialized indexes, including indexes that are designed specifically for a particular ETF, bond indexes, and international indexes. Index-based ETFs track indexes, and have specified methodologies that select component securities that are generally highly liquid. For example, the SPDR[®] Barclays Capital High Yield Bond ETF “seeks to provide investment results that, before fees and expenses, correspond generally to the price and yield performance of the Barclays Capital High Yield Very Liquid Index.” The Underlying Index is a rules-based index designed to reflect the 50 most liquid U.S. dollar-denominated high-yield corporate bonds registered for sale in the U.S. or exempt from registration. PowerShares offers ETFs that mirror custom-built indexes based on Intellidexes. Some of the index providers that compile and revise the indexes are affiliated with the sponsor of the ETF. They seek to track the price and yield performance of domestic and international equity securities indexes provided by an affiliate.

In the United States, ETFs are registered as open-end investment companies, under the Investment Act of 1940. However, several of the features of ETFs are not consistent with the requirement of the Act that apply to mutual funds and therefore exemptions are needed from the SEC. Therefore, in the United States, ETFs require exemptions from the SEC before starting operations, which the SEC provides on a case-by-case basis. Instead of providing case-by-case exemption, in 2008, the U.S. SEC proposed new rules to permit ETFs to operate without the need for individual exemptive orders (see, SEC press release, March 4, 2008 on “SEC Proposes to Streamline ETF Approval Process”) in order to eliminate barriers to entry

⁴ The 2011 J. P. Morgan Global ETF Handbook

and avoid delay. However, the financial crisis of 2008 has delayed action and the proposed rules have not been implemented yet.

II.B.1 Leveraged and Inverse ETFs

Leveraged and inverse ETFs are relatively new category of actively managed ETFs that were introduced only in 2006.⁵ A leveraged ETF tracks the value of an index, a basket of stocks, or another ETF, with the additional feature that it uses leverage. Leveraged ETFs aim to achieve 2x or 3x long exposure. Similarly, inverse ETFs provide -1x or -2x short exposure. The majority of the activity is in the 2x and -2x leveraged products, with much smaller amounts in products with higher leverage and inverse ETFs. Leverage ETFs are popular with hedge funds.

As an example, the ProShares Ultra Financial ETF (UYG) was introduced in January 2006 and offers double exposure to the Dow Jones U.S. Financial Index. The ETF invests two dollars in a basket that tracks the index for each dollar of UYG's net asset value, leverage is provided by borrowing the second dollar that is invested in the index. Hence, UYG has 2x long position. The description of the UYG ETF is stated on ProShares website:

“This ETF seeks a return of 200% of the return of an index (target) *for a single day*. Due to the compounding of daily returns, ProShares' returns over periods other than one day will likely differ in amount and possibly direction from the target return for the same period. Investors should monitor their ProShares holdings consistent with their strategies, as frequently as daily.”

Similarly, ProShares Short Financials, SEF, -1x, seeks a return of -100% of the target index for a single day and was started in June 2008. ProShares UltraShort Financial ETF, SKF, is a short leveraged ETF, -2x and was first offered in January 2007. These ETFs short sell a basket of stocks that track the Dow Jones U.S. Financial Index. The performance of these ETFs is shown in Figure 2.

⁵ Leveraged ETFs were initially issued by Rydex in 2006.

The difference between traditional ETFs and leveraged ETFs is not simply the exposure to returns but they are also constructed differently. In a traditional ETF, when authorized participants e.g. institutional investors buy and redeem creation units, the underlying stocks are transferred. Leverage and inverse ETFs, are pre-packaged margin products, and are constructed using derivatives. They are created and redeemed in cash and not by the transfer of the underlying basket of stocks. These products provide an alternative to direct short selling, and also allow access to leverage.

Figure 2: Dow Jones U.S. Financials Index (DJUSFN), ProShares UltraShort Financials (SKF), ProShares Ultra Financials (UYG), and ProShares Short Financials (SEF)



Source: Yahoo Finance.

Leverage ETFs need to maintain a daily ratio of leverage to the benchmark. The daily rebalancing of leverage keeps the specific leverage ratio intact but implies that long-term performance of the ETF may differ significantly from the unleveraged performance of the benchmark index times the leverage ratio. Over long periods of time, such as three months and beyond, leveraged ETFs have been shown to underperform a corresponding leveraged buy and hold portfolio. As discussed by Avellaneda and Zhang (2009), returns on leveraged ETFs have generally underperformed a buy and hold leveraged strategy. Cheng and Madhavan (2009) discuss how the daily rebalancing can create volatility, particularly at the end of the day, and Militaru and Dzekounoff (2010) show that both long and short ETFs can

lose money even when the underlying index is flat. This discrepancy is partially driven by the daily rebalancing of leveraged ETFs.

II.B.2 Physical versus Synthetic ETFs

Physical ETFs hold all or most of the assets in a particular benchmark index. Investors in physical ETFs receive returns from the basket of securities net of expenses and any revenue from securities lending.⁶ These ETFs can be fully replicated or optimized. Typically, full replication is used for blue-chip indexes in the developed markets. Optimization strategies are more common for broader indexes or for indexes tracking illiquid securities⁷ Transparency is high because the portfolio composition is disclosed regularly and the underlying index can be easily followed. In the United States, regulatory restrictions on the use of derivatives, has resulted in the continued popularity of physical ETFs. In fact since March 2010, the SEC has not considered exemptive requests from ETFs that would make significant investment in derivatives, until it completes a review to evaluate the use of derivatives. ETFs that had already obtained an exemptive relief prior to March continue to operate as usual.

