

BOND ETFs: BENEFITS, CHALLENGES, OPPORTUNITIES

JULY 2015

Many questions have recently been raised about the liquidity of Exchange Traded Funds (ETFs). In this *ViewPoint*, we seek to address these questions, with reference to the structural features of ETFs, the value of exchange listing and the role of **Authorized Participants (APs)**‡. We also discuss the benefits of ETFs, including transparency and **price discovery**, and some of the challenges, including the need for a classification system that better distinguishes among several types of ETFs that have varied structural features. Finally, we offer some suggestions for concrete regulatory actions that can extend the benefits of ETFs to a broader investor base and improve financial stability by accelerating market structure transition from principal-based trading of bonds to an agency model.

Recent discussions about bond ETFs often refer to a “liquidity mismatch” between highly liquid bond ETFs and the underlying bond markets. The concerns reflect the intersection of two recent trends: the rapid growth of assets in bond ETFs alongside the perception of growing liquidity challenges in fixed income markets.¹ In these discussions, the term “liquidity” is often used as a catch-all phrase for several concepts, which has created confusion and led to the conflation of distinct issues. We need to start by distinguishing between “**market liquidity**” and “liquidity terms”. Market liquidity refers to the ability of investors to trade assets without undue large price movements, whereas liquidity terms refers to the structural features of a fund that determine how often and under what conditions shareholders can redeem. Liquidity terms include redemption frequency (e.g., daily, monthly), fund structure (e.g., open-end fund, ETF, closed-end fund, private fund, etc.), and redemption provisions (e.g., notice periods, ability to gate the fund, redemption fees), or the ability to make redemptions **in-kind**. In times of financial stress, overall market liquidity can be severely challenged. In these conditions, there may be a “liquidity

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EXECUTIVE SUMMARY

- ▶ The rapid growth of assets in bond ETFs juxtaposed with the perception of growing liquidity challenges in fixed income markets has raised some questions about the liquidity of ETFs.
- ▶ ETF trading today offers a vision of the future state of the bond market, exhibiting low cost, transparent, electronic trading in a standardized, diversified product.
 - ETFs can help enhance price discovery, provide investors with low execution costs to establish a diversified portfolio, and increase bond market liquidity and transparency.
 - ETF liquidity is incremental to the underlying bond market liquidity because buyers and sellers can offset each other's transactions without necessarily having to trade in the underlying market.
 - Even during periods of market stress, ETF shares are at least as liquid as the underlying portfolio securities.
- ▶ Commonly voiced concerns about ETFs actually relate to a small subset of exchange-traded products. A systematic classification schema can help investors and regulators focus on these funds.
- ▶ There are several concrete steps that regulators and policy makers can take to promote the benefits of ETFs more widely while also addressing genuine challenges. These include ETF market structure enhancements, regulatory capital treatment, and streamlining the approval process for creating ETFs.

‡ For text in blue bold italics, please refer to *Glossary of Terms* on page 11.

mismatch” between a fund that provides unlimited liquidity terms (the ability to redeem each day for cash) and the market liquidity of its underlying holdings, which may be difficult to sell if the fund needs to satisfy redemptions. For reasons discussed herein, ETF shares often provide greater market liquidity than the ETF’s holdings. In BlackRock’s *ViewPoint* “Addressing Market Liquidity” published in July 2015², which is a companion to this *ViewPoint*, we discuss how market participants are adapting their investment strategies to reflect the evolution of the bond markets.

Bond issuance has hit new records since the Financial Crisis as borrowers take advantage of low interest rates, leading to increased market fragmentation as dozens or even hundreds of unique securities may be issued by the same corporation. This trend, coupled with lower turnover and transaction sizes in the over-the-counter (OTC) corporate bond market, has led to discussions of potential methods to improve bond markets. BlackRock has proposed: (a) larger issuers incorporating a greater use of more liquid benchmark issues into their capital structures, (b) greater use and acceptance of “all-to-all” trading venues where multiple parties can come together to transact, and (c) expansion of trading protocols to help increase the number of ways that market participants can interact with each other to find additional means of sourcing liquidity.

In many ways, bond ETFs offer a vision of this future. Rather than trade hundreds of unique bonds, buyers and sellers of exposure to a bond market segment (such as high yield) can make a single trade in a bond ETF that represents that segment. By concentrating trading demand in a single instrument that trades continuously with centrally-reported quotations, bond ETFs help buyers and sellers of bonds find each other efficiently without having to rely on OTC dealers. Both institutional and retail investors in bond ETFs benefit from this, as ETFs provide quick diversification, transparency, intraday liquidity and lower trading costs, resulting in a rapid growth in bond ETFs in recent years. Although bond ETFs are often lumped together with traditional open-end bond funds, their structure and behavior are significantly different. A closer look at these underlying features helps explain how ETFs improve market liquidity and can actually be part of the solution rather than exacerbate market liquidity issues. This analysis leads naturally to a discussion of real challenges for ETF understanding and adoption that should be addressed. Finally, this provides a foundation for specific policy recommendations to improve markets for all participants.

Comparison of ETFs and Other Fund Structures

ETFs, traditional open-end funds, and closed-end funds are often referred to collectively as “funds”. While it is true that they operate under a similar regulatory regime, the fund types have different mechanisms for providing liquidity to investors and establishing prices at which share transactions occur. In a traditional open-end mutual fund, investors buy new shares and redeem existing shares directly with the fund at a specified time each day at a price that is the fund’s best estimation of **net asset value** (NAV) per share. As a result, when there is a significant imbalance between buyers and sellers of an open-end fund, the fund must typically purchase or sell fund holdings in response. A closed-end fund, in contrast, has a fixed number of shares that are listed on a stock exchange. As a result, buying and selling of closed-end fund shares occurs at an agreed market-determined price between investors on the exchange without the fund’s involvement. Any imbalance between buyers and sellers affects the exchange price, but does not result in purchases or sales of holdings by the fund. In a closed-end fund, there is no mechanism to reconcile differences between the exchange price and NAV, and exchange prices commonly exhibit **premiums and discounts** to NAV.

