

COVID-19 UPDATE

Facts & Figures

Issued February 05, 2021

In brief:

- **Special focus:** Covid-19 mutations. Key points: transmissibility, reinfection and vaccine effectiveness.
- **February 04:** 503,786 total new cases (+0.5%), vs 505,772 the previous day and 488,649 7-day average. Now confirmed **104,772,741 cases worldwide** vs 101,352,201 cases last week.
- 2,281,499 people have died (2.2% of confirmed cases) and 77,011,381 have recovered (73.5%).
- **Europe:** 30,842,294 cases; 7-day avg growth of 164,668. **USA:** 26,676,957 cases; 7-day avg growth of 130,039.
- **Vaccines:** around 30 million vaccination doses have been administered in the past week, of which 6 million in the **USA** and 7 million in **Europe**.

Focus: Covid-19 Mutations

As for all viruses, the Sars-CoV-2 (Covid-19) is naturally mutating over time. The majority of mutations are temporary and will have little impact, but sometimes a virus mutates in a way that helps it survive and reproduce. This is what happened with the variants discovered in the UK, in South Africa and in Brazil.

Which are the risks of a mutation? As of today, there is no evidence that either of these variants cause a more severe disease, but rather they show an increased transmissibility that is likely to lead an increased number of infections. The reason for the rapid spread could be a slight change in a spike protein, that allows the mutated virus to replicate, transmit or escape the immune system more easily than the original coronavirus.

Is it really better having an increase in the transmissibility of the disease rather than an increase in the severity?

The answer is not so straightforward. Let's take [Adam Kucharski's example](#).

Suppose current $R=1.1$, fatality rate at 0.8%, reproduction time at 6 days and 10k people infected in a city (similar conditions to many European cities). At current conditions we would expect $\rightarrow 10,000 * 1.1^5 * 0.8\% = 129$ deaths

Now suppose the **fatality rate increase** by 50%. In the same period, we would have $\rightarrow 10,000 * 1.1^5 * (0.8\% * 1.5) = 193$ deaths

Let's take instead an **increase in the transmissibility** rate by 50%. Again, we would have $\rightarrow 10,000 * (1.1 * 1.5)^5 * 0.8\% = 978$ deaths

Obviously, this is just an example, but it shows how an increase in the **transmissibility** may have worse consequences, especially considering the increased pressure such a rapid rise in new cases may have on the healthcare systems. Also for this reason, the ECDC released a [risk assessment related to the spread of the new SARS-CoV-2 variants](#) where they increased the risk associated to the spread of these new variants to high/very high.

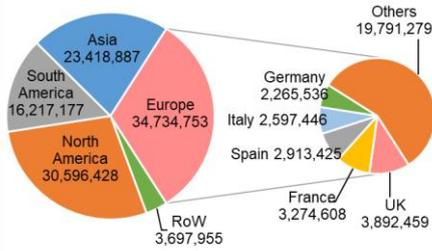
A further cause of concern is the higher possibility of **reinfection**. The Brazilian variant first appeared in Manaus, where three quarters of the population were infected with Covid-19 last year. This should have led to some basic immunization in a large part of the population, but infection numbers have recently been rising again, meaning [the mutation is potentially associated with an increase in transmissibility or propensity for re-infection](#).

Finally, one of the main questions: **do new variants mean vaccines won't work?** First, a new variant will not completely make a vaccine "not work", but it may reduce the extent of the protection thus reducing its effectiveness. Regarding the UK variant, [the WHO said](#) that **new strain does not alter the efficacy of existing laboratory diagnosis, therapeutics, vaccines, or public health preventive measures**. More concerns emerge regarding the South African variant. Several drug makers have been testing their vaccine in South Africa, and despite still offering important protection, they are less effective. [A preliminary study](#) (not yet peer reviewed) by Moderna found that their vaccine seems to work against the UK and the South African variants, although a reduced efficacy was observed in the latter. Even so, the authors said the antibodies were **effective enough to provide protection**. [Johnson & Johnson reported](#) that its one-shot vaccine was 72% effective overall in the US but only 57% effective in South Africa. [Novavax reported](#) its vaccine was nearly 90% effective in the UK and only 60% effective in South Africa.

