Exchange-traded funds (ETFs) allow investors to buy or sell portfolios of securities on exchanges, with a single order. They are unique investment tools that combine some of the features of mutual funds with some of the features of individual stocks. Like a mutual fund, investors gain access to a group of securities through a single transaction. Like a stock, ETF shares are traded on exchanges at market-determined prices. The basic techniques for trading ETFs are conveniently similar to those used by stock market investors. As the ETF market has grown in size and popularity, many investors have simply transferred trading skills from stocks to ETFs.

Trading ETFs depends on factors that are unique to ETFs – such as evaluating underlying holdings, knowing the best time of day to trade and reducing long-term “transaction cost drag” on portfolios. These concepts will be discussed in this paper.

ETFs have different investment applications than stocks. Thus, they involve different trading terms and concepts.

This paper focuses on the skills and techniques investors use to execute timely and cost-efficient ETF trades. Let us begin with a quick review of why it is useful to know the “best ETF trading practices.”

Why best trading practices matter

Are ETFs more cost-efficient than other investment choices such as mutual funds, closed-end funds, variable insurance products and hedge funds? The answer may depend on how often ETFs are traded and what strategy is used for trading them.

Most ETFs seek to track an index so their ongoing management fees may be relatively low as compared to actively managed funds.¹

What ETFs do have is an entry and exit cost for each position, and this cost actually has two components, which are brokerage commissions¹ and bid-ask spreads, as explained on the next page:

¹ Since ordinary brokerage commissions apply for each buy and sell transaction, frequent trading activity may increase the cost of ETFs.
Brokers commissions – Full-service, discount and online brokers charge a commission to buy or sell ETF shares. In some cases, the commission is based on the number of shares traded or the dollar amount of the trade. In other cases, it is a flat cost per order.¹

Note: Some brokerage firms have begun offering “commission-free trades” on selected ETFs or on a limited number of trades per month. While this feature can be a bargain for some ETF investors, these types of trades are not always cost-free. This is because there may be limitations on the types of ETFs, caps on the number of trades or a minimum balance required.

Bid-ask spreads – This component of cost may appear quite small, typically a penny or less per share in the most active ETFs. But, it still should be factored into trading strategies because it can accumulate over time – especially for active traders. The bid price is the highest price at which a dealer will buy a security and the ask or offer price is the lowest price a dealer is willing to accept. The difference between the two is the bid-ask spread.

The value of a pretrade analysis

For each portfolio, a pretrade analysis can be conducted to determine such factors as:

The amount of ETFs the portfolio requires to achieve adequate portfolio diversification – In general, more ETFs may result in higher total costs rather than fewer.

The trading frequency required to maintain portfolio structure and direction – Actively adjusted or rebalanced strategies may result in higher costs than “buy-and-hold” portfolios.

Expected bid-ask spreads in ETFs – These are determined primarily by the asset classes chosen and also the liquidity of each ETF’s underlying holdings.

The average commission per trade – which will be higher at full-service brokers than at discount or online brokers.

The pretrade analysis should develop a target for total annual trading costs expressed as a percentage of average portfolio assets.

In some cases, fee-based investment advisors may choose to “wrap” – that is, include ETF trading costs into an all-inclusive advisory-fee structure. In this case, having a trading-cost target can help investors and advisors align expectations.
Evaluating ETFs for trading efficiency

The management fees and expenses of any given ETF are visible and may easily be compared to alternatives, such as other ETFs and comparable mutual funds. Given two or more choices that appear similar on the surface, investors often choose the one with the lowest management-expense ratio.

To implement best trading practices, it is useful to consider the total cost of holding and trading an ETF over time. Characteristics of each ETF can impact trading liquidity and bid-ask spreads, which may accumulate into a meaningful component of total costs over time. The cost of bid-ask spreads can have greater impact in portfolios with:

- Steady inflows of new investable cash, which generate a stream of new buy orders; e.g., dollar-cost-averaging programs. Dollar-cost averaging is the practice of buying a fixed dollar amount of a particular investment on a schedule regardless of the share price.

- Dividends systematically reinvested back into the portfolio through new share purchases

- An asset allocation that is rebalanced or adjusted periodically

- Systematic withdrawal plans (SWPs) that require periodic share sales to generate income

- Programs reviewed for year-end tax-loss harvesting share sale opportunities

Later in this discussion, we will describe three profiles of ETF trading strategies and possible trading-cost ranges for each.

