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BNP Paribas Multi Asset Diversified 5 Index

Bloomberg ticker: BNPIMAD5 Index

For further information on the BNP Paribas Multi Asset Diversified 5 Index, please visit <http://madindex.bnpparibas.com>

Index Philosophy

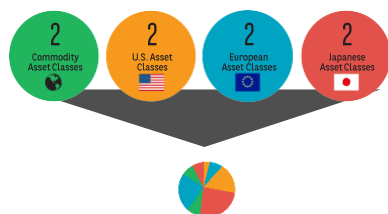
The combination of a diverse range of assets with a daily allocation methodology and a risk reduction mechanism.

The BNP Paribas Multi Asset Diversified 5 Index (the "BNPP MAD 5 Index") is a rules-based index which seeks to measure the performance of a diverse range of asset classes across a number of geographic regions. The index dynamically rebalances its weighting to these on a daily basis, based on momentum investing principles and subject to a certain level of volatility.

In addition, the BNPP MAD 5 Index includes a risk control mechanism which seeks to further reduce volatility and large drawdowns.

Index Overview

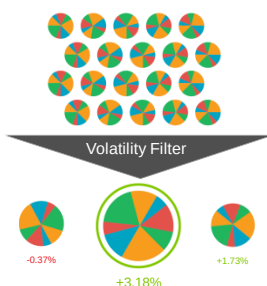
DIVERSE COMPONENTS



The BNPP MAD 5 Index contains eight components (the "Hypothetical Portfolio") which are indices that cover a range of 3 asset classes and 3 geographical regions based on the principles of:

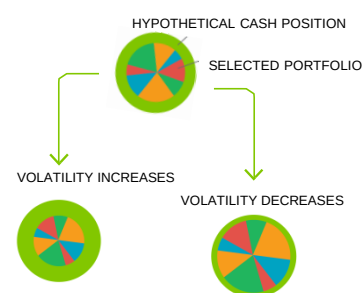
- Diversity in geographic zones covered
- Use of market benchmarks
- Representing multiple asset classes

DYNAMIC ALLOCATION



On a daily basis, the BNPP MAD 5 Index dynamically rebalances the weightings of the components according to a proprietary rules-based methodology which seeks to identify weights for the components that would have resulted in the Hypothetical Portfolio with the highest past returns¹ subject to a certain level of volatility and weighting constraints.

DAILY VOLATILITY CONTROL



On a daily basis, the Hypothetical Portfolio of the BNPP MAD 5 Index targets an annualized realized volatility of 5%. If the realized volatility of the selected Hypothetical Portfolio exceeds the 5% target volatility rate on any day, the BNPP MAD 5 Index will reduce the weight of the portfolio and rebalance it with a non-remunerable hypothetical cash position.³

The BNPP MAD 5 Index is an excess return² index – performance is net of rebalancing and replication fees and a Maintenance Fee of 0.50% per annum is deducted on a daily basis.

¹ Computed based on a trend indicator that compares current component levels to past component levels over a 1 year period

² The BNPP MAD 5 Index is an "Excess Return Index" meaning its returns are derived from changes in level of its components (known as "price return") and profit or loss gained from rolling from one futures contract to another (known as "roll return"). Unlike Total Return Indices, it does not derive returns based on interest earned on cash or other collateral deposited in connection with the purchase of futures contracts (known as "collateral return")

³ Based on the realized volatility, the BNPP MAD 5 Index may be partially or wholly uninvested, and will not earn interest or any other return with respect to that cash position.

