

INFLATION - THE HOT TOPIC AS THE ECONOMY GETS WARMER

Real-time Macroeconomic insights using QuantCube data science
- Newsletter June 30, 2021 -

Quantcube Inflation Index: Predict global inflation accurately and enhance investment performance

Since the beginning of the year the risks of higher inflation have been widely commented on by economists and market participants. As the economy begins to recover from the initial shock of the pandemic, we observe that prices are supported by strong global demand. This was mainly fueled by strong fiscal boosts and accommodative monetary policies around the world. Sharp increases have been observed in some commodity prices (i.e. oil, copper, lumber).

We also observe price increases in specific sectors such as semi-conductors, reflecting tensions between supply and demand. However, a large fraction of the increase in inflation rates is mainly due to technical effects – the adjustment from the sharp decline during the first part of 2020 due to the negative effect caused by the pandemic. As inflation rates are measured as year-over-year change in consumer prices, we experienced the so-called “base effects” during the first two quarters in 2021, where inflation rates are pushed upward mechanically. This is especially true for energy prices that had fallen down close to zero at the height of the recession caused by the pandemic.

• US Inflation

Inflation risks are particularly elevated in the U.S. where the fiscal stimulus package under the Biden’s administration was significant (about 13% of GDP to counter the Covid effects on economic activity). The CPI inflation rate rose significantly as a result of the large fiscal stimulus; from 1.4% in January 2021 to 4.9% in May 2021, the highest level since the summer of 2008.

The QuantCube US inflation index tracks the official Consumer Price Index for Urban Consumers provided by the Bureau of Labor Statistics with high accuracy. As shown in Figure 1 the index indicator has a **77% success rate in predicting the trend of inflation and a 96% correlation with the official data** since January 2018. It successfully captured the sharp increase in inflation, rising from 1.1% in January 2021 to 5.1% in mid-June.

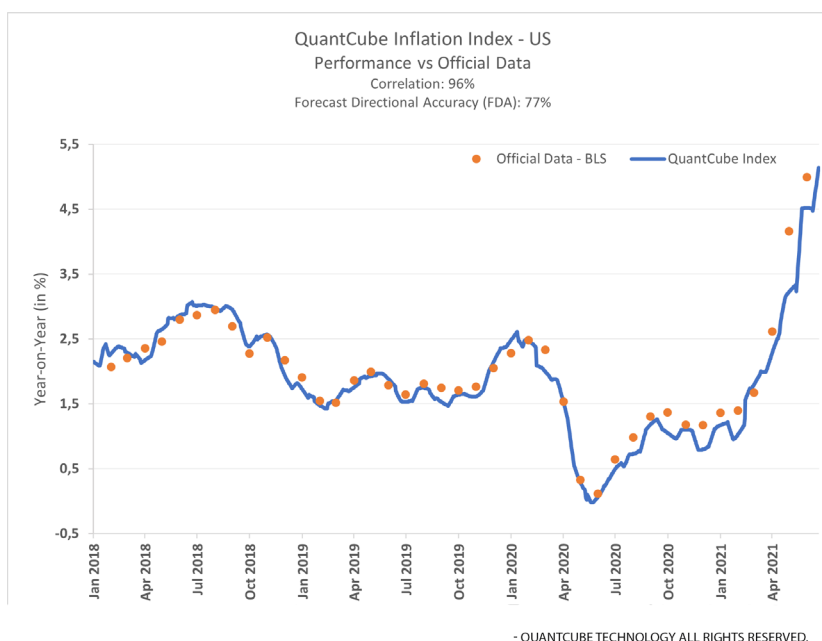


Fig 1: QuantCube Inflation Index - United States of America

• European Inflation

For European economies, QuantCube developed a French Inflation Index to track the Consumer Price Index, excluding Tobacco, provided by the French National Statistics Institute (Insee). As observed in Figure 2, our real-time inflation index is **highly accurate - it has a 67% success rate in predicting the inflation trend** and a **94% correlation with the official CPI inflation** since January 2018.

Our inflation index for France successfully captured the strong increase this year, a rise from 0.0% in January to 1.23% in mid-June 2021, in line with official data (1.4% in May 2021).