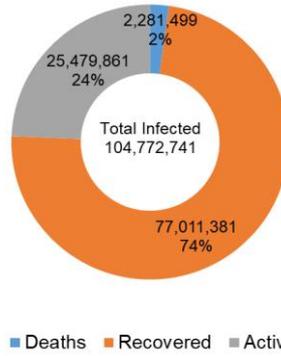
That said, Anthony **Fauci** urged Americans to get the vaccine as soon as possible and not wait for the next generation of shots, because "**viruses cannot mutate if they don't replicate**". **Vaccines fast deployment is therefore crucial to limit the spread of the disease and potentially reduce the probability of mutations.**

Last Contagion Figures

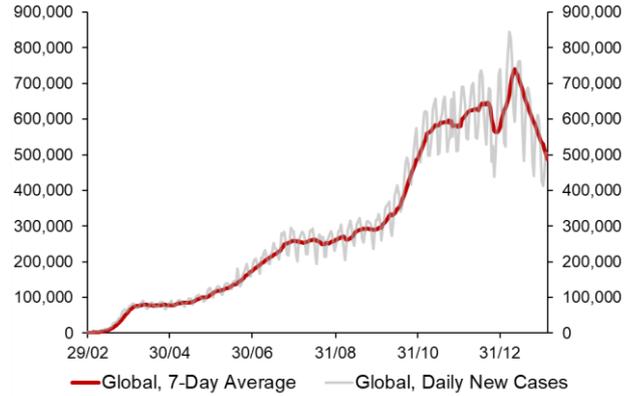
Global Confirmed Cases



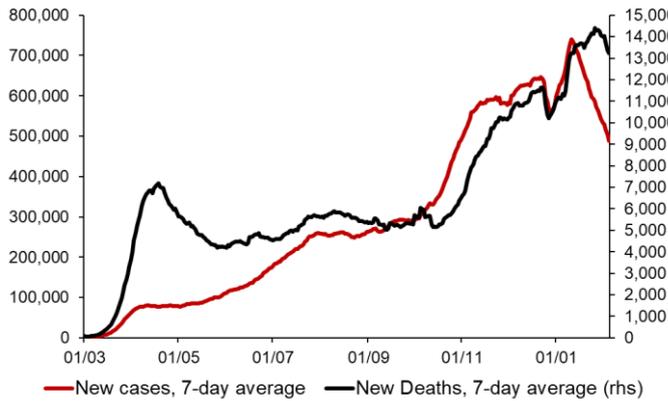
Global Infected Status



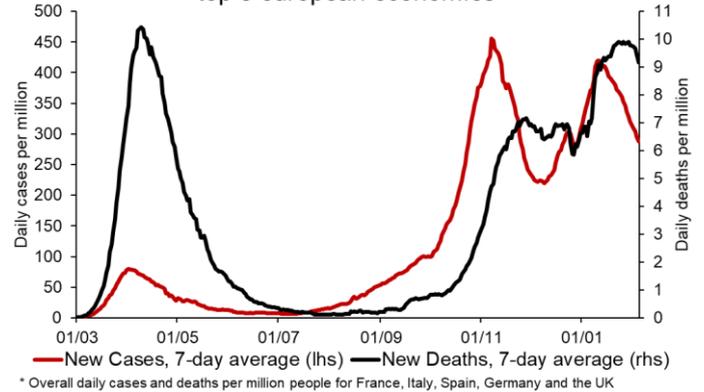
Global new cases per day



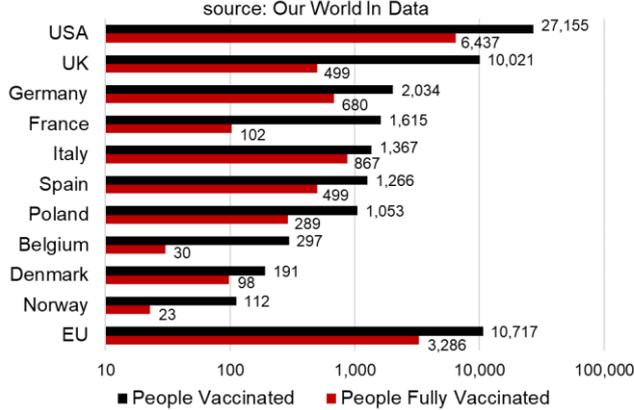
Global New Cases & Deaths



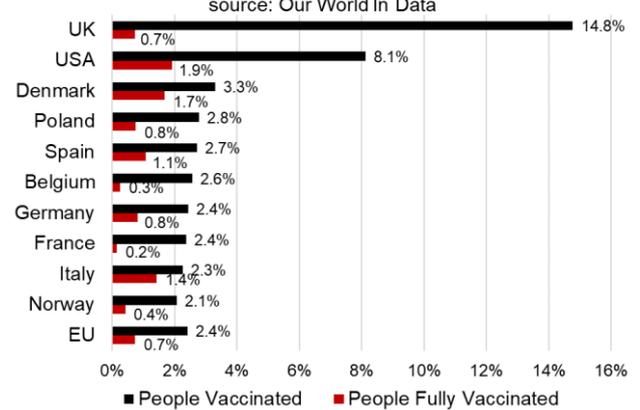
daily cases & deaths per million, 7-day avg top 5 european economies*



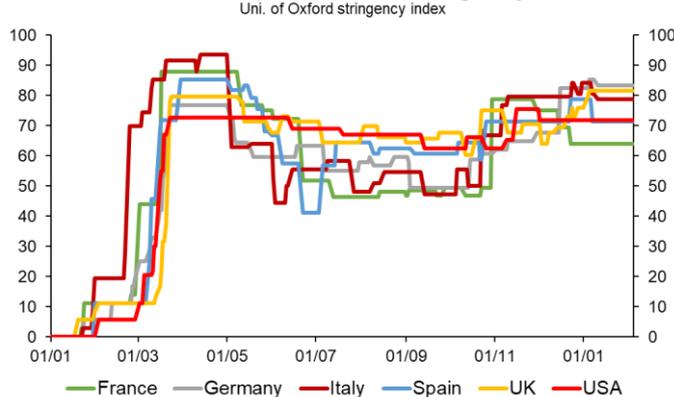
People vaccinated ('000)