ETFs are based on a hybrid approach. Like closed-end funds, ETFs can be bought or sold intraday on the exchange at a market-determined price. Unlike closed-end funds, however, ETFs incorporate a mechanism for keeping the market price within close range of NAV by adjusting the supply of available shares based on investor demand. Most ETF investors can trade shares only on the exchange. Nonetheless, a small group of investors, known as Authorized Participants (APs)³, can trade directly with an ETF. APs are sophisticated institutional trading firms that enter into a contract with the ETF specifying rules for creating and redeeming ETF shares. APs are not agents of the ETF – they are not required to create or redeem ETF shares under any circumstances, and only do so when it is in their interest. Some APs act only on their own behalf, while others may act as agents for a variety of clients. When APs create or redeem shares with an ETF, they do so at NAV (like with an open-end mutual fund) but typically transact for large blocks of shares in-kind rather than for cash (unlike with an open-end mutual fund). Because ETF share creations and redemptions are typically done in-kind, which frequently involves complex transfers of thousands of securities, ETFs issue and redeem shares only with APs rather than with the general public. APs’ ability to purchase new ETF shares, and redeem existing ETF shares, directly with the ETF in-kind has a variety of benefits for all investors discussed below.

The Role of Arbitrage and of Authorized Participants

When sellers of ETF shares exceed buyers, the price of the ETF shares on the exchange declines, just as you would see with the share price of other equity securities, including shares of closed-end funds. Exchange transactions directly between buyers and sellers provide each with liquidity without requiring the ETF to buy or sell holdings. If the exchange price of the ETF shares deviates from the value of the ETF's holdings, it is apparent to any interested observers.⁴ When this occurs, traders can take advantage of the valuation deviation by *opposing* the market trend – ETF shares must be purchased when trading at a discount, and sold short when trading at a premium. This process causes traders to supply liquidity on the exchange when supply and demand imbalances occur. Trading positions resulting from such activity are closed out, and profits realized, by redeeming any ETF shares purchased at a discount for the **ETF Basket**, which is then sold to realize the price deviation, or by delivering the ETF Basket to the ETF to **create** new shares which can be delivered to close out short positions taken while ETF shares traded at a premium. This type of so-called “arbitrage” trading occurs readily with ETFs because ETFs are transparent (that is, they generally publish their holdings) and because it is relatively simple for APs, or other trading firms that have the ability to trade with or through APs, to close out and realize the value of arbitrage trades by exchanging ETF shares for the ETF Basket (or vice versa). This trading activity has the beneficial effect of causing APs to create or redeem ETF shares in a manner that adjusts the supply of outstanding ETF shares to match demand, resulting in keeping the ETF share price on the exchange aligned with the value of the ETF's underlying holdings. This permits ETFs to incorporate beneficial features of both closed-end and open-end funds. Like closed-end funds, much of the demand

to buy and sell ETF shares can be satisfied by exchange transactions, with any oversupply of shares for sale on the exchange resulting in decreasing the exchange price (rather than a direct redemption of fund shares that in turn results in a sale of the fund's underlying holdings). In the event supply and demand for ETF shares on the exchange does not balance at a price that closely reflects the value of the ETF's holdings, however, arbitrage trading will cause APs to adjust the supply of outstanding shares.

Exchange Trading Liquidity Can be Greater than Underlying Markets

ETF shares are traded intraday on exchanges. The volume of ETF shares traded on exchanges can be many times greater than the amount of shares issued or redeemed directly by the ETF. Data from the Investment Company Institute (ICI) for US ETFs regulated as publicly-offered funds under the US Investment Company Act from January 3, 2013, to June 30, 2014 shown in Exhibit 1 demonstrates that, while there are differences among various ETFs, on average, exchange volume (referred to as “secondary activity” in the charts below) has been between 3 and 5 times aggregate “creates” and “redeems” (referred to as “primary activity” in the charts below). In addition, Exhibit 1 shows that average daily aggregate creations and redemptions for all bond ETFs involve less than 0.34 percent of aggregate bond ETF total net assets.

In reviewing individual ETFs, we find a similar pattern. The exchange volume for several of the largest bond ETFs as highlighted in Exhibit 2 is frequently many multiples of the aggregate creation/redemption activity in the corresponding ETF.

Exhibit 1: PRIMARY AND SECONDARY ACTIVITY IN US-DOMICILED BOND ETFs (January 3, 2013-June 30, 2014)

Investment objective	Number of ETFs	Total net assets (\$ billions)	Average daily creations/redemptions (\$ millions)	Primary market relative to total net assets (percent)	Average daily volume (\$ millions)	Secondary relative to Primary (ratio)
Domestic	194	254	867	0.34	3,802	4.4
Domestic high-yield	27	46	149	0.32	738	5.0
Municipal	35	13	19	0.15	101	5.3
Other domestic	132	195	698	0.36	2,964	4.2
International	53	19	64	0.33	224	3.5
Emerging Markets	20	11	46	0.42	169	3.7
Other International	33	8	18	0.21	55	3.1
Bond ETFs (Total)	247	273	931	0.34	4,026	4.3

Source: Antoniewicz, Rochelle and Jane Heinrichs, 2014. “Understanding Exchange-Traded Funds: How ETFs Work,” ICI Research Perspective 20 (September). Investment Company Institute, Washington DC. Available at www.ici.org/pdf/per20-05.pdf.

