Index Literacy

An Investor's Guide to Indices

S&P Dow Jones Indices

A Division of S&P Global

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Chapter 3: Index Access Via Products

Contents

The birth of index-linked products

August 31, 1976, was the day the first index mutual fund—the Vanguard S&P 500®—came to market and changed the future of investing.

Index-linked investment products come in many shapes and forms, including:

- ETFs and index mutual funds
- ETNs
- Index-linked options and futures
- Structured products
- Insurance products

The investment world changed forever on August 31, 1976.

Chances are this date doesn't ring a bell. But if you own an index mutual fund, an exchange traded fund (ETF), or any other index-linked investment, you've certainly felt the impact. August 31, 1976, was the day the first index mutual fund—the Vanguard S&P 500®—came to market and changed the future of investing.

Before the Vanguard S&P 500 index fund launched, major indices like the S&P 500 and the Dow Jones Industrial Average® were market benchmarks that could be used as tools for measuring the performance of active portfolio managers, but not as the basis for actionable investment decisions.

Today, retail banks, insurance companies, ETF providers, and options and futures exchanges develop and market tens of thousands of index-linked products to satisfy an ever-growing demand for access to the returns of equity, fixed income, commodity, and other types of indices. The products that are available differ not only by issuer, but also in their investment objectives, structure, and the access they provide to index returns.

ETFs and index mutual funds

There are now almost twice as many ETFs as index funds—with more than half linked to an index from S&P Dow Jones Indices.

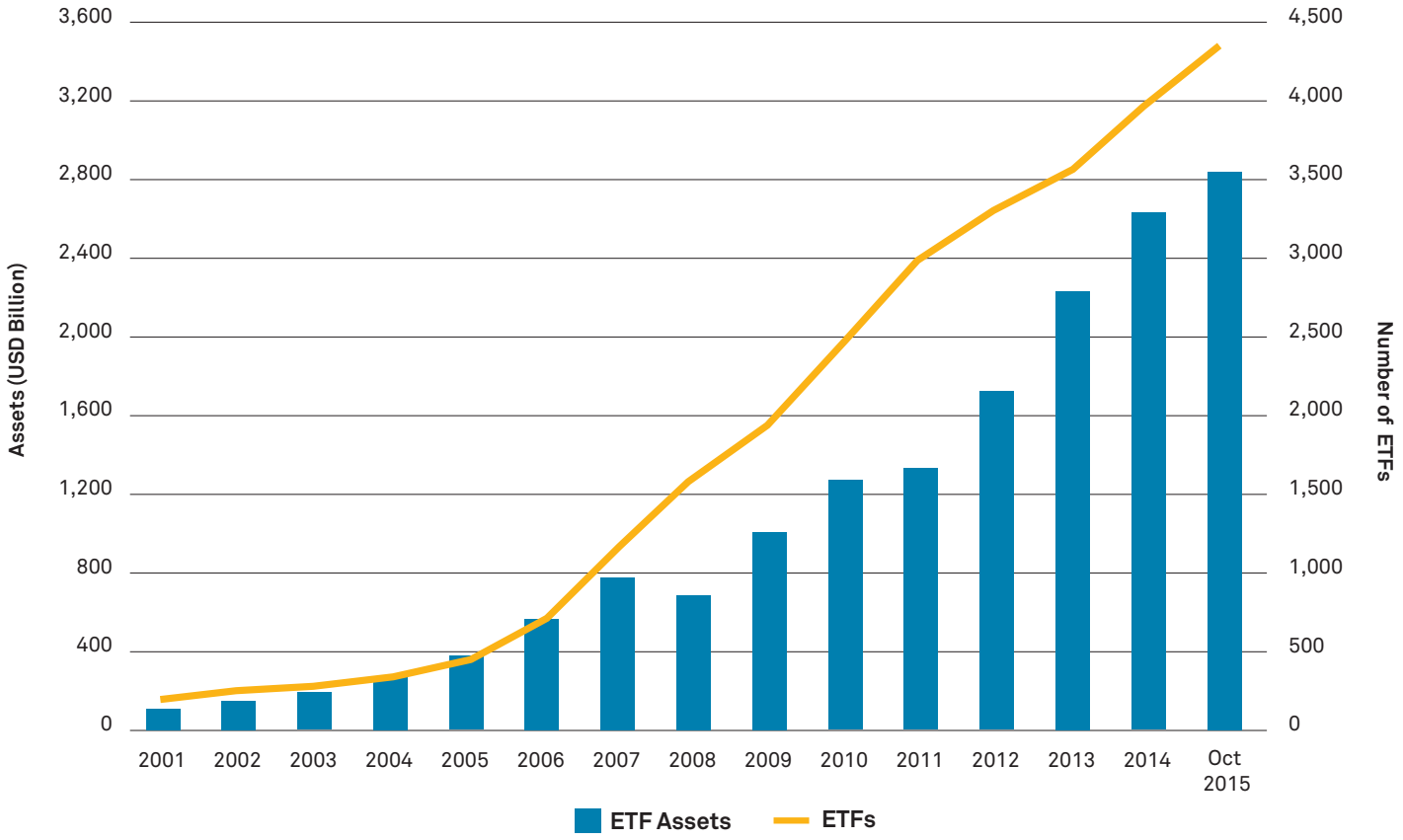
ETFs and index mutual funds are practically synonymous with index investing.

