

# INVESTMENTS & WEALTH MONITOR

*A reprinted article from March/April 2020*

## Defined Outcome Investing with Exchange-Traded Funds

*By Wes Mathews, CFA®*



**INVESTMENTS & WEALTH INSTITUTE®**

# Defined Outcome Investing with Exchange-Traded Funds

By Wes Mathews, CFA®

*Editor's Note: The author uses actual products to illustrate how defined outcome strategies work. Investments & Wealth Monitor doesn't endorse any specific products.*

Recently, a new approach to investing has come to market; one that offers defined outcomes on equity markets, similar to the structured note, but in a more efficient manner. Often termed “defined outcome investing,” the basic premise entails the delivery of the upside performance of an equity market to a certain level, with a defined downside protection amount, over a pre-established period. The delivery of defined outcomes on the market is not a new concept, but the vehicles by which these strategies are delivered have broadened, to the benefit of investors.

The majority of portfolio management strategies that exist for the average investor rely upon some level of market speculation. Technical/quantitative analysis, strategic analysis, or any number of more esoteric techniques are what typically form these market opinions. Investors are willing to trade some level of risk for a desired level of reward; however, this trade-off is difficult to quantify ahead of time. Although most strategies seek to match or outperform industry benchmarks, there are a growing number of approaches with the goal of risk management or downside protection. Within this category, only a few strategies let investors know the potential

range of outcomes ahead of time. One possible solution is a structured product, but this does not come without a number of challenges including liquidity, transparency, credit risk, and fees.

## HISTORY OF DEFINED OUTCOME INVESTING

Structured products were introduced in Europe in the 1980s and have grown substantially. Today there are more than \$7 trillion in structured product assets worldwide, with Asian markets leading the way in new flows.<sup>1</sup> The original intent of the structured product was to provide investors access to some of the returns of the equity markets without risking capital to do so (often referred to as a principal protected note). The product designs have since evolved to include exposures that are far more exotic.

More recently, insurance companies have been issuing defined outcome investments of their own, typically referred to as buffered annuities—a version of a structured note that entitles investors to the upside performance relative to a stated benchmark return, up to a cap level, in exchange for a measure of downside protection.

This “protection” is delivered typically through one of two means: a “buffer” or a “floor.” A buffer provides protection against the first X percent of losses, and no protection thereafter; and a floor offers no protection against the first X percent of losses, and provides full protection thereafter.

## THE RISK-REWARD TRADE-OFF

When selecting an investment allocation, there is a trade-off between the amount of risk investors are willing to take and the potential reward they may reap. This is the case with all investments, and the trade-off is difficult to predict because no amount of past performance can indicate what will happen in the future. The common way to address this trade-off has been through modern portfolio theory (MPT)—the idea that allocation of wealth across multiple asset classes provides diversification, and thus a good balance of risk versus reward over time.

Post-financial crisis, however, there has been much debate over the effectiveness of MPT. This is because MPT is reliant on asset classes being non-correlated. Although this may be true in calm rising markets, severe sustained market declines (such as the financial crisis) exhibited that most asset class correlations can in fact move in the same direction (to the detriment of investor wealth). During the financial crisis, some claimed that MPT was broken. In reality, MPT is likely not broken, but perhaps there is recognition that diversification provides better benefits in normal markets than during periods of significant correction. Either way, regardless of how diversified a portfolio may have been leading into the financial crisis, it was difficult to predict how much risk one truly was assuming.

This is where the benefits of defined outcome investing really become evident,

because they are designed to create exposure to equity markets while limiting downside participation over a known period. In other words, defined outcome investments can inform about the reward (i.e., positive market returns up to a cap) and risk (i.e., downside protection level) the investor will experience at an exact point in the future (e.g., 12 months).

## STRATEGY CONSTRUCTION IN AN ETF

In the early days of structured products, notes were available primarily to institutional buyers. In 2018, an efficient retail application of defined outcome investing was introduced to the market by way of the exchange-traded fund (ETF).

