
High-Yield Bond ETFs

A Primer on Liquidity

Morningstar Research
June 2016

Jose Garcia-Zarate
Senior ETF Analyst
+44 203 194-1017
jose.garciazarate@morningstar.com

Executive Summary

Investor interest in the high-yield bond market has grown at a dramatic pace during the past decade, with postcrisis ultraloose monetary policy settings giving rise to the “search for yield”. Exchange-traded funds have played a pivotal role in providing access to this opaque corner of the fixed-income world.

Although small relative to other investment vehicles, the visibility of heavily traded high-yield bond ETFs has made them easy targets to convey all sorts of concerns. In particular, questions regularly arise about the ability of high-yield bond ETFs to operate in stress scenarios. Most of these concerns stem from a lack of understanding of the on-exchange trading framework of ETFs and the extra layer of liquidity they bring to the marketplace.

In this report, we outline the crucial distinction between the primary and secondary layers of ETF market liquidity. We also carry out a comprehensive analysis of trading activity in the most heavily traded high-yield bond ETFs domiciled in the United States and Europe.

The results of our analysis show that, so far, the very dynamic secondary market trading of high-yield bond ETFs has allowed investors to express investment views about the asset class without unduly affecting the liquidity of the underlying market. The bulk of operations is regularly netted off between buyers and sellers of existing ETF shares, while, whenever needed, creation and redemption activity in the primary market has not presented problems for execution.

Far from being agents of instability, high-yield bond ETFs have acted as a safety valve in a marketplace where, largely because of postcrisis banking regulation, the availability of ready-to-trade fixed-income inventory has been on a declining trend.

Key Points

- ▶ Global assets under management in high-yield bond ETFs have grown substantially during the past decade, hitting USD 51 billion by mid-May 2016.
- ▶ In the case of US-domiciled ETFs, trading on the exchange is the norm. We found that since 2008, the median secondary/primary market ratio for iShares iBoxx \$ High Yield Corporate Bond ETF (HYG) has ranged between 5 and 8, while that for SPDR Barclays High Yield Bond ETF (JNK) has ranged between 3 and 5.5.
- ▶ In the case of European-domiciled ETFs, it is estimated that up to 70% of secondary market trading takes part away from the exchange. Adjusting our analysis accordingly, we also find healthy median secondary/primary ratio ranges for the most popular high-yield bond ETFs.

- ▶ This shows that the impact of ETF trading in the liquidity of the underlying high-yield bond market is limited. In fact, we find that secondary/primary market ratios have tended to spike considerably at times of stress in the high-yield bond market, while remaining within range at times of above-average redemptions from the ETFs.
- ▶ A liquidity crunch in the underlying high-yield bond market would impair – even suspend—the ETF’s creation/redemption process at the primary market level. However, as long as the secondary market continued to function, holders of existing ETF shares should be able to trade, even if at unfavourable prices.

The Rise in Demand for High-Yield Bonds: A Fundamental Backdrop

Investor interest in the high-yield (that is, non-investment-grade) corporate bond market has grown at a dramatic pace during the past decade. The ultra-low-yield environment of the post-2008 crisis years has been a key factor driving flows into high-yield bonds. Protracted ultraloose monetary policy settings have encouraged an element of herding in the fixed-income market, whereby yield-hungry investors have had little option but to move up the credit risk spectrum.

Taking advantage of this environment, high-yield bond issuers found fertile ground to increase issuance and refinance and extend maturities of existing debt at ever-decreasing rates. This likely allowed for the survival of a number of financially unworthy credits. Irrespective, the net result was a significant decline in the rate of defaults for high-yield bond issuers, which in turn further fed the demand for the asset class.

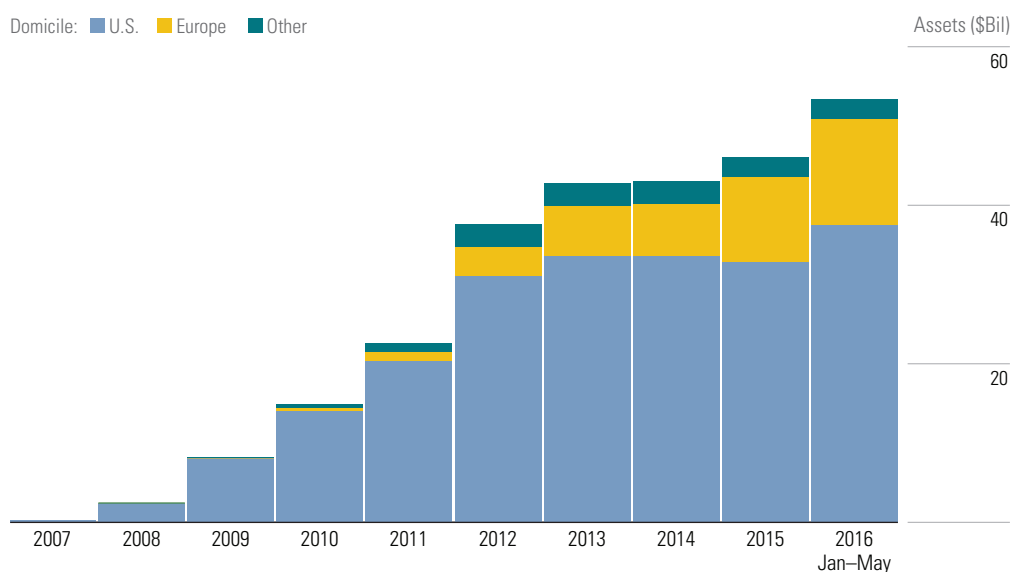
The high-yield bond bet worked fairly seamlessly until mid-2014, when the decline in commodity prices started to take hold. The fundamentals for high-yield bond issuers in the energy sector—particularly those in the US fracking industry—worsened considerably, with the collapse of oil prices likened to a torpedo aimed at their financial flotation line. As a result, US energy sector high-yield bond yields rocketed to convey the expectations of a much higher rate of future defaults. By comparison, other areas of the high-yield bond market have remained significantly less risky. The reversal, albeit timid, of the US Federal Reserve policy settings at a time of much increased volatility in the energy high-yield sector also unnerved investors. This was particularly evident at the end of 2015. Events such as the closure of the Third Avenue Focused Credit fund had a negative effect on high-yield bond market valuations across the board.

Investors have rekindled their interest in the high-yield bond market in the early part of 2016, largely as a result of a dovish revision of US monetary policy tightening expectations. In addition, in March 2016 the European Central Bank announced the expansion of its monthly asset purchases programme, both in quantitative and qualitative terms with the addition of eurozone nonbank investment-grade rated corporate debt to the list of eligible assets. Although targeted, the ECB’s move has been taken by investors as providing support to the entire corporate debt market—both investment-grade and non-investment-grade.