Exhibit 2: PRIMARY AND SECONDARY VOLUMES OF LARGEST BOND ETFs

	NAV (\$ billions)	Secondary Market Volume (\$ millions)	Secondary vs. Primary Market Ratio
Broad Market Bond ETF "A"	27	224	3.2
Broad Market Bond ETF "B"	25	226	6.1
U.S. Investment Grade Corporate Bond ETF	21	331	3.9
Short-Term Bond ETF	16	95	6.0
Inflation-protected U.S. Treasury Bond ETF	14	75	4.6
High Yield Bond ETF	13	594	4.8
1-3 Year Credit Bond ETF	11	49	2.1
Short-term Corporate Bond ETF	10	60	4.8
High Yield ETF	10	292	3.3
1-3 Year Treasury Bond	9	98	2.8

Source: Bloomberg, 2015 Average Daily 1/1/15-6/30/15

For education and illustration purposes only.

One of the frequent concerns raised about ETFs relates to the availability of market liquidity in periods of market stress. The actual experience of ETFs during the Financial Crisis, in the wake of the Taper Tantrum and again after the sudden departure of Bill Gross from PIMCO illustrates that the market was readily able to find prices at which buyers and sellers were willing to transact – so much so that exchange trading volume of bond ETFs spiked. For example, for one of the largest broad market bond ETFs, the ratio of secondary to primary market volume since the fund's inception in 2007 to mid-2015 has been between 3.8 and 7.5. Not coincidentally, during the height of the Financial Crisis, this ETF experienced its highest observed ratio, 7.5 times exchange volume to aggregate creations and redemptions.

In the so-called "Taper Tantrum" of the summer 2013, the Federal Reserve unexpectedly announced that it would begin tapering back its \$70 billion a month bond and mortgage backed securities purchase program, sparking widespread fears of rising interest rates. Bond prices fell steeply June 18-19, 2013 followed by a rebound June 24-25, 2013. During this period, volume in the largest high yield bond ETF spiked to as high as 25% of the underlying market.

Exhibit 3 shows the increased volume in two of the largest broad market bond ETFs in the wake of Bill Gross' departure from PIMCO in October 2014. For investors who wanted to stay invested in core US fixed income while changing managers, these ETFs provided a low cost way to quickly establish this exposure in their portfolios.

Exhibit 3: TURNOVER AND FLOWS – TWO BROAD MARKET BOND ETFs

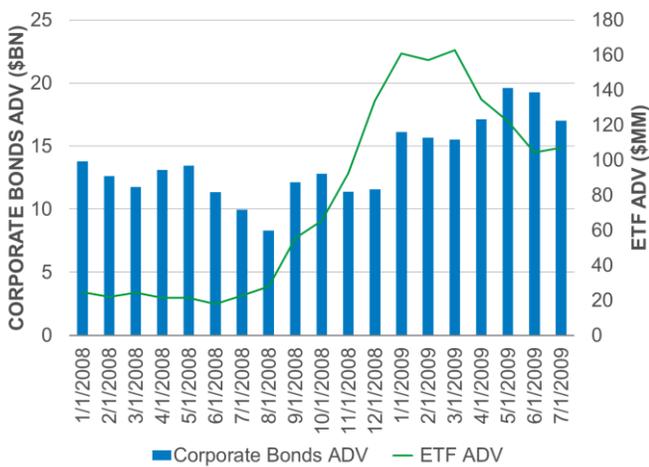


Source: Bloomberg, 9/1/14-10/15/14

As we have mentioned, during the Financial Crisis, fixed income markets came under severe pressure. Consider, for example, the largest ETF offering exposure to broad US investment grade corporate bonds and underlying bond market volumes in the period January 2008-August 2009. In Exhibit 4 below, we plot the trading volumes in the underlying corporate bond markets in billions of dollars and the volume in this ETF in millions of dollars.

As liquidity in the underlying bond markets declined in June 2008, investors increasingly turned to this ETF for liquidity.⁵ The ETF continuously traded, in an orderly manner, while underlying bond market activity declined. Because the ETF continued to match buyers and sellers of investment grade bond exposure while the market for individual investment grade bonds ceased to function effectively, the ETF permitted market participants means of establishing the real current value at which transactions in investment grade bonds could occur. Similar occurrences have been observed for other bond ETFs and for other stressed periods, including corporate credit funds in the “Taper Tantrum” of 2013. Of course, premiums and discounts often widen in stressed times, but we caution against interpreting this phenomenon as mispricing. Rather, the ETF price, which is determined by actual transactions between willing buyers and sellers, can move very quickly to reflect prevailing conditions while NAV, which is calculated once daily based on known previous bond transactions or estimates of value (which may not be occurring frequently during stressed markets), tends to adjust to new market levels with a lag. Because ETF share prices may “lead” other indications of underlying bond value, ETFs can provide insight into the direction of the markets for the underlying securities. This “*price discovery*” attribute is an important feature of ETFs.

Exhibit 4: UNDERLYING BOND VOLUME AND US INVESTMENT GRADE CORPORATE BOND ETF VOLUME IN THE CRISIS (Monthly Data)



Source: Bloomberg and TRACE data, 1/08-7/09

What all this means is that most demand to trade ETF shares is satisfied through matching willing buyers with willing sellers on the exchange. When selling demand exceeds buying demand, the key effect is downward pressure on the exchange price, which may in turn spur arbitrage traders to provide compensating liquidity. Ultimately, some portion of arbitrage trades are closed out in a manner that results in creations or redemptions of ETF shares, but the amount of aggregate creations and redemptions is frequently low in comparison to exchange volume. Exchanges create venues for different investors to establish a price for exposure to a variety of asset classes through ETFs without having to trade large baskets of securities. The key point to note is that, because ETF exchange trades match buyers and sellers without any direct trading of the ETF’s underlying holdings, ETF liquidity on exchanges is *incremental* to the liquidity in the underlying markets, and the data shows that this additional liquidity is real with firm actionable prices.

