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Abstract

To understand the economic and public health impact of the Covid-19 pandemic on India, we take a comparative cross-country perspective as all countries were exposed to this shock and were negatively affected and so, a relative comparison allows us to better assess India's performance in these dimensions. We carry out three sets of exercises. First, we discuss the economic impact of Covid-19 using key macroeconomic indicators – gross domestic product and employment. Second, we review the fiscal policy response of the government and use household and individual-level surveys to understand the heterogenous impacts of the pandemic on households in the country. Finally, we compare public health indicators across countries. The analysis suggests that India's record with respect to other countries, including countries that are comparable in economic status, puts it in the lower tail of the distribution – both in terms of economic and public health indicators. The fallout on the poorer sections and informal sector was particularly severe and policies to mitigate this were inadequate. We conclude that going forward, improving the public health infrastructure and the social safety net must be the public policy priority for the government.

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Abstract

To understand the economic and public health impact of the Covid-19 pandemic on India, we take a comparative cross-country perspective as all countries were exposed to this shock and were negatively affected and so, a relative comparison allows us to better assess India's performance in these dimensions. We carry out three sets of exercises. First, we discuss the economic impact of Covid-19 using key macroeconomic indicators – gross domestic product and employment. Second, we review the fiscal policy response of the government and use household and individual-level surveys to understand the heterogenous impacts of the pandemic on households in the country. Finally, we compare public health indicators across countries. The analysis suggests that India's record with respect to other countries, including countries that are comparable in economic status, puts it in the lower tail of the distribution – both in terms of economic and public health indicators. The fallout on the poorer sections and informal sector was particularly severe and policies to mitigate this were inadequate. We conclude that going forward, improving the public health infrastructure and the social safety net must be the public policy priority for the government.

Keywords: Covid-19, Indian Economy, Economic Contraction, Unemployment, Fiscal Response, Public Health.

1. Introduction

After a lull of six months, when the effect of the pandemic in India was seemingly on a slow burn, the second wave of infections and deaths have been rising ominously since mid- February 2021, crossing the previous peak in September (Menon, 2021). The news on the economic front looks grim as well. It is not surprising that the pandemic of the century and the steps taken to deal with it would take an economic toll. Indeed, all countries and not just India have suffered in terms of public health and the economy. But because the pandemic is common shock, one can also compare different countries in terms of what the economic and public health impact has been and to what degree this reflects their relative effectiveness in handling the crisis.

In this paper, we evaluate the relative status of India, compared to other countries in both the economic and public health areas. An important question in this context is, are there trade-offs between the economic and public health outcomes from the crisis? Did countries adopting stringent lockdown measures suffer more economically but achieve better public health outcomes? Or, does the evidence suggest that some countries coped better on both dimensions, while others fared worse?[1]

2. Methodology for Country Selection

For ease of understanding and clarity, rather than looking at a comprehensive list, we select a list of 27 countries (excluding India) comprising of advanced and emerging market and developing economies. To make the cross-country comparisons meaningful, we first classify the countries as "developed" and "peer" according to two measures – GDP per capita in current prices (US dollars) and GDP per capita in constant prices (based on purchasing power parity; 2017 international dollar) *relative to India*.

The classification is based on the ratio of the respective country's GDP per capita to India's GDP per capita. The ratios range from 0.6 to 32.3 for GDP per capita in current prices and 0.8 to 15.0 for GDP per capita in constant prices based on purchasing power parity. Developed countries are classified as

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[1] See Fernandez-Villaverde and Jones (2020) for an international perspective on Covid-19 and macroeconomic outcomes.

those with a ratio greater than 10 for GDP per capita in current prices and 5 for GDP per capita in constant prices.

We conduct a robustness check using 194 countries in the IMF World Economic Database. Using the same classification metric, based on GDP per capita in current prices, India's GDP growth rate ranks 115 out of 150 peer countries and 36 out of 45 developed countries. Similarly, based on GDP per capita in constant prices, India's GDP growth ranks 112 out of 148 peer countries and 39 out of 47 developed countries. Both measures put India in a similar rank bracket and also yield similar classifications (presented in Table 1). Overall, India's GDP growth rate in 2020 ranks 150 out of 194 countries.