The Role of ETFs as Facilitators of Access to the High-Yield Bond Market

Exchange-traded-funds have played a pivotal role in providing investors easy access to this opaque corner of fixed-income market throughout this past decade. According to Morningstar data, global assets under management in high-yield bond ETFs have grown from zero in early 2007 to USD 51 billion by mid-May 2016. This represents around 10% of the total AUM in fixed-income ETFs worldwide. More than 75% of AUM in high-yield bond ETFs are held by US-domiciled products (see exhibit 1).

Exhibit 1 AUM in High-Yield Bond ETFs (USD billion)

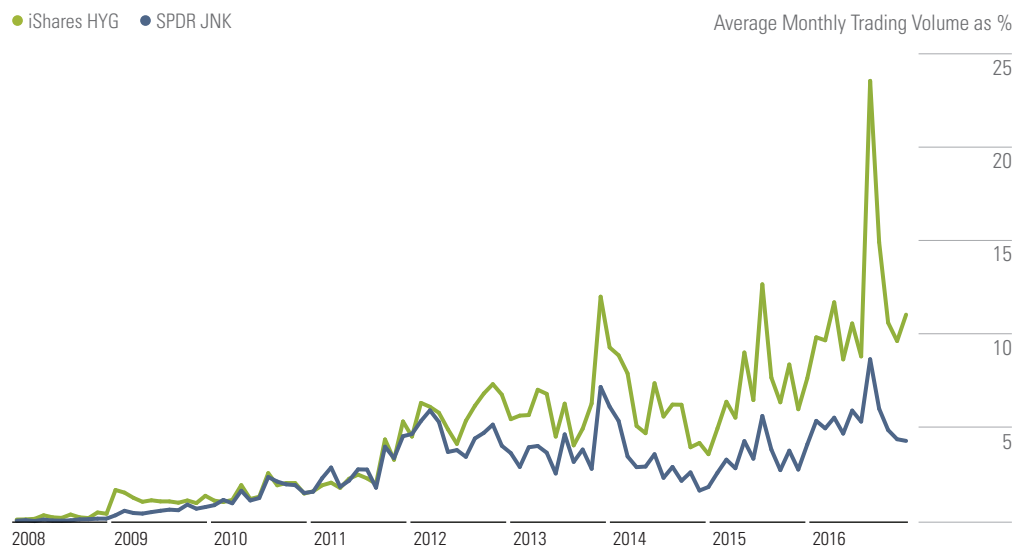


Source: Morningstar Direct. Data as of 15 May 2016.

By virtue of mixing an open-ended fund structure with real-time stocklike tradability, ETFs are democratising agents for fixed income, an asset class that operates over the counter in its natural state. In addition to providing easy access, fixed-income ETFs also provide continued consolidated pricing signals. This feature can be particularly valuable for the more opaque corners of the market, such as high yield, where OTC pricing signals are much harder to come by. This explains why, despite their tiny size in relation to the underlying market—the estimated size of the US high-yield bond market is USD 2 trillion, while Europe’s would be half of that—high-yield bond ETFs have become a price discovery mechanism for the asset class.

Market trading metrics for high-yield bond ETFs make remarkable reading. This is particularly noticeable in the US, where, compared with Europe, on-exchange ETF trading is the norm.

The combined monthly average on-exchange trading volume for the two largest US-domiciled high-yield bond ETFs—iShares iBoxx \$ High Yield Corporate Bond (HYG) and SPDR Barclays High Yield Bond (JNK)—as a proportion of the entire US high-yield publicly traded bond market has increased substantially since 2008 (see exhibit 2). It must be noted that 80%-90% of the total on-exchange volume traded in high-yield bond ETFs in the US is executed in these two ETFs.

Exhibit 2 US High-Yield ETF Average Monthly Trading Volume as % of US High-Yield Publicly Traded Bond Market

Source: Morningstar Direct. FINRA. TRACE. Data as of end April 2016.

The chart also shows how at times of heightened market volatility, such as the one experienced in December 2015, traded volumes in these two ETFs have spiked considerably. In sum, two ETFs with combined assets under management of USD 27 billion (65% of all AUM held by US-domiciled high-yield ETFs), have become the very public face of a US high-yield bond market worth an estimated USD 2 trillion.

High-Yield Bond ETFs and Liquidity

The high usage and visibility of ETFs explains why media and other interested parties (for example, regulators) have high-yield bond ETFs on their radar. In particular, questions regularly arise about the ability of high-yield bond ETFs to operate in stress scenarios.

One of the most common misconceptions when it comes to ETFs and liquidity is that every purchase or sale of an ETF share necessarily has an impact on the underlying market. Put differently, every time an investor buys or sells a high-yield bond ETF, the ETF itself has to buy or sell the bonds making up the fund. This is incorrect and reveals a lack of understanding about the structure of ETFs and their trading mechanics.

ETFs can never be more liquid than the underlying market they track. However, by virtue of their exchange-traded nature, ETFs do bring an extra layer of liquidity to the marketplace.

Here lies the root of much of the existing confusion around ETFs and liquidity; taken at face value, the above statements seem to contradict each other.

In fact, the only way to reconcile them is to fully grasp the key distinction between an ETF's primary and secondary market layers of liquidity.

Investors in ETFs operate in the secondary market, buying and selling existing ETF shares like common stock by means of traditional market-making channels. This is the extra layer of liquidity ETFs bring about, and it can be extremely useful in the case of fixed-income exposures.

Only when there is an imbalance in demand/supply in the secondary market, a selected group of market makers, known as authorised participants, interacts directly with the ETF provider to create new ETF shares or redeem existing ones. This is the primary market activity that has a direct impact on the underlying, in the sense of having to buy or sell the actual bonds—or stocks—making up the ETF basket.

This explains why ultimately an ETF can never be more liquid than the underlying market it tracks, as creation/redemption activity is strictly delimited by the depth and size of the underlying market.

However, as our analysis will show, the bulk of secondary market trading activity in the most heavily traded high-yield bond ETFs is routinely netted off between buyers and sellers of existing ETF shares. Meanwhile, the level of direct operations on the underlying, whether by means of creations or redemptions, has been kept at much lower ranges and has not presented problems of execution.

US-Domiciled High-Yield Bond ETFs

Here we show the primary and secondary market trading activity for the two largest US-domiciled high-yield bond ETFs: iShares iBoxx \$ High Yield Corporate Bond (HYG) and SPDR Barclays High Yield Bond (JNK).

