Solactive Qraft AI-Generated US Equities Long Short Select Index

Where Leading Artificial Intelligence meets German Index Engineering

SOLACTIVE
German Index Engineering

QRAFT Technologies

An Artificially Intelligent Long Short Strategy Index

Qraft Technologies' suite of AI Generated US Equity Indices are the first and only rule-based equity strategies to harness prediction power of Artificial Intelligence to replicate a hedge fund long/short investment strategy.

Qraft's investment team partners with data scientists, researchers, and data engineers to apply Artificial Intelligence ("AI") technology to data processing, investment research, stock selection, portfolio construction, and risk management.

The Solactive Qraft AI-Generated US Equities Long Short Select Index ("**SOLQUSLS**") is the first of its kind to utilize AI to create a long/short investment strategy. SOLQUSLS seeks to identify investment opportunities in both long and short positions by uncovering patterns and signals amid massive data sets that humans alone cannot discover.

Trusted Track Record

"AIs not only objectively analyze millions of data points per second but also execute an effective investment strategy based on them.

Qraft AI… stands out for performance."

- BARRON'S

Founded in 2016, Qraft Technologies was established with the vision of innovating the asset management industry with Artificial Intelligence. Qraft has an established track record as one of the only outperforming AI-managed products on the market,* and has developed cutting-edge AI solutions that have been adopted by over 20 financial institutions worldwide.

In 2022, Qraft received a US$146 million investment from SoftBank Group, entering into a strategic partnership to accelerate AI in the asset management industry

*Can AI Replace Your Fund Manager? In Time, Yes. Barron's. (2023).
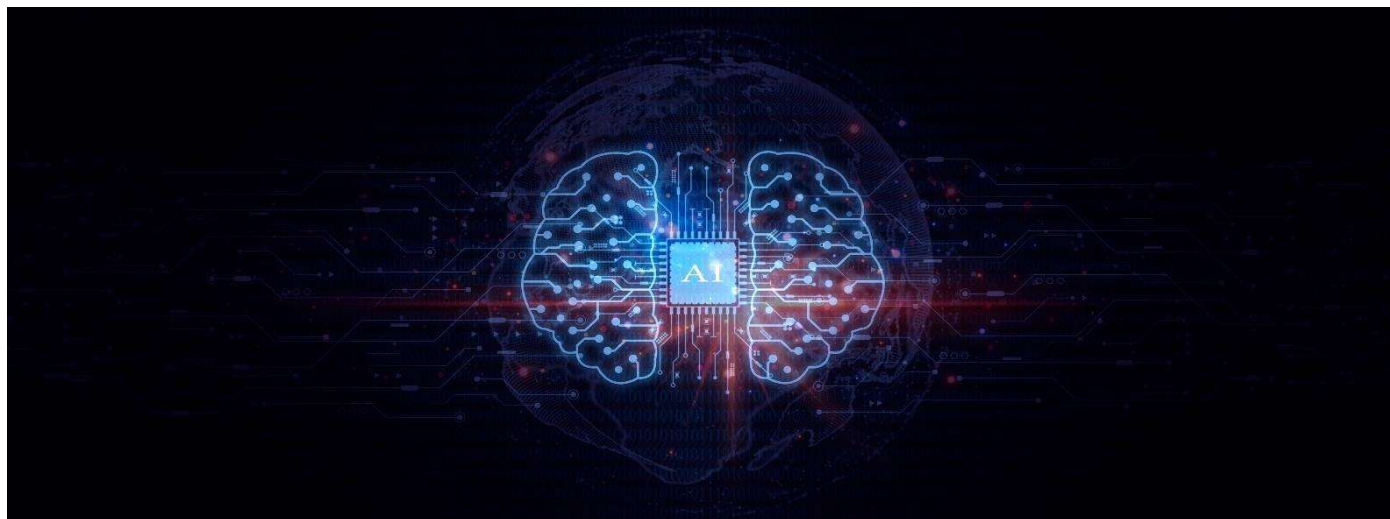
The Future of Investing

Artificial Intelligence is ubiquitous in our daily lives, and the world of investing could be the next frontier of the AI revolution. The advent of Big Data represents unbridled opportunity for investors to uncover company or market insights, and yet poses its own set of challenges as the sheer amount of data available makes it harder to uncover valuable signals.

