



WILL VACCINE ISSUES CAUSE A STOCK MARKET STUMBLE?

Agenda

- Vaccine background
- Investment effect of slow vaccine rollout
- Investment effect of Sinovac problems
- Investment effect of uneven economic growth / emerging market debt
- Investment effect on Value vs quality vs growth

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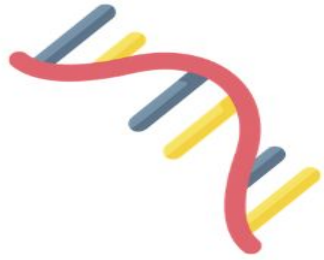
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Different types of COVID-19 vaccines

SANCHAR | Science And News:
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mRNA vaccine

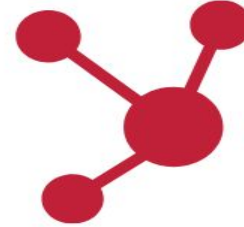
Uses synthetic mRNA that instructs the cell to produce proteins that generate immunity



inactivated or weakened virus vaccine

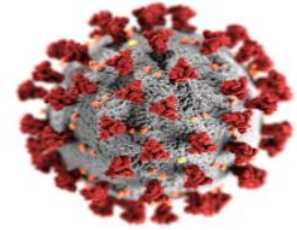
Uses inactivated/weakened virus to generate immunity

COVAXIN
Bharat Biotech Vaccine



protein based vaccine

Uses proteins that mimic the proteins of the virus to generate immunity



viral vector vaccine

Uses a genetically engineered virus to carry DNA. This DNA instructs the cell to produce proteins that generate immunity

COVISHIELD
Serum Institute Vaccine

Candidates that made it

SIZING UP THE SHOTS

The Oxford University-AstraZeneca

TECHNOLOGY: Viral Vector (Genetically modified virus)
When injected, the vaccine instructs human cells to produce the SARS-CoV-2 spike protein – the immune system’s main target in coronaviruses.

EFFICACY: 62-90%

PROCESS: Passed all three trials

MAJOR BUYERS: EU (400 million doses), US (300 million doses), UK (100 million doses)

THAILAND: 26 million doses

PRICE: US\$ 4 per dose

DOSED REQUIRED: 2

Pfizer-BioNTech

TECHNOLOGY: mRNA
The new mRNA technology tricks the body into making the viral protein itself which, in turn, triggers an immune response

EFFICACY: 95%

PROCESS: Passed all three trials

MAJOR BUYERS: EU countries (200 million doses), US (100 million doses)

PRICE: US\$20 per dose

DOSED REQUIRED: 2

Sinovac

TECHNOLOGY: Inactivated vaccine
Using the dead Covid-19 virus itself to trigger an immune response

EFFICACY: 50-70% (varies in tested countries)

PROCESS: Phase 3 trials

MAJOR BUYERS: Indonesia (40 million doses), Philippines (25 million doses)

THAILAND: 2 million doses

PRICE: US\$5 per dose

DOSED REQUIRED: 2

Sputnik V (by Russia's Gamaleya Institute)

TECHNOLOGY: Adenoviral vector-based platform
The technology delivers the genetic instructions for SARS-CoV-2 antigens directly into patients' cells, triggering an immune response

EFFICACY: 91.4%

PROCESS: Phase 3 trials ongoing

MAJOR BUYERS: Brazil (10 million doses), Argentina (10 million doses) Bolivia (2.6 million doses), India (contracted to locally produce 100 million doses)

PRICE: US\$10 per dose

DOSED REQUIRED: 2

Moderna

TECHNOLOGY: mRNA
A new type of vaccine which uses messenger RNA, which contains instructions for human cells to make proteins that mimic part of the coronavirus, to trigger an immune response.

EFFICACY: 95%

PROCESS: Passed all three trials

MAJOR BUYERS: EU (160 million doses), US (100 million doses), Canada (40 million doses)

PRICE: US\$33 per dose

DOSED REQUIRED: 2

Johnson & Johnson

TECHNOLOGY: Uses a cold virus to deliver genetic material from the coronavirus into the body to prompt an immune response.

