



#virus

Data Science HF Indicators Update

Social Distancing Started Last Week, but Hospital Load Already Near Peaks

Even before the widespread ban on gatherings that arrived this weekend, we were seeing significant evidence of social distancing in transportation and shopping:

New York City (NYC) subway ridership fell almost 40% over the same period last year, and airport traffic was down 30%.

Workplaces across the US took swift action to implement social distancing last week: By Friday, more than 90% of headquarters for the S&P 500 were operating with fewer people than normal, and >40% had cut their staffing by at least half.

Despite that, it may already be too late to avoid significant strain on healthcare infrastructure: Combined NYC emergency room admissions for influenza like illnesses (fever + cough or sore throat) and respiratory illnesses (pneumonia, difficulty breathing) reached their fifth highest day since at least 2016 on March 12. On that day, NYC had reported only 96 COVID cases, but that number more than tripled to 329 as of March 15.

Information seeking continues to grow exponentially: We suspect that one of the earliest indicators of flattening in the epidemic curve will come from changes in online activity. But as of the latest data on March 14, growth in COVID calls to NYC's 311, visits to the CDC's website, and tweet volume all appeared to still be growing sharply.

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Commentary

Social distancing had already started in earnest even before the widespread bans on gatherings and closures of public places that happened this past weekend:

- Airport traffic volumes were down about 30% y/y nationally, with the average airport converging to the declines seen at WA, CA, and NYC airports;
- NYC subway ridership was down 20% last week, and almost 40% on Friday;
- >90% of S&P companies have cut their headquarters staffing, with 40% having at least half the normal employees out of the office.

Despite that increase in distancing, NYC emergency rooms were already close to historical peak admissions for flu-like and respiratory illnesses on March 12. Given that confirmed cases in the city were only 96 on that date, but have since risen to 329, we have to imagine that the volumes have only increased since then.

Finally, we expect information-seeking behaviors may provide some of the earliest insight into any potential flattening of the epidemic curve. But even there, we continue to see exponential-like growth. Calls to NYC's 311 line are continuing to accelerate, as are visits to the CDC's website and tweet volumes in the US and western Europe.

As a final note, the virus outbreak appears to have strained the infrastructure for delivery of geolocation data, so it should be treated with a higher degree of uncertainty (and more likelihood of revision for the most recent datapoints) for the time being.

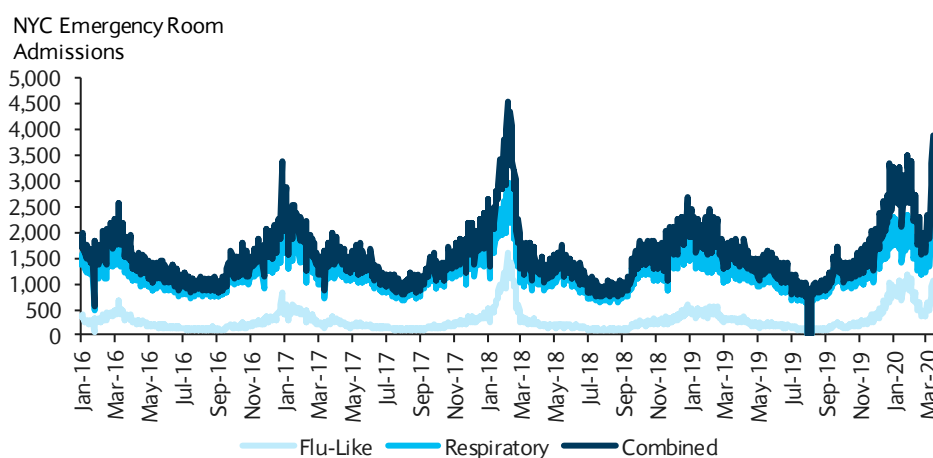
High Frequency Series Updates

NYC Hospital Emergency Room Admissions

March 12 (the latest day for which data is available) was the fifth highest day for combined admissions to New York City (NYC) emergency rooms for influenza-like illnesses (ILI, fever + cough or sore throat) and respiratory illnesses (Figure 1).