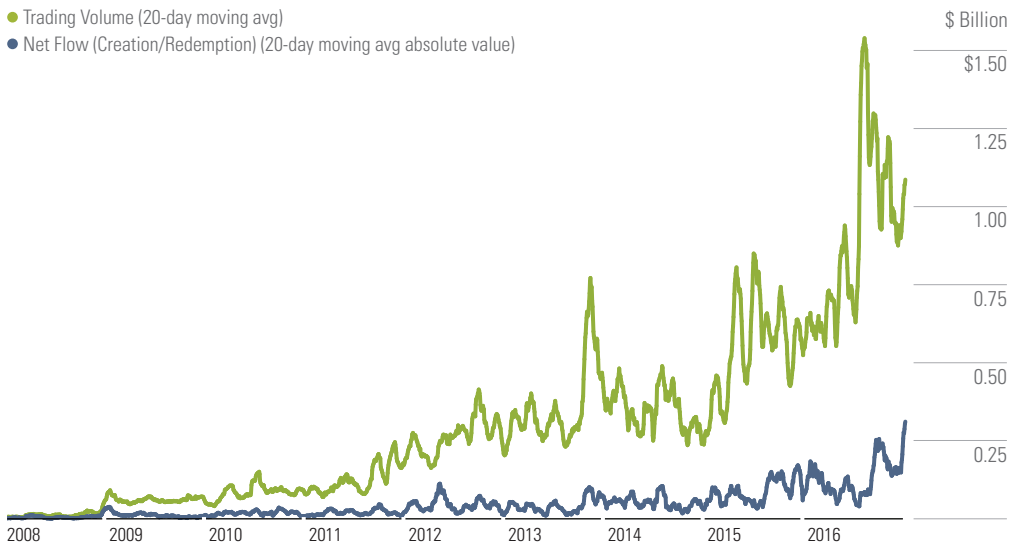
The combined AUM of these two ETFs account for 65% of the total AUM in US-domiciled high-yield bond ETFs. More importantly, 80%-90% of all on-exchange trading—both in number of shares and value—in US-domiciled ETFs is executed in these two products.

On-exchange secondary market trading is the norm in the US ETF market. In contrast to the European market, OTC secondary market trading of ETF shares is undertaken peripherally, mostly in situations where there is limited “on-screen” liquidity in smaller, less heavily traded funds. This means that on-exchange ETF traded volumes in the US more accurately represent secondary market activity. Also, the measurement of secondary market activity in the U.S. is further improved relative to Europe, owing to the existence of a consolidated tape.

For the purposes of our analysis, we take daily data on net ETF creation or redemption (primary market activity) as well as traded volume on the exchange (secondary market activity) from the start of 2008 until mid-May 2016. Both series are expressed in US dollar value terms. It is not unusual for ETFs to show none or very little primary market activity on a given day. In contrast, aside from exchange holidays, we find that secondary market activity is continuous. This means that the quality of an unsmooth daily series of secondary/primary market ratios (that is, trading volumes divided by creation/redemption in absolute terms) is compromised by invalid data points and outliers. We solve this issue by smoothing the original daily data series, using 20-day moving averages as our preferred unit of measurement.

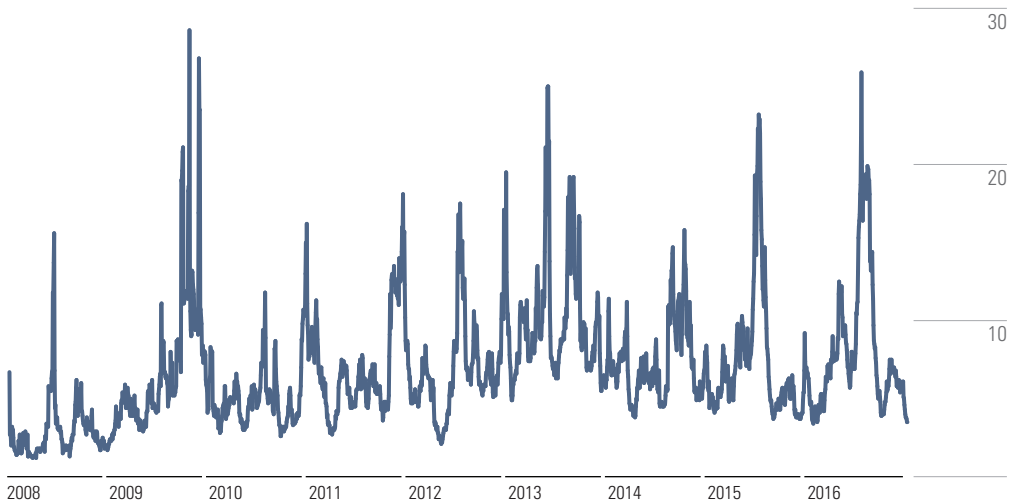
iShares iBoxx \$ High-Yield Corporate Bond ETF HYG

Exhibit 3 Primary and Secondary Market Activity (USD billion)



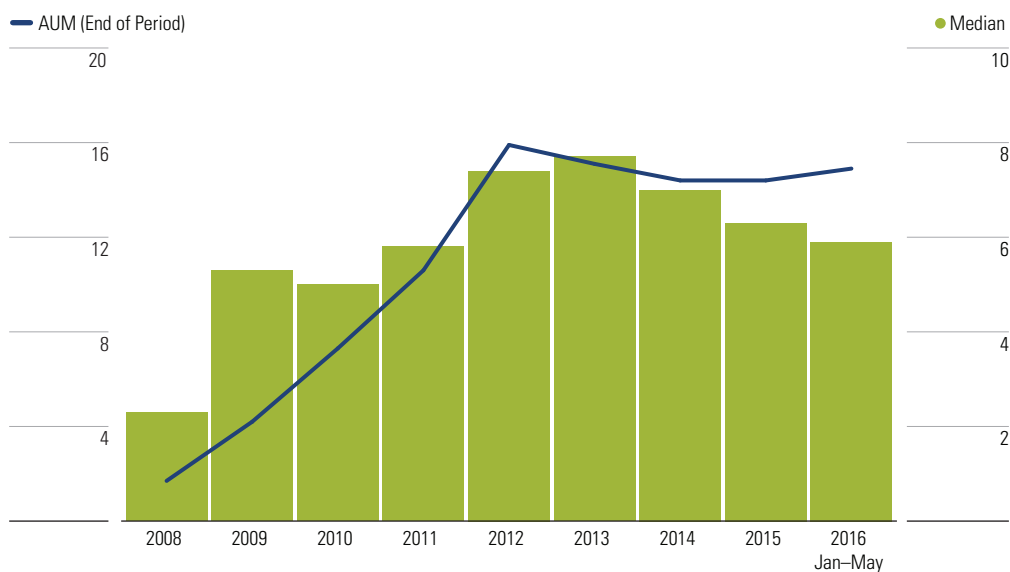
Source: Morningstar Direct. Data as of 15 May 2016.

Exhibit 4 Secondary/Primary Market Ratio



Source: Morningstar Direct. Data as of 15 May 2016.

