

Convexity Maven

...it's always about character

A Commentary by Harley Bassman

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"Looking Under the ETF Hood"



The concept of “pooling assets” for retail investors (whom I refer to as civilians) was pioneered in Amsterdam in 1774 with a resemblance to a Closed-end Fund.

This was modernized in 1924 via the Massachusetts Investors Trust (now MFS Investment Management) in Boston as an Open-end mutual fund.

The stock market crash of 1929 motivated Congress to create the SEC in 1933 and soon after the Investment Company Act of 1940 (the Forty Act) to establish fund transparency, disclosure rules and regulatory oversight.

Open-end Mutual funds such as Fidelity, Vanguard and Dreyfus rapidly expanded in the 1970s as Boomers searched for professional investment vehicles. However, investing in these funds was cumbersome and fee heavy.

But the true paradigm shift was the 1993 creation of Exchange Traded Funds (ETFs) which democratized finance so civilians could easily and inexpensively invest like the professionals.

Today we look under the hood of ETFs to avoid pitfalls and improve selection.

Modern Pooled Investing

The era of **Open-end** Mutual funds peaked in the 1980s as Fidelity's Magellan fund, managed by Peter Lynch, grew from \$18mm in 1977 when he became its manager to \$14bn when he retired in 1990.

Magellan, the best-known actively managed fund, was not only the market's largest fund, but also its best performing with a 29.2% annual return during Lynch's tenure versus an S&P 500 Index return of 15%.

Unfortunately, entering and exiting Magellan was bothersome. An investor had to fill out a sheaf of forms and could only buy or sell once a day at the 4:00pm closing price (Net Asset Value – NAV). Moreover, one had to pay a 3% "load" (commission) upon purchase and then pay an annual management fee of 74bps.

Clearly, this was a worthwhile effort given the results; but this cost structure became common for funds that generally offered an inferior performance.

The **Closed-end** fund (CEF) offered exchange trading liquidity as investors could buy or sell at any time during the day; but still with an expensive fee profile.

Aside from the frequent use of leverage in CEFs, which elevated their risk, their (continuing) structural flaw is that there is no mechanism to maintain the relationship between their market (trading) price and their NAV.

Most CEFs trade at a discount to their NAV, sometimes as much as 20%. Worse still, in a fast market that gap can be even wider as market makers struggle to tap the liquidity of the underlying CEFs assets.

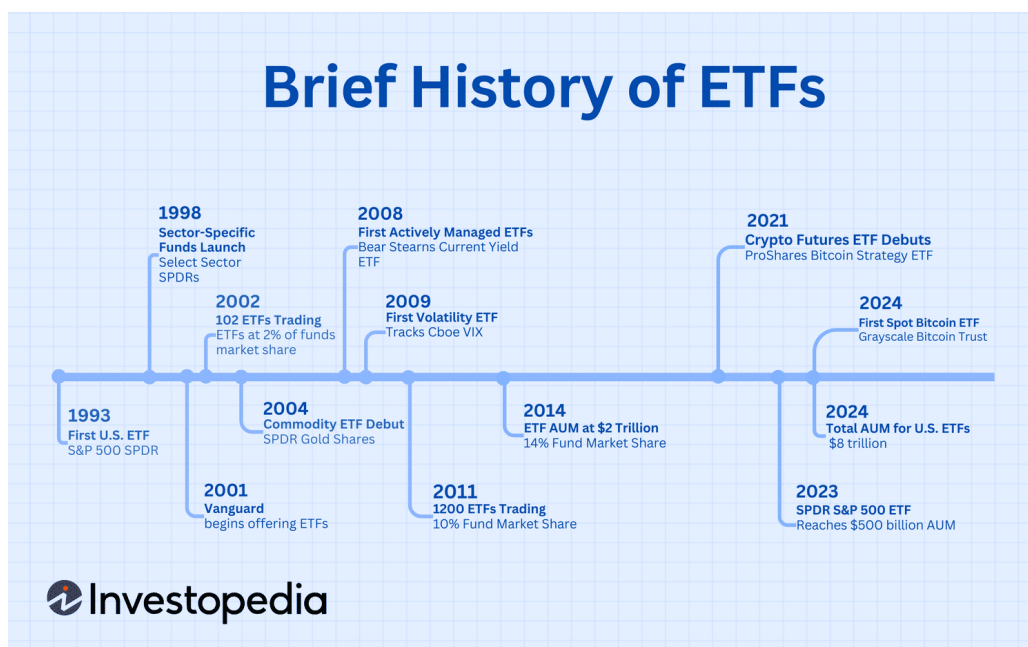
These handicaps limit their use by institutional investors and thus reduce their liquidity despite having an exchange listing.