Many in the financial industry believe that AI is the key. three out of four financial companies are already using high-performance computing, machine learning, or deep learning. 95% of financial experts indicated AI will have a significant impact on the financial industry, and 92% say they are open to adopting AI if it has the potential to enhance their investment strategy.*

Machine learning and Deep Learning algorithms are able to assess massive and complex data sets at scope, speed, and scale far beyond human capacity.

AI models has the capability of discerning subtle relationships that might elude human analysts, and are constantly learning and updating to respond to fluctuating market conditions.

AI is capable of consistently applying rules and logic that are suited to the market condition, and the capacity to execute investment decisions free of human inconsistencies and biases.

In an age where data is generated at an unprecedented rate, the success or failure of investment strategies will rest on the ability to distinguish valuable signals from the noise. Artificial Intelligence's ability to process data and uncover insight has the potential to transform the future of investing.

AI Powered Stock Selection

AI researchers and financial industry experts at Qraft Technologies worked together to develop **SOLQUSLS** index, designing and training a strategy that could thrive in an increasingly complex world of data by using AI techniques such as Machine Learning and Deep Neural Networks.

SOLQUSLS index is the world's first long/short investment strategy driven purely by Artificial Intelligence. It utilizes Qraft's Technologies' cutting-edge AI prediction technology to analyze equity markets and generate investment recommendations, in a process that is fully automated but monitored closely by industry experts.

Qraft's proprietary AI security selection engine assesses structured financial data including macroeconomic indicators, price data, and technical signals. Qraft's Machine Learning models are designed to identify non-linear patterns within vast data sets, as well as continuously learn from previous outcomes to improve their decision-making process. **SOLQUSLS** index employs a 3-step equity selection process that evaluates large and mid cap U.S. listed companies. The index remains 100% invested in U.S. equities at all times and does not invest in cash or other instruments.

SOLQUSLS long/short index uncovers sources of alpha that may not be readily apparent with Artificial Intelligence. By applying investment signals generated from Qraft's AI engine, **SOLQUSLS** index constructs a long/short equity portfolio based on large and mid cap U.S. publicly traded companies.
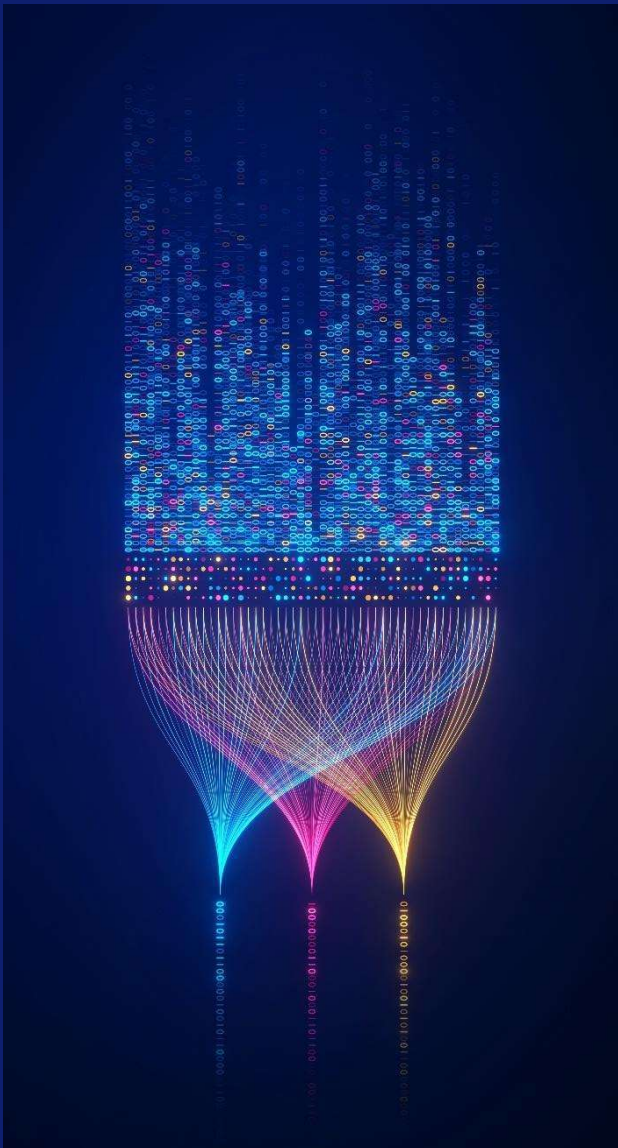
Proprietary AI Engine and Hybrid Approach

Qraft Technologies has harnessed the power of artificial intelligence to streamline data processing, investment research, and portfolio construction - an investment approach that parallels that of traditional fundamental asset managers, but with far greater scale, scope and speed.