These products are widely available, easy to buy and sell (liquid), and designed to meet a variety of investment goals. The funds' issuers, sometimes referred to as sponsors, are financial services companies. Some of these firms concentrate on either ETFs or mutual funds, while others offer both types of products.

While index mutual funds have been on the market almost twice as long as ETFs, there are now almost twice as many ETFs as index funds—with more than half linked to an index from S&P Dow Jones Indices. The rapid expansion of ETFs that began in the U.S. now extends around the world.

Going beyond broad market exposures, ETFs are now used to access markets and strategies that might otherwise be available only through active management. For example, it's possible to invest in ETFs on indices that seek to limit risk, track high-dividend-paying stocks, or even measure market volatility.

Growth of ETFs globally



Source: ETFGI

How ETFs and index mutual funds work

Each ETF and index mutual fund has a specific investment objective. To achieve that objective, the fund typically builds its index-based portfolio in one of three ways:

By holding all of the securities in the index it has licensed

Most ETFs and index mutual funds use this approach. Typically these investment products are also weighted in a manner that is consistent with the index weighting.

By holding a representative sampling of the securities

This might be for strategic reasons or because it's not feasible to purchase all of the components in the index. For example, indices that track thousands of securities, or those that hold some less liquid components may be difficult to replicate. Whatever the reason, the performance of a fund that uses the sampling method may differ from the index performance more than it would with full replication.

By entering into a swap agreement with one or more counterparties

While this approach provides the same return as the index, it exposes fund holders to the risk that the counterparty may default on its obligation. Clearing the SWAP through a clearing house tends to mitigate the counterparty risk.

The performance of a fund that uses the sampling method may differ from the index performance more than it would with full replication.

ETFs and index mutual funds resemble each other in some basic ways:

- Investors in both ETFs and index mutual funds own shares in a fund, not the individual securities in the fund's portfolio.
- ETFs and index mutual funds typically pass through income from their underlying investments, after expenses and any capital gains from updating their portfolios, to fund shareholders on a proportional basis.
- The intent of each ETF or index mutual fund is typically to replicate the performance of the index it tracks. For example, if the annual return on an underlying index is 10%, the objective of an ETF or mutual fund following the index is, with a few exceptions, to match that 10% return as closely as possible. Of course, if the index loses value, the ETF or index fund's return reflects that loss directly as well.

Actual results vary among equity products linked to the same index. In the case of index mutual funds, the primary reason for the variation is the fee structure, with higher costs translating directly into a lower return. Returns may also diverge if a fund uses a sampling of index components rather than full replication to create its portfolio, or if the fund's cash reserve, which it maintains to cover share redemptions, acts as a drag on results.

The intent of each ETF or index mutual fund is typically to replicate the performance of the index it tracks.

With an ETF, differences in return, or what is known as tracking error, can result from its fees and from the way the product is structured. Among the most important structural factors that may affect return are:

Whether dividends are reinvested

Whether there's a brokerage commission for reinvesting dividends

Whether the ETF uses derivatives, leverage, or other strategies to enhance return or hedge against losses

How ETFs and index mutual funds differ

Although both ETFs and index mutual funds tend to have low turnover rates, an ETF may deliver greater tax efficiency.

The most significant differences between ETFs and index mutual funds—in addition to the greater variety and larger market share of ETFs—are the ways they can be traded and their tax efficiency.

Because ETFs trade like stocks, they can be bought on margin or sold short, even on a downtick. Short selling is widely used in hedging and other risk management strategies. For example, if an investor thinks a particular stock is promising but is part of a lagging sector, he might buy the stock but short an ETF tracking an index of the sector. Since index mutual funds do not trade like stocks, this kind of strategy would be more difficult to execute if they were used.

Tax efficiency is another differentiator. ETFs do not redeem shares that investors wish to sell as mutual funds typically do. This means that an ETF does not generally liquidate holdings to cover redemptions, as index mutual funds may have to do. Forced liquidations have the potential to create capital gains, some of which may be short-term gains that could increase the tax liability of the mutual fund shareholders.