Table 1: Classification of countries for comparison against India

Developed Countries	Peer Countries
Australia	Bangladesh
Canada	Brazil
France	China
Germany	Indonesia
Italy	Malaysia
Japan	Mexico
Korea	Pakistan
New Zealand	Philippines
Singapore	Russia
Spain	South Africa
Taiwan	Sri Lanka
United Kingdom	Thailand
United States	Turkey
	Vietnam

2. Macroeconomic Indicators

We begin our economic analysis by looking at two key indicators that provide diagnostics on the state of the economy – the growth rate of GDP (constant prices) and unemployment. We summarise the analysis of economic indicators in Table 2 and Table 3. In Table 2 we present both the GDP growth rate (at constant prices 2020) and the unemployment rate for India and peer countries, as well as India's rank in this group of countries. In Table 3 we present similar figures, but for India and a selected group of developed countries. Since Covid-19 was a common shock facing both developing and developed countries, a comparative picture helps us put the performance of any country of interest (in our case, India) in perspective.

Table 2: Economic data – India versus peer countries

Country	GDP Growth Rate in 2020	Rank in terms of GDP growth rate (Out of 15)	Unemployment 2020 (Percent of total labour force)	Rank in terms of unemployment rate (Out of 15)
Bangladesh	3.8%	1	5.3%	9
Brazil	-4.1%	9	13.2%	2
China	2.3%	3	3.8%	13
India	-8.0%	13	7.1%	5
Indonesia	-2.1%	6	7.1%	6
Malaysia	-5.6%	10	4.5%	10
Mexico	-8.2%	14	4.4%	12
Pakistan	-0.4%	5	4.5%	11
Philippines	-9.5%	15	10.4%	4
Russia	-3.1%	7	5.8%	8
South Africa	-7.0%	12	29.2%	1
Sri Lanka	-3.6%	8	5.8%	7
Thailand	-6.1%	11	2.0%	15
Turkey	1.8%	4	13.1%	3
Vietnam	2.9%	2	3.3%	14
World	-3.3%		6.5%	
Emerging market and developing economies	-2.2%		n/a	

Source: International Monetary Fund, World Economic Outlook Database, April 2021. Unemployment estimates for the World, India, and Bangladesh obtained from World Bank.

Table 3: Economic data summary – India versus developed countries

| Country	GDP Growth in 2020	Rank in terms of GDP growth rate (Out of 15)	Unemployment 2020 (Percent of total labour force)	Rank in terms of unemployment rate (Out of 15)
Australia	-2.4%	3	6.5%	7
Canada	-5.4%	9	9.6%	2
France	-8.2%	11	8.2%	4
Germany	-4.9%	7	4.2%	10
India	-8.0%	10	7.1%	6
Italy	-8.9%	12	9.1%	3
Japan	-4.8%	6	2.8%	14
Korea	-1.0%	2	3.9%	11
New Zealand	-3.0%	4	4.6%	8
Singapore	-5.4%	8	3.1%	13
Spain	-11.0%	14	15.5%	1
Taiwan	3.1%	1	3.9%	12
United Kingdom	-9.9%	13	4.5%	9
United States	-3.5%	5	8.1%	5
World	-3.3%		6.5%	
Advanced economies	-4.7%		6.6%	

Source: International Monetary Fund, World Economic Outlook Database, April 2021. Unemployment estimates for the World, India, and Bangladesh obtained from World Bank.

2.1. Gross Domestic Product

The preliminary estimate of GDP presented at the end of February, according to national statistics, shows that national income in real terms contracted by 8% between 2019 and 2020. In per capita terms, the drop was by 9%. In the post-independence period, India's national income has declined only four times before 2020 – 1958, 1966, 1973, and 1980. The largest drop was in 1980 (5.2%) when the economy was in turmoil due to a countrywide drought and the doubling of global oil prices due to the revolution in Iran. This implies that 2020/21 is the worst year in terms of economic contraction in India's history, and much worse than the overall contraction in the world (Figure 1).

Figure 1: Economic Contraction in India and the World due to the Covid-19 Pandemic

