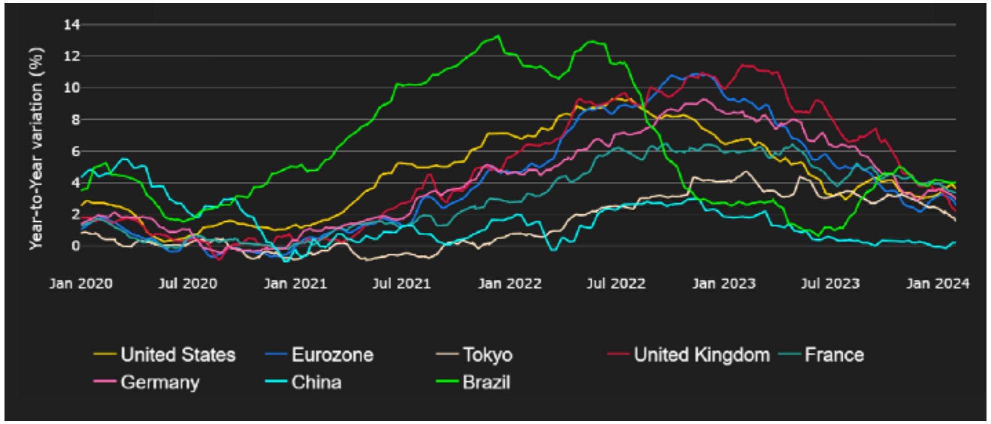
GLOBAL ECONOMIC TURBULENCE: NAVIGATING INFLATION AND FINANCIAL MARKET DYNAMICS

Over recent years the global economic landscape has been impacted by a series of significant events, notably the COVID-19 pandemic and the conflict between Russia and Ukraine. These shocks have not only tested the resilience of major economies but also exerted considerable pressure on central banks, compelling them to adjust their monetary policies. Such adjustments have, in turn, deeply influenced the performance of both bonds and currencies, prompting investors to refine their forecasts in light of evolving economic signals and shifts in interest rate projections. The way these inflationary pressures have spread and their subsequent impact across various economies are influenced by a range of factors; the economic structure of each country, its monetary policy framework, and its exchange rate regime. As a result, the effects have been far from uniform.

As energy-dependent economies, the Eurozone, UK and Japan have experienced inflationary pressures and the risks associated with external factors such as price volatility and supply disruptions. This has prompted measures to safeguard consumers' purchasing power. In contrast, many emerging markets have demonstrated remarkable resilience, benefited from relatively diversified economic structures and the absence of oil supply disruptions caused by economic sanctions. In Exhibit 1 we examine inflationary trends across various countries with the QuantCube Headline CPI Nowcast. Taking a closer look, the analysis reveals a nuanced narrative for each country from 2020 to the present. After the outbreak of the conflict between Russia and Ukraine, both the US and Eurozone experienced pronounced inflationary surges. Signs of normalisation have only recently emerged. Even Tokyo's CPI surged to a multi-year high, while Brazil and China followed their own unique paths; Brazil's inflation spiked in 2020, but subsided following the implementation of government measures aimed at curbing inflation ahead of elections. Meanwhile, the Chinese economy, characterised by subdued domestic demand, a depressed housing sector and the advantage of procuring oil at discounted rates from Russia, witnessed relatively stable inflationary trends throughout this period.

Exhibit 1. QuantCube Headline CPI Nowcast - Overview



This scenario underscores the nuanced impact of global events on inflation and bond performance, highlighting the diverse economic responses across different regions.

ECB, BoE, Fed : Navigating the current crossroads

Officials from the European Central Bank, the Bank of England and Federal Reserve are closely analysing various datasets to determine the appropriate timing for reducing interest rates from their historically elevated levels. After experiencing a significant surge in prices during 2022, rates have started to recede, gradually approaching the central banks' 2% inflation target.

This prompts a critical question - what further evidence is required to justify initiating reductions in interest rates ? While the downward trend in inflation is promising, central banks are carefully assessing inflation data and its component parts to ensure the stability and sustainability of this trend before considering any rate reductions.