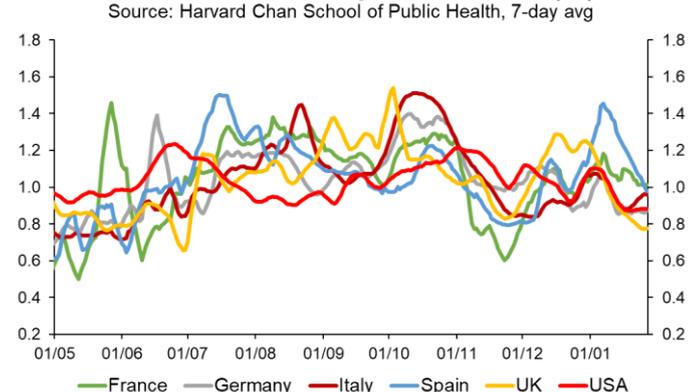
Percentage of people vaccinated

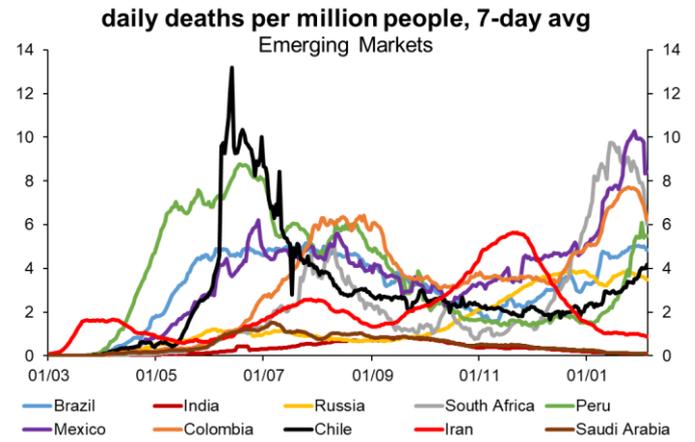
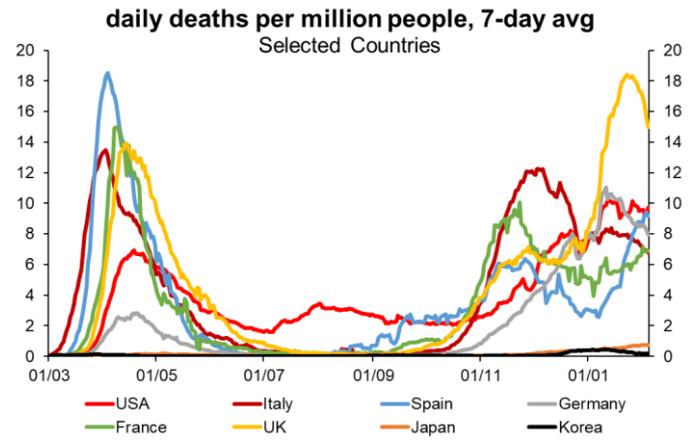
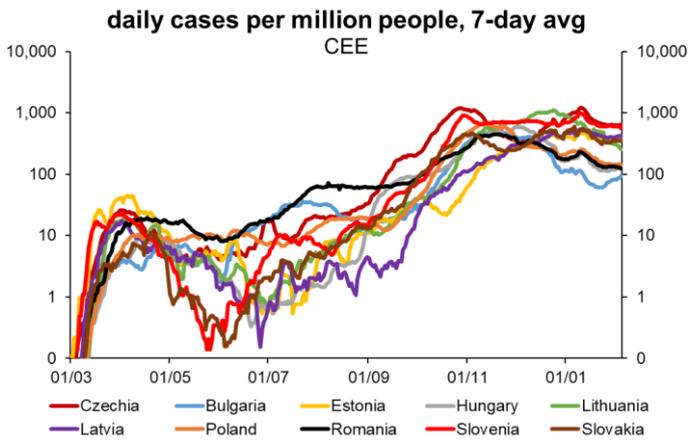