FIGURE 1

March 12 was already the fifth highest day on record for hospital emergency room Admissions for combined flu-like and respiratory illnesses



Source: NYC Health, Barclays Research

For details of how we look at emergency room admissions, see [Data Science High Frequency Indicators: NYC Emergency Room Admissions Are Already at Peaks](#), March 16, 2020.

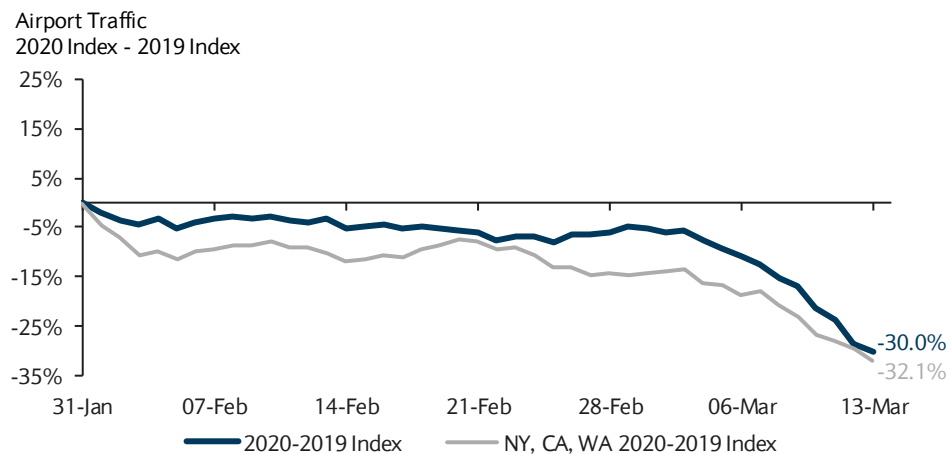
Airports

Traffic continued to fall at airports nationally last week. As of the latest data on March 13, traffic was down by 30% nationally. It was also notable that the national decline has almost converged to the decline at airports in CA, WA, and NYC.

We should note that this data does not include the night of Saturday, March 14, when waits at customs resulted in significant crowds at a number of major international airports across the United States.

FIGURE 2

Traffic at airports was down 30% last week, with airports nationally mostly converging to CA, WA, and NYC



Source: Complementics, Barclays Research

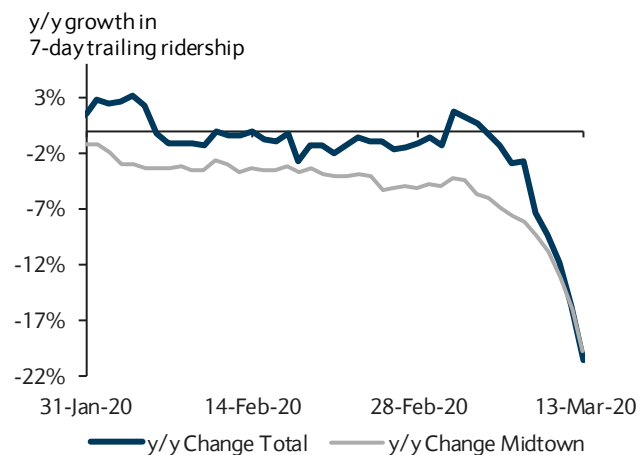
For details of how we look at airport traffic, see [Data Science High Frequency Indicators: US Airport Traffic Is Down and Falling](#), March 12, 2020.

NYC Subways

Subway ridership in New York City took an extremely sharp downturn this past week, with Friday's number almost 40% below 2019 levels.

