iShares™

AN INTRODUCTION TO EXCHANGE TRADED FUNDS

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Exchange Traded Funds (ETFs) are rapidly becoming a staple investment tool for a wide spectrum of investors, both individual and institutional. They are utilized to execute traditional strategies—from completing asset allocation policies to cash equitization—and also “nontraditional” strategies such as long-short arbitrage.

ETFs lend themselves to more uses than can be covered in a short synopsis. In this paper we intend to accomplish the following:

- Review the basics of ETFs
- Understand how investors view ETFs
- Discuss investment consulting applications for ETFs
- Identify additional uses for ETFs

Most ETFs combine characteristics of an open-end mutual fund and a stock. Like index mutual funds, ETFs represent a fractional ownership in an underlying portfolio of securities that track a specific market index. However, unlike mutual funds, individual investors do not purchase or redeem shares from the fund. Instead, individuals buy and sell shares of ETFs like stocks, on an exchange, including the American Stock Exchange, the New York Stock Exchange, NYSE Arca℠, and the Chicago Board Options Exchange. The trading dynamic is also a mixture of the two. That is, prices of ETFs fluctuate according to changes in their underlying portfolios, and also according to changes in market supply and demand for ETF shares themselves. ETFs offer investors the cost-effective opportunity to buy or sell an interest in a portfolio of bonds or stocks in a single transaction.

While some may classify closed-end funds and grantor trusts (HOLDRs) as ETFs, in this discussion we will focus only on unit investment trust (UIT) and open-end ETFs. Unlike closed-end funds, UIT and open-end ETFs have the capability to continuously offer shares through a unique creation and redemption process, which means that the number of outstanding shares may be increased or decreased on a daily basis as necessary to reflect demand. Thus UIT and open-end ETFs have the capability to avoid trading at large premiums and discounts to their Net Asset Values (NAVs). Closed-end funds, on the other hand, offer a fixed supply of shares; as demand changes, they frequently trade at appreciable discounts from—and sometimes premiums to—their NAVs. HOLDRs can increase and decrease in terms of shares outstanding, but the underlying portfolios themselves are static. This means that HOLDRs are unmanaged baskets of securities, whereas UIT ETFs (such as SPDRs) and open-end ETFs (such as iShares® Funds) are managed daily to closely track benchmark indexes.

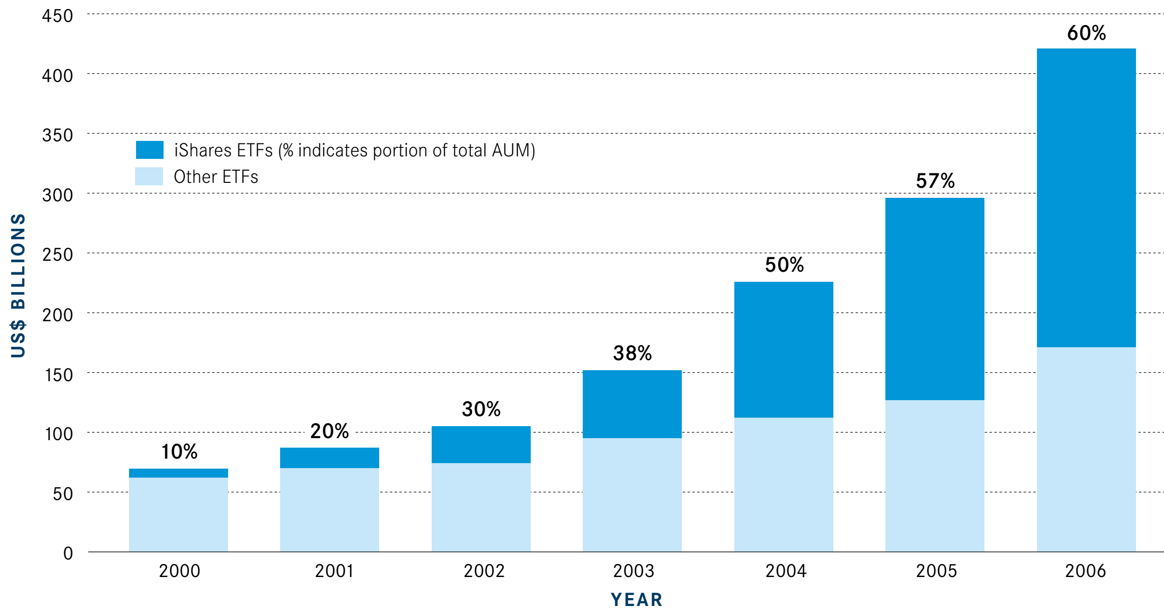
ETF creations and redemptions occur at prices based on the next calculation of NAV after the order is placed. This enables market makers to arbitrage—taking advantage of even slight premiums and discounts to the NAV by either creating or redeeming ETF units. Arbitraging the trading price of the ETF against the NAV should limit the persistence of any premiums or discounts since it has the effect of matching the outstanding supply of shares with investor demand. Of course, there can be no guarantee that market makers will take advantage of a difference between the NAV and the trading price. Historically, however, they have done so.

