



# Understanding ETF Liquidity

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Exchange Traded Funds (ETFs) have had a major surge in popularity in recent years as investors, advisors and institutions alike have sought new ways to diversify their investment portfolios. Since the launch of the first ETF in Canada in 1990, assets have grown to over \$107 billion across 442 ETFs ([www.cetfa.ca](http://www.cetfa.ca) – [September 2016](#)). While there is no doubt investors of all levels are embracing this type of investment vehicle, there is much that is still misunderstood about them. In our experience, liquidity might be the most misunderstood factor of all and simply looking at an ETF's average daily trading volume when assessing liquidity could have a negative impact on your trading experience.

With this piece, our goal is to provide you with a better sense of what really matters when it comes to assessing ETF liquidity and to ensure you know how to minimize the frictional costs that can be incurred when liquidity is limited.

## **ETFs, mutual funds and individual stocks: Similarities and differences**

Like mutual funds, ETFs are open-ended structures that hold an underlying basket of securities. Mutual Funds can only be purchased or sold at the end-of-day Net Asset Value (NAV) directly through the issuing fund company or via an investment dealer/broker. ETFs, on the other hand, can be purchased or sold on exchanges intraday.

Individual stocks can also be purchased or sold on exchanges intraday like ETFs but this is where the similarities end. (See Appendix I for more information of the similarities and differences between stocks, ETFs and mutual funds). There are a finite number of shares outstanding for any public company; therefore, trading volume is an important factor when determining the liquidity of an individual stock. Big trades in stocks where average volume is limited will likely have an impact on the price of the shares.

For example, if you are looking to purchase 50,000 shares of a stock where the average daily volume is 10,000 shares, there's a good chance your order will move the market. ETFs, on the other hand, have the ability to issue new units to meet market demand. This is called the "creation" process. Conversely, if investors aggressively sell an ETF, units can be dissolved through what's known as the "redemption" process. This means even a substantial demand level (to buy or sell) an ETF can generally be met without significantly impacting its market price. In other words, low average trading volume for an ETF does not necessarily mean the risk of a bad fill is high or that a big order will move the market, so making investment decisions based primarily on the average daily volume of an ETF makes little sense. What's far more important is the liquidity of the ETF's underlying securities. More on that later.

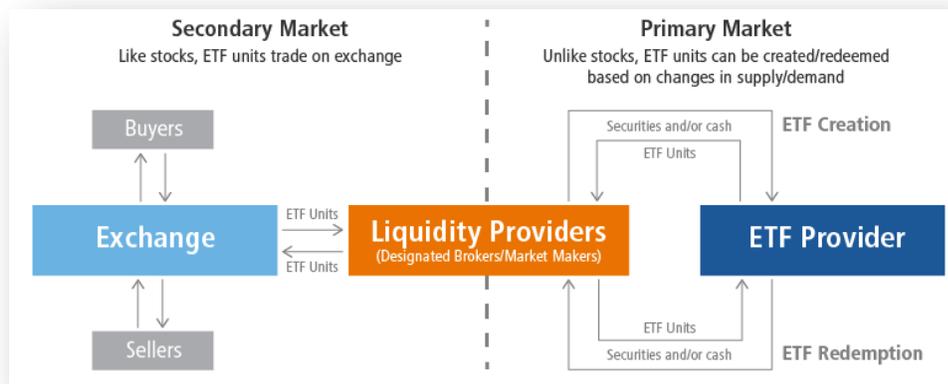
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## Creations and Redemptions and Why You Should Care

ETFs trade on the secondary market but are created and redeemed in the primary market. This additional level of liquidity (on the primary market) is facilitated by the market makers (represented primarily, but not exclusively, by the trading desks of the major banks in the case of Canada). The creation/redemption process is critical to a smooth functioning ETF because it ensures a continuous balance between the supply and demand of ETFs.

For example, when demand increases for an ETF, market makers will buy the basket of the securities underlying the index (on the primary market) and deliver the individual shares to the ETF provider. In exchange for these shares, market makers receive new ETF units which are then sold to investors via the stock exchanges (secondary market). Conversely, if investors are net sellers of an ETF, market makers will remove ETF shares from the secondary market. The ETF shares are delivered to the ETF provider in exchange for the same value in the underlying securities of the ETF (or in some cases, cash).

