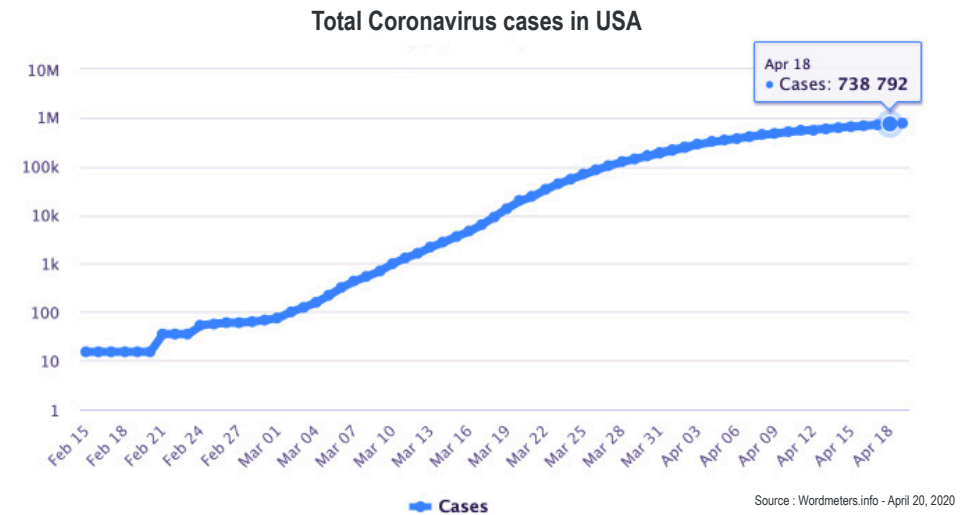
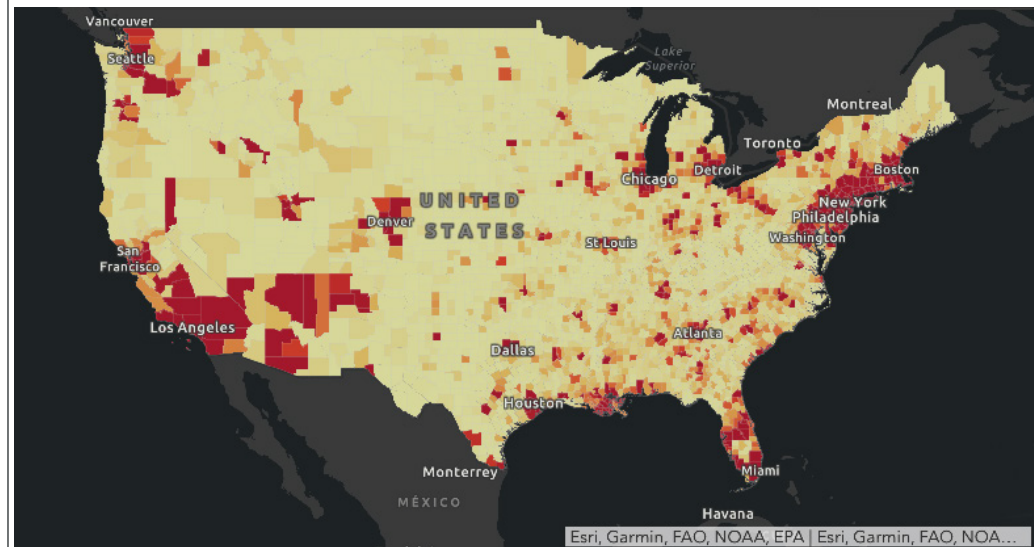


## Global Overview of the impact of Coronavirus



### Cases and deaths by state and county (USA)

	▼ CASES	PER 100,000 PEOPLE	DEATHS	PER 100,000 PEOPLE	CASE GROWTH RATE
New York	222,284	1,143	12,192	63	Feb. 26 Apr. 16
New Jersey	75,317	848	3,518	40	
Massachusetts	32,181	467	1,245	18	
Michigan	29,119	292	2,091	21	
Pennsylvania	28,314	221	864	7	
California	28,142	71	971	2	
Illinois	25,734	203	1,081	9	
Florida	23,332	109	667	3	
Louisiana	22,532	485	1,156	25	
Texas	16,927	58	431	1	

