# CAN INDIA BE DECOUPLED FROM THE GLOBAL

# SLOWDOWN?

APRIL 2020

PALAK KAUR

# Abstract

The research closely assesses the implications of the WHO declared pandemic, COVID-19 on India. Analysing it through the economic lens of India's global trade linkages, interplay of fiscal and monetary policies by the government to counter the disruptions caused by the outbreak. The research undertakes empirical and qualitative analysis to unleash the impact of global slowdown on the Indian economy.

Keywords: COVID-19, pandemic, economic growth

#### Introduction

COVID-19 has been ridiculed to have optimally utilised globalisation in this world of distant lands and put a halt to the global economy, a standstill for the greater part of the world. Just when the world was anticipating a recession, closely watching the macro indicators align to the pre financial crisis scenario of 2008, an unearthly story from Wuhan brags the headline and takes the world by a swirl with the haunting deeds of COVID19. The numbers are unprecedented, delusional at first and defeating all possible scenarios projected through the SIR (Susceptible, Infected, Recovered) Model.

While the virus appears to be less deadly in comparison to the mortality rate of SARS 2003, H2N2 or even the 1918 Spanish Flu, the rate of spread of coronavirus is increasing exponentially and futile efforts in its containment has caught everybody's concern. Amid this chaos, people's health is the biggest sufferer, however, the apprehension towards the economic impact of this pandemic cannot be differentiated from the wellbeing of all. Thus, an attempt has been made to look at India in perspective with its trading partners, which are also its allied sufferers in the ongoing crisis. In the first section of our study we undertake empirical analysis to establish business cycle synchronisation between India and its trade partners to gauge the extent of India's relation with the rest of the world. Based on this we can comment on possible flow of global slowdown ushering through the borders of these countries into India and its economic impact thereafter.

Following this, the paper indulges into the conditions prevailing in India amid the health crisis, analysing the demand and supply shocks triggered by the pandemic across various sectors of the economy and its ramifications that are expected to continue even after the virus downplays. Observing these trade linkages, domestic demand and supply shocks in conjunction with the policies implemented by the Centre to arrest the spread of virus provides a comprehensive view to advocate potential decoupling of India from the global slowdown.

#### Trade Linkages

The pandemic being witnessed is like no other, economists and analysts are speculating around the odds in contrast to earlier crises this world has survived. However, the reach of the virus has spared neither the developed nor the developing countries. The magnitude and persistence of the economic impact is unknowable and thus, it becomes even more crucial to understand the potential derailment of the Indian economy.

India's top trading partners have found themselves to be most badly affected by the disease. Quoting a few, US, China, Japan, Germany, Britain, France, and Italy account for 60% of world supply and demand (GDP), 65% of world manufacturing, and 41% of world manufacturing exports. The rupture caused is bound to trickle down to other economies, ours being no special.

Thus, dwelling on one aspect of this effect requires us to know the extent of bilateral correlations of India and its paired countries. A correlation analysis helped identify the business comovements. Cyclical components of the time series data of real and nominal GDP reflected the business cycle, while the data on imports and exports helped derive the bilateral trade linkages. This study on business cycle synchronisation makes use of rolling correlation technique, applying a correlation between two time series as a rolling window calculation, providing a continuous series of bilateral correlations over the period, thereby, allowing business cycles synchronization assessment by its own and in the text of trade intensity as well. A rolling window of 5 years is taken which is justified by the average length of business cycles which is considered as 5 years. The table below gives the summary of average business cycle correlation of India with the paired nations. The general trend in the level of business cycle synchronization is evaluated from the results of trend line parameters of rolling correlation coefficients. The results from the exercise showed the relation between business cycle synchronization and trade integration for India is found to be significant with China, Saudi Arabia, Singapore and the United States of America out of the total sample taken.