Partly as a result of their efficient pricing, ETFs have become a popular and fast-growing fund category. The size, growth and current liquidity of ETFs all reflect investors' tremendous interest in this innovative product (Figure 1, page 3). It's worth noting that this growth was achieved in spite of the fact that up until May 2000, the ETF industry offered relatively few options for building a diversified portfolio. The change in breadth and scope of the product set has been dramatic, growing from one fund in 1993 to more than 350 at the end of 2006, with most growth coming in the last six years. ETFs represent a new way to gain precise strategic and tactical market exposure through a myriad of low-cost, tax-efficient index funds.

Some of the most popular ETFs in terms of both asset size and trading volume include the Nasdaq-100 (symbol QQQQ), iShares MSCI EAFE (EFA), iShares MSCI Emerging Markets (EEM), iShares Russell 2000 (IWM), and two S&P 500 index funds: iShares S&P 500 (IVV) and SPDR (SPY).[1]

1. Source: www.amex.com.

Figure 1
The Growth in Popularity of ETFs: Total U.S. ETF Assets in US$ Billions



Source: FRC as of 12/31/06.

As noted at the outset, both retail and institutional investors use ETFs for a variety of purposes—short-term trading, intermediate-term sector rotation, tactical asset allocation, and long-term buy-and-hold strategies.

Investors typically find the following characteristics of ETFs most interesting:

- Continuous pricing
- Access to sectors and indexes
- Ability to track an entire market segment
- Diverse array of investments
- Lower expense ratios
- Tax efficiency

As a framework for analyzing the potential reasons behind investor interest in ETFs, let's look at these traits one at a time.

CONTINUOUS PRICING

The continuous pricing feature of ETFs is significant in that—unlike traditional open-end mutual funds—ETFs offer the same intraday liquidity as other securities that trade on major exchanges. The estimated NAV for an ETF's underlying portfolio (also called the "Indicative Optimized Portfolio Value," or IOPV) becomes a basket of stocks that is repriced for the market makers and specialists on the exchange every 15 seconds (and sometimes even more frequently). This is what enables premiums and discounts to NAV to correct very quickly through arbitrage, where the supply of outstanding shares is increased or decreased based on changes in demand. The benefit to investors is efficient pricing on an intraday basis. Implementing asset allocation strategies with open-end funds is no longer limited to end-of-day execution.

Although we've noted that ETFs trade like stocks, there is an important qualification regarding liquidity. When estimating what type of execution they will receive on their ETF trade, investors often look to its volume to gauge its liquidity. However, due to an ETF's creation and redemption capability, volume does not equal liquidity. Since the supply of outstanding shares may be continuously increased or decreased, liquidity in an ETF is actually influenced more by the liquidity of the stocks in the underlying index. For example, to say that a technology sector ETF is illiquid would be to say that the stocks within the index are illiquid. An ETF that is based on a liquid index can facilitate good executions even if the ETF itself trades infrequently.