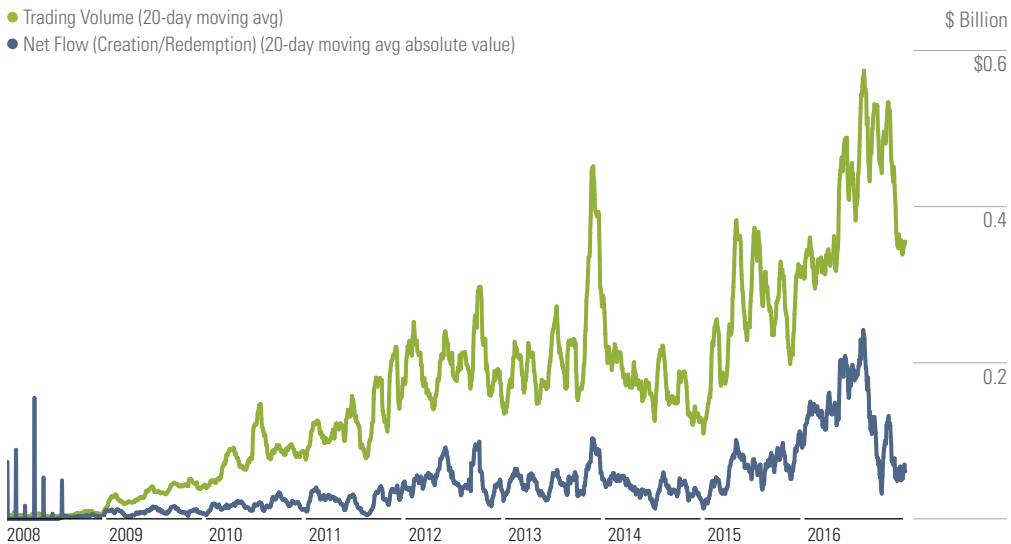
Exhibit 5 Secondary/Primary Market Ratio (Median) vs. ETF AUM



Source: Morningstar Direct. Data as of 15 May 2016.

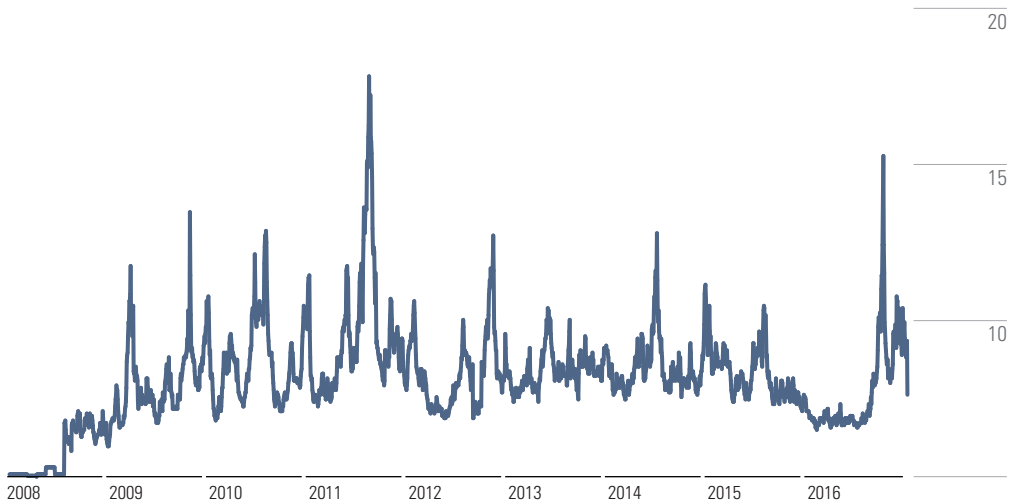
SPDR Barclays High Yield Bond ETF JNK

Exhibit 6 Primary and Secondary Market Activity (USD billion)

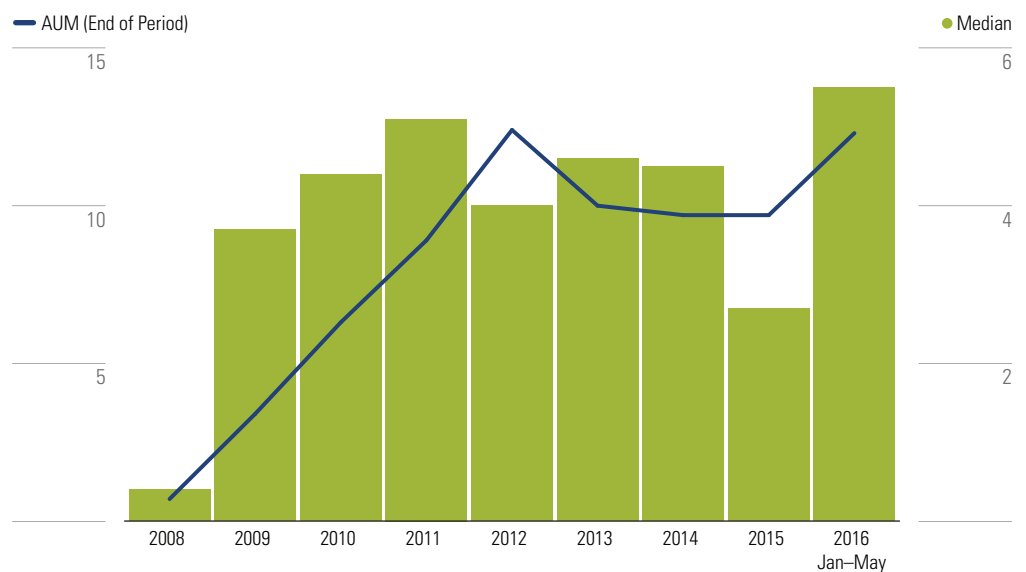


Source: Morningstar Direct. Data as of 15 May 2016.

Exhibit 7 Secondary/Primary Market Ratio



Source: Morningstar Direct. Data as of 15 May 2016.

Exhibit 8 Secondary/Primary Market Ratio (Median) vs. ETF AUM

Source: Morningstar Direct. Data as of 15 May 2016.

The historical analysis shows that secondary market trading in the two high-yield bond ETFs increased substantially after 2008. This coincides with the development of the “search for yield” investment theme in fixed-income markets.

The expanding body of demand for the asset class saw the AUM for both ETFs rocket from less than USD 1 billion in 2008 to USD 16 billion in the case of iShares iBoxx \$ High Yield Corporate Bond ETF and to USD 12.5 billion in the case of SPDR Barclays High Yield Bond ETF by the end of 2012. The AUM of both ETFs has declined slightly from those levels thereafter, in great part reflecting the fall in market capitalisation of energy sector high-yield bonds.

Since 2008, the calculated median secondary/primary market ratio for iShares iBoxx \$ High Yield Corporate Bond ETF has ranged between 5 and 8 (see exhibit 5), while that for SPDR Barclays High Yield Bond ETF has ranged between 3 and 5.5 (see exhibit 8). These figures help dispel the myth that ETF secondary trading has a one-to-one impact on the underlying.