ETF “Run Risk”, AP Withdrawal and Other Potential Issues Resulting from Market Stress

While some commenters have suggested that ETF market liquidity is illusory or have made analogies to the repackaging of risk in the Financial Crisis, the actual performance of ETFs in periods of stress demonstrates that the exchange trading of bond ETFs has been additive to underlying bond market liquidity. Many discussions of ETFs conflate the liquidity of the ETF shares with the liquidity characteristics of the underlying securities. Confusion about the two often gives rise to the perception of “run risk”, “fire sales”, redemption risk, etc. or in other words the risk that fund shareholders will seek to redeem in a panic causing a fire sale of the ETF’s holdings. However, ETFs are not subject to “run risk”, nor do they present a “first mover advantage” for investors considering redeeming their shares.

ETF creations/redemptions are generally in-kind, not for cash. The fact that ETFs create and redeem shares in-kind helps to shield ETF shareholders from liquidity issues of the fund. The ETF delivers a representative share of its holdings for an in-kind redemption, rather than sell holdings and deliver cash. This means that a redeemer will typically receive individual stocks or bonds that are representative of the ETF’s portfolio. The so-called “first mover” advantage, where investors have an incentive to redeem before other investors, does not exist. All redeeming APs receive the ETF Basket, which is identical to or a broadly similar subset of the ETF’s portfolio. The ETF Basket is determined by the ETF’s manager. APs who redeem first do not have the ability to “cherry pick” assets, and will receive a slice of the ETF’s holdings identical or broadly similar to all other redeeming APs. Because there is no first-mover advantage with respect to ETFs, there is also little risk of a chain reaction of redemptions creating a “fire sale” of the underlying assets.

Further, any ETF holdings delivered to a redeeming AP in-kind may be sold into the market by the AP, but in many cases may not – they may be held by the AP as part of its inventory or to hedge other positions, or they may be delivered to a client of the AP seeking to exchange a temporary position in ETF shares for a longer-term position in individual bonds. Because any demand to sell ETF shares is first met by matching with buyers in exchange transactions, and then through in-kind redemptions that may or may not lead directly to sale of assets, ETFs have a low risk of causing a “fire sale” as the consequence of mass redemptions. In-kind redemption also helps to protect ETF shareholders from being hurt by redemptions by other shareholders, because ETFs do not have to fund redemptions by selling into the market and incurring transaction costs and tax effects.

What would happen if, as the result of infrastructure challenges or market stress, an AP withdraws or ceases to trade a particular ETF? APs have a variety of different business models – some trade solely for their own account, while others are essentially clearing brokers that provide services to a wide variety of trading firms. Because there are typically multiple APs in a given fund, the market will be unaffected unless all the other APs simultaneously withdraw – which is unlikely for ETFs with numerous APs that have different physical locations and react differently to market conditions. The largest ETFs have an average of 38 APs according to ICI statistics.⁶ Even though not all APs create and redeem shares regularly (the average is 4-7 depending on fund size and type), there is strong competition among active APs and a strong bench of others who can and do step in to serve investors if one backs away. According to research from the TABB Group, in the US, broker dealers are building out their fixed income ETF businesses to meet institutional investors’ demands in their search for more viable liquidity options,⁷ which means the bench for APs is expected to deepen even further.

What if all APs were to simultaneously withdraw, perhaps in a severe crisis? We have not experienced such a situation. In the event this occurs for reasons other than a general market calamity, the ETF would continue to trade on the exchange. Essentially, in this scenario the ETF would temporarily lose the ability to create or redeem shares until a replacement AP is ready to operate and would therefore behave somewhat like a closed-end fund. While discounts likely would occur or widen, so long as institutional traders believe another AP will shortly be in position to perform they have an incentive to step in to buy discounted ETF shares, keeping the ETF share price within range of the value of the underlying securities.

In an extremely stressed environment, it is conceivable that all institutional traders including **market makers** designated

by exchanges, (which have an obligation to maintain consistent two-way quotations) would be unable to bid to purchase an ETF’s shares at discounted prices, in which case the ETF shares would not regularly trade or would trade only at discounted prices that attract buyers with longer-term outlooks until market conditions normalized. In this case, ETF shareholders with the ability to trade with or through an AP could cause redemptions, resulting in an “unzipping” of the ETF wrapper for the ETF Basket. Consequently, such investors are in no worse position than if they held the ETF’s underlying assets directly. The ETF’s shares would continue to reflect new market information and would trade at a clearing price on the exchange. This price would likely deviate from last traded prices in the temporarily-frozen OTC bond market.

Benefits of ETFs on Bond Market Liquidity

Given exchange trading and in-kind creation/redemption of ETF shares, bond ETFs may provide a number of benefits. As described more fully in this section, bond ETFs enhance price discovery and transparency and provide investors with low execution cost to establish a diversified portfolio. These benefits have fueled the increasing acceptance and growing popularity of bond ETFs. A recent report from Greenwich Associates showed that US institutions are integrating fixed income ETFs into routine functions, including rebalancing, hedging, and liquidity enhancement program. Of those surveyed, 59% of fixed income ETF users have increased ETF usage since 2011, and 40% of investment managers plan to increase their use of bond ETFs in the coming 12 months.⁸

BOND MARKET LIQUIDITY AND TRANSPARENCY

- ▶ Fixed Income ETFs offer intraday electronic trading of organized exchanges on broadly diversified baskets of bonds that track well-established indexes.
- ▶ Transparency and intraday liquidity are among the key benefits of bond ETFs.
- ▶ ETFs allow multiple buyers and sellers to meet directly, just like in the equity markets.

