## GUGGENHEIM

## Rydex Funds

# A Comparison of ETFs and Mutual Funds—The True Cost of Investing

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The popularity of exchange traded funds (ETFs) in investment portfolios has increased substantially over the past decade, with ETFs often highlighted for their low expense ratios. However, expense ratios are just one element of the total cost of ownership for ETFs. In order to make informed investment decisions, it's important for investors to understand the complete cost structure of investing via ETFs, as well as mutual funds, so they can choose the best investment structure for their needs. ETFs may not always be the correct vehicle for every investor. For active investors, no-transaction-fee (NTF) tradable mutual funds may be the more cost-effective investment vehicle.

When it comes to choosing between ETFs and mutual funds, popular notions about cost need to be critically examined. Investors and financial advisors—and even the popular financial press—need to be more careful and develop a more comprehensive approach to assessing cost. The reflexive notion that ETFs cost less, simply based on their lower expense ratios, is not entirely true. Investors cannot assume that in all cases, ETFs, with their low fees, are more cost-effective than mutual funds. In addition to the expense ratios, there are other costs associated with ETF trading, such as bid/ask spreads and, if applicable, occasionally commissions. There also may be additional costs associated with purchasing and selling mutual funds.

Chart 1 on page three details many of these costs and separates them into explicit (known in advance) and implicit (harder to quantify in advance) costs. Implicit costs for each can be difficult to quantify and can vary by individual security. For ETFs, these costs include premium/discount and market impact, while for mutual funds, they include shareholder activity or potential transaction fees if they are not bought and sold on an NTF platform or if they are subject to holding period penalties. Taxes are another consideration, but are not discussed here. If shares of an ETF or mutual fund are sold at a price other than the purchase price, the transaction will typically represent a taxable event. Due to their unique structure, ETFs tend to be more tax-efficient than their mutual fund counterparts because they do not need to sell securities to address shareholder activity.

For simplicity's sake, the two main costs of owning mutual funds and ETFs—expense ratio and bid/ask spread—will be explored here. Because nearly all ETFs are now traded without brokerage costs, this cost is not relevant as it once was. Comparisons do not include brokerage charges to more accurately reflect cost comparisons between the two products. Again, the examples shown highlight the use of mutual funds and ETFs for active trading strategies and make the assumption that the mutual funds are no-load, are available NTF, and have no holding period restrictions.

The reflexive notion that ETFs cost less, simply based on their low expense ratios, and are more cost-effective than mutual funds, is not entirely true. In addition to an expense ratio, there are other considerations that investors should consider when making an informed choice between ETFs and mutual funds—including spreads.

## I. Explicit Versus Implicit Costs

To understand the difference between ETFs and mutual funds, there are generally two key points against which to judge cost: explicit versus implicit costs; and the cost of holding versus the cost of trading.

#### Explicit costs are costs that are known in advance:

**Expense ratio**—Mutual fund and ETF annual fund operating expenses (the "expense ratio") are published in a fund's prospectus. The expense ratio helps describe the annualized cost of owning fund shares—this includes management fees, distribution [and/or service] (12b-1) fees, and other expenses that are deducted from a fund's assets or charged to all shareholder accounts. The expense ratio does not include shareholder fees, such as sales charges, redemption fees, exchange fees, and account-related fees.

**Brokerage commission**—The commission is the fee paid to a broker to facilitate a purchase or sell transaction. Many mutual funds are available with no brokerage commission or NTF. While brokerage costs used to be a contributing cost to trading ETFs, most ETFs are now available without a transaction fee. Investors should check to ensure that their brokerage firm does not charge commissions for trading ETFs.

#### Implicit costs are costs that are not known in advance:

**Bid/ask spread**—ETFs are bought and sold on an exchange and are quoted with a bid/ask spread—or the difference between the ETF's current bid and ask price, which represents the cost for selling and buying the ETF. During times of market stress, bid/ask spreads may widen. Mutual funds are bought and sold at the same price, the net asset value (NAV).