## GDP NOWCAST

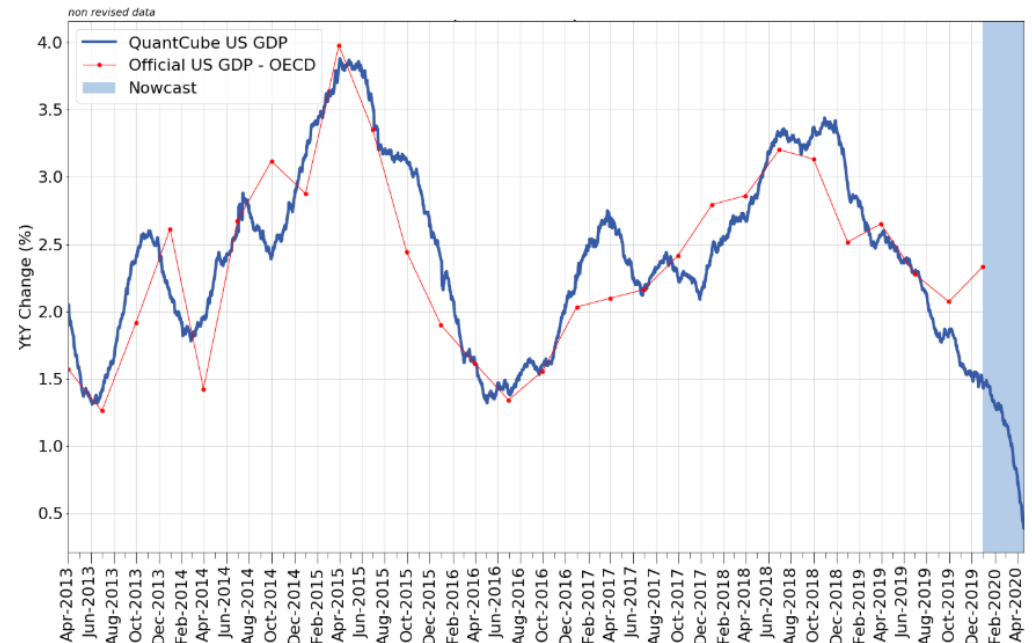
We clearly see that this QuantCube GDP Nowcast is able to efficiently track U.S. GDP growth in real-time with a correlation of 0.75, especially with regards to peaks and troughs in the cycles. For example, during the year 2016, we observe that the index anticipated the slowing pace of the U.S. economy including the trough in June 2016 with a GDP growth at 1.6% annually. Again, it anticipated very well the peak at the end of 2Q2018. More recently, in 2019, the index pointed out the deceleration of the U.S. economic activity starting from mid-2018, amid escalating trade tensions with the U.S. and rising global uncertainties.

Focusing on the latest data, the YtY QuantCube GDP US Nowcast stands at 0.40% on 20 April 2020, consistent with a quarter-over-quarter GDP growth of about -4.6% in annualized terms.

These massive alternative data have the great advantage of being available at a very high frequency, thus leading to signals that can be delivered well ahead of official data. Also, these data are not revised, avoiding thus a major issue for forecasters.

## GDP NOWCAST

QuantCube GDP Nowcast Index  
April 2013 - April 2020



*In the following sections, enclosed are details on consumption, industrial production, job employment, international trade, air traffic and road traffic.*

*Additional information on QuantCube GDP Nowcast could be read in the article titled "Macroeconomic nowcasting in times of Covid-19 crisis: On the usefulness of alternative data" published on <https://econbrowser.com/archives/2020/03/guest-contribution-macroeconomic-nowcasting-in-times-of-covid-19-crisis-on-the-usefulness-of-alternative-data>*

*Full methodology will be published in near future, please contact [info@q3-technology.com](mailto:info@q3-technology.com) for access.*

## CONSUMPTION

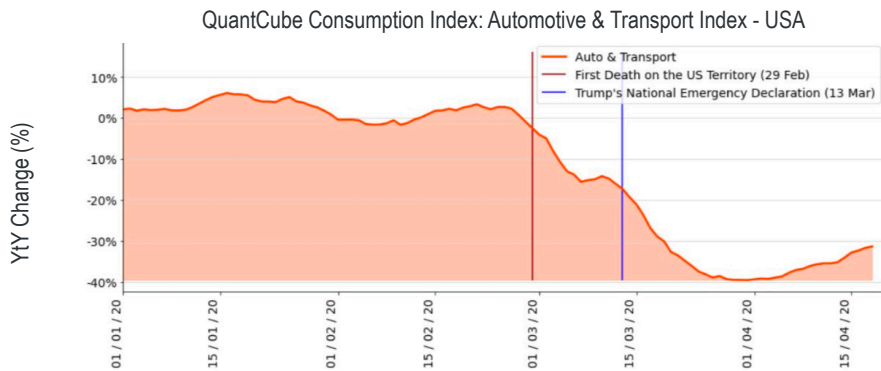
With 25 states having officially banned car sales, the automotive industry suffers significantly from the impact of Covid-19 on the economy, resulting in higher inventories, downgrading of credit ratings or impact on the valuation of the automotive sector.

that there was a -40% drop within the automotive sector.

It will be important to estimate the time for the sector to 'return to normal'. It seems that there was an inflection point at the end of March 2020.

