

Measuring ETF Liquidity

Looking Beyond Trading Volume

As exchange traded funds have grown in popularity over the past decade, so have the questions on how best to determine the liquidity of these securities. While many investors immediately look to trading volume as an indicator of liquidity, it is important to realize that due to the unique structure and trading process of ETFs, trading volume is neither the only, nor the most important measurement when determining an ETF's liquidity.

ETF trading volume accounted for 42% of all equity dollar volume YTD in 2014,¹ yet most of this volume was concentrated in relatively few ETFs. The majority of ETFs, more than 80%, trade less than \$10 million a day.² The range of ETFs that make up this tier is large and diversified, encompassing multiple asset classes and markets. When analyzing the investment opportunities of ETFs, liquidity is, and should be, an important consideration. However, using trading volume as the only measure of liquidity can unknowingly limit the ETF universe. Investors should also consider the liquidity of the primary market, the liquidity of the underlying securities and the bid/ask spread of the individual security when selecting an ETF to incorporate into their investment portfolio.

CREATION AND REDEMPTION IN THE PRIMARY MARKET

Because average daily trading volume is not the only indicator of an ETF's overall liquidity, as it only represents the number of shares traded in the secondary market, investors should also consider the primary market as a source of liquidity. The primary market can be accessed through the creation and redemption mechanism.

Understanding the creation/redemption process is paramount to gaining insight into the true extent of an ETF's overall liquidity. Creation and redemption take place in the primary market and are facilitated by authorized participants (APs), who are US registered, self-clearing broker dealers.

Authorized participants create fund shares in large increments—known as creation units—by assembling the underlying securities of the fund in their appropriate weightings to reach creation unit size (typically 50,000 fund shares) and then delivering those securities to the fund in-kind. In return, the AP receives fund shares which are then introduced to the secondary market where they are traded between buyers and sellers through the exchange. APs also have the ability to redeem fund shares through the same process in reverse.

Unlike stocks, where the buyers and sellers control the liquidity of the security, ETF liquidity is managed by the APs through the creation/redemption process. While stocks have a finite number of shares available in the marketplace, ETFs shares can be created in response to market demand. If, for example, there are more buyers than there are sellers, APs can create shares in the primary market and introduce them to the secondary market in order to meet market demand. The opposite is also true. In a situation where there are more

sellers than buyers, an AP can purchase ETF shares on the secondary market and redeem the shares in the primary market to keep a continuous balance between supply and demand. The ability to introduce additional shares into the marketplace on a daily basis demonstrates precisely why ETF trading volume is not an all encompassing measure of the fund's overall liquidity. The creation and redemption of ETF shares in the primary market is also supported by the liquidity of the underlying securities of each fund.

LIQUIDITY OF UNDERLYING SECURITIES

In order to fully understand the liquidity of an ETF, investors must also consider the liquidity of its underlying securities. If an ETF's underlying securities are liquid securities, then the ETF will have the potential for greater liquidity mirroring that of its underlying securities. It is the securities that are held by the ETF that drive the liquidity of the ETF, not vice versa.

Figure 1 illustrates the efficiency of an ETF within the secondary market in terms of the liquidity of the underlying basket of securities. For example, when looking at the SPDR® S&P® International Small Cap (GWX) in the figure below, one can see that ETF volume is \$2.6 million over the three-month period. Interestingly, the volume of the underlying basket of securities is much larger at \$833 million. If an investor was looking at ETF volume as their sole indicator of liquidity, they may inaccurately predict that GWX does not offer significant liquidity relative to other ETFs that may trade more. However, one can see that the potential liquidity of the ETF is actually quite large. In fact, the ETF volume represents only 0.32% of the basket volume, meaning that the primary market may be a source of additional liquidity.

FIGURE 1: ETF LIQUIDITY IN THE SECONDARY MARKET (VOLUME)

ETF	ETF VOLUME (\$)	UNDERLYING BASKET VOLUME (\$)	ETF AS A % OF THE UNDERLYING BASKET (%)
SDY	31,578,668	4,298,249,958	0.74
GWX	1,950,220	1,440,488,080	0.14

Source: Instinet TradeSpex as of 09/30/14.