EFFICACY: Expected to be released by the end of January

PROCESS: Phase 3 clinical trials ongoing

MAJOR BUYERS: EU (160 million doses), US (100 million doses), Canada (40 million doses)




























PRICE: Estimated US\$10 per dose

DOSED REQUIRED: 1

Source: World Health Organization (WHO), agencies, respective companies

BANGKOK POST GRAPHICS

How some of the Covid-19 vaccines compare

Company	Doses	Storage
RNA		
 Pfizer (BioNTech)		 -80 to -60°C (6 months) and 2 to 8°C (for up to 5 days)
 Moderna		 -25 to -15°C (6 months) and 2 to 8°C (for 30 days)
Viral vector		
 Oxford-AstraZeneca		 2 to 8°C (6 months)
 Sputnik V (Gamaleya)		 -18.5°C (liquid form) 2 to 8°C (dry form)
 Johnson & Johnson (Janssen)		 2 to 8°C (3 months)
Inactivated virus		
 CoronaVac (Sinovac)		 2 to 8°C
 Sinopharm		 2 to 8°C
 Covaxin (Bharat Biotech)		 2 to 8°C
Protein-based		
 Novavax		 2 to 8°C

Source: Wellcome Trust, BBC research

Efficacy

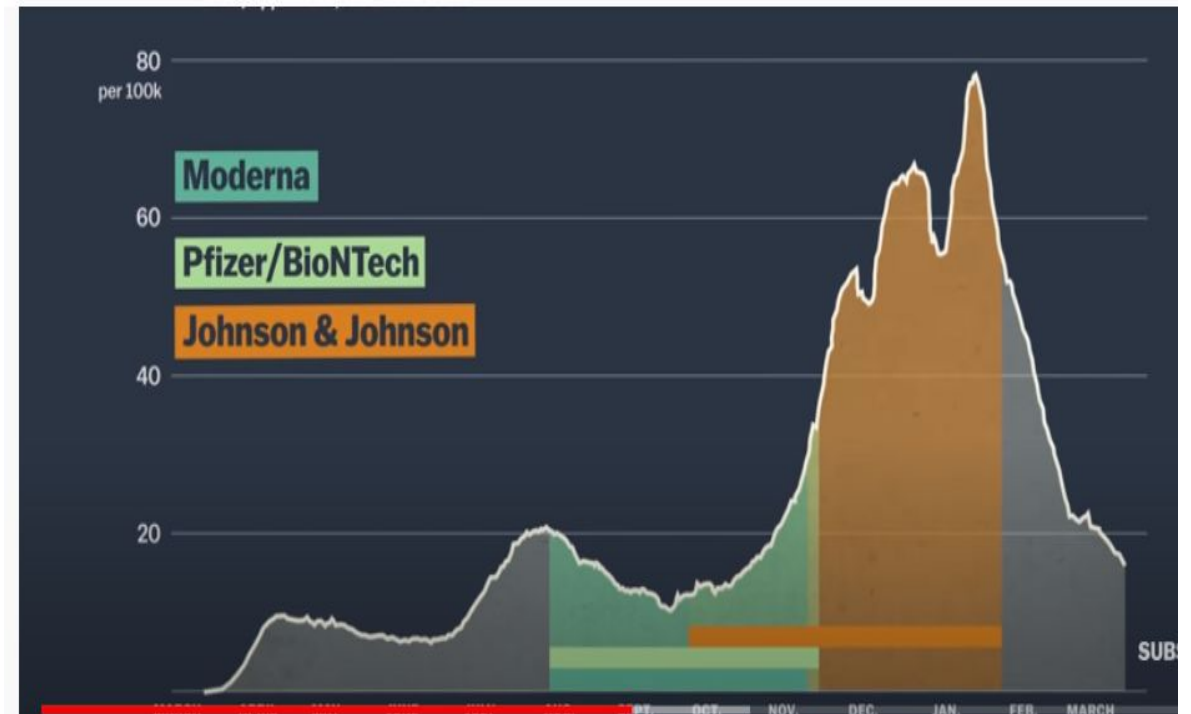
“We should be cautious in comparing these trials since they used different ways to measure efficacy” says A Thompson, assoc professor at Uni of Toronto

Efficacy is

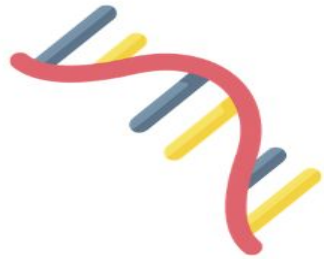
how good the vaccines are at preventing illness, (rather than stopping you from being infected with COVID-19 altogether)

....**but when you broaden the criteria**
AstraZeneca found a 67% reduction in infections after a single vaccine dose...
but reports a 80% Efficacy