At the beginning of the month, we estimate

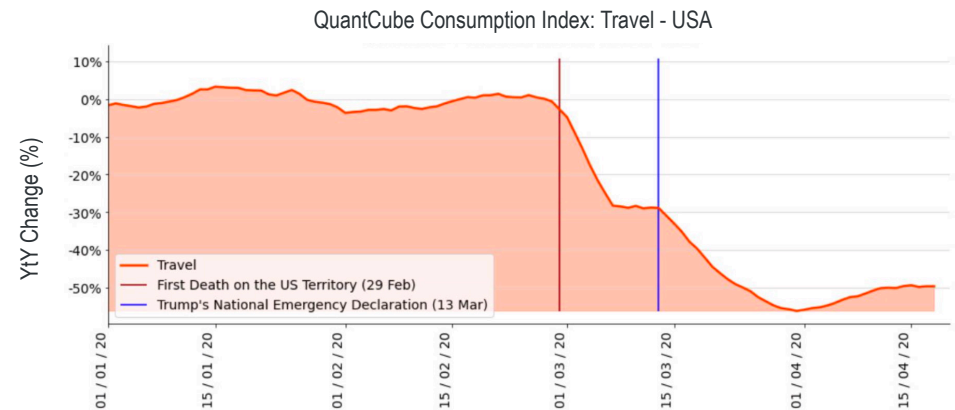
Since Americans limit their trips, bus and train tickets sales nosedived too.



## CONSUMPTION

Since the US decided to restrict the arrival of travellers from Europe and the Schengen zone in mid-March, the travel industry took a big hit. Online reservations for hotels and plane tickets are at their lowest,

according to the CEO of Delta Airlines, the company loses \$ 60 million of cash each day. Since airline companies operate on low margins, we expect a long-term impact on airline companies.



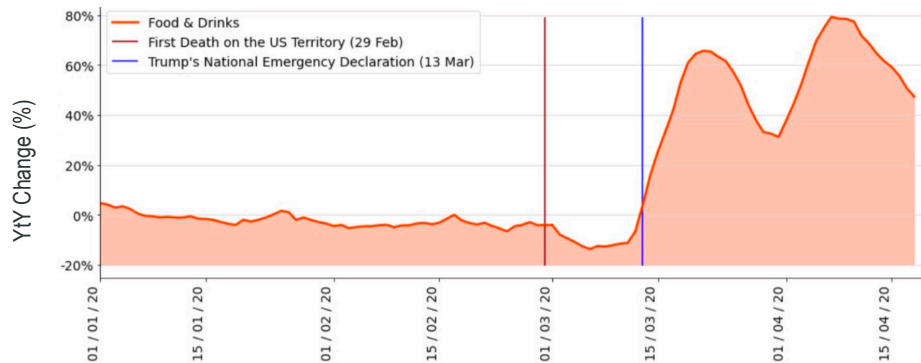
## CONSUMPTION

Since the beginning of Covid-19, the food and retail industry has been under critical pressure. The fear for a food supply penalty leads consumers to rush to nearby stores, resulting in a significant increase in demand for groceries, household supplies, and home entertainment.

Interestingly, compared to countries such as France or Italy following the lockdown dates where there was a higher demand for food & drinks only for a few days, this higher demand occurred for more than a month.

Consequently, retail stores should benefit from this increase in demand for food and drinks.

QuantCube Consumption Index: Food & Drink Index - USA

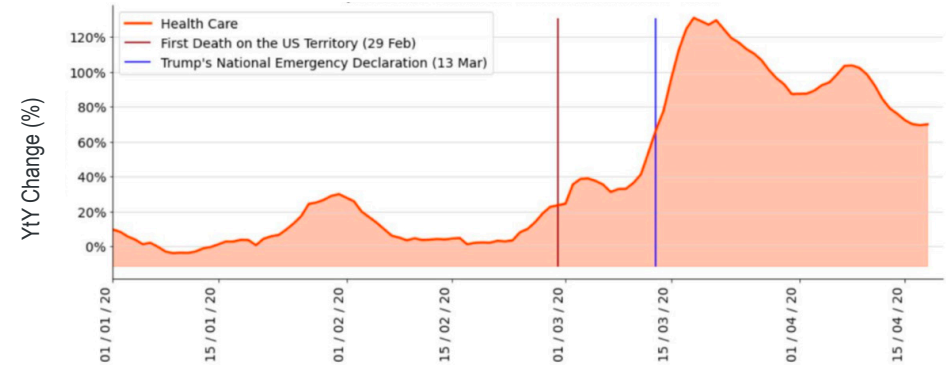


## CONSUMPTION

The US is one of the only developed countries that still relies on a private healthcare system and does not cover medical services. As a consequence, the recent epidemic triggered a wave of panic

and a surge in interest in healthcare services. We expect the healthcare service sector to benefit from this higher demand in those services.

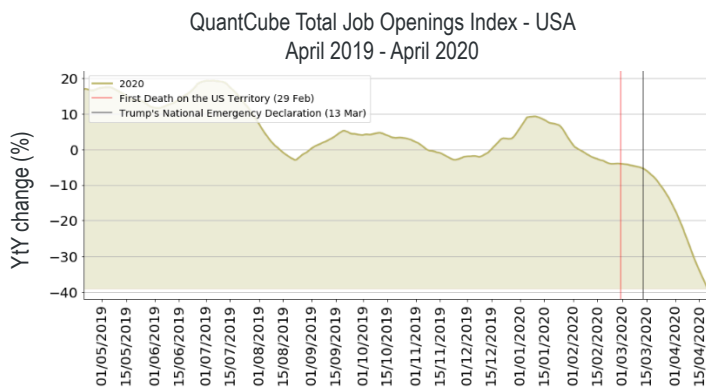
QuantCube Consumption Index: Health Care - USA



## JOB OPENINGS

During the year 2019, the yty change in terms of number of total job openings has been mostly positive, reflecting a strong US economy. Still the yty growth of sectors has varied significantly, either within the consumer discretionary sector, the consumer staples sector, the technology sector or the healthcare sector.