FIGURE 3

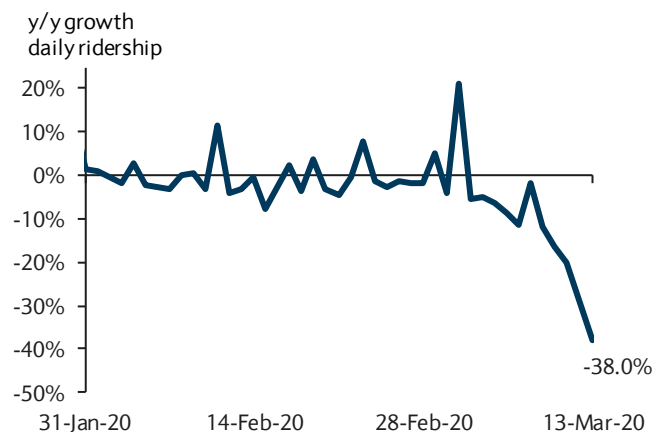
NYC subway ridership was down more than 20% last week



Source: MTA, Barclays Research

FIGURE 4

But the most dramatic moves happened at the end of the week, with Friday's ridership down nearly 40%



Source: MTA, Barclays Research

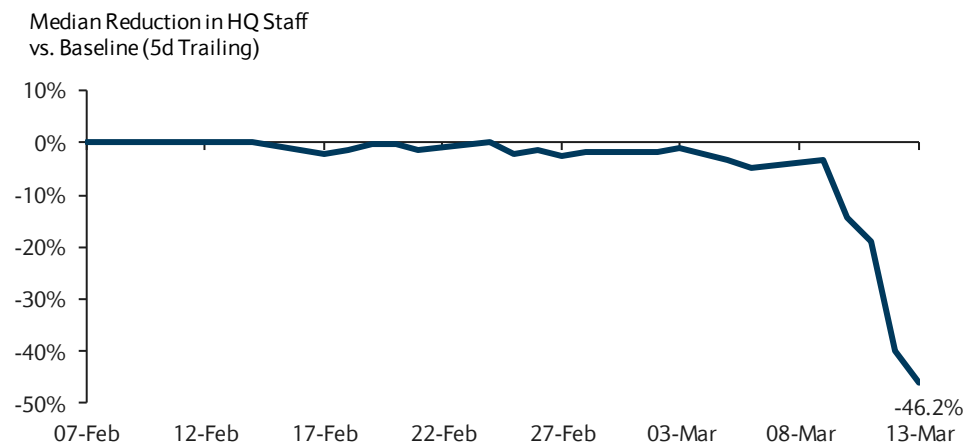
For details of how we look at subway ridership, see [Data Science High Frequency Indicators: NYC Subway Ridership Is Declining](#), March 10, 2020.

S&P 500 Headquarters

Although it really only took hold in the past week, we have now seen a sharp increase in social distancing by S&P 500 companies. In the past week, the median name in the group has gone from a single-digit reduction in headquarters staffing to a 46% reduction.

FIGURE 5

The median S&P 500 company has reduced HQ staffing by 46% in the most recent week

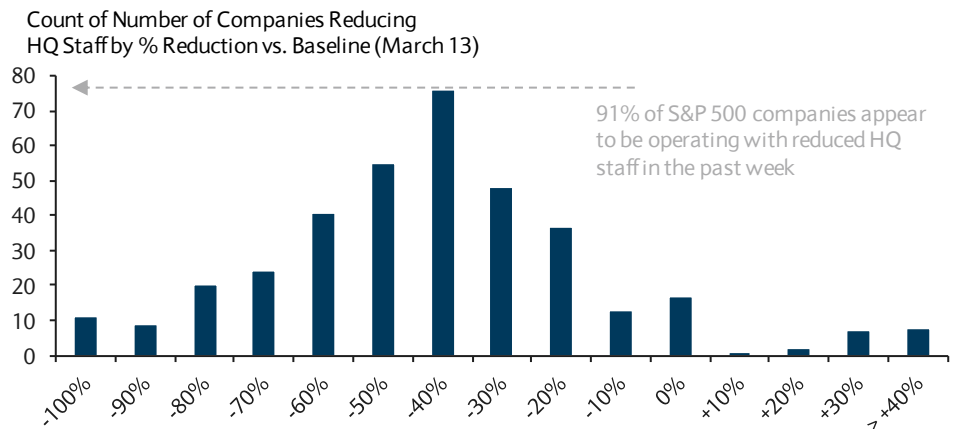


Source: Complementics, Barclays Research

And the cutting has been close to universal, with >90% of the firms reducing headquarters staffing compared to a January/February baseline, and more than 40% cutting staff by half or more.

