

# From Pfizer to Moderna: who's making billions from Covid-19 vaccines?

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The arrival of Covid-19 vaccines promises a return to more normal life – and has created a global market worth tens of billions of dollars in annual sales for some pharmaceutical companies.

Among the biggest winners will be Moderna and [Pfizer](#) – two very different US pharma firms which are both charging more than \$30 per person for the protection of their two-dose vaccines. While Moderna was founded just 11 years ago, has never made a profit and employed just 830 staff pre-pandemic, Pfizer traces its roots back to 1849, made a net profit of \$9.6bn last year and employs nearly 80,000 staff.

But other drugmakers, such as the British-Swedish [AstraZeneca](#) and the US pharma Johnson & Johnson, have pledged to provide their vaccines on a not-for-profit basis until the pandemic comes to an end.

Whether the market remains a money-spinner in the future depends on whether the vaccines become the type that need just a one-off shot – as for measles – or if regular vaccinations will be required, such as for flu. But in the immediate future, there are big financial returns up for grabs.

Here, we look at who is in line for the biggest gains – and which shareholders have already made fortunes.

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## **Pfizer/BioNTech mRNA vaccine**

Pfizer's Comirnaty vaccine, developed with Germany's BioNTech, is based on re-engineered messenger RNA – the molecule that sends genetic instructions from DNA to a cell's protein-making machinery. It was the first to be approved and has to be stored at ultra-low temperatures (-70C). Governments have ordered about 780m shots, including the US (200m doses for \$3.9bn) and the EU commission (300m), while 40m doses will go to lower-income nations via the Covax facility. It costs \$39 (£28) for two doses in the US and about \$30 in the EU.

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### **Expected sales in 2021: \$15bn-\$30bn**

Pfizer, which [splits costs and profit margins equally with BioNTech](#), expects \$15bn in 2021 sales based on current deals. The final number could be twice as high, as Pfizer says it can potentially deliver 2bn doses this year. Barclays analyst Carter Gould is predicting sales of \$21.5bn in 2021, \$8.6bn next year and \$1.95bn in 2023, on the assumption that the jab is given as a one-off shot.

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### **Share price change over the past 12 months**

Pfizer: +1.8%

BioNTech: +156%

The [two founders of BioNTech](#), the husband and wife team Ugur Sahin and Özlem Türeci – both doctors – became multibillionaires last year, when the potential of the vaccine and the deal with Pfizer prompted the shares to surge.

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2

## Moderna mRNA vaccine

The vaccine produced by the US biotech firm, based in Massachusetts, must be stored at freezer temperature (-20C). The UK has ordered 17m doses, the EU bought 310m with an option for a further 150m in 2022, while the US government ordered 300m shots. Japan purchased 50m shots. Moderna charges \$30 for the required two shots in the US and \$36 in the EU.

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### Expected sales in 2021: \$18bn-\$20bn

[Moderna has said it expects 2021 sales of \\$18.4bn](#). Barclays analyst Gena Wang forecasts sales of \$19.6bn, \$12.2bn in 2022, and \$11.4bn in 2023, assuming recurring vaccinations.

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### Share price change over past 12 months

+372%

A group of investors that backed the company when it was founded in 2010 will have made substantial returns. The chief executive, Stéphane Bancel, a 48-year-old French executive, owns 9% of the shares, now worth nearly \$5bn.

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## Johnson & Johnson Adenovirus vaccine

[J&J's jab](#), the world's first single-shot Covid-19 vaccine, was developed by its Janssen division in Belgium. It uses adenovirus-26, a rare variant of cold virus. It was approved in the US in late February and can be stored at standard fridge temperatures for at least three months. Big orders include the US, UK (30m doses plus option for 22m), the EU (up to 400m doses), and [Covax nations](#) (500m doses through 2022).

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### Expected sales in 2021: up to \$10bn

The company aims to deliver at least 1bn doses this year, which would generate \$10bn. The US government has ordered 100m doses, with the option to buy 200m more, and is paying \$10 a shot.

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## Share price change over past 12 months

+7.7%

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4

## AstraZeneca Adenovirus vector vaccine

The vaccine developed with Oxford University uses a modified chimpanzee cold virus and can be kept at fridge temperature. Viral vector vaccines use a harmless virus to deliver a piece of genetic code to cells. Big orders have come from the UK (100m), the EU (up to 400m), the US (300m) and Japan (£120m).

