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Covid-19 Pandemic: Past, Present and Future Perspective of Indian Economy

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ABSTRACT

"Don't react, but respond"

The world is struggling with modern horrors such as COVID-19, which has left the planet confused and brought the whole universe to a halt. This deadly virus, which is declared as pandemic by the World Health Organization (WHO), has taken in its grip nearly 210 countries. As our new Calendar year begins, the Novel Coronavirus (COVID-19) has infected more than 14.3 million people in more than 210 nations and territories, resulting in 6,02,000 deaths-impacting lifestyles, businesses, economies, and the assumption of common well-being that many of us have taken for granted. Though countries and businesses are struggling to understand the scope of this pandemic, there is no surprise that we are experiencing a deliberate change in living standards of the people.

The main aim of this paper is to figure out how the business today might turn towards which side of the globe. Taking advantages of these would probably help to navigate the economically and socially viable route to the better normal.

- Transition to Localisation
- Digital gains a significant push
- E-Learning platform
- Work from Home mechanism
- Switch to variable cost models
- Develop resources for sensing and managing towers
- Resilience in supply chain is vital

The crisis in short, is a story with unpredictable ending. However, what is clear is COVID-19 has established new challenges to the business environment which call for a measured, practical and informal approach from political and business tycoons. There is presently a little clarity as to how long the pandemic will last, and what its effect on the economy will be in the near future. The industries will certainly be impacted by this "black swan" event.

Keywords: COVID-19, Localisation, Digital gains & Supply Chain.

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Introduction

This year's global economy has been the worst hit since the great depression, says International Monetary Fund (IMF). Just before this pandemic began, the global economy faced instability due to trade disturbances and reduced growth. The situation has now been made worse by the shocks in demand, supply and liquidity caused by COVID-19. The shape and speed of recovery in the G20 nations will be the key factors determining the nature and sustainability of world economic, once the pandemic is stabilized whole over the planet. We expect the path of economic recovery in India at this time to be easier and faster than that of many other developed countries. In fact, there has also been a sensible discussion among economic and political thinkers about the upcoming challenges for India after lockdown is over along with the suggestive policy initiatives to curve the situation. While our political leaders, economist and government, are now focusing on securing the population from health risks and providing support, especially for the poor section of people. We do need to think from long-term perspective to secure economic health, business profitability and livelihoods of people.

Background of the study

The globe has undergone a variety of epidemics, including the Spanish Flu of 1918, HIV / AIDS outbreak, SARS[1] (Severe Acute Respiratory Syndrome), MERS[2] (Middle East Respiratory Syndrome) and Ebola. India also fought with diseases like the small pox, plague and polio in the past. These have all been fairly serious episodes individually. COVID-19 's growing prominence has turned the world's hustle into different degree of uncertainty. This virus also raises a very serious threat to the global economy, which is already in danger. One of the few dimensions that appear relatively clear is that the present slowdown varies significantly from the recessions we've experienced previously. This is another turn of the business and economic cycle but a shake-up to the international economy.

Indeed, UNCTAD[3] has predicted that China and India would be the major economies least vulnerable to recession in its latest research "The COVID-19 shock to developing countries". Many famous economist and policy makers like Raghuram Rajan, former RBI governor and Prof. Abhijeet Banerjee, Nobel Laureate acknowledges that India is moving towards to encounter great socio-economic emergency since independence.[4]

However, the Covid-19 which evolved in China in December 2019 and spread rapidly to almost every parts of the world over the next few months, may potentially turn out to be the biggest health crisis in the history of universe. Many experts have already described this as a Black Swan event for the global economy.

Literature Review

Ahani and Nilashi (2020) jointly made a study on *Coronavirus Outbreak and its Impacts on Global Economy: The Role of Social Network Sites* highlighting the effect of the Coronavirus outbreak on the global economy and the role of social network sites in exchanging knowledge and concerns about the Coronavirus outbreak with consumers and businesses. The paper ends with several descriptions of the problems of travellers as well as their input on social networking sites and ideas for future research.

