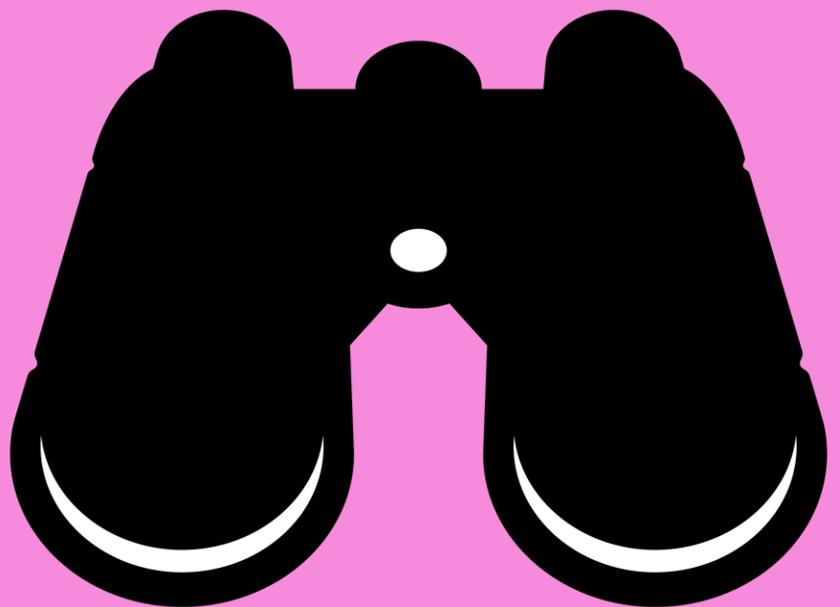


# TAKE A CLOSER LOOK

**Five metrics for evaluating ETF market quality**



# MARKET QUALITY MATTERS

Exchange traded funds ([ETFs](#)) have become indispensable tools for analyzing and investing in financial markets—but not all ETFs are created equal.

While there are many ways to evaluate ETF performance, this paper explores five key metrics—usage, trading costs, premium/discount behavior, tracking and primary market efficiency—that can help investors assess the market quality of an ETF. Together, these metrics can reveal an ETF’s ability to offer liquidity, price discovery and efficient access to markets in all market conditions.

**1**

**Usage**

**2**

**Trading costs**

**3**

**Premium/discount behavior**

**4**

**Tracking**

**5**

**Primary market efficiency**

# 1

## USAGE

ETFs have evolved from buy-and-hold asset allocation tools that let you own the market to liquidity tools that allow you to trade the market. Market data shows that investors increasingly use ETFs to allocate capital and adjust portfolio positions, especially when markets are volatile. Consider that in 2017, ETFs accounted for 23% of U.S. equity trading volumes on average; in the first half of 2020, a period of extreme market volatility, they accounted for 29%.<sup>1</sup>

As trading volume in an ETF grows, more price information becomes available to buyers and sellers. The information gives market makers, who earn a “spread” on each trade, an economic incentive to offer competitive quotes (set the best prices) to attract trading volume.<sup>2</sup> Competition between market makers ultimately reduces trading costs for investors.

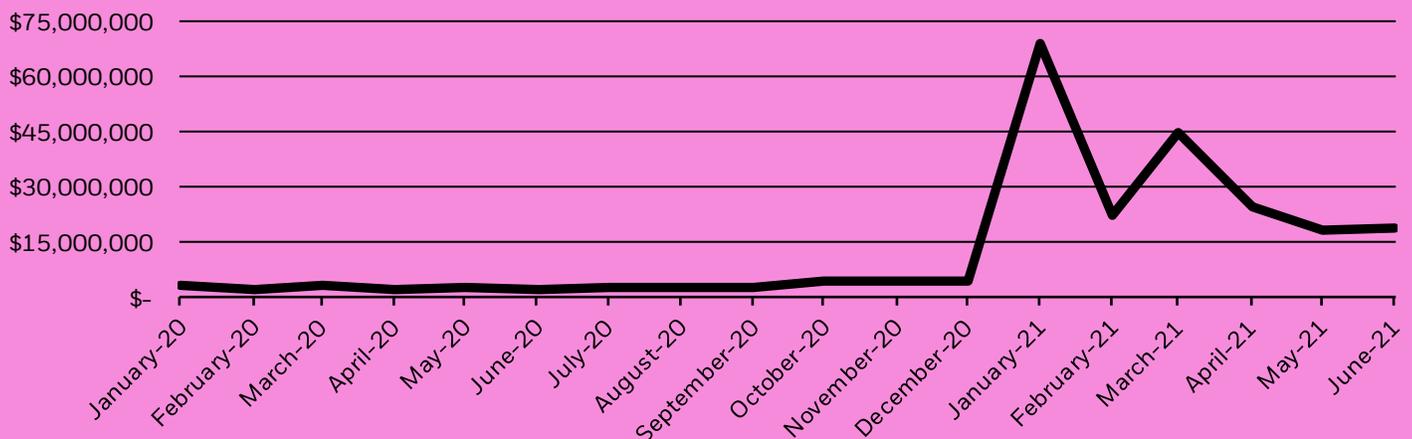
Importantly, increased liquidity can create a network effect. The most heavily traded ETFs are typically the cheapest to trade, which spurs even more usage.

