Barclays Focus50 Index

(Included as Appendix: Barclays US Low Volatility II Equity Index)

BARCLAYS

The Barclays Focus50 Index is designed to give investors exposure to a dynamic combination of equity and fixed income assets

The index aims to provide stable returns across different market environments by focusing on low volatility[1] stocks and by systematically adjusting its asset allocation on a monthly basis using techniques from the Modern Portfolio Theory and trend investing.

To further control risk, the index aims to limit its annual volatility to a 5% target using a procedure called volatility control.

1. Volatility is a measure of the degree to which the price of an asset fluctuates. Please refer to the Appendix for a more detailed discussion on volatility.

Building Blocks of the Index

For equities, the index provides exposure to an equally weighed portfolio of up to 50 US stocks selected each month that have shown low volatility during the past year. Low volatility stocks are used because academic research has observed that such stocks have historically outperformed broad market benchmarks over the long run with relatively lower risk. The exposure to these stocks is accessed through the Barclays US Low Volatility II Equity Index (the 'Barclays Low Vol Index').

For fixed income, the Index provides exposure to four Treasury indices tracking the 2, 5, 10, and 30-year US Treasury futures, respectively.

Please refer to the Appendix for a more detailed discussion on the Barclays Low Vol Index.

Equities Up to 50 low volatility US stocks	Equities Up to 50 low volatility US stocks
• Barclays US Low Volatility II Equity Index	• Barclays US 2-year Treasury Futures Index • Barclays US 5-year Treasury Futures Index • Barclays US 10-year Treasury Futures Index • Barclays US 30-year Treasury Futures Index

The Asset Allocation Process

The index creates a monthly rebalanced portfolio that combines the equity and fixed income components. This is called the 'Index Portfolio'. The asset allocation of the Index Portfolio is determined in the following two steps.

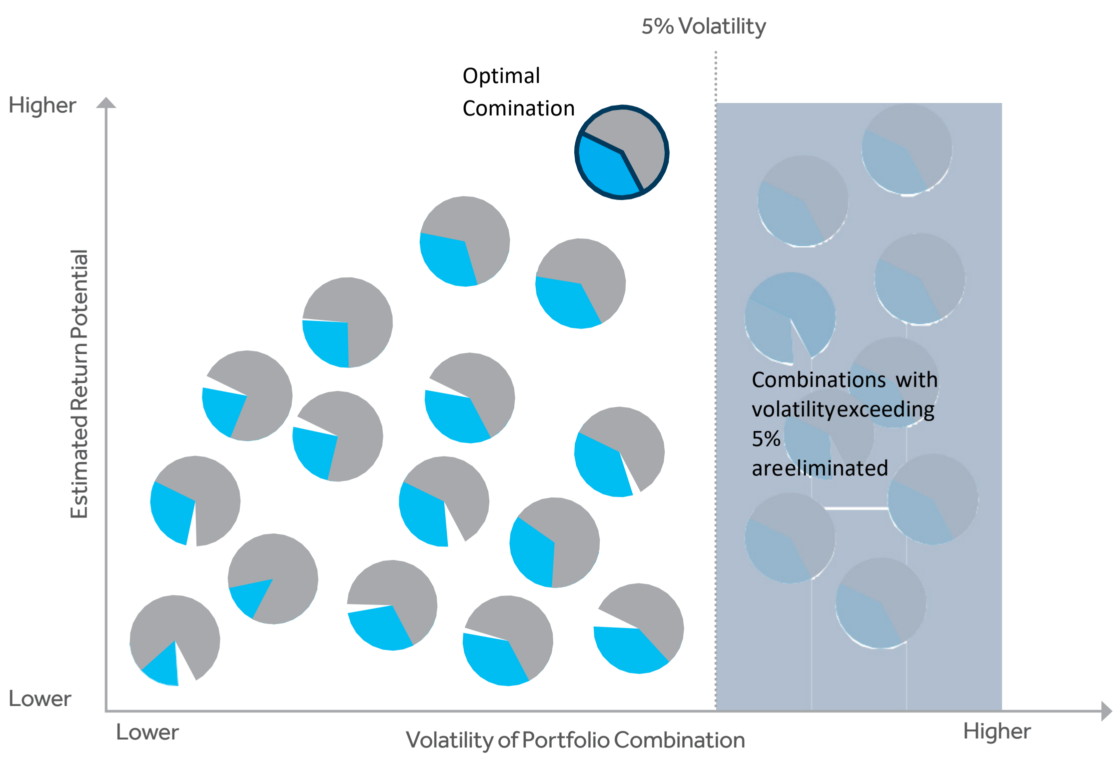
Step 1: Determine optimal weights for equities and fixed income