The Qraft AI Engine combines a quantitative-based Factor Model with an AI-based Strategy Factory model, leveraging the strengths of both approaches to construct the SOLQUSLS Index. This hybrid approach integrates cutting-edge AI technology with proven quantitative methods enhancing the effectiveness of the strategy.

The AI-based Strategy Factory model utilizes self attention model for time-series deep learning process to predict the future stock performance. It utilizes a wide range of meticulously curated datasets, including real-time macroeconomic data, factor data, and financial data, to continuously train the AI model.

The Factor Model utilizes selected feasible factors within a comprehensive pool of over 400 factors. These factors are categorized into widely recognized factor groups, such as value, momentum, quality, growth, and shareholder's interest.
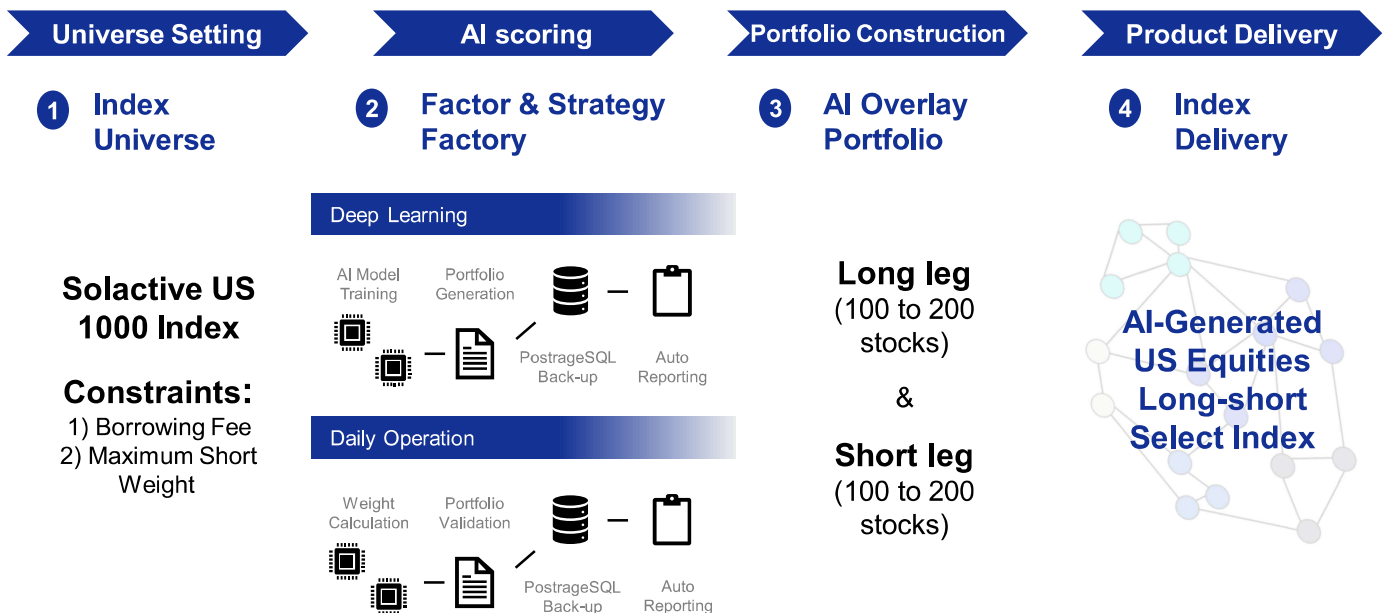