Most ETFs in the U.S. and Asia are physical, whereas synthetic ETFs have become quite popular in Europe. Almost half of the ETFs in Europe are synthetic. The first synthetic/swap-based ETF was introduced in Europe in 2001. Synthetic ETFs use futures, options and swaps to simulate the return of an underlying index, unlike physical ETFs that hold assets underlying a benchmark index. Synthetic ETFs have lower tracking error because the use of derivatives in these products makes it possible to more accurately obtain the same return as the underlying. Synthetic ETFs may be needed when physical replication is not possible. For example, commodity ETFs, such as energy-related ETFs, tend to be of the

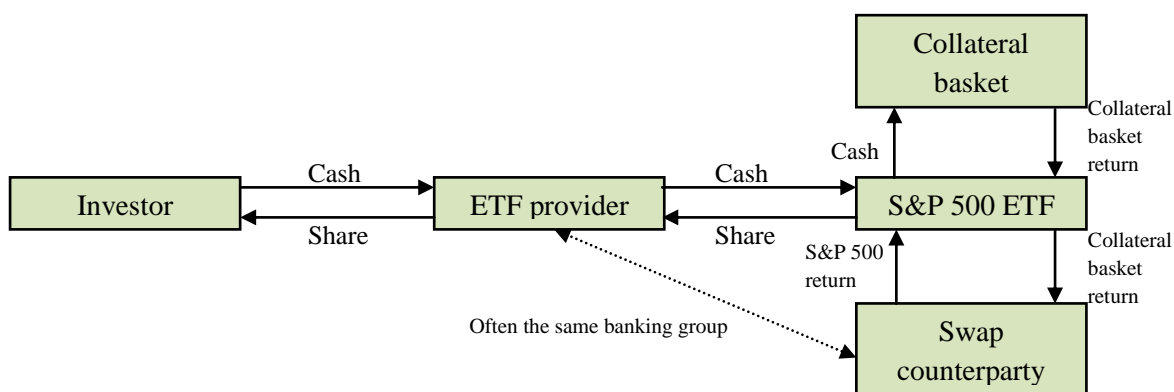
⁶ At any point in time some of the ETF's holdings may have been lent out, with the portfolio temporarily owning other assets taken as collateral.

⁷ Optimization strategies use a representative portfolio to mimic the index if the index consists of a very large number of stocks or has illiquid securities. The portfolio holds a subset of the index assets, which is expected to deliver the same aggregate return as the overall index. For example, S&P 500 tracker could hold just 100 shares whose performance is expected to be representative of all 500 index stocks. In some cases, the ETF may also hold securities that don't actually belong to the index; for example, a fixed income ETF facing limited liquidity in a specific bond may choose to diversify into other bonds with very similar characteristics and expected returns (Heaton, 2011). This strategy may however entail higher tracking error.

synthetic variety. Synthetic ETFs can allow exposure to countries such as India and China that have foreign investor restrictions, or Russia that has operational issues.

Synthetics can be complex; they can lack transparency, and have counterparty risk, as explained below. In a synthetic ETF, the ETF does not contain the securities in an index, instead the fund enters a total return swap agreement with the swap counterparty based on the return of the underlying index as shown in Figure 3. The value of the swap is marked to market daily. This setup may leave investors with counterparty risk and insufficient transparency about counterparty exposure. The concern is that the counterparty to the derivatives trade may not be able to meet its obligations due to financial difficulties and may default. If the counterparty defaults then the ETF may not perform as expected. This risk makes the issue of diversifying counterparty risk important. It also highlights the importance of obtaining high quality collateral. There are also concerns about the lack of transparency of the reference basket. As discussed later, many of these concerns are now being addressed by ETF providers.

Figure 3: Structure of a Simple Synthetic ETF



Source: Potential Financial Stability Issues Arising from Recent Trends in Exchange-Traded Funds, Financial Stability Board, April 12, 2011.

II.B.3 Actively Managed ETFs

An ETF that does not “seek to track the performance of a market index by either replicating or sampling the index securities in its portfolio” is considered an actively managed ETF as described in SEC Concept Release: Actively Managed Exchange-Traded Funds.⁸ In contrast to an index-based ETF, actively managed ETFs need not seek to track a particular index;

⁸ U.S. SEC Concept Release IC-25258, File No. S7-20-01, May 18, 2004.

securities may be selected consistent with the investment objective, without actually replicating or sampling the underlying securities. There are currently more than 40 actively traded ETFs in the U.S. The fee for actively managed ETFs is higher than for passive ETFs.

III. Regulatory Concerns in Developed Markets

Regulators around the world have been showing concerns about the risks associated with the more complex ETFs that may have additional risks associated with the construction and performance of the ETFs. The major concerns are related to:

- Systemic risk and excess volatility
- Suitability of complex ETFs for retail investors
- Lack of transparency and liquidity of the securities in the portfolio
- Securities lending of the ETF itself and the underlying securities

The Financial Stability Board (FSB), established to coordinate the development and promotion of effective regulatory, supervisory and other financial sector policies, issued a note on ETFs on April 12, 2011.⁹ FSB has warned that the recent financial innovation in ETFs requires closer monitoring of potential vulnerabilities and warrants the attention of regulators. The main issues that the regulators in Europe and the U.S. are currently addressing are as follows.

III.A Systemic Risk and Excess Volatility

The FSB is concerned that when the same bank serves both as the provider of a synthetic ETF and the swap counterparty, investors may be exposed, if the bank defaults. The concern is that this counterparty risk could be a source of contagion and systemic risk, since it entails possibilities of a bank default. Further, many ETFs are cross-listed and hence there is potential for contagion and systemic risk in the financial system crossing over country borders. The “Flash Crash” of May 6, 2010” was an event that further put the spotlight on ETFs as discussed in Box 1 below.