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### Expected sales in 2021: \$2bn-\$3bn

Analysts at SVB Leerink are forecasting sales of \$1.9bn this year and \$3bn in 2022. The 2021 figure could be far higher if AstraZeneca achieves its ambitious target of 3bn doses. The company has pledged to supply the vaccine on a not-for-profit basis during this pandemic, and charges \$4.30 to \$10 for two doses.

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## Share price change in last 12 months

-8.6%

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## Sinovac Inactivated virus vaccine

The CoronaVac jab has been administered for emergency use in several Chinese cities since last summer, and [was approved by China's regulator](#) in early February. Sinovac, which is based in Beijing, has struck deals with Brazil, Chile, Singapore, Malaysia and the Philippines. [In January, Turkey](#) and [Indonesia kicked off their vaccination campaigns with the jab](#). Sinovac also plans to supply 10m vaccine doses to Covax nations.

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### Expected sales in 2021: billions of dollars, but unclear

Sinovac says it can produce more than 1bn doses this year. The vaccine has been priced at \$60 for two shots in some Chinese cities. Sinovac's Indonesian partner Bio Farma, which has ordered at least 40m doses, said it would cost \$27.20 for two doses locally.

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## Share price change in last 12 months

-21.6%

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## Gamaleya Institute/Russian Direct Investment Fund Adenovirus vaccine

Although it has not been approved by the EU regulator yet, Hungary and Slovakia have bought the Russian vaccine Sputnik V. In total, more than 50 countries, including Iran, Algeria and Mexico, have ordered it. AstraZeneca is testing a two-shot combination of its vaccine with Sputnik.

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### Expected sales in 2021: unclear but possibly billions

The developers are struggling to mass-produce Sputnik in Russia, but RDIF, a sovereign wealth fund, [told the Financial Times](#) last month that it had signed contracts with 15 manufacturers in 10 countries to produce 1.4bn jabs. [The developers have said they would charge \\$20](#) or less for the required two doses internationally but are providing it free in Russia.

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## Novavax Recombinant protein vaccine

The Novavax vaccine uses a small fragment of a lab-made version of the Sars-CoV-2 spike protein. The US firm hopes for regulatory approval in the UK, US and other countries in the first half. The company has been researching vaccines for more than 30 years and has never before had a jab approved. It has agreed to supply 300m doses so far, including the UK (60m doses), EU, Canada and Australia. It hopes to produce 150m doses a month and is expected to be cheaper than rivals. According to the Financial Times, the company has agreed to charge \$3 a shot in Africa. The vaccine will also be made in Stockton-on-Tees, in north-east England, and can be kept at fridge temperature.

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### Expected sales in 2021: ‘several billion dollars’

Based on these deals, [Novavax said this week](#) it sees “the potential for several billion dollars in revenue in the next 12 months”. This is set to rise, as Novavax expects to be able to make 2bn doses a year by mid-2021, thanks to a partnership with the Serum Institute of India.

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### Share price change in the past 12 months

+1,128%

The biggest financial gains will go to fund managers such as Vanguard and BlackRock, who are the biggest shareholders.

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## CureVac mRNA vaccine

CureVac expects to publish late-stage results for its CVnCov vaccine in April and hopes to gain EU approval by June. The EU has pre-ordered 225m doses with the option to buy a further 180m. Unlike other mRNA vaccines, CureVac's shot can be stored at fridge temperature. Together with GSK, which owns nearly 10% of the German firm, it [is seeking to develop next-generation shots for multiple emerging Covid-19 variants](#) in one vaccine.

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## **Expected sales in 2021: unclear – pricing not yet revealed, but priced at a profit**

The Nasdaq-listed biotech aims to produce up to 300m doses this year and 600m to 1bn doses in 2022. CureVac says its jab requires less active ingredient than rivals but insists it cannot price it at cost because investors are expecting a return.

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## **Share price change**

+45.5%

The biggest shareholder is German billionaire Dietmar Hopp, the co-founder of the software firm SAP. He owns more than 80% of CureVac, now worth more than \$12bn.

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