How ETFs Work
What Are ETFs?

Exchange traded funds (ETFs) are pooled investment vehicles that invest in portfolios of securities. Most ETFs are passively managed to pursue cost-effective returns that generally correspond to the risk and return of specified indexes. Actively managed ETFs use more flexible trading strategies to pursue other targeted investment outcomes.

ETFs have revolutionized the world of investing because of the special array of characteristics they offer, such as tax efficiency, diversification, trading flexibility, transparency and lower costs in comparison to other investment vehicles.
What Are ETFs?

Exchange Traded Funds

- How Do ETFs Compare with Mutual Funds?
- Intraday Pricing and Trading
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- Transparency
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- Liquidity
- How Can ETFs be Used?
What Are ETFs?

How Do ETFs Compare with Mutual Funds?

Unlike mutual funds, which are purchased directly from a fund company, ETFs are traded on exchanges like individual stocks and can be bought or sold at market prices throughout the trading day, subject to commission costs for each trade.
What Are ETFs?

Intraday Pricing Trading

Regardless of when they are purchased during the day, mutual fund shares trade at their end of day net asset value (NAV). By contrast, ETFs can be bought or sold on stock exchanges at market-quoted prices at any time during the trading day. This feature gives investors access to the same trading flexibility and control as they have with stocks, allowing them to place market orders, limit orders buy on margin or short sell, etc.

Since ETF shares are available for trading on securities exchanges, investors can easily see the prices and volumes at which ETF shares trade. After the markets close at the end of each trading day, investors can also see how market-quoted prices for an ETF share relate to its NAV and whether those prices reflect a premium or discount relative to NAV.

NAV is generally reserved to indicate a fund’s net asset value per share, whereas the IOPV reflects an indicative per-share value of a published basket of securities for the fund, which is not the same thing as the fund’s portfolio and which may vary slightly from the fund’s value during the day on account of such differences and other factors.
What Are ETFs?

Reduced Portfolio Turnover and Transaction Costs

Most ETFs are index funds, and typically engage in portfolio transactions as necessary to reflect changes in the composition of the underlying indexes. Annual turnover for a fund that tracks a specific index is often, but not always, lower than for actively managed mutual funds, translating into lower transaction-related costs.

Also, traditional open-ended mutual funds generally buy and sell securities based on cash flows from shareholder activity, selling portfolio holdings to raise cash to fund redemptions and buying securities using the cash received from inflows. To the extent that sellers of ETF shares meet with buyers of ETF shares through exchange-based market transactions, portfolio turnover within a fund is reduced, which in turn lowers transaction costs and other sources of wealth erosion. Of course, ETF investors do incur trade-related commission costs when they purchase or sell ETF shares.
What Are ETFs?

Tax Efficiency

ETFs can be managed to capture the performance of portfolio holdings while reducing any capital gains that must be distributed to shareholders. For investors who hold ETF shares in taxable accounts, this means a reduced tax burden. While some mutual funds also are managed for tax efficiency, ETFs have an inherent advantage because the in-kind transactions that are generally used to redeem ETF shares are not regarded as taxable events.
What Are ETFs?

Transparency

The daily portfolio holdings of an ETF are typically available on its website. In addition, ETFs issue an indicative optimized portfolio value (IOPV) every 15 seconds throughout the trading day. This value reflects changes in the aggregate value of a basket of holdings that matches or closely resembles a pro-rata portion of the ETF’s portfolio holdings. Information about an ETF’s portfolio holdings and the IOPV can be used to evaluate ETFs for investment or risk purposes and can help investors make effective trading decisions. IOPV is available in real-time via market quotation systems (e.g., Bloomberg terminals). It is also available with a lag or delay via web-based quotations.
What Are ETFs?

Diversification

Similar to mutual funds, ETFs can provide instant exposure to a broad range of securities. Instead of taking concentrated risks by purchasing individual securities, investors can diversify by choosing an ETF. Some ETFs are still subject to concentration risk based on their investment focus.
What Are ETFs?

Liquidity

The trading volume for an ETF does not fully reflect its liquidity. The liquidity of any given ETF is the product of two separate sets of market dynamics:

- Those relating to the supply and demand for the ETF shares themselves.

- Those relating to the supply and demand for the securities that are used to create the ETF’s own portfolio.
How Can ETFs Be Used?

As ETF offerings expand, so do their investment applications. You can use ETFs alone or in combination to pursue a spectrum of investment strategies including:

- **Asset Allocation**
  Use ETFs to fill diversification gaps or adjust exposures across asset classes within your portfolio.

- **Risk Management**
  Adjust your exposure by selecting ETFs designed to hedge specific risks.

- **Cash Equitization**
  If you have short-term cash holding, ETF’s can offer you immediate market exposure to minimize opportunity costs.