There is a general consensus that the market liquidity in individual bonds has declined. Bond dealers’ ability to make markets and carry inventory in bonds is reduced, in part, by the effects of regulation and higher capital costs. This has been further exacerbated by monetary policy and record amounts of bond issuance by companies.

The demand for bonds is often for a set of bond risk/return characteristics rather than for a precise issue. By aggregating

large numbers of bonds that may be thinly traded in over-the-counter markets, a bond ETF can satisfy the demand for buyers to increase, and sellers to decrease, exposure to a set of bond risk/return characteristics captured by the ETF's index.

ETFs migrate trading in those sets of characteristics from OTC dealer markets to exchanges. OTC dealers trade as principals. Their ability to bid for a wide variety of bonds, and maintain bond inventories, requires bond dealers to maintain a large balance sheet. Since the Financial Crisis, however, regulators have sought to constrain dealer balance sheets and the ability to fund large bond inventories. This has led many bond dealers to shrink their businesses, reducing the market liquidity of bonds. In addition, OTC bond markets lack central reporting of pre-trade quotations, and therefore it may be unclear at what prices specific bonds can trade. ETFs help to address these issues. ETF trading does not require any system participant (other than the ETF itself, which is generally unleveraged) to hold a large inventory. Bond ETFs, as discussed previously, have proven to be very liquid relative to their underlying holdings. This is largely because bond ETFs trade continuously on exchanges, which allow buyers and sellers to find each other, and match off, more readily than they can in OTC markets. Exchange quotations are also centrally reported in real time and transparent to everyone, allowing buyers and sellers to know, and quickly adjust to, new price information.

Several studies⁹ have shown that ETF prices move quickly to reflect new information. Traders will step in to take advantage of any divergence between the ETF's share price and the intrinsic value of the ETF's holdings. The exchange prices of a bond ETF typically forms a tight band around the intrinsic value of a bond ETF, within a range that represents the cost required for an AP to effect an arbitrage trade between the ETF shares and underlying holdings.

Bond investors are turning to ETFs¹⁰ where buyers and sellers can meet directly, just like in the equity markets. Bond ETFs offer intraday electronic trading on organized exchanges on broadly diversified baskets of bonds seek that track well-established indexes. This transparency and intraday liquidity are among the key benefits of bond ETFs.

Lower Costs, Greater Diversification

- ▶ Bond ETF transaction costs are typically much lower than trading the individual bonds.
- ▶ When demand is concentrated in the ETF shares, exchange trading volume can grow to the point where it greatly exceeds the volume of creation/redemption activity, which creates incremental liquidity and squeezes down transaction costs.

- ▶ The process of aggregating bonds into diversified portfolios creates units of exposure that are much more appealing to many investors and differs from the demand for individual bonds.

Bond ETFs create packages of bond market exposures, total returns and risks that are not easily and efficiently replicated by most investors. As portfolios, ETFs are easier to hedge than individual securities; they are also less subject to informed trading, meaning asymmetric information risk. Consequently, the cost of trading the "package" of securities represented by a bond ETF, as reflected in the **spread** of the ETF shares, can be much lower than trading the individual bonds held by the ETF, as reflected in the aggregate spread of those bonds. Bond ETFs trade at spreads that are a fraction of the underlying bonds. For example, in June 2015 the largest high yield corporate bond ETF had a bid-ask spread of just 1.1 basis points versus 73.1 basis points for the 1,037 constituents in the underlying basket.

Challenges Facing ETFs

ETFs are not without their challenges. One concern is that a growing variety of exchange-traded products (ETPs) are called ETFs, although they may present very different risks. BlackRock's *ViewPoint* "ETFs: A Call for Greater Transparency" published in 2011¹¹ laid out initial ideas for establishing a classification system for ETPs that would clarify these investment strategies and help investors differentiate the risks involved and thus make more informed decisions. In June 2015, the Securities and Exchange Commission (SEC) published a request for comment on exchange-traded products which similarly suggested that a classification system may be warranted to address the fundamental differences among various strategies.¹²

A logical classification scheme would help investors and regulators to distinguish among different kinds of exchange-traded products. The discussion below highlights that the concerns expressed about ETFs center primarily on structures that collectively account for a small fraction of ETFs. We recommend additional regulatory attention be focused on this subset of exchange-traded products.

Needed Improvements in ETP Classification

ETFs are structurally different from other ETPs. We believe the ETF industry and the regulators of these products need to revisit the naming conventions and clarify for investors how these products are structured and managed. In 2011 we introduced an Exchange Traded Product Classification system that we recently revised in our response to the Financial Stability Board (FSB) consultation.¹³ While all exchange-traded products share certain characteristics, including exchange-tradability, the term "ETF" has become a blanket one describing many products that have a wide range of different risks, which has led to a great deal of confusion.

In our schema, ETFs are a subset of a broader umbrella group of investment vehicles, ETPs, a generic term for portfolio exposure products that trade intraday. In an ETF, the underlying basket securities are physically or synthetically represented with the objective of tracking the performance of a benchmark index. These indexes are usually broad market gauges offered by index providers such as Standard & Poor's or MSCI, but may also include custom indexes or indexes based on narrow sectors or particular investment strategies, such as dividend yield. Exhibit 5 introduces our recommended nomenclature and classification scheme for ETPs.