Timing is everything



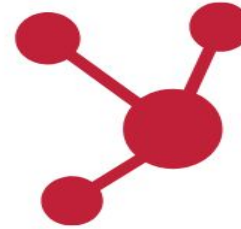
Vaccine Side effects



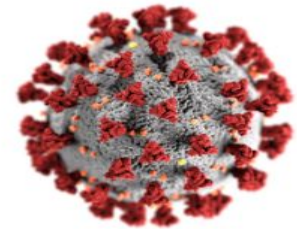
**mRNA
vaccine**



**inactivated
or weakened
virus vaccine**



**protein based
vaccine**



**viral vector
vaccine**

Pfizer	Sinovac	Novavax	Johnson&Johnson
Moderna			AstraZeneca
			Sputnik

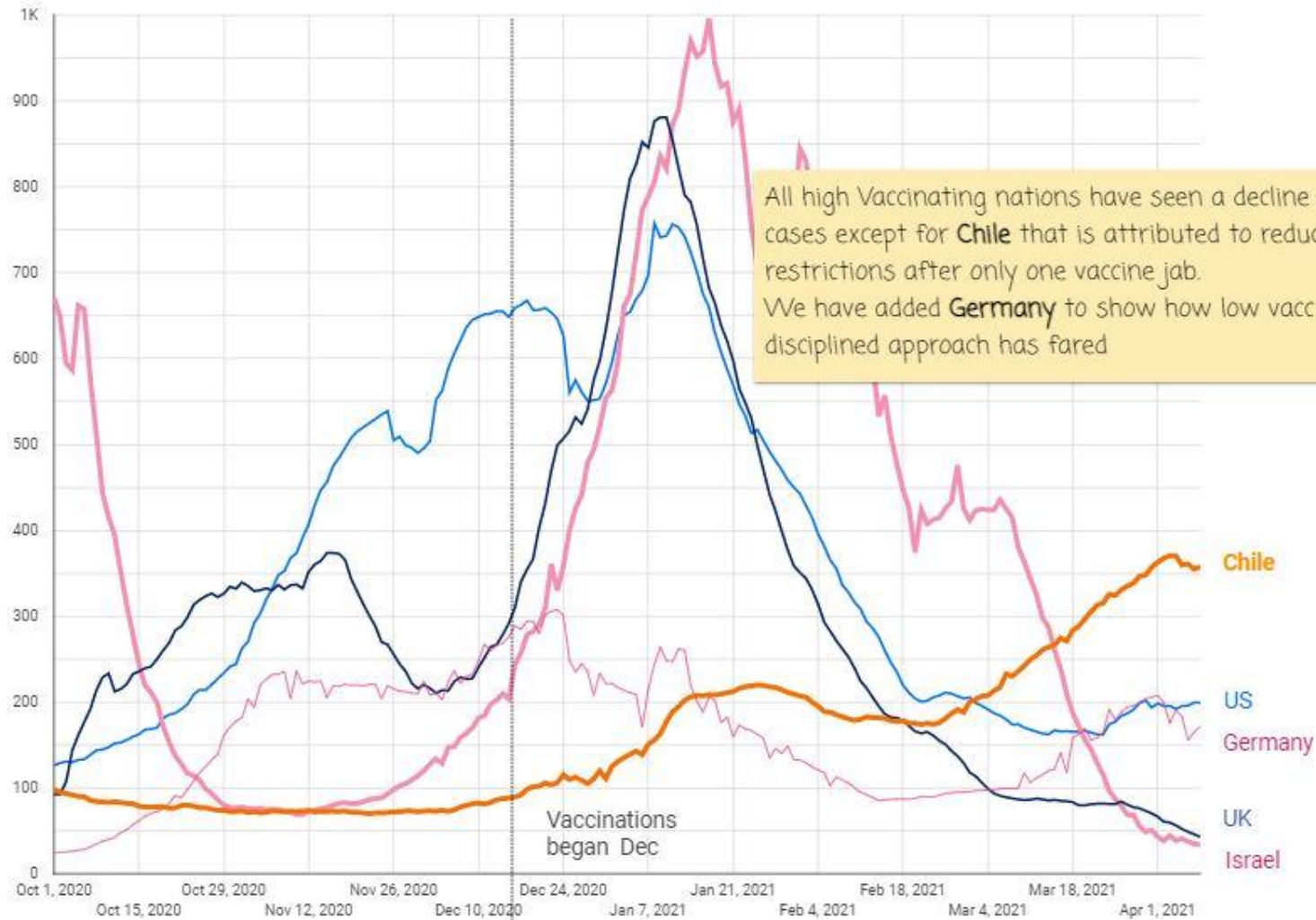
Reported Issues

- Viral vectors (J&J, AstraZeneca) and have been put on review due to Blood Clotting issues
- mRNA give more adverse reactions to people with allergies (anaphylactic shock)
- Inactivated/ Protein based appear to be the Safest