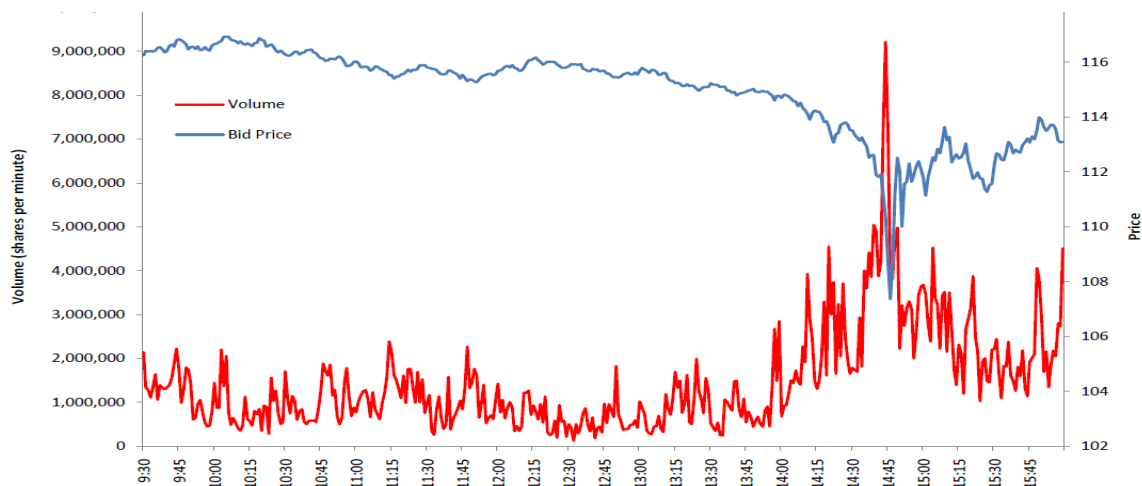
⁹ “Potential Financial Stability Issues Arising from Recent Trends in Exchange-Traded Funds,” FSB, 2011.

There are also concerns that if a counterparty bank finances illiquid assets through swaps in the case of synthetic ETFs, there may be a liquidity mismatch between short term liabilities and long term funding, leading to systemic problems if there is huge liquidation of ETFs. In a synthetic ETF, a bank may sell ETF shares in exchange for cash. The cash is invested in a collateral basket, the return of which is swapped by the derivatives desk of the same bank for

Box 1: The Flash Crash

Equity-based ETFs suffered some of the most severe price dislocations on May 6, 2010 when the Dow Jones Industrial Average plunged by almost 1000 points in 20 minutes, wiping out more than \$1 trillion in market value. As a result, 21,000 trades were cancelled, 68% being ETF trades. The day started with unusual volatility with concerns about the European debt and potential Greek default. As reported in the SEC-CFTC study, by 2:30 p.m., the S&P 500 volatility index (“VIX”) was up 22.5% from the opening level and selling pressure had pushed the Dow Jones Industrial Average (“DJIA”) down about 2.5%. Buy-side liquidity in the E-Mini S&P 500 futures contracts (the “E-Mini”), as well as the S&P 500 SPDR exchange traded fund (“SPY”), the two most active stock index instruments traded in electronic futures and equity markets, had fallen from the early-morning level of nearly \$6 billion dollars to \$2.65 billion (representing a 55% decline) for the E-Mini and from the early-morning level of about \$275 million to \$220 million (a 20% decline) for SPY.

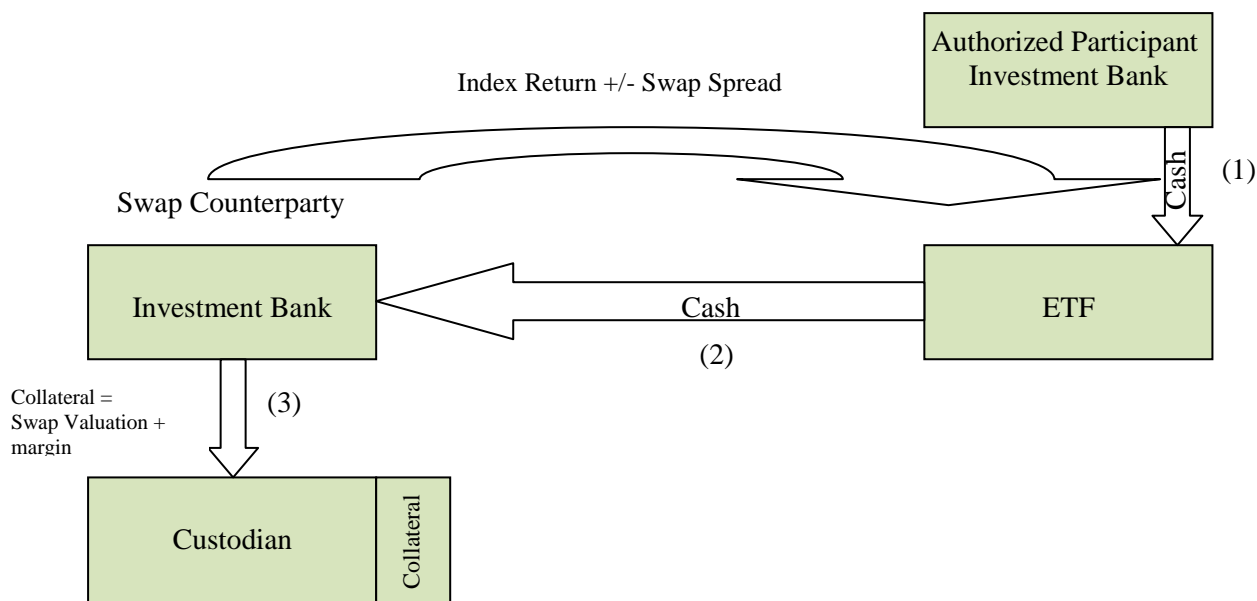
At 2:32 p.m., a mutual fund complex initiated a sell program to sell a total of 75,000 E-Mini contracts, worth approximately \$4.1 billion as a hedge to an existing equity position, using an automated execution algorithm programmed to feed orders to target an execution rate set to 9% of the trading volume calculated over the previous minute, but without regard to price or time. The Sell Algorithm based only on trading volume, and neither price nor time, executed the sell program extremely rapidly in just 20 minutes. The combined selling pressure from the Sell Algorithm, High-frequency traders and other traders drove the price of the E-Mini down approximately 3% in just four minutes from 2:41 p.m. to 2:44 p.m. During this same time cross-market arbitrageurs who did buy the E-Mini, simultaneously sold equivalent amounts in the equities markets, driving the price of SPY also down approximately 3%. The price and volume movements of SPY on the day of the Flash Crash are shown in the figure below.