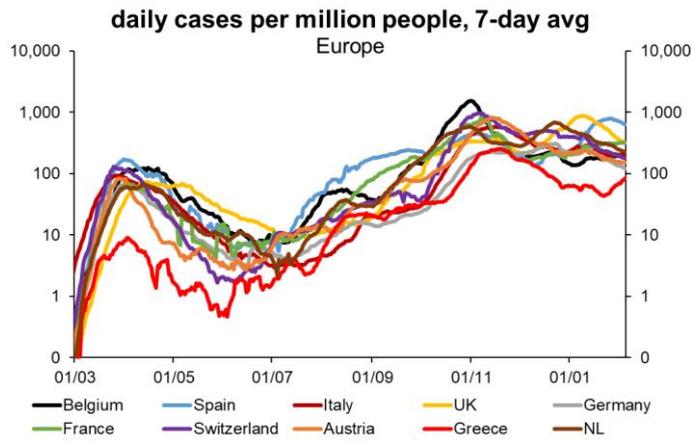
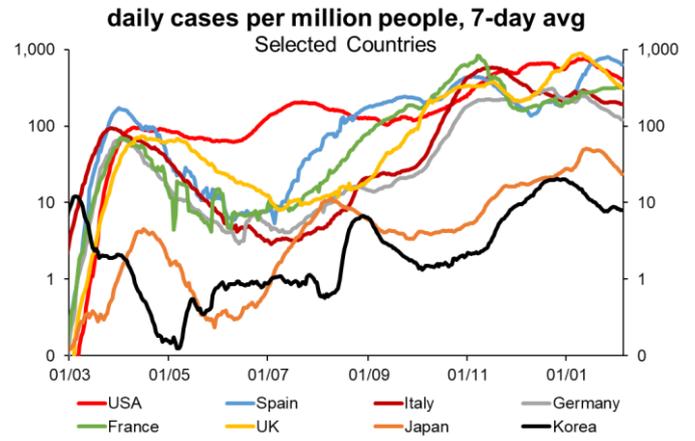
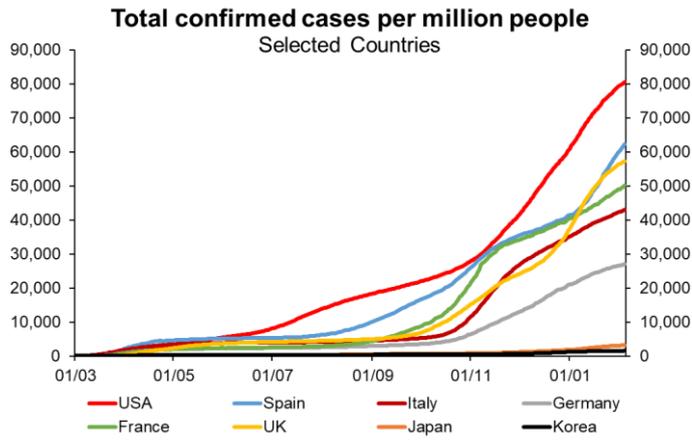
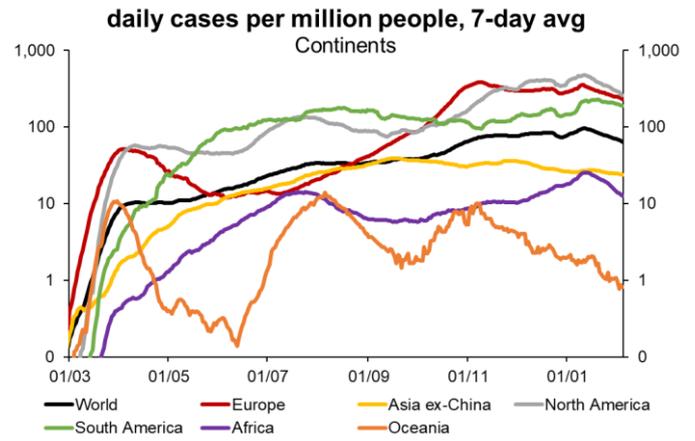
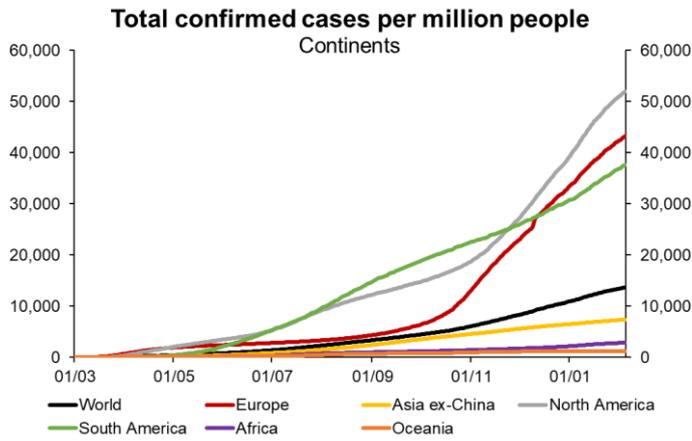