Evolution of GDP Per Capita Since 2011
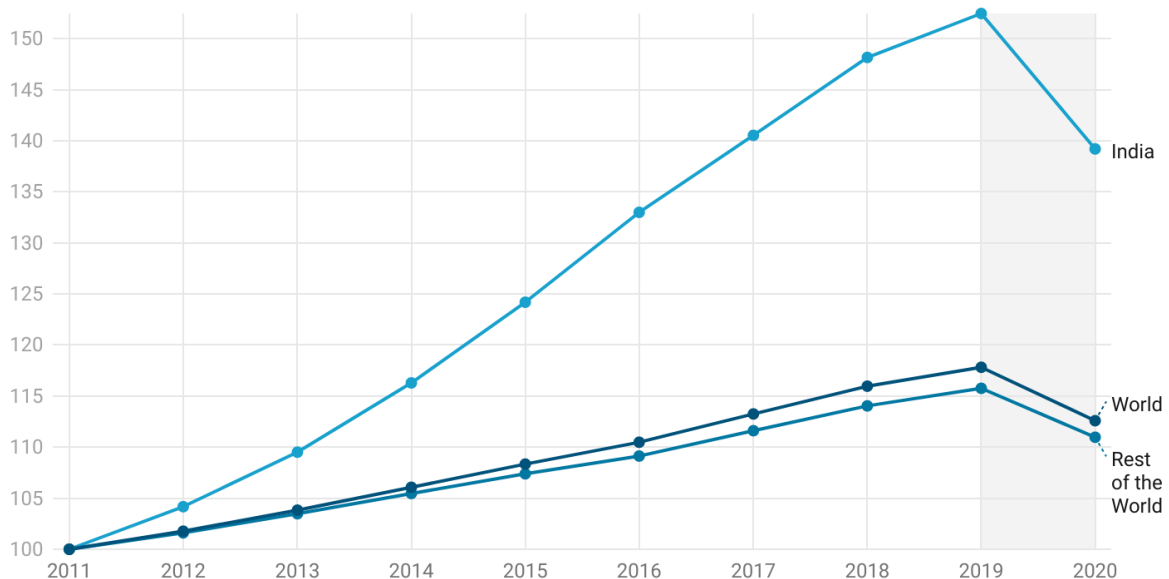
The gross domestic product (GDP) per capita, constant prices is measured at purchasing power parity; 2017 international dollars. The GDP per capita of each series is normalised to 100 in 2011. We use population-weighted average as the aggregation method.

Chart: Authors • Source: World Economic Outlook, International Monetary Fund, April 2021 • Created with Datawrapper

In Table 2 and 3, we compare India's growth to peer and developed countries respectively. India ranks 13 out of 15 peer countries and 10 out of 14 developed countries in terms of GDP growth rate in 2020. The average rate of decline in GDP for the world was 3.3%, for advanced economies 4.7%, while in developing and emerging economies it was 2.2%.

However, on a positive note, for the next two years (2021-22), the estimates show some light of hope. While all economies are expected to recover to some degree, the rate of recovery in India will be

relatively higher. The IMF estimates the GDP of India to grow at 12.5% in 2021 and 6.9% in 2022, resulting in a compound growth rate of 3.6% between 2020-2021 and 10.8% between 2020-2022.

We note two caveats here. First, the greater is the negative impact of the shock, the more the ground there is to recover – the more you fall behind, the greater the rate of improvement required just to regain your earlier position. India's growth rate before the onslaught was relatively higher than other countries. Therefore, even after recovering in absolute terms, to achieve the same relative position will not be easy and would require an even higher rate of growth. Second, as the Covid-19 situation in India is currently evolving, the growth rates for 2021 would likely be adjusted downward by the IMF. The magnitude of the current situation on the GDP growth remains to be ascertained with certainty as the upcoming months unfold – depending on the intensification of lockdowns and acceleration of vaccine administration.

2.2 Is the drop in the GDP per capita representative?

National income is just one measure of a country's economic health and there are many well-known problems of using it. Some of these problems are universal – for example, in the presence of large inequalities in the distribution of income and wealth, the national income nor its growth rate is very informative about the economic conditions of the poor. Therefore, an average contraction rate of 8% does not mean that everyone's income has fallen by 8%. Rather, evidence suggests that the income and wealth of those who are richer has actually increased and those who are poor has deteriorated. A study by Pew Research Center (Kochhar, 2021) suggests that the number of poor in India is estimated to have more than doubled post-pandemic and the number of people in the middle class have been cut by a third.

Therefore, it is difficult to say exactly how much has national income decreased and what the economic impact has been on the poor. In the case of underdeveloped countries like India, the problem is worse, as the unorganized sector in the Indian economy accounts for about half of the national income. About 70% of India's total workforce is engaged in in the informal sector and they tend to be poorer. The contribution of the unorganized sector to national income is estimated largely based on guesswork. Fortunately, several surveys have been conducted since the onset of the pandemic and the announcement of the lockdown. The general picture that emerges from these surveys is that the income of this poorer sections has decreased much more than the rate of contraction of national income.