It is also important to note that—just like stocks—specialists on the exchanges are responsible for facilitating orderly markets by providing liquidity for ETFs. Specialists "make" quoted markets for all ETFs while the markets are open.

Lastly, liquidity comes from ETFs being created and redeemed as needed to match investor demand. This enables both large and small orders to be "filled" intraday at prices that represent close tracking to the intraday underlying value of the Fund's basket of securities.

ACCESS TO SECTORS AND INDEXES

ETFs provide access to a wide variety of sectors and indexes. Currently available ETFs fall into multiple benchmark categories, including:

- Small-, mid-, large- and broad capitalization
- Growth, value and core
- Global and international (sector and single country)
- U.S. sectors
- Fixed income

In many cases there are even multiple benchmark provider options available for the same style or sector (such as the Russell 1000 Value Index vs. S&P 500/Citigroup Value Index). ETFs are currently based on—but not sponsored or endorsed by—institutional indexes from Dow Jones & Company, Inc., Frank Russell Company, FTSE/Xinhua Index Limited, iBoxx, KLD Research & Analytics, Inc., Lehman Brothers, MSCI Inc., The New York Stock Exchange, Inc., Standard & Poor's, Cohen & Steers Capital Management, Inc., the NASDAQ Stock Market, Inc., and the Bank of New York. We should note that while these companies support the growth of the ETF industry, they do not make any representation to individual investors regarding the advisability of investing in ETFs.

ABILITY TO TRACK AN ENTIRE MARKET SEGMENT

ETFs are designed to closely follow the index or sector they track. ETF fund managers may replicate the index in its entirety by owning every security in the index according to its set weighting, or in some cases they may "optimize" (constructing a portfolio that will track the index as closely as possible without having to own each security).[2] For some indexes, a fund manager may be required to optimize due to the diversification rules in the Securities and Exchange Commission Investment Company Act of 1940. For example, this can happen in sector- and/or country-based ETFs where one company represents more than 25% of the index. If an ETF experiences tracking error, often it is due to the efforts of the fund manager to meet the 1940 Act diversification requirements. Broad-market-based indexes (such as the S&P 500, 400 and 600) do not contain single positions greater than 25% of the entire portfolio, and so the ETFs that represent them tend to be fully replicated.

2. Optimized replication is investing in a representative sample of stocks in the underlying index that have an investment profile similar to the underlying index. Funds that use representative sampling generally do not hold all the stocks included in the underlying index.

Whether fully replicated or optimized, to accomplish the objective of closely tracking an index, the fund manager must know what's in the index. Fortunately, index providers publish changes to their benchmarks daily, enabling complete transparency.

DIVERSIFICATION

Diversification is another popular feature of ETFs. In volatile markets, investors appreciate the cushion that diversification can offer. Investors are sometimes affected by market downturns because they own only a few individual stocks. "Single stock risk" is in the news as a manageable risk that deserves investor attention. Many view ETFs as an excellent means of investing in a favorite sector while mitigating the risk of being exposed to the fortunes of a few companies.[3]

ETFs are also viewed as precise tools that can be used to diversify an entire portfolio, particularly now that ETFs have made so many different benchmarks conveniently investable. For example, Figure 2 on page 6 illustrates the modular nature of the iShares domestic and international ETF family. iShares Funds can complement most any portfolio construction. They can "complete" portfolios that are missing key components, and can also serve as the core building blocks for both domestic and international asset allocations.

Barclays Global Investors was the first to launch fixed income ETFs within the United States, providing investors with a cost-effective and efficient means to manage yield curve and credit exposure in the Treasury, TIPS, corporate, and broad bond markets.