The introduction of **Exchange Traded Funds** (ETFs) in 1993 was a true paradigm shift as it resolved most of the deficiencies of pooled investments.

The SPDR S&P 500 ETF (SPY - affectionately known as "Spider") was introduced on January 22, 1993, as a market cap-weighted Index fund.

Until recently it was the largest ETF as measured by Assets Under Management (AUM) and is still the most active of all ETFs trading over \$60 billion daily.

It was eclipsed in size by Vanguard's VOO (which is functionally identical) with only a 3bps management fee versus SPY's 9bps; as such, VOO is geared for "buy and hold" investors while SPY is for active Index traders.



There are now more ETFs (~4,400) than listed single-name stocks (~4,000) as ETFs have resolved most of the significant pooled investment vehicle hurdles:

- 1) High Liquidity – listed on an exchange
- 2) Easy access – no applications to submit
- 3) Low Fees – no purchase commission (“load”) and often lower management fees
- 4) Nearly real time transparency – daily disclosure of assets
- 5) Minimal spread between trading price and NAV

This final point of keeping the trading price of the ETF close to the NAV is crucial to their success; so, let’s take a closer look at the magic of ETFs.

A Tour of the ETF Sausage Factory

Definitions:

ETF Manager: Designs and issues the ETF, manages its trading strategy as well as the Creation and Redemption of ETF shares.

Market Maker: The entity that posts bids and offers on an exchange to facilitate the trading of the ETF

Authorized Participant (AP): The entity that is permitted to work directly with the ETF manager to buy or sell ETF shares for cash or “in kind” securities.

Note: A market maker is almost always an AP, but an AP does not have to be a market maker.

The process to **Create units (CU)** or **Redeem units (RU)** helps keep the value of the ETF close to the Net Asset Value (NAV) of the ETF's holding.

An **in-kind** swap is when an AP delivers or receives securities to create or redeem an ETF; this is prevalent for most vanilla index ETFs.

The ETF process

ABC is an ETF where one share of ABC owns five shares of XYZ company.

Each share of XYZ trades at \$10, and thus each share of ABC is worth \$50.

Ten investors each buy 100 shares of ABC at \$50 each (\$5000) on the exchange from a market maker (who is also an AP). On the settlement date the market maker will receive \$50,000 from the ten buyers and will need to deliver 1000 shares of ABC back to them (which is functionally 5000 shares of XYZ).

If the market maker does not own the 1000 shares of ABC, they will either have to short ABC, or more likely, go to the ETF manager to create the shares.

To do this, on or about 2:00pm the AP will call the ETF manager and ask them to **Create (CU)** 1000 shares of ABC. To create the 1000 ABC shares, the AP will either deliver 5000 XYZ shares to the ETF manager for an **"in kind"** swap, or the ETF manager will need to go into the market and buy 5000 shares of XYZ.

In the latter case, the AP will pay the Net Asset Value (NAV), which is the closing price of XYZ, to the ETF manager who will deliver 1000 shares of ABC.

Without an "in kind" swap, the process can still be rather smooth if all the assets in the ETF trade on an exchange so the ETF manager can place a "market on close" buy order. In this manner, there is no slippage between where the ETF manager buys the 5000 XYZ shares and the (closing) NAV price they sell the 1000 ABC shares to the AP.