**Premium/discount**—For both ETFs and mutual funds, an NAV is published at the end of the day. With mutual

funds, this is the price at which investors buy or sell, and there is no premium or discount. When trading on an exchange, ETFs do not necessarily trade at NAV. During the day, the price of an ETF is based on its particular supply and demand, and could be trading at a premium or discount, which means it is trading higher or lower than its underlying NAV. For the most part, ETFs trade near their underlying value, except during periods of market dislocation in which an ETF's market price can vary widely from its NAV. Investment returns for tactical investors can be eroded over time if an ETF is consistently bought at a premium and sold at a discount. This is a potential implicit cost that investors should be aware of, but will not be reflected in the examples shown.

**Shareholder activity**—When shareholders buy or sell a mutual fund, the mutual fund needs to stay fully invested and buys and sells investments within the fund. This causes trade activity within the fund and represents an implicit cost in owning mutual funds. This type of cost is also applicable to ETFs that have a cash creation/redemption process.

For the most part with mutual funds, expense ratios are typically the largest component of ongoing costs. Some mutual funds may also have transaction fees if they are not bought and sold directly through the mutual fund provider or on an NTF platform. Some may also be subject to holding period penalties. There are other mutual fund fees that investors should understand before investing—these include class-specific charges such as sales charges, redemption fees, exchange fees, and account-related fees. For the purposes of this discussion, we are comparing the costs associated with mutual funds (available through an NTF platform, with no sales charges or holding period) versus ETFs that are also available without brokerage or transaction fees.

■ Product characteristic □ Product characteristic in some circumstances (see disclosure)		NTF Mutual Funds	ETFs
	Expense Ratio	Mutual Fullus	
xplicit	Brokerage Commission	_	_ □¹
	Bid / Ask Spread		
	Premium / Discount		
mplicit	Shareholder Activity <sup>2</sup>		
	Tax Implications <sup>3</sup>		

<sup>1</sup> Many mutual funds are available on No-Transaction-Fee (NTF) platforms without brokerage commission. An increasing number of ETFs are also available on NTF platforms. When considering complete ETF costs, verify whether brokerage commissions apply to the applicable ETF. 2 Shareholder activity affects both mutual funds and ETFs, but is lessened with ETFs due to their unique creation/redemption process. 3 If shares of an ETF or mutual fund are sold at a price other than their purchase price, the transaction will typically represent a taxable event. Due to their unique structure, ETFs tend to be more tax-efficient than their mutual fund counterparts because they do not need to sell securities to address shareholder activity.

In contrast, ETF ownership costs are comprised of two elements: (1) the holding cost or expense ratio, and (2) the spread cost. While ETF expense ratios are explicit and easy to quantify, the bid/ask spread can be more challenging to ascertain. Investors need to have a good understanding of how both explicit and implicit costs can affect the cost of ownership.

Implicit costs can be especially problematic for strategies that involve active trading, because people tend to focus on what they know and discount, or ignore, what they have difficulty predicting. In the language of behavioral finance, this falls within the rubric of "availability bias," and refers to the tendency to favor easily accessible information over full information. So, because the expense ratios are explicit and easily available, but

the bid/ask spread is unclear and difficult to predict in advance, many investors focus exclusively on the former. Investors fail to factor the latter costs into their investing and trading strategies up front. Because it can be challenging to identify exact bid/ask spread costs that will be included in the cost of ownership prior to making a trade, the cognitive tendency may be to deal with such unknowns after the fact. These unanticipated costs are where ETF trading can impact an investor's results.

The key idea here is that buy-and-hold strategies and active trading strategies can have different cost profiles when taking into account all of the relevant costs and the trading frequency. In the case of an active trader, bid/ask spreads associated with ETFs can create a drag on investment performance.

## II. The Impact of Spreads in Trading

Bid/ask spreads can be one of the larger costs of ETF ownership, so even ETF investors who can purchase and sell ETFs NTF need to understand the potential impact of this cost component.

Mutual funds are traded at the NAV, and all buyers and sellers pay the same price. By contrast, prices for ETFs fluctuate during the trading day, and the price an investor pays for an ETF can be affected by both the bid/ask spread and any potential gap between the share price and the value of the underlying securities.

**Bid/ask spread**—ETFs trade on an exchange and can be subject to bid/ask spreads, just like individual securities—sellers can sell at the bid price and buyers pay through the

spread and can buy at the offer price. The bid/ask spread on the largest, most liquid ETFs is generally a few basis points. But bid/ask spreads for smaller, thinly traded ETFs can be considerably higher—a percent or two.