Paired Nation	1995-2019	1995-2008	2009-2019
CHNIND	0.993049	0.991796	0.916919
SGPIND	0.982765	0.987761	0.856055
USAIND	0.991121	0.976337	0.971448
SAUIND	0.883801	0.990296	0.447348
HKGIND	0.943551	0.953482	0.806087
BELIND	0.909433	0.932951	0.855112
BGDIND	0.949233	0.980511	0.792631
DEUIND	0.964019	0.991515	0.972019
ITAIND	0.965784	0.995639	0.976573
MYSIND	0.993617	0.985379	0.987085
NPLIND	0.833307	0.781579	0.720304
ANTIND	0.976987	0.994244	0.920159
AREIND	0.975254	0.994530	0.777825
GBRIND	0.926102	0.989677	0.741279
NVNMIND	0.876760	0.995608	0.728954

This establishes the fact that considering our position in the global scenario, it will take diligent efforts to unhinge the Indian economy from the worldwide slowdown.

Note: Cyclical components of real GDP are taken as business cycles. The data for real and nominal GDP is sourced from the World Bank's World Development Indicators and corresponding time series data on exports and imports from International Monetary Fund's Direction of Trade dataset (IMF-DOTS).

Source: Author's Calculations

Can India be decoupled from the Global Slowdown? | 4

#### Looking Within

The trade linkages have already fed woes into the Indian economy with its 'supply chain contagion'. This can be seen in restrictions on import of parts from China and other severely impacted countries having direct influence on manufacturing. Reduction in thermal coal prices due to reduced demand and so on. Closure of workplaces, departure from daily business, closing down of schools, factories, dysfunctional SMEs are just a few worries to quote.

The crisis has spared a direct negative impact on the banks, however, we are still recovering from the twin balanced sheet problem, and we will plunge backwards a many steps if the current situation reaps greater NPAs on their balance sheets. For business units that have borrowed from banks on a short term basis to cater 'business as usual' needs are dependent on the incoming revenues to service the debt. A sudden stop in revenue, a phased lockdown with an unfinished exit plan could paint a rather uncomfortable story, undoing the clean up by the Insolvency Board. A major concern has risen towards the functioning of SMEs that will and already have begun to face a liquidity crisis. The government has already opened a knot to leak liquidity into the economy, easing financial regulatory requirements through announcement on moratorium period, availability of greater credit in the market, but efforts on reducing fixed charges, taxes and credit forbearance could help ease out the situation.

Another major hit has been taken by the manufacturing sector wherein the supply disruption has affected the production activities. Kicking life to these production units might take time given the persistence of the virus spread in the country will stall the production activities further rendering an unmatchable loss to these units. Such delays would redundant business' and firms months long well -funded projects. Dislocations in casual and contract workers have resulted in loss of activity. India is heavily characterised by the informal sector and the closures and travel bans induced productivity reduction is in a way akin to drops in employment. The absence of workers in the units has affected their payroll, while daily wage workers have been devoid of their daily incomes which has surfaced as an interstate migration crisis. There is a pressing need for the government to stabilise and stimulate the economy and protect people' lives and livelihood.

Thus, a negative impact on the disposable income available to the people shall loom over the economy for a little longer, resulting in further contraction of investment and spending in the economy. High frequency indicators suggest that private final consumption expenditure has been hit hardest, even as gross fixed capital formation has been in contraction since Q2 of 2019-20.

Having roots to an agrarian economy, the plight of the farmers needs to be addressed soon especially when the harvest season for rabi crops is due in two weeks. Financial support needs to be extended and a smooth season for the farmer needs to be ensured amid the levied curbs on farming. Balancing the economic and social impact on the health of the farmers in these trying times is a desideratum. This is also important in order to optimize the outlook for agriculture and allied activities which appears to be the only silver lining, with foodgrains output at 292 million tonnes being 2.4% higher than a year ago.