A typical defined outcome ETF offering comprises three parts: (1) a long exposure, (2) a buffer or floor, and (3) a “cap.” All these components in the existing ETF offerings are created through the purchase and sale of different options positions. The long exposure uses quite a large portion of the invested assets, but not all. The second leg is a buffer or floor. A buffer is constructed by buying a put spread; i.e., buying a put at one level and selling another put at a lower strike to provide protection between the two strikes. As an example, if the underlying exposure of the fund had a value of 100, a put spread might purchase a put at the 100-strike level and sell a put at the 85-strike level. This would offer a 15-percent buffer of protection and offset losses if the market closed within that range. For a floor product, a put is purchased at the level that matches the desired level of protection. For instance, if the underlying was at 100, a put purchased at 90 would protect the fund from any losses beyond 10 percent, hence the 10-percent floor. These second legs of a defined outcome strategy also use up part of the invested principal. The cost of the first and second legs is typically more than the invested principal. To help pay for this exposure and protection, the funds must give up some of the upside participation by selling a “cap” to help finance the protection that

a buffer or floor provide. This is done by selling a call out-of-the-money (above the current market value) and earning the premium that comes along with it. The sold call will limit the fund’s upside participation to the strike level at which the call is sold. The ETF portfolio manager will sell that out-of-the-money call at as high a level as possible to pay for the protection while offering the investor the maximum market participation over the outcome period.

The product structures that have received the most assets in the ETF space so far have been a 9-percent one-year buffer, a 15-percent one-year buffer, and a 30-percent one-year buffer (-5 percent to -35 percent protection). The caps for these strategies have varied over time, based on the level of equity market volatility during the reset period when a new cap and buffer are established. It is also worth noting that although these are one-year outcome periods, the ETF itself does not cease to exist after the one-year period. Rather, the fund will roll into a new basket of options at the end of the outcome period, creating a new one-year buffer and cap at that time. This will allow investors to hold the ETF as long as desired and know that they will receive a new buffer and cap on an annual basis.

ETF issuers use exchange-traded Cboe FLEX options<sup>2</sup> to construct defined outcomes on equity markets. Cboe FLEX options trade on an exchange like any other listed option, except they have the benefit of custom strike prices, maturity dates, and style (American or European). This customization enables the ETF issuer to create and deliver an accurate buffer or floor over a stated outcome period. Recent offerings have been constructed with a one-year payoff period, although, given the customization of FLEX options, shorter or longer periods also are possible, along with varying buffers and multiple liquid indexes (e.g., S&P 500, MSCI EAFE, MSCI EM, NASDAQ 100, Russell 2000).

ETFs focus primarily on standard broad market exposures, but structured products cover a larger variety of exposures. For institutions or investors seeking these more complex payoff structures or exposures, a custom structured note is likely a better solution; but for those seeking typical broad market exposures with a buffer and cap, the new ETF offerings have proven to be an attractive alternative. According to Morningstar, as of December 2019, there was nearly \$4 billion in U.S. options-based ETFs, of which defined outcome ETFs had grown to \$1.7 billion since the first product launch in August 2018. In other words, in 18 months, the defined outcome ETF space nearly doubled the size of the 12-year-old options-based ETF industry.

---

*For institutions or investors seeking these more complex payoff structures or exposures, a custom structured note is likely a better solution; but for those seeking typical broad market exposures with a buffer and cap, the new ETF offerings have proven to be an attractive alternative.*

---

## THE BENEFITS OF DEFINED OUTCOME ETFs

The benefit-rich ETF wrapper solves a number of concerns investors often have expressed about traditional structured notes or insurance products, such as illiquidity, lack of daily pricing, transparency issues, credit risk, and generally high and/or nontransparent fees.

## LIQUIDITY

Liquidity in the structured product space has been a challenge because the secondary market for notes is limited for a retail investor. If the need for liquidity

arises, it usually means going back to the issuing agency and requesting a quote that typically includes an early redemption charge or a penalty.