the return of an index (e.g. S&P 500). The ETF does not contain the securities in an index, instead the fund enters a total return swap agreement with the swap counterparty based on the return of the underlying index as shown in Figure 4. The value of the swap is marked to market daily. This setup may leave investors with counterparty risk.

The dual role in swap-based ETFs entering into a derivatives contract with the ETF promoter’s investment banking arm can also cause conflict of interest. FSB suggests rules on selecting collateral, screening for credit quality and liquidity, valuation processes, and limits on derivatives exposure.

Figure 4: Swap Based ETFs with Over Collateralized Exposure



Source: BlackRock.

III.B Suitability for Retail Investors

Several regulators around the globe have been concerned about the suitability of certain types of ETFs for retail customers. In the United States, FINRA highlighted its focus on ETFs in its 2011 Annual Regulatory and Examination Priorities Letter. They explained that this focus is a result of the complexity of these products, along with a considerable increase in their number and trading volume, as well as increased interest by retail investors.

“In addition to overall sales practice concerns, we have identified marketing materials that appear to omit the material risk disclosures necessary to provide a sound basis for evaluating a product as required by FINRA’s advertising rules. In this regard, FINRA is conducting targeted exams to gather information on advertising and sales literature pertaining to ETPs that are not registered investment companies.”

In its 2009 Regulatory Notice 09-31, FINRA pointed out the performance of leveraged and inverse ETFs over longer periods of time can differ significantly from their stated daily objective due to the effects of compounding. Therefore, according to FINRA, these products are unsuitable for retail investors who plan to hold them for longer than one trading session, particularly in volatile markets.

FINRA in its Fall 2001 Regulatory and Compliance Alert, discussed disclosure of ETF performance. ETF returns are calculated based on NAV, however ETF shares may trade at a discount or premium. Therefore, FINRA raised concern that only NAV-based returns might not provide a complete picture of performance.

In 2011, the U.K. Financial Services Authority (FSA) raised concerns about the suitability of leveraged ETFs for retail investors.¹⁰ The FSA plans to take a much more interventionist approach to the regulation of retail financial services. FSA believes that the previous approach of ensuring that sales processes are fair and that product disclosure is transparent has proved insufficient to protect retail customers, and that a new regulatory approach, involving earlier intervention, is needed. FSA is not banning leveraged ETFs but it wants the starting point to be that these products are unsuitable for most retail customers. Therefore, anyone promoting them would need to provide justification. In contrast with the SEC, the FSA has warned about the risks involved in leveraged ETFs but not inverse ETFs.

The ETF exemptive rules proposed by the SEC in 2008 included a condition requiring each ETF to agree not to market or advertise the ETF as an open-end fund or mutual fund and to explain that ETF shares are not individually redeemable. This condition was designed to help prevent retail investors from confusing ETFs with traditional mutual funds. Similarly, the proposed rule would require each ETF relying on the rule to identify itself in any sales literature as an ETF that does not sell or redeem individual shares, and explain that investors may purchase or sell individual ETF shares in secondary market transactions that do not involve the ETF.

¹⁰ “Retail Conduct Risk Outlook,” Financial Services Authority, February 28, 2011.

A recent article in the *Wall Street Journal* noted that iShares, the largest ETF manager, warned that some ETF providers are not doing enough to make their products safe.¹¹ The European Securities and Markets Authority (ESMA) issued a discussion paper on “ESMA’s policy orientations on guidelines for Undertakings for Collective Investment in Transferable Securities (UCITS) Exchange-Traded Funds and Structured UCITS,” on July 21, 2011. ESMA determined that the regulatory regime related to UCITS ETFs is not sufficient and is examining possible measures that could mitigate the risk of some of these complex products. UCITS may put limits on the sale of complex ETFs to retail customers. A suggestion has been to divide European UCITS products into complex and non-complex, and restrictions could be placed on the distribution of complex products to retail customers. However, as of now there is no consensus about regulatory approaches and the industry is proactively taking steps to address the suitability issues.

III.C Transparency and Liquidity

Regulators have expressed concerns about several aspects of insufficient transparency, including counterparty exposure, collateral and underlying indexes that are proprietary in many cases. In addition to counterparty risk, regulators are concerned about transparency and disclosure related to counterparty exposure. Investors need to have sufficient and timely disclosure about counterparty exposure. The financial crisis of 2008 heightened concerns about the quality of collateral posted, this is another area that needs further transparency. Finally, the lack of transparency of the reference basket for complex ETFs is also of concern.