The reverse process is a trading mirror. Assume one of the prior buyers wants to sell. They sell their 100 shares to the market maker on the exchange at the market price (\$50 each for this example).

The market maker can keep the shares as inventory, or they can sell them back to the ETF manager via a **Redemption (RU)**.

The AP calls the ETF manager near 2:00pm and indicates they want to redeem 100 shares. After the close, the ETF manager will receive (and extinguish) the shares and give the AP the (closing) NAV value (\$5000) or deliver the 500 XYZ shares via an “in kind” swap.

If the AP wants cash instead of the stock, and the assets of the ETF are listed on an exchange, the ETF manager will place a “market on close” sell order for 500 shares of XYZ. Once again, there is no slippage since the price at which the ETF manager transacts is the same price as the closing price, which defines the NAV.

Without an “in kind” swap, an ETF manager’s skill to buy (CU) or sell (RU) assets near the (closing) NAV is critical since any slippage harms the remaining shareholders (an important topic I will detail soon).

The ability to accomplish this task cannot be overstated in evaluating an ETF’s suitability as an investment.

Notice: The next sections of this commentary are educational and are not intended to refer to, criticize, or allege misconduct by any specific ETF sponsor, adviser, fund, trustee, or management team. Investors should evaluate all funds by reference to their prospectuses, SAIs, holdings, fee disclosures, shareholder reports, and realized total return

ETFs have resolved many problems with pooled investments, both for individual investors as well as Investment Managers; but not all ETFs are well-designed with pitfalls that demand consideration, such as:

- 1) Passive versus Active Management
- 2) Leverage: Linear versus Daily Percentage Return
- 3) Return of Capital
- 4) Fund of Funds
- 5) Opaque Fees
- 6) Underlying Asset Liquidity
- 7) Strategy Drift

Passive versus Active Management

From a legal and regulatory standpoint, the distinction between Passive and Active ETFs hinges entirely on the fund’s investment objective and how the portfolio manager is bound by an Index or Benchmark. These definitions are primarily governed by the SEC under the Forty Act.

An ETF like SPY is clearly a Passive strategy; its goal is to track the total return of the market capitalization weighted S&P 500 on a both a short-term and long-term basis. Passive ETF managers have zero discretion as transactions are effectively automatic - "human hands" do not touch the management of the ETF.

The polar opposite, for example, is the ARK Innovation ETF, an Active "stock picking" strategy with the goal to invest in equity securities of companies relevant to the theme of disruptive innovation.

In between these two is the gray area of systematic or algorithmic ETF strategies. Such might include a covered call strategy where the "roll date" and "strike structure" are well-defined; or a quantitative or momentum strategy with an ex-ante rules-based trading paradigm with little room for discretion.

For these sorts of ETFs, it is important you understand the extent to which "human hands" can transact away from the advertised strategy.

Leverage: Linear versus Daily Percentage Return

As detailed in "[Leverage is NOT a four-letter Word](#)", January 23, 2023, leverage is not inherently bad, but it can add risks which may be unappreciated. However, used properly, leverage can significantly improve a portfolio's risk and return.

For our purposes, let's define **linear leverage** to be the ratio of the Assets owned to the Capital invested in the portfolio; and let's keep it simple for now and ignore the borrowing cost required to gain leverage (more on this later).

Consider a portfolio manager who has \$2000 of cash in an account and buys one ounce of Gold for \$4500. If Gold rises by \$500 to \$5000, that's an 11.1% increase in the asset, but a 25% return on \$2000 of Capital in the account. And if Gold declines by \$500 the next day, the investor is back to his initial state.

This is a "linear" return where the investor is 2.25 times "levered", which is terrific on the way up, and a bother if the asset declines; and because it offers a linear return, such an ETF can be used for longer-term buy and hold strategies.

There are many ETFs that use linear leverage which can allow an investor to avoid personal margin debt or opening a separate futures account.

This sort of leverage is common in "stacked-return" ETFs that may have \$100 of Capital which is used to buy \$90 of SPY and \$50 of TY 10yr futures contracts to mimic the "risk-parity" strategy made famous by Bridgewater Associates.