### Usage in action

Trading volumes in the iShares Fallen Angels USD Bond ETF (FALN), which seeks to track the investment results of an index composed of U.S. dollar-denominated, high yield corporate bonds that were previously rated investment grade, rose in the first half of 2021 as investors sought to generate yield from downgraded bonds. The fund’s average daily volume (ADV) surged to over \$32 million in the first half of 2021, nearly 11 times its ADV in 2020.<sup>3</sup>

Data shows that instead of simply relying on individual bonds for exposure to corporate debt that was downgraded from investment grade to high yield, investors increasingly turned to the liquid ETF to access this segment of the market.

**iShares Fallen Angels USD Bond ETF (FALN) monthly average trading volume (\$ million)**



Source: BlackRock, Bloomberg as of June 30, 2021. There can be no assurance that an active trading market for shares of an ETF will develop or be maintained.

# 2

## TRADING COSTS

Bid-ask spreads, or the cost of trading into and out of a fund, can vary significantly from ETP to ETP. Spreads can be impacted by security-specific criteria, including asset class, as well as broader market conditions. For example, in times of volatility (when market uncertainty rises), bid-ask spreads typically widen (increase).

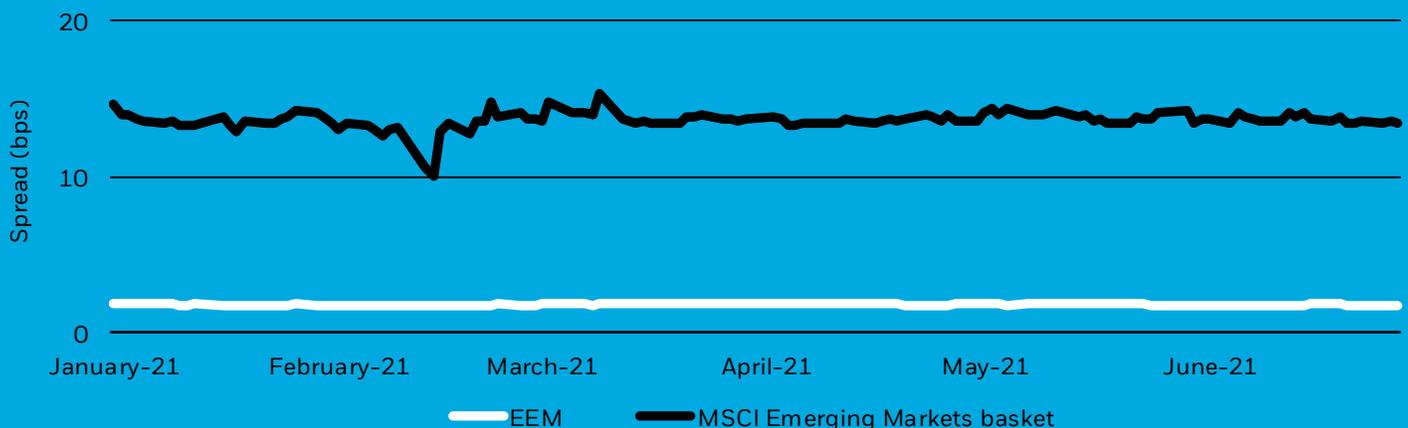
ETP bid-ask spreads that are tighter than those of the ETP's underlying holdings, or exhibit less sensitivity to stressed market conditions, can signal high market quality. In other words, ETP bid-ask spreads that are tighter than the spreads on their basket of underlying securities, or that widen less than their basket spread in periods of volatility, can indicate healthy trading activity.