Relative to the liquidity of a structured product, the daily primary market liquidity of an ETF represents a cost-efficient way for defined outcome investors to enter or exit the market with minimal transaction costs or penalties. This is due in no small part to the ETFs' underlying option contracts, which are tied to liquid indexes—the largest and most liquid indexes in the world. Liquidity also is facilitated through exchange-disseminated intraday options pricing, through an extensive market-maker community.

In addition to being able to create and redeem shares at net asset value in the primary market through block trades called “creation units,” the ETF wrapper also enables trading in the secondary market like any single name stock. Even if the ETFs themselves do not trade, the holdings are valued on a regular basis throughout the day, enabling investors to monitor the value of their defined outcome ETFs.

The use of FLEX options is an aspect of structuring these funds that often raises questions around liquidity. The ability to set custom strike prices as well as custom maturity dates for the options contracts enables ETF issuers to deliver on the stated outcomes the funds aim to produce. Questions usually revolve around how a custom option that is used only by these funds actually can offer liquidity. The answer requires a deeper look into the market-making community. When market makers are facilitating a two-sided market on these FLEX options baskets, they are more concerned with the underlying exposure of the funds than the FLEX options themselves. Market makers will either buy or sell shares of the funds and immediately delta hedge their exposure with the underlying exposure. Take the S&P 500, for example: If the fund comprises a number of FLEX

options, the market maker will calculate the delta of that options package and immediately take the opposing position in the S&P 500 itself. These offsetting positions are typically futures, standard listed options, or other ETFs that track the S&P 500 Index. Because these underlying exposures are some of the most-liquid traded markets in the world, it is not difficult for the market-maker community to hedge itself properly and create incredibly large levels of liquidity.

---

*When buying a note from an issuing bank or an annuity from an insurance company, it can be unclear what the issuer actually is doing with the invested funds in order to provide the stated buffers and caps.*

---

## TRANSPARENCY

Transparency is another significant benefit of the ETF wrapper. When buying a note from an issuing bank or an annuity from an insurance company, it can be unclear what the issuer actually is doing with the invested funds in order to provide the stated buffers and caps. Conversely, an ETF must publish its fund holdings daily, offering a level of transparency that enables buyers to know exactly what they own and provides a clear window into how the defined outcome ETF's payoff profile was constructed.

## CREDIT RISK

There are very few investment choices available to investors that offer a defined outcome with minimal credit risk (save for U.S. Treasuries). This is especially true for equity markets. Defined outcome ETFs address these credit concerns by providing a vehicle where investors have ownership of the underlying assets of the fund. This is in contrast to a promissory

note or contract with an issuing bank or insurance company that relies on the issuer's solvency. As discussed above, these underlying holdings are exchange-traded FLEX options. The Options Clearing Corporation (OCC), which has been deemed a “financial market utility,” backs these FLEX option trades and the Financial Stability Oversight Council has labeled the OCC as “systemically important.”<sup>3</sup> Most consider these classifications to imply a higher credit worthiness of the OCC compared to an issuing bank or insurance company.

## FEES

Like any investment strategy, defined outcome investing does not offer a free lunch. Historically, defined outcome structured products have been sold with either an explicit fee (such as a fund management fee or a sales charge), or an implicit fee (such as a reduced upside cap). Compared to structured products, the defined outcome ETF costs can be significantly lower. However, the potential difference in caps, buffers, outcome periods, and underlying exposures can make it difficult to compare one product to another directly. It is also worth remembering that the costs are not always stated explicitly but sometimes as an opportunity cost in a lower upside cap.