In contrast are the leveraged “**daily percentage return**” ETFs that offer two or three times the daily movement in the assets. The problem is that the underlying math of the strategy creates a Negative Convexity profile.

Consider an asset with a price of \$100, which rises by 20% (\$20) to a price of \$120. On the next day, its price drops by 20% (\$24) to a price of \$96.

Despite equal moves in percentage terms, **the dollar price moves differ**.
Over time this process will slowly grind such a strategy to zero.

Notice the **-chanh xanh line-** price of a Sector Index exhibiting significant volatility versus the **-mau tim line-** price of a three-times daily return ETF. Notice how the Negative Convexity of this strategy eats away its value.



I will not say that the ETF managers of such risk profiles are evil doers as they are offering an easy and liquid manner to achieve short-term leverage without the direct cost of margin or its limitations.

Daily percentage return ETFs should only be used for near-horizon trading, and never as a buy and hold investment.

Return of Capital

ETF managers recognize the “eye candy” of a product that offers double-digit income and often count on that as a lure for their ETFs. However, it is imperative one look under the hood to ensure the strategy is creating such income, as opposed just returning a portion of your investment.

Note: For this section I will ignore the tax implications of a Return of Capital

Consider an ETF purchased for \$20 which consistently pays 20c a month (\$2.40 per year) for a 12% distribution yield.

If the investment strategy of the ETF truly produces \$2.40 annually, then all else equal, one will receive the income, and the price of the ETF will remain at \$20.

However, if the investment income of the strategy is only \$1.32 (6.6%) and the ETF still distributes \$2.40, then all else equal, the ETF will trade at \$18.92 as the extra \$1.08 is a “return of capital”, a portion of your original investment.

This is a mathematical truism - if the “economic yield” of the strategy is less than the distribution, then the NAV must decline by the difference. So, in the latter example, the **“total return”** (price movement plus distribution) would be 6.6%, the same as the economic yield of the strategy inside the ETF.

Separately - ETFs are required to distribute most realized gains. If an ETF does not do “in kind” creations and redemptions, you can be hit with an unexpected tax bill at year end. As such, avoid buying ETFs late in the year with realized gains that have yet to be distributed; you will owe the full year’s taxes.

Fund of Funds

One ETF buying another ETF is not wrong on its face, it completely depends upon why it is being done and is the fee structure fair.

For example, if an EFT manager wants to offer a product that combines US Treasury Inflation Protected Securities (TIPs) with other derivative products, it is totally reasonable to use a huge TIPs Index ETF with a 3bps fee instead of the manager (expensively) trading individual bonds.

Similarly, an ETF that offers exposure to the S&P 500 (along with other risk vectors) should use Vanguard’s VOO instead to trading 500 tickers by hand.

However, this proposition becomes a bit murky when the ETF manager buys their own funds since the trading management is under the same umbrella.

There can be small efficiencies for the ETF manager to trade within a single legal entity, and to resolve possible conflicts the manager may offer a “fee waiver” for the Fund within a Fund.

The rules governing such practices are squishy since there can be reasonable exceptions, but one should be mindful when ETFs buy their own funds.

Opaque Fees

A Fund of Funds without a fee waiver is a special case of an opaque fee since it is fully disclosed if one looks carefully at an ETF’s holdings. Less transparent is the cost of leverage.

When an ETF does not pay cash for an asset (or return profile), they must borrow the money, either explicitly or implicitly.

The cost of **explicit** borrowing shows up as the interest paid on a **margin loan** which would be disclosed.

A form of **implicit** borrowing occurs when an ETF buys a listed **futures contract** where the borrowing (and other costs) is embedded in the price.

For example, Gold for June delivery recently settled at \$4520, and for December delivery settled at \$4617, a \$97 difference. Since mining is (generally) not seasonal, the difference is the embedded cost of borrowing the \$4520 from June to December as well as the cost of insuring the physical Gold.

Back of the envelope, \$4520 borrowed at 3.75% (Fed Funds) for six months is \$85, plus a 50bps running cost of insurance is \$11, close to the \$97 spread.