The issue of bid/ask spread is particularly important for advisors using ETFs for short-term thematic exposure, sector exposures, or hard-to-access niche markets. Where ETFs act as satellite exposure and may be subject to frequent trading, even small bid/ask spreads can add up quickly. Patient ETF investors who sit on the bid or ask price to get better terms may find that it takes more time to get their trades executed, their trades may not get executed at all, or the market may move away from them.

#### **Calculating Spreads**

Spreads are often quoted in terms of basis points, which is really just another way to express percentages.

1% = 100 basis points

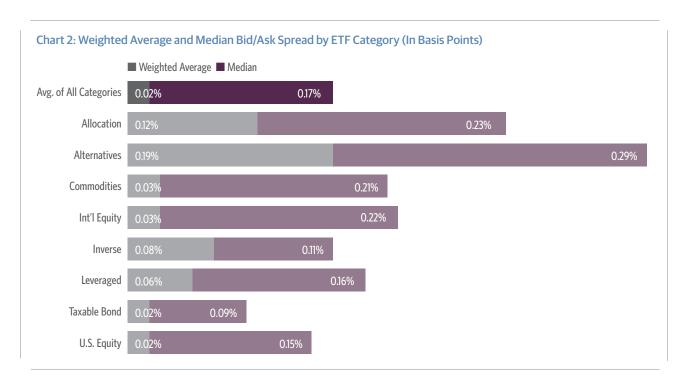
To calculate the basis points spread, simply divide the nominal spread (in dollars and cents) by the midpoint of the spread (also in dollars and cents) and multiply by 10,000.

For example: Consider an ETF with a bid price of \$44.75 and an offer price of \$44.81. The nominal spread is \$0.06 and the midpoint is \$44.78. The spread in basis points would be 0.06 / 44.78, or 0.00134. This is 0.13% or 13 basis points.

As the following chart shows, the weighted average of ETFs trade with a two basis point bid/ask spread (Basis points are another way to express percentages. One percent equals 100 basis points). An investor making six round trips a year (12 trades total) from an ETF to cash would pay 0.12% a year. For a more active trader who makes a weekly round trip trade (100+ trades per year),

there would be a trading cost of 1.04% per year outside of the ETF management fee.

Although at first glance it may appear that trading large and liquid ETFs with a small bid/ask spread may not be enough to move the needle in favor of making the switch from ETFs to mutual funds, consider a very active trader who makes 100 round trips a year.



Source: Bloomberg, Morningstar December 2023. Core methodology reviews bid/ask data at the end of the day when liquidity it at its highest for ETFs. Each ETF is assigned an "average" spread from those data points over the previous quarter. That average is fixed per fund. In asset class or sector buckets, each bucket is then calculated as an average weighted and median spread based on period ending Assets Under Management (AUM).

Weighted Average is the average of a series of data points in which instead of each of the data points contributing equally to the final average, they are weighted by the asset size of each ETF's bid/ask spread. Median is the numerical value separating the higher half of a data sample, a population, or a probability distribution, from the lower half.

#### **Takeaway**

Very liquid ETFs with tight spreads can be affordable choices for investors.

However, if an investor is a more active trader or trading ETFs with wider spreads, an NTF mutual fund may be the more cost-effective choice.

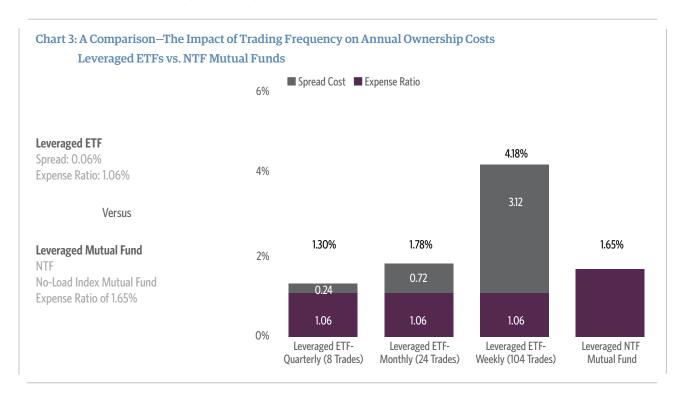
## III. Understanding the Complete Ownership Cost

Many factors can affect total ownership cost for both mutual funds and ETFs. It is incumbent upon investors to make sure they understand how these costs are calculated, understand how these costs might impact investment performance, and weigh the potential benefits and risks against the cost of ownership. Understanding where specific costs are incurred may help investors adjust their strategies to optimize the use of these vehicles.