Further, although both ETFs and index mutual funds tend to have low turnover rates, typically updating their portfolios when the components of their underlying indices change, an ETF may deliver greater tax efficiency. This is because of the unique process by which ETF shares are typically created and redeemed in regularly recurring tax-free exchanges between the ETF sponsor and a number of authorized participants, generally major financial institutions.

Specifically, an authorized participant delivers a basket of the ETF's underlying securities to the sponsor in exchange for a number of shares, typically 50,000, and can redeem that number of shares to receive the basket of securities in return. For every instance of redemption, the ETF sponsor chooses to return, from among the securities it holds, those with the lowest cost basis. This means that when the ETF's portfolio is updated, the securities that are sold have a higher average cost basis than they otherwise might have. As a result, the ETF may be able to pass on lower capital gains to its shareholders than the index mutual fund can.

A key difference between mutual funds and ETFs is that mutual fund shares are traded just once a day, at the closing net asset value (NAV), which is determined by the total market capitalization of its index-derived portfolio, minus fees and expenses, divided by the number of outstanding shares. ETF shares, on the other hand, trade throughout the day at current market prices. This may make them more versatile for meeting a variety of investment objectives, but it does mean that the market price can be at a premium or discount to NAV. In reality, though, the market prices of many ETFs, especially those that are most widely traded, tend to be extremely close to their NAVs.

A key difference between mutual funds and ETFs is that mutual fund shares are traded just once a day, while ETF shares trade throughout the day at current market prices.

ETFs vs. Index mutual funds

	ETFs	Index mutual funds
OBJECTIVE	**Replicate performance of an index**	**Replicate performance of an index**
DIVERSIFICATION	**Typically highly diversified**	**Typically highly diversified**
EXPENSE RATIOS	**Low**	**Low**
TRADING FREQUENCY	**Throughout trading day, at current market prices**	**Once per day, at the closing net asset value**
TRADING FEATURES	**Can be bought on margin or sold short**	**Cannot be bought on margin or sold short**
AVAILABILITY	**Purchase through brokerage account**	**Purchase from a fund company or through a retirement plan**

Putting ETFs to work

Who uses ETFs? Retail and institutional investors, including asset managers, pension funds, endowments, and fiduciaries, among others, either include ETFs in their holdings or construct entire portfolios with these products. One reason is that ETFs—or, more precisely, specific products within the ETF universe—represent various investment strategies from conservative to aggressively contrarian.

Some ETFs may be purchased for their diversification.

Even less-diversified ETFs, such as a narrowly focused sector fund, may provide exposure to the performance of multiple companies, which theoretically carries less risk than owning just one or two of the companies in the index. Typically low expense ratios also make ETFs attractive.

In addition, both retail and institutional investors who adopt a core-satellite strategy may supplement a portfolio with tactical allocations to sector or strategy ETFs based on what's happening in the marketplace or the economy as a whole. The core portfolio may itself be built entirely of ETFs or with a combination of individual securities and ETFs.

At the opposite end of the spectrum, active traders use ETFs for the arbitrage opportunities they may provide when NAVs and market prices diverge. So do hedge funds and other firms, which may have no interest in holding the underlying assets but have serious interest in realizing profits.

Who uses ETFs?

- Retail investors
- Institutional investors
- Asset managers
- Pension funds
- Endowments
- Fiduciaries

ETFs may be used as tools in other ways as well. For example, they may be useful for investors wishing to comply with the wash-sale rule when taking capital losses on an individual stock, since an ETF that holds the stock is not considered a "substantially identical" investment. Further, ETFs can be used in a number of hedging strategies, either to protect unrealized portfolio gains or to limit further losses.

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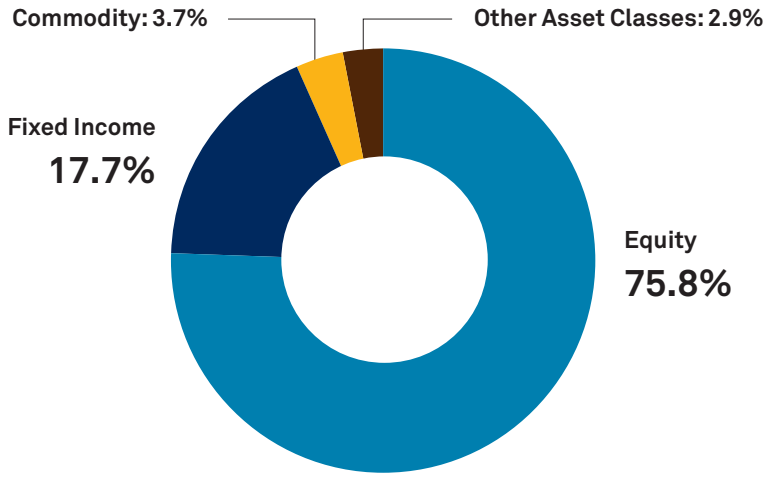
Despite these advantages, many more retail investors own mutual funds than own ETFs. One reason has been that most ETFs must be traded through a brokerage window, something that only a limited number of employer-sponsored retirement plans offer. Since ETF prices change throughout the day rather than being set once a day, the difficulty of determining valuation is also cited as a factor. Another reason often cited is the fact that you can't buy fractional shares in an ETF, which complicates allocation of employee deferrals to a plan. At least some of these issues may be resolved though, as some plan sponsors have introduced suites of commission-free ETFs.

