



#virus

## Data Science High Frequency Indicators COVID-19 Tweet Surges Vary by Country

**Twitter data shows that public attention has increased rapidly in the US and Europe since mid-February.** Italy's 152x jump initially led among Western countries, and the US has surged rapidly since the declaration of national emergency on 3/13/2020.

**We used twitter data to proxy public awareness/attention to COVID-19 pandemic.**

We count the number of tweets that contain "virus" or "covid" by country on a daily basis and normalized the counts by population in each country. We then use the average between 1/1/2020 to 1/15/2020 as our baseline case and compared it with the two periods between 2/20/2020 to 3/12/2020 and 3/13/2020 to 3/14/2020, post national emergency being declared in the US, to measure the increase in public attention.

**Because we did the search in English terms only, we only include countries which have more than 1,000 confirmed cases and whose language has identical spelling of "virus" as in English.** China and Iran are not included because Twitter is not accessible in these two countries, and South Korea is excluded for language reasons. We note that the counts in non-English countries are still likely to be underestimated, but we think it is still appropriate to compare with each country's own baseline case.

**Additionally, we counted the number of tweets that are related to "working from home" and its variants.** We believe the number of employees working from home is an indicator of the economic impact, but it also presents opportunities for remote working service providers.

FIGURE 1  
Daily Number of Tweets per 1,000 Population Has Surged Compared to Baseline

	US	GB	ES	FR	DE	IT
1/1 - 1/15 (Baseline Case)	0.01	0.01	0.01	0.01	0.00	0.00
2/20 - 3/12	0.76	0.75	0.85	0.59	0.13	0.37
Multiples to Baseline	85	78	60	44	85	152
3/13 - 3/14	6.17	4.79	6.29	3.05	0.60	1.20
Multiples to Baseline	690	496	442	232	397	489

Source: Twitter, United Nations, Barclays Research

Equity Research

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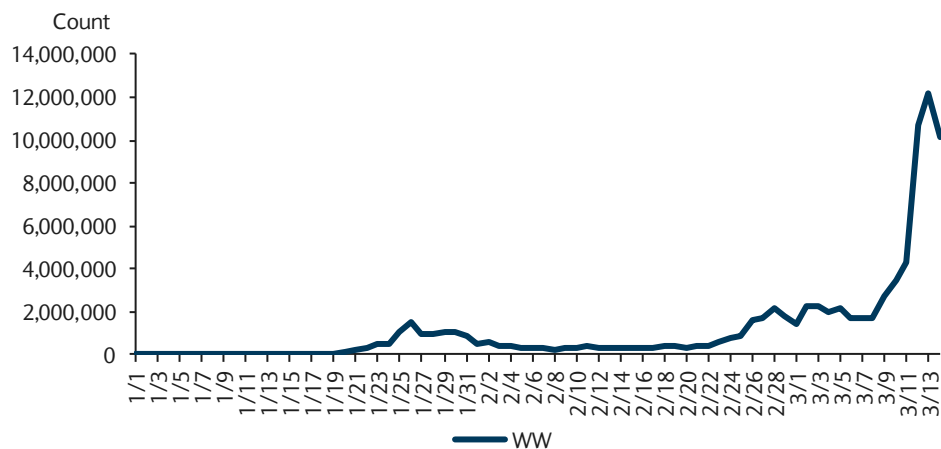
PLEASE SEE ANALYST CERTIFICATION(S) AND IMPORTANT DISCLOSURES BEGINNING ON PAGE 4.

## Twitter Shows a Dramatic Increase in Public Attention to COVID-19

Twitter data provides real time count of tweets containing specific key words. It serves as an ideal high frequency indicator of public awareness/attention to the COVID-19 pandemic.

FIGURE 2

World Wide Count of Tweets Containing “virus” or “covid”