Some widely held, liquid ETFs have tight spreads and low expense ratios and can be cost-effective investment

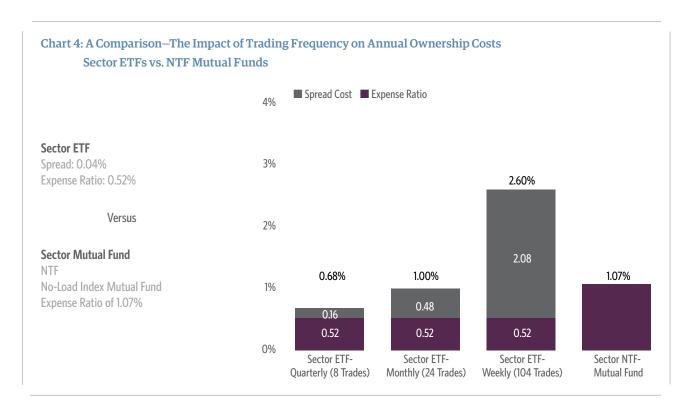
choices compared to mutual funds. However, as Chart 3 indicates, more focused investment strategies, such as leveraged, inverse, and sectors, can have wider spreads and a tradable NTF mutual fund may be the better choice. In the examples below, a comparison of ETFs vs. NTF mutual funds is shown for three focused strategies (leveraged, inverse, and sectors) in three different trading scenarios in which an investor always sells one fund to buy another. Seeing how spreads impact total ownership cost for ETFs in active trading strategies may be surprising.

**Leveraged.** Chart 3 compares a hypothetical scenario of trading a leveraged tradable NTF mutual fund (expense ratio of 1.65%) vs. the average leveraged ETF (spread of 0.06%<sup>2</sup> and expense ratio of 1.06%<sup>3</sup>) based on three trading frequency scenarios—quarterly round trips (eight trades), monthly round trips (24 trades), and weekly round trips (104 trades). In this example, the ETF is the most cost-effective choice for quarterly trades, while the mutual fund is the most cost-effective choice for monthly and weekly trades.



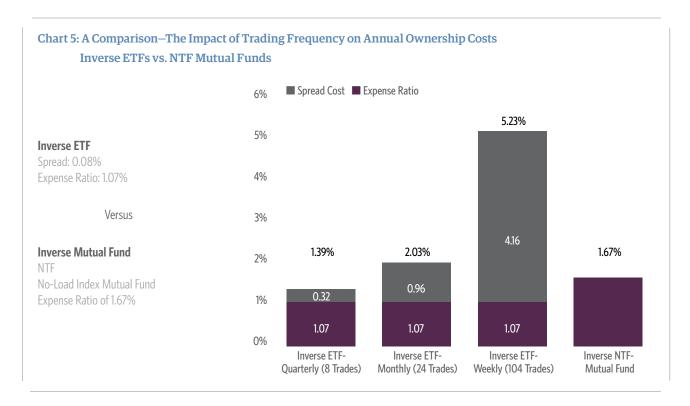
This example is hypothetical and for illustration purposes only. It is not meant to represent any particular fund. 1 Average leveraged mutual fund expense ratio is 1.65% as of December 31, 2023 per Morningstar. 2 ETF industry weighted average spread for leveraged ETFs is 0.06%. Source: Bloomberg, December 2023. 3 Average leveraged ETF expense ratio is 1.06%, Source Morningstar December 2023.

**Sector.** Chart 4 compares a hypothetical scenario of trading a tradable NTF sector mutual fund (expense ratio of 1.04%<sup>1</sup>) vs. the average sector ETF (spread of 0.04%<sup>2</sup> and expense ratio of 0.52%<sup>3</sup>) based on three trading frequency scenarios—quarterly round trips (eight trades), monthly round trips (24 trades), and weekly round trips (104 trades). In this example, the ETF is the cost-effective choice for quarterly and monthly trades, but with more active trading, such as weekly, the mutual fund becomes the cost-effective choice. Take note that the cost difference for monthly trades is very similar 1.00% for ETFs and 1.07% for the mutual funds.



