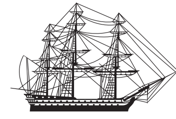

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'Best practices' for ETF trading: Seven rules of the road

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- Exchange-traded funds (ETFs) effectively blend the investment characteristics of mutual funds with the trading flexibility of individual securities.

- ETFs trade somewhat differently than either mutual funds or individual securities, and investors may need to learn different tools and strategies when trading ETFs. Unlike investing in mutual funds, for example, investors generally bear the full costs of trading ETFs in their personal transactions. This paper outlines ETF trading "best practices" that emphasize price control and patience in trading.

- Three of the key best practices discussed for individual investors who trade ETFs are: (1) avoid the use of "market" orders—instead, consider using "marketable limit" orders (see box of key terms on page 4); (2) avoid trading at either the market open or close; (3) for larger orders, consider phoning your brokerage firm for additional sources of liquidity to reduce transaction costs.

Exchange-traded funds have become an increasingly popular investment vehicle over the past decade. Generally speaking, ETFs blend the investment characteristics of a mutual fund with the trading flexibility of individual securities. These key attributes introduce differences in how ETFs trade relative to both mutual funds and individual securities, as well as in the approach investors may wish to take in trading them. This paper highlights the trading differences of these investment vehicles. Understanding these differences helps to underscore why incorporating a set of ETF trading "best practices" that emphasize price control and patience in trading can help reduce both the implementation risks of ETFs and their transaction costs.

Trading ETFs versus mutual funds and individual securities

ETFs are very similar to mutual funds. Both vehicles can provide low-cost exposure to investment strategies, and both calculate a net asset value (NAV) based on the value of their underlying securities at 4 p.m., Eastern time, each trading day. However, due to the differences in the trading characteristics of ETFs versus mutual funds (see **Figure 1**), investors should learn how to use different tools to trade ETFs proficiently.

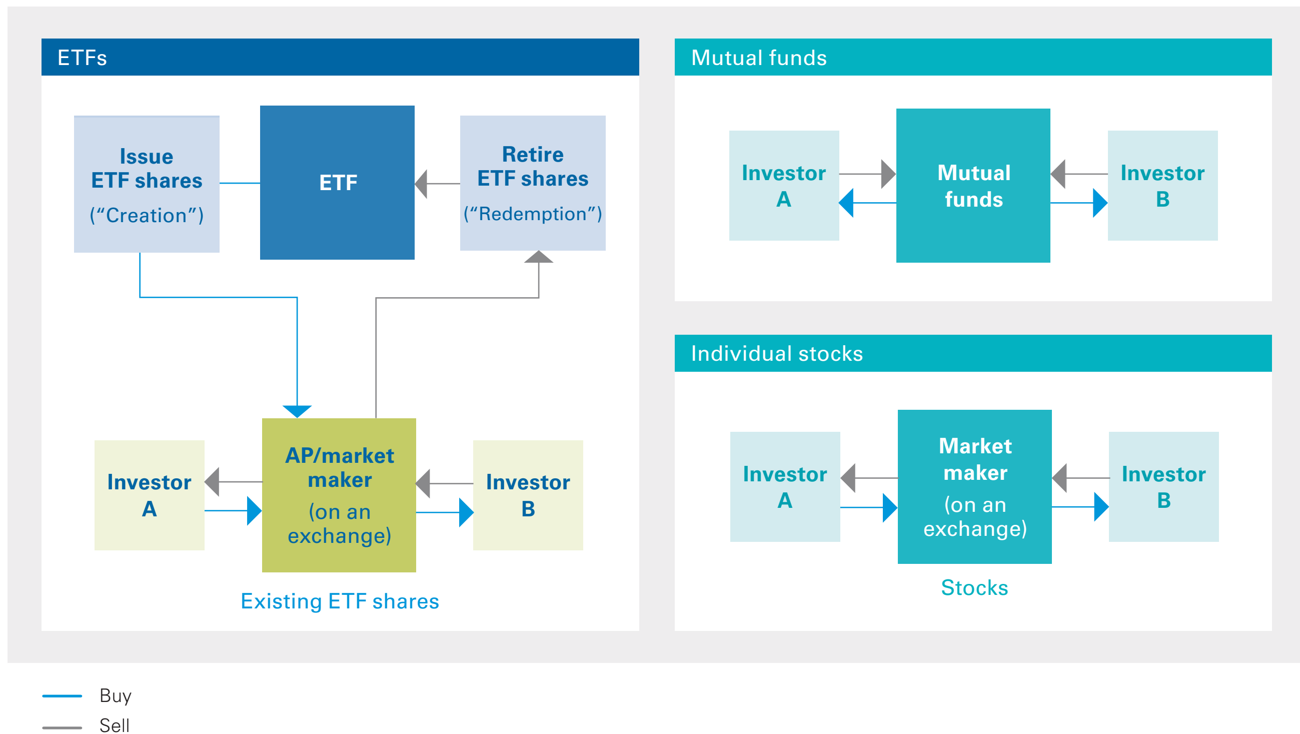
Figure 1. Mutual funds have different trading characteristics than ETFs and individual stocks