Distortions have occurred in operations across all strata, with the corporate sector ushering into huge layoffs. Rather, the government and corporates should combine efforts to devise plans to retain employees and not use them as the first measure of cost cutting. Australian government has disbursed financial aids to companies to pay their employees a minimum salary and keep the employee structure intact so that normalcy can be restored sooner once this wave of panic and fear is cleared. One upside is the venture of small and big companies in the field of technology to build mechanisms through cloud computing, generation of soft token apps, virtual desk setup enabling work from home facilities. Investing in their digital capabilities, the private sector can keep the wheels churning rotation by rotation. The office workspace can then be deployed as available sites to set up health care facilities, filling the gap in healthcare infrastructure. The disruption is a sudden jolt to the economy with fatal implications.

#### **Beliefs Induced Economic Shocks**

Markets are driven by sentiments, demand and supply is influenced by household behaviour, and the way chartered by a crisis is largely driven by public behaviour especially when it carries dual characteristics of fear of survival and monetary panic. This fuels the economy further onto the downside.

A study suggests that human brains evolved in a walking-distance world, where future increments could reasonably be predicted by past increments. Using increments to predict increments is 'straight -lining the future' (i.e. linear approximation). In the current scenario, it is more likely to expect people to make guesses on the number of future COVID-19 cases based on the number of new cases that appeared in the recent past. This can lead to grave mistakes. a linear prediction made during the early days of the epidemiological curve would radically under-estimate of the spread of the disease. A linear projection made later would radically over-estimate the severity of the outcome, blowing the situation out of proportion.

The massive Knightian uncertainty has webbed multiple lines of thoughts in the country. While the rate of spread is still beyond the curb, the public is unable to gauge this lag, indulging into hoarding at a time of sporadic resources which seems to be a roadblock as the government is trying for equitable distribution of supplies.

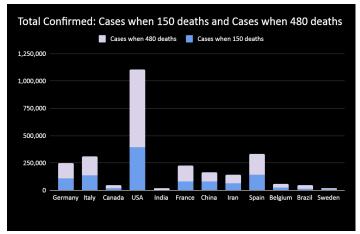
Working population is cast under the gloomy spell of layoffs, potential layoffs and expected salary cuts. As a result, the spending approach has become pessimistic and the hesitant recovery has aggravated the demand shock. The psychological twining of 'wait and see' attitude is not going to alter in a short span of time. The direct bearers of this would be sectors like hospitality, tourism, automobiles, entertainment and leisure services. Suggestive business and vacation travels would still haunt the scared, automobiles were already exposed to a down cycle and this is only worsening their prospects.

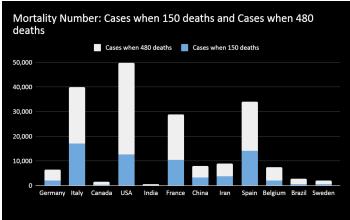
Just how we can associate behavioral impact in certain cases to worsen the receptiveness of the shocks, efforts are being made to use aspects of behavioral economics to help spread awareness around the citizens to stand united in this fight against the pandemic. A very simple concept of 'nudge' talks about any aspect of the choice architecture that alters people's behavior in a predictable way without forbidding any options or significantly changing their economic incentives. Putting the fruit at eye level counts as a nudge. Banning junk food does not. Similarly, sanitizers have been placed in every shop, every place that attracts people to inculcate a habit of its usage among the masses. All apps have a pop up attached giving away simple clear instructions around the steps that one can take to safeguard against this virus. Another technique of effective communication is being followed by our political leaders, with live updates on tally and policy measures being populated to trend a sense of confidence in the public. The government in one such initiative to instill hope and confidence amongst the countrymen organised the 5pm "clap and appreciate" and 9pm "light the diyas to enlighten the darkness" activities. As random as it sounded in Modi's speech at first, both the activities did bring the community together with a sense of belonging and hope to hold on a little longer because we are all in this together.

While behavioural economics is playing its role in both capacities, it is important to stress upon a balanced monetary and fiscal policy to tackle the crisis and ensure a speedy recovery.

#### Insights from our neighbours

This pandemic demands decisions to be taken not in isolation but taking into account constant feedback of the receptiveness of the actions while keeping a balance between the short and long sight of the economy and its people.





