

## Using AI to Pinpoint Market Turning Points in Real-Time



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The power of artificial intelligence, machine learning and big data techniques to analyse billions of alternative data points in real time to uncover crucial macro-economic insights is now becoming apparent. Such insights are giving financial institutions a critical edge in their investment strategies. In this article, Thanh-Long Huynh, Co-Founder and CEO of QuantCube Technology, discusses how applying AI technology to alternative data can be highly effective in identifying market turning points ahead of market consensus. Such an approach can provide investors an opportunity to apply a 'risk on/risk off' strategy to asset allocation and stock rotation.

Historically it has been challenging for financial institutions to ingest, analyse and derive insights from the vast amount of alternative data sources available due to the amount of time and effort it requires. Gaining insights from this data fast enough to make a difference in trading strategy or investment decisions requires advanced AI technology, computing power and robust data science expertise. Recent advances in this area are changing the game.

### **The value of alternative data**

Alternative data sources can provide crucial intelligence well in advance of the publication of official data which is time-lagged. For example, industry data for macroeconomic variables such as GDP, consumption, inflation, employment and international trade is typically published on a monthly or quarterly basis.

In contrast, an intelligent and comprehensive approach to alternative data analytics - combining and analysing a huge range of data sources can deliver robust and reliable market insights for each of these macro-economic variables on a real-time basis. Advanced AI technologies such as NLP (Natural Language Processing) and Computer Vision are an important part of this innovation. Such techniques can play a key role in processing text, geospatial, geolocation, structured and unstructured data - including social media, professional networks, satellite imagery, blogs, transportation data, real-estate and hospitality data and consumer reviews. Sophisticated AI models can then interpret the data, allowing market inflection points to be detected and flagged immediately.

As well as analysing macroeconomic performance, alternative data can also be harnessed to assess a wide range of other variables - for example, tracking environmental change through satellite data, or using social media sentiment to help forecast the outcome of elections, or monitor risk in relation to commodity prices.

Let's take a commodity like crude oil as an example given the recent volatility in prices. Applying AI techniques and NLP technology to social media data in Arabic, as well as English, increases the information on crude oil more than five-fold and can provide vital insight on market sentiment ahead of traditional news outlets. This ability to capture short-term risks and predict price movements can give commodity traders and hedge funds a vital edge in the market.

Similarly, when the risk sentiment for a commodity like crude oil is analysed in combination with other real-time macro variable indices for GDP, consumption, inflation and employment - it enables users to assess overall demand trends, giving a fuller picture.

## Identifying market turning points

Taking a 'risk-on/risk-off' approach to investing, informed by real-time insights, enables financial institutions to take more informed decisions about their asset allocation strategies in order to generate Alpha and increase AUM.

Risk-on mode is triggered when one or more of the leading macroeconomic indicators for major global economies is trending positive, suggesting there is some economic growth expectation in the world. In this mode investors can benefit from selecting sectors that heavily depend on future economic growth such as cyclicals.

In contrast, risk-off mode is triggered when there are significant limitations in economic growth globally. It can prompt investors to take a more defensive approach and reconsider cash holding levels, and also help users anticipate financial market crashes.

The below graphic shows major events that have impacted the markets and triggered a 'risk-off' approach to investing over recent years. Major events such as the US/China trade war and the COVID-19 pandemic triggered 'risk-off' mode pushing down the MSCI World Index sharply. Hindsight is always a great thing - but having this critical market insight as close to real-time as possible is the key.

Harnessing alternative data in real-time, ahead of official numbers, can allow users to monitor macroeconomic regime changes in a much more robust way. For example, helping to identify macro regime turning points and the top or bottom of economic growth. The anticipation of those trends and turning points can support users with asset allocation, fixed income allocation or equity sector rotation.

Taking this a step further, alternative data indicators can help users determine in real-time the macro regime they are in, whether it's: 'slow growth', 'goldilocks', 'stagflation', or 'heating up' so that they can make the most appropriate investment decisions based on the four quadrants using real-time GDP and CPI data as leading indicators of growth and inflation. Successfully anticipating sharp peaks and troughs in the market so that the right action can be taken is vital in optimising trading and portfolio performance.

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## About QuantCube

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.