In addition, the spread of the underlying basket of securities is 32.1 basis points (bps) as compared to 12.6 bps for the ETF itself. This implies that it is cheaper to trade the ETF than all of the securities in the ETF. In this case, it would have been more beneficial to look at the ETF spread rather than the ETF volume to determine how liquid the ETF may be relative to the universe of securities that comprise it.

FIGURE 2: ETF LIQUIDITY IN THE SECONDARY MARKET (BID/ASK SPREADS)

ETF	BASIS POINTS		
	ETF SPREAD	UNDERLYING BASKET SPREAD	ETF PRICE IMPROVEMENT
SDY	2.6	4.0	1.4
GWX	13.5	31.9	18.4

Source: Instinet TradeSpex as of 9/30/14.

Past performance is not a guarantee of future results.

Another important factor is the difference in spreads between various asset classes. In efficient asset classes spreads tend to be much tighter, whereas in less efficient asset classes spreads tend to widen. Figure 2 shows the difference in spreads between the SPDR S&P Dividend ETF (SDY), which represents domestic dividend-paying equities—a relatively efficient asset class, and GWX, which represents international small cap equities—a less efficient asset class. Increased spreads and decreased liquidity occur in these latter asset classes due to the higher degree of risk that is present. These risks vary depending on the specific security. However, through the use of ETFs, investors are able to benefit from the increased risk/return profile and gain a higher degree of liquidity within these less efficient asset classes, than if they were attempting to invest in the individual securities themselves.

BID/ASK SPREADS

In addition, looking at the bid/ask spread of each individual security will help investors realize the liquidity of an ETF. Bid/ask spreads are composed of a number of fixed and variable costs. Being aware of what drives these costs will allow investors to more efficiently buy and sell ETFs.

WHAT IS A BID/ASK SPREAD?

The bid is the price at which a buyer is willing to buy ETF shares, and the ask is the price at which a seller is willing to sell ETF shares. The difference between the bid and the ask is the bid/ask spread, which indicates the overall cost of transacting in any security (plus any applicable brokerage commission costs). These spreads are a cost associated with transacting in the secondary market, or at the exchange level.

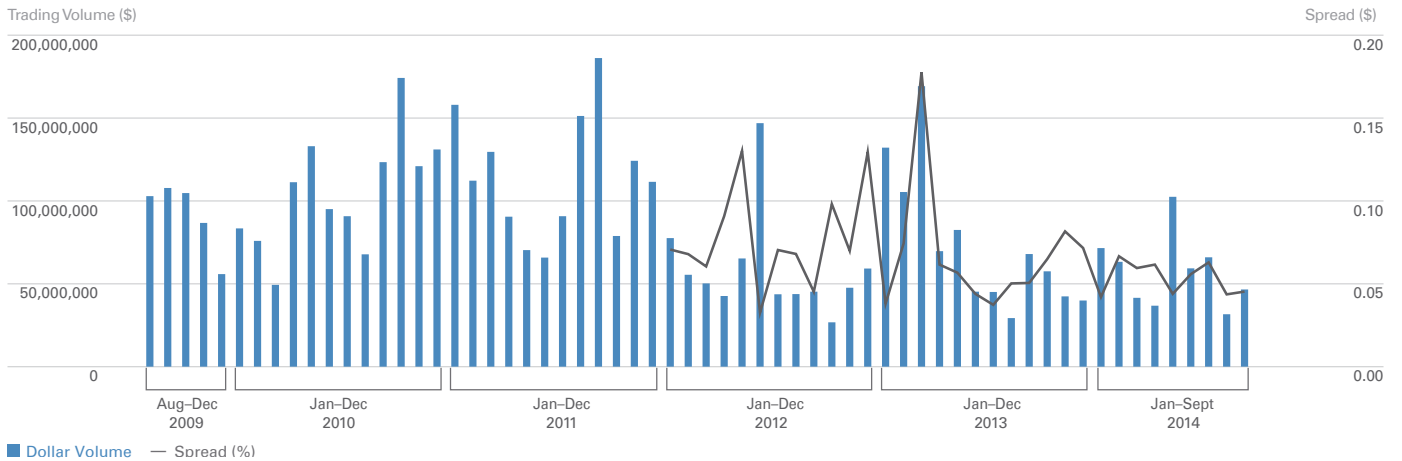
WHAT DOES THE BID/ASK SPREAD REPRESENT?

