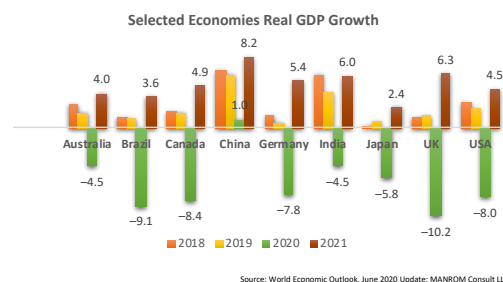


Coronavirus Vaccinomics !

Will all the nations get an equitable distribution or will it be cornered by rich nations first....

Manoj K Agarwal
Dr Abhilasha Agarwal
New Delhi, August 2020

The latest World Economic Outlook update June 2020¹ projects that the global growth is going to be -4.9% much worse than the anticipated earlier. In 2021 global growth is projected as 5.4% leaving the overall global GDP somewhere around 6.5% lower than the pre-Covid19 period, as projected in Jan 2020. The world trade volume is projected to be -11.9% in 2020 to be recovered as 8% in 2021. The real GDP growth of some selected countries (as per adjacent chart) shows the dismal numbers except China at 1% in 2020 whereas all remaining countries showing the negative GDP ranging from -4.5% to -10.2%. Recoveries are projected in 2021 however it will all be dependent on the pandemic situation. Localised Lockdowns and on & off lockdowns due to re-emergence of the cases are further exacerbating the economic downturn. The recent appearance of Covid19 cases in New Zealand after 102 days of no Covid19 case has led to level 3 (stay at home) lock down again. All this leading to disruption in demand-supply of goods and services, depressed mobility, poor labour market and contraction in global trade. Average inflation in advanced countries had dropped the inflation from 1.3% in 2019 to 0.4%, while in emerging economies, it had fallen to 4.2% (down 1.2%) except some countries like India witnessing, may be temporarily, where it is higher 6.9% arguably due to supply constraints.

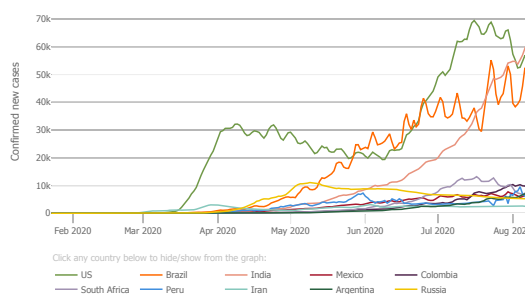


Source: World Economic Outlook, June 2020 Update; MANBOM Consult LLP

Global cases² of Covid19 cases are on rise with global cumulative cases over 20.9 million with USA ~5 million cases, Brazil ~3 million and India ~2.4 million cases are top three most affected countries. Spread of the pandemic is so severe that almost all countries (188 countries) are affected and putting strain on the health infrastructure coupled with economical downturn. The countries around the world are working to flatten the curve³ meaning reducing the number of new cases from one day to

DAILY CONFIRMED NEW CASES (5-DAY MOVING AVERAGE)
Outbreak evolution for the current 10 most affected countries

Source: John Hopkins University



¹ World Economic Outlook update June 2020 by IMF

² WHO - covid19 Dashboard

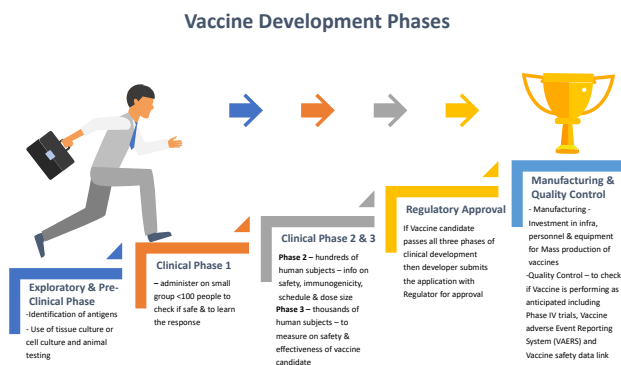
³ John Hopkins University - Coronavirus Resource Center

next. The chart for 10 countries still showing the curve bumpy thereby putting huge stress in countries' resources to handle the pandemic resulting into huge loss of life & livelihood. Russia & Iran have some relief as their covid new infections cases are coming down but still it is too early to be relaxed.