Countries	Total Confirmed		Mortality Number	
	Cases	Cases	Cases	Cases
	when 150	when 480	when 150	when 480
	deaths	deaths	deaths	deaths
Germany	107,663	142,283	2,016	4,403
Italy	135,586	172,434	17,127	22,745
Canada	17,872	31,927	375	1310
USA	396,223	710,272	12,722	37,175
India	5,311	14,792	150	480
France	79,163	147,969	10,343	18,681
China	82,718	83,760	3,335	4,636
Iran	62,589	80,686	3,872	5,031
Spain	141,942	191,726	14,045	20,043
Belgium	22,194	37,183	2,035	5,453
Brazil	14,034	34,485	686	2,181
Sweden	7,693	13,822	591	1,511

The virus struck India when many parts of the world had already fallen prey to its parasitic attack, and thus gave us a chance to be a little prepared to postpone and delay its usual cycle of emergence in the country. Given this. here is a need to look at international experiences during the initial phases of the COVID-19 pandemic and see whether India is indeed doing worse than other countries, on the average. India has around 480 deaths as on April 18, 2020 and about 14,790 confirmed cases of COVID -19. Using international data available across various parameters, we look at the

Source: Klipfolio HQ Dashboard

historical data from top 12 countries in terms of patient load and mortality load. For each country across these two parameters, the number of COVID-1 patients recorded in the system is looked at two mortality milestones- once when the number of deaths was 150 (in India, i.e as on April 7,2020), and again, when the number of deaths was 480 (in India, as on April 18,2020), close to the current India situation.

The historical data indicates that India is not an outlier, and stands on average in terms of number of coronavirus cases confirmed and morbidity figures. It indeed has saved itself from a catastrophe unlike other nations so far and in order to maintain the safe distance, government's swift actions would be needed.

As Weder di Mauro puts it, "The size and persistence of the economic damage will depend on how governments handle this sudden close encounter with nature and with fear."

The most effective interplay of the monetary and fiscal policy will be able to uplift the economy and surface above the behaviour of the virus. While the above data shows India in light with other countries, it is important to draw insights from these nations on how they are putting in place their policies to cope with the havoc.

Singapore's measures outline the importance of stabilising and boosting confidence in the population and pushing for uninterrupted expenditure on the healthcare system. Bonuses have been paid out to health care workers, political leadership stepped up to donate one-month salary in solidarity, households have been distributed with face masks, lockdown has been put in place but additionally, aggressive testing has also begun to ensure the positive coronavirus cases aren't enveloped in time and a suitable exit plan can then be ignited without further deliberation. Singapore has extended financial support to specific sectors of tourism, accommodation and aviation. Businesses too have been provided financial relief and financial support has been extended to the working class whose pay was on stake due to the inevitable absence on work.

Hong Kong gears to provide liquidity in all spheres to grease the working engines of its economy as well as ensure minimum cash flows to the required households. US\$1,000 and more has been paid out to every citizen above 18 years of age. Support has been extended to the uninsured households for the medical expenses. The small and medium-sized firms have been encouraged to take loans on low interest rates and a relief provided through reduced profit tax.

Italy has suspended payments for electricity in order to ease the burden on households. While Germany supplemented the measures with subsidised short-term employment schemes.

Some broader measures observed across countries include government provisioned liquidity into the economy through banking channels, cut in bank rates, lower interest rates, emergency tax reductions, halt to social security payments, increased government spending and quantitative easing.

The IMF has initiated a US\$50 billion emergency lending program, the World Bank has scaled the IFC/EBRD facility to fund the private sector in countries affected by the virus.

### On the Indian Soil

RBI's attempt to ease liquidity through cut in interest rates by 75 basis points would have limited translations of its intentions, when compared to other countries that are in talks for a zero or rather negative interest rate policy at these tough times. This discretely points out to the distinction in exercising monetary and fiscal policies. In February 2016, RBI and the Government of India legally signed up for RBI's mandate on ensuring Price Stability in the economy and inflation targeting, isolating its role from other aspects of economic functioning. In a limited purview of actions, RBI has floated its 'operation twist' in addition to Forex Swaps, LTROs, so that the refinancing risk will arise only later once the current situation has been dealt with. Under this unconventional operation, there is simultaneous sale of short-term government securities (of Rs.28/276 crore) and purchase of long term securities (of Rs.40,000 crore), cumulatively injecting a net amount of Rs.11,724 crore.