TOTAL ETF AUM (USD million)

$2,794,703



As of September 2015. Source: ETFGI.
*For more information on ETFs and risks associated with ETFs, please see http://www.investopedia.com/articles/investing/050316/what-all-investors-should-know-about-etfs.asp

ETNs

Unlike ETFs, which are equity products, ETNs are unsecured debt securities.

Exchange traded notes (ETNs), which are issued by investment and commercial banks, resemble ETFs in a number of ways.

Both are index-linked products, and both trade on an exchange at their current market prices. Like ETFs, ETNs offer access to a variety of markets that might otherwise be accessible only through active management. Like ETFs, ETNs are often linked to broad and narrow stock market indices, strategy indices, and commodity indices, including the S&P VIX© Futures Indices.

However, ETNs and ETFs do differ in significant ways.

Unlike ETFs, which are equity products, ETNs are unsecured debt securities. As a result, ETNs may expose investors to credit risk, market risk, and sometimes call or early redemption risk. Some ETNs are collateralized, which means that note holders may recover a percentage of their principal in case of default, though the terms of the arrangement may also limit return potential. Many ETNs, however, do not offer principal protection.

Further, ETNs don't own the investments included in the underlying indices as ETFs do. Instead of seeking to replicate index return, most ETN issuers offer a payment at maturity that's linked to the performance of the underlying index during the term, minus fees and other expenses. The precise method for calculating the return is detailed in the offering document. Maturity may be 10 to 40 years from the date of issue. As with zero-coupon bonds, the issuers don't typically pay interest during the note's term.

ETNs don't own the investments included in the underlying indices as ETFs do.

Since an ETN has no assets, it has no net asset value (NAV). Instead, the issuer calculates and publishes an indicative value throughout the trading day. Like an ETF's NAV, the indicative value may or may not be close to the current market price.

ETNs tend to be easier to bring to market than ETFs for regulatory reasons, so in some cases an ETN tracking a particular index may be available before an ETF tracking that index. And ETNs tend to be popular with investors who seek a potentially higher return than may be available with conventional debt securities, as well as with investors who want to add some equity exposure to a debt portfolio.

Index-linked options and futures

Investors may buy or sell options or futures contracts based on how they expect the market to behave.

Options exchanges and futures exchanges offer contracts on market indices, such as S&P 500 index options and S&P 500 futures.

While these derivative products differ in some important ways, they are similar in allowing investors—both retail and institutional—to hedge or to speculate on the level of the underlying index on the date when the contract expires, which is specified in the contract.

Investors may buy or sell options or futures contracts based on how they expect the market to behave. For example, if options investors think the index will fall, they might hedge to protect unrealized gains by purchasing put options. If the market does fall, they can exercise the option and collect the settlement price.

Likewise, futures investors might hedge to protect an existing position or to help manage the price of a future stock purchase. In the latter case, the investor would buy a contract on the relevant index. If the index goes up, the cost of the stock purchase will be offset by the gain on the contract. Conversely, if the index goes down, the contract loss will be offset by the lower cost of buying the stocks.

As is the case with other index-linked products, options and futures contracts are seen as a means to make a portfolio more diversified.

Options

Options investors may buy or sell a contract at a specific price, called the strike or exercise price, which is above or below the current index level. Buyers, called holders, choose between a call option and a put option, based on the direction they expect the index to move.

Buying a contract gives the investor the right to exercise at expiration, if the index has moved to the expected level, and collect a cash settlement. A buyer also has the right to sell a contract before expiration if that move would provide a profit. However, a buyer is under no obligation to act.

Options sellers, called writers, also choose between a call and a put, and they collect a premium for selling. Sellers can offset the contract at any point before expiration by purchasing the same contract they sold. However, if the contract isn't offset and the option holder decides to exercise, the seller is required to make the cash settlement that is due the holder.