### Trading costs in action

For example, the bid-ask spread on the iShares MSCI Emerging Markets ETF (EEM), which seeks to track the investment results of an index composed of large- and mid-capitalization emerging market equities, consistently exhibited a bid-ask spread of less than two basis points (bps) throughout the first half of 2021,<sup>4</sup> compared to the bid-ask spread of its underlying basket (stocks that compose the MSCI Emerging Markets Index), which traded at an average of 14 bps over the same period.<sup>5</sup>

This means it was cheaper for investors to access large- and mid-cap emerging market equities using EEM than by trading its basket of underlying securities.

**Bid-ask spread of the iShares MSCI Emerging Markets ETF (EEM) versus underlying securities**



Source: BlackRock, Bloomberg, NYSE as of June 30, 2021. A basis point is 1/10th of 1%.

## PREMIUM/DISCOUNT BEHAVIOR

An ETF's market price is typically in line with the value of its underlying securities, but it's possible for ETFs to trade at prices above (premium) or below (discount) their net asset value (NAV).

For example, if the price of an ETF share is greater than the value of its underlying securities, the ETF is said to be trading at a "premium." In response, market participants may engage in arbitrage by buying the underlying securities and exchanging them with an ETF issuer (via an authorized participant, or AP) in return for newly created ETF shares, which may then be sold in the market for a profit.<sup>6</sup> Increasing the supply of available ETF shares ultimately reduces the premium of the ETF, bringing its price back in line with its NAV. For this reason, tight alignment to NAV can be evidence of a high-functioning arbitrage mechanism.

Evolving market conditions can also result in large or persistent ETF premiums and discounts. In certain instances, such as when underlying markets are illiquid or stressed, premiums and discounts can illustrate how ETF prices provide price discovery to markets by offering real-time information about market conditions, particularly in fixed income markets where individual bonds can trade infrequently.

The key point is that an ETF's alignment to NAV in stable or liquid markets, and the appearance of ETF premiums and discounts in illiquid or volatile markets, help provide information about an ETF's market quality.

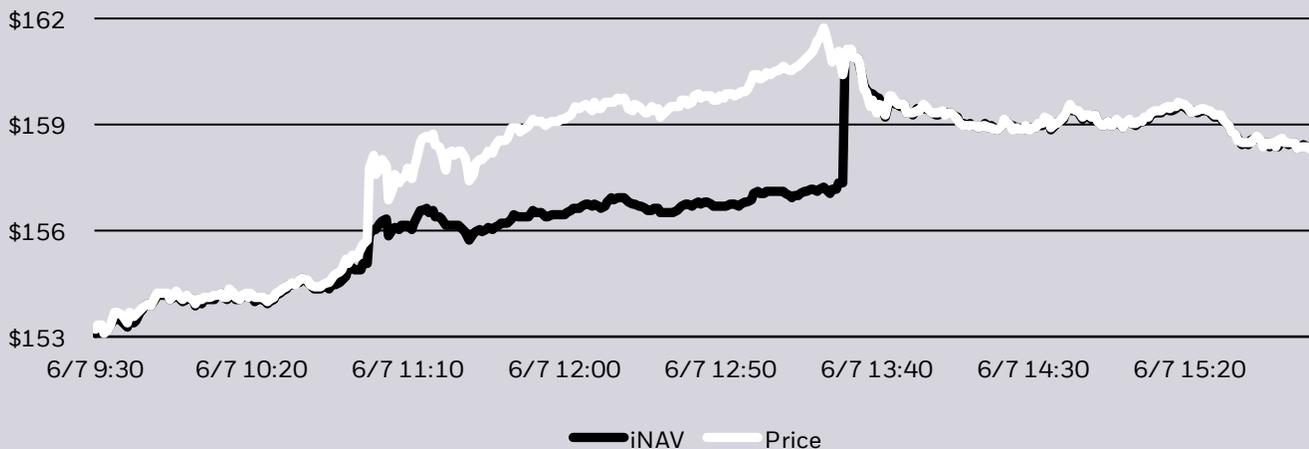
### Premium/discount behavior in action

On June 7, 2021, shares of the iShares Biotechnology ETF (IBB), which seeks to track the investment results of an index composed of U.S.-listed equities in the biotechnology sector, traded at a 2% premium to their intraday net asset value (iNAV).<sup>7</sup> This was driven by Biogen, one of IBB's largest holdings, triggering a regulatory halt after trading up over 30% following news that its Alzheimer's drug was approved by the FDA.<sup>8</sup>