Another issue is that ETFs offer on-demand liquidity to investors even though the underlying assets might not be liquid. During market meltdowns, investors may demand massive redemptions. Even if redemption is in-kind/cash, there would be issues about liquidity risk of ETF providers and counterparties. It may be noted that UCITS has provided greater flexibility in the use derivatives in ETFs, leading to a large number of synthetic ETFs being introduced in Europe, compared to the United States. Swap based ETFs can be UCIT compliant if they satisfy certain conditions, such as use of eligible counterparty.

¹¹ “Financial News: Turmoil Raises Fears About Synthetic ETFs,” *Wall Street Journal*, August 14, 2011.

III.D Securities Lending

The securities lending business in ETFs is extremely active and is a significant source of income for investors and ETF managers. One of the concerns expressed is that hedge funds are using ETFs to short stock indexes, sometimes resulting in mismatches between outstanding ETF shares, the number of shares short and the actual ownership of underlying index assets by the ETF. FSB has expressed concerns that the low margins in plain-vanilla ETFs provide incentive for aggressive securities lending. Concerns about liquidity, counterparty, and collateral risk exist on the securities lending aspect of the business. Similar concerns have been expressed by the International Monetary Fund and by the Bank for International Settlements (Ramaswamy 2011) in their notes on ETFs.¹²

IV. Response to Regulatory Concerns

In response to regulatory concerns and after the crisis of 2008, there have been a number of moves to mitigate risks related to ETFs, including the move towards multiple counterparties and to have over collateralized swap exposure. By having multiple counterparties exposure is not limited to one entity that might default. Multiple counterparties also allows for competitive swap pricing. In order to address transparency issues, there are recommendations to provide full disclosure of collateral holdings, and index holdings.

Recently swap-based ETFs have started to report collateral holdings, index holdings, swap counterparties, and swap pricing on their websites. European synthetic ETFs are Undertakings for Collective Investment in Transferable Securities (UCITS) and cannot have more than 10% exposure to a swap counterparty. In the funded swap ETFs, introduced in Europe in 2009, the counterparty posts collateral assets with a third party custodian. The collateral belongs to the funds and hence the risk of counterparty default is mitigated.

In August 2011, the Hong Kong Securities and Futures Commission mandated 100% collateralization of counterparty risk, when derivatives are used to replicate index performance. As of August 2011, there were 49 synthetic ETFs listed in Hong Kong, 13 of them were domestic. If equity is used for collateral then coverage has to be 120%. The

¹² “Durable Financial Stability, Getting There from Here,” Global Financial Stability Report, IMF, 2011.

Commission also requires all synthetic ETFs to carry an “X” in front of the name. Collateralization levels have to be made available on the ETFs website. In Australia, no more than 10% of the ETFs net asset value can be swapped out using derivatives. Also, only authorized deposit-taking institutions or authorized foreign banks can be counterparties. BetaShares in Australia decided to convert its two synthetic ETFs into physical ETFs due to the emerging regulatory concerns.

The U.S. SEC has been considering not requiring ETFs to obtain an exemptive relief if they satisfy three conditions that facilitate the arbitrage mechanism: transparency of the ETF’s portfolio, disclosure of the ETF’s Intraday Value, and listing on a national securities exchange. An ETF can rely on the proposed rule only if a national securities exchange disseminates the Intraday Value at regular intervals during the trading day. Further, in case of ETFs that have a stated investment objective of maintaining returns that correspond to the returns of a securities index, their providers need to disclose on their website the identities and weightings of the component securities and other assets of the index. The proposed rule does not limit the types of indexes that an ETF may track or the types of securities that comprise any index. Thus, the rule does not limit the exemption to ETFs investing in liquid securities or assets—instead, requires ETFs to comply with the liquidity guidelines applicable to all open-end funds. The ETF should be listed on a national securities exchange, and the national securities exchange typically disseminate the Intraday Value of ETF shares at 15-second intervals throughout the trading day, thereby providing institutional investors and other arbitrageurs the information necessary to engage in ETF share purchases and sales on the secondary market, and purchases and redemptions with the fund, which should help keep ETF share prices from trading at a significant discount or premium. However, the proposed rules have not become effective as of year-end 2011.

The industry itself has become proactive and is taking steps to address the criticisms. For example, in October 2011, BlackRock recommended the following reforms:¹³

- Clear labeling of product structure and investment objectives
- Frequent and timely disclosure for all holdings and financial exposure
- Clear standards for diversifying counterparties and quality of collateral

¹³ “ETFs: A Call for Greater Transparency and Consistent Regulation,” ViewPoint, BlackRock, October 2011.

- Disclosure of all fees and costs paid, including those to counterparties
- Universal trade reporting for all equity trades, including ETFs

The intention of these recommendations is to reduce the risks and increase transparency in areas that have concerned regulators and market participants. Many ETF sponsors have voluntarily adopted many of these best practices. Regulatory mandates and voluntary reforms by market participants can ensure that ETFs will continue to be a safe and useful product for investors.

V. Emerging Markets and the Case of India

Several emerging markets now trade ETFs; in addition, emerging market ETFs are also listed in foreign markets. Broad based emerging market ETFs were introduced almost ten years ago. We use India as an example of a growing emerging market that has ETFs in order to examine the role of ETFs in emerging markets. Emerging market ETFs have grown significantly over the last decade and now investors can access almost all the MSCI emerging market countries. In 2010, there were 450 emerging market ETFs/ETPs with 869 listings on 38 exchanges from 32 countries from 94 providers with \$193b in assets. MSCI Emerging Markets ETF is the largest, trading in the United States with assets greater than \$45 billion.¹⁴ Appendix B provides a global listing of all ETFs. ETF activity in Asia is quite limited relative to other regions. Japan, Hong Kong, Korea and Taiwan have the most ETF activity in Asia. Among the BRIC countries of Brazil, China, India and Russia, ETF activity is highest in China and Brazil, followed by India and barely exists in Russia. ETF activity is concentrated only in a few countries around the world.