In our recommended classification system, certain exchange-traded products would be renamed to better reflect the investment strategy being utilized. Exchange-traded notes (ETNs) are senior, unsecured (and often uncollateralized) debt securities that are exposed to the credit risk of the issuer, typically an investment bank. Exchange-traded commodity (ETC) refers to funds that hold physical commodities such as silver or gold. Some ETPs contain embedded leverage via swap contracts and are thus quite different from conventional ETFs. The exchange-traded instruments (ETI) category includes these types

of funds, which for the most part are leveraged/inverse funds. Leveraged and inverse exchange-traded products may hold the individual index stocks too and thus have elements of physical-backing. Since they obtain leverage through swaps, we include them in the exchange-traded instruments category. In our nomenclature, we don't specifically distinguish active funds which depart from traditional market capitalization weighting. To the extent these funds embody leverage, they will fall into the ETI category. So called Smart Beta funds that reweight long only positions using a non-market capitalization scheme, but hold a portfolio of physical securities without any additional structural features, are categorized as ETFs.

ETP Structure and Regulation

A standard classification system as proposed above would help both policy makers and investors better understand the structure of various ETPs and hone in on key sectors of the ETP market where further analysis of the structure of the ETP may be warranted. Exhibit 6 illustrates the classification scheme and provides a sense of relative scale in terms of the breakdown of global assets under management (AUM) in ETPs of approximately \$3 trillion as of June 2015.

Exhibit 5: RECOMMENDED CLASSIFICATIONS FOR ETPs

ETP	Exchange Traded Product	<ul style="list-style-type: none"> • Catch-all term for any portfolio exposure product that trades on an exchange. • ETFs, ETCs, ETNs, and ETIs, are all subsets of ETP.
ETF	Exchange Traded Fund	<ul style="list-style-type: none"> • ETFs are structured as publicly-offered investment funds that trade on an exchange. • ETFs can be passive (tracking a specific index) or active (via a transparent basket) that meet diversification and liquidity thresholds as mandated by the regulators and exchanges. • ETFs' exposures can be achieved by both holding the physical securities or by holding synthetic instruments. • ETFs' underlying securities can include stocks, bonds, and bank loans • As noted below, this category should <i>exclude</i> funds with embedded leverage or inverse features as they will not track the index performance.
ETN	Exchange Traded Note	<ul style="list-style-type: none"> • Debt instruments that provide an index-based return. ETNs may or may not be collateralized, but depend on the issuer's solvency and willingness to buy and sell securities to deliver fully to expectations. • The extent of regulation varies by region.
ETC	Exchange Traded Commodity	<ul style="list-style-type: none"> • A variety of fully-collateralized legal structures that are not ETNs but seek to deliver the unleveraged performance of a commodity, or basket of commodities. • Some ETCs may hold physical commodities, while others invest in commodity futures. • ETCs that invest in commodity futures may raise special issues because futures do not precisely track spot commodity prices.
ETI	Exchange Traded Instrument	<ul style="list-style-type: none"> • An ETI is any ETP that has embedded structural features designed to deliver performance that will not track the full unlevered positive return of the underlying index or exposure (that is, products that seek to provide a leveraged or inverse return or a return with caps on upside or downside performance).

Building on the ETP classification system introduced above, the source of most regulatory concern is actually a relatively small subset of total assets in ETPs including:

- ▶ Leveraged and inverse structures
- ▶ Use of derivatives/synthetic structures
- ▶ ETFs with less liquid underlying assets, including bank loans, high yield, emerging market debt and equity
- ▶ Active strategies

Exhibit 6: SCHEMATIC OF ETP CLASSIFICATION



Category	Assets (\$bn)	Market Share (%)
Total ETP	2,978	100%
ETF	2,750	92%
<i>Bank Loan</i>	7	
<i>High yield corporate bonds</i>	49	
<i>Emerging markets bonds</i>	27	
ETN	65	2%
ETC	112	4%
ETI	51	2%

Source: BlackRock as of June 2015. Note: diagram not to scale

The vast majority of ETPs are ETFs that are managed using long-only passive strategies that are designed to track a specific capitalization-weighted index. However, the number and size of non-capitalization-weighted index ETFs (including “smart beta” or fundamental index ETFs) and non-index-based (or “active”) ETFs is increasing. A number of these strategies make use of derivatives as a means to obtain an economic exposure. That said, over 90 percent of ETPs are ETFs that do not have embedded leverage or inverse features.¹⁴

Levered ETIs and inverse-levered ETIs, which currently comprise approximately 1.3 percent of the ETP market,¹⁵ utilize leverage to magnify returns relative to an index. The risks of these products are still being debated.¹⁶ We have previously noted our concern that levered and inverse-levered ETIs create significantly different risks than those presented by traditional ETFs¹⁷ and have recommended that these products not use the ETF label.

Similarly, bank loan ETFs introduce several issues. ETFs backed by bank loans account for about \$7bn or 0.2% of total ETF assets. Given the features associated with bank loans (physical contracts not publicly traded securities and relatively long settlement periods), these loans cannot be used for in-kind redemptions with an AP. We recommend a closer analysis of these types of ETPs to determine if any special provisions are needed to mitigate potential risk.

In summary, a logical classification scheme helps distinguish among different kinds of exchange-traded products. Our discussion highlights that the concerns expressed about ETFs focus primarily on structures that collectively account for a small fraction of ETPs. We recommend establishing a global classification system and focusing additional regulatory attention on the subset of exchange-traded products that may have different or additional risks than the vast majority of ETFs.

Opportunities to Increase Understanding and Usage of ETFs

BlackRock has long been committed to transparency regarding structure, holdings and fees in our ETFs. As such, we welcome the SEC’s recent request for comments and other policymakers’ interest¹⁸ in understanding the mechanisms behind ETFs and in studying how ETFs behave. As we have discussed in this paper, we believe ETFs are part of the solution to the evolution that is underway in the bond markets. In this section, we discuss some of the regulatory enhancements that could accelerate the benefits that ETFs can provide and recommend consideration be given to a combination of market structure enhancements, regulatory capital treatment and the approval process for creating ETFs.