LOWER EXPENSE RATIOS

ETFs' lower expense ratios are illustrated in Figure 3 on page 7. Note the dramatic difference in expenses between actively managed funds, traditional index mutual funds and index ETFs. Cost is important because fees are deducted straight out of an investor's return.

It should be remembered that ETF transactions will result in brokerage commissions, but the savings from lower annual fees can help offset these costs for long-term holders. Another consideration is that the cost of acquiring the underlying securities for the fund is included in the ETF's own bid/ask spread, which benefits both short- and long-term investors.

ETFs enable price specificity and hedging capabilities not available with traditional mutual funds. For example, intraday pricing enables investors to place limit orders on purchases or sales; stop orders can be entered as well. Standard margin rules apply and investors can even sell ETFs short.[4]

Low expense ratios and modularity make ETFs useful tools when engaging in tax-management strategies, including using sector ETFs as a year-round method for harvesting losses to manage after-tax performance. Investors should consult their tax advisors for help determining when it's appropriate to employ ETFs to equitize cash or engage in swaps while harvesting losses in other holdings.

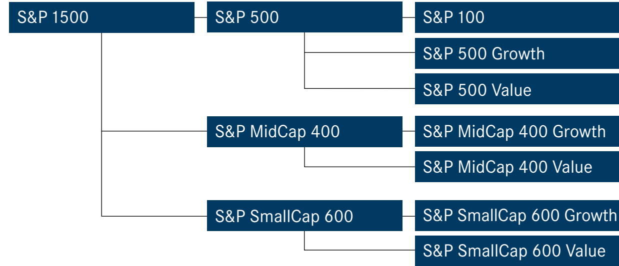
3. As with mutual funds, there are risks involved with ETF investing, including possible loss of principal. Diversification may not protect against market risk. In addition to the normal risks associated with equity investing, investments in smaller companies typically exhibit higher volatility, and ETFs that replicate indexes weighted in smaller capitalization stocks share the same risk/return attributes of those stocks and of those indexes. Optimized replication is investing in a representative sample of stocks in the underlying index that have an investment profile similar to the underlying index. Funds that use representative sampling generally do not hold all the stocks included in the underlying index. Bonds and bond funds will decrease in value as interest rates rise.

4. It is important to note that there are additional risks associated with margin investing. As with stocks, you may be called upon to deposit additional cash or securities if your account equity (including that attributable to ETFs) declines. With short sales, you risk paying more for a security than you received from its sale.

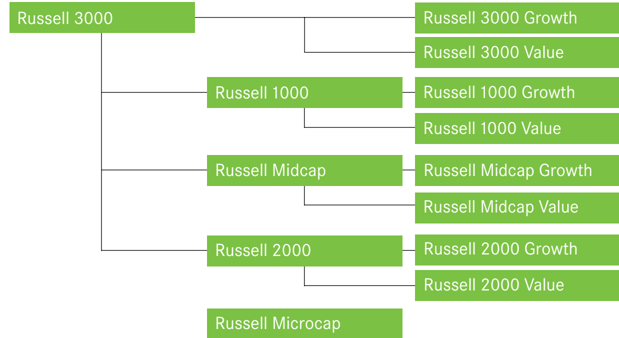
Figure 2

Sample Modular View of U.S. Equity, Fixed Income and International/Global Markets

Standard & Poor's (S&P)



Russell



Dow Jones

- U.S. Index

SECTORS

- U.S. Basic Materials
- U.S. Consumer Services
- U.S. Consumer Goods
- U.S. Energy
- U.S. Financial
- U.S. Healthcare
- U.S. Industrial
- U.S. Technology
- U.S. Telecommunications
- U.S. Utilities

INDUSTRY

- U.S. Financial Services
- Transportation Average
- U.S. Real Estate

Fixed Income

TREASURY

- Lehman TIPS
- Lehman 1–3 Year Treasury
- Lehman 3–7 Year Treasury
- Lehman 7–10 Year Treasury
- Lehman 10–20 Year Treasury
- Lehman 20+ Year Treasury
- Lehman Short Treasury
- Lehman MBS