BNP Paribas MAD 5 Index Components

Equity Futures Indices	BNP Paribas US Equity Futures Index	BNPIFUS Index	Bond Futures Indices	BNP Paribas USD 10Y Futures Index	BNPIFU10 Index
	BNP Paribas Eurozone Equity Futures Index	BNPIFEU Index		BNP Paribas EUR 10Y Futures Index	BNPIFE10 Index
	BNP Paribas Japan Equity Futures Index	BNPIFJP Index		BNP Paribas JPY 10Y Futures Index	BNPIFJ10 Index
Commodity Indices	Bloomberg Commodity ex-Agriculture and Livestock Capped Index			BBUXALC Index	
	S&P GSCI Gold Index Excess Return			SPGSGCP Index	

Index Return Summary¹

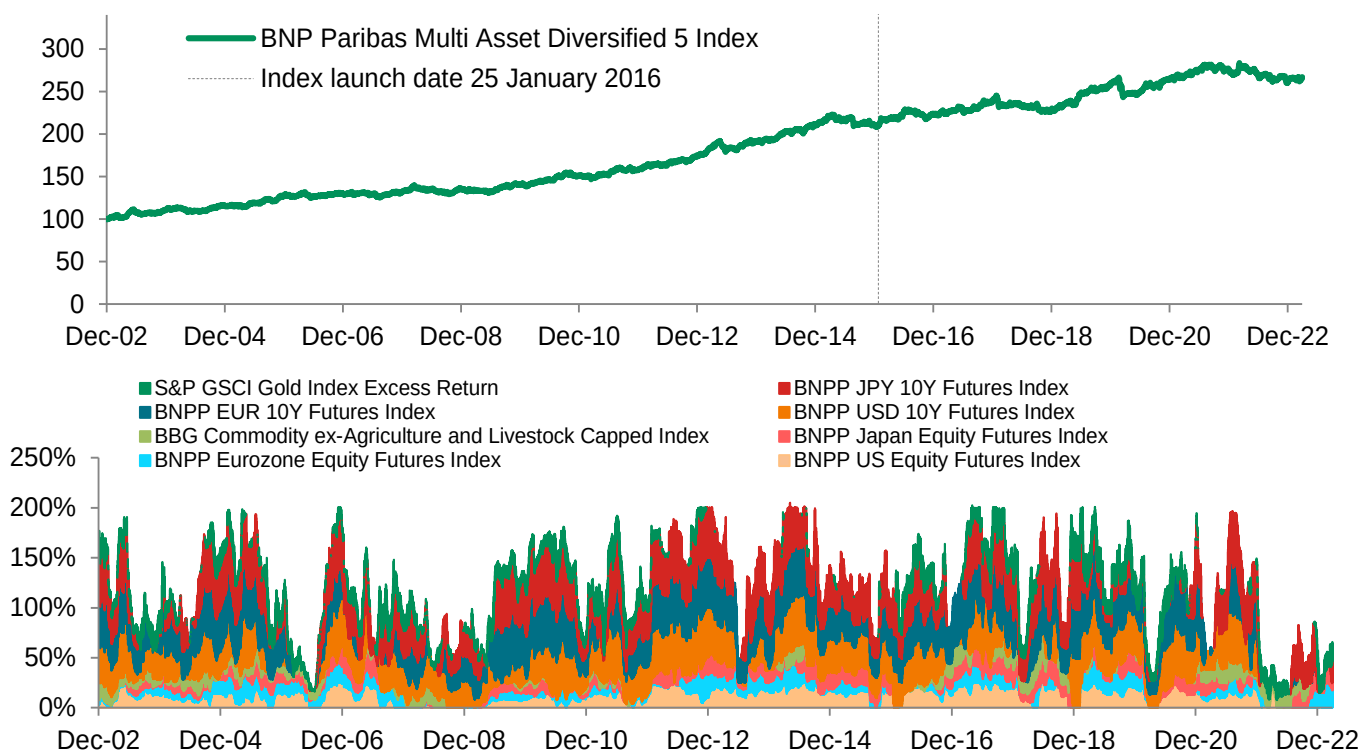
	Since Index Start	Last 1 Year	Last 2 Years	Last 5 Years
Annualized return	4.96%	-4.35%	-0.02%	2.74%
Volatility	4.86%	4.52%	4.76%	5.00%
Sharpe Ratio	1.02	-	-	0.55

Source: Bloomberg, BNP Paribas as of 31 March 2023.