Buying an option contract gives the investor the right (but not the obligation) to exercise at expiration

Futures

Futures investors also buy or sell a contract on a particular index by opening a position. However, both parties are required to follow through on the terms of the contract at expiration unless it has been closed, or offset, with an opposing position, as most are.

Futures also differ from options in their potential cost. Instead of paying or receiving a one-time premium, futures investors make an initial margin payment, and the value of their accounts is updated daily either with a credit or a loss, based on the changing level of the index.

If the account value falls below the maintenance margin, the investor must add to the account to bring it back to the required level.

Both futures parties are required to follow through on the terms of the contract at expiration

Structured products

Despite their link to an equity index, structured products are typically unsecured debt obligations of the issuer, and therefore subject to credit risk.

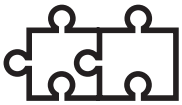
A structured product combines two asset classes, such as a short-term note and an index, to create a hybrid that links the interest the note earns to the return of the index.

Interest is paid only at maturity, subject to the terms of the specific product—and the terms typically vary substantially from product to product. Commercial and investment banks issue a variety of index-linked structured products.

Despite their link to an equity index, structured products are typically unsecured debt obligations of the issuer, and therefore subject to credit risk. One exception is an index-linked CD, which, as a bank deposit, can be FDIC-insured. Structured products are not always listed on an exchange, and if they are, they may be thinly traded, so typically there's no readily available secondary market or an accurate way to determine their value.

Structured products may be fairly conservative as well as highly speculative and extremely complex. At one end of the scale, there are structured products that offer principal protection and income generation, though limited return. At the other end, some of the products offer the potential for greater return but at the risk of being exposed to significant leverage.

This variety makes structured products potential diversification tools for high-net-worth investors and asset managers.



Structured products are also seen as tools for enhancing returns.

Insurance products

The insurance issuer typically promises that if the underlying index's value rises, it will credit a portion of the index return as an interest payment to the policyholder's account.

Insurance companies offer two types of index-linked products:

- Fixed index annuities
- Index-linked universal life insurance policies.

These products are intended for people interested in earning a potentially higher rate of return than the current market interest rate, often as a way to enhance retirement savings. The return for which the policyholders are eligible, the way the return is calculated, and how it will be credited are specified in the insurance contract.

The insurance issuer typically promises that if the underlying index's value rises, it will credit a portion of the index return as an interest payment to the policyholder's account. However, the interest that's credited may not be the actual index return. Each policy typically has both a participation rate and a maximum crediting rate, described as a cap. A participation rate is the percentage of index gain that will be counted toward calculating the interest payment. Each insurer sets its own rate, which may range upward from 60% of the index return. The insurer also sets the maximum percentage that will be credited in any one year, often 10% to 14%. Both of these rates can be modified over the life of the policy.

To illustrate how an index-linked product works, assume that a hypothetical policy has a participation rate of 80% and cap of 12%. A year in which the underlying index gained 20%, the participation rate of 80% would result in a return of 16%. However, because of the cap, it would actually be 12%. Some insurers also subtract a margin or asset-based fee, called a spread, from the return before applying the participation rate and cap.

Some index-linked products may offer downside protection by guaranteeing that the least interest a policy or annuity will earn in any year is 0%. This means the principal would not be eroded in years when the index loses value. Some issuers may guarantee a minimum return—say 2%—to be paid from earnings on its fixed income investments if the return on the index would provide less.

To meet its commitment to pay index-linked interest, the insurer typically purchases rolling call options on the underlying index, which it can exercise or sell at a profit if the index exceeds the strike price before expiration.

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Quiz

Select the best response to each question:

Which is the most common way that a fund company builds an index-based portfolio?

A It enters into a SWAP agreement with one or more counterparties
B It buys all of the securities in an index
C It purchases a representative sampling of the components of an index
D It buys securities it believes will outperform the index

Which of the following is not true of ETFs?

A They trade throughout the trading day
B They can be shorted
C They can be purchased through a broker or from a fund company
D They can track portfolios of stocks but not bonds

Which investment products are constructed as a hybrid of two types of investment tools, such as a short-term note and an index?

A Futures
B ETFs
C Structured products
D Annuities

What factors should you consider to help determine which index-based investment products might be right for you?

A The product's issuer
B The product's investment objective
C The product's structure
D All of the above

What is the definition of "tracking error"?

A The difference between the performance of an index-based portfolio and the index
B Differences in the performance of index funds due to portfolio manager error
C The sum of accumulated rounding errors in index performance calculations
D None of the above

Answers: B, D, C, D, A

Appendix: specific risks

ETF risks

The risks described herein are general in nature. There may be different or additional risk that would apply in specific jurisdictions. Please consult your counsel, investment advisor and/or regulator for complete and specific details pertaining to your jurisdiction.