BROAD MARKET

- Lehman Aggregate

CREDIT

- iBoxx $ Investment Grade Corporate
- iBoxx $ High Yield Corporate
- Lehman 1–3 Year Credit
- Lehman Credit
- Lehman Intermediate Credit
- Lehman Intermediate Government/Credit
- Lehman Government/Credit

International/Global Modular View

MSCI SERIES
15 developed markets
95% market cap coverage

- Australia
- Austria
- Belgium
- Canada
- France
- Germany
- Hong Kong
- Italy
- Japan
- The Netherlands
- Singapore
- Spain
- Sweden
- Switzerland
- United Kingdom

MSCI SERIES
6 emerging markets
50% market cap coverage

- Brazil
- Malaysia
- Mexico
- South Africa
- South Korea
- Taiwan

MSCI SERIES
4 broad/regional markets

- EAFE
- EMU
- Emerging Markets
- Pacific ex-Japan

S&P GLOBAL SECTORS

- Global Consumer Discretionary
- Global Consumer Staples
- Global Energy
- Global Financials
- Global Healthcare
- Global Industrials
- Global Materials
- Global Technology
- Global Telecommunications
- Global Utilities

S&P SERIES

- Global 100
- Europe 350
- Latin America 40
- TOPIX 150

FTSE/XINHUA

- China 25

In addition to the normal risks associated with equity investing, international investments may involve risk of capital loss from unfavorable fluctuation in currency values, from differences in generally accepted accounting principles or from economic or political instability in other nations. Emerging markets involve heightened risks related to the same factors, in addition to those associated with their relatively small size and lesser liquidity. Securities focusing on a single country, narrowly focused investments, and investments in smaller companies typically exhibit higher volatility.

Figure 3

Lower Expense Ratios (%)

MORNINGSTAR CATEGORY	AVG. ACTIVE FUND (%)	AVG. INDEX FUND (%)	iSHARES FUND (%)	
U.S. Taxable Bond	1.08	0.45	**0.15**	iShares Lehman 1–3 Year Treasury
			0.15	iShares iBoxx $ Investment Grade Corporate
Large Blend	1.37	0.59	**0.09**	iShares S&P 500
Large Value	1.37	0.90	**0.20**	iShares Russell 1000 Value
			0.18	iShares S&P 500 Value
Small Blend	1.56	0.68	**0.20**	iShares Russell 2000
			0.20	iShares S&P SmallCap 600
Diversified Foreign Equity	1.79	0.71	**0.34**	iShares MSCI EAFE
			0.74	iShares MSCI Emerging Markets
Specialty Equity	1.69	0.70	**0.48**	iShares Dow Jones U.S. Sector Series

Source: Strategic Insight, *12/06. The annual management fees of iShares Funds may be substantially less than those of most mutual funds. iShares Funds transactions will result in brokerage commissions, but the savings from lower annual fees can help offset these costs.*

TAX EFFICIENCY

In the world of investing, some funds are more tax efficient than others, delivering higher after-tax returns for similar amounts of risk (see Figure 4). In addition to having the relatively low turnover rates associated with index funds, ETFs can be even more tax efficient than their traditional index fund brethren.

To some extent, traditional mutual fund investors are at the mercy of their fellow shareholders and their fund managers when it comes to capital gains taxes. That's because mutual fund shareholders purchase and redeem shares from the fund. If the fund managers need cash to meet investors' redemptions, they may have to liquidate holdings in the portfolio, possibly generating a capital gain. And the consequences of the shareholder redemption—capital gains—are passed along to all other shareholders. Receiving unwanted capital gains tax

Figure 4

Percent of Active Managers UNDERPERFORMING the Index
(from 12/31/96 to 12/31/06)