Each month, the index runs a process called mean-variance optimisation, which aims to determine the optimal weights to be allocated between equities and fixed income.

The mean-variance optimisation process is based on Harry Markowitz's Modern Portfolio Theory, which states that investors can maximise their expected return at any given risk level through diversification. For the Barclays Focus50 Index, the process works as follows:

1. The process considers all combinations of the Barclays Low Vol Index and an equally weighted basket of the four Treasury indices, provided that the combined weight does not exceed 100%
2. The volatility of each combination is calculated, based on how volatile the underlying components have been and how they have moved relative to each other
3. All the combinations whose annual volatility exceeds 5% are eliminated
4. The process selects the combination that has the highest estimated return potential, by assuming that the risk-adjusted returns offered by equities and fixed income will be comparable to each other in the near future. The percentage weights for equities and fixed income in this combination are deemed to be the optimal weights[2].

Illustration of the mean-variance optimisation process



Hypothetical examples are provided for illustrative purposes only and may not reflect actual weights or allocations

2.The sum of optimal weights for equities and fixed income may be less than 100%.

The Asset Allocation Process

Step 2: Adjust the fixed income allocation based on trend

After the optimisation process, the optimal equity weight is fully allocated to the Barclays Low Vol Index, whereas the weight allocated to fixed income may be further adjusted with the goal of mitigating the impact of increasing interest rates. To achieve this, the index calculates a trend signal for the Treasury index basket to determine whether the collective performance of the four Treasury indices has been in a positive or negative trend.

If the trend signal is positive, each of the four Treasury indices will receive 25% of the optimal fixed income weight.

How is the trend signal calculated?

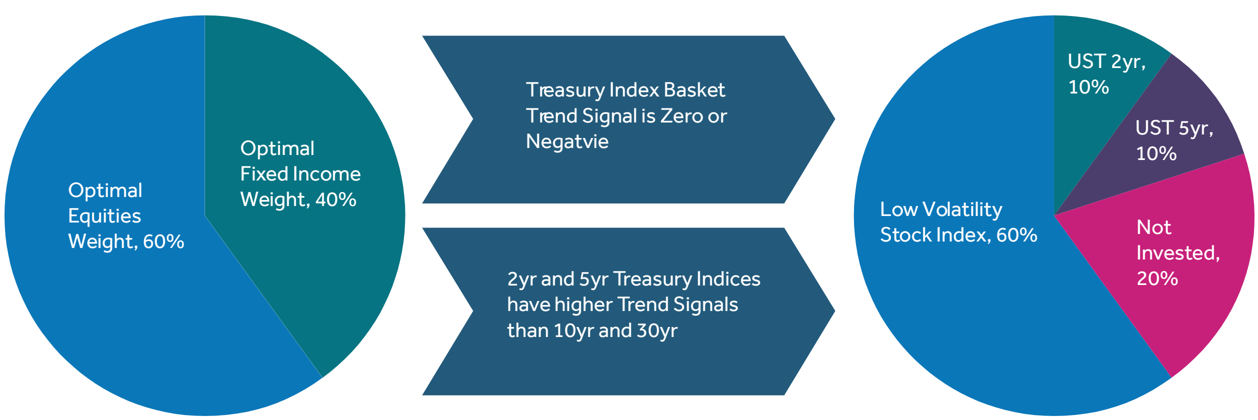
The trend signal is equal to the weighted average of the basket's historical daily returns over a 3-year period, where significantly more weight is given to more recent historical returns than to older data, so that more up-to-date performance has a greater effect on the signal. Specifically, the most recent six months of performance is given approximately the same weight as all previous years.