There are plenty of periods when the secondary/primary market ratio spikes significantly above median values (see exhibits 4 and 7). Though not always, these spikes coincide with periods of stress in the underlying—for example, the start of the eurozone debt crisis in 2009, the US Fed taper tantrum in the summer of 2013, or the comprehensive sell-off in late 2015.

In all these occasions, the ETFs’ dynamic secondary market activity has afforded investors a channel to express investment views—even extreme ones—without unduly affecting the primary market liquidity of the underlying.

In fact, even in episodes of heavy redemptions from high-yield bond ETFs, such as the one experienced in early May 2015, we see that secondary market activity continued to greatly outpace the net impact on the primary market. Indeed, the ETFs behaved as expected, and the flow of redemption orders was duly executed.

Faced with these facts, it can be argued that far from being agents of instability, heavily-traded US-domiciled high-yield bond ETFs have acted as a safety valve in a marketplace where, largely because of postcrisis banking regulation, the availability of ready-to-trade fixed-income inventory has been on a declining trend.

European-Domiciled High-Yield Bond ETFs

In this section, we aim to ascertain whether the same conclusions can be drawn in the case of European-domiciled high-yield bond ETFs. We carry out the analysis on the three largest European-domiciled high-yield bond ETFs: iShares iBoxx Euro High Yield Corporate Bond (IHYG), iShares iBoxx \$ High Yield Corporate Bond (SHYU), and Pimco Short-Term High Yield Corporate Bond Source ETF (STHY).

The combined AUM of these three ETFs accounts for 75% of the total AUM in European-domiciled high-yield bond ETFs, and according to our calculations 80% of all on-exchange trading—both in number of shares and value—in European-domiciled ETFs is executed in these three products.

Irrespective of asset class, the analysis of ETF market liquidity in the European context is not a straightforward task. In contrast to its US counterpart, the European ETF market is not a single entity, but is made up of a collection of national trading venues. This means that ETFs are routinely listed on multiple exchanges across Europe, typically in a variety of trading currencies to cater for the needs of a nationally varied investor base.

Consolidating on-exchange ETF trading data involves the sourcing and addition of trading volumes for each individual listing, making sure that all data are expressed in the same currency terms. This is a time-consuming inconvenience, although perfectly doable.

The problem is that, in contrast to the US, on-exchange trading of ETFs is not the norm in Europe. This means that consolidated on-exchange traded volumes for European-domiciled ETFs only provide a partial vision of the actual operations conducted in the secondary market.

The lack of compulsory reporting of OTC trades—something that is expected to change with the implementation of MiFID II—means that there are no solid statistics about the extent of OTC trading in ETFs in Europe. However, it is routinely estimated that up to 70% of trading in ETFs in Europe is carried out OTC, with only 30% routed via the network of national exchanges.

For the purposes of this analysis, we assume a standard 30/70 on-exchange/OTC trading volume ratio. In parallel we run a second scenario using a 50/50 ratio for iShares iBoxx Euro High Yield Corporate Bond for the period when the AUM in this ETF exceeds the EUR 3 billion mark. This assumes that

as ETFs grow sufficiently in size, investors may feel more comfortable executing a larger number of operations via the exchange.

The multiplicity of exchange listings, and in some cases of share classes, for each individual ETF also generates issues with regards to the interpretation of primary market activity data. There are instances when investors will switch from one listing, or more commonly from one share class, to another—for example, to better align their currency objectives. Typically, these operations are reported at the fund level as a net redemption, followed by a net creation of the same size the following business day. In reality, they are neither, but simply AUM switches within the ETF. Hence, they cannot be classed as primary market activity in the true sense.

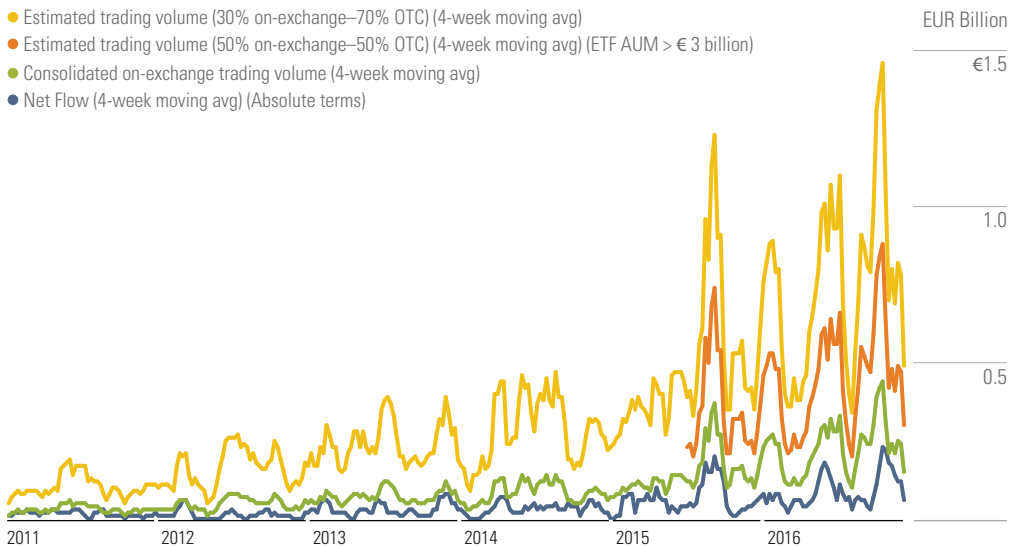
This means that for our analysis we must work with weekly, rather than daily, net flow data. In this way, most intrafund switches cancel each other out to ensure that the data series provides a truer representation of primary market activity.

We take weekly data on ETF net creation or redemption (primary market activity), as well as traded volume on all exchange listings (secondary market activity), from the inception date of each ETF until mid-May 2016. Both series are expressed in euro value terms.

Even working on the basis of weekly data, we continue to find that the primary market data series is filled with gaps that represent none or very little activity, whereas secondary market activity is continuous. We smooth the original weekly data series, using four-week moving averages as our preferred unit of measurement. This is equivalent to a 20-trading-day moving average, which is the measure we used for the US-domiciled ETFs.