## RISKS OF DEFINED OUTCOME

Although the ETF wrapper and use of FLEX options have eliminated most of the traditional risks of defined outcome investing, there are a couple risks to consider. The structuring of defined outcome payoffs inside of an ETF is more operationally complicated than a typical ETF. Thankfully, the first issuer in this space has completed multiple one-year outcome periods and shown success in delivering the stated returns, net of fees, over the outcome period. As the space grows and new competitors enter the market, it is worth noting that the ability to deliver the defined outcome objective is not necessarily as straightforward as it may seem and could create some risk of not meeting the fund objectives.

Other risks with the use of defined outcome would be setting proper expectations for investors. It is important that investors recognize that the stated buffers and caps are applicable for those who owned the funds before the outcome period resets. After that initial reset, an individual's upside cap and remaining buffer will differ from someone who owned the funds on the first day of the new outcome period. Thankfully, tools are available on the ETF issuer website that provide this information on an intraday basis.

Another characteristic to be aware of is that ETF defined outcome funds do not distribute dividends. This is not really an inherent risk but rather something that the investor should know. Even though this can be perceived as a negative, it is really a trade-off in terms of potential performance. The discount flows through the options package by lowering the cost of the long exposure. This lower cost leaves more money for the purchase of the buffer or floor and therefore allows the fund to sell a higher cap (sold call) on the upside. Again, this is not really an operational risk but more of an expectation risk.

**INVESTMENT USE**

Today, investors are buying structured products for many of the same reasons they did in the 1980s, namely preservation of capital in exchange for equity participation with a limit. The ability to know these factors and outcome ranges ahead of time can create an especially compelling investment proposition for conservative investors. These funds have become core holdings for quite a few investors, but the ETF structure has allowed for other uses as well.

Before looking into some of the more nuanced uses, it is worth exploring the interim price movement of these funds when deciding how to implement them in a portfolio. Because these funds are designed to provide the underlying index performance minus a buffer or up to a cap over the full outcome period, it

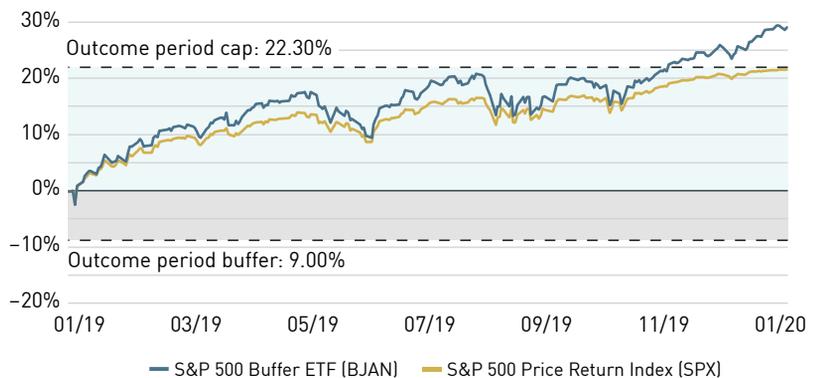
is important to understand how the funds move relative to the underlying during the 12-month period. Because the basket of options has time value remaining until the end of the outcome period (as well as other factors that determine its value), the fund will not track the underlying one-to-one during the outcome period. If the underlying market is down, the fund will not stay at zero; rather, it will also have some losses although typically less than the underlying. This is because even though there is a buffer, if the underlying exposure had losses that exceeded the buffer, the fund would also participate in some of those losses at the end of the outcome period. The chance of this happening is priced into the current value of the basket of options. If the underlying market is up during the outcome period, the fund may or may not rise to the same degree as the underlying during the interim outcome period. It is only at the end of the outcome period that the full potential of the fund is realized. At the end of the period, the fund performance will match the underlying gains up to the cap or losses minus the buffer. Thankfully, ETF issuers have provided helpful tools that show investors the history of price movements relative to their exposures as well

as current caps and buffers for those looking to invest at any point during the defined outcome period.