In its continuous effort to stimulate economic activity, RBI recognises that All India financial institutions (AIFIs) such as the National Bank for Agriculture and Rural Development (NABARD), the Small Industries Development Bank of India (SIDBI) and the National Housing Bank (NHB) play an important role in meeting the long-term funding requirements of agriculture and the rural sector, small industries, housing finance companies, NBFCs and MFIs. These All India Financial Institutions raise resources from the market through specified instruments allowed by the Reserve Bank, in addition to relying on their internal sources. In view of the tightening of financial conditions in the wake of the COVID-19 pandemic, it has been decided to provide special refinance facilities for a total amount of Rs.50,000 crore to NABARD, SIDBI and NHB to enable them to meet sectoral credit needs.

China, Hong Kong and Singapore have decided on substantial fiscal measures to stimulate demand and boost confidence (almost 2% of GDP in the case of Singapore). While in India, the current fiscal stimulus of 1.7 crore is about 0.8% of GDP which will dissipate sooner than realised. This will only cater to the initial demand for food and necessities in the wake of this disruption. A second stimulus package should be underway of a magnitude to suffice the basic needs of the population especially those in the informal sector, increased shelling on the public health infrastructure, special allocations to our front line barriers i.e. our medical professionals. Utmost care needs to be provided to these professionals, in terms of their shielding and availability of equipments for smooth working of their practice.

The government has over 430 Direct Benefit Transfer Schemes that can be put in use to reach the larger audience. Currently, the government is providing some financial relief through the Jan Dhan Accounts, crediting an ex-gratia payment of Rs 500 to women Jan Dhan account holders for the next three months. Constant measures are in place to provide food and cooking gas to lower-income households. These measures are in addition to a previous commitment by Prime Minister Modi that an additional 150 billion rupees (about 0.1 percent of GDP) will be devoted to health infrastructure, including for testing facilities for COVID-19, personal protective equipment, isolation beds, ICU beds and ventilators.

Several measures to ease the tax compliance burden across a range of sectors have also been announced, including postponing some tax-filing and other compliance deadlines. Numerous state governments have also announced measures to support the health and wellbeing of lower-income households, primarily in the form of direct transfers (free food rations and cash transfers)—the magnitude of these measures varies by state, but on aggregate measures thus far amount to approximately 0.2% of India's GDP.

Strenuous efforts are paving way both at the Centre and the state level. India ranks highest on the Stringency Index, with a nationwide lockdown. Essential goods have been exempted from this lockdown to avoid public run, ensure running households and limit hoarding of goods. However, aggressive testing needs to be accompanied with the lockdown to speed the unveiling of cases, isolate the potential ones and treat the infected to ensure that the lockdown doesn't have to be extended for long. The exit plan is essential to overcome bumps in the economy.

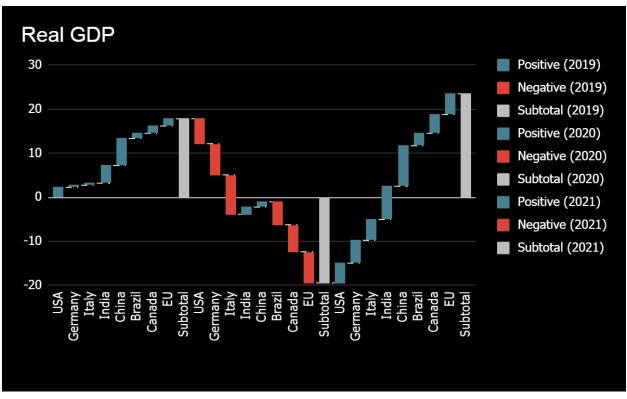
All the initiatives taken are under the purview of the existing schemes. Many economists at this time have also argued the applicability of Universal Basic Income in the current scenario. A policy of fixed amount being paid to the public irrespective of occupation and their income level, on a monthly or quarterly basis could come handy especially at this time when the normalcy has been obstructed. An untied payment of this sort assures a minimum in everybody's pocket to dispense, expanding the consumption basket. The government is already trying to transfer cash payments to the lower income households, however, if UBI as a policy is put in action for the majority and continues in future, the existing income level would witness a rise which would translate into increased spending, but this would add extra burden on government expenses. In a country like India with a massive population, the policy could drain the reserves. One way to make it affordable would be to do away with the pension schemes and undo the MGNREGA guarantee and so on. The trade off is huge, either UBI be implemented in addition to the existing umbrella