QuantCube's daily, non-revised CPI estimates can offer valuable insights into the latest inflation trends, providing a forward-looking view that

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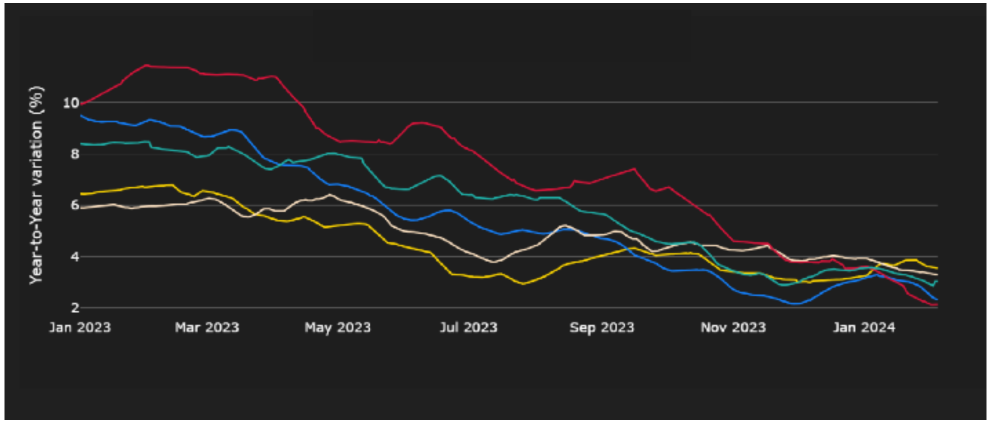
may be critical for anticipating potential shifts in monetary policy actions.

Exhibit 2 shows the latest trends in the QuantCube Headline CPI Nowcast for the Eurozone, the UK and the US.

Exhibit 2. QuantCube Headline CPI Nowcast – UK, Eurozone, US since January 2023



In the Eurozone and the UK, headline inflation experienced a modest reduction in January this year. This trend was influenced by disinflationary pressures in both cyclical and core inflation components (Exhibit 3 and Exhibit 4). However, while core inflation is on a downward trajectory, it remains relatively elevated (above 4% in both the Eurozone and the UK). In the US, there was a slight increase in the core inflation rate in January, which was attributed to a recalibration of weightings - a factor that does not raise concerns for us, as it is a part of normal yearly adjustments. However, there were also some second-round effects in the services sector.

For central banks to gain confidence in a lasting deflationary trend, in our view, a more pronounced decline in core inflation is essential.

Exhibit 3. QuantCube Food & Energy CPI Nowcast – UK, Eurozone, US

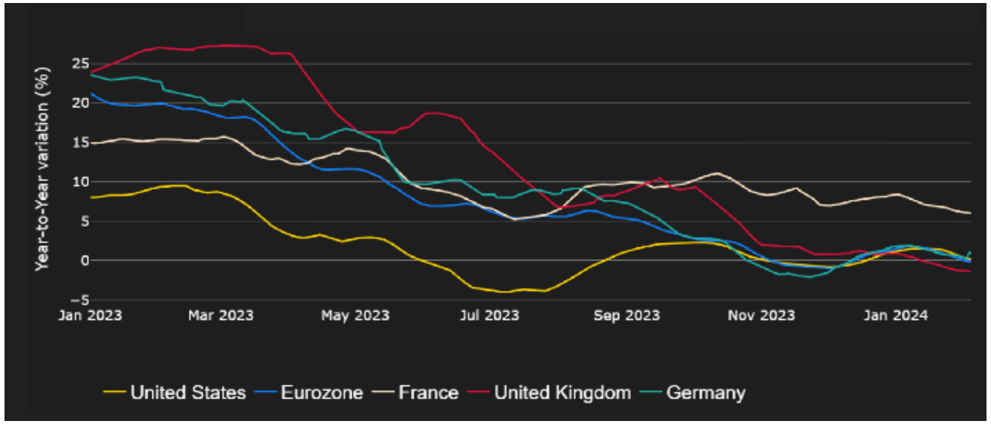
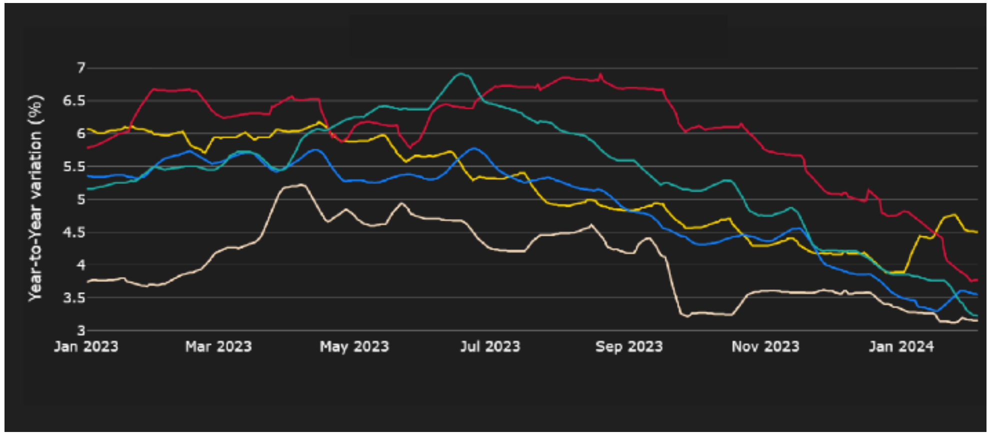