Hypothetical Example #1:

If the trend signal is zero or negative, only half of the optimal fixed income weight is allocated, whereas the remaining half will be un-invested. The trend signal described above will be calculated for each of the four Treasury indices.

The two indices with higher trend signals will each receive 25% of the optimal fixed income weight, and the two indices with lower trend signals will both receive zero allocation.

Hypothetical Example #2:



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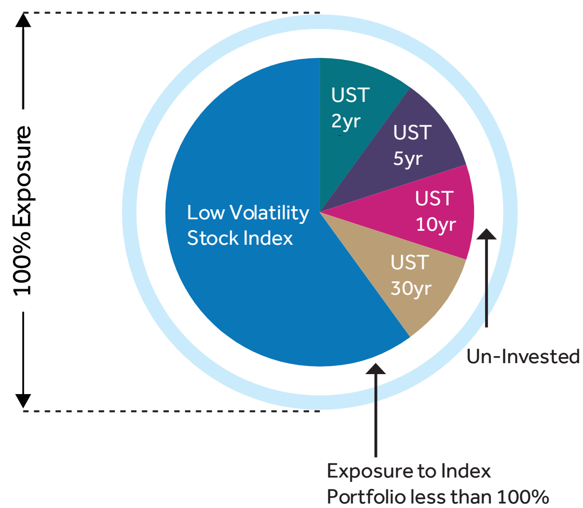
5% Volatility Control

The final step in assembling the Barclays Focus50 Index is applying volatility control to the Index Portfolio. Simply stated, the Barclays Focus50 Index increases or decreases the exposure to the Index Portfolio in order to try and maintain volatility at a constant 5% annualised level.

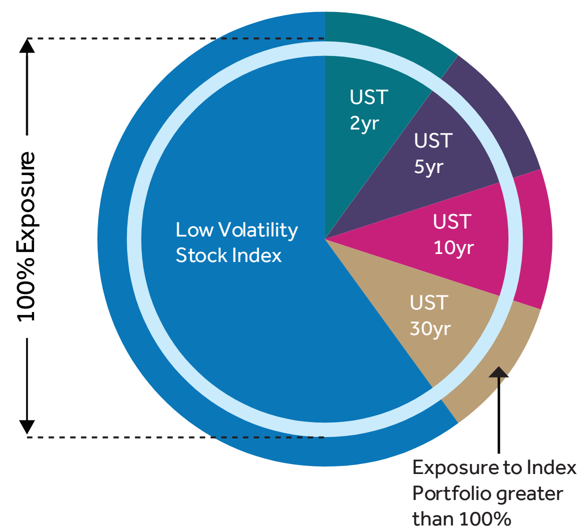
If the recent volatility of the Index Portfolio exceeds 5%[3], the index tends to allocate less than 100% exposure to the Index Portfolio and leave the residual weight un-invested.

If the recent volatility of the Index Portfolio is below 5%, the exposure allocated to the Index Portfolio may exceed 100% and can be up to 150%.

Barclays Focus50 Index



Barclays Focus50 Index



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The exposure level may be adjusted as often as daily in response to volatility change of the Index Portfolio. The more volatile the Index Portfolio has been, the lower the exposure level tends to be, and vice versa. The purpose of dialing up and down an investor's portfolio exposure is to try and keep the level of risk fairly constant as the market environment changes.

In Conclusion..

An investment in the Barclays Focus50 Index involves fees, costs, and certain risks. You should consult with professional advisors before making any investment that is based on the performance of the index.

3. For the purpose of calculating index portfolio volatility in the volatility control procedure, the daily returns of the index portfolio are calculated as the weighted average of component daily returns using weights determined during the most recent monthly rebalance.

Barclays Focus50 Index Risk Factors

An investment in the Index also involves fees, costs and risks. The following is a summary of these fees and costs and certain risks associated with the Index. You should consider the following, and consult with your advisers and read any product documentation carefully, before investing in any financial product based on the performance of the Index.