Trading characteristics	Mutual fund	ETF and individual stocks
When is a trade executed?	Regardless of when a trade is placed, it is executed at a specified time (usually 4 p.m., Eastern time) directly with the mutual fund.	During market hours on an exchange, either immediately (market order) or when a stipulated trade price is met (limit order). See Note, below.
Price of a trade	NAV.	Current market price.
When does the trade settle?	Next business day.	Three business days.
Trading units	Dollars (usually).	Shares.

Note: Some investors may be able to execute trades outside of normal market hours.
Source: Vanguard.

Note on risk: All investing is subject to risk, including the possible loss of the money you invest.

Figure 2. Differences between trading ETFs versus mutual funds and individual stocks



Buy
Sell

Notes: The ETF creation and redemption process is the means by which authorized participants bring new ETF shares into and out of the market, helping to maintain a balance between supply and demand. APs (authorized participants) can also act as market makers, but not all market makers are authorized participants.

Source: Vanguard.

Figure 2 illustrates that ETFs trade somewhat differently than mutual funds and stocks. Mutual fund investors buy and sell fund shares directly with the mutual fund. In contrast, most ETF investors do not trade directly with the ETF. Rather, designated institutions known as *authorized participants* (APs) work with the ETF to create and redeem ETF shares as needed. APs work as intermediaries between the ETF and investors to facilitate trading by increasing or decreasing the number of ETF shares outstanding in the market, to meet investor demand and keep the ETF's market price close to the value of the ETF's underlying securities.

Although ETFs trade on a stock exchange, they do not always trade like equities. The price and liquidity of an individual stock are largely determined by supply and demand, because the number of a stock's shares outstanding in the market is generally fixed. However, an ETF's market price and liquidity are determined by the ETF's underlying securities as well as by factors of supply, demand, and costs in the market (Dickson, 2013).

The language of ETF trading: Some key terms

Bid-ask spread. The difference between the price a buyer is willing to pay (bid) for a security and the seller's offering (ask) price. The bid-ask spread represents the best bid and the best "offer" (the latter term is typically used in place of "ask" in exchange trading). Because secondary-market (see definition below) transactions occur at market prices, you may pay more than the value of the underlying securities when you buy ETF shares, and receive less than the underlying securities' value when you sell those shares.

ETF premium/discount. The difference between the ETF's last traded price and its NAV.

Limit order. An order to buy a security at no more (or to sell it at no less) than a specific price. This gives the investor some control over the price at which the trade is executed, but may prevent the order from being completed in full. In such a case, an additional order with a modified price may be necessary to trade the total desired number of shares. However, the higher the limit price for a buy (and the lower the limit price for a sell), the greater the probability that the entire order will be filled. With limit orders, investors must weigh the likelihood that their trade will be fully completed versus transaction costs.

Market order. An order to buy or sell a security immediately at the best available current price. Priority is execution, not price.

Marketable limit order. A limit order whose limit price is set either at or above the best "offer/ask" when buying or at or below the best bid when selling. This essentially accomplishes the same goal as a market order, but with some price protection.