Market Structure Modernization

In BlackRock’s companion *ViewPoint*, “Addressing Market Liquidity,” we recommend considering ways to modernize certain aspects of the market structure to create better alignment with the current environment where banks have less capacity to intermediate. As the market structure for bonds evolves, ETFs can play an important role. Policy makers could accelerate this modernization by adopting some of the following regional recommendations:

- (i) In Europe, consolidated reporting of trades would make it easier to understand true liquidity¹⁹,
- (ii) In the US, the SEC could streamline and expedite the process for bringing “standard” ETFs to market,
- (iii) The SEC should also consider changes to listing or market maker requirements for less liquid ETFs to encourage order flow to focus on venues with a significant order book rather than fragment among market makers quoting on multiple venues, and

(iv) Globally encourage exchanges to consider the application of trade error cancellation rules to ETFs – in particular, how to prevent cancellation of only one side of a trade involving an ETF hedge, which adds substantially to the risk of ETF market making and discourages liquidity providers from stepping in to provide liquidity to stressed markets.²⁰

Regulatory Enhancements

As we have discussed throughout this paper, the growth of bond ETFs has contributed positively to bond market liquidity and should, therefore, be encouraged. Regulators can remove artificial regulatory barriers to ETF investment, thereby allowing usage of ETFs by a larger universe and growing ETF liquidity. Many regulatory schemes have not evolved to deal specifically with ETFs as a type of investment, and, as a result, treat all ETFs either as equities (even if the underlying exposure is 100% physical bonds) or as miscellaneous securities. Examples of this are capital rules for insurers and broker-dealers and investment eligibility and diversification rules for insurers. We believe that an investment in a portfolio of US Treasuries or corporate high yield bonds, for example, should be treated similarly for regulatory risk purposes, whether the investment is made directly in the bonds or indirectly through an ETF. We recommend that regulators for insurers and broker-dealers consider rules that “look through” the wrapper to the true underlying risk exposure.

Overcome Impediments to Adoption

As ETFs gain acceptance, these products may evolve to address additional investor needs. For example, fixed maturity bond ETFs that have diversified portfolios that roll down the curve to a maturity date like a bond have been introduced successfully as an alternative to holding individual municipal bonds. This could similarly be applied to corporate bonds. However, the lack of look-through treatment and accounting rules make these bond ETFs less attractive than the underlying bonds. Similarly, it has been reported that Morgan Stanley²¹ has proposed the creation of ETFs that aggregate bonds of a single issuer. This would essentially create larger issues of a single issuer and thus address the

proliferation of CUSIPS and the small size of individual issues. However, single issuer bond ETFs are not possible in the US under the Tax Code provisions relating to concentration risk in publicly offered investment funds that hold securities. We recommend that these rules be reexamined.

Conclusion

Although equity ETFs are about 3% of the global equity market, bond ETFs are just 0.4% of the global bond market as of 2014. In some segments, such as US Treasury bonds and corporate bonds, ETFs only represent 0.5% and 1.7%, respectively, of holdings today. These figures suggest significant room for further growth, especially as the fixed income markets themselves evolve and automate, as did equity markets two decades ago. While this rapid growth coupled with the perception of growing liquidity challenges in fixed income markets has at times raised some questions, we argue that rather than creating systemic risks, ETFs act as a force to promote financial market stability. Specifically:

- ▶ ETFs offer a vision of the future state of the bond market, with low cost, transparent, electronic trading.
- ▶ ETF liquidity is incremental to the underlying bond market liquidity because buyers and sellers can offset each other's transactions without necessarily having an impact on the underlying market.
- ▶ ETFs have tended to function well in times of stress; their incremental liquidity acts as a “safety valve” helping to stabilize markets and they serve as an important vehicle of price discovery.
- ▶ Even during periods of extreme market stress, ETF shares have been at least as liquid as the underlying portfolio securities.
- ▶ Commonly voiced concerns about ETFs actually relate to a small subset of exchange-traded products; a systematic classification schema can help investors and regulators focus on these funds.
- ▶ Finally, there are several concrete steps that regulators and policy makers can take to promote the benefits of ETFs more widely while also addressing genuine challenges.

Glossary of Key Terms

Authorized Participant (AP)

These firms, typically large financial institutions, have an agreement with an ETF provider to create and redeem ETF shares.

Creation

The issuance of a block of new ETF shares.

ETF Basket

A list of securities published by an ETF that is representative of the ETF's holdings and for which the ETF stands ready to exchange its shares in creation or redemption transactions. The contents of the basket (security names and quantities) are made public daily.

ETF Creation/Redemption

The process by which ETF shares of ETFs are issued to, and redeemed from, Authorized Participants. ETF creations and redemptions are typically for very large blocks of shares and are settled by delivery of the ETF Basket (but may be settled for cash when in-kind delivery of assets is impractical, using a variety of transaction charges so that costs are borne by APs in a manner similar to an in-kind delivery).

In-Kind Creation or Redemption

A transaction in which, in exchange for ETF shares, an AP provides or receives a basket of securities determined by the ETF that is identical, or with risk characteristics very similar to, a pro rata share of the ETF's holdings.

Market Liquidity

Generally refers to the degree to which an asset can be bought or sold in the market without affecting the asset's price. The more liquid an ETF, the easier and more cost-effective it will be to trade. A lack of liquidity can translate into difficulties entering and existing trading positions, alongside higher trading costs.

Market Maker

General term for any firm that can provide two-sided (buy & sell) markets on the exchange but do not necessarily have exchange or regulatory obligations to do so. Their service in providing liquidity naturally tightens the bid/ask spread so that investors can benefit from cost savings. Also referred to as *liquidity providers*.