- The strategy reflected in the Index may be unsuccessful. Historical volatility may prove to be a poor measure of predicting future returns and future volatility and, if it is, the Index portfolio may not be optimised and may perform poorly. The performance characteristics of low volatility stocks on which the Index strategy is based may not persist in the future or may not be reflected in the future to the degree it has been in historical performance or over the time period for any investment in the Index. In addition, the allocation between stocks and Treasury futures reflected in the Index at any time may not be optimised and may underperform a different allocation between the two asset classes
- Because the low volatility stock index includes a limitation on the exposure to any given industry sector, the Index may limit exposure to stocks within a sector experiencing positive performance, which may result in the Index underperforming a similar strategy without this limitation
- Index includes deductions for a fee of 0.5% per year for all component indices and a cost equal to the 1- month US dollar LIBOR rate (before April 28, 2022) or SOFR plus 0.1145% (April 28, 2022 onwards) for the low volatility stock index, which may be increased or decreased in the aggregate by the volatility control mechanism. These deductions will reduce Index performance, and the Index will underperform similar portfolios from which these fees and costs are not deducted
- The volatility control mechanism included in the Index may not achieve its intended goal, and the Index may not achieve its target volatility. In addition, when the Index's exposure to its portfolio is greater than 100%, any negative performance of the portfolio will be magnified and the level of the Index may decrease significantly. In addition, if the volatility control mechanism causes exposure to the Index portfolio to be less than 100%, the difference will be uninvested and will earn no return.

Appendix:

Barclays Low Vol Index

The Barclays US Low Volatility II Equity Index (Barclays Low Vol Index) is designed to provide exposure to U.S. stocks that have shown low volatility during the past year

Academic research[1] has observed that low volatility stocks have historically outperformed broad market benchmarks over the long term with relatively lower risk.

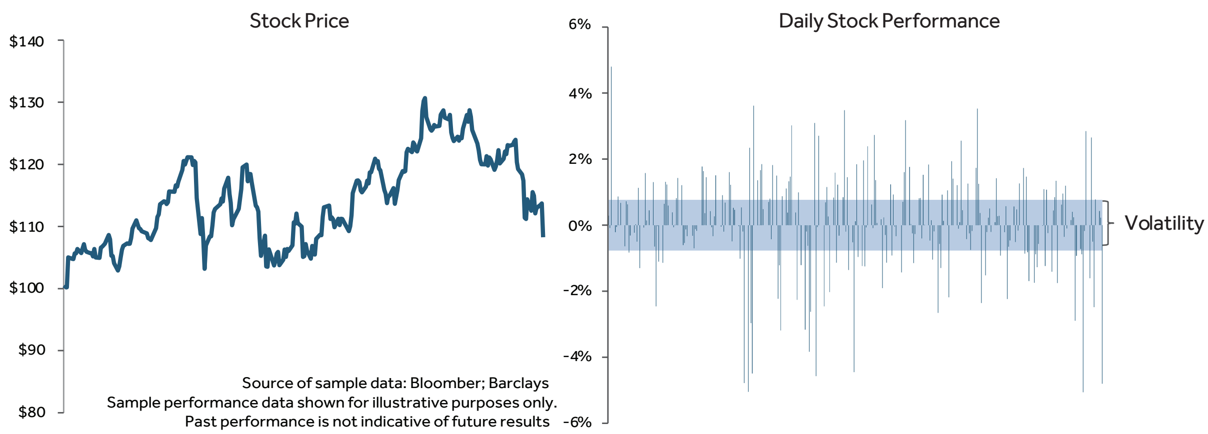
1. Engle and Patton, 2001 – http://www.stern.nyu.edu/rengle/EnglePattonQF.pdf and papers referenced on P239
2. Baker, Bradley & Wurgler, "Benchmarks as Limits to Arbitrage: Understanding the Low Volatility Anomaly", Financial Analysts Journal Jan/Feb 2011 note on p7/8 that "In particular, a benchmark makes institutional investment managers less likely to exploit the low volatility anomaly".
3. Blitz & van Vliet, The Volatility Effect: Lower Risk without Lower Return, Journal of Portfolio Management, April 2007 – Examined global stock returns over 1986-2006 and found not merely the absence of a risk premium, but a negative correlation between returns and increasing risk. Baker, Bradley & Wurgler, Benchmarks as Limits to Arbitrage: Understanding the Low Volatility Anomaly, Financial Analysts Journal Jan/Feb 2011 – Extended their analysis to cover the period of 1968-2008. Their study focused on the US stock market and found, once again, an inverse relationship between risk and return.