As of May 2011, there were 47 ETFs that offer Russian exposure, 69 ETFs offer exposure to Brazil, 160 offer exposure to China, and there are 43 India-related ETFs listed in the U.S. In May 2011, Direxion Funds filed with the SEC to introduce nine new India-related ETFs that are not leveraged.¹⁵ Emerging Global Advisors has also filed for additional Indian ETFs with

¹⁴ <http://etfdb.com/type/region/emerging-markets/>

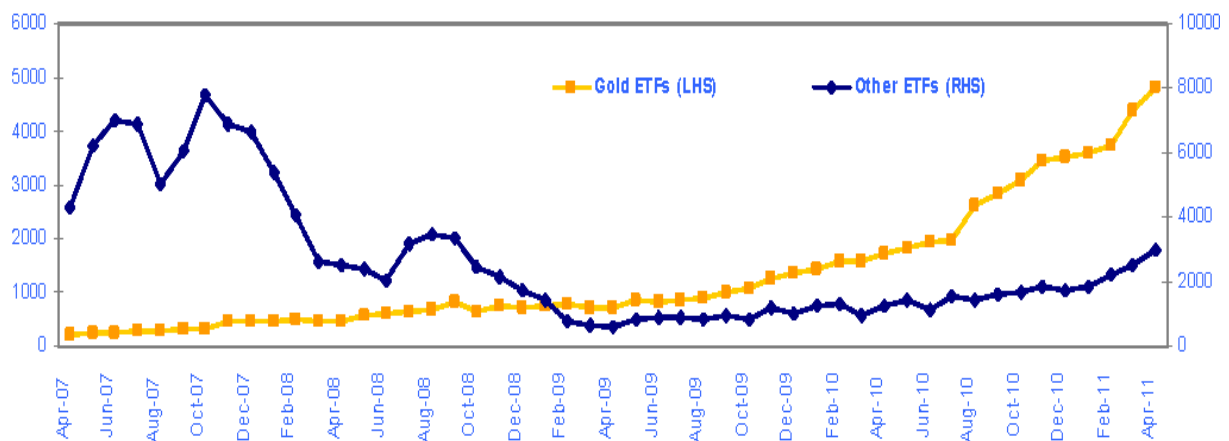
¹⁵ They are: IndiaShares Fixed Income Shares, IndiaShares Mid & Small Cap Shares, IndiaShares Consumer Shares, IndiaShares Energy & Utility Shares, IndiaShares Financial Shares, IndiaShares Industrial Shares, IndiaShares Infrastructure Shares, IndiaShares Materials Shares, and IndiaShares Technology & Telecommunication Shares.

nine of them focusing on different sectors of the economy. These ETFs provide investors another option to obtain easy exposure to foreign markets.

ETFs trading in emerging markets are typically of the vanilla type with synthetic or leveraged ETFs not being allowed in most emerging markets. One of the issues in emerging markets is that only stocks in broad based indexes tend to be liquid; therefore, ETFs have been limited to broad indexes. The liquidity issue raises concerns about the spreads of ETFs. In contrast to developed markets, the ETF market in countries such as India is dominated by retail investors. Hence, securities regulators are even more inclined to be conservative in allowing complicated products. In order to trade ETFs in India, investors need demat/broking accounts and many Indian investors do not have these accounts and therefore do not consider ETFs. Banks play a large role in the Indian financial markets and are the biggest distributors. They find it easier to sell open-end mutual funds that do not require demat accounts. They also do not want to be seen as selling stock market products for the fear of additional regulation and scrutiny. There are 31 ETFs listed in India as of September 2011, with total assets of \$2 billion. They are listed on the NSE and/or BSE.

Growth in Gold ETFs have seen a rising trend as shown in Figure 5, however other ETFs have seen a decline in activity from 2007 to 2011.

Figure 5: Growth in Indian ETFs



Source: Mutual Fund Category Analysis, HDFC Securities, June 28, 2011.

Of the total, 65% is invested in gold, 25% in equity, and the rest in money markets as of June 2011.¹⁶ Equity ETFs represent large cap and small cap stocks on major indexes; sector based ETFs are mostly bank-related, and there is also an ETF related to infrastructure. Gold ETFs are backed by physical holding of gold of 99.5% purity. There is no wealth tax on gold ETFs.

There are two international ETFs, linked to Nasdaq 100 and the Hang Sang Index. There is only one fixed income ETF, Liquid BeES, and it invests in short-term debt instruments. These are plain vanilla ETFs as synthetic ETFs are not permitted in India. The situation is similar in most emerging markets. The expense ratios of the ETFs are typically quite reasonable ranging from 0.50 % for the local broad based indexes to 1% for gold and international ETFs.¹⁷

Local regulators in emerging markets have typically allowed only simple ETFs in the local market. However, foreign providers can create and list complex ETFs in the foreign market. For example, in 2010, ETF provider Direxion introduced the Direxion Daily India Bull 2x ETF (INDL), which seeks daily investment results, before fees and expenses, of 200% of the price performance of the Indus India Index. Similarly, the Direxion Daily India Bear 2x ETF (INDz) seeks -200% of the price performance of the Index. The underlying Indus India Index is designed to replicate the Indian equity market as a whole, through a group of 50 Indian stocks selected from a universe of the largest companies listed on NSE and BSE.

Emerging market regulators have been appropriately cautious in not allowing complex ETFs. In countries such as India, trading in ETFs has been quite limited relative to the U.S. and Europe. ETFs based on broad market indexes with sufficient liquidity appear to be suitable products for retail customers.

