
**June 2, 2020**

# ETF Performance During the Coronavirus Crisis

## An IA Policy Briefing

### 1. Intro

ETFs are a type of investment fund which, unlike many open-ended funds, are listed on one or multiple global stock exchanges. They have a secondary market to match buyers and sellers combined with a primary market to manage the creation or redemption of ETF shares. In Europe, most ETFs are governed under the UCITS regulatory framework. ETFs are one of a number of exchange-traded products, each with its own structure, and many of which will have differing regulatory frameworks. Further information on ETFs can be found here.

ETFs have grown in significance in the global fund market since their introduction just over 25 years ago, with ETF AUM growing to over $6 trillion worldwide by the end of 2019.

The coronavirus outbreak has had a significant impact on capital markets, and like other products ETFs have been affected by the significant market volatility. This has raised a range of questions about the performance and resilience of ETFs during the crisis and with this paper, we seek to address the main points, including:

- Liquidity, Spread and Premium/Discount to NAV;
- Authorised Participant ("AP") Arrangements; and
- Different types of Exchange Traded Products.

At the IA, we represent members who are both investors in, and providers of, ETFs. Our members represent over 90% of the ETF market share in Europe.[1] European ETFs tend to be heavily weighted towards equity (65% of AUM) and fixed income (24%)[2], though there is also more limited allocation towards commodities and other asset classes.

It is our members' view that ETFs have proven themselves resilient despite the initial market shock and that they have provided a key source of liquidity and price discovery during the crisis.

[1] ETF Stream

[2] Investment Association, "Investment Management Survey 2018-2019"

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## 2. Liquidity, Spreads and Premiums/Discounts

ETFs, as with most financial instruments during the crisis, have seen widening spreads and a reduction in displayed liquidity. During periods of market volatility, an ETF's underlying securities may become more difficult to buy or sell and the cost of hedging ETF trades may also increase.

During the early weeks of the crisis in Europe, concerns were raised about ETFs trading in the secondary markets at a significant discount or premium to their net asset value (NAV), particularly in the context of fixed income ETFs, and in particular investment-grade corporate bond ETFs, where 80% saw discounts climb to all-time highs.[3]

Questions were also raised as to whether this represented a breakdown of the 'arbitrage mechanism' by which premiums or discounts to NAV within ETF pricing are usually corrected, and that the discounts were having a distortive effect on the prices of underlying bonds.

To understand this dynamic in times of high market volatility, it is important to understand the fundamental factors that inform these discounts/ premiums to NAV.

The main driver can be attributed to the bond prices used by index providers, which ETF NAVs are benchmarked to. Index providers need to obtain a price for every bond in their respective index and different providers can have their own pricing source and methodology. Prices of bonds need to be obtained at a certain "fixing" time but as bonds are not traded on transparent and widely accessible venues similar to equities, index providers may ask a panel of broker-dealers at a certain time for indicative (non-firm) prices. Alternatively, algorithms can be used to model the theoretical fair value of a bond. In many cases if the bond has not been traded during the day a stale price reflecting when the bond last traded is the only viable option to use.

It is important to outline that the underlying fixed income market does not currently operate in the same way as the equity market, insofar as:

- it is not standardised;
- it is very fragmented;
- there is no official market, and
- there is no closing auction period.