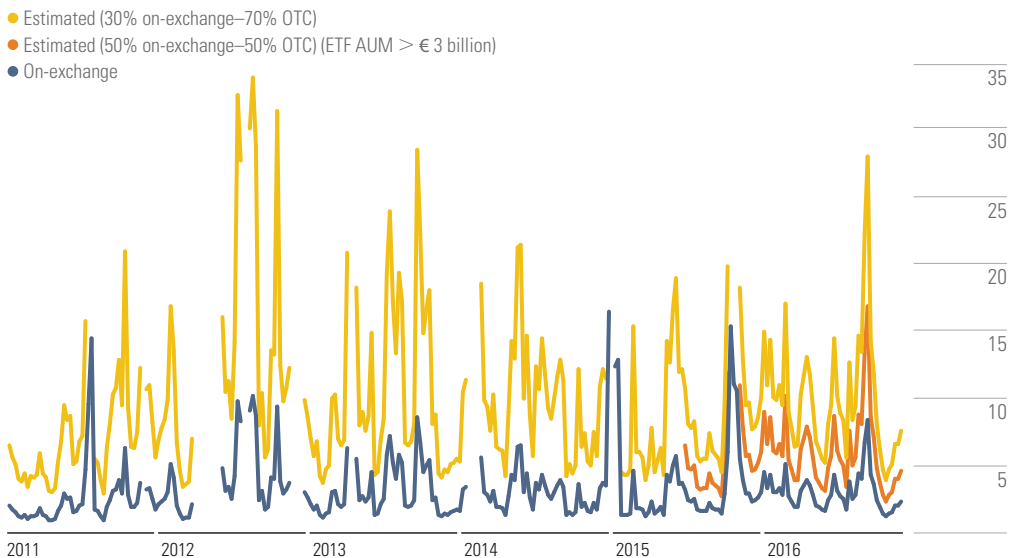
iShares iBoxx Euro High Yield Corporate Bond ETF IHYG

Exhibit 9 Primary and Secondary Market Activity (EUR billion)



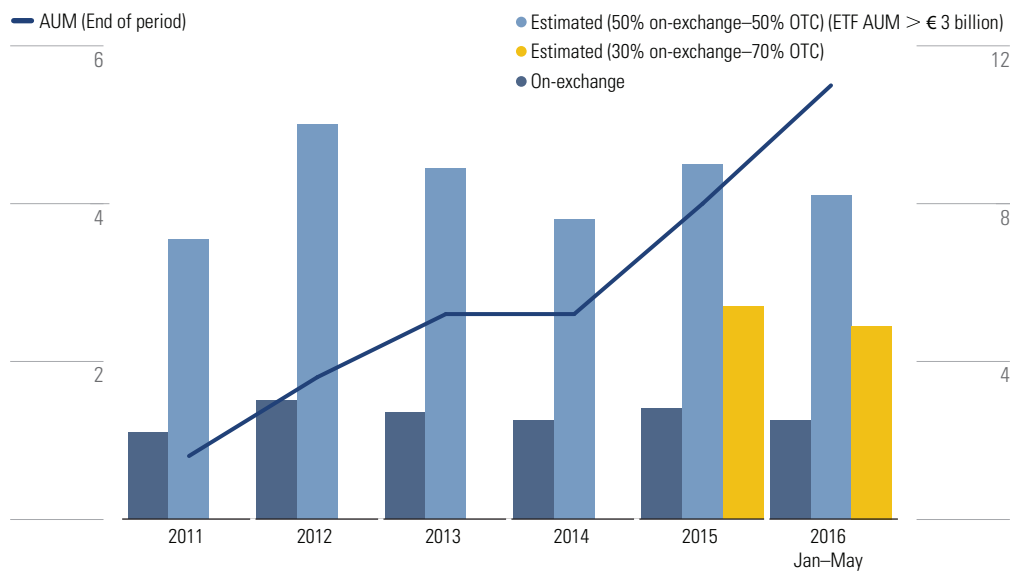
Source: Morningstar Direct. Data as of 15 May 2016.

Exhibit 10 Secondary/Primary Market Ratio



Source: Morningstar Direct. Data as of 15 May 2016.

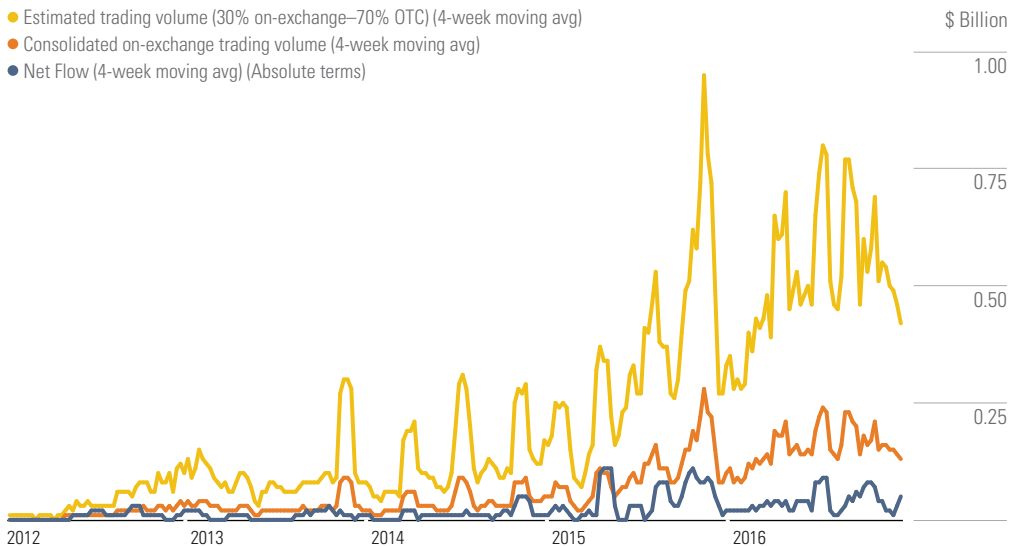
Exhibit 11 Secondary/Primary Market Ratio (Median) vs. ETF AUM



Source: Morningstar Direct. Data as of 15 May 2016.

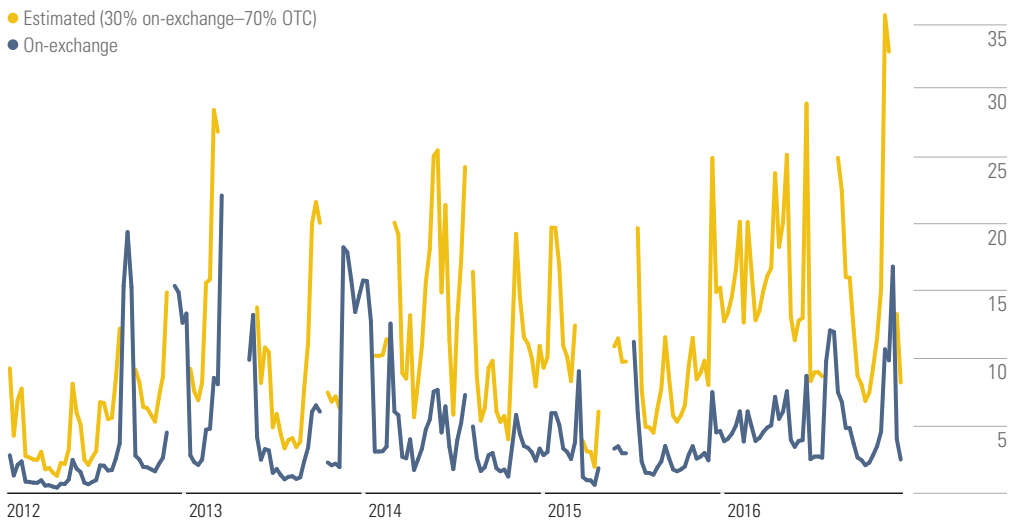
iShares iBoxx \$ High Yield Corporate Bond ETF SHYU