VI. Conclusion

ETFs have grown tremendously during the last decade and have become a significant part of the equity market activity; hence, regulators are keeping a close watch on any potential impact of these products on financial stability and market volatility. Many ETFs are cross-

¹⁶ <http://www.risk.net/asia-risk/news/2080294/risk-india-etfs-set-grow-india-regulators-wary-systemic-risk>

¹⁷ For details, see “Mutual Fund Category Analysis,” HDFC Securities, June 28, 2011.

listed and hence contagion and systemic risk in the financial system cross over country borders. The growth of ETFs has been accompanied by innovation and complexity in some of these products. In some countries, regulations do not allow complex ETFs, which however are seen in regimes where the regulatory structure is less stringent. Synthetic ETFs are more prevalent in Europe and have raised the greatest concerns. In the United States, concerns have been raised about leveraged and inverse ETFs. The industry itself has recognized the concerns about transparency and counterparty risk, and has started to address them proactively. Regulations in several emerging markets restrict ETFs to simple products.

ETFs are one of the most successful products introduced on exchanges in recent years. Regulators will need to tread carefully to manage risks and yet not impose unnecessary regulation. There is little by way of data and facts concerning the risks of ETFs. Academic scholars can play a role by conducting comprehensive and unbiased analysis.

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Appendix A

Creation and Redemption

Figure A.1 shows the operational structure of an ETF in both the primary and secondary market. A financial institution that purchases a creation unit of ETF shares, first deposits with the ETF, a “purchase basket” of certain securities, and then receives the creation unit. The basket reflects the composition of the ETF’s portfolio and is equal in value to the aggregate NAV of the ETF shares in the creation unit. After purchasing a creation unit, the financial institution may hold the ETF shares, or sell some or all in secondary market transactions. ETF shares can be redeemed for shares “in kind” of the underlying securities. The in-kind distribution of securities does not have tax consequences in the United States, unlike mutual funds that may need to sell securities to meet redemptions. The ability to create and redeem shares keeps the ETF price close to the net asset value of the underlying asset, and therefore ETFs generally do not trade at a discount or premium. The creator of ETF shares typically deposits a portfolio of securities that resembles the holdings of the underlying index and in return obtains shares of ETFs. The redemption process is the reverse of the purchase process as shown in Figure A.2.

The ability of financial institutions to purchase and redeem creation units at each day’s NAV creates arbitrage opportunities that may help keep the market price of ETF shares near the NAV per share of the ETF. For example, if ETF shares begin trading on national securities exchanges at a price below the fund’s NAV per share, financial institutions can purchase ETF shares in secondary market transactions and, after accumulating enough shares to comprise a creation unit, redeem them from the ETF in exchange for the more valuable securities in the ETF’s redemption basket. The purchases create greater market demand for the ETF shares, and thus tend to drive up the market price of the shares to a level closer to NAV. Conversely, if the market price for ETF shares exceeds the NAV per share of the ETF itself, a financial institution can deposit a basket of securities in exchange for the more valuable creation unit of ETF shares, and then sell the individual shares in the market to realize its profit. These sales would increase the supply of ETF shares in the secondary market, and thus tend to drive down the price of the ETF shares to a level closer to the NAV of the ETF share.

Figure A.1: Operational Structure of ETFs

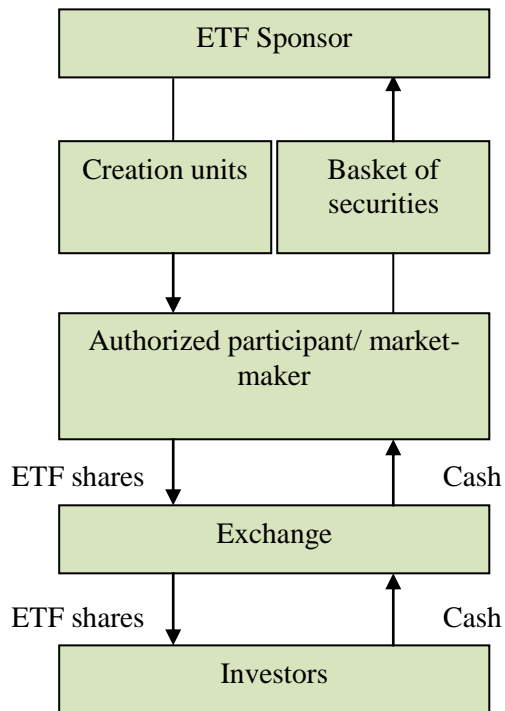
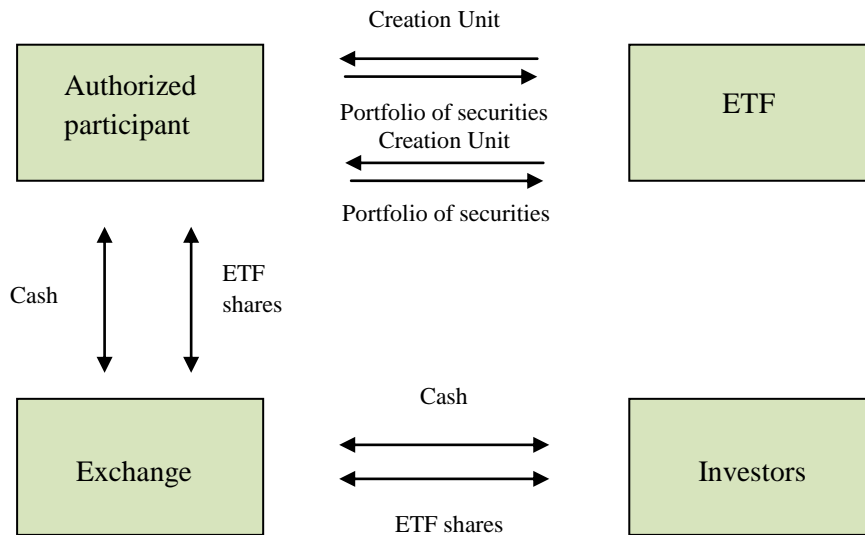


Figure A.2: ETF Creation and Redemption Process



Appendix B

Global ETF Listings by Exchange, as at end H1 2011

The table shows the number of ETFs, number of total ETF listings, ETF assets under management in dollars (AUM) and the 20 day average dollar trading volume (ADV) for Asia Pacific, Americas and Europe, and Middle East & Africa. The statistics are also shown for each country in the region.