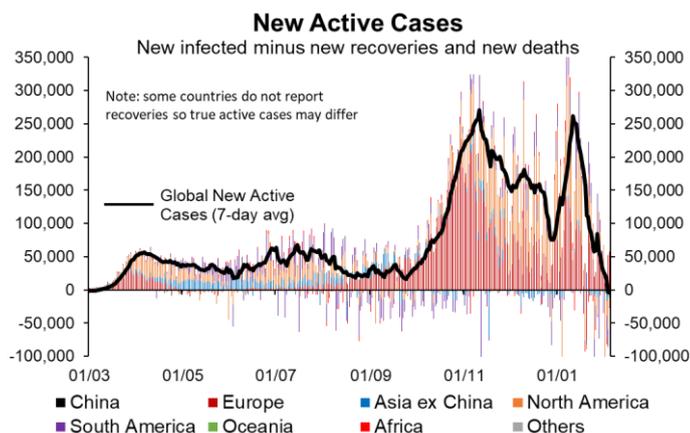
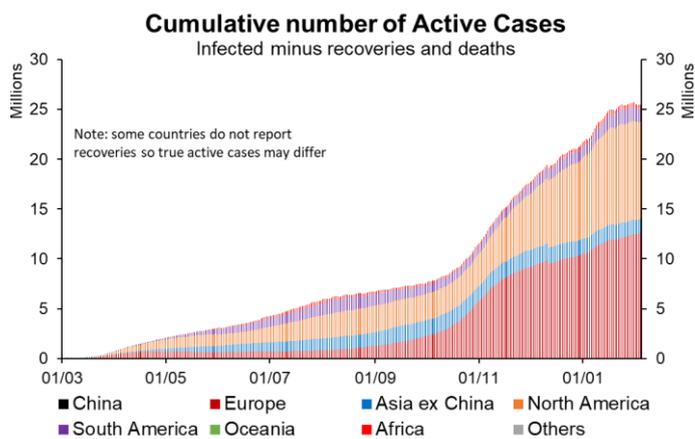
Covid-19 Govt. Response: Stringency Index



Covid-19 Effective Reproduction Rate (Rt)