**Figure I: Creation/Redemption Process**



Source: Mackenzie Investments

## Why should investors care?

Market makers earn a profit when participating in the creation/redemption process. Competition amongst market makers to earn a profit helps to ensure a tighter bid-offer spread, thereby minimizing the cost for investors. The bid-offer spread in this sense is a good indication of the liquidity of an ETF.

In addition, the creation/redemption process ensures the price of an ETF is in line with its underlying NAV. For example, if the market price of an ETF starts to rise above its NAV due to an increased demand, market makers can sell the ETF shares it received during the creation process and generate a profit from the spread between the cost of the underlying securities (as reflected by the lower NAV) and the higher market price of the ETF. Alternatively, if the market price of an ETF starts to decline versus its NAV, the market makers can buy the discounted ETF shares from the secondary market in exchange for the underlying securities which are sold on the primary market at a profit. This arbitrage activity enables the ETF price and the NAV to be closely aligned, thus ensuring fair bid-ask spreads on ETFs for investors.

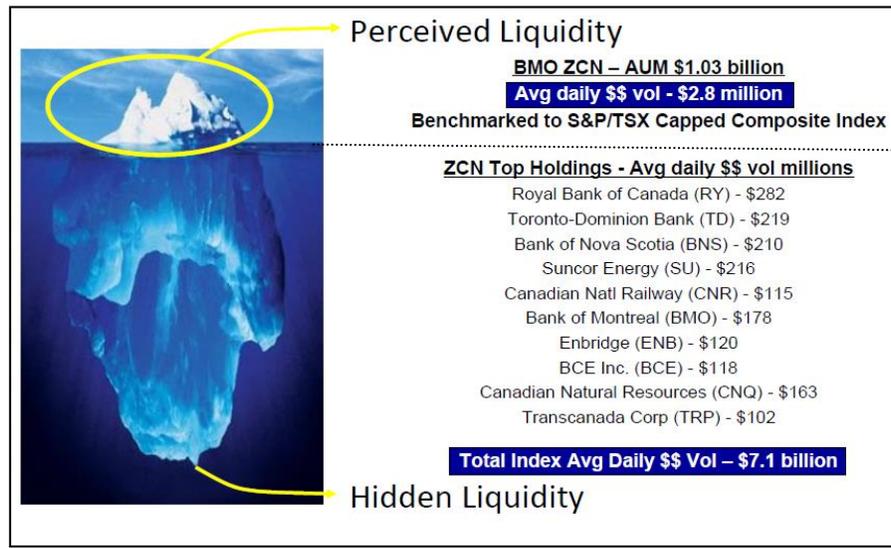
## The Two Layers of Liquidity

Figure II shows that while high daily trade volume can be beneficial for an ETF from a liquidity standpoint, what matters when assessing ETF liquidity is what's below the surface. In other words, the tip of the iceberg is not fully representative of what the real liquidity picture looks like. Because of their "open-ended" structure, ETFs benefit from the existence of other mechanisms that provide additional layers of liquidity.

- 1) *Perceived liquidity (secondary market liquidity, or the tip of the iceberg):* This is the natural flow between buyers and sellers. Just like stocks, this is the visible or "perceived" liquidity which is represented by the trading volume.
- 2) *Hidden liquidity (primary market liquidity, or the rest of the iceberg):* Since the underlying basket of shares (created by a market maker) can be exchanged for ETF shares at any time, the ETF will be as liquid as its underlying basket of securities.

Let's use the example of the BMO S&P/TSX Capped Composite Index ETF (ZCN) from Figure II to better illustrate how liquidity works. The ETF's average daily trading volume is \$2.8 million. The underlying basket, however, consists primarily of large cap names with good liquidity. So in theory, an order that's substantially larger than the ETF's average daily volume could come in and market impact would be limited. This would be a function of the significant amount of liquidity for the basket that underlies the ETF and the creation and redemption mechanisms that help facilitate liquidity.

**Figure II: The Perceived and Hidden Liquidity of an ETF**



Source: Bloomberg and BMO ETFs.

### What's Important when Gauging the Liquidity of an ETF?

In isolation, the average daily volume of an ETF is a poor indicator of its overall liquidity. In reality, there are many factors that should be considered when trying to assess liquidity. The most liquid ETFs are those that track a very liquid basket of securities AND have a high level of average daily volume. For example, the SPDR S&P 500 ETF "SPY" is the most liquid ETF in the world. The basket that underlies it consists of some of the largest and most liquid stock in the world, plus the average daily volume for SPY itself is near 100 million. ETFs with good underlying liquidity and solid average daily volume tend to exhibit very narrow bid-offer spreads. However, no ETF is the same and therefore some ETFs will inherently be more liquid than others. So what's important when gauging the liquidity of an ETF?