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2 ETFs and mutual funds are structurally different. ETFs are typically passively managed, and mutual funds are typically actively managed, which contributes to the variance of management fees and expenses between the two.

3 Dollar-cost averaging does not guarantee a profit or eliminate the risk of loss. Investors should consider their ability to continue investing regardless of fluctuating security prices.

4 Please note there can be no guarantee or assurance that companies will declare dividends in the future or that if declared, they will remain at current levels or increase over time.

5 The information in this communication is not a complete analysis of every material aspect relating to tax-loss harvesting. This communication is for educational purposes only. The benefits of tax-loss harvesting will vary depending on each investor’s income tax situation. ETFs may have additional risks that may not be associated with an investor’s original investment. Invesco PowerShares does not offer tax advice. Investors should consult their own tax adviser for information regarding their own tax situations.
Mechanics of ETF trades

Like stock trades, ETF trades are placed through exchanges that quote bid-ask spreads, transaction prices and Average Daily Trading Volume (ADTV). ADTV is the amount of securities traded over a specific amount of time such as a day. The lower a quote's bid-ask spread, the more efficiently a trade may be executed. To reduce the impact of spreads, ETF traders use the same types of orders as stock traders, including limits orders that are not triggered until the specified price is attained.

Illustrative Example: An ETF is quoted at $24.32 bid/$24.35 ask – so the spread is 3 cents per share. A buyer who wishes to pay no more than $24.32 per share can place a limit order specifying this price or lower. By including an “all or none” instruction on the order, the buyer can make sure the full order is executed, if any shares are bought.

Also like stocks, ETFs may be sold short, which means that a seller may borrow shares (from a brokerage firm) and then sell them in hopes of profiting from a share price decline. A short ETF position is covered when the shares are purchased and repaid to the lending brokerage firm. Profit is realized to the extent of a decline in the share's price over the duration of the short position, less transaction and borrowing costs.

Relationships between ETF trading spreads and ADTV

In assessing trade opportunities, the biggest difference between ETFs and stocks lies in the relationship between bid-ask spreads and ADTV:

- Stocks trade in an auction market, and ADTV provides a good indication of liquidity and bid-ask spreads. The higher the ADTV is, the lower the bid-ask spread is likely to be. Thinly (not as frequently) traded small-cap stocks tend to have the highest spreads and trading costs. An auction market is a market where buyers enter bids and sellers enter offers simultaneously. The price a security traded represents the highest price a buyer is willing to pay and the lowest price a seller is willing to sell. Bids and offers are matched and orders executed. The New York Stock Exchange (NYSE) is an auction market.

- ETFs trade in an arbitrage market, due to their share creation/redemption process. Professional arbitrageurs and liquidity providers are constantly evaluating relationships between the prices of ETF shares and the value of their underlying portfolios. Underlying portfolio value is expressed throughout the trading day (usually at 15-second intervals) as indicative intraday value (IIV). IIV is the estimated fair value based on the most recent intraday price of underlying assets. These values are typically generated by computers every 15 seconds.
By buying ETF shares below IIV or selling them above IIV, arbitrageurs may be able to lock in a tiny profit per trade, often less than a penny per share. Once per day, after the market's close, traders may exchange baskets of underlying portfolio securities for shares, or vice versa, based on the net asset value (NAV) of the ETF. Arbitrage is the process of buying an undervalued asset, selling an overvalued one and making a riskless profit on the price difference.

As a result of this process, trading efficiency in most ETFs depends more on the liquidity of the underlying portfolio securities than on ADTV. To say this differently, an ETF's bid-ask spread can be low, even if it has low share-trading volume and if its underlying portfolio consists of widely held and actively traded securities. We believe when ETFs are chosen for the right reasons, trading volume rarely should be an obstacle, especially for the long-term investor. Also, investors should keep in mind that fluctuations in trading volume (around ADTV) can be far wider in ETFs than in stocks. It is not uncommon for trading in an ETF to spike above ADTV. It is even possible for a few trades in an ETF to exceed ADTV.

Trade timing

The time when an ETF trade takes place can affect the bid-ask spread. Orders placed at the open or close may have greater price volatility and higher trading spreads due to market-making and arbitrage activities. For international equity ETFs, it may be a good idea to place trades during hours when the underlying foreign markets are open for trading.