Exhibit 4. QuantCube Core CPI Nowcast – UK, Eurozone, US



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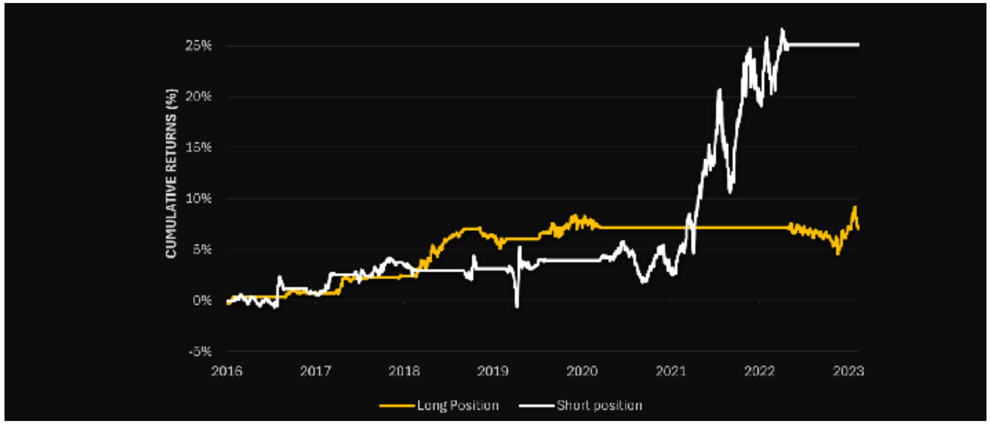
Refining Bond and Forex Investment Allocations with QuantCube CPI Nowcasts

The bond market is notably reactive to the ebb and flow of inflationary trends. Recently, bonds in Europe and the US have navigated turbulent waters, with their performance adversely affected by sudden surges in inflation. Similarly, currencies, which are influenced by changes in monetary policy, have also grappled with difficulties and headwinds stemming from inflationary pressures and interest rate hikes. For investors employing both directional and spread strategies, an ability to track inflation trends across diverse nations with real-time and detailed data is a priceless advantage. This depth of insight affords the foresight needed to recalibrate positions in anticipation of impending market changes. Leveraging real-time insights from the QuantCube CPI Nowcasts, our quantitative research team developed a series of investment strategies aimed at enhancing performance through well-informed and timely positioning in the bond and forex markets.

Inflation-responsive bond strategy for the German market

In navigating the complexities of the German bond market, our approach is to harness a comprehensive analysis of headline, cyclical, and core inflation trends. We integrate these insights to adopt a balanced stance by diversifying signals across various inflationary movements. Our methodology is clear-cut - we choose to short Bund futures as inflation ascends, exploiting the inverse relationship between bond prices and interest rates. Conversely, during periods of declining inflation, we take a long position in Bund futures, thereby benefiting from the uptick in bond prices.
Exhibit 5 displays the performance of our long-short approach based on the QuantCube Inflation Nowcast data from 2016 to present, in comparison with the German 10-year government bond. This strategy has not only generated positive returns in both long and short positions but also surpassed the benchmark in return rates, volatility reduction, and Sharpe ratio improvement—from 0.16 to 0.84 as shown in Table 1.

Exhibit 5. QuantCube Bund strategy - long and short legs



The success of this strategy hinges on the adept utilisation of timely inflation data. By strategically shorting the German Bund during periods of heightened inflation, we are able to capitalise on the opportunity to garner substantial returns, thereby amplifying the overall efficacy of our investment approach.

Table 1: QuantCube Bund strategy – performance metrics

	Bund 10 years (benchmark)	QuantCube Bund long-short strategy
Annual return	-1.0%	4.4%
Annual volatility	6.4%	5.2%
Sharpe ratio	-0.16	0.84
Beta	1	-0.49
Alpha	0.0%	3.9%

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Harvesting arbitrage opportunities in UK and French Bonds through cyclical inflation differentials

When it comes to exploiting disparities between UK and French bond futures, our approach is based on real-time signals related to cyclical inflation differentials. Cyclical inflation, characterized by its volatile and sensitive nature within the broader inflation spectrum, serves as a pivotal factor in guiding our arbitrage decisions. Should UK cyclical inflation exhibit a sharper increase or a lesser decline compared to France, our tactical response involves adopting a long position in OAT futures while simultaneously shorting Gilt futures, aiming to capitalise on the expected market dynamics prompted by shifts in relative inflation rates.
Conversely, in scenarios where French cyclical inflation surpasses its UK counterpart, our strategy undergoes a strategic adjustment, advocating for long positions in Gilt futures against short positions in OAT futures. This methodical approach to arbitrage relies on the timely and precise analysis of inflation trends, provided by our CPI Nowcast indicator.