Net Asset Value

The fund sponsor's official determination of the per-share value of a fund, reflecting the estimated value of the securities in a portfolio divided by the number of shares outstanding, plus cash and any other assets and less liabilities. An ETF's NAV is calculated once a day upon the close of trading, using the value of the most recent transactions in the underlying securities. Given that many securities do not trade contemporaneously with the calculation of NAV, the valuations used to determine NAV are frequently either estimated or stale. The NAV is a determination of value at a particular time, and necessarily does not reflect future changes in value.

Premiums vs Discounts

The direction in which an ETF's market price differs from its Net Asset Value. If the price exceeds its NAV, the ETF is trading at a premium. If the price is below the NAV, the ETF is trading at a discount. Premiums and discounts often result from stale security prices used to calculate NAVs, due to illiquid trading or time differences in markets of the underlying assets. Bond ETFs often trade at a small premium.

Price Discovery

A hallmark of ETF design, which provides a mechanism for market participants to accurately price assets or markets that otherwise are not trading. The ability to arbitrage the prices of an ETF share and its underlying securities eventually helps the two prices converge by rebalancing supply and demand. An ETF's price reflects an actionable, real-time value of the underlying assets they represent, and are increasingly preferred by investors, particularly when market sentiments shift rapidly.

Redemption

The cancellation of a block of ETF shares in exchange for the ETF Basket

Spread

The difference between the highest bid to purchase an asset and the lowest offer to sell an asset. Lower spreads are associated with greater liquidity brought about from more competition among buyers and sellers, and result in lower transaction costs for investors.

Notes

1. At the end of 2002, combined US-listed fixed income mutual fund and ETF assets were \$1,191 billion. By the end of 2014, that number had increased 300% to \$3,610 billion.
2. BlackRock *ViewPoint*, Addressing Market Liquidity, July 2015.
3. In some countries, Authorized Participants are referred to by other terms, such as Participating Dealers.
4. ETFs generally publish their holdings daily, which allows APs and other traders to value the ETF's holdings. Several indicative valuations are also published daily, including the prior day's NAV and an estimated current (intraday) valuation that is updated based on the most recent reported transactions of holdings.
5. Greenwich Associates, Bond Market Challenges Continue to drive Demand for Fixed Income ETFs, May 2015.
6. Antoniewicz, Rochelle, 2015. "The Role and Activities of Authorized Participants of Exchange-Traded Funds, Investment Company Institute, Washington DC., available at https://www.ici.org/pdf/ppr_15_aps_etfs.pdf
7. "Fixed Income ETFs: Bridging the Liquidity Divide," TABB Group, 2015.
8. Greenwich Associates, Bond Market Challenges Continue to drive Demand for Fixed Income ETFs, May 2015.
9. See Ananth Madhavan and Aleksander Sobczyk, "Price Dynamics and Liquidity of Exchange Traded Funds," forthcoming, Journal of Investment Management, 2015 and Matthew Tucker and Steven Laipply, "Bond Market Price Discovery," BlackRock, 2013.
10. Greenwich Associates, Bond Market Challenges Continue to drive Demand for Fixed Income ETFs, May 2015.
11. BlackRock, *ETFs: A Call for Greater Transparency and Consistent Regulation*, October 2011.
12. See SEC's Request for Comment on Exchange-Traded Products, Federal Register, June 17, 2015., available at: https://www.ici.org/pdf/ppr_15_aps_etfs.pdf
13. Comments on the Consultative Document (2nd) Assessment Methodologies for Identifying Non-Bank Non-Insurer Global Systemically Important Financial Institutions, May 2015, available at: <http://www.blackrock.com/corporate/en-us/literature/publication/2nd-nbni-qsif-fsb-iosco-052915.pdf>
14. Source: BlackRock as of June 2015.
15. *Id.* We note that leveraged and inverse ETIs comprise the majority of ETIs.
16. Ivan Ivanov and Stephen Lenkey, *Are Concerns About Leveraged ETFs Overblown?* Federal Reserve Board, November 19, 2014, available at: <http://www.federalreserve.gov/econresdata/feds/2014/files/2014106pap.pdf>; Tugkan Tuzun, *Are Leveraged and Inverse ETFs the New Portfolio Insurers?* Federal Reserve Board, July 16, 2013, available at: <http://www.federalreserve.gov/pubs/feds/2013/201348/201348pap.pdf>
17. BlackRock, *ViewPoint*, *Exchange Traded Products: Overview, Benefits and Myths*, June 2013.
18. See in particular IOSCO Principles for the Regulation of Exchange Traded Funds, June 2013, available at: <http://www.iosco.org/library/pubdocs/pdf/IOSCOPD414.pdf> and ESMA Guidelines on ETFs and other UCITS issues, December 2012, available at: <http://www.esma.europa.eu/content/Guidelines-ETFs-and-other-UCITS-issues>
19. We would expect the implementation of the Markets in Financial Instruments Directive (MiFID) II & Regulation (MiFIR) to catalyse this development.
20. The European Union's Capital Markets Union (CMU) initiative provides the appropriate policy framework to address such issues .
21. Danielle Robinson, "Bank proposes ETF-style trusts to boost liquidity," *Reuters*, May 15, 2015.

RELATED CONTENT

- ▶ [ViewPoint - Addressing Market Liquidity, July 2015](#)
- ▶ [ETFs Help Improve Market Stability: A Closer Look at Fixed Income ETF Behavior During Recent Bond Market Movement, October 2014](#)
- ▶ [ViewPoint - Exchange Traded Products: Overview, Benefits and Myths, June 2013](#)
- ▶ [ViewPoint - ETFs: A Call for Greater Transparency and Consistent Regulation, December 2011](#)

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