Deep neural network
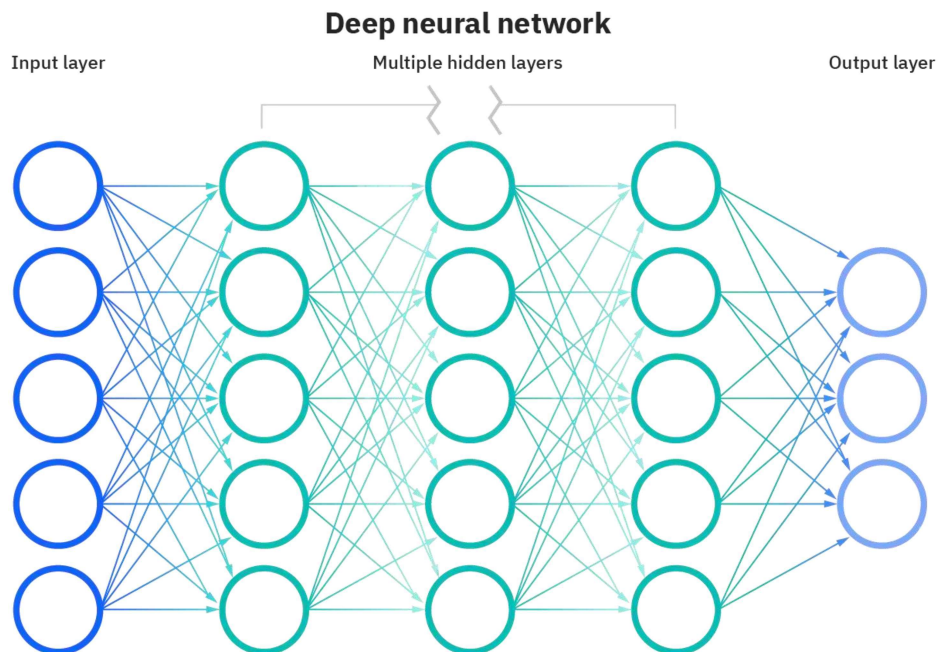
Index Construction

The Solactive Qraft AI-Generated US Equities Long-short Select Index combines long and short exposures to securities selected from the Solactive US 1000 index which exhibit projected price appreciation opportunities (long exposure) or price depreciations opportunities (short exposure) according to Qraft's Model, applying an FX hedge and an adjustment factor on top.

Qraft Technologies' Factor Model and AI-based Strategy Factory model generate relative scores for individual stocks on the current investment status, indicating their relative competitiveness. Each model constructs the long and short portfolio from the members of the Solactive United States 1000 Index ("Index Universe") based on the relative score, suggesting top 100 stocks as long position and bottom 100 stocks as short position. This leads to each legs for the index containing up to 200 constituents.

Both the long and short positions from both models are then combined to construct the market neutral portfolio. The selection and rebalancing are performed on a monthly basis.

Universe Setting	AI scoring	Portfolio Construction	Product Delivery
1 Index Universe	**2** Factor & Strategy Factory	**3** AI Overlay Portfolio	**4** Index Delivery

Solactive US 1000 Index

Constraints:
1) Borrowing Fee
2) Maximum Short Weight

Deep Learning

AI Model Training — Portfolio Generation — PostrageSQL Back-up — Auto Reporting

Daily Operation

Weight Calculation — Portfolio Validation — PostrageSQL Back-up — Auto Reporting

Long leg
(100 to 200 stocks)

&

Short leg
(100 to 200 stocks)

AI-Generated US Equities Long-short Select Index

Performance Simulation

The **SOLQUSLS** Index would have provided steady growth even during highly volatile phases as in spring 2020 or the bear market 2022, with its market-neutral exposure and alpha generated by the model's stock selection. While the simulation began on January 04, 2011, the graph below illustrates how **SOLQUSLS** Index would have performed during the testing period*.

| SOLQUSLS | 1.22 Sharpe Ratio | SPY | 0.71 Sharpe Ratio | EHFI252 | 0.81 Sharpe Ratio |

Key Statistics and Characteristics

Index Returns as of 09/01/2023	SOLQUSLS Index	SPDR S&P500 ETF TRUST	Eurekahedge LSEHF Index**
1Y	**13.09%**	15.69%	4.73%
3Y	**51.08%**	35.16%	17.19%
5Y	**127.82%**	69.23%	30.12%
10Y	**143.05%**	231.51%	83.13%
10Y Volatility	**6.76%**	17.17%	7.39%
10Y Sharpe Ratio	**1.22**	0.71	0.81

Bloomberg Ticker	SOLQUSLS Index
Asset Class	Equity
Geographical Focus	United States
Base Date	04/Jan/2011
Type of Return	Adjusted Return
Index Sponsor	Solactive AG
Calculation Agent	Solactive AG

Index
Collaborators

Solactive AG is an index provider operating globally and growing at a fast pace. Since 2007, they have been developing tailor-made and multi-asset class index solutions for ETFs and other index-linked investment products at competitive prices. Solactive indices are connected to more than USD 300 billion in investments across over 25,000 indices they calculate on a daily basis.