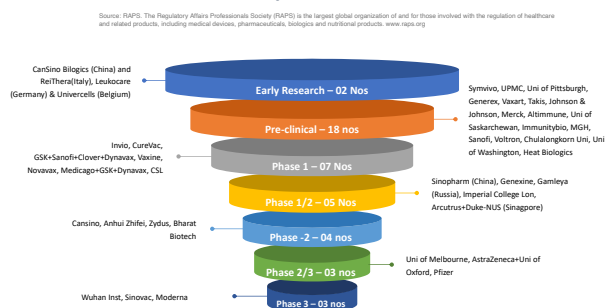
The people are now eagerly looking forward to the vaccine as the general perception among the masses is that the situation is not going to improve till the vaccine for Covid19 is available and the population at large is inoculated. Vaccine gives the hope to heal the wounds of the people created by Covid19 due to painful health & financial mess. Hard work of 20-30 years by various governments world-wide to alleviate the poverty for their population has gone to drain. However, the good news is that more than 165 vaccines are being developed by various research institute/companies world-wide. It is encouraging to note that several companies have come forward to speed up the development of the vaccine at the earliest. Vaccine development phase is long path and typically it may take 8 to 10 years. According to CDC, there are six stages of vaccine

development ie Exploratory, Preclinical, Clinical development (Phase 1 to 3), regulatory review & approval, manufacturing and quality control, see the adjacent figure. Each stage needs to be well complied with, documented and reported for each vaccine candidate's safety and efficacy. Experts estimate that a fast-tracked vaccine development process could speed a successful candidate to market in approximately 12-18 months if all goes well. Vaccine development tracker by RAPS (Regulatory Affairs Professional Society) based in

Washington which is tracking the vaccine development for 42 Vaccines (as updated on Aug 06 2020), shows that around three candidates ie Wuhan Institute of Biological Products (Inactivated vaccine), Sinovac (CoronaVac) & Moderna (mRNA-1273) are in advance stage of Phase 03 trials, see the figure adjacent. The New York Times corona tracker which is tracking the development indicates that around eight candidates are in Phase 3 trials and two candidates have been approved for early & limited use. A typical vaccine has a ~20% chance of failure in its final trials. Russia surprised the world on Aug 11 2020 by announcing the world's first Covid19 vaccine. Scientists around the world immediately denounced the certification as premature and inappropriate, as the Gamaleya vaccine (appears in Phase 1/2 trial stage as per RAPS), now named as Sputnik V, has yet to complete a trial that convincingly shows it is safe and effective in a large group of people. The registration certificate for the vaccine candidate was issued on the basis of testing on just 76 people.



Vaccine Development – 42 candidates



Rich countries are backing several vaccine development efforts, keeping in view to mitigate the vaccine failure, with financial commitments. Governments⁴ have so far invested more than \$10 billion and made forward purchase of 4 billion doses (though the data on deals are murky). Analysis of forward purchases of selected covid-19 vaccines in terms of doses per person by Goldman Sachs shows that while Britain has secured more than 3.5 doses per person, USA - more than 2 doses per person, EU - 1.5 doses per person and Japan as 1 dose per person, for their population reaching ahead of the queue. It leaves the emerging markets' economies to cover just less than one-third of their population. Past experience of H1N1 or Swine flue is not very good where the rich countries cornered the vaccine supplies to themselves releasing only some of these to poor countries when they had excess to what was needed. It found little use to these countries as the pandemic was over by then. Post Covid19 pandemic, the recent bans on export of PPE kits and other essential items by several nations to take-care of their population first have raised the concerns that if the countries will allow the export of vaccines from their territories before enough is available for their own population first. A need of global alliance is much needed to handle the equitable distribution to inoculate the world population as any left out population will remain a threat to even inoculated population. The situation raises the question of equitable access of covid19 vaccine to the world population.

Rich world is already in vaccine procurement drive. United States⁵ - The US government has chosen some vaccine candidates, committing the payment of over \$9 billion for Moderna's mRNA-1273, University of Oxford and AstraZeneca's AZD1222, Sanofi, Pfizer/BioNTech, Novavax and Johnson & Johnson, securing over over 700 million of doses. EU has committed for 700 million of doses by paying over \$800 million with AstraZeneca & Sanofi. Britain is securing 250 million of doses from AstraZeneca, Sanofi, Pfizer & Valneva. Japan & Brazil have also made the commitment for over 100 million doses. Additionally countries like China, Russia, India etc have their own vaccine in making.