IBB continued to reflect market demand while its iNAV lagged due to Biogen's halt. When Biogen resumed trading three hours later, the iNAV caught up with where IBB was trading, showing that the ETF was accurately tracking the price of the sector.

In this instance, IBB's premium/discount behavior was indicative of high market quality because it was providing price discovery to the market.

**iShares Biotechnology ETF (IBB) price versus iNAV**



Source: BlackRock, Bloomberg as of June 30, 2021.

# 4

## TRACKING

“Tracking” measures the difference between a fund’s return and the benchmark index’s return. “Tracking volatility” measures the volatility (standard deviation) of this tracking difference month-over-month.

Index ETFs seek to deliver returns that are consistent with the returns of their benchmark, but closely replicating benchmark performance consistently over time is no small feat. Superior tracking requires specialized portfolio management expertise, including the ability to continuously balance cost, risk and return in an effort to deliver precise performance outcomes. For this reason, tracking difference and tracking volatility are key components of an ETF’s market quality.<sup>9</sup>

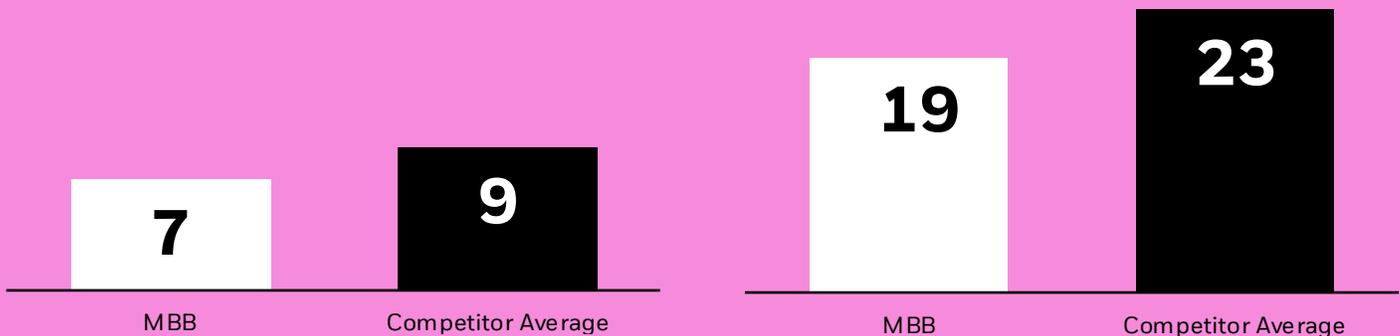
### Tracking in action

The iShares MBS ETF (MBB), which seeks to track the investment results of an index composed of investment-grade mortgage-backed pass-through securities issued and/or guaranteed by U.S. government agencies, exhibited a tracking difference of 7 bps over a one-year period ending June 2021, tightly tracking its benchmark.<sup>10</sup>

At the same time, MBB exhibited tracking volatility of 19 bps, providing consistent tracking on a monthly basis.<sup>11</sup>

**Absolute one-year tracking difference (bps) for MBB vs. two largest competitor mortgage backed debt ETFs by AUM**

**Absolute one-year tracking volatility (bps) for MBB vs. two largest competitor mortgage backed debt ETFs by AUM**



Competitor average consists of the two largest competitor mortgage-backed ETFs by AUM. Source: BlackRock, Bloomberg as of June 30, 2021.

# PRIMARY MARKET EFFICIENCY

Even though most ETF trading occurs in the secondary market (where investors buy and sell existing ETF shares on exchange), efficient primary market operations—the creation and redemption of ETF shares—is at the heart of ETF market quality.