ETF shareholders are subject to risks similar to those of holders of other portfolios, such as mutual funds. In addition, there are risks specific to each ETF, which are described in the relevant ETF prospectus. Some specific risks associated with ETFs include:

- The general value of securities held may decline, thus adversely affecting the value of an ETF that represents an interest in those securities. This could occur with equities, commodities, fixed income, futures, or other investments the fund may hold on behalf of the shareholders.
- For ETFs for which the stated investment objective is to track a particular industry or asset sector, the fund may be adversely affected by the performance of that specific industry or sector.
- Fund holdings of international investments may involve risk of capital loss from unfavorable fluctuations in currency exchange rates, differences in generally accepted accounting principles, or economic or political instability in other nations.
- Although ETFs are designed to provide investment results that generally correspond to the price and yield performance of their respective underlying indices, the trusts may not be able to exactly replicate that performance because of expenses and other factors. This is sometimes referred to as "tracking error."

Investors should refer to an ETF prospectus to obtain a complete discussion of the risks involved in that ETF.

For more information and further discussion on ETFs and risks associated with ETFs, please see "What Risks Are There in ETFs?" at www.etf.com/etf-education-center/21004-what-risks-are-there-in-etfs.html, published by ETF.com and "Advantages and Disadvantages of ETFs"at http://www.investopedia.com/articles/exchangetradedfunds/11/advantages-disadvantages-etfs.asp, published by Investopedia.

Index mutual fund risks

Index mutual fund risks include market risk, credit risk, and interest rate risk, among others.

By investing in a mutual fund, investors are exposed to market risk, as the underlying securities that make up a portfolio fluctuate in price with the market. As the market declines, an investor's principal investment in the fund may also decline. When a mutual fund invests in equity securities, the mutual fund investors are subject to declines faced by the company as well as any overall decline in the market and the risk that the mutual fund performance does not coincide with the performance of the underlying securities in the portfolio, or tracking error.

If the fund invests in a portfolio of fixed income securities, investors are subject to credit risk, the risk that the issuing bank will not make timely interest and principal payments or will subsequently experience a ratings downgrade. In some cases, a mutual fund may not be able to sell an investment quickly as a result of liquidity risk. Mutual funds are also subject to interest rate risk. As interest rates increase, the value of an investor's portfolio may decline. Some disadvantages to investing in mutual funds include additional fees and expenses as well as tax considerations.

For more information, see "Invest Wisely: An Introduction to Mutual Funds," published by the U.S. Securities and Exchange Commission at https://www.sec.gov/investor/pubs/sec-guide-to-mutual-funds.pdf and "Understanding Risk" at http://mfea.com/learn/investing_basics/content_tabbed/understanding_risk.fs, published by the Mutual Fund Education Alliance.

ETN risks

The risks described herein are general in nature. There may be different or additional risk that would apply in specific jurisdictions. Please consult your counsel, investment advisor and/or regulator for complete and specific details pertaining to your jurisdiction.

Some specific risks associated with ETNs include:

- **Credit Risk.** As mentioned above, ETNs are unsecured debt obligations of the issuer and do not buy or hold assets to replicate or approximate the performance of the underlying index.
- **Market Risk.** As an index's value changes with market forces, so will the value of the ETN in general, which can result in a loss of principal to investors. Also, some of the indices and investment strategies used by ETNs can be quite sophisticated and may not have much performance history.
- **Liquidity Risk.** Although ETNs are exchange-traded, a trading market may not develop.
- **Price-Tracking Risk.** Investors should be wary of buying at a price that varies significantly from closing and intraday indicative values.
- **Holding-Period Risk.** Some leveraged, inverse, and inverse-leveraged ETNs are designed to be short-term trading tools, and the performance of these products over long periods can differ significantly from the stated multiple of the performance (or inverse of the performance) of the underlying index or benchmark during the same period.
- **Call, Early Redemption, and Acceleration Risk.** Some ETNs are callable at the issuer's discretion.
- **Conflicts of Interest.** The issuer of the notes may engage in trading activities that are at odds with investors who hold the notes (shorting strategies, for instance).

Index options risks

The risks described herein are general in nature. There may be different or additional risk that would apply in specific jurisdictions. Please consult your counsel, investment advisor and/or regulator for complete and specific details pertaining to your jurisdiction.