Exhibit 12 Primary and Secondary Market Activity (EUR billion)



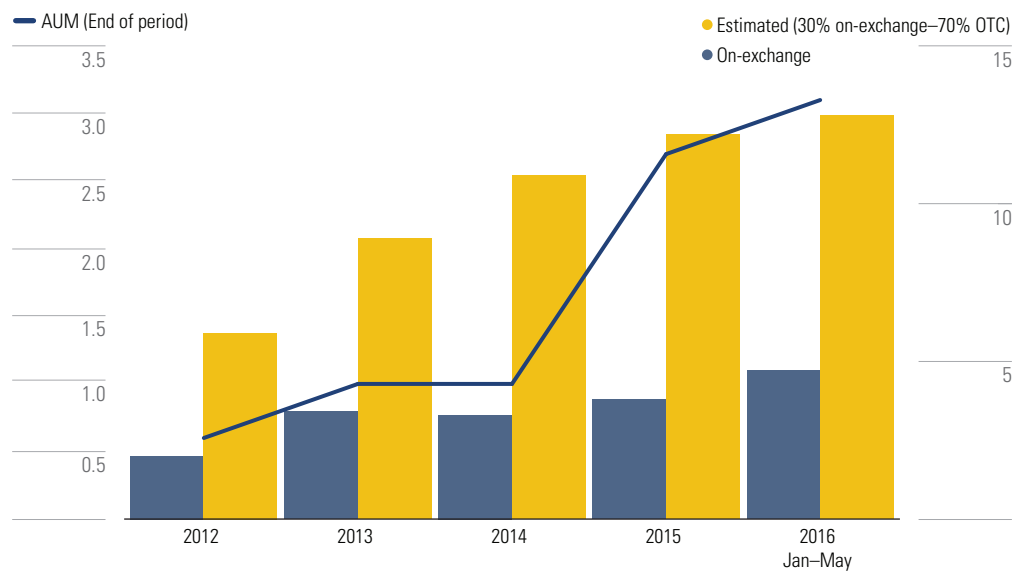
Source: Morningstar Direct. Data as of 15 May 2016.

Exhibit 13 Secondary/Primary Market Ratio



Source: Morningstar Direct. Data as of 15 May 2016.

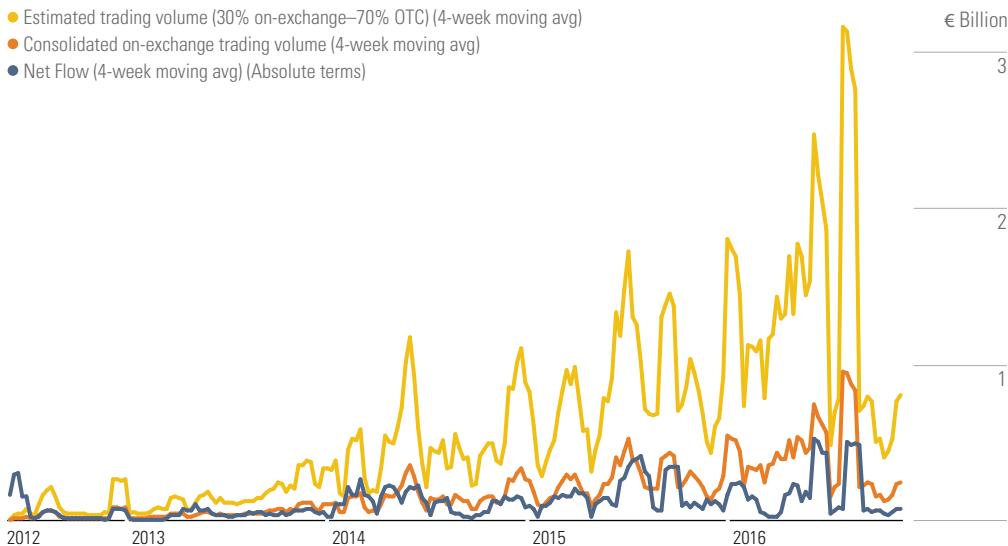
Exhibit 14 Secondary/Primary Market Ratio (Median) vs. ETF AUM



Source: Morningstar Direct. Data as of 15 May 2016.

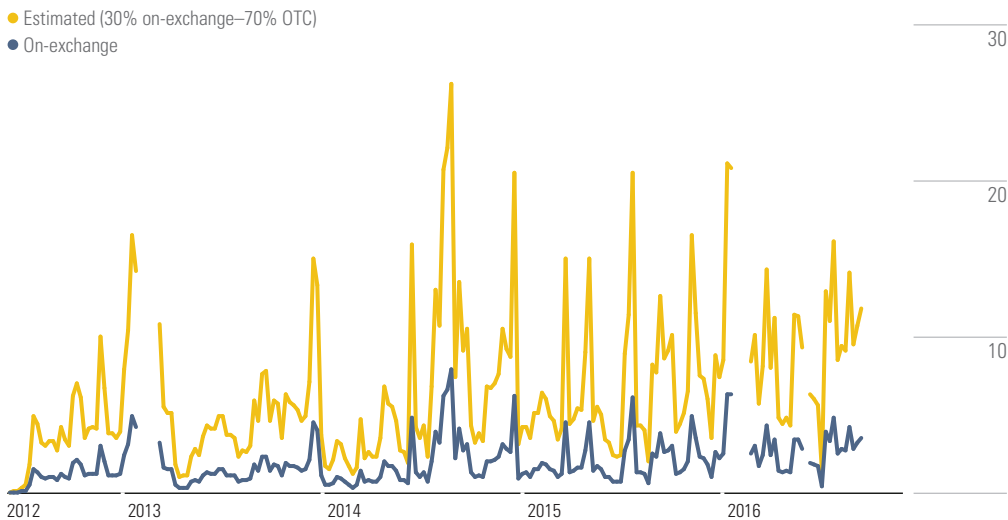
Pimco Short-Term High Yield Corporate Bond Source ETF STHY

Exhibit 15 Primary and Secondary Market Activity (EUR billion)