	VALUE (%)		BLEND (%)		GROWTH (%)	
	BEFORE TAX	AFTER TAX	BEFORE TAX	AFTER TAX	BEFORE TAX	AFTER TAX
Large-Cap	85	96	69	86	37	56
Mid-Cap	87	100	54	84	46	70
Small-Cap	65	93	19	47	18	31

Sources: Morningstar, U.S. equity mutual funds, Russell Indexes. Past performance is no guarantee of future results. All total returns reflect 10-year annualized figures. Funds are categorized by their Morningstar objective.

distributions in a year when their fund displays negative performance can be especially discouraging to investors. With ETFs, investors buy and sell from one another on an exchange—not with the fund. Thus, ETF shareholders have more control over their tax destiny because they are not impacted by fellow shareholder purchases and redemptions.[5]

Individual investors will likely be satisfied with a simple explanation for the reason ETFs may be more tax efficient than traditional funds, such as: "ETFs are tax efficient because they trade on an exchange just like stocks." On the other hand, advisors usually want to become comfortable with the specifics of the operational differences that make the additional tax efficiency possible.

Let's begin by reviewing the structure of a traditional mutual fund. As we've indicated, an individual investor interacts with the fund when purchasing or redeeming shares. As Figure 5 illustrates, the investor approaches the traditional fund through an advisor, or perhaps directly through the fund's customer service area. The investor pays cash to the fund in exchange for shares of the fund. The manager, on behalf of the fund, then takes the cash to the capital markets and buys the securities appropriate to the fund's objective. When the client wants to sell, the manager may need to raise cash by selling securities back to the capital markets, especially during down markets or periods of underperformance when redemptions often run especially high.

Figure 5
Traditional U.S. Mutual Fund Structure

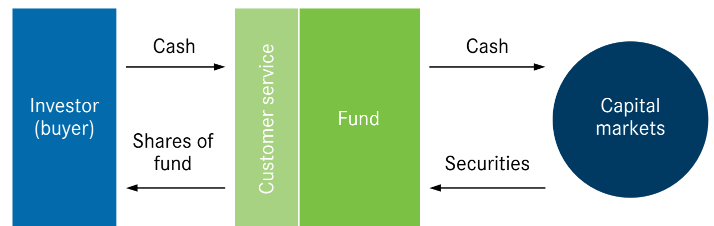
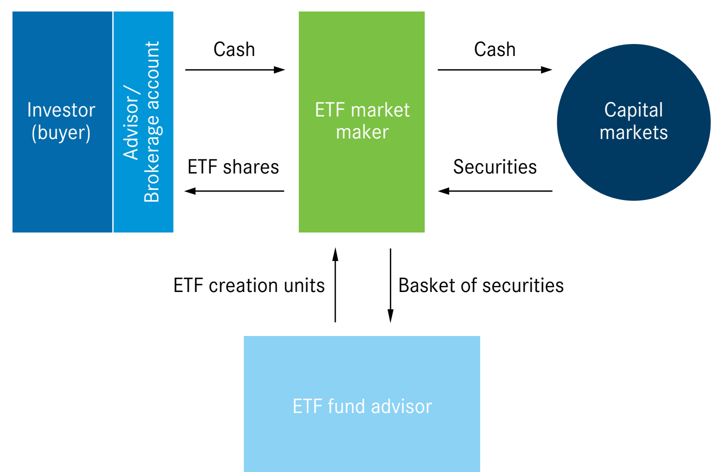


Figure 6
Exchange Traded Fund Structure



Now let's look at the ETF structure. Note in Figure 6 that there's a new participant in the center of the flow chart—the "ETF market maker."

To buy an ETF, the individual investor, through an advisor/brokerage account, places a buy order. But this time it is directed to the exchange instead of to the fund. After exchanging the shares of the ETF for cash with the client's broker/dealer, the market makers on the exchange in turn take the cash and, when appropriate, replenish their supply of ETFs through the creation process we outlined earlier.