- **Tax Management and Loss Harvesting**
  ETF tax swap strategies can help you sell a security and take a tax loss – while simultaneously purchasing an ETF with similar characteristics – without triggering a potential wash sale. There can be tax implications, so please consult your tax advisor before implementing such strategies.

- **Core / Satellite**
  Use ETFs to add or overweight specific markets, sectors or asset classes to a core portfolio.
The FlexShares Approach

Education
FlexShares ETFs are designed to help investors pursue targeted investment goals, by blending:

Intelligent Portfolio Construction
Engineering strategies to pursue targeted outcomes, with

Passive Management
Minimizing turnover and containing costs, or

Active Management
Combining research and fundamental analysis with quantitative filters.
The FlexShares Approach

FlexShares seek to avoid both the challenges of traditional portfolio management (i.e., costs, risk and portfolio turnover) and the limitations of indexing (i.e., allocations not aligned with investors’ targeted goals). To help to effectively deliver on each fund’s goals we seek to better understand, analyze and manage both risks and costs.
The FlexShares Approach

Investment Approach

FlexShares ETFs take an investor-centric approach to developing exchange traded funds, leveraging both passive and active investment strategies in an effort to capitalize on their strengths and avoid their limitations.
FlexShares’ portfolio management approach is grounded in the following six principles.

- Solutions Orientation
- Multiple Perspectives
- Portfolio Allocation and Diversification
- Capital Markets Expertise
- Long Term Focus
- Managing Costs and Risks
The FlexShares Approach

Solutions Orientation

We seek to design discrete solutions targeted to specific investment outcomes that fit seamlessly into broader portfolio strategies. We begin by understanding the goals investors seek to achieve, the issues they wish to address, or the risk they want to mitigate. We believe investors must understand the risk associated with each strategy and determine whether these risk are aligned with their objectives. Then we work to develop focused solutions to advance those objectives.
To best address investor objectives, we believe it is critical to construct portfolios using effective combinations of asset classes. We seek to provide solutions that optimize performance through appropriate diversification across strategies and within asset classes. Additionally, we focus on asset classes and/or market segments within each asset class that we view as providing the best prospects for above-average returns over the long term and at different stages through market cycles.
Our long-term approach to investment decision-making is reflected in our rigorous investment process, deep research discipline and commitment to risk management. We create detailed, multi-year projections of the capital markets based on extensive analysis of macroeconomic factors and global investment trends.
We place great value on thought leadership and diverse analytical perspectives. As a firm, we deliver a broad array of active, passive and quantitative portfolio strategies. We leverage the rich expertise of tenured investment professionals in each discipline to enhance market strategies, develop solid research and construct comprehensive solutions.
Given our knowledge of the capital markets and relationship with market makers, we can assist in the development of execution strategies for large trades. Our capital markets experts can assist by interacting with a trading desk and providing insights and options on how to trade a particular ETF.
The FlexShares Approach

Managing Costs and Risks

We believe managing identifiable cost and risk is critical to maximizing long-term returns.
A Deeper Understanding

Though many investors are familiar with the comparative features and uses of ETFs and Mutual funds, not everyone knows the trading mechanics that underpin these instruments. The unique creation and redemption process through which ETFs are traded creates value relative to the comparable mutual fund process.

Unit investment trusts (UITs) and open-end ETFs continuously offer shares through a daily in-kind purchase and sale (creation and redemption) process that reflects demand and increases transparency. Creations and redemptions occur at prices based on the next calculation of the net asset value (NAV), enabling market makers to match even slight premium and discounts to the NAV.

The process involves only a few large investors, known as authorized participants (APs). APs are typically large institutional organizations, such as market makers or specialists. Only APs can create or redeem units.

In a creation transaction, an AP assembles a portfolio of stocks and turns them over to the fund in exchange for new ETF shares. Similarly, for redemption transactions, authorized participants deliver ETF shares to the fund in return for the underlying portfolio of stocks.

No cash changes hands during the in-kind process. Each day the fund’s underlying holdings are disclosed to the public.
ETF vs. Open-Ended Mutual Fund

A traditional open-end mutual fund structure has one level of trading activity. Investors exchange cash for shares in the fund based on the net asset value (NAV) or offering price calculated at the end of each business day. Investors can make transactions each business day after that price is posted and only at the day’s price.

NAV is a fund’s price per share, which is derived by dividing the total value of all the securities in its portfolio, less any liabilities, by the number of fund shares outstanding.
ETF vs. Open-Ended Mutual Fund

By contrast, ETFs have two levels of trading activity – primary and secondary. This distinction is vital to understanding how an ETF works.