One such study by researchers at the Azim Premji University (Center for Sustainable Employment, 2020) on the effect of the crisis on self-employed, casual, and regular wage workers across 12 states of India between mid-April to mid-May 2020 reported a 64% drop in earnings, which is more than two and a half-time the reported decrease in quarterly GDP of the same period. A second round of the survey conducted between October – December 2020 found that about one-fifth of the workforce who were employed before the lockdown, continued to remain unemployed. While earnings have recovered for those back to work, the situation remains dire for those who are not. Women and urban workers have been hit hard, a sign of rising inequality. Additionally, only one-third are consuming the same amount of the food as they had, pre-lockdown.

Another study, the Round 4 of the Delhi NCR Coronavirus Telephone Survey (National Council of Applied Economic Research, 2021) conducted between December 2020 – January 2021 found that about 80% of the households suffered economic hardship such as decreased salary or daily wages, job loss, difficulty in finding work, business closure, or decline in business income. Small business owners and salaried workers have been hit the hardest. Estupinan and Sharma (2020) note that while formal worker's wages have been cut by 3.6%, informal workers experienced a decline in wages by 22.6%.

Therefore, whatever the limitations of using the GDP as a measure of economic activity might be, there are two immediate conclusions one can draw from the reported GDP figures. First, the negative economic impact of the crisis has been large for India whether we look at its own past record or the contemporary experience of other countries. Second, the drop in GDP is in line with other macroeconomic indicators, but very likely under-estimates the impact on the informal economy, where a vast majority of the population is employed, implying that the crisis has hit the poor harder. Given the large fraction of the population that is poor, the drop in GDP does not fully capture how badly the crisis has affected people's lives.

2.3. Unemployment Rate

India is estimated to have witnessed an unemployment rate of 7.1% in 2020. In Table 2 and 3, we compare India's unemployment rate to peer and developed countries respectively. India ranks 5 out of 15 peer countries and 6 out of 14 developed countries in terms of the unemployment rate. While several peer and developed countries have experienced greater unemployment rates as compared to India, it should be noted that India's informal sector is typically not well accounted for in these measurements. According to CMIE estimates, the unemployment rate peaked to above 23% in the months of April and May 2020, nearly three times what it was in the months of January and February

2020, and came down to 10% in June 2020. We note that unemployment rates were more muted within the reference group economies, including both developed and peer countries. To what extent this reflects the impact on the shock itself and to what degree differential labour market policy responses to mitigate it, is difficult to tell with the data we have at present but certainly deserves further examination.

2.4. Summary of Macroeconomic Indicators and Fiscal Response

In Table 4, we summarise India's performance against the world and a 'reference group' of countries based on classifications developed by IMF and the World Bank. While the economies of all the countries have been hit hard, India ranks higher in terms of the intensity of the impact, compared to the rest of the world as well as a reference group of countries that are comparable in terms of economic status. The fact that India's growth rate in 2019 was among the highest makes the drop due to Covid-19 in 2020 even more noticeable.

Table 4: Summary of key macroeconomic indicators

	India	Reference group	World
GDP at constant prices 2019 (% change)	4.0%	3.6%	2.8%
GDP at constant prices 2020 (% change)	-7.3%	-2.2%	-3.3%
Unemployment rate 2019 (% of total labour force)	5.3%	5.5%	5.4%
Unemployment rate 2020 (% of total labour force)	7.1%	6.4%	6.5%
Above-the-line additional health sector fiscal measures in response to Covid-19 (% of GDP)	0.4%	0.9%	1.2%
Above-the-line additional non-health sector fiscal measures in response to Covid-19 (% of GDP)	3.0%	2.8%	7.8%

Note: The 'Reference group' refers to the closest peer group statistic under which India falls. The reference group for GDP per capita is the Emerging Market and Developing Economies (EMDEs) classification by the IMF. The reference group for the unemployment rate is the Low- and Middle-Income Countries (LMICs) classification by the World Bank. The reference group for the fiscal measures is the Emerging Market and Developing Economies (EMDEs) classification by the IMF.
Source: Data on gross domestic product, constant prices (percentage change) is obtained from the World Economic Outlook Database April 2021, International Monetary Fund. India's GDP contraction is 8% according to the IMF and 7.3% from recent national estimates. Unemployment rates (for youth, adults: 15+) are ILO modelled estimates as of November 2021 and are obtained from ILOSTAT, International Labour Organization and World Bank. Fiscal measures are obtained from Fiscal Monitor Database of Country Fiscal Measures in Response to the COVID-19 Pandemic as of April 2021, International Monetary Fund.