To facilitate all of this, ETF advisors such as Barclays Global Fund Advisors and State Street Global Advisors are producing,

5. Mutual funds and ETFs are obliged to distribute portfolio gains to shareholders by year-end. These gains may be generated due to index rebalancing or to meet diversification requirements. Your own ETF trading, too, will generate tax consequences and transaction expenses. Certain traditional mutual funds can be tax efficient as well.

on a daily basis, portfolio composition files (or PCFs) for each of their funds. These files list the exact stocks in their representative percentages. As market makers take in cash and hand out ETFs, they are aware of which stocks they must buy. To build a creation unit, market makers take cash, go to the capital markets, and buy the stocks as listed and defined in the PCF. Market makers then deliver these securities "in-kind" to the fund, which issues the appropriate ETF's creation unit. The redemption process works in the same way, but in reverse. According to current tax law, the in-kind transfer for redemptions does not create a tax burden for the remaining ETF shareholders.[6]

To summarize, ETF creation and redemption activity using the in-kind transfer does not create capital gains that are then passed on to the loyal "buy-and-hold" investor. However, we should clarify that this does not guarantee zero capital gains distributions. There may be events, such as an index reconstitution (where the fund may sell securities directly to the capital markets), that could generate a capital gain for the fund.

INVESTMENT CONSULTING AND INSTITUTIONAL APPLICATIONS

There are many investment consulting applications and institutional uses for ETFs. With multiple benchmarks available as ETFs—whether by capitalization, style, country or sector categories—consultants and portfolio managers can easily construct fully diversified, cost- and tax-efficient portfolios. For years, institutions, foundations and plan sponsors have implemented successful strategies that combine active and index investments. The evolution of the ETF marketplace has enabled individual investors the same sophisticated flexibility, combining actively managed mutual funds and separate accounts with ETFs to finely tune a portfolio's total risk. This blended strategy provides a way to implement strategic asset allocations with better benchmark tracking, while still allowing active management to add alpha. The blending of active and index investments, by asset class or within each asset class, is known as core/satellite investing.

As you can imagine, in addition to core/satellite there is an amazing variety of potential applications and strategies to implement. In fact, the total sum of possibilities for using ETFs employ both traditional and nontraditional investment strategies, including:

- Asset allocation tools for increasing or decreasing exposure to a specific style, sector or capitalization
- Sector rotation strategies
- Arbitrage strategies
- Hedging and defensive strategies
- Securities-lending revenue strategies (from short sellers)
- Market-neutral strategies
- Equitizing cash in areas where no listed derivative exists
- Maintaining equity exposure during a manager transition
- Hedging tools for shorting
- Brokerage window options in defined contribution plans
- Portfolio completion
- Tax-loss harvesting
- Adjusting duration/credit or sector exposure in fixed income portfolios.

Carefully consider the iShares Funds' investment objectives, risk factors and charges and expenses before investing. This and other information can be found in the Funds' prospectuses, which may be obtained by calling 1-800-iShares (1-800-474-2737) or by visiting www.iShares.com. Read the prospectus carefully before investing.

There are risks involved with investing, including possible loss of principal.

6. It is important to remember that although ETFs may be bought and sold on the exchange through any brokerage account, they aren't redeemable from the fund. Investors—authorized participants—may acquire ETFs, and tender ETFs for redemption, through the fund in creation unit aggregations only. Creation units usually represent 50,000 shares, and so are typically done by institutions. However, ETFs are used by both individual investors and institutional investors in the secondary markets on the stock exchanges.

Complete listings of ETFs can be found at www.indexfunds.com.

The iShares Funds are distributed by SEI Investments Distribution Co. (SEI). Barclays Global Fund Advisors (BGFA) serves as an advisor to the Funds. Barclays Global Investors Services (BGIS) assists in the marketing of the Funds. BGFA and BGIS are subsidiaries of Barclays Global Investors, N.A., a majority-owned subsidiary of Barclays bank PLC, none of which is affiliated with SEI. State Street Global Investors and the Bank of New York are not affiliated with SEI or BGI.

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