Fornaro and Wolf (2020) jointly made a study on *Covid-19 Coronavirus and Macroeconomic Policy* provides a simple design for understanding some of the macroeconomic effects of the coronavirus epidemic. They focused on a situation where the Covid-19 outbreak triggers a persistent disruption of supply, probably continuing till the end of the epidemic. Aggressive investment support policies will break the supply-demand doom loop and push the economy out of the traps of stagnation.

Sohrabi, C., et al (2020) made a study on *World Health Organization declares global emergency: A review of the 2019 novel coronavirus (COVID-19)*. Authors analysed about the precise mechanisms of human-to-human and animal-to-human transmission to promote the development of a virus specific vaccine. However, a major limitation to the current review is the rapidly evolving nature of the Covid-19 epidemic. As a community, it is our responsibility to be aware of the aforementioned signs, symptoms and to promote escalate suspected cases.

Fernandes (2020) made a study on *Economic Effects of Coronavirus Outbreak (COVID-19) on the World Economy*. Author discussed the economic impact of the COVID-19

[1] *SARS: A infectious respiratory illness caused by a coronavirus, and often fatal*

[2] *MERS: Middle East respiratory syndrome related coronavirus, or EMC/2012, is a species of coronavirus which infects humans, bats, and camels.*

[3] *For more details kindly go through the link-* https://unctad.org/en/PublicationsLibrary/gds_tdr2019_covid2_en.pdf

[4] https://indianexpress.com/article/opinion/coronavirus-india-lockdown-economy-amartya-sen-raghuram-rajan-abhijit-banerjee-6364521/

crisis across the whole nations. It also provides estimates of the potential global economic costs of COVID-19, and various countries' GDP's growth rate. The author could see a median decline in GDP in 2020 of (2.8%) in the sample of 30 countries covered. In other cases, GDP will decline by more than 10%, in some countries by more than 15%.

Chohan (2020) made a study *on A Post-Coronavirus World: 7 Points of Discussion for a New Political Economy*. Author depicts about the post-coronavirus economy and policies, which can be designed and structured on the basis of lessons learned from the outbreak, as well as international reactions to the hardships that followed. He also raises seven points of discussion for international policymakers as the outbreak subsides, with the aim of generating debate for the public about greater post-corona value creation.

Objectives of the study

- To examine the impact of Covid-19 based on Economic Indicators of various world economy.
- To measure the impact of selected independent variables on GDP growth rate before and after the onset of Covid-19.
- To figure out the changing contours of post Covid-19 economy in G-20 nations.
- To present few future directions of new paradigm of corporate world and living standards across G-20 nations.

Research Hypothesis

H_{01}*:* There is no significant change inGDP Growth rate between pre and post incidence of Covid-19 for G20 nations.

H_{02}*:* There is no significant change in Inflation rate between pre and post incidence of Covid-19 for G20 nations.

H_{03}*:* There is no significant change in Unemployment ratebetween pre and post incidence of Covid-19 for G20 nations.

H_{04}*:* There is no significant change in Consumer Price Index between pre and post incidence of Covid-19 for G20 nations.

H_{05}*:* There is no significant change in Industrial Production between pre and post incidence of Covid-19 for G20 nations.

H_{06}*:* There is no significant change in Interest rate between pre and post incidence of Covid-19 for G20 nations.

Methodology

The study is based on secondary data collected from sources like IMF & RBI websites, Trading economics, magazines, journals etc. Total of G20 Country's world wide has been taken for data collection. In this study, paired T-Test has been used for testing hypothesis to find out the dependability of Covid-19 based on various economic indicators of the world economy. Stepwise Regression method has been used to measure the impact of selected independent variables on GDP growth rate before and after the onset of Covid-19.

Data Analysis and Results

For testing the hypothesis, paired *t*-test has been used to find out the solution for it and degree of freedom *(d.f.)* = (n-1) = (20-1) = 19. After putting the data in Statistical Package for the Social Science (SPSS), we got the calculated value mentioned above in the table.

Since, in three cases i.e. Unemployment rate, Consumer Price Index and Industrial Production the calculated value is greater than the tabulated valueat 5% level of significance i.e. 1.729, it is significant and the null hypothesis is rejected. In rest three cases i.e. GDP Growth, Inflation and Interest rate the calculated value is smaller than the tabulated valueat 5% level of significance i.e. 1.729, it is Insignificant and the null hypothesis is accepted.