European markets are open for trading during morning hours in the US. Their IIVs are continuously updated during these hours, and this provides a reference point for arbitrage ETF trading on US exchanges. After European markets close, international ETFs continue trading for several hours on US exchanges, but they lack updated IIVs. Without the reference point of current IIVs to guide arbitrageurs, bid-ask spreads can widen.

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6 Foreign securities have additional risks, including exchange-rate changes, decreased market liquidity, political instability and taxation by foreign governments.

Shares are not individually redeemable and owners of the shares may acquire those shares from the Funds and tender those shares for redemption to the Funds in creation unit aggregations only, typically consisting of 50,000, 75,000, 100,000 or 200,000 shares.
Guidelines for placing ETF orders

- Exercise caution in placing trades when underlying markets are closed.

- Use limit orders to buy or sell shares of ETFs in which the underlying assets are thinly traded or temporarily volatile, due to lack of normal liquidity.

- Check the depth of the bid-ask quote (number of shares bid and asked) in an ETF, in addition to its ADTV. At a given moment, the depth of the quote may be a more reliable indicator of turnover in shares than ADTV.

- Use caution with stop-loss orders that specify a floor price at which declining ETF shares should be sold. Any brief market disruptions (such as the Flash Crash) may cause such orders to be triggered at unrealistic prices.

- To execute large trades, in which having a contact with an authorized participant (AP) or market-maker would be useful, financial advisors or investors may wish to call the ETF sponsor. Some sponsors provide a dedicated capital markets team, or they can provide a referral to one.

Trading in commodity ETFs

Commodity ETFs have characteristics that may require special trading skills and knowledge. In commodities, one long-term cost/performance factor is the difference by which the ETF underperforms or outperforms the current (spot) price of the underlying commodities - such as oil, gasoline, industrial metals, agricultural products or precious metals. Spot price is the current price at which a commodity can be bought or sold at a specific time and place.

Commodity ETFs seek to track indexes that invest in futures contracts, which have expiration dates. When longer-term contracts cost more than near-term, the commodity is said to be in contango. An ETF that holds the most near-term contracts must continually roll into new contracts as they expire, and each roll comes at a higher cost, which produces contango cost drag. The opposite of contango is backwardation, and backwardation occurs when the prices of the longer-term futures contracts are lower than the current spot price. Futures and spot prices converge upon contract expiration to eliminate arbitrage opportunities. When a contract expires or reaches maturity, it is closed out and another one with a longer and different maturity is purchased. This process is called “rolling.”

7 Commodities and futures generally are volatile and are not suitable for all investors.
Although contango cost can produce a cumulative drag for commodity ETF holders, it requires evaluation for two complex reasons: 1) Contango cost can vary considerably over time, and also among futures contracts. Crude oil futures, for example, can swing from high contango cost (when supply lines are glutted with oil) to backwardation (when oil supplies are tight); 2) some ETFs employ systematic techniques to purchase the least-expensive futures contracts, instead of the front-month contract. Some futures-based commodity ETFs have adopted a multiple-month approach to possibly mitigate contango’s sting. By holding contracts across the curve rather than just one month, the fund’s exposure to rolling when a market is in contango may be limited to a smaller fraction of the ETF’s total assets. Investors may also benefit from a strategy specifically designed to select whichever contract over the next 13 months will generate the lowest negative roll yield for markets in contango.

Additionally, some contango-related slippage versus spot commodity prices can be offset by a bonus that comes automatically in futures-based commodity ETFs. Since futures contracts are leveraged, most ETF assets are held in short-term cash instruments that generate interest income for shareholders. The interest income on cash collateral may offset part of any contango cost drag, in many cases.

Conclusion

Following effective trading techniques and managing trading costs will not make a mediocre investor successful. However, these best trading practices can help investors pay attention to costs, which may also help to sharpen overall investment reflexes. These practices may help to make sound investment strategies rewarding, cumulatively over time.

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8 Leveraged investments are likely to be more volatile than unleveraged investments. There is also a greater risk of loss of principal associated with a leveraged investment than with an unleveraged investment.
About risk

There are risks involved with investing in ETFs, including possible loss of money. Index-based ETFs are not actively managed. Actively managed ETFs do not necessarily seek to replicate the performance of a specified index. Both index-based and actively managed ETFs are subject to risks similar to stocks, including those related to short selling and margin maintenance. Ordinary brokerage commissions apply.

Investments focused in a particular industry are subject to greater risk, and are more greatly impacted by market volatility, than more diversified investments.

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