What is volatility?

Volatility is a measure of the degree to which the price of an asset fluctuates. It is widely used as an indicator of investment risk.

The Barclays Low Vol Index uses a stock's 1-year historical volatility, calculated by computing the stock's daily performance over the past year and measuring how much the performance has varied – in statistical terms, it is the standard deviation of 1-day returns.

Illustration of how volatility is calculated



1-year Historical Volatility = Annualised Standard Deviation of 1-day Return

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- A low volatility level implies that the stock has had relatively stable performance during this period
- high volatility level implies that the daily performance has varied more significantly and the stock's price has had a tendency to fluctuate more dramatically.

Appendix: Barclays Low Vol Index

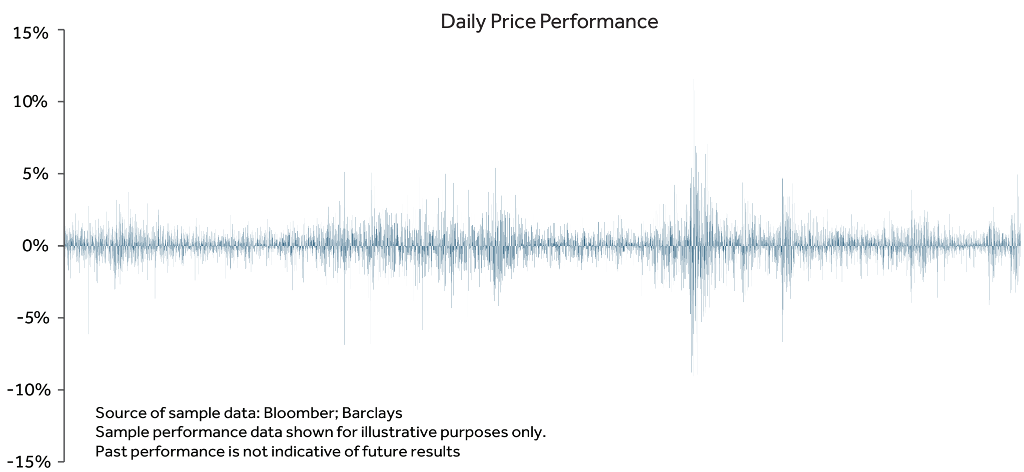
Performance Characteristics of Low Volatility Stocks

Stock price volatility and the performance of low volatility stocks have been studied extensively in finance research.

From a risk perspective, it is well documented that recent volatility levels tend to persist into the short- to medium-term horizon.

In other words, measured by volatility, low-risk stocks in the recent past tend to remain low-risk in the near future.

Illustration for 'clustering' of higher and lower volatility levels over time



From a return perspective, extensive academic literature has documented that stocks with lower recent volatility[1] have historically outperformed their higher volatility peers and broad market indices over the long run. These observations are contrary to the conventional theory that associates higher risks with higher returns. Therefore, this persistent phenomenon is known as the 'Low Volatility Anomaly' of stock market investing.

Researchers have provided numerous explanations for this anomaly, as described below.[1,2,3]

Why does the Low Volatility Anomaly exist? Here are some of the explanations.

- I nvestors overpay for high volatility 'lottery' stocks hoping for large potential gains
- I nvestors avoid low volatility stocks because they would have to leverage up to track benchmark
- I nvestors focus more on outperformance in up markets than on underperformance in down markets, hence overpay for more volatile stocks.