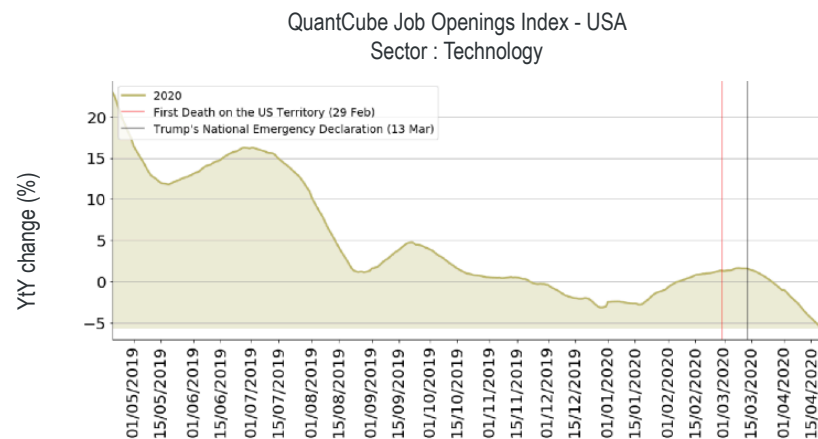
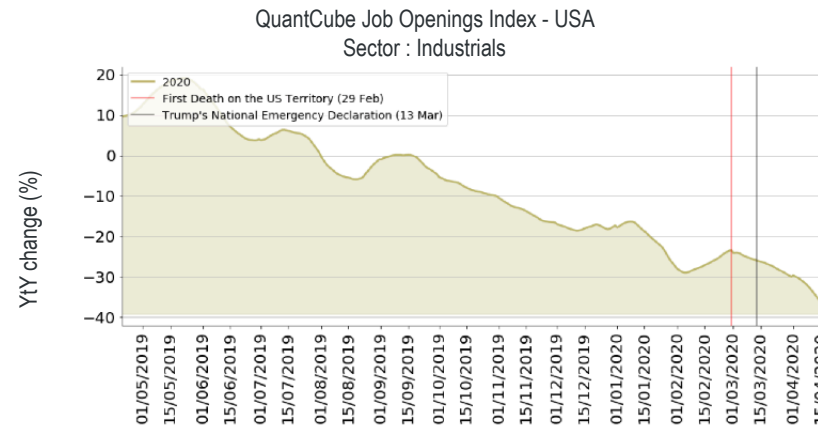
In any case, following the presence and the spread of Covid-19 in the US since the beginning of March 2020, the job market has stalled and followed by a significant yty decrease in total job opening, currently at -40% compared to yty level in 2019. We still expect this number to be worse in the following weeks, reflected in a dramatic increase of the unemployment rate.



Because of the US-China trade war, the industrial sector has suffered during the year 2019, and even more since the spread of Covid-19. Yty change has reached -40% mid-April 2020 and this number could be even worse in the next few weeks. The inflection point of this sector will depend on the shape of the recovery of the US economy.

The technology sector has experienced strong growth in job openings during the first part of the year 2019, reflecting a sector in very good health. Still, following the first death of Covid-19 in the US and the National Emergency declaration, the slowdown in the technology sector is not very significant and this sector should not be too impacted by the Covid-19 impact.

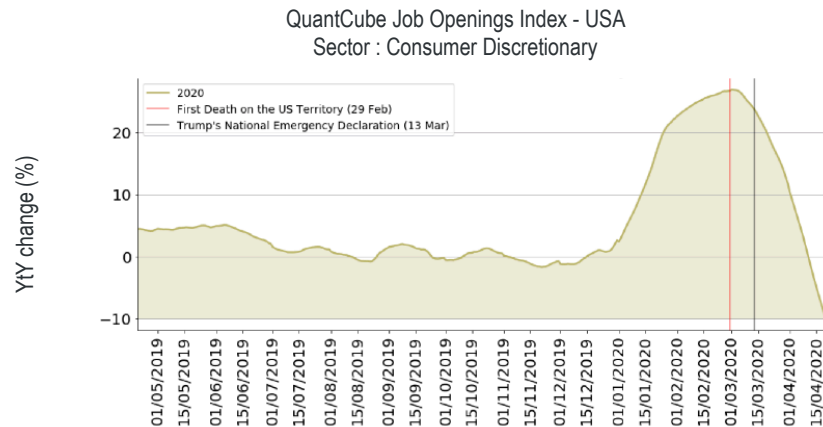
## JOB OPENINGS



## JOB OPENINGS

The US economy was very robust at the end of the year 2019, and it has been reflected in significant hiring within the discretionary sector, especially at the beginning of the year 2020 with an inflection point appearing with the first death from Covid-19 in the US.