Primary market efficiency requires a functioning arbitrage mechanism (as previously described), which helps keep the price of an ETF in line with the value of its NAV.

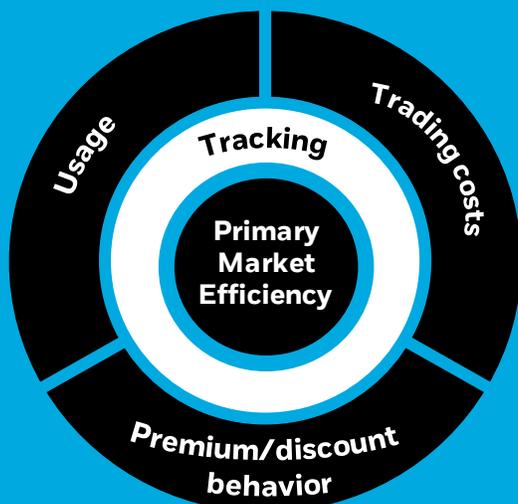
An ETF's primary market efficiency typically relies on market participation and platform stability. For example, an ETF that interacts with a diverse set of APs will have a more competitive market in which APs are motivated to capture volumes. More market participant involvement can provide additional support for the ETF's primary market operations. Likewise, ETFs backed by platforms that leverage technology and scale are more likely to efficiently process ETF primary market activity.

## Primary market efficiency in action

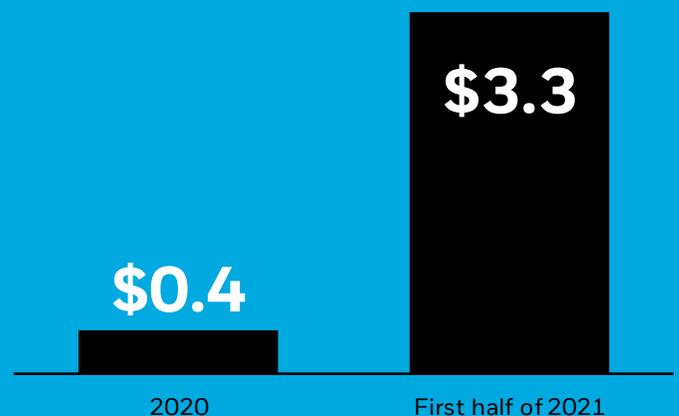
As investor appetite for exposure to global banks increased on the back of rising inflation in the first half of 2021, the iShares Global Financials ETF (IXG), which seeks to track the investment results of an index composed of global equities in the financials sector, saw \$3.3 billion of gross primary market activity processed across seven different APs.<sup>12</sup> This was nine times IXG's primary market activity in 2020.

Despite this increased activity, broad AP support and a stable technology platform ensured efficient access to primary market liquidity.

Primary market efficiency is at the heart of ETF market quality



iShares Global Financials ETF (IXG) gross primary market activity (\$ billion)



Source: BlackRock, Bloomberg as of June 30, 2021.

# PUTTING IT ALL TOGETHER

Each of the metrics described in this paper is useful to investors in isolation, but when combined they provide a more complete picture of an ETF's market quality.

Take the iShares Core Total USD Bond Market ETF (IUSB), which seeks to track the investment results of an index composed of U.S. dollar-denominated bonds that are rated either investment grade or high-yield, as an example of how the five metrics collectively demonstrate market quality.

- **USAGE.** In the first half of 2021, IUSB traded an average \$128 million a day—80% more than its average daily volume in 2020.<sup>13</sup> Amid the increased activity, key IUSB market quality metrics did not deteriorate.
- **TRADING COSTS.** IUSB's bid-ask spread was significantly less than the spread of its underlying bonds, providing investors with a more cost-effective vehicle to access the market of US dollar-denominated bonds that are rated either investment grade or high-yield.<sup>14</sup>
- **PREMIUM/DISCOUNT BEHAVIOR.** Due to its efficient arbitrage mechanism, IUSB maintained an average absolute premium/discount of 0.12%, which was almost half of its 2020 average of 0.20%.<sup>15</sup>
- **TRACKING.** Importantly, IUSB continued to tightly and consistently track its benchmark, exhibiting a tracking difference of 0.2 bps and tracking volatility of 50 bps for the one-year period ending June 2021.<sup>16</sup>
- **PRIMARY MARKET EFFICIENCY.** Additionally, as investors turned to IUSB to access the US investment grade and high-yield market in the first half of 2021, the fund saw \$9 billion of gross primary market activity processed across six different APs.<sup>17</sup> This was almost four times IUSB's primary market activity in 2020, in half the time.