QRAFT Technologies is a fintech company based in Seoul. Founded in 2016, Qraft Technologies was established with the vision of innovating the asset management industry through Artificial Intelligence. QRAFT powers financial institutions with a variety of AI-generated investment signals, leveraging proprietary security selection and asset allocation AI models to create investment solutions customized to client demands. From data processing to AI investment signal generation, QRAFT has an established track record in developing cutting-edge AI solutions that have been adopted by over 20 financial institutions worldwide.

In 2022, QRAFT received a US$146 million investment from SoftBank Group.

The Adjustment Factor, or decrement, of 0.95% per annum and the monthly Rebalancing Fee of 0.01% of the change in the composition of the Notional Portfolio will always adversely affect the performance of the Index.
The Index has a decrement feature whereby 0.95 % per annum is deducted daily from the Index level. The Index tracks the performance of the Notional Portfolio (as defined below), which is a notional portfolio of stocks select- ed from the Benchmark. The Notional Portfolio does not have a decrement feature. Also, the Rebalancing Fee of 0.01% of the relevant change in the composition of the Notional Portfolio is deducted from the Index's level every time such composition is rebalanced, which is expected to occur monthly.

Consequently, the Index will always underperform the Notional Portfolio.

Due to the decrement feature, the Index's level will only increase if the Notional Portfolio's aggregate performance (as reduced by the monthly Rebalancing Fee) exceeds 0.95 % per annum.
The Index level may decline even if the Notional Portfolio level appreciates.

Any potential benefit from the total return feature of the Notional Portfolio will be reduced by the Index's decrement of 0.95 % per annum.
The Notional Portfolio is calculated as if it were a total return index, reflecting the reinvestment of dividends on its components. Because of the 5.00% per annum decrement feature of the Index, the Index level will always be less than the Notional Portfolio solely modified by the monthly Rebalancing Fee. The 0.95 % per annum decrement will be deducted daily from the Index, regardless of whether any dividends were paid on the Index Components (as defined below).

The Index strategy is not guaranteed to succeed.
The Index strategy is not guaranteed to be successful. It is impossible to predict whether and the extent to which the Index and the Notional Portfolio will yield positive or negative results. The Index adjusts its exposure to the select- ed constituents of the Benchmark based on historical economic relationships which may not hold true in the future.

The Index tracks the total return of the Notional Portfolio selected by Qraft Technologies from the constituents (the "Index Universe Components") of the Solactive United States 1000 Index (the "Index Universe") following a methodology based on artificial intelligence ("AI") techniques developed by Qraft Technologies, subject to certain allocation constraints. The selection of shares includes a tracking error constraint to cap the Tracking Error between the Index and the Benchmark at 2.60%.

There is no guarantee that the Qraft Technologies' AI techniques will select the best per- forming Index Universe Components from the Benchmark to become constituents of the Index ("Index Components"). The Index may underperform an alternative strategy based upon the Benchmark or any other measure or portion of the US equity market
.
The Index and the Notional Portfolio are purely notional.
The exposure to the Notional Portfolio is purely notional and will exist solely in the records maintained by or on behalf of Solactive AG ("Solactive"). Although the Notional Portfolio may also be referred as the "portfolio", the "underlying portfolio" or other similar terms, there is no actual portfolio of assets to which any person is entitled or in which any person has any ownership interest.

The Index was recently launched and has a limited operating history. The Index was launched on January 4, 2011 and therefore has limited historical performance. As a result, limited actual historical performance information is available for you to consider in making an independent investigation of the Index, which may make it difficult for you to evaluate the historical performance of the Index and make an informed investment decision than would be the case if the Index had a longer trading history.

Hypothetical back-tested performance prior to the launch of the Index provided in this document refers to simulated performance data created by applying the Index's calculation methodology to historical prices of the underlying constituents. Such simulated performance data has been produced by the retroactive application of a back-tested methodology in hindsight, and may give more preference towards underlying constituents that have performed well in the past. Hypothetical back-tested results are neither an indicator nor a guarantor of future results.