Following the National Emergency declaration, job openings within this sector dropped dramatically, from a yty change of +20% at the beginning of March 2020 to -10% in mid-April 2020. We expect lower numbers in the following weeks.

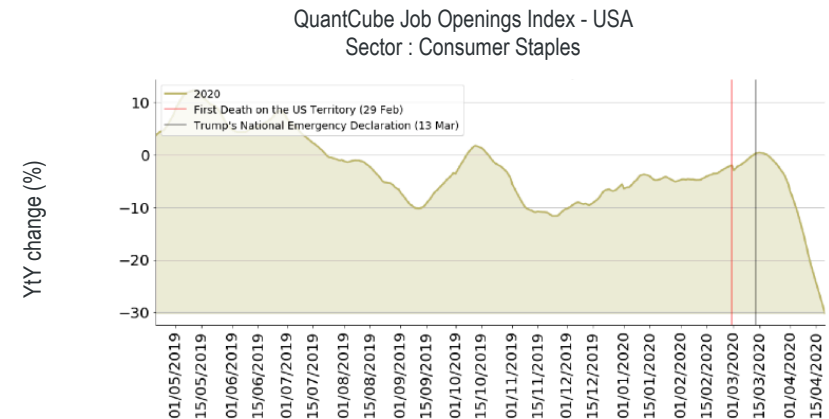


## JOB OPENINGS

This graph tracking job openings within the consumer staples sector shows an inflection point following the National Emergency declaration even though we have seen previously that consumption in food & drinks

has been significantly higher over the same period.

Higher demand for food & drinks with less recruitment should drive the earnings of the consumer staples sector higher.



## INDUSTRIAL PRODUCTION

QuantCube Technology tracks different levels of pollution, especially emissions from nitrogen dioxide, ozone, sulphur dioxide, methane, carbon monoxide and aerosols provided by Tropomi, a spectrometer instrument from the satellite

Sentinel 5P. Tropomi maps the global atmosphere every day with a resolution of 7 km x 3.5 km. The analysis of these data allows us to follow human activities by comparing the total average of produced

## INDUSTRIAL PRODUCTION

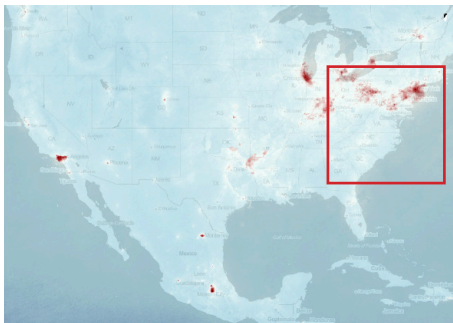
NO2 over given periods in time. In the United States, NO2 is primarily emitted from the traffic (cars, ships, planes), a combustion of fossil fuels in industrial processes, gas and oil extraction and heating. The objective is to track pollution from industries over the US.

During the first two weeks of April 2020, it appears that there was still some activity in New York - New Jersey area but very little industrial activity in the US compared to the same period in 2019.

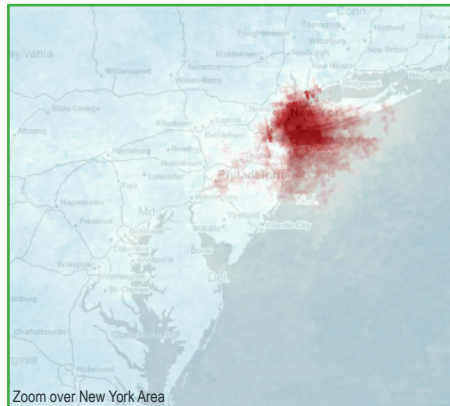
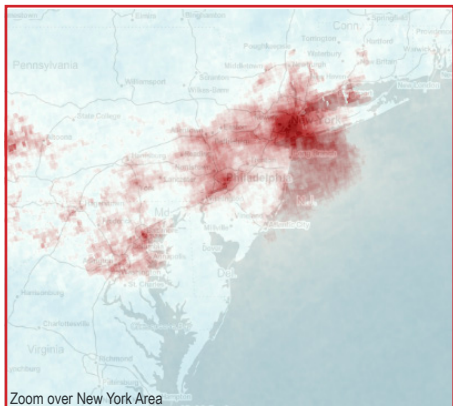
This satellite data analytics emphasizes the negative impact of Covid-19 over the production activity over the US compared to China where we currently see production activity close to normal level in the Northern part of China.

This sudden drop of industrial activity in the US has had significant impact of the demand of energy fuel, leading to high inventory in crude oil in the US.