There are essentially three main factors that in combination can influence the level of liquidity of an ETF: 1) the average daily volume of an ETF on the secondary market 2) the availability and accessibility of the underlying basket trading on the primary market and 3) the market/trading environment.

The first factor simply represents the popularity of the ETF in question. All else equal, for two ETFs tracking the same index, the ETF with average daily volume be considered more liquid and as a result will exhibit a narrower bid-offer spread (XIN versus ZDM for example).

The second factor is largely a function of how easy it is for market makers to replicate (create or redeem) the underlying basket. An ETF tracking a basket of large-cap companies from a developed country will be more liquid than an ETF tracking a basket of Malaysian equity companies, for example, because the companies in the latter basket do not trade frequently and trade on a market that is closed when the North American exchanges where the ETF is listed are open.

The last factor is more general in nature but can be a crucial component when it comes to understanding the level of liquid of ETFs. Below are a few examples of market/trading environments that can have a detrimental impact on the liquidity of an ETF. In these cases, lower levels of liquidity will lead to wider than usual bid-offer spreads.

- Geopolitical events causing temporary disruptions on the markets. For example, during the Egyptian Revolution of 2011, the Egyptian stock market closed for almost eight weeks thereby greatly reducing the liquidity of ETFs tracking Egyptian securities.
- ETFs trading on foreign exchanges that have different trading laws and regulations can have an impact on liquidity. The size of the exchange can also influence liquidity as the larger well-known exchanges are more liquid than those trading on smaller exchanges.
- Market event(s) that has caused trading to be halted on an exchange. For example, on August 24, 2015, stocks and ETFs were automatically halted more than 1,200 times forcing many market makers to stop participating in the creation/redemption process thus reducing liquidity.

Ultimately, the popularity of the ETF, the type of securities constituting the underlying basket and other external market/trading conditions can all have an impact on the level of liquidity of an ETF. Being aware of these factors will help investors to minimize the frictional costs that can be incurred when liquidity is limited.

### Best Practices for ETF Order Execution

There are a few key trading rules one should adhere to when dealing with ETFs in order to ensure the experience is as smooth as possible and that frictional costs are minimized. Average daily trading volume isn't everything, so understanding the creation/redemption process and being aware of the existence of the different layers of liquidity is crucial when trading ETFs. Below are other suggestions that could help reduce costs and improve the client experience when placing ETF orders:

- Avoid placing orders near the open and close. In the morning, allow some time for market makers to price the ETFs with greater certainty. This process brings in bid/offer spreads. Near closing, market makers begin to take down their positions and hedge their books and this can lead to increased volatility and wider bid-offer spreads. The rule of thumb is don't trade within the first 15 to 30 minutes after market open or during the final 15 to 30 minutes of the trading day.
- Use limit orders. A limit order can only be filled if the security's market price reaches the limit price. Limit orders protect the investors from potential price swings that may occur during the day.
- Understand why premium/discounts occur. In other words, are the markets unusually volatile or are the underlying securities trading on an exchange that is not open at the same time as the domestic exchange where the ETF is trading?
- If questions about liquidity persist, or if you want to ensure smooth order execution, communicate directly with the ScotiaWealth trading desk.
  - ScotiaWealth Canadian equity/ETF trading desk: 416.863.7515
  - ScotiaWealth U.S. and International equity/ETF trading desk: 416.863.7860

### Appendix I: ETFs, Mutual Funds and Individual Stocks: Similarities and Differences

	Stock	ETF	Mutual Fund
Shares outstanding	Generally fixed	Flexible	Flexible
Holdings transparency	Quarterly	Daily	Quarterly
Intraday liquidity	Yes	Yes	No
Expected trading counterparty	Market participants	Issuer and Market Participants	Issuer
Diversification	No	Yes	Yes
Valuation	Varies/Subjective	Intraday & end of day	End of day
Tax efficiency	N/A	In-kind transactions allow PM to manage taxable gains	Normal
Typical source of liquidity	Secondary market only	Both secondary and primary markets	Primary market only
Ownership percentage	Important, regulatory reporting required	Not applicable, will fluctuate with shares outstanding	Not applicable, will fluctuate with shares outstanding

— Shading represents ETF characteristics

Source: [tortoiseindexsolutions.com](http://tortoiseindexsolutions.com): Understanding ETF Liquidity

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None.

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