The study conclude that the impact of Covid-19 has been affected to the world economy with respect to Unemployment rate, Consumer Price Index and Industrial Production.

Stepwise Regression Analysis

To measure the impact of selected independent variables on GDP growth rate before and after the onset of Covid-19, Stepwise Regression method has been used to find out the solution for it. After putting the data in E-Views 11, we got the value mentioned below in the table.

1. Dependent Variable: GDP_Q4_20
   Method: Stepwise Regression
   Included observations: 20
   Number of always included regressors: 6
   Selection method: Stepwise forwards

Table 1: List of G20 Countries

	GDP Growth Rate		Inflation Rate		Unemployment Rate		Consumer Price Index		Industrial Production		Interest Rate	
G20 Country List	**Q4/20**	**Q1/21**	**Q4/20**	**Q1/21**	**Q4/20**	**Q1/21**	**Q4/20**	**Q1/21**	**Q4/20**	**Q1/21**	**Q4/20**	**Q1/21**
Argentina	−0.5	0.6	40	38	11.5	11.7	397	408	1.5	1.6	32	32
Australia	0.6	0.7	0.3	1.8	9.5	9	117	118	−3.3	−1.3	0.25	0.25
Brazil	−1.2	0.7	1.7	2	13.3	13	5411	5455	1.5	1.8	2.25	2.75
Canada	0.4	1.1	0.5	0.9	15.5	15	137	138	−1.5	0.5	0.25	0.25
China	0.9	1.2	2	2	5.6	5.5	113	115	5.2	5.2	3.5	3.5
Euro Area	2.9	1.6	0.3	0.6	9.6	9.4	106	106	1.4	1.4	0	0
France	3.2	2.5	−0.1	0.3	11	10.5	105	105	1.4	1.4	0	0
Germany	2	1.5	0.3	1	4.5	4.4	106	107	1.1	1.1	0	0
India	1.5	1.1	5.2	5.2	12	11.7	158	156	3.5	3.5	3.5	3.75
Indonesia	−1.8	−1.8	3.7	3.7	7.3	7.5	108	109	6.6	6.6	3.75	4.25
Italy	4.4	2.9	−0.4	−0.1	12.5	12.1	102	103	1.2	1.2	0	0
Japan	1.1	0.9	−0.4	0.2	4.4	4	102	102	2	2	−0.1	−0.1
Mexico	0.9	1.5	2.7	2.9	4.5	4.3	109	110	−1	1.7	3.5	3.5
Russia	−2	0.6	4	4	7.3	8	616	624	2.5	3.5	4.5	4.5
Saudi Arabia	0.9	1	1.8	1.9	5.5	5.5	100	101	−5.1	10	0.75	0.75
South Africa	−5	0.3	3.7	4	37	36.7	118	120	1.5	1.5	3.25	3
South Korea	1	1	1.4	1.4	4.6	4.4	107	107	1.8	1.8	0.25	0.25
Turkey	1.5	0.9	8.6	7.9	18	17.5	478	486	−2.8	2.5	5.5	5.5
United Kingdom	4.8	1	1.2	1.9	6.8	6.5	110	111	1.6	1.6	0.1	0.1
United States	−3	1	−0.1	0.4	20	19	258	259	1.1	1.1	0.25	0.25

Source: IMF's Statistics data, respective countries' National Statistical Offices, Trading Economics

Table 2: Descriptive Statistics

	GDP Growth Rate		Inflation Rate		Unemployment Rate		Consumer Price Index		Industrial Production		Interest Rate	
	Q4/20	**Q1/21**	**Q4/20**	**Q1/21**	**Q4/20**	**Q1/21**	**Q4/20**	**Q1/21**	**Q4/20**	**Q1/21**	**Q4/20**	**Q1/21**
Mean	0.63	1.015	3.82	4	11.02	10.785	442.9	447	1.01	2.435	3.175	3.225
S.D	2.4029	0.9069	8.8085	8.2412	7.65263	7.531777	1178.4	1188	2.7243	2.4412	7.03434	7.03565
C.V	381.41	89.346	230.59	206.03	69.4431	69.83567	266.06	265.78	269.74	100.25	221.554	218.16
Correlation	0.6277		0.9991		0.999		0.9999		0.0885		0.9996	