Less transparent are the fees embedded in a **Total Return Swap (TRS)**, a popular way for ETF managers to gain leverage and enhance a risk profile.

A Total Return Swap is an agreement between two parties (such as an ETF and a Wall Street firm) where the buyer (ETF) receives the price movement and distributions and pays the seller (Wall Street) an interest rate, **plus a fee.**

A TRS is functionally identical to a futures contract plus the extra fee. Over time, this extra fee will silently erode the performance of the TRS relative to the asset.

Separately, new ETFs can be launched with an introductory fee reduction, the details will be stipulated in its documentation. This is fair as one is taking some risk investing a new ETF; but do take notice of when these fee reductions expire.

Underlying Asset Liquidity

I noted prior that an ETF manager's skill to buy (CU) or sell (RU) assets near the closing NAV is critical since any slippage harms the remaining shareholders; let's demonstrate why this is important.

Harking back to the above, ten investors own 100 shares each of ABC at \$50, and each share of ABC owns five shares of XYZ at \$10.

ABC has 1000 shares outstanding, and the ETF owns 5000 shares of XYZ at \$10 each for a total AUM of \$50,000; the ten shareholders each have \$5000 of value.

One of the investors sells his shares at \$50 (\$5000 total) to a market maker (an AP) who informs the ETF manager they wish to redeem (RU) 100 shares.

It is a volatile day, and the ETF manager clumsily sells the 500 XYZ shares at \$8, thus receiving only \$4000; but XYZ recovers at day's end and closes back at \$10.

The ETF manager is obligated to buy the 100 shares at the closing NAV, which is \$10/share or \$5000 for a loss of \$1000.

The ETF now owns 4500 shares of XYZ at \$10 (\$45,000) less the \$1000 loss results in total fund assets of \$44,000. Dividing \$44,000 by the remaining 900 shares results in a Net Asset Value of \$48.89 per share (with XYZ still at \$10).

Whenever the ETF manager creates (CU) or redeems (RU) shares and trades the underlying assets at price different than the closing NAV, the remaining shareholders pay (or receive) the difference.

ETFs often cushion this risk via adding a creation (CU) or redemption (RU) fee paid by the AP to offset possible slippage; but if the assets trade divergently in a "Hot Market", that may not be enough. This issue was not a problem when ETFs were limited to listed assets which offered a "market on close"; but the use of OTC (not listed) underlying assets need more careful consideration.

Strategy Drift

"Strategy drift" is common for fully discretionary investment vehicles (Hedge Funds) as managers seek to enhance returns by pressing the boundaries of their mandate. But this should not be the case for a well-defined ETF strategy.

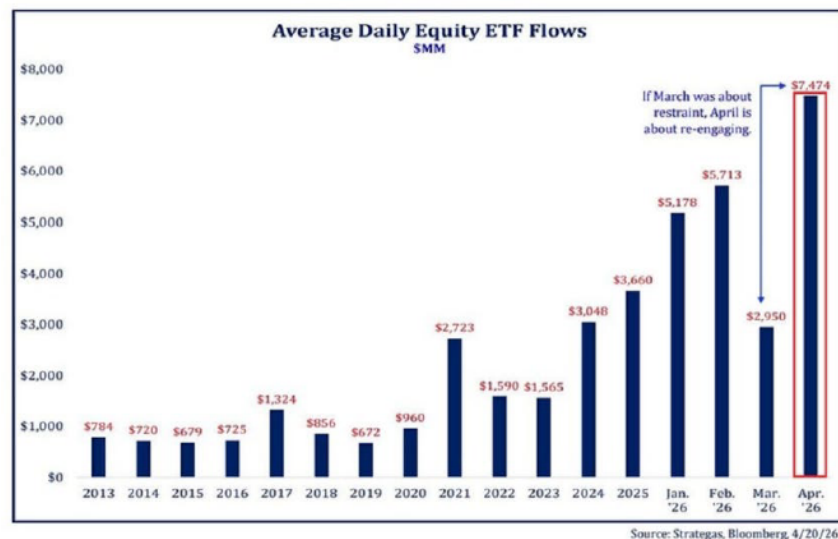
Nonetheless, this does occur at times to enhance performance.