of schemes or be a replacement for some of these schemes. The former would prove to be of greater burden on the fiscal deficit. Government should ideally be the employer of last resort to avoid the effect on workforce labour and wage distortions.

In the current economic screen play, what is required is a coordinated effort between the fiscal and monetary policy to pump the economy and survive the crisis with minimum collateral damage.

# Statistics and Conclusion

The IMF has projected India's growth at 1.9% for the financial year 2020 which is the highest growth rate among the G20 economies' growth rate as revealed by IMF in its global growth projections. Globally, the world output is expected to plummet to -3%. The projections might imply a better retract for India in comparison to the rest of the nations as is visible from the chart below, however, it is important to highlight concerns specific to India, and given the positive number, should that actually indicate a sigh of relief?



Source: IMF World Economic Outlook, April 2020

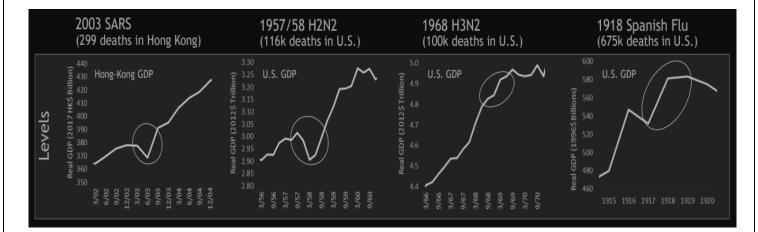
GDP trajectory chartered a course lower to the expectations prior to January, indicating a structural downturn which now is further downplayed due to the pandemic. Statistics show that as of mid-April,2020, 45.7% of the households have seen a decline in income while approximately 43% households have witnessed no change in income.

The unemployment rate has already risen by 0.9% to 18.7% as per data collected by CMIE. Some variations can be expected due to discrepancy in sizing samples, however, the broader picture still is gloomy and empathetic. Labour statistics show a sign of worry. In March 2020, the labour participation rate (LPR) fell to an all-time low to 41.9%. It was 42.6% in February and 42.7% in March 2019. The employment rate fell to 38.2% in March 2020, the fall since January 2020 is particularly steep. The change in these statistics outline a daunting picture. This fall in LPR and sudden jump in unemployment means that although fewer people are looking for jobs today than before, many more of them are unable to find jobs. Before the lockdown, 42% of the working age population was looking for jobs and 7-8% were not finding jobs. Now, only 36% of the working age population is looking for jobs and yet, nearly a quarter of them cannot find jobs. The impact of this lockdown is taking a toll on the livelihood of multiple sections of the society.

Steady growth was observed in IIP in the last quarter of 2019. As per the index published in February, it continued to show positive growth, the effect of COVID-19 on this measure is yet to be captured. The data also suggests that automobile production and sales, and port freight traffic declined sharply in March, with manufacturing purchasing manager's index (PMI) at its lowest in the last four months. In the external sector, the contraction in exports in March 2020 at (-) 34.6% has turned out to be much more severe than during the global financial crisis. Barring iron ore, all exporting sectors showed a decline in outbound shipments. Merchandise imports also fell by 28.7% in March across the board, barring transport equipment.