In order to fully understand what a bid/ask spread represents, it is helpful to have an understanding of how the trading firms that specialize in buying and selling ETF shares operate. Like most businesses, the cost to the end consumer generally consists of the input costs, plus a profit. In this respect, ETF trading is no different from any other business. As such, ETF traders need to account for three different categories of input costs when facilitating ETF trades.

- **CREATION/REDEMPTION FEE** This is a fixed cost that the ETF sponsor charges an AP to create or redeem shares. The fee varies between funds and is a cost per order, not per creation or redemption unit. Since the creation/redemption fee is a fixed cost, this input cost remains constant unless an ETF sponsor changes their creation/redemption fees. Fees can generally range from several hundred dollars to several thousand dollars depending on the fund and fund manager.
- **SPREAD OF THE UNDERLYING SECURITIES IN AN ETF BASKET** One major variable cost that ETF traders often encounter is the cost of gathering the underlying securities. For less liquid or esoteric asset classes, such as the high yield or emerging market debt markets, this cost is greater, thus spreads tend to be wider for ETFs with more thinly traded underlying markets.
- **RISK** At times, risk can be the highest cost component of spreads, especially during periods of elevated market volatility. What most investors would call investment exposure, ETF traders call risk. In order to avoid this risk, traders will hedge investment exposure with the use of underlying securities, options, futures contracts or even other ETFs. Depending upon the liquidity of the underlying instruments used to initiate a hedge, it can be costly to maintain market neutrality when trading ETFs. This hedging cost will be included in an ETF’s spread and passed along to investors trading in the secondary market.

If any of these three input costs rise, it is reflected in an ETF’s spread, meaning investors transacting on the secondary market pay higher fees to purchase the ETF. Much like a farmer who raises corn prices after an increase in the price of fertilizer, water or equipment, an ETF trader may widen spreads if any of his/her costs or risks rise.

FIGURE 3: TRADING VOLUME AND SPREAD OVER TIME OF THE SPDR S&P INTERNATIONAL SMALL CAP ETF (GWX)



Source: Bloomberg as of 09/30/14.

TRADING VOLUME AND ITS AFFECT ON SPREADS

Although there are certainly a number of factors that contribute to the spread of an ETF, studies have shown there is one main factor that tends to compress spreads: secondary market trading volume in the ETF. Over time, as secondary market trading volume increases, there is a high correlation with tightening spreads (as demonstrated in Figure 3). As volume in an ETF rises, competition lowers spreads and allows investors to transact in a more cost-efficient manner in the secondary market. Often times, significant secondary market trading volume can trump the other three costs: creation/redemption fees; spread of the underlying securities in an ETF basket; and risk. This means that at a certain point an ETF may hit a tipping point where it becomes more liquid than the underlying securities that compose it.

CONCLUSION

When searching for liquidity in the ETF market it is important to look beyond trading volume. By understanding the unique creation/redemption mechanism that allows ETF shares to stay in line with market demand, examining the liquidity of the ETFs underlying securities and comparing bid/ask spreads on these securities, investors will be able to more precisely identify an ETF's liquidity within the marketplace.

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¹ NYSE Arca, as of 09/30/2014.

² Bloomberg, SSgA, as of 09/30/2014.

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Investments in small-sized companies may involve greater risks than in those of larger, better known companies.

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There can be no assurance that a liquid market will be maintained for ETF shares.

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