Table 3: 5% Level of Significance for a Paired T-Test

	t-value (Calculated value)	t-value (Tabulated value)	Significant/Insignificant
GDP Growth Rate	0.876	1.729	Insignificant
Inflation Rate	1.210	1.729	Insignificant
Unemployment Rate	3.030	1.729	Significant
Consumer Price Index	1.848	1.729	Significant
Industrial Production	1.824	1.729	Significant
Interest Rate	1.285	1.729	Insignificant

**Significant- t-value (Calculated value)>t-value (Tabulated value)*
** Insignificant- t-value (Calculated value)<t-value (Tabulated value)*

Table 4: Stepwise Regression

Dependent Variable: GDP_Q4_20			
Variable	**t-Statistic**	**Prob.**	**Significant/ Insignificant**
Inflation Rate Q4/20	1.92342	0.07501	Insignificant
Unemployment Rate Q4/20	–3.04792	0.00869	Significant
Consumer Price Index Q4/20	–0.37510	0.71321	Insignificant
Industrial Production Q4/20	0.08663	0.93219	Insignificant
Interest Rate Q4/20	–2.00076	0.06520	Insignificant
C	3.62311	0.00277	–

From the above table, the study conclude that Unemployment rate has got a significant impact on GDP growth rate because the probability value is less than 0.05. But the rest four independent variables i.e. Inflation rate, Consumer Price Index, Industrial Production and Interest rate isn't significant since the probability value is greater than 0.05.

Adjusted R-square is 0.518. So, 51.8% of the variation of GDP growth rate (Q4 2020) is due to Unemployment rate (Q4 2020).

F-statistic (Prob) is 0.046. Hence the significance F value is less than 0.05, so F is significant to prove that the model is fit.

2. Dependent Variable: GDP_Q4_21
   Method: Stepwise Regression
   Included observations: 20
   Number of always included-regressors: 6
   Selection method: Stepwise forwards

From the above table, the study concludes that all the independent variables i.e. Unemployment rate, Inflation rate, Consumer Price Index, Industrial Production and Interest rate have got no significant impact on the dependent variable i.e. GDP growth rate.

Adjusted R-square is 0.2204. So, 22.04% of the variation of GDP growth rate (Q1 2020) is due to Independent variables. (Q1 2020).

F-statistic (Prob) is 0.572. Hence the significance F value is more than 0.05, so F is not significant to prove that the model is fit.

Changing postCovid-19 economic shapes of G-20 nations

The cumulative experience of this soaring crisis will lead to the questioning of underlying hypotheses and priorities that will be both an opportunity and a challenge. In this study, we've outlined seven ways of improving the business situation, not only in India but around the world. Taking advantage of these would certainly help to navigate the economically and socially sustainable journey to the next normal. However, to minimize the impact of the shock on financial, Health and Economic sectors and pave the way for a V-shaped recovery, businessmen must be ready to increase the response as situations unfold.

According to the Organisation for Economic Co-operation (OECD) latest economic outlook, Covid-19 pandemic has

Table 5: Stepwise Regression

Dependent Variable: GDP_Q1_21			
Variable	**t-Statistic**	**Prob.**	**Significant/ Insignificant**
Inflation Rate Q1/21	0.21479	0.83303	Insignificant
Unemployment Rate Q1/21	–0.74784	0.46693	Insignificant
Consumer Price Index Q1/21	–0.32137	0.75268	Insignificant
Industrial Production Q1/21	–1.49795	0.15635	Insignificant
Interest Rate R Q1/21	–0.31562	0.75694	Insignificant
C	3.40984	0.00423	–

created the most serious recession in almost 100 years, causing significant harm to the health, employment and well-being of people. The outbreak of Covid-19 and the economic slow down increased the ranks of unemployed Americans by over 14 million, from 6.2 million in February to 20.5 million in May 2020. From the Table 1, it is clearly visible that effect of Covid-19 has been affecting the world economy in term of Unemployment rate. The G20 also decided to step up aid for the development of early warning systems, suitable treatments and vaccines. The Riyadh meet also agreed to help and work closely with the World Health Organization (WHO) to monitor the outbreak, exchange relevant information, facilitate preventive measures, identify early cases and provide clinical care.