Index Information

Website	http://madindex.bnpparibas.com
Bloomberg ticker	BNPIMAD5 Index
Calculation Agent	BNP Paribas Arbitrage SNC
Index Sponsor	BNP Paribas
Index Type	Excess Return
Weighting	Daily rebalancing
Maintenance Fee	0.50% per annum, charged on daily basis
Index Publication Date ¹	January 25 th 2016
Index Start Date ¹	December 31 st 2002

Index Level and Portfolio Weightings - Actual and Hypothetically Simulated¹



Source: Bloomberg, BNP Paribas as of 31 March 2023.

¹ Sources: Bloomberg, BNP Paribas as of 31 March 2023. Past performance is not an indicator of future performance. The BNP Paribas Multi-Asset Diversified 5 Index is based on Hypothetical Past Performance Data ("PPD") prior to January 25th, 2016. Because the BNPP MAD 5 Index did not exist prior to this date, all retrospective levels provided in the graph and table above are simulated and must be considered illustrative only. The presentation of hypothetical data reflects the deduction of fees and charges. These simulations are the result of estimates made by BNP Paribas at a given moment on the basis of the parameters selected by BNP Paribas, certain assumptions that may or may not hold in future periods, of market conditions at this given moment and of historical data, which should not be used as guidance, in any way, of the future results of the BNPP MAD 5 Index.



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Selected Risks and Considerations Associated with the Index

The BNPP MAD 5 Index levels are based on the values of notional assets and liabilities.

The BNPP MAD 5 Index only calculates the exposure to a dynamic, Hypothetical Portfolio that tracks the excess returns of the components of the BNPP MAD 5 Index ("the Index Components") and is purely notional. There is no actual portfolio of assets to which any person makes any investment or has any ownership interest.

No recommendation.

BNP Paribas makes no recommendation as to the suitability for investment of the BNPP MAD 5 Index or any products or strategies based partly or wholly on the BNPP MAD 5 Index. You should reach a decision after careful consideration with your advisors.

Strategies relying on the levels of the BNPP MAD 5 Index may not be successful.

There is a risk that the rules-based methodology of the BNPP MAD 5 Index does not meet its stated objectives, including meeting its target volatility of 5%, which may result in underperformance of the Hypothetical Portfolio.

There are risks associated with an index methodology that attempts to replicate a momentum-based investment strategy.

The calculation of the BNPP MAD 5 Index employs a mathematical model intended to replicate what is known as a momentum-based investment strategy, which seeks to capitalize on positive market price trends based on the supposition that positive market price trends may continue. This momentum-based strategy underlying the methodology of the BNPP MAD 5 Index is different from a strategy that seeks long-term exposure to a Hypothetical Portfolio consisting of constant components with fixed weights. Because the level of the BNPP MAD 5 Index is intended to replicate the performance of the momentum-based investment strategy, these risks could also affect indirectly the performance of any product or strategy based partly or wholly on the levels of the BNPP MAD 5 Index. BNPP reserves the right to amend or adjust the BNPP MAD 5 Index methodology from time to time and accepts no liability for any such amendment or adjustment. BNPP is not under any obligation to continue the calculation, publication or dissemination of the BNPP MAD 5 Index and accepts no liability for any suspension or interruption in the calculation thereof. Neither BNPP nor any of its affiliates accepts any liability in connection with the publication or use of the level of the BNPP MAD 5 Index at any given time. This is neither an offer to sell securities or other instruments nor a solicitation of an offer to buy securities or other instruments, nor shall it be deemed to provide investment, tax, accounting or other advice.

Correlation of performances among the Index Components may reduce the levels of the BNPP MAD 5 Index.

Performances among the Index Components may become highly correlated from time to time. High correlation during periods of negative returns among Index Components representing any one sector or asset type that have a substantial weighting in the BNPP MAD 5 Index could have a material adverse effect on the levels of the BNPP MAD 5 Index, which could in turn negatively affect the performance any product or strategy based partly or wholly on the levels of the BNPP MAD 5 Index.

Legal and regulatory regimes may affect the BNPP MAD 5 Index, its Index Components or its Sub-Components.