In summary, the underlying rationale is that while conventional theories assume investors always behave rationally and financial markets are efficient, such assumptions may not always hold true in the real world.

1. Engle and Patton, 2001 – http://www.stern.nyu.edu/rengle/EnglePattonQF.pdf and papers referenced on P239
2. Baker, Bradley & Wurgler, "Benchmarks as Limits to Arbitrage: Understanding the Low Volatility Anomaly", Financial Analysts Journal Jan/Feb 2011 note on p7/8 that "In particular, a benchmark makes institutional investment managers less likely to exploit the low volatility anomaly".
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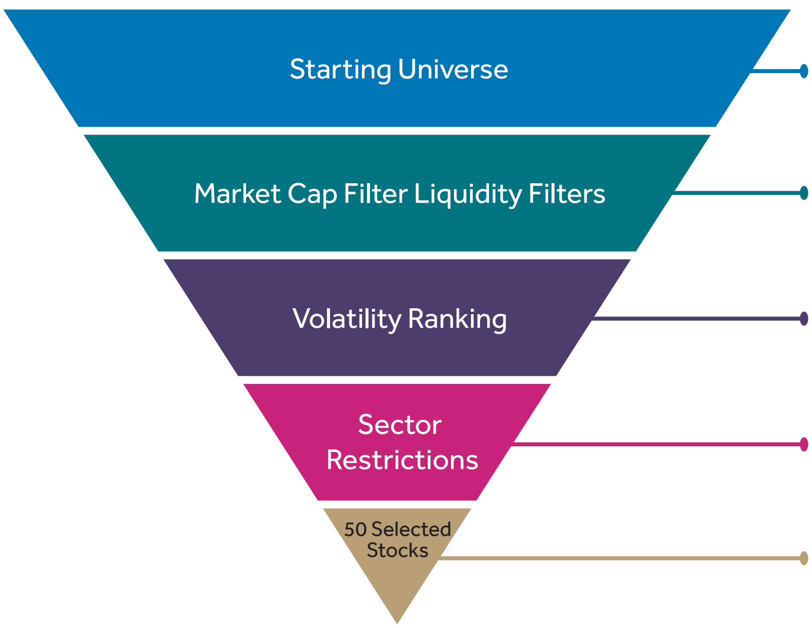
How does the Barclays Low Vol Index select its constituents?

Each month the Barclays Low Vol Index follows a systematic process to select up to 50 stocks as its new constituents.

- The starting universe consists of all stocks listed on the New York Stock Exchange and NASDAQ issued by companies headquartered in the United States
- The index then filters out stocks from this starting universe that do not meet defined size and liquidity thresholds
- remaining eligible stocks are then ranked based on their 1-year historical volatility, and the process selects the 50 stocks with the lowest volatility, subject to the requirement of including no more than 10 stocks from any single industry sector. This limitation is designed to prevent over-concentration in any given industry sector
- Upon the completion of the next index rebalancing, the 50 newly selected stocks, weighted equally, will represent the index constituents for the following month.



All listed stocks from NYSE and NASDAQ and headquartered in the US.

Market capitalization > $5 billion
Avg. daily traded value > $50 million
Avg. daily traded volume > 5,000 shares.

Ranks stocks by one year realized volatility, with the lowest volatility stock receiving the highest rank.

No more than 10 stock from 1 sector (e.g information technology, industrial, energy).

Equally weighted basket of 50 stocks with the lowest realized volatility measure.

The above process is repeated each month to construct a dynamic stock portfolio that is reconstituted and rebalanced on a monthly basis.

In summary:

The Barclays Low Vol Index follows a systematic process to select an equally weighted portfolio each month, consisting of 50 US stocks that have shown low volatility during the past year.

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Barclays Low Vol Index Risk Factors

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- Because the Index includes a limitation on the exposure to any given industry sector, the Index may limit exposure to stocks within a sector experiencing positive performance, which may result in the Index underperforming a similar strategy without this limitation
- The Index includes deductions for a cost equal to the 1-month US dollar LIBOR rate (before April 28, 2022) or SOFR plus 0.1145% (April 28, 2022 onwards).

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