This interim price movement can create opportunity as well. Some investors will buy a defined outcome fund near the annual reset date (time at which a new buffer and cap is established) to attain the original stated cap and buffer and hold it long-term as it rolls on an annual basis. Other more active investors may purchase the funds later in the life cycle after the underlying investments have appreciated substantially, viewing this as a sort of fixed income alternative. They are looking to collect the accretion of the remaining time value as a fixed income replacement. As an example, if the underlying exposure is up 20 percent, but the fund has a cap of, say, 12 percent, the actual value of the fund with a couple months left until the end of the outcome period might be gains of 9 percent. This would indicate that the fund still has 3 percent of growth left over the remaining outcome period. Some investors have purchased funds at this point with the goal of capturing that remaining growth potential while assuming that the market will not fall more than 8 percent in order to

Figure 1

**ONE-YEAR PERFORMANCE: 9-PERCENT BUFFER ETF (BJAN)**



*Ticker: BJAN. The results shown are historical, for informational purposes only, not reflective of any investment, and do not guarantee future results. Any reference to a market index is included for illustrative purposes only, because it is not possible to directly invest in an index. Indexes are unmanaged, hypothetical vehicles that serve as market indicators and do not account for the deduction of management fees or transaction costs generally associated with investable products, which otherwise have the effect of reducing the results of an actual investment portfolio.*

*The pricing tool above shows the performance of a 9-percent buffer S&P 500 fund (blue line) compared to the S&P 500 Index performance (gold line) YTD for a January based product that resets the buffer and cap annually in the beginning of January.*

achieve that 3-percent growth until the end of the outcome period. It is worth noting that ETF expense ratios are deducted over the outcome period and that investors should keep this in mind when analyzing remaining upside potential. Investors should be aware of whether or not the remaining cap is gross or net of fund fees.

---

*It is worth noting that ETF expense ratios are deducted over the outcome period and that investors should keep this in mind when analyzing remaining upside potential.*

---

Although many investors are taking a buy-and-hold approach in a single fund or spreading allocations among multiple offerings, others are looking to more tactically utilize the funds and rotate into newer offerings on a regular basis to lock in gains or reset their buffers. The current fund issuers are releasing these one-year payoff outcome products on a monthly basis, allowing investors to frequently have an opportunity to deploy new funds without having to wait for the next annual reset on an individual offering or accept the current payoff profile that may be different from the original buffer and cap. Of course, taxes always must be a consideration when implementing a more active approach; investors also must consider the remaining upside or buffer that was foregone by not waiting until the end of the outcome period.

Although there are other risk management strategies in the marketplace, most are heavily reliant on low correlations between asset classes or on actively shifting from one asset class to another to accomplish their stated objectives. Defined outcome products that use options allow investors to select their downside protection levels with

precision. They also allow for true gap risk protection, which is not always present in more dynamic risk management strategies that protect by shifting allocations based on momentum, volatility, or other performance signals. We have seen many risk managers view these as complementary in that sense. For those managing portfolios with some element of risk management, a defined outcome solution is a welcome complement to more dynamic risk management strategies that are more path dependent than explicit.

### CONCLUSION

Defined outcome investing, particularly in an ETF wrapper, has proven to be an attractive option for investors who are concerned with limiting potential losses. This strategy allows investors to maintain exposure to typically riskier equity markets with knowledge ahead of time about the range of potential gains and losses their investments could provide. As we continue to see assets grow in these strategies, we anticipate additional defined outcome solutions to come to market and provide many more choices for investors looking to protect their portfolios. ●

*Wes Mathews, CFA®, is the director of portfolio solutions at Milliman Financial Risk Management LLC. He earned a BA in business/economics from Wheaton College. Contact him at wes.mathews@milliman.com.*