Exhibit 6. QuantCube Gilt/OAT spread strategy – long and short legs

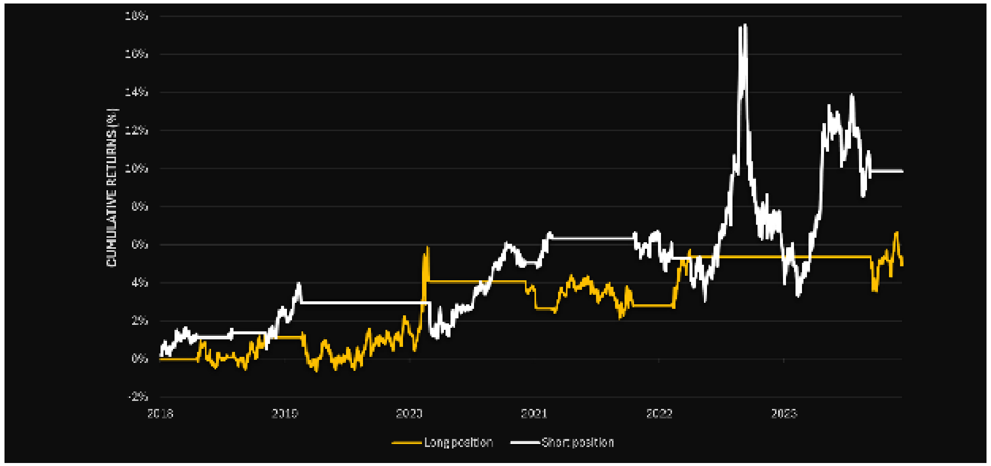

Table 2. Gilt – OAT spread strategy performance metrics – Performance metrics

	Gilt – OAT Spread (benchmark)	QuantCube Gilt - OAT spread strategy
Annual return	-0.8%	2.4%
Annual volatility	5.9%	5.9%
Sharpe ratio	-0.14	0.41
Beta	1	-0.55
Alpha	0.0%	2%

Riding the GBP/USD rollercoasters by leveraging real-time inflation

To demonstrate the effectiveness of our data in the forex markets, we conducted a simulation with a specific focus on the GBP/USD currency pair. Our strategy centers on analysing trends arising from the disparity between UK and US inflation rates, considering both headline and cyclical inflation metrics. By synthesing these two metrics, we derive a composite signal that steers our trading decisions. When UK inflation shows a more pronounced increase or a lesser decrease compared to its US counterpart, our approach leans towards purchasing GBP/USD futures. The cumulative returns of the strategy are showcased in Exhibit 7. In the event that the scenario reverses, with US inflation surpassing that of the UK, our strategy would shift towards shorting GBP/USD futures. The philosophy of this approach is predicated on the expectation of divergent monetary policy trajectories between the Federal Reserve and the Bank of England, as both entities strive to anchor inflation around the 2% mark. The core of this strategy relies on anticipating differences in the momentum of inflation rates between the two economies.

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Specifically, a scenario where US inflation escalates more swiftly than that of the UK could prompt the Federal Reserve to escalate interest rates at a more accelerated pace compared to the Bank of England. Such a dynamic would inherently bolster the US economy's appeal to investors vis-à-vis the UK, thereby catalyzing an appreciation of the US dollar against the British pound. The performance metrics of the strategy are summarised in Table 3.

Exhibit 7. QuantCube GBP-USD spread strategy – long and short legs

Table 3. QuantCube GBP-USD spread strategy – Performance metrics

	GBP-USD spread (benchmark)	QuantCube GBP – USD spread strategy
Annual return	-1.4%	7.4%
Annual volatility	9.3%	8.3%
Sharpe ratio	-0.15	0.89
Beta	1	0.18
Alpha	0.0%	7.7%

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COMPANY BACKGROUND

QuantCube analyses billions of alternative data points in real time, using artificial intelligence and big data analytics to deliver insights ahead of the market – giving users an edge in their investment strategies. Today we are the global leader in macroeconomic intelligence nowcasting and in pinpointing macro regime change.

Our vision is to become the standard point of reference for macroeconomic, sector, corporate and environmental intelligence. By delivering timely, comprehensive and actionable economic insights we empower users within financial institutions, corporates and public bodies to reach their financial performance and sustainability goals. Headquartered in Paris, QuantCube employs a diverse international team of economists, quant analysts and data scientists with expertise in multilingual NLP, deep learning and machine learning techniques. The company’s shareholders include Moody’s and Caisse des Dépôts and its R&D in computer vision has been partially funded by the European Space Agency (ESA) and French government space agency CNES.

QuantCube Technology
15 Boulevard Poissonnière, 75002 Paris, France
Phone: +33 1 43 58 48 46

For general enquiry:
info@quant-cube.com
www.quant-cube.com