FIGURE 6

90% of S&P 500 companies whose headquarters we can track appear to have reduced the number of people working at HQ; >40% have cut by half or more



Source: Complementics, Barclays Research

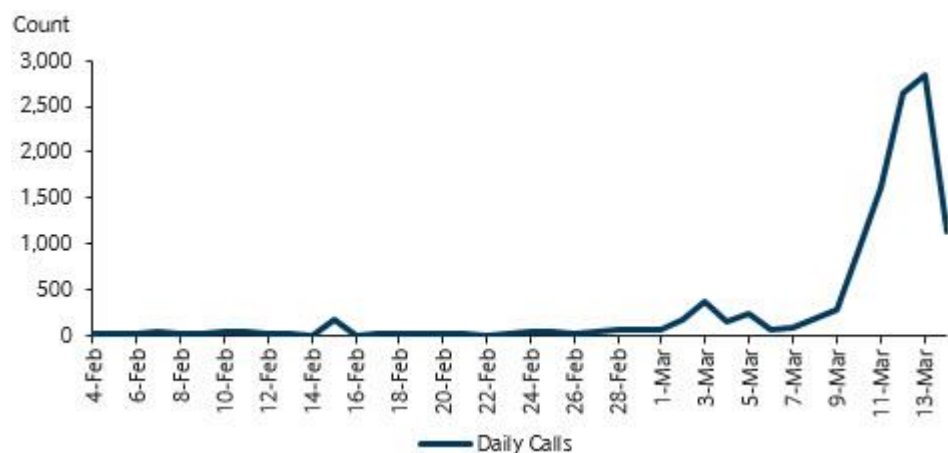
For details of how we look at S&P HQ staffing, see [Data Science High Frequency Indicators: S&P Companies Have Committed to Social Distancing](#), March 16, 2020.

NYC 311 Calls

NYC 311 calls are one of our gauges for information-seeking about COVID-19, which we think have the potential to be leading indicators. Those calls are climbing exponentially; although the total number slowed and dipped on Friday, March 13 and Saturday, March 14, which appears to be a day-of-week effect with large growth rates over prior Fridays and Saturdays. The growth rate over the comparable day in the prior week was near the peak on Saturday.

FIGURE 7

NYC 311 calls seeking information about COVID-19 are climbing exponentially; although the number dipped on the weekend, growth accelerated over the prior week



Source: NYC Open Data, Barclays Research

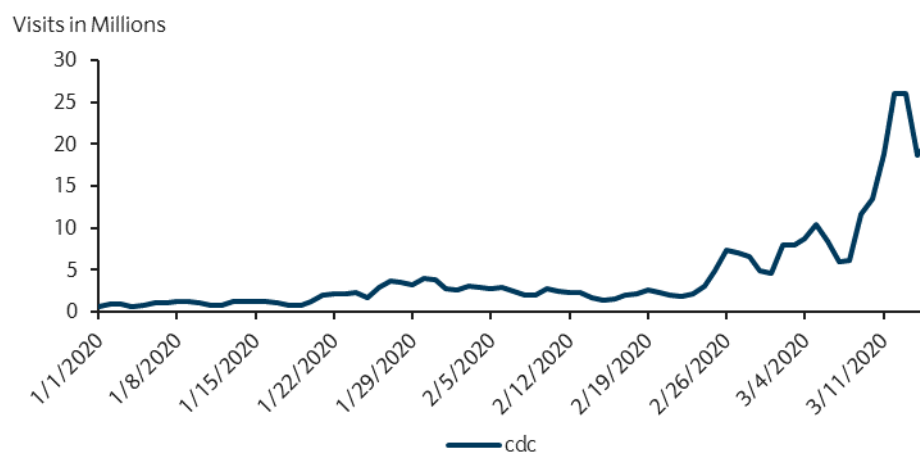
For details of how we look at 311 call volume, see [Data Science High Frequency Indicators: COVID-19 Calls to NYC's 311 Are Starting to Spike](#), March 13, 2020.