This example is hypothetical and for illustration purposes only. It is not meant to represent any particular fund. 1 Average sector mutual fund expense ratio is 1.07% as of December 2023. Source: Morningstar. 2 Weighted average spread for Sector ETFs is 0.04%, Source: Bloomberg 12.2023. 3 Average sector ETF expense ratio of 0.52%, Source Morningstar December 2023.

**Inverse.** In the example below, the chart compares a hypothetical scenario of trading an inverse tradable NTF mutual fund (expense ratio of 1.67%<sup>1</sup>) vs. the average inverse ETF (spread of 0.08%<sup>2</sup> and expense ratio of 1.07%<sup>3</sup>) based on three trading frequency scenarios—quarterly round trips (eight trades), monthly round trips (24 trades), and weekly round trips (104 trades). In this example, again, the inverse ETF is the cost-effective choice for quarterly trades (1.39% vs 1.67%), but with more active trading (monthly and weekly), the inverse mutual fund becomes the cost-effective choice.



This example is hypothetical and for illustration purposes only. It is not meant to represent any particular fund. 1 Average NTF tradable inverse mutual fund expense ratio is 1.67% as of December 2023 per Morningstar. 2 Weighted average spread for Inverse ETFs is 0.08%, Source: Bloomberg, December 2023. 3 Average inverse ETF expense ratio of 1.07%, Source Morningstar December 2023.

## IV. Ownership Considerations for Active Investors

When determining whether an ETF or mutual fund is more suitable for your portfolios, consider all costs (implicit and explicit). Many different variables can factor into the total cost of ownership: e.g., number of trades, ETF price, commission costs, spread, and dollar amount invested. With so many variables, there are no set rules, but here are a few things to consider:

#### **Expense Ratio**

Expense ratios do not represent the entire cost of ownership for either an ETF or a mutual fund. An investor should understand the complete ownership cost of an ETF or mutual fund before making any decision.

#### **Brokerage Commission**

While most mutual funds and ETFs are now available without brokerage commissions, investors should verify that there will be no transaction costs or understand the nature of the costs if commissions are relevant.

- An investor who pays a flat commission per trade with an ETF should consider the impact the size of a trade can have on costs and if it would be more advantageous to utilize an NTF mutual fund instead.
- An investor who pays a per-share commission with an ETF should consider the impact the value per share can have on costs and if it would be more advantageous to utilize an NTF mutual fund instead.

#### Bid/Ask Spread

- An investor who is more strategic and doesn't rebalance very often may be better off trading ETFs vs. mutual funds. However, the more active the investor is, the more costly it may be to own ETFs (even the most liquid ETFs) versus mutual funds.
- Active investors who use ETFs with a wide bid/ask spread may be better off using mutual funds even if they only trade several times a year. For investors who do not invest in the above scenarios, or those who have

- a more strategic buy-and-hold investing strategy, ETFs may be the better choice.
- Bid/ask spreads tend to widen when there is less trading volume or higher market volatility. ETF investors should be mindful of wider bid/ask spreads near holidays or when volume is lighter. Mutual fund investors are not subject to bid/ask spreads.

#### Premium/Discount

Mutual funds trade at NAV, while ETFs may trade at a premium or discount to their NAV. Investment returns may be reduced if an ETF is consistently bought at a premium and sold at a discount. In times of market stress, ETFs generally trade further away from their NAV.

#### **Number of Trades**

If investors make more than 10 round trip trades per year, they should consider using NTF mutual funds over ETFs.

#### **Market/Limit Orders**

A limit order allows investors to buy or sell shares at a specific price or better, while a market order allows investors to purchase shares immediately at the next available price. For ETF investors, market orders enable trades to be executed quickly, but may result in the traded ETF's price differing substantially from the quoted market, especially for large orders. In general, best practice for ETF trading is to use limit orders, which give investors more control over execution.

For investors who do not invest in the above scenarios, or those who have a more strategic buy-and-hold investing strategy, ETFs may be a better choice.

In addition to reducing market impact, they may help buyers avoid both price spikes and sudden market drops. However, with a limit order, there is no guarantee that the entire ETF trade will get filled at the limit price. In contrast, a large trade in a mutual fund will be fully executed at the same NAV.