The BNPP MAD 5 Index and the Index Components (and sub-components thereof) are subject to legal and regulatory regimes in various regions and, in some cases, in other countries that may change in ways that could negatively affect the BNPP MAD 5 Index or the Index Components (or sub-components thereof). Changes to the applicable legal or regulatory regimes may have a negative impact on the BNPP MAD 5 Index level. The Index Components (or sub-components thereof) that are traded on one or more public exchanges are subject to the rules of the relevant exchange.

The BNPP MAD 5 Index has Limited Historical Information.

The BNPP MAD 5 Index is a new index, launched on January 25th, 2016. The performance shown before that date is hypothetical past performance, based on hypothetical back-tested information. This website also contains certain performance data based on back-testing, i.e., calculations of the hypothetical levels of the BNPP MAD 5 Index as if it had actually existed during a defined period of time, and may in certain circumstances contain simulated levels information where the BNPP MAD 5 Index or asset described has recently been established or issued. Further, you must note that such analysis is based on a number of working assumptions that may not be capable of duplication in actual trading terms. Unlike actual performance records, hypothetical or simulated performances, returns or scenarios may not necessarily reflect certain market factors such as liquidity constraints, fees and transaction costs and must be considered illustrative only. Actual historical or back-tested past performance does not constitute an indication of future results. The actual performance of the BNPP MAD 5 Index may bear little relation to the hypothetical historical results.

The BNPP MAD 5 Index has limited public information.

The BNPP MAD 5 Index is a custom index developed by BNP Paribas, the Index Sponsor. There is limited information relating to the BNPP MAD 5 Index that is publicly available. In addition, publicly available information on the BNPP MAD 5 Index, its methodology and its Equity Futures Indices, Bond Futures Indices and Commodity Indices is limited.

The BNPP MAD 5 Index's Daily Volatility Control mechanism may reduce the appreciation potential of the BNPP MAD 5 Index and may not equal the target volatility.

The BNPP MAD 5 Index's "volatility control" mechanism allows the BNPP MAD 5 Index to dynamically adjust the level of the hypothetical exposure to the selected portfolio and hypothetical cash position, depending on the volatility environment. However, the risk control overlay might limit overall levels of the BNPP MAD 5 Index in rising equity markets and may provide imperfect, limited protection in falling equity markets, particularly against sudden, large equity losses. There can be no assurance that such mechanism will be the most effective way to accurately assess volatility or to predict patterns of volatility. There can also be no assurance that the BNPP MAD 5 Index will achieve its target volatility of 5%.

The Closing Levels of the BNPP MAD 5 Index will include the deduction of a Maintenance Fee.

The closing level of the BNPP MAD 5 Index includes a deduction from the aggregate levels of its constituents of a Maintenance Fee equal to 0.50% per annum. As a result of this deduction, the level of the BNPP MAD 5 Index will trail the level of a hypothetical identical portfolio from which no such amount is deducted.

The BNPP MAD 5 Index is an "excess return" index and not a "total return" index.

In general, returns from investing in futures contracts are derived from three sources: (1) changes in the price of such futures contracts (known as the "price return"), (2) profit or loss realized when rolling from a futures contract with one expiry date to another futures contract with a different, generally later, expiry date (known as the "roll return") and (3) interest earned on the cash (or other) collateral deposited in connection with the purchases of such a futures contract (known as the "collateral return"). The Index Components generate "excess returns", meaning the sum of the price return and roll return with respect to the Index Components. As a result, an investment in an instrument linked to the BNPP MAD 5 Index will not generate the same returns that would be obtained from investing directly in future contracts underlying the Index Components because the collateral return is not used in calculating an "excess return" index.

The Closing Level of the BNPP MAD 5 Index is net of replication and rebalancing costs.

The Closing Level of the BNPP MAD 5 Index is net of replication and rebalancing costs associated with the BNPP MAD 5 Index. As a result of these costs, the level of the BNPP MAD 5 Index will trail the value of a hypothetical identical portfolio from which no such amount is deducted.

BNP Paribas Arbitrage SNC, an affiliate of the BNPP MAD 5 Index Sponsor, BNP Paribas, is the Calculation Agent and is responsible for calculating the BNPP MAD 5 Index.