Visits to the CDC Website

Visits to the CDC website are another indicator for information-seeking about COVID-19, as people seek information about symptom, how to protect themselves, what to do if infected, and official information and policy response. As with 311 calls, we still see significant growth in traffic to the site. And as with the 311 data, the dip on weekends should be compared to prior weekends when estimating the growth rates.

FIGURE 8

Visits to CDC website



Source: analytics.usa.gov, Barclays Research

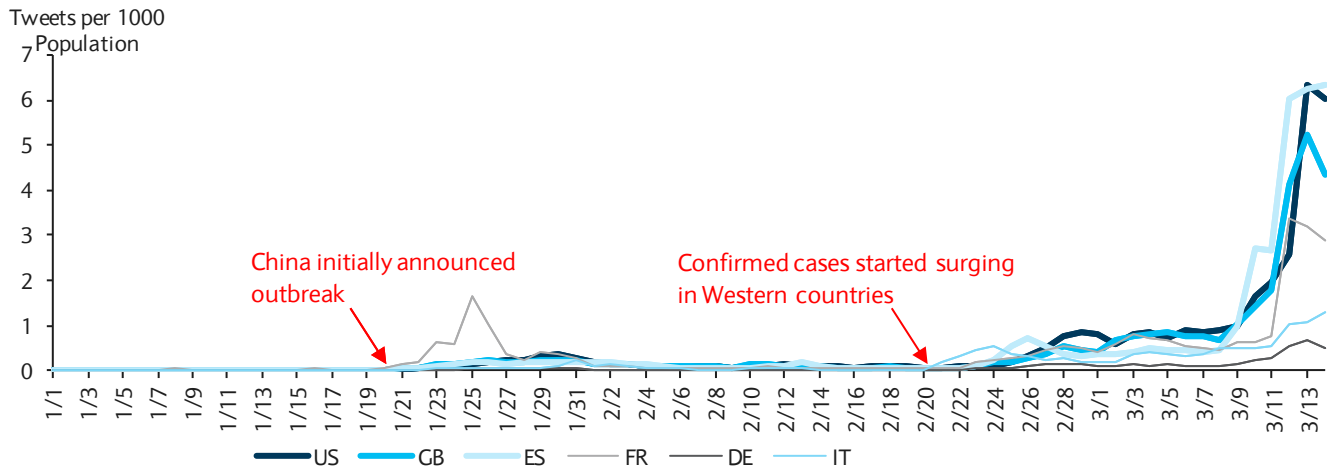
For details of how we look at CDC website traffic, see [Data Science High Frequency Indicators: Visits to CDC Websites Have Spiked](#), March 16, 2020

Twitter

As with our other high-frequency information indicators, tweets with the topic of virus or Covid have continued to surge at an exponential-like rate (Figure 9). Although the baseline volume of tweets for each country is different, because of varying degrees of penetration for the app, we have seen similar recent growth paths, with Spain turning up earlier than the US, and France lagging (but now rising fast).

As with other high frequency information series, we often see dips in total volume on weekend days that do not represent interruptions of the trend.

FIGURE 9
Population normalized count of “virus” or “covid” related tweets, by country



Source: Twitter, United Nations, Barclays Research

For details of how we look at tweet volume, see [Data Science High Frequency Indicators: COVID-19 Tweet Surges Vary by Country](#), March 16, 2020.

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