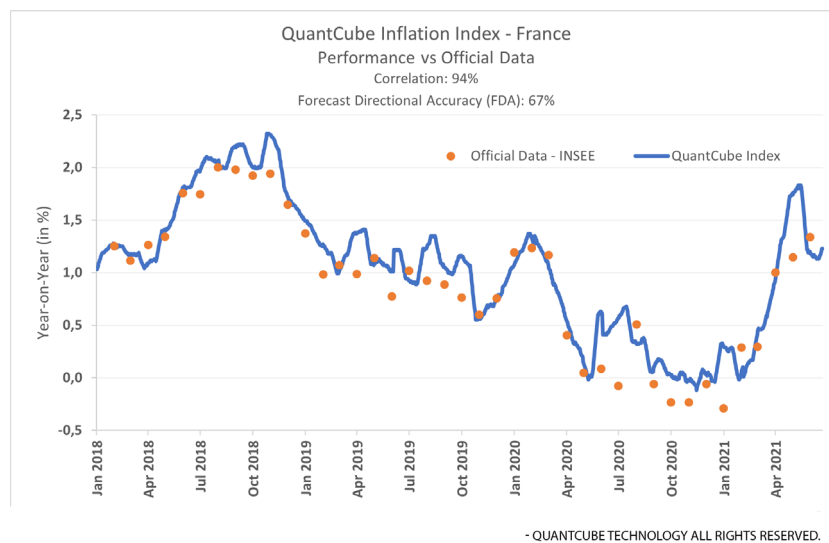


Fig 2: QuantCube Inflation Index - France

Methodology:

The year-over-year change in QuantCube's Inflation Index for both France and the U.S. show a strong upward trend since January 2021. Inflation rose from 0.0% in January to 1.23% in mid-June 2021 in France, while in the U.S. inflation rose from 1.1% in January 2021 to 5.1% in mid-June 2021.

QuantCube inflation indicators are built by leveraging its innovative methodology that combines high-frequency data and econometric models. QuantCube analyzes millions of data points to track the most important inflation subcomponents. As the data is collected in real-time, QuantCube indicators are, by construction, two-weeks ahead of official data releases.

US Inflation Bonds Rotation Strategy with QuantCube US Inflation Index

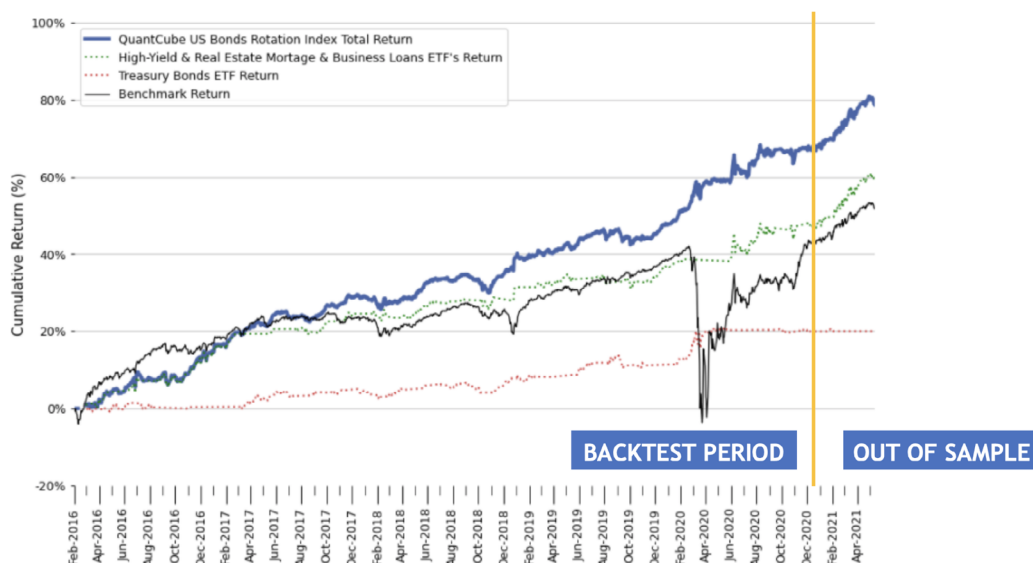
The **US inflation Bonds Rotation** investment strategy that exclusively uses **QuantCube real-time U.S Inflation Index** delivered **3% alpha since the beginning of 2021**. The investment strategy is to invest in the **U.S Fixed Income** market through various ETFs, which were selected for their ability to react positively / negatively to a change in U.S Inflation.

Methodology:

When inflation is increasing, the strategy will invest in a basket of three ETFs:

- **HYG US**, which focuses on high-yield corporate bonds. The periods with increasing inflation related to the economic recovery are favorable for the HY companies.
- **REM US**, which corresponds to the residential and commercial U.S real estate. Property prices and rental income tend to rise when inflation rises.
- **BIZD US**, which tracks business development companies (BDC). Most loans made by BDCs to small-to-medium-sized businesses are structured as floating rates.

When inflation is in a downward trend, the strategy will fully invest in the mid-term treasury bonds (7-10 years) market through **IEF US**. With a duration of 8 years, this ETF is negatively correlated to U.S inflation.



- QUANTCUBE TECHNOLOGY ALL RIGHTS RESERVED.