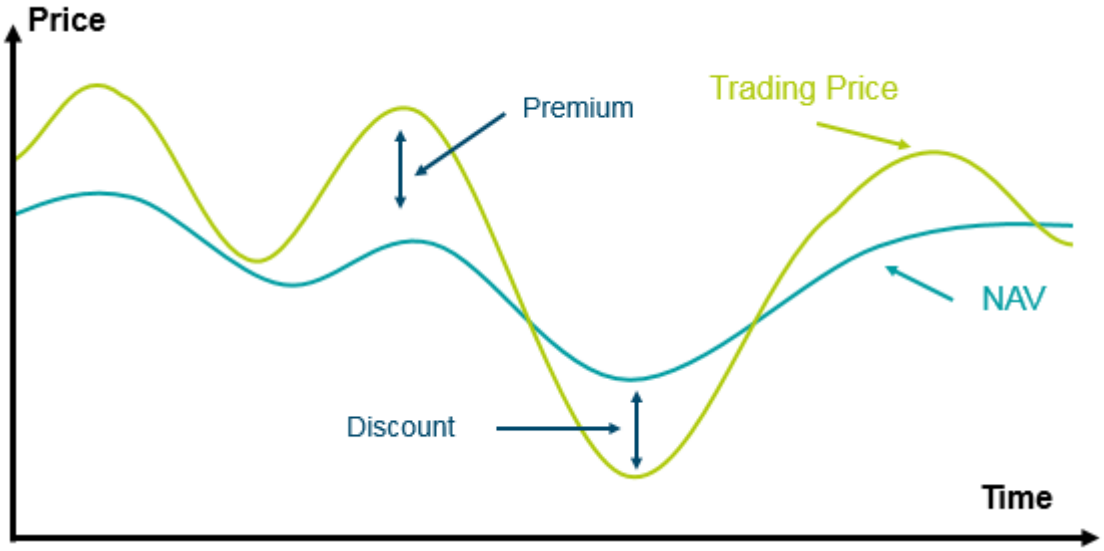
This makes price discovery for fixed income securities more challenging than for equity shares. In the end, the ETF NAV, like any other traditional fixed income investment fund, shows a theoretical bond price that is indicative, reasonably estimated and as close as possible to a fair value. Therefore, bond indices can include many theoretical prices which are not necessarily tradeable prices.

Under normal market conditions, this causes fixed income ETFs to trade at small differences to NAV, as ETF brokers will price in any difference they see between the tradeable prices of the underlying bonds versus where the index has priced the bonds. But In times of severe market volatility, such as in the outbreak of the Covid 19 crisis in March 2020, where markets have moved at dramatic speeds, these small differences are

[3] Citi

amplified to a much larger extent and will result in differences between the intraday tradeable price of the ETF (which is based on the live tradeable prices of the underlying bonds) and its NAV (which is using theoretical or stale prices). In some cases, depending on the specific ETF exposure, some fixed income ETFs were seen to be trading at heavy discounts between 2% to 7% below the NAV of the ETF.

***Figure 1: ETFs trading at a premium or discount to NAV***




*Source: DWS International GmbH. The image is for illustration purposes only. ETF trading at a premium: ETF Price > NAV. ETF trading at a discount: ETF Price < NAV*

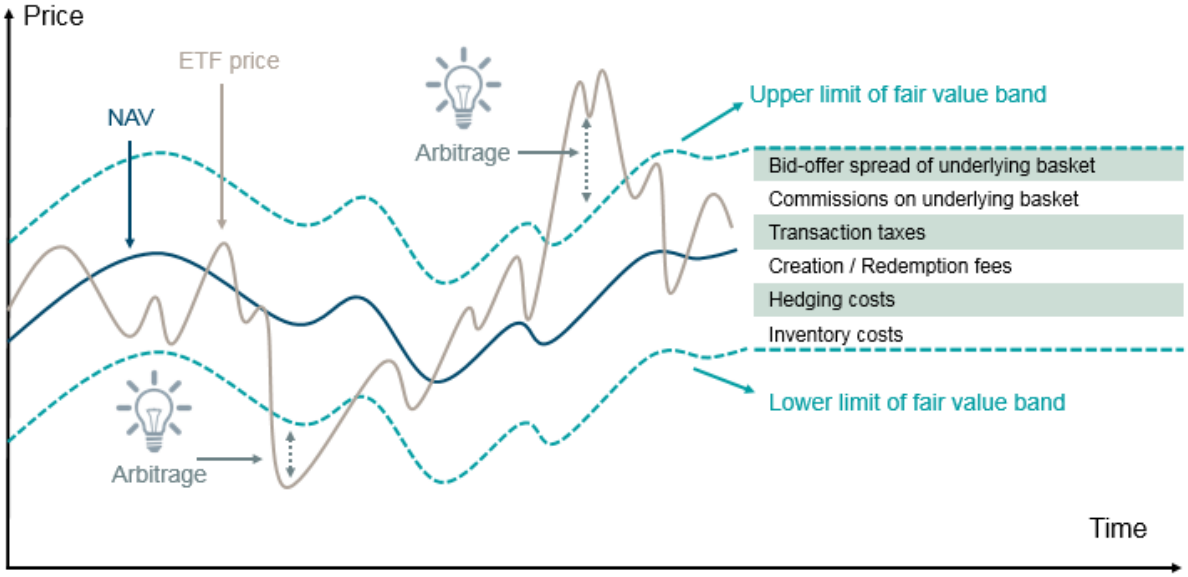
In addition, although bond traders obtain these theoretical bond fair values from pricing services, they have to estimate the value of bonds that are not trading and, as a result, the actual bid price at which they can sell the bonds may be different. This is a typical stress scenario in markets with insufficient liquidity to absorb all of the sell orders in the underlying bond market. It is important that we acknowledge that this is not specific to ETFs, but to how bond market pricing works in its broadest sense.