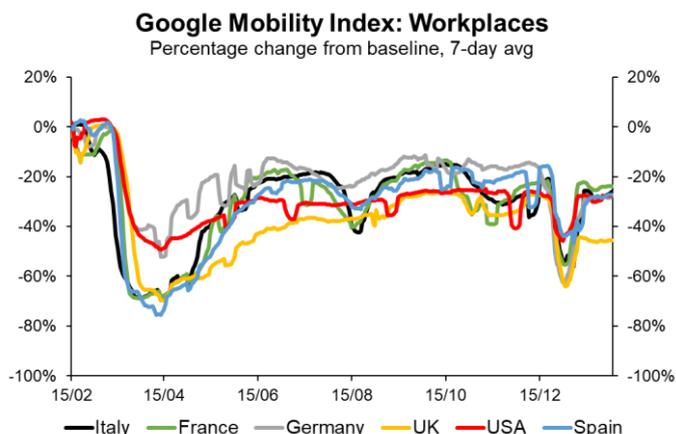




Country	TOP 10 most hit countries					
	Cases			Deaths		
	Total	1-Day	7D avg	Total	1-Day	7D avg
USA	26,676,957	+ 119,931	+ 130,039	455,738	+ 4,941	+ 3,220
India	10,803,533	+ 12,410	+ 11,795	154,862	+ 120	+ 116
Brazil	9,397,769	+ 57,848	+ 48,140	228,883	+ 1,291	+ 1,030
Russia	3,917,918	+ 16,714	+ 17,730	75,205	+ 521	+ 508
UK	3,892,459	+ 20,634	+ 21,246	110,250	+ 915	+ 1,018
France	3,274,608	+ 23,448	+ 20,568	77,952	+ 357	+ 450
Spain	2,913,425	+ 29,960	+ 29,775	60,802	+ 432	+ 428
Italy	2,597,446	+ 13,659	+ 11,706	90,241	+ 421	+ 409
Turkey	2,508,988	+ 7,909	+ 7,410	26,467	+ 113	+ 123
Germany	2,265,536	+ 12,989	+ 10,139	60,885	+ 673	+ 666

Country	Most hit regions					
	Cases			Deaths		
	Total	1-Day	7D avg	Total	1-Day	7D avg
Europe	30,842,294	+ 177,946	+ 164,668	690,775	+ 4,728	+ 4,775
North America	30,596,428	+ 142,906	+ 151,606	661,397	+ 6,960	+ 4,557
Asia	23,329,238	+ 74,326	+ 74,891	406,225	+ 1,320	+ 1,359
South America	16,217,177	+ 91,800	+ 81,069	423,622	+ 2,189	+ 1,881
Africa	3,646,894	+ 16,744	+ 16,334	93,751	+ 568	+ 666
Oceania	50,340	+ 34	+ 34	1,078	-	-
Others	721	-	-	15	-	-

* Regional classification according to the United Nations Geoscheme; Russia included in Asia



COVID-19 candidate vaccines		
Stage	Phase	N°
Clinical Evaluation	3	16
	2/3	6
	2	5
	1/2	18
	1	18
Total Clinical Evaluation		63
Preclinical Evaluation		175

*Data from the World Health Organization landscape documents

Note: Data sources: WHO, CDC, ECDC, JHU, Worldometers.info, state and national government health departments, local media reports, Google Mobility Report, OpenTable, Bloomberg, Oxford University, OurWorldInData, Harvard Chan school of public health. The day is reset after midnight GMT+0. For additional information regarding the data collected and presented in this document please contact mattia.mammarella@generali-invest.com

Main news

- South Korea and Moderna are in discussions over a \$200 million investment to build a vaccine manufacturing facility.
- Pfizer has withdrawn an application for emergency use of its vaccine in India after a meeting with the local regulator.
- J&J has applied to the US FDA to receive authorisation for emergency use of its single-dose Covid-19 vaccine.
- The UK has launched a clinical study to test if alternating the AstraZeneca and Pfizer-BioNTech vaccines in a two-shot schedule is safe and effective.
- The COVAX initiative has published an initial distribution plan for 337 million vaccines, that will mainly be divided among low-income countries.
- A study by Oxford University suggest Oxford-AstraZeneca vaccine may reduce Covid-19 transmission by two-thirds.
- A study published in The Lancet found that the Sputnik V vaccine is 91.6% effective.
- The European Medicines Agency has authorised AstraZeneca’s Covid-19 vaccine.
- The US Senate passed a budget resolution to approve Biden’s \$1.9 trillion stimulus bill.

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