FOCUS



Overnight, pharmaceutical company **Pfizer** with biotech partner **BioNTech** announced that the initial phase III trial results have found their **COVID-19** vaccine to be "more than 90% effective".





BioNTech co-founder and Chief Executive Ugur Sahin described the findings as "the best possible outcome". Pfizer CEO Albert Bourla called it "a great day for science and humanity". Anthony Fauci, head of the US National Institutes of Health, called the 90% effectiveness "just extraordinary" and saw the results as a positive sign for other vaccines under development.

Stock markets around the world have rallied, led by those sectors most hit by COVID-19 such travel and leisure. "Stay-at-home" sectors (previous COVID-19 beneficiaries) have lagged or, in some cases, pulled back sharply.

## Miracle of science

The companies' vaccine uses a new technology, messenger-RNA (mRNA). If approved, it would be the first vaccine to use this technology. Unlike traditional vaccines, mRNA vaccines do not use an inactivated virus. Instead the vaccine causes the body to create a protein from the virus, which the immune system recognises and learns to attack.

Phase III trials are the last and most rigorous phase before a vaccine is submitted for approval. The current trial, which commenced in July, is extensive with over 43,000 participants. The early results show that people who have received two treatments of the vaccine, three weeks apart, experienced over 90% less cases of COVID-19 than those who received a placebo.

These initial results are promising. No vaccine in the world is 100% effective. Experts have been warning that, at best, a COVID-19 vaccine might only be 60-70% effective. The phase III study is ongoing and additional data could affect results. That said, it looks like it will comfortably exceed the US Food and Drug Administration (FDA) approval hurdle of at least 50% effectiveness.



The companies plan to file for emergency authorisation to distribute the vaccine around the third week of November, once half of the patients in the study have been observed for safety issues for at least two months. Pfizer has said that, so far, there are "no safety concerns".

Pfizer and BioNTech have said up to 50 million doses of the vaccine could be manufactured this year, and a further 1.3 billion next year (treating half that number of people – two doses each). New Zealand is reported to have secured 1.5 million doses of this vaccine, enough for 750,000 people, however, it is not yet clear where we sit in the queue.

## There is still a lot we don't know

Whilst the Pfizer and BioNTech vaccine is highly promising, experts are warning there is still a lot we don't know.

How long will the vaccine last? The company's expect "at least one year". Does it affect children and elderly differently? Will it prevent people from carrying and transmitting the virus? Does it reduce incidences of severe illness and death? Are there longer-term side effects? There will also likely be distribution challenges. The vaccine must be stored at super-cold temperatures, -70° to -80°C, which could make distribution difficult. We need to appreciate the hyperspeed at which this development is travelling. Vaccines typically take 10-15 years to develop. The only real way to know the long-term implications is to wait and see.

## Will there be others?

Pfizer and BioNTech's early success does bode well for the nine other vaccine candidates in the late stages of testing. Moderna, which is also using mRNA technology, and AstraZeneca, along



with Oxford University, are expected to report findings within weeks.

## The beginning of the end?

There is no debate that Pfizer and BioNTech's news is strongly positive. For markets it provides a timely sentiment boost, at a point when the focus was shifting to escalating second waves of the virus in Europe and the US. It reinforces, that medium-term, a medical treatment for the virus is likely. Getting these quickly to enough people, however, will not be straightforward. In the near-term, economies around the world will face varying ranges of restrictions. And the pandemic will leave economic scars. But it's clear, the market's focus will now turn to vaccine news flow. Fingers crossed, today's news marks the beginning of the end for COVID-19.



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