Region/country listed	Exchange	# ETFs	# total listings	AUM (US\$ Bn)	20 day ADV (US\$ Mn)
Asia Pacific		350	466	\$92.4	\$1,002.6
Australia	Australian Securities Exchange	28	49	\$3.9	\$31.3
China	Shanghai Stock Exchange	20	20	\$7.4	\$133.1
	Shenzhen Stock Exchange	5	5	\$4.7	\$73.9
Hong Kong	Hong Kong Stock Exchange	47	76	\$27.3	\$261.1
India	Bombay Stock Exchange	2	2	\$0.0	\$0.0
	National Stock Exchange	17	17	\$0.4	\$4.2
Indonesia	Indonesia Stock Exchange	1	1	\$0.0	\$0.0
Japan	Osaka Securities Exchange	11	11	\$11.5	\$71.1
	Tokyo Stock Exchange	74	78	\$19.7	\$90.8
	Nagoya Stock Exchange	1	1	\$0.0	\$0.0
Malaysia	Bursa Malaysia Securities Berhad	4	5	\$0.4	\$0.3
New Zealand	New Zealand Stock Exchange	6	6	\$0.4	\$0.4
Singapore	Singapore Stock Exchange	25	83	\$3.2	\$14.0
South Korea	Korea Stock Exchange	91	91	\$7.7	\$274.7
Taiwan	Taiwan Stock Exchange	15	18	\$5.7	\$47.4
Thailand	Stock Exchange of Thailand	3	3	\$0.1	\$0.2

Region/country listed	Exchange	# ETFs	# total listings	AUM (US\$ Bn)	20 day ADV (US\$ Mn)	
Americas		1,261	1,683	\$1,026.5	\$63,433.0	
Brazil	BM&F Bovespa	8	8	\$1.8	\$17.9	
Canada	Toronto Stock Exchange	195	235	\$41.7	\$1,028.8	
Chile	Bolsa Comercio Santiago		50		\$0.1	
Mexico	Mexican Stock Exchange	19	351	\$9.5	\$371.8	
United States	BATS				\$10,498.6	
	NASDAQ OMX BX				\$988.0	
	CBOE				\$317.0	
	Chicago				\$774.8	
	NSX (Cincinnati)				\$216.4	
	FINRA-ADF				\$16,785.7	
	NASDAQ		78	78	\$38.1	\$15,315.3
	Philadelphia				\$1,747.0	
	NYSE AMEX				\$2.7	
	NYSE Arca		961	961	\$935.4	\$15,368.9

Region/country listed	Exchange	# ETFs	# total listings	AUM (US\$ Bn)	20 day ADV (US\$ Mn)
Europe, Middle East and Africa (EMEA)		1,214	4,080	\$323.8	\$3,564.9
Austria	Wiener Borse	1	21	\$0.1	\$0.1
Belgium	NYSE Euronext Brussels	1	28	\$0.0	\$0.2
Botswana	Botswana Stock Exchange		1		
Finland	NASDAQ OMX Helsinki	1	1	\$0.3	\$2.6
France	NYSE Euronext Paris	270	494	\$64.3	\$522.8
Germany	Deutsche Boerse	420	831	\$124.2	\$774.7
	Boerse Stuttgart		406		\$14.5
Greece	Athens Exchange	3	3	\$0.1	\$0.1
Hungary	Budapest Stock Exchange	1	1	\$0.0	\$0.0
Ireland	Irish Stock Exchange	14	14	\$0.4	\$0.1
Italy	Borsa Italiana	23	535	\$2.7	\$360.1
Netherlands	NYSE Euronext Amsterdam	16	115	\$0.4	\$67.7
Norway	Oslo Stock Exchange	7	15	\$0.9	\$61.6
Poland	Warsaw Stock Exchange	1	3	\$0.1	\$0.3
Portugal	NYSE Euronext Lisbon	3	3	\$0.1	\$1.6
Russia	RTS Stock Exchange	1	1	\$0.0	\$6.8
Saudi Arabia	Saudi Stock Exchange	2	2	\$0.0	\$0.0
Slovenia	Ljubljana Stock Exchange	1	1	\$0.0	
South Africa	Johannesburg Stock Exchange	26	26	\$2.6	\$11.9
Spain	Bolsa de Madrid	12	67	\$1.5	\$11.9
	Latibex		1		
Sweden	NASDAQ OMX Stockholm	23	63	\$3.0	\$91.8
	Burgundy		24		\$22.2
Switzerland	SIX Swiss Exchange	128	691	\$47.3	\$270.6
Turkey	Istanbul Stock Exchange	12	12	\$0.2	\$20.9
UAE	Abu Dhabi Securities Exchange	1	1	\$0.0	\$0.0
United Kingdom	London Stock Exchange	247	720	\$75.8	\$528.5
	European Reported OTC				\$794.1
Grand total		2,825	6,229	\$1,442.7	\$68,000.5

Source: ETF Landscape – Global Handbook, BlackRock, H1 2011.