It could be as simple as rolling a covered-call option book a day earlier than advertised, or more challenging such as adding “human hands” to an algorithmic or quantitative investment process. In any case, one should monitor their investments to ensure adherence to the strategy advertised.

Summary

ETF activity has rightfully surged as they have further “democratized” finance.

And their original form as liquid and transparent Index-oriented vehicles required little oversight after the initial due diligence.



However, it is likely not a coincidence that [-sac xanh bar-](#) ETF flows jumped in 2021, soon after the SEC widened the scope of ETFs to allow for derivatives.

Derivatives literally offer a Star Trek-style fourth dimension as portfolios can now be customized to offer almost any risk profile; and often at a reasonable cost.

Some ETF design flaws only become obvious in times of stress, so I urge careful ex ante due diligence. And note that if your ETF distributes more than Junk Bond returns, you may be taking more risk than you expect.

Complex ETFs require more due diligence than plain-vanilla index ETFs because the risks often live in implementation, not ticker-level liquidity or headline expense ratio.

If the **volatility** of the ETF is greater than expected or the **total return** (not distribution) is less than anticipated – Look under the hood.

Macro-economic Comments

The bond market has finally reached "fair value" as the anticipated three FED rate cuts have been dusted. The "old wives'" rule of UST 2yr at FED Funds plus 50bp has been reached with 2s near 4.12% (vs the FED's 3.62% rate).

UST 10yr is circling my "fair value" of 4.35%, and 30yrs are a pre-GFC of 5.0%.

But let's be clear, "fair value" means the center of the distribution, and **markets can rotate viciously** as various opinions come in and out of vogue.

For instance, my good friends [@profplum99](#) and [@EconguysRosie](#) still anticipate much lower yields, while the venerable bond bull Lacy Hunt has joined me and [@biancoresearch](#) on the dark side in his latest missive >>>
<https://hoisington.com/pdf/HIM2026Q1.pdf>

Trump wants to fund a Golden Dome and a Golden Fleet within his proposed 42% increase in the Defense budget (and let's ignore that a \$50,000 Shahed-136 drone can take out a \$13bn aircraft carrier).

Maybe we are not at "war", but this is the definition of a Guns and Butter budget which rhymes with LBJs inflation-pumping fiscal spending.

Notwithstanding that Secretary Bessent is the "smartest guy in the room", the Treasury Department expects to jam 27% of its 2026 debt issuance into short-term T-bills, up from an historical 15% to 20%. This is the sort of Balance Sheet mismanagement that presaged the collapse of Silicon Valley Bank.

I am not calling for the end of civilization; and the US will remain the Global hegemon with the USD as the world's Reserve Currency (if only because there is no "Plan B"). **But a 6% Fiscal deficit will keep inflation well above 2%.**

Simple math: A 4% inflation rate will double prices in less than 18 years. The only protection is nominal Stocks, protected Real Estate, and Gold.

Remember: For most investments, sizing is more important than entry level.

Harley S. Bassman
June 9, 2026

Follow me on Twitter: [@ConvexityMaven](#)
Your comments are always welcome at: harley@bassman.net

If you would like to be added to my distribution, just ping me.

To become better educated on macro-economic fundamentals and policy, I urge you to connect with my good friend, Michael Green, aka, [@profplum99](#).

For reference literature on the financial markets - particularly about options and derivatives - I will immodestly direct you to my educational archive at:

<https://www.convexitymaven.com/classroom/>

If you still have kids in the house, please take a vacation that is more interesting than the Four Seasons, Costa Rica – life is not a dress rehearsal. Turn off the Crackberry (did I just date myself ?) and explore with the family. You don't need to break the bank, rent an RV and see the U.S. We traveled with our four kids on five incredible RV trips.

<http://bassman.net>

Special credit to [Gerard Minack](#), the best macro analyst on the planet.

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