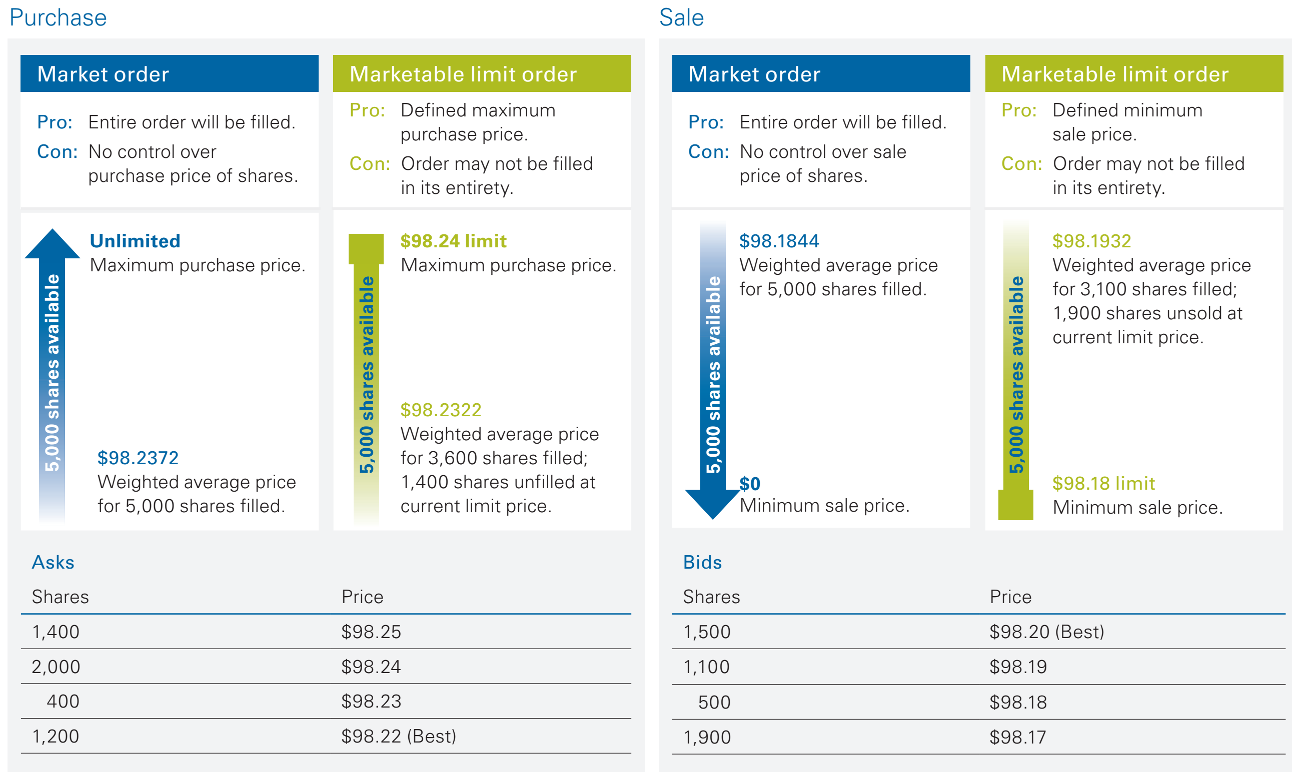
Secondary market. A market where investors purchase securities or assets from other investors, rather than from the issuing companies themselves.

ETF trading best practices

By incorporating a set of ETF trading best practices, an investor may improve his or her trading process through more purposeful execution at a fair market price in relation to the value of the ETF's underlying securities. In many situations, executing ETF trades in a price-controlled and patient manner can reduce transaction costs. Adhering to these basic principles can help ensure that an investor's execution price is as close to real-time value as possible when making ETF trades (The Vanguard Group, 2014).

1. *In general, use marketable limit orders instead of market orders.*
   Marketable limit orders offer advantages over market orders in terms of price control and protection, while providing some trading flexibility. They are a form of limit order that may offer a higher likelihood of execution. For example, a limit order with a purchase price set in between the bid and ask has less chance of completion than a marketable limit order that is set to buy at the ask price. Although a market order may be effective when dealing with highly liquid ETFs, there is always a risk of poor execution. As **Figure 3** shows, beyond the best bid and ask price quotes is the remaining book of standing limit orders to sell to buyers at higher asks and to buy from sellers at lower bids. A market order runs the risk of sweeping indiscriminately through this book of liquidity, potentially leading to higher trading costs. A marketable limit order, however, sets a boundary around the price at which an investor is willing to transact. The higher the limit price for a buy (and the lower the limit price for a sell), the greater the probability that the trade will be executed. The trade-off of garnering a greater likelihood of a fully completed trade, though, can be higher transaction costs.