The hypothetical back-tested performance of the Index prior to January 4, 2011 cannot fully reflect the actual results that would have occurred had the Index actually been calculated during that period, and should not be relied upon as an indication of the Index's future performance.

Solactive administers, calculates and publishes the Index, the Index Universe and the Benchmark.
Solactive has the authority to determine whether certain events affecting the Index have occurred including, but not limited to, events affecting the under- lying equity constituents of the Index.

Potential investors in any financial instrument of which the Index is an underlying need to be aware that any determination or calculation made by Solactive may affect the Index's level, as applicable, and, as appropriate, the performance of any instruments linked to the performance of the Index. Solactive has no obligation to consider the interest of investors in any such instruments when making any determination or calculation. Such discretion in the decisions taken by Solactive (in the absence of manifest or proven error) are binding on all investors and holders of such instruments.

The Index selects and weights the Index Components based on AI models; the strategies and views implicit in such models and in the Index are not guaranteed to succeed.
The strategy of the AI models, and therefore the Index, is not guaranteed to be successful. It is impossible to predict whether and the extent to which any underlying constituents of the Index will yield positive or negative results. The AI models evaluate the Index Universe Components, and the Index selects and weights the Index Components, based on historical data which may not reflect future performance. You should seek your own advice as necessary to assess the Index and the underlying AI models.

The method by which the Index reweights the Index Components and the reallocation period may negatively affect the Index's level.
The Index Components are reviewed and the Notional Portfolio is rebalanced monthly. Near the end of each month, the AI models are used to recalculate the AI scores for each Index Universe Component, and these scores are used by Qraft Technologies to select and weight the Index Components, subject to pre- deter- mined constraints. The weight of each Index Component selected from the Index Universe Components is subject to a cap (equal to 7.50% unless a lower cap is applicable based on the realized volatility of such underlying) and any excess weight is allocated to the iShares® 1-3 Year Treasury Bond ETF (the "ETF Constituent"). The selection and weight of the Index Components is also subject to a tracking error constraint, which caps the Tracking Error between the Index and the Benchmark at 2.60%. The allocation rules, including the cap, will be followed even where they limit the Index's exposure to positively performing Index Components or increase the Index's exposure to negatively performing Index Components, and may result in lower returns on the Index.

The AI models attempt to estimate the future price of each eligible Index Universe Component over a 1-month time horizon, relative to its current price. There is no way to determine whether any future price will actually be achieved or if any projected growth will occur before the next monthly rebalancing. Additionally, an eligible Index Universe Component that was predicted to perform poorly may outperform those which were selected for inclusion in the Index. The Index's level may be adversely affected if the Index Components do not perform as the AI models predict.

Any changes to the Index Components and their relative weights are made over a three trading day period. This delay between the observed values and the following reallocation may negatively affect the ability of the Index to implement its strategy and the return on the Index.

The Index Universe is exposed to equity risk, including from mid-capitalization companies.
The Index Universe includes U.S. large-capitalization and mid-capitalization stocks. The Index's level can rise or fall sharply due to factors specific to the Index Universe Components, such as stock price volatility, earnings and financial conditions, corporate, industry and regulatory developments, management changes and decisions and other events, as well as general market factors, such as general market volatility and levels, interest rates and eco- nomic and political conditions.

The Index's level may be determined by reference to the SPDR S&P 500 ETF Trust ("SPY") if the AI models become unavailable.
In the event that Qraft Technologies, the provider of the AI models, no longer provides the applicable AI scores with respect to the eligible constituents, the shares of SPY will be selected as the sole Index Component with a weight of 100%. In such an event, the value of the Index will be determined by reference to SPY, the tracking error constraint and the Adjustment Factor, or decrement.

Disclosure

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Use of Simulated Returns
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The hypothetical back-tested performance of the Index prior to January 4, 2011 cannot fully reflect the actual results that would have occurred had the Index actually been calculated during that period, and should not be relied upon as an indication of the Index's future performance. Because of the lack of actual historical performance data, your investment in any structured investment linked to the Index may involve a greater risk than investing in a security or other instrument linked to one or more indices with an established record of performance..

All Sources: Solactive, Qraft Technologies, Bloomberg, from January 4, 2011 to September 15, 2023

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