QuantCube Industrial activity index - USA  
USA '05/4/2019' - '20/4/2019'



USA '05/4/2020' - '20/4/2020'



New York Area - Drop for 11% over 2 weeks period 2020 vs 2019

QuantCube Industrial activity index - Los Angeles  
'05/4/2019' - '20/4/2019'



'05/4/2020' - '20/4/2020'



Los Angeles - Drop for 16% over 2 weeks period 2020 vs 2019

*Los Angeles area has stalled its industrial activity, resulting in higher increase in inventory of crude oil.*

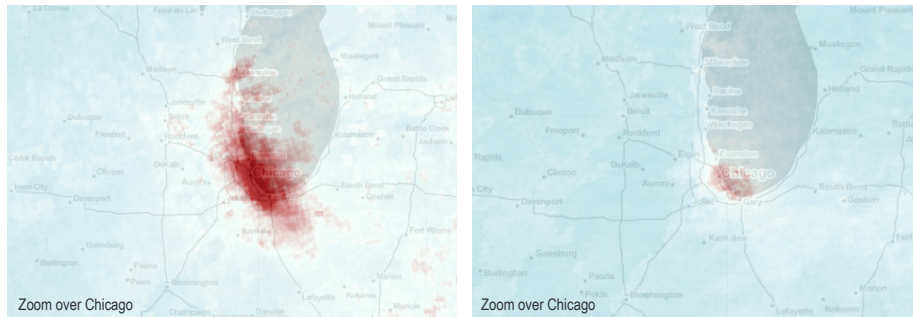
## INDUSTRIAL PRODUCTION

In conclusion, not only the consumer demand has slowed down significantly but also the industrial production within the US. Those macroeconomic variables have a significant negative impact on the US

economic growth.

We will keep tracking the Production activity to identify the inflection point of this activity in the future.

QuantCube Industrial activity index - Chicago



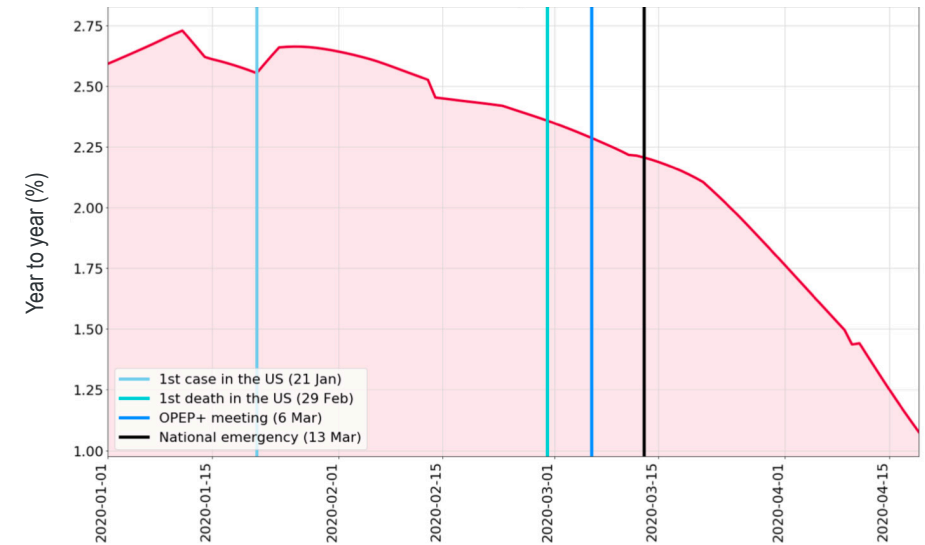
Chicago - Drop for 36% over 2 weeks period 2020 vs 2019

## INFLATION

The Quantcube Inflation Index, which tracks the CPI-U, has sharply decreased since the beginning of March 2020. It went from 2,35 % on 1/3/2020 to 1,10 % on 19/4/2020.

This is mainly due to the decrease in demand and the drop in oil prices explained by the over-supply of fuel and oil products.

QuantCube Inflation Index - USA





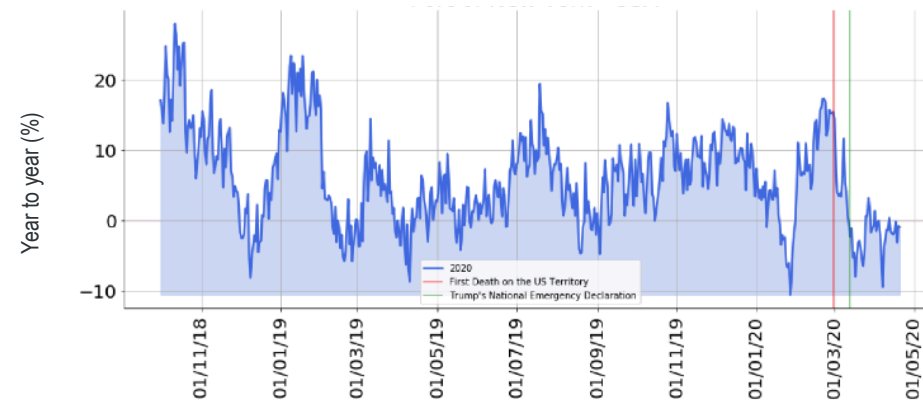
## INTERNATIONAL TRADE

US has recently been the most affected by the COVID19 spread, despite that, the port of Houston demonstrated a 20% increase in container volume in January and February 2020, the port is now showing signs of being impacted by the virus spread. Los Angeles port had a significant decline in cargo volume in the first quarter of the year. The virus, supplementing the negative effects of the US-China trade war, has strongly disturbed