EFT Primary Market Creation / Redemption
In the primary market, APs exchange a published basket of securities in-kind plus a published cash component in exchange for ETF shares. These baskets are generally very large, and one creation or redemption unit is equal to a fixed number of ETF shares. The ratio varies by product, but it usually 50,000 ETF shares per unit.
Net Asset Value

Basket (securities) + Non-Basket (cash component) = PCF = NAV

A single creation unit consists of the published basket of securities plus a cash component to equal the NAV per unit.

From a bottom-up perspective, the non-basket (cash component) is primarily comprised of dividend and tax accruals, expense accruals, cash and restricted from trading. Restricted securities could be odd lots that don’t fit into the basket, or securities that are for some reason restricted from trading.

Creations and redemptions occur at the end of the day NAV, where the value of the securities basket plus the cash component equal the NAV, so there is no dilution to existing shareholders. The published securities basket along with the published cash component is called the portfolio composition file (PCF) and is distributed to AP and market data vendors as well as service providers.
The intraday value of the underlying PCF on a per share basis is called the indicative optimized portfolio value, or IOPV.

For each ETF, Bloomberg (a financial market information firm) provides a ticker for ETF shares, the IOPV and the underlying index. The IOPV value represents the underlying basket of securities plus the cash component and is updated every 15 seconds through the trading day. The IOPV helps market participants relate the value of the fund and its underlying securities to the value of the ETF shares trading in the secondary market on the exchange.
Arbitrage activity not only seeks to efficiently match the outstanding supply of shares with demand, but also eliminates trading at large premiums or discounts to the NAV. This helps support closer tracking between the exchange-listed ETF shares and the fund’s NAV.

Most analyses comparing the costs of using futures versus holding underlying securities versus ETFs consider only the case of an investor limited to transacting at the ETF share level. However, the economics of two different ETF transactions must be considered.

If the investor is an AP, he or she is faced with a situation in which futures, securities and ETFs are fungible. That is, if you buy either future or the underlying securities, you can easily convert to ETF shares via creation units. (This assumes that a liquid futures contract exists on the same index and the market’s price at the same time.)

1 NAV is a fund’s price per share, which is derived by dividing the total value of all the securities in its portfolio, less any liabilities, by the number of fund shares outstanding.
Arbitrage and ETF Pricing

This creates the arbitrage opportunity relationship that forces ETF shares in the secondary market to trade relatively in-line with their underlying securities. Three examples illustrate this relationship.

Example One
ETF shares look cheaper than futures or underlying securities. Investor (AP) decision: consider ETF shares.

Example Two
Underlying securities look cheaper than futures or ETF shares. Investor (AP) decision: buy securities, convert to a creation unit and end up holding ETF shares.

Example Three
Futures look cheaper than underlying securities or ETF shares. Investor (AP) decision: buy futures, exchange for securities, convert to a creation unit and wind up with ETF shares.

These examples have been included only as hypothetical illustrations and not as a comprehensive list of possible relationship dynamics between the primary and secondary markets.
Arbitrage and ETF Pricing

The assumptions of fungible futures and same-time trading/pricing do not hold in international markets or in some U.S. markets due to differences in market hours. Where that is the case, premiums and discounts tend to exist intraday and revert day-over-day. In addition, markets affected by a Stamp Tax (the United Kingdom being most notable) can cause certain markets to always trade with a rich basis to the IOPV. This effect results from taxes incurred during the creation process when buying the basket of underlying securities.

Additional Considerations
Management fees – which accrue overtime - reduce the total return received from holding ETF shares relative to futures or a basket of actual securities. Expenses ratios of ETF shares vary based on the particular fund, with more specialized exposures costing more.
Before investing, carefully consider the FlexShares investment objectives, risks, charges and expenses. This and other information is in the prospectus and a summary prospectus, copies of which may be obtained by visiting www.flexshares.com. Read the prospectus carefully before you invest.

Foreside Fund Services, LLC, distributor.

An investment in FlexShares is subject to numerous risks, including possible loss of principal. Fund returns may not match the return of the respective indexes. The Funds are subject to the following principal risks: asset class; commodity; concentration; counterparty; currency; derivatives; dividend; emerging markets; equity securities; fluctuation of yield; foreign securities; geographic; income; industry concentration; inflation-protected securities; infrastructure-related companies; interest rate / maturity risk; issuer; large cap; management; market; market trading; mid cap stock; MLP; momentum; natural resources; new funds; non-diversification; passive investment; privatization; small cap stock; tracking error; value investing; and volatility risk. A full description of risks is in the prospectus.

Investment Products and Services are:
Not FDIC INSURED / May lose value / No bank guarantee

All registered investment companies, including FlexShares, are obliged to distribute portfolio gains to shareholders at year-end regardless of performance. Trading FlexShares Funds will also generate tax consequences and transaction expenses. The information provided is not intended to be tax advice. Tax consequences of dividend distributions may vary by individual taxpayer.

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