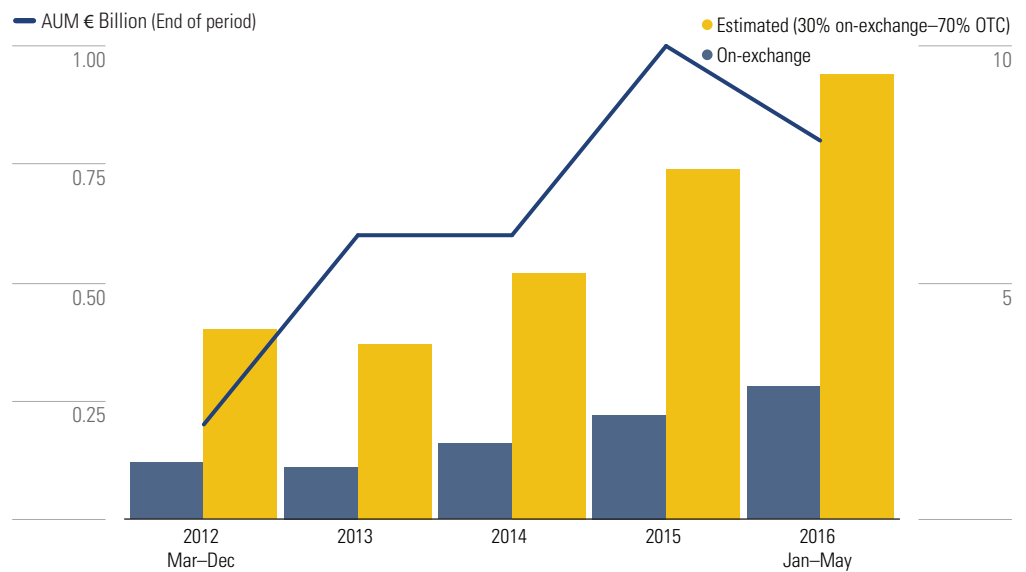


Source: Morningstar Direct. Data as of 15 May 2016.

Exhibit 16 Secondary/Primary Market Ratio



Source: Morningstar Direct. Data as of 15 May 2016.

Exhibit 17 Secondary/Primary Market Ratio (Median) vs. ETF AUM

Source: Morningstar Direct. Data as of 15 May 2016.

The first thing that becomes apparent for all three ETFs under study is that the graphs charting the secondary/primary market ratio (exhibits 10, 13, and 16) are sprinkled with gaps. Even after smoothing the data series, there remain four-week periods where primary market activity is very minimal. During these periods, the secondary/primary ratio data points spike out of all proportion. We have cleaned the data series of these outliers for the benefit of interpretation.

In the case of iShares iBoxx Euro High Yield Corporate Bond ETF, the estimated median secondary/primary market ratio ranges between 7 and 10 under the main working assumption of a 30/70 on-exchange/OTC trading ratio, and between 5 and 5.5 in the 50/50 scenario when the ETF's AUM has grown above EUR 3 billion (see exhibit 11). This ETF was launched in September 2010 and quickly built up in size. By the end of 2011, its AUM approached EUR 1 billion, rising to EUR 5.5 billion by mid-May 2016.

In the case of iShares iBoxx \$ High Yield Corporate Bond ETF, the estimated median secondary/primary market ratio ranges between 6 and 13 for the period spanning from 2012 to mid-May 2016. However, it narrows to a higher magnitude range of 10 and 13 from 2014 onwards, once the ETF's AUM had surpassed the EUR 1 billion mark.

Finally, in the case of Pimco Short-Term High Yield Corporate Bond Source ETF, the estimated median secondary/primary market ratio ranges between 4 and 9.5 since inception. It narrows to a higher magnitude range of 7.5 and 9.5 from 2015 onwards, coinciding with the ETF's AUM approaching EUR 1 billion.

With all the necessary caveats that come with working with estimations rather than hard statistics, we conclude that heavily-traded, high-sized, European-domiciled high-yield ETFs also show healthy secondary/primary market activity ratios.

What Would Happen If High-Yield Bond Market Liquidity Fully Dried Up?

When properly scrutinised, the concerns about high-yield bond ETFs have little to do with ETFs, but with the fundamentals of investing in the asset class. Investing in what in the past was commonly known as “junk bonds” has become mainstream by virtue of the monetary policy settings borne out of the global financial crisis of 2008. However, the basic fundamentals for the asset class—higher yields on offer in exchange for assuming greater credit risk—remain unchanged.

Our analysis shows that, so far, the very dynamic secondary market trading of high-yield bond ETFs—whether US- or Europe-domiciled—has allowed investors to express investment views about the asset class without unduly affecting the liquidity of the underlying market. The bulk of operations is netted off between buyers and sellers of existing ETF shares, while, whenever needed, creation and redemption activity in the primary market has not presented problems for execution.

However, the question most want an answer to is, what would happen in a situation where the liquidity of the underlying dries up?

The straightforward answer is that such a situation would be an asset-class-wide problem, and it would affect anybody invested in high-yield bonds, irrespective of the investment vehicle. As it pertains to ETFs, a severe impairment of liquidity conditions in the underlying high-yield bond market would clearly hinder—highly likely stop—redemptions at the primary market level. De facto, the ETF could become a closed-end fund.

Meanwhile, the consequences for holders of existing ETF shares would be determined by their ability to continue trading in the secondary market. Unless faced with the ultimate worst-case scenario where there are only sellers and no buyers, an ETF shareholder intent on liquidating a position should be able to transact, even if at very unfavourable prices. This affords ETF holders an “escape route” that would not be available to investors in traditional high-yield bond mutual funds—where, let’s not forget, the overwhelming majority of the invested money still resides—once they suspend redemptions.

Ultimately, the merits and risks of investing in an asset class such as high-yield bonds must be judged—and assumed—by the individual investor. There certainly is an interesting debate to be had about the financial soundness of the “search for yield” investment theme. However, it pays not to lose sight that ETFs are simply investment vehicles affording access to the asset class, not the shapers of its fundamentals. ■■

About Morningstar Inc.

Morningstar, Inc. is a leading provider of independent investment research in North America, Europe, Australia, and Asia. The company offers an extensive line of products and services for individual investors, financial advisors, asset managers, and retirement plan providers and sponsors. Morningstar provides data on approximately 525,000 investment offerings, including stocks, mutual funds, and similar vehicles, along with real-time global market data on nearly 18 million equities, indexes, futures, options, commodities, and precious metals, in addition to foreign exchange and Treasury markets. Morningstar also offers investment management services through its investment advisory subsidiaries, with more than \$180 billion in assets under advisement and management as of March 31, 2016. The company has operations in 27 countries.



1 Oliver's Yard
55-71 City Road
London
EC1Y 1HQ

©2016 Morningstar Inc. All rights reserved. The information, data, analyses, and opinions contained herein (1) are proprietary to Morningstar, Inc. and its affiliates (collectively, "Morningstar"), (2) may not be copied or redistributed, (3) do not constitute investment advice offered by Morningstar (4) are provided solely for informational purposes and therefore are not an offer to buy or sell a security, and (5) are not warranted to be accurate, complete, or timely. Morningstar shall not be responsible for any trading decisions, damages, or other losses resulting from, or related to, this information, data, analyses or opinions or their use. Past performance is no guarantee of future results.