This poses the statement that significant tradable disparity between the ETF price and its NAV or fair value, would imply an arbitrage opportunity for Authorised Participants ('APs'), who can create and redeem ETF shares with the ETF provider.

When the price of an ETF exceeds the fair value range that is made up of the total costs of buying and selling the underlying basket of securities the ETF is tracking, there is a commercial incentive for APs to arbitrage the difference. This is frequently referred to as the "arbitrage mechanism"

During the period of market volatility triggered by the COVID-19 crisis, no significant arbitrage occurred and ETF prices remained discounted. Rather than demonstrating a failure of the arbitrage mechanism, it is our view that, instead, it demonstrates that there was no obvious arbitrage opportunity because market participants agreed that the ETF prices were based on the actual tradeable prices of the underlying bonds, whilst conversely, the NAVs represented stale or theoretical prices.

**Figure 2: Arbitrage mechanism**




*Source: DWS International GmbH. The image is for illustration purposes only.*

This dynamic was also referenced in the Bank of England's May Financial Stability Report, which noted that during this period, ETF prices appear to have provided information about future changes in underlying asset markets, offering evidence that ETF prices incorporated new information more rapidly than the NAV of the underlying assets.[4]

Therefore, at a time of uncertain, severely stressed and volatile markets, ETFs - and especially fixed-income ETFs - helped to provide continuous liquidity, facilitate unprecedented high trading volumes and provide transparent price discovery for the underlying bond market.

This can be further demonstrated by the fact that trading volumes have increased sharply and yet ETF liquidity during the crisis has far exceeded that of the underlying securities. During the three weeks from February 24th, European ETF trading volumes increased to over two times their average 2019 volumes. European equity ETFs accounted for 30% of all equity trading on the busiest days of this period (compared to 20% on the busiest days of 2019),[5] while in fixed income the iShares UCITS fixed income range saw trading volumes double their 2019 average figure.[6]

High secondary trading volumes continued even as markets started to recover in April. On 9 April, the day the US Federal Reserve (Fed) announced additional stimulus plans and broadened its existing Primary and Secondary Market Corporate Credit Facilities, the iShares USD Corp Bond UCITS ETF traded over nine times the average daily trading volume.[7]

[4] Bank of England Financial Policy Committee, 2020 May Interim Financial Stability Report
[5] State Street
[6] BlackRock
[7] BlackRock

This increase in trading volume has happened because ETFs have provided a source of liquidity and price discovery when underlying market trading was impaired. In equity markets, at several points during the ETFs proved among the most liquid S&P 500 instruments available, and allowed for price discovery when US equity and equity futures markets were suspended – reminiscent of the role ETFs played when Greek markets were suspended in 2015.