At the bottom of the pyramid, government have announced rescue packages for the population via direct benefit transfers (DBT) to their respective accounts. Similarly, sufficient national assistance will help buffer the effect of the corona virus. The central government has already announced some relief packages including support for work equity, alteration of loan re-structuring and credit terms, motivating to enhance consumer spending, etc. Responsible authorities need to facilitate that these rescue bundles are properly implemented by continuous monitoring. Besides providing the vulnerable with robust safety nets, ensuring continuity of employment and job creation is the key. Urgently, resource mobilization is needed to stimulate the economy.

Future Directions for a Post-Pandemic Future

a) Transition to Localisation

As instructed by Shri Narendra Modi, Prime Minister of India, to emphasis on producing and manufacturing of goods and services in India. Each industries focus must be on Made in India projects and missions. For example, Indians has to boycott Chinese goods and 'Made in India' banners written in white on a saffron background, identical to the original colour scheme of the company's logo, have replaced the brand name outside of Mi-stores. Although it is expected to get adaptability to more localization of the goods & services, particularly significant supply chains.

b) Digital gains a significant push

Many organizations have preferred to work staying with certain restrictions remotely and now their employees are 'online' and working from home. It provides a clear and immediate opportunity to drive towards digital world. This crisis simultaneously emphasized the significance of investment in emerging tactics such as cyber security, data analytics and cloud.

c) Blended Learning

Blended learning represents a model that incorporates learning-enhancing technologies and deliver business impact. Mixed learning or 'hybrid learning' is a learning paradigm incorporating both formal (traditional) and non-formal (online) methodologies. While education experts continue to debate the feasibility of blended learning, their presence has forced them to re-evaluate not only the role of technology in (and out) the classroom, but also how to more efficiently reach and educate students.

d) Work from Home mechanism

Making remote employment an option is an investment that can pay off for both employers and employees. Companies embracing telecommuters are able to recruit the best talent without any geographical limitations. Employees who have the ability to work from home or from a remote location are happier, more successful and more loyal to their company. For example, Google would give each employee a $1,000 allowance, or the equivalent value in their country, to spend the required equipment and office furniture, as most of them plan to work mostly from home for the remainder of the year.

e) Switch to variable cost models

From this crisis, the upmost lessons, among others, is the significance of reducing the fixed cost models ongoing in various organizations. For example, companies can decide now what they need to retain in the business, like install security measures to cut insurance and cheaper software so that fixed costs can be minimized.

f) Develop resources for sensing and managing towers:

Companies have recognized the value of sensing technologies, creating accountability through 'digital control towers,' 'digital twins,' and the ability to process structured and unstructured data. For example, companies are now extracting specific data such as road safety, orders for food, e-learning, e-commerce etc. to monitor Covid-19 issues.

g) Resilience in supply chain is vital

Supply chains are at various threats, and they are constantly changing. It is therefore imperative to establish resilience capabilities to react to unpredictable happenings and either revert back quickly to the real state of organization or shift to a different and improved

condition after risk has been impacted and commercial activities continue as effectively as possible.

Conclusions

In short, the crisis is a story with unpredictable ending. Given the large size of the population, the precarious economic situation, particularly of the financial sector in the pre-COVID-19 period, and the dependence of the economy on informal labour, lockdowns and other social distancing measures would be extremely disruptive. The central and state governments have acknowledged and reacted to the challenge but this response should be only the beginning. What is clear is that COVID-19 has created new business environment dynamics that call for a calculated, realistic and informal strategy from political and business leaders. The pandemic's full effects are yet to be measured, though change is already here. We also need to understand that COVID-19 is likely to lead to a new normal-being aware of and planning these trends will allow businesses and economic activities to survive the post-COVID-19 environment.

Competing Interest Statement

All authors have read and approved the manuscript and take full responsibility for its contents. No potential conflict of interest was reported by the author(s).

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