Despite the scale of the pandemic, additional budgetary allocation to various social safety measures has been relatively low in India compared with other countries. While India seems comparable to the reference group in non-health sector measures, the additional health sector fiscal measures are less than half those in the reference group. More worryingly, the Indian government's announced

allocation in the 2021 budget for such measures does not show an increase, once inflation is taken into account.

3. Public Health Indicators

Researchers at the University of Oxford (Hale et al., 2021) have come up with a measure for assessing the stringency in the restrictions that the governments have imposed to contain the spread of the Covid-19 crisis, referred to as the Stringency Index. At the early stages of the crisis, India imposed stringent measures compared to other countries, though these have been relaxed somewhat since. That there is a direct relationship between these constraints and negative impact on the economy is not hard to guess. The question is: despite the economic loss, have these restrictions been effective in terms of mitigating the public health crisis?

At the outset, we acknowledge several caveats regarding our discussion on public health. First, that the pandemic is still evolving globally and in India and therefore, we can only report what is known at this point with the caveat that a fuller understanding of the impact of it would take a longer time horizon. Second, we have focused mainly on the economic aspect of the pandemic but still, the pandemic's economic impact will inevitably depend on the length of the pandemic – which is not known with certainty at this point. Third, we provide only a broad overview of the public health situation and refer the interested reader to the work of epidemiologists (some of which we cite) who have been studying the public health data carefully. Finally, public health experts have highlighted the gross underreporting of data and hence, the quality and accuracy of the available health data should be taken with the appropriate degree of caution.

Turning to the statistics, we first look at data on the total confirmed cases and deaths per million – as the most basic indicators of the public health catastrophe caused by Covid-19.[2] For the first six months after the crisis began, the spread of the disease and the resulting mortality rates were alarming for India. At that time, India's record was not looking particularly good relative to all countries as well as its peer group. Given the stringency of its reaction, this was a particularly disappointing outcome and shows that these measures were not very effective.

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[2] The numbers reported here are as of the end of April 2021 and do not capture the full impact of the ongoing second wave in India at the time of writing this article. Also, serious issues of under-reporting have come up (see Banaji, 2021) and therefore, the health-related statistics have to be interpreted with appropriate caution.

In Table 5, we first analyse the total confirmed cases and deaths per million due to Covid-19 as of April 25, 2021. India records a lower number of total confirmed cases and deaths per million compared to some high-income countries such as Canada, France, Germany, Italy, Spain, United Kingdom, and United States. Some high-income countries such as Australia, Japan, Korea, New Zealand, Singapore, and Taiwan have managed to respond to the pandemic more effectively and thereby record a lower number of total confirmed cases and total confirmed deaths per million due to Covid-19 in comparison to India.

India has also had a greater success in total vaccination doses administered per 100 people in the population compared to countries such as Australia, Japan, Korea, New Zealand, and Taiwan. However, we recognise that all of the countries mentioned above have recorded lower confirmed cases and deaths per million compared to India. Several developed countries such as Canada, France, Germany, Italy, Singapore, Spain, United Kingdom, and United States are vaccinating their population at a faster rate.

Table 5: Key health indicators and policy measure – India versus developed countries

Location	Total confirmed cases per million people (as of April 25, 2021)	Total confirmed deaths per million people (as of April 25, 2021)	Total vaccination doses administered per 100 people in the population (as of April 25, 2021)	Stringency index (as of April 25, 2021)
Australia	1163.9	35.7	7.6	75.5
Canada	31450.0	634.6	31.9	75.5
France	81574.6	1511.7	28.9	78.7
Germany	39466.9	974.8	30.5	75.0
India	12545.7	141.4	10.1	69.9
Italy	65540.1	1972.1	29.5	80.6
Japan	4495.9	78.6	2.2	47.7
Korea	2328.6	35.4	4.6	58.3
New Zealand	539.4	5.4	4.6	22.2
Singapore	10427.8	5.1	37.8	50.9
Spain	74187.4	1659.5	31.5	67.6
Taiwan	46.2	0.5	0.2	25.0
United Kingdom	65115.7	1880.8	68.7	63.9
United States	96909.1	1728.9	68.4	56.9

Source: Max Roser, Hannah Ritchie, Esteban Ortiz-Ospina, and Joe Hasell (2020). Coronavirus Pandemic (COVID-19), Our World in Data, University of Oxford. Retrieved from: https://ourworldindata.org/coronavirus.