## V. Conclusion

While ETFs may offer specific benefits to certain kinds of investors, they may not be right for every situation, and may not be suitable for every investment objective or strategy. Intra-day trading does not in itself guarantee better or more efficient performance. Low expense ratios can lull investors into a false sense of security about the total cost of their investment program, tempting them to trade more often, where hidden costs can have a dramatic impact on investment performance.

Simply focusing on the "race to zero" in expense ratios and commission-free ETFs is an understandable

cognitive bias, but it can blind investors to costs associated with bid/ask spreads, and departure from NAV, hence masking the true cost of ETF usage. It is up to each investor to include both explicit and implicit costs into the due diligence process—looking at the wide range of trading factors that can increase cost. An active ETF investor should make sure that trading profits exceed any potential additional costs. In doing so, investors may well find that—despite potentially higher expense ratios—commission-free and NTF tradable mutual funds may be a more cost-effective and efficient option.

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## **Appendix**

#### Formulas To Calculate Ownership Cost

The formulas for calculating ownership cost are fairly straightforward. However, these formulas do not account for potential market impact of large trades, fluctuations in market pricing for ETFs (i.e. premiums/discounts), or other unpredictable costs.

These formulas also assume that the mutual fund is noload, with no commissions. If the fund had a load, then the public offering price would need to be considered vs. only the NAV.\*

#### **ETF Calculation**

Holding Cost (Expense Ratio) + Spread Costs (Bid/Ask Spread)

#### **Mutual Fund Calculation**

Holding Cost (Expense Ratio)

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<sup>\*</sup> Public offing price (POP)- The price at which an investor may buy shares of a mutual fund. A mutual fund POP is equal to Net Asset Value (NAV) plus the load, if any. As with the net asset value, the public offering price (POP) will typically change on a day to day basis. Net asset value- The dollar value of a single mutual fund share, based on the value of the underlying assets of the fund minus its liabilities, divided by the number of shares outstanding. Calculated at the end of each business day.

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Risk Considerations: Inverse and leveraged funds are not suitable for all investors. • These funds should be utilized only by investors who (a) understand the risks associated with the use of leverage, (b) understand the consequences of seeking daily leveraged investment results, (c) understand the risk of shorting, and (d) intend to actively monitor and manage their investments. •The more a fund invests in leveraged instruments, the more the leverage will magnify any gains or losses on those investments. •Inverse funds involve certain risks, which include increased volatility due to the funds' possible use of short sales of securities and derivatives, such as options and futures. •The funds' use of derivatives, such as futures, options, and swap agreements, may expose the funds' shareholders to additional risks that they would not be subject to if they invested directly in the securities underlying those derivatives. •Shortselling involves increased risks and costs. You risk paying more for a security than you received from its sale. •Leveraged and inverse funds seek to provide investment results that match the performance of a specific benchmark, before fees and expenses, on a daily basis. Because the funds seek to track the performance of their benchmark on a daily basis, mathematical compounding, especially with respect to those funds that use leverage as part of their investment strategy, may prevent a fund from correlating with the monthly, quarterly, annual, or other period performance of its benchmark. Due to the compounding of daily returns, leveraged and inverse funds' returns over periods other than one day will likely differ in amount and possibly direction from the benchmark return for the same period. For those funds that consistently apply leverage, the value of the fund's shares will tend to increase or decrease more than the value of any increase or decrease in its benchmark index. The funds rebalance their portfolios on a daily basis, increasing exposure in response to that day's gains or redu

Shares of mutual funds are not deposits or obligations of any bank, are not guaranteed by any bank, are not insured by the FDIC or any other agency, and involve investment risks, including the possible loss of the principal amount invested.

ETFs may not be suitable for all investors. •Investment returns and principal value will fluctuate so that when shares are redeemed, they may be worth more or less than original cost. Most investors will also incur customary brokerage commissions when buying or selling shares of an ETF. •Investments in securities and derivatives, in general, are subject to market risks that may cause their prices to fluctuate over time. •ETF shares may trade below their net asset value ("NAV"). The NAV of shares will fluctuate with changes in the market value of an ETF's holdings. In addition, there can be no assurance that an active trading market for shares will develop or be maintained.

As with any investment, you should consider how your investment will be taxed. Investors should consult their own tax professional about the tax consequences of an investment as Guggenheim Funds Distributors, LLC does not offer tax advice.

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