Some specific risks associated with index options include:

- Options, like other securities, carry no guarantees, and investors should be aware that it is possible to lose all of your initial investment, and sometimes more. For example:
    - Option holders risk the entire amount of the premium paid to purchase the option. If a holder's option expires "out-of-the-money" the entire premium will be lost.
    - Option writers may carry an even higher level of risk since certain types of options contracts can expose writers to unlimited potential losses.
- Market Risk – Extreme market volatility near an expiration date could cause price changes that result in the option expiring worthless.
- Underlying Asset Risk – Since index options derive their value from an underlying index, any risk factors that impact the price of the underlying index will also indirectly impact the price and value of the option.

Index futures risks

Some specific risks associated with index futures contracts include:

- Trading security futures contracts may result in potentially unlimited losses that are greater than the amount invested.
- Because of the leverage involved and the nature of futures transactions, investors may feel the effects of futures losses immediately. Unlike holdings in traditional securities, gains and losses in security futures are credited or debited to an investor's account on a daily basis at a minimum. If an account is under the minimum margin requirements, the investor's position may be liquidated at a loss and the investor will be liable for any deficit in his account.
- Under some market conditions, it may be difficult or impossible to hedge or liquidate a position. If an investor cannot hedge or liquidate his position, existing losses may continue to mount. Even if an investor can hedge or liquidate his position, he may be forced to do so at a price that involves a large loss. This can occur, for example:
    - If trading is halted due to unusual trading activity in the security futures contracts or the underlying index
    - If trading is halted due to news events about the underlying index or in some or all of the securities that make up the index
    - If computer systems failures occur
    - If the market is illiquid
- Under some market conditions, the prices of security futures may not maintain their customary or anticipated relationships to the prices of the underlying index. This can occur, for example, when the market for the security futures contract is illiquid and lacks trading interest or when trading is delayed or halted in some or all of the securities that make up the index.
- Placing contingent orders, if permitted, such as "stop-loss" or "stop-limit" orders, will not necessarily limit an investor's losses as intended. Market conditions may make it impossible to execute the order or to get the stop price.
- Day trading strategies involving security futures pose special risks. Seeking to profit from intraday price movements poses a number of risks, including increased trading costs, greater exposure to leverage, and heightened competition with professional traders.

For more information on index options and futures and risks associated with index options and futures, please see http://www.sec.gov/oiea/investor-alerts-bulletins/ib_introductionoptions.html and http://www.finra.org/investors/security-futures-know-your-risks-or-risk-your-future.

Structured products risks

The risks described herein are general in nature. There may be different or additional risk that would apply in specific jurisdictions. Please consult your counsel, investment advisor and/or regulator for complete and specific details pertaining to your jurisdiction.

Some specific risks associated with structured notes include:

Market risk. Some structured notes provide for the repayment of principal at maturity, which is often referred to as "principal protection." Principal protection is subject to the credit risk of the issuing financial institution. Many structured notes do not offer principal protection. If they don't, the performance of the linked index may cause an investor to lose some, or all, of the principal.

Issuance price and note value. The price paid for a structured note at issuance will likely be higher than the fair value of the structured note on the date of issuance. Issuers now disclose an estimated value of the structured note on the cover page of the offering prospectus, allowing investors to gauge the difference between the issuer's estimated value of the note and the issuance price. The estimated value of the notes is likely lower than the issuance price of the note to investors because issuers include the costs for selling, structuring, or hedging the exposure on the note in the initial price of their notes. After issuance, structured notes may not be resold on a daily basis and thus may be difficult to value given their complexity.

Liquidity. The ability to trade or sell structured notes in a secondary market is often very limited as structured notes are not listed for trading on exchanges. As a result, the only potential buyer for a structured note may be the issuing financial institution's broker-dealer affiliate or the broker-dealer distributor of the structured note. In addition, issuers often specifically disclaim their intention to repurchase or make markets in the notes they issue. Therefore, if an investor does not hold a note to its maturity date, he risks selling the note at a discount to its value at the time of sale.

Payoff structure. Structured notes may have complicated payoff structures that can make it difficult to accurately assess their value, risk and potential for growth through the term of the structured note. Payoff structures can be leveraged, inverse, or inverse-leveraged, which may result in larger returns or losses. For example, the payoff on structured notes can depend on:

- *Participation rates.* Some structured notes provide a minimum payoff of the principal invested plus an additional payoff to the investor based on multiplying any increase in the reference asset or index by a fixed percentage. This percentage is often called the participation rate. A participation rate determines how much of the increase in the reference asset or index will be paid to investors of the structured note. For example, if the participation rate is 50 percent, and the underlying index increased 20 percent, then the return paid to the investor would be 10 percent (which is 50 percent of 20 percent).
- *Capped maximum returns.* Some structured notes may provide payments linked to an index with a leveraged or enhanced participation rate, but only up to a capped, maximum amount. Once the maximum payoff level is reached, an investor does not participate in any additional increases in the underlying index. For example, a note may provide the investor 100% of all funds invested at the end of two years, plus an enhancement of any rise in the performance of the S&P 500 up to 20%. If the performance of the S&P 500 increases 25% in those two years, an investor only receives a return of 20%.
- *Knock-in feature.* If the underlying index falls below a pre-specified level during the term of the note, an investor may lose some or all of the principal investment at maturity and also could lose coupon payments scheduled throughout the term of the note. This pre-specified level may be called a barrier, trigger, or knock-in. When this level is breached, the payout return changes on the note. For example, if the index falls below the knock-in level and its value is lower than on the date of issuance, instead of receiving a return of principal, the investor may instead receive an amount that reflects the decline in value of the index.

Credit risk. Structured notes are unsecured debt obligations of the issuer, meaning that the issuer is obligated to make payments on the notes as promised. These promises, including any principal protection, are only as good as the financial health of the structured note issuer. If the structured note issuer defaults on these obligations, investors may lose some, or all, of the principal amount they invested in the structured notes as well as any other payments that may be due on the structured notes.

Call risk. Some structured notes have "call provisions" that allow the issuer, at its sole discretion, to redeem the note before it matures at a price that may be above, below, or equal to the face value of the structured note. If the issuer "calls" the structured note, investors may not be able to reinvest their money at the same rate of return provided by the structured note that the issuer redeemed.

Tax considerations. The tax treatment of structured notes is complicated and in some cases uncertain. Before purchasing any structured note, you may wish to consult with a tax advisor. You also should read the applicable tax risk disclosures in the prospectuses and other offering documents of any structured note you are considering purchasing.

In most cases, over-the-counter (OTC) index-linked derivative products aren't issued. Instead, they're often arranged by an intermediary, typically a broker, between two parties. Among the primary products are equity index-linked swaps that provide for an exchange of cash flows over a specific term, variance swaps linked to a volatility index, dividend swaps, and options.

Institutional investors use these products for hedging, arbitrage, and executing various options' strategies including a variety of spreads. OTC products are different from exchange-listed alternatives in many ways. For example, in the case of OTC index-linked options, the expiration date and strike price can be customized to meet a specific objective. In addition, OTC products are subject to a different regulatory system.

The swaps linked to equity indices attract users seeking the potential to both reduce risk and increase return. At the same time, swaps cost less than the more traditional approach of replicating an index to achieve its return. In the absence of replication, tracking error may also be reduced. Also, when it serves investors' purposes, the floating rate, based on debt, can be exchanged in different currencies. The same is true for the fixed rate, which is based on the return of the index.

A major concern with any OTC product is counterparty risk: the possibility that one party to the agreement will default. However, that risk is mitigated when OTC products are cleared through an established clearing house, such as the Options Clearing Corporation (OCC). Clearing of OTC products is becoming more common.

For more information on structured products and risks associated with structured products, please see https://www.sec.gov/news/studies/2011/ssp-study.pdf.

Insurance product risks

The risks described herein are general in nature. There may be different or additional risk that would apply in specific jurisdictions. Please consult your counsel, investment advisor and/or regulator for complete and specific details pertaining to your jurisdiction.

Insurance products have specific risks.

Investors in index-linked products risk losing their principal investment if there is no downside protection such as a guaranteed minimum return or if the investor is penalized for making a withdrawal prior to the expiration of the lockup or surrender period. Some of the features of index- linked annuities may be combined to minimize or limit the amount of interest an investor may be able to receive. For instance, participation rates, spread/margin/asset fees, and interest rate caps may be combined and/or modified over time, which may lead to losses or lower returns for an investor. Such restrictions and combinations are set forth in the investor contract and investors are advised to read such contracts carefully.

Index-linked products are also subject to market risk, credit risk, and regulatory risk. Additionally, if the underlying index which the indexed-linked annuity is linked to declines in value, the annuity also declines in value and the investor will receive less interest as a result. An investor is also subject to the risk that an insurance company may fail to honor its obligation to the investor due to its financial ability or the risk that the insurance company may change the terms of the contract by imposing such features discussed above in the return calculations. Investors should note that index-linked annuities are governed by state insurance departments.

For more information and further discussion on index-linked products, see "Equity-Indexed Annuities – A Complex Choice" at www.finra.org/investors/alerts/equity-indexed-annuities_a-complex-choice, published by the Financial Industry Regulatory Authority and "6 Questions Before Buying a Fixed Indexed Annuity" at http://www.cbsnews.com/news/six-questions-to-ask-before-buying-a-fixed-indexed-annuity/, published by CBS News.

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