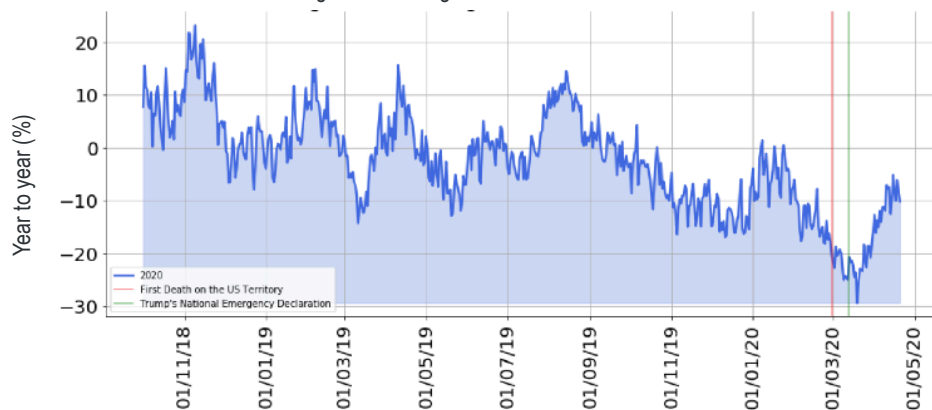
the activity in those ports on the West coast representing more than 25% of the US market share, with a decrease of up to 30% during March. This sharp decrease of international trade on the West coast reflects as well as the impact of Covid-19 on Asia, especially on China, slowing down since mid-January 2019. In New York port, even though it is the epicenter of the pandemic in the US, we did not see a significant slowdown of the activity.

## INTERNATIONAL TRADE

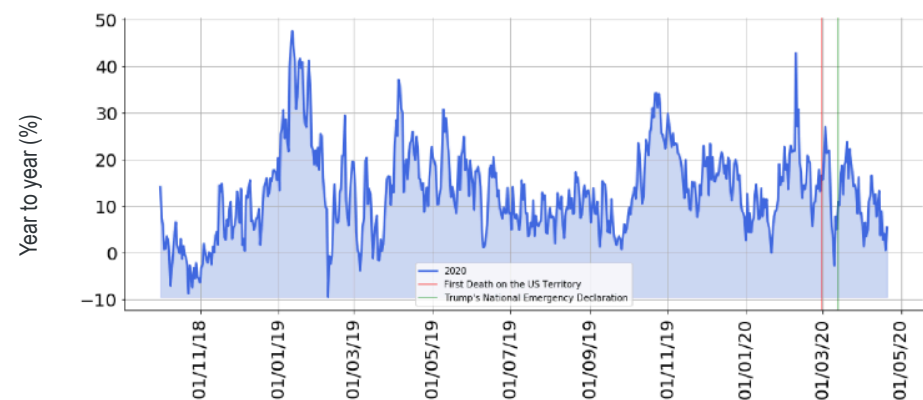
QuantCube International Trade Index - Containers  
Port of New York City - USA



QuantCube International Trade Index - Containers  
Los Angeles and Long Beach Ports - California - USA



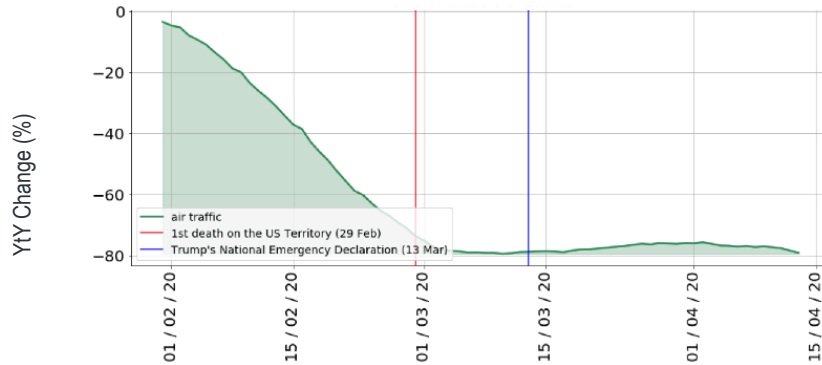
QuantCube International Trade Index - Containers  
Port of Houston - USA