For the global procurement & equitable distribution among the nations, a joint initiative is launched by WHO, Gavi & CEPI. The Coalition for Epidemic Preparedness Innovations (CEPI)⁶ is a global partnership launched in 2017 to develop vaccines to stop future epidemics. CEPI was founded in Davos by the governments of Norway and India, the Bill & Melinda Gates Foundation, the Wellcome Trust, and the World Economic Forum. Created in 2000, Gavi⁷ is an international organisation - a global Vaccine Alliance, bringing together public and private sectors with the shared goal of creating equal access to new and underused vaccines for children living in the world's poorest countries. Gavi, CEPI and WHO are jointly-leading COVAX, the global effort to securing a global response to COVID-19 that is effective and fair, using its unique expertise to help identify and rapidly accelerate development, production and delivery of COVID-19 vaccines so that anyone that needs them, gets them. Goal of COVAX is to end the acute phase of global pandemic by the end of 2021. COVAX is a purchasing pool & promises the participant countries for the vaccine up to 20% of their population. It intends to procure 2 billion of doses by end of 2021, ensuring that participating countries receive the allocation as quickly as possible to provide

⁴ Economist August 8 2019

⁵ Economist Aug 2019

⁶ www.cepi.net

⁷ www.gavi.org

a globally fair and equitable allocation. Total budget is estimated to be \$18.1 billion out of which \$11.3 billion is needed urgently. About 81 self financing countries are expected to join this efforts but we would have to wait and see as to how many will join this as they are required to pay 15% of their share of vaccine by this month. The list of 92 eligible economies includes all economies with Gross National Income (GNI) per capita under \$4,000, plus other World Bank International Development Association (IDA)-eligible economies. While close to \$600 million has already been raised for COVAX, this innovative financing mechanism requires seed funding of \$2 billion before the end of the year to secure and guarantee doses for the 92 eligible economies. A minimum of an additional \$3.4 billion is estimated to be required to procure around one billion doses by the end of 2021. A protocol has been laid out for the priority population for first round of vaccination; i) Health workers (1% of global population), ii) Adults more than 65 years of age (8% of global population) and iii) other risk adults with co-morbidities like diabetes, hypertension, etc (15% of global population). However, it remains to be seen as to how the respective countries follow these guidelines for implementation.

If the economy of every country is contingent on the Covid Vaccine than it is imperative on every country to start spending on the vaccine. Present spent is very meagre compared to what experts feel that it should be more than 100 billion dollars. As per the World Economic Outlook June 2020, the various government world-wide have announced the fiscal measures of over \$11 trillion and it is not the end of the road. Governments are still fighting the pandemic and economic mess, compelling the countries to spend more on fiscal measures. US congress is further considering another fiscal package of few trillion dollars. Despite all these measures, the economy is still in doldrums. The point is governments have to evaluate the investment for the vaccine development against ongoing fiscal measures and then may get an answer justifiable for vaccine investment to push the economy back. National discourse should also focus on vaccine development and availability of the vaccine for the population at large in first go, in addition to the health and economic issues.

Disclaimer: The views expressed here are personal of the authors and may be biased. The sole purpose of the article is a knowledge sharing of the author. In particular, the article may not address any specific requirements, interests or circumstances; Anybody should seek the professional advice when dealing with specific issues or concerns. Authors claims no responsibility for the representation or warranties as to the accuracy, completeness or reliability of the information contained in this article hence bears no liabilities from anyone.

Mr Manoj K Agarwal, an Engineer, Management, Law graduate & Insolvency Professional, is presently Managing Partner at MANROM Consult LLP and has over 33 years of corporate experience in CXO positions as a business leader who has dealt in various functions like Management Consulting, Strategy, Operations (with P&L responsibility), Business development, strategic alliances, JVs, M&A, Project development, Finance, Legal and HR in various sectors like Energy (Power), Resources, Steel, Non-ferrous, Infra-structure, Technology, EPC & Consultancy. Author has keen interest global macro-economics and geo-political matters.

Dr Abhilasha Agarwal, a medical professional and counsellor, has over 25 years of experience and has a keen interest in the development of Vaccine.