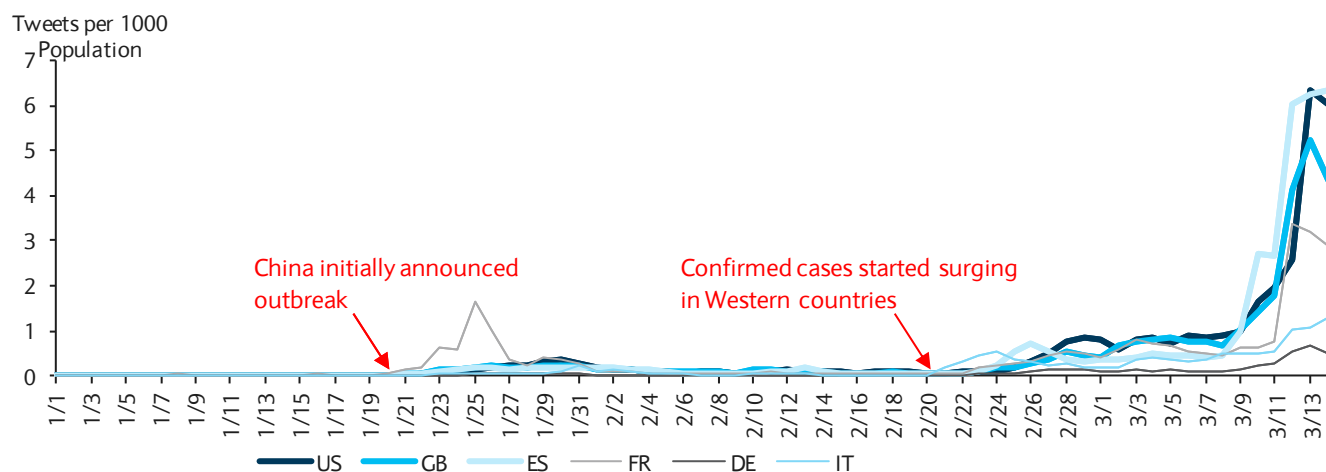


Source: Twitter, Barclays Research

In this analysis, we count the number of tweets that contain “virus” or “covid” by country and on a daily basis, and normalized the counts by population of each country. We then use the average between 1/1/2020 to 1/15/2020 as our baseline case and compare it with the two periods between 2/20/2020 to 3/12/2020 and 3/13/2020 to 3/14/2020, post national emergency being declared in the US, to measure the increase in public attention.

FIGURE 3

Population Normalized Count of “virus” or “covid” related Tweets, by Country



Source: Twitter, United Nations, Barclays Research

Figure 4 summarizes the multiples of virus-related tweets count since confirmed cases started to surge in Western countries in mid-February, compared to a baseline period prior to China's initial announcement of outbreak in Hubei province. Data shows that Italy, where the situation is reported to be most serious, led the surge initially while other countries also saw sizable increases. On 3/13/2020, a national emergency was declared in the US and we see an immediate spike in the multiples in the US and the UK, surpassing Italy in the latest period. Spain, France, and Germany each also saw a significant increase in their multiples, but this remains far below the US.

FIGURE 4

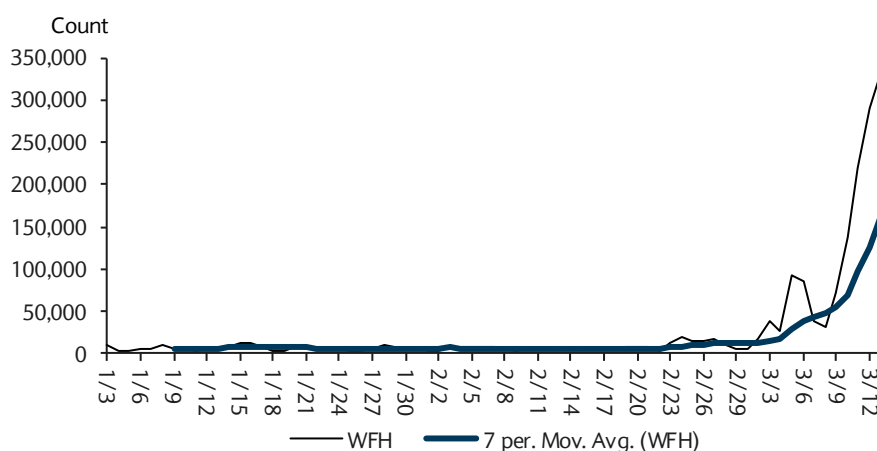
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Multiples to Baseline	690	496	442	232	397	489

Source: Twitter, United Nations, Barclays Research

Additionally, we counted the number of tweets that are related to “working from home” and its variants. We believe the number of employees working from home is an indicator of economic impact, but also presents opportunities for remote working service providers such as Zoom, Citrix, Webex, etc. Note that tweets count related to “working from home” tend to follow a weekly pattern as fewer people tweet this topic during weekends. Therefore, we think a trailing seven-day average is the most appropriate read of this indicator.

FIGURE 5

**“Working From Home” Related Tweets Have Also Surged Since Early March**

Source: Twitter, Barclays Research

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