Figure 3. Hypothetical ETF trading scenarios: Market orders versus marketable limit orders



Asks

Shares	Price
1,400	$98.25
2,000	$98.24
400	$98.23
1,200	$98.22 (Best)

Bids

Shares	Price
1,500	$98.20 (Best)
1,100	$98.19
500	$98.18
1,900	$98.17

Notes: The figure depicts hypothetical trading scenarios using a market order versus a marketable limit order. For a 5,000-share purchase, a market order would sweep through the entire 5,000 shares, executing at a weighted-average price of $98.2372. If the investor desires more than 5,000 shares, any remaining shares would likely transact at prices higher than $98.25. A marketable limit order, however, would likely buy 3,600 shares up to the capped purchase price at $98.24, for a weighted-average price of $98.2322. There is some risk, however, that the marketable limit order would not be completely filled, as 1,400 shares would be left to execute of the original 5,000-share order. In that case, the investor could consider submitting an additional trade to reach the desired share amount, which could incur additional trading costs.

Source: Vanguard.

In general, investors can set whatever price limit they wish in order to buy or sell their position. For marketable limit orders, a starting point might be to add a small amount (e.g., a penny or two) to the best ask price (for a buy) or subtract a small amount from the best bid price (for a sale).

2. *A block trading desk can help tackle a large trade.* When trading ETFs in larger share amounts (e.g., 10,000 shares or more), a brokerage firm, through its block desk, can help obtain best execution by accessing additional trading strategies and liquidity options unavailable to typical investors. For example, a block desk may be able to find and access unseen liquidity in the market and/or implement the trade in smaller digestible increments.

3. *Beware of the open and close.*
   An ETF investor should consider allowing some time to pass before trading in the morning, and also avoid waiting until the last minute to wrap up buy or sell orders in the afternoon. After the market opens, not all of an ETF's underlying securities may have started trading. The market maker then cannot price the ETF as precisely, potentially leading to wider bid-ask spreads. As the underlying market's close nears, an ETF may experience wider spreads and more volatility as market participants begin to limit their risk, leading to fewer firms "making markets" (i.e., supporting the ability to buy or sell a particular security at the quoted bid and ask price) in an ETF.

4. *Pay attention during volatile periods.*
   Wide swings in the market can cause the prices of an ETF's underlying securities to move sharply, resulting in wider bid-ask spreads for the ETF or larger premiums and discounts. In such situations, using market orders may prove risky (because no price control is set), whereas using limit orders can be beneficial.

5. *Tune out the volume.*
   ETFs with substantial trading volume and narrow bid-ask spreads may appear to offer superior liquidity. However, an ETF's average daily volume (ADV) is not the only gauge of its liquidity. An ETF's bid-ask spread may provide a better indication of liquidity because it incorporates the liquidity of an ETF's underlying securities and the associated costs for authorized participants (APs) to engage in the creation/redemption process.

   However, an ETF with higher ADV may provide some cost benefits. A highly (i.e., frequently) traded ETF can often trade at spreads that are within the weighted bid-ask spread of its underlying basket of securities, and may allow an investor to execute trades closer to the value of the underlying securities.

6. *For trading international ETFs, it's a matter of time.*
   In general, it is better to trade international ETFs at times that coincide with the trading hours of the underlying securities' local markets. Prices of international ETFs traded in the United States tend to be closer to the value of the underlying securities and typically trade with narrower bid-ask spreads when their respective markets are open and overlap with U.S. trading hours.

   When foreign markets are closed, information continues to flow that may affect the prices of an international ETF's underlying securities, even though the security prices themselves do not yet reflect this information. For an international ETF whose local markets are closed while the U.S. markets are open, this may mean that new information is incorporated into the ETF's market price, leading to seemingly greater premiums and discounts relative to the ETF's stated NAV (Rowley, 2013). However, the ETF's market price may better reflect the true value of its underlying securities, whose last available set of prices have not yet had the chance to adjust to the latest news and events.

7. *When in doubt, call for help.*
   Keep in mind that assistance is available when trading ETFs. ETF investors may encounter issues or questions that are not covered by the trading best practices outlined here. They may also unknowingly face higher costs when trading larger ETF share amounts, and it is important for investors to focus on controlling these costs. Rather than go it alone, investors should consider reaching out to their brokerage platform or to the ETF provider for assistance.

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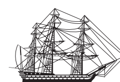

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