Evaluated together, these metrics—usage, trading costs, premium/discount behavior, tracking and primary market efficiency—showed that IUSB exhibited high market quality in the first half of 2021.

# GLOSSARY

## **Absolute premium/discount**

The absolute value of the difference between an ETF's share price and its net asset value (NAV)

## **Authorized participant (AP)**

Financial institution that manages the creation and redemption of ETF shares in the primary market. Each AP has an agreement with an ETF sponsor that gives it the right (but not the obligation) to create and redeem ETF shares. APs may act either on their own, or on behalf of market participants.

## **Bid-ask spread**

A measure of the average cost to buy and sell securities on an exchange. Spreads are the difference between the bid price of the trade (what the buyer is willing to pay) and the ask price (what the seller is willing to accept).

## **Gross primary market activity**

The total dollar value of all creations and redemptions of ETF shares

## **Liquidity**

How easily an asset can be bought or sold

## **Market maker**

A broker-dealer that regularly provides two-sided (buy and sell) quotes to markets

## **Net asset value (NAV)**

The value of all the securities held by the ETF, often expressed as a value per share. An ETF's official NAV is calculated once per day based on the most recent closing prices of the underlying securities. For US-listed ETFs holding foreign securities, NAV is fair valued at 4pm ET to reflect information released after the local market has closed.

## **Net primary market activity**

The dollar value of creations of ETF shares less the dollar value of redemptions of ETF shares

## **Primary market**

Where authorized participants transact with ETF issuers to create or redeem ETF shares

## **Secondary market**

Where investors buy and sell existing ETF shares on exchange

## **Tracking difference**

The difference between a fund's return and its benchmark's return over a certain period

## **Tracking volatility**

The standard deviation of a fund's month-over-month tracking difference

## ENDNOTES

1. Source: Bloomberg, as of June 30, 2020.
2. A market maker is a broker dealer that regularly provides two-sided (buy and sell) quotes to clients. The difference between the buy and sell quotes, the bid-ask spread, is the market maker's potential profit. For more information on the role of market makers, see [\*iShares Investigates: The ETP Ecosystem | Part 1: APs and market makers\*](#) .
3. Source: BlackRock, Bloomberg as of June 30, 2021.
4. Source: BlackRock, Bloomberg, NYSE as of June 30, 2021. A basis point is one hundredth of a percent, or 0.01%.
5. Source: BlackRock, Bloomberg, NYSE as of June 30, 2021.
6. An AP is a financial institution, often a bank, that has entered into an agreement with an ETF to create and redeem ETF shares in the primary market. Some APs may also be market makers. To learn more about the role of APs, see [\*iShares Investigates: The ETP Ecosystem | Part 1: Authorized participants and market makers\*](#).
7. Source: BlackRock, Bloomberg as of June 30, 2021. iNAV is an intraday estimate of an ETF's NAV per share. The value is calculated by an independent third-party calculation agent and publicly disseminated every 15 seconds.
8. Source: BlackRock, Bloomberg as of June 30, 2021.
9. iShares fair values the NAV of US-listed ETFs that hold foreign securities each day at 4pm ET. The ETF's index, however, calculates its level based on the closing prices of the securities on their local exchanges. While these differences will net out over time, this may cause the ETF holding foreign securities to appear to have a high tracking difference on any given day. To help investors understand the impact of fair value on tracking performance, iShares publishes an unadjusted NAV return on its website daily.
10. Source: BlackRock, Bloomberg as of June 30, 2021.
11. Source: BlackRock, Bloomberg as of June 30, 2021.
12. Source: BlackRock, Bloomberg as of June 30, 2021.
13. Source: BlackRock, Bloomberg as of June 30, 2021.
14. Source: BlackRock, NYSE as of June 30, 2021.
15. Source: BlackRock, Bloomberg as of June 30, 2021.
16. Source: BlackRock, Bloomberg as of June 30, 2021.
17. Source: BlackRock, Bloomberg, Markit as of June 30, 2021.

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