The policies and calculations for which the Calculation Agent is responsible could have an impact, positive or negative, on the level of the BNPP MAD 5 Index. BNP Paribas and its affiliates are under no obligation to consider your interest as an investor in a product linked to the BNPP MAD 5 Index.

Portions of the BNPP MAD 5 Index may be effectively uninvested and earn no return.

The BNPP MAD 5 Index, on each day on which it is calculated, adjusts its exposure to the Index Components in an attempt to maintain a historical volatility approximately equal to an annualized volatility of 5%. If the aggregate weight of the Index Components is less than 100%, the BNPP MAD 5 Index will allocate exposure to a hypothetical cash position. As a result, the BNPP MAD 5 Index may underperform a similar index that provides 100% exposure to the Index Components. The hypothetical cash position is an uninvested position that does not earn interest or any other return.



Selected Risks and Considerations Associated with the Index

The price, level or value of the Index Components used in the BNP MAD 5 Index may differ from other publicly available prices.

The levels of the Index Components that are Equity Futures Indices or Bond Futures Indices (the "BNPP Component Indices") are intended to reflect the performance of the relevant futures contracts on a daily volume-weighted average price, subject to a set of trade filters selected by the Index Sponsor to exclude trades with certain codes provided by the relevant exchange that indicate non-standard trades. Such levels are calculated by the Index Calculation Agent or an affiliate thereof and are not publicly available and may not reflect all trades reported by the relevant futures exchange. The daily closing price or any other price of the underlying futures contract may vary from the volume-weighted average price reflected by the level of the applicable BNPP Component Index. Furthermore, a BNPP Component Index may be subject to a disruption due to the unavailability of a volume-weighted average price despite regular trading of the underlying futures contract and the availability of a closing price for such contract.

The BNPP MAD 5 Index's target volatility feature may reduce its appreciation potential.

Under normal circumstances, equity or commodity futures may exhibit significantly higher volatility than the target volatility of 5%. Accordingly, the "volatility control" mechanism of the BNPP MAD 5 Index may have the effect of skewing allocations among eligible components in the BNPP MAD 5 Index toward components that provide exposure to fixed-income assets (which typically have lower volatility than components that provide exposure to equity or commodity futures) or to cash (which has zero volatility). Index Components that typically have lower volatility may have lower return potential than components that typically have higher volatility, and any allocation to cash will earn no return at all.

Moreover, if the BNPP MAD 5 Index has a relatively high allocation to components that provide exposure to fixed-income assets, it will be particularly sensitive to factors that adversely affect the value of fixed-income instruments, such as increases in interest rates or declining perceptions of credit quality. A high allocation to components that provide exposure to fixed-income assets may also cause the BNPP MAD 5 Index to underperform a portfolio more heavily weighted with higher volatility assets under certain circumstances. For example, in an equity bull market that is accompanied by rising interest rates, a portfolio heavily weighted with components that provide exposure to fixed-income assets might decline in value as a result of the rising interest rates, while a portfolio heavily weighted with components that provide exposure to equities would appreciate in value.

Other Key Risks:

- The BNPP MAD 5 Index involves daily rebalancing that is applied to the Index Components by asset type and geographical region. Changes in the value of the Index Components may offset each other.
- The BNPP MAD 5 Index is subject to risks associated with non-U.S. markets.
- The futures contracts underlying the Index Components are subject to currency exchange risk. The BNPP MAD 5 Index contains a currency hedge mechanism that seeks to reduce losses due to currency exchange risk. It can also reduce or eliminate gains from currency exchange risk.
- BNP Paribas is the sponsor of the Equity Futures Indices and Bond Futures Indices that underlie the BNPP MAD 5 Index.

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In calculating the performance of the BNPP MAD 5 Index, BNPP deducts on a daily basis a Maintenance Fee of 0.50% per annum. In addition, the BNPP MAD 5 Index methodology embeds certain costs in the strategy which cover replication and rebalancing costs in running the BNPP MAD 5 Index.

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