### ENDNOTES

1. Karim Faraj and Abdessamad Khaled, "Sure Time to Grasp the Potential of Structured Products," *Bloomberg* (October 16, 2019), <https://www.bloomberg.com/professional/blog/sure-time-to-grasp-the-potential-of-structured-products/>.
2. FLEXible EXchange® Options (FLEX Options) are customized equity or index option contracts made available by Cboe Options Exchange. FLEX Options provide investors with:
  - The ability to customize key contract terms, such as exercise prices, exercise styles, and expiration dates
  - Virtual elimination of counterparty risk—guaranteed by The Options Clearing Corporation
  - Price discovery in competitive, transparent, auction markets
  - A secondary market for an opportunity to offset or alter positions before expiration

- Independent daily valuation by OCC of prices
  - Availability of daily price and open interest reports
  - The opportunity to trade large size with expanded or eliminated position limits
  - Operational efficiencies of exchange-listed options
3. See "Designated Financial Market Utilities," Board of Governors of the Federal Reserve System, [https://www.federalreserve.gov/paymentsystems/designated\\_fmu\\_about.htm](https://www.federalreserve.gov/paymentsystems/designated_fmu_about.htm); and John Fennell, "The Importance of a Systemically Important Financial Market Utility," Options Clearing Corporation (October 29, 2018), <https://www.theocc.com/about/newsroom/blog/2018/fennell-the-importance-of-a-systemically-important-financial-market-utility.jsp>.

### Disclaimers

The information, products, or services described or referenced herein are intended to be for informational purposes only. This material is not intended to be a recommendation, offer, solicitation or advertisement to buy or sell any securities, securities related product or service, or investment strategy, nor is it intended to be to be relied upon as a forecast, research or investment advice.

The products or services described or referenced herein may not be suitable or appropriate for the recipient. Many of the products and services described or referenced herein involve significant risks, and the recipient should not make any decision or enter into any transaction unless the recipient has fully understood all such risks and has independently determined that such decisions or transactions are appropriate for the recipient. Investment involves risks. Any discussion of risks contained herein with respect to any product or service should not be considered to be a disclosure of all risks or a complete discussion of the risks involved. Investing in foreign securities is subject to greater risks including: currency fluctuation, economic conditions, and different governmental and accounting standards.

The recipient should not construe any of the material contained herein as investment, hedging, trading, legal, regulatory, tax, accounting or other advice. The recipient should not act on any information in this document without consulting its investment, hedging, trading, legal, regulatory, tax, accounting and other advisors. Information herein has been obtained from sources we believe to be reliable but neither Milliman Financial Risk Management LLC ("Milliman FRM") nor its parents, subsidiaries or affiliates warrant its completeness or accuracy. No responsibility can be accepted for errors of facts obtained from third parties.

The materials in this document represent the opinion of the authors at the time of authorship; they may change, and are not representative of the views of Milliman FRM or its parents, subsidiaries, or affiliates. Milliman FRM does not certify the information, nor does it guarantee the accuracy and completeness of such information. Use of such information is voluntary and should not be relied upon unless an independent review of its accuracy and completeness has been performed. Materials may not be reproduced without the express consent of Milliman FRM. Milliman Financial Risk Management LLC is an SEC-registered investment advisor and subsidiary of Milliman, Inc.

Milliman FRM is a Sub-Adviser to the Innovator ETF Trust.



# INVESTMENTS & WEALTH INSTITUTE®

5619 DTC Parkway, Suite 500  
Greenwood Village, CO 80111  
Phone: +1 303-770-3377  
Fax: +1 303-770-1812  
[www.investmentsandwealth.org](http://www.investmentsandwealth.org)

© 2020 Investments & Wealth Institute®. Reprinted with permission. All rights reserved.

INVESTMENTS & WEALTH INSTITUTE® is a registered mark of Investment Management Consultants Association Inc. doing business as Investments & Wealth Institute. CIMA®, CERTIFIED INVESTMENT MANAGEMENT ANALYST®, CIMC®, CPWA®, CERTIFIED PRIVATE WEALTH ADVISOR®, RMA®, and RETIREMENT MANAGEMENT ADVISOR® are registered certification marks of Investment Management Consultants Association Inc. doing business as Investments & Wealth Institute.