Vaccine..the real world Evidence

COVID-19 cases per million: 7 day average

High Vaccinating Nations & Germany

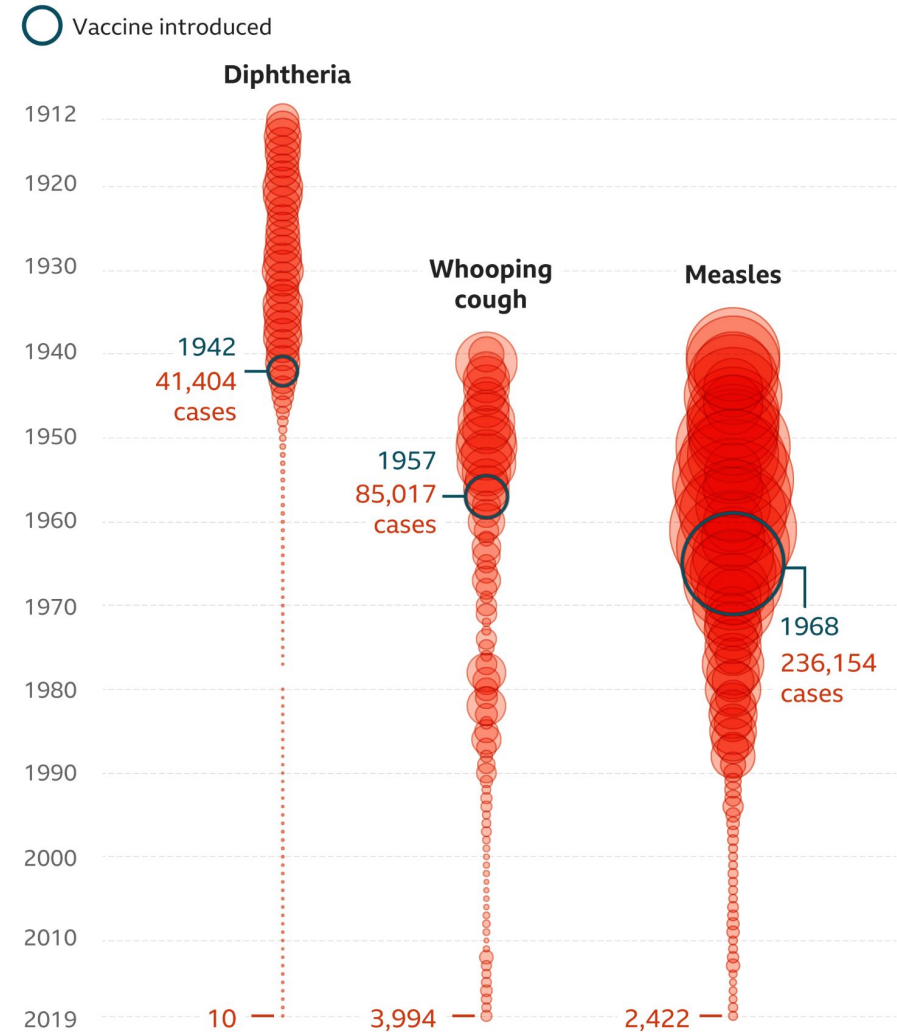


Vaccines are the magic bullet.... but it can take time

- Vaccines WILL bring COVID 19 under control
- It is not instant as the graph shows
- However, markets are primarily interested on when Vaccines will enable Normal Economic Activity(COVID relegated to the effects of the annual flu)

Mass vaccination has had a profound effect on some diseases

For example, vaccine introduction in England and Wales saw cases drop over the following years



Source: Cases of notifiable infectious diseases, Public Health England

BBC

Investment effect of slow vaccine rollout

- Travel
- Manufacturing
- Services
- Technology
- Virus winners vs losers

Investment effect of Sinovac problems

- Chinese stimulus
- Emerging market growth
- Commodities
- Soft diplomacy

Investment effect of uneven economic growth

- USD
- Emerging market debt
- Inflation / supply chain issues

Investment effect on value vs quality vs growth

- Bond yields
- Central bank support
- Cyclical stocks
- Domestic vs international focus

Risks

- Policy error
- Virus and Vaccines
- Emerging markets crisis
- Debt crisis

Viewer question of the week:

Will the vaccine issues cause a stock market stumble?

Drop your answers in the comments

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