Fig 3: QuantCube US Inflation Bonds Rotation Breakdown - Risk Adjusted

Backtesting results:

During the backtesting period, from early 2016 to early 2021, the strategy yielded a gross return of **68%, outperforming the benchmark** (an equally weighted basket of the four ETF used for the rotation) - **by 24%**. This is equivalent to **14%** annualized gross return and **5%** annualized alpha.

During the first weeks of the COVID-19 period, the strategy continued to perform well benefiting from the rotation to the treasury bonds yielding approx. **10% gross return in 2 months**. Our test results for 2021 also indicate that it continues to perform strongly since the beginning of 2021, delivering a gross return of **10% YTD** compared to the **7%** by the benchmark (equivalent to **3%** of alpha in 6 months).

QuantCube US Inflation Index is designed to beat market consensus and help trigger investment rotation prior to the release of the official figure. **The index is currently forecasting US inflation to rise by 5% yoy.**

Launch of QuantCube ESG Platform for the G20 TechSprint 2021

Together with BIS (The Bank of International Settlements), The Bank of Italy has launched an international contest of innovative solutions in green and sustainable finance. The challenge aims to find the best technology solutions, such as remote sensors, GPS and other kinds of non-traditional reporting data, that can achieve timely, transparent and verifiable disclosure (including impact measurement and reporting), while reducing the disclosure workload and costs for corporates and other reporting entities.

We are glad to announce that on June 21st *QuantCube's has been selected* to present its project to the final selection round in September 2021.

QuantCube will release its full ESG Solution on this occasion.



QuantCube has been developing environmental indexes based on our existing technology for satellite data analytics. Using satellite images, we offer scalable, comparable, and reliable environmental indexes as images are taken worldwide from independent satellite data sources (European Space Agencies, NASA, etc.)

Among our indicators to measure the environmental impact of companies, QuantCube Air pollution Index monitors emissions of multiple pollutants, including NO₂, SO₂, CH₄ and CO at the asset level (refinery, coal power plant...) based on satellite, Sentinel-5P and meteorological data. In collaboration with the French Space Agency (CNES), we developed models taking into account wind speed, congestion traffic data, and other data sources to apply this technology to a large number of assets.

The following is an example of the QuantCube NO₂ Pollution Index for the Springerville power plant in the US:

Assets



Springerville

Type : Power Plant

Description : Springerville Generating Station is A 1,765.8-Megawatt (MW) Coal-Fired Power Station Operated By The Tucson Electric Power Company Near Springerville, Arizona.

Country : United States Of America

Capacity : 1779 MW

Primary Fuel : Coal

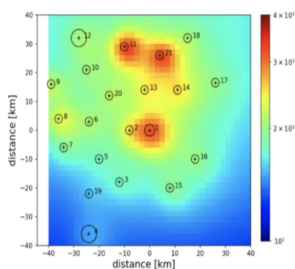
Coal Source : 1779 MW

Owner : Tucson Electric Power Co

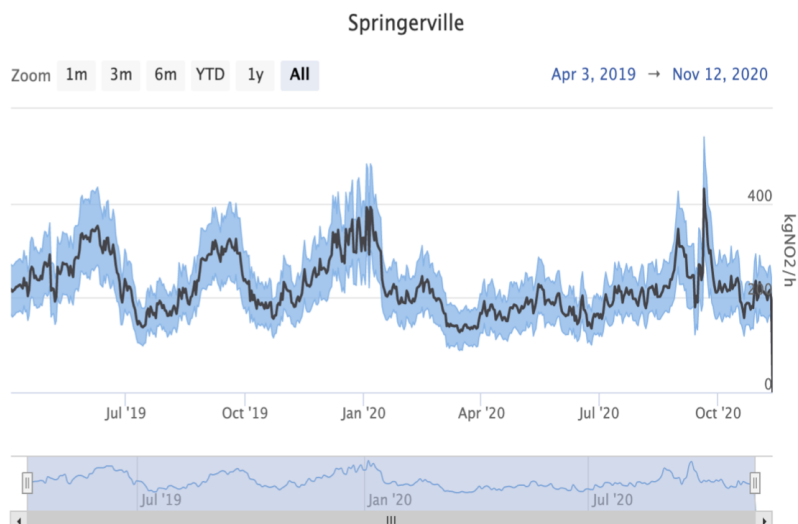
Commissioning Year : 1998

Last update : 02/02/2021 09:00AM

Estimation of Power Plant Pollution with Confidence Interval:



SSP simulation



CONTACT

QuantCube Technology
15 Boulevard Poissonnière, 75002 Paris, France

Phone: +33 1 43 58 48 46
Email: info@q3-technology.com