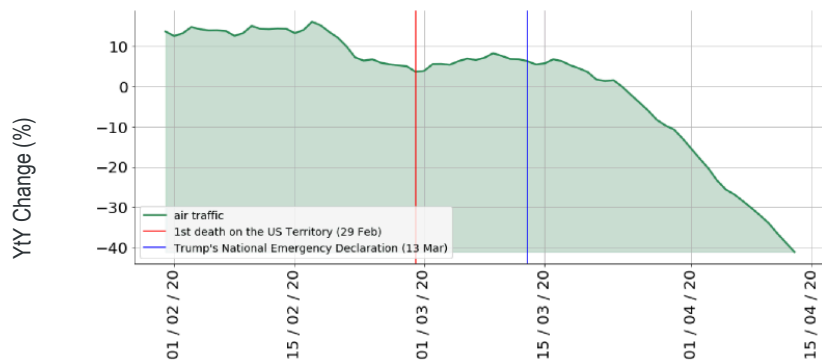
## AIR TRAFFIC

QuantCube Air Traffic Index tracks all the air traffic worldwide. Due to increasing travel restrictions, we observe a significant drop of more than 30% of air traffic in the United States. From the two previous graphs we notice that the traffic with China near to totally shut down with a drop of 80% compared to last year, but the internal traffic dropped only by 30%. We observe that the main American airports are following the same trend as Europe with air traffic in sharp decline since last month.

QuantCube Air Traffic Index  
from USA to China



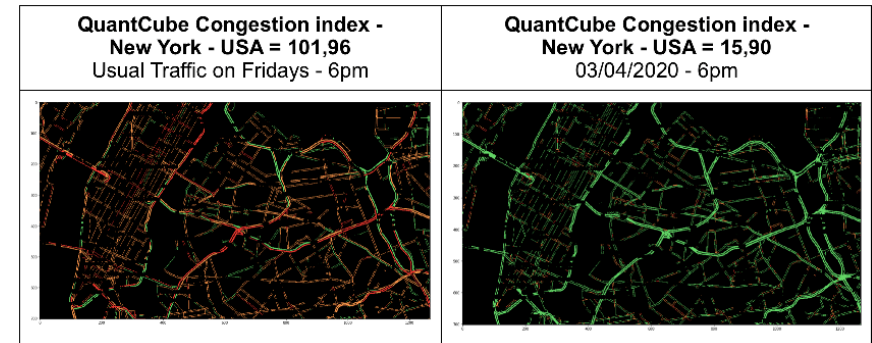
QuantCube Internal Air Traffic Index  
USA



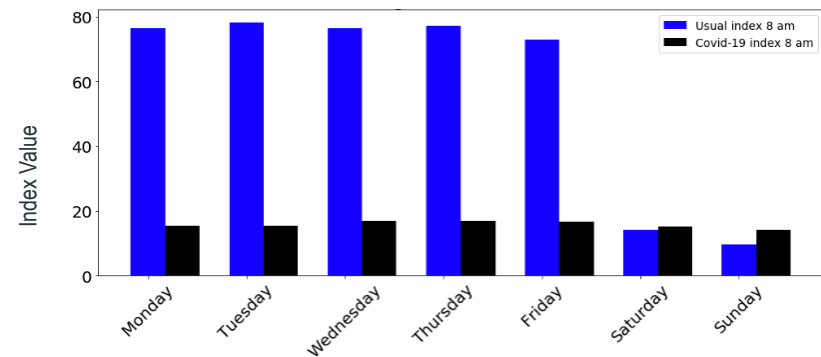
## ROAD TRAFFIC

In last week's newsletter, we highlighted the fact that the QuantCube congestion index will be used as a proxy to monitor the "return to normal" when the lockdown will be lifted. The previous index highlights the fact that since the lockdown of New York City many businesses have closed or encouraged employees to work remotely when it is possible.

These new habits have real impact on the road congestion that especially contributes massively to greenhouse emissions. In normal traffic, we observe two daily spikes in traffic congestion during rush hours: from home to work and from work back home. We observe a drop of 85% in our QuantCube congestion index in New York City, illustrating the consequence of shops, restaurants and offices shutting.



QuantCube Congestion Index New York - USA



## Company Background

Founded in 2013, QuantCube Technology is a fintech startup specialized in **Alternative Data Analytics for Economic Intelligence**. QuantCube Technology aims to provide to financial institutions actionable global macro smart data through its economic intelligence platform. Our focus is especially on real-time predictive analytics, commonly called Macroeconomic Nowcast.

QuantCube has built up one of the largest datalake in the financial industry. Relying on the most advanced AI techniques and high performing computing machines, we are able to **estimate in real time major macroeconomic variables** such as economic growth, employment market, inflation, international trade or consumer expenses with very high correlation with official numbers.

Our team has proven expertise on AI analytics such as multilingual Natural Language Processing to analyze different economic and financial texts, Deep Learning for Satellite data analytics or machine learning techniques on structured data such as maritime traffic, meteorological data, and other numerous data sources.

QuantCube is also involved in **advanced scientific publications with governmental agencies, academic institutions and major leading corporates** in different sectors of the economy.

QuantCube Technology is backed by two major institutional investors : **Moody's Investor Services** and **Five Capital** -a joint venture between CDC International (Caisse des Dépôts) and Kingdom Holdings.

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