These statistics are alarming and advocate attention from an economic standpoint. At the same time, a leading concern is India's uninterrupted investment in its healthcare infrastructure. If we are able to detour this spread of virus in our country, trace our path to pre COVID-19, we will only then be able to tackle these problems. The time is ticking and with that our country is being plunged into further gray areas. India has so far protected its front-line barriers, medical practitioners from falling prey to the deadly virus. It is essential to keep this risk at bay, because India is not equipped in its healthcare facilities to handle the catastrophic effect of widespread virus.

COVID-19 impact and recovery scenarios are changing day by day. Economists have outlaid three scenarios with a potential to emerge - Rapid recovery (V), or slow comeback(U), or protracted challenge (L). These are primarily driven by evolving properties of the virus, containment and mitigation efforts, vaccine/treatment development lead time and, policy and fiscal response. There is significant uncertainty around the geometry and intensity of the shock. A little digging into the earlier flu that has struck humanity before provides an interesting precedent. 2003 SARS shows the Real GDP levels tracing a V-shaped trajectory in the year 2003-2004. Additionally, 1957-58 H2N2 causing nearly 116,000 deaths in the US exhibited a V shaped economic scenario for USA's real GDP levels. Similar trend was witnessed at the time of the 1918 Spanish Flu. These historical trends are not predictive in nature, however, the RBI in its latest statement has projected a sharp V-shaped recovery for India in 2021-22. It expects India to record a sharp turnaround and resume its pre-Covid 19 slowdown trajectory by growing at 7.4 per cent in 2021-22.



There are no affirmatives when the variables are uncertain. The gap in the monetary and fiscal mechanism, intense trade relations of India with its partnering countries, growing deficit, plunging economic statistics show a bleak future. Amid this ink spot, India shows spaces and lags with respect to the rest of the world, which if capitalised upon can decouple it from the global slowdown. However, it cannot blind itself from the economic slowdown that was surfacing before coronavirus hit us.

The Indian economy's slowdown is inevitable, and the pandemic was another shock. However, quoting Dr.Charan Singh here, the Delhi based economist in his article on 'Coronavirus impact: Indian economy may prove doomsayers wrong', firmly wrote, "If the economy is managed well and support is offered for recovery, India can bounce back faster than previously thought." The situation is daunting, but India cured the world of polio and smallpox and so India stands united against COVID-19, to fight for its survival, figuratively and metaphorically.

#### References

Shruthi Jayaram,Ila Patnaik, and Ajay Shah. (2009). Economic and Political Weekly,Vol. 44, No. 44 (OCTOBER 31-NOVEMBER 6, 2009), pp. 109-116 (8 pages)

WHO India's Situation Update Report. (2020). Retrieved from https://www.who.int/docs/default-source/ wrindia/situation-report/india-situation-report-11.pdf?sfvrsn=f7646851\_2

World Economic Outlook, April 2020. https://www.imf.org/en/Publications/WEO/Issues/2020/04/14/ World-Economic-Outlook-April-2020-The-Great-Lockdown-49306

Aggarwal, S. & Chakraborty, D. (2017). Determinants of India's Bilateral Intraindustry Trade over 2001-2015: Empirical Results. South Asia Economic Journal, 18(2), 296-313

Calderon, C., Chong, A. & Stein, E. (2007). Journal of international Economics, 71(1), 2-21. Trade intensity and business cycle synchronization: Are developing any different?

The Center For Disease Dynamics, Economics & Policy. (2020). Modeling the Spread and Prevention of COVID-19, https://cddep.org/covid-19/

Guerrieri, V., Lorenzoni, Straub, L., & Werning, I. (2020). Macroeconomic Inplications of COVID-19: Can Negative Supply Shocks Cause Demand Shortage? (No. w26918), National Bureau of Economic Research.

Ministry of Health and Family Welfare, Data Retrieved from https://www.mohfw.gov.in/

Centre For Monitoring Indian Economy Pvt. Ltd. Data Retrieved from https://www.cmie.com/kommon/bin/sr.php?kall=wrticle&dt=2020-04-17%2015:23:27&msec=390