Moreover, fixed income ETFs changed hands far more than their underlying holdings, giving unparalleled insight into bond market pricing. As more investors turned to fixed income ETFs, they became indicators of real-time prices throughout the sell-off, as well as through the recovery in April 2020. During the first weeks of the crisis, bond market liquidity became impaired. With little trading data available to provide a reliable on-screen price, on-screen bid prices were often far higher than the firm bid prices market participants were willing to accept.

By contrast, ETFs were providing real-time pricing and were far more liquid than the underlying bonds – on 12 March the iShares USD Corp Bond UCITS ETF traded more than 1,000 times on exchange, compared to an average of just 37 times amongst its top 5 holdings. This extended through April 2020's 'risk on' period in investment grade (IG) credit. On 9th April the same ETF trading 537 times, while its top 5 underlying bonds each traded less than 20 times.[8]

This same dynamic can be seen in the material increase in the secondary-to-primary trading ratio of fixed income ETFs during this period, some of which saw a 270% increase in secondary-to-primary trading activity during March 2020 compared to the 2019 average.[9] Again, secondary market trading provided a deeper pool of liquidity even where primary market trading in the underlying securities was less frequent.

As a result, market participants and pricing services began to use ETFs to essentially estimate the price of those bonds that were not trading. In this way, rather than distorting the price of the underlying bonds, it can be argued that fixed income ETFs were able to keep pace with the bonds that were changing hands frequently and previewed the market-clearing prices of those that traded less frequently, signalling relevant and timely information about where market participants valued corporate bonds in the heat of volatile trading.

Moreover, there has been a significant reduction in discounts to NAV since the initial volatility spike in March, as bond prices have fallen towards the level of bond ETFs and as ETF prices have responded to central bank intervention.

## 3. AP Arrangements

Concerns have previously been raised by regulators that ETF AP arrangements would break down in times of market stress. However, despite the extreme volatility experienced through the crisis, AP networks appear to have held up well. It has been in the interests of ETF providers, even prior to this crisis, to ensure a well-planned and varied network of APs is in place, and such networks do not appear to have degraded.

It is also important for investors, regulators, influencers and policy makers to distinguish between APs and other market participants who provide liquidity. While APs are the only

[8] BlackRock

[9] DWS, 'ETF Trading During Volatile Times', April 2020

firms that can directly conduct creation and redemption business with ETF providers, they are not the only organisations that can provide liquidity. Market makers and broker-dealers also play important roles within the ETF ecosystem and, as with APs, the experience of this crisis, as well as previous market events, is that the withdrawal of one such market participant does not result in serious liquidity impacts on the ecosystem as a whole.

As discussed above, the structure of the ETF ecosystem allows ETF trading to take place in the secondary market without correlated trading of the underlying securities or the creation/redemption of ETF units in the primary market, thus enhancing overall ETF liquidity.

To illustrate the resilience of AP mechanics during the crisis, Invesco noted that, despite heightened volatility during the peak of the crisis, they had the same 16 APs active during this period as previously. In addition, despite seeing a 50% increase in trading volume between February and March, the top three APs by gross market volume remained in place (albeit with a lower market share). This would suggest that more APs were stepping up to take a proportionately larger trading volume, rather than shying away from trading.[10]

**4. Different Types of Exchange Traded Products**

In late April, falling oil prices led to difficulties for a number of Exchange Traded Products (ETPs). It should be noted that many of these products were Exchange Traded Commodities (ETCs), rather than ETFs. ETCs are structured differently to ETFs, and accordingly, are subject to different regulatory requirements. It is important that these distinctions be recognised – this paper analyses only the performance of ETFs during the crisis.[11]

The IA notes the ongoing work being conducted by market participants in both the US and Europe with a view towards developing appropriate classification frameworks for ETPs.

[10] Invesco

[11] While oil ETFs do exist, particularly in the US, they are not a significant constituent of the ETFs provided by the IA's membership, whose ETFs focus predominantly on equity and fixed income. As such, the IA does not intend to comment on oil ETFs at this time.