Moving to India's peer group in Table 6, we witness a more mixed performance. While India records a lower number total confirmed cases and deaths per million due to Covid-19 when compared to Brazil, Mexico, Russia, South Africa, and Turkey, a significant number of countries such as Bangladesh,

China, Indonesia, Malaysia, Pakistan, Philippines, Sri Lanka, Thailand, and Vietnam have outdone India. That countries within India's peer group that have performed better in health and economic outcomes, coupled with less stringent policy measures, provides grounds questioning India's initial policy response to the pandemic.

India has also administered more vaccination doses per 100 people in the population compared to countries such as Bangladesh, Indonesia, Malaysia, Pakistan, Philippines, South Africa, Sri Lanka, Thailand, and Vietnam. However, we recognise again that most countries mentioned above have recorded lower confirmed cases and deaths per million compared to India. India has administered fewer doses per 100 people compared to countries such as Brazil, China, Mexico, Russia, and Turkey.

Table 6: Key health indicators and policy measure – India versus peer countries

Location	Total confirmed cases per million people (as of April 25, 2021)	Total confirmed deaths per million people (as of April 25, 2021)	Total vaccination doses administered per 100 people in the population (as of April 25, 2021)	Stringency index (as of April 25, 2021)
Bangladesh	4525.6	67.1	5.0	83.3
Brazil	67467.2	1838.5	17.9	68.1
China	71.1	3.4	15.6	78.2
India	12545.7	141.4	10.1	69.9
Indonesia	6000.2	163.0	6.8	69.0
Malaysia	12140.6	44.4	4.0	61.6
Mexico	18059.0	1667.1	12.7	44.4
Pakistan	3623.7	77.8	1.0	58.8
Philippines	9103.1	153.2	1.6	68.1
Russia	32265.4	729.3	12.4	36.6
South Africa	26563.9	913.0	0.5	48.2
Sri Lanka	4734.4	30.0	4.3	47.7
Thailand	794.6	2.0	1.7	56.5
Turkey	54897.1	454.8	25.1	83.3
Vietnam	29.2	0.4	0.2	22.2

Source: Max Roser, Hannah Ritchie, Esteban Ortiz-Ospina, and Joe Hasell (2020). Coronavirus Pandemic (COVID-19), Our World in Data, University of Oxford. Retrieved from: https://ourworldindata.org/coronavirus.

Public health experts continue to highlight that the official reports on Covid-19 cases and deaths understate the magnitude of the pandemic in India. Gamio and Glanz (2021) report estimates of the underreporting based on three potential scenarios, that we summarise in Table 7. The estimates are developed in consultation with public health experts and analysis of official reports and nationwide antibody tests. The real number of infections are estimated to be 15 (conservative scenario) to 26

(worse scenario) times higher, while the infection fatality rate is estimated to be between 0.15% (conservative scenario) to 0.60% (worse scenario).

Table 7: Summary of Key Health Indicators as of May 24, 2021

	Official Counts		Estimates of India Inclusive of Underreporting	
	India	Rest of World	Conservative Scenario	Worse Scenario
Total confirmed cases of Covid-19	26,948,874	140,375,091	404,233,110	700,670,724
Total confirmed cases of Covid-19 per million people	19,528	21,883	292,922	507,731
Total deaths attributed to Covid-19	307,231	3,278,511	606,350	4,204,024
Total deaths attributed to Covid-19 per million people	223	511	439	3,046
Total number of Covid-19 vaccination doses administered	194,165,711	1,510,218,685	-	-
Total number of Covid-19 vaccination doses administered per 100 people in the total population	14	24	-	-

Source: Official counts for health indicators and population data are obtained from: Max Roser, Hannah Ritchie, Esteban Ortiz-Ospina, and Joe Hasell (2020), Coronavirus Pandemic (COVID-19), Our World in Data, University of Oxford, Accessed on June 15, 2021. Estimates of underreporting are based on the scenarios developed by Gamio and Glanz (2021) who obtain the numbers in consultation with public health experts and through analysis of official reports and nationwide antibody tests. Note: The real number of infections are estimated to be 15 (conservative scenario) to 26 (worse scenario) times higher than the official count, while the infection fatality rate is estimated to be between 0.15% to 0.60% of the estimated infections. We note here that while we focus on India, underreporting of Covid-19 cases and deaths is prevalent globally.

In the conservative scenario, the total confirmed cases per million are about 13 times larger than in the rest of the world and the total confirmed deaths per million are about 85% of that in the rest of the world. The worst-case scenario however, puts India far behind the rest of the world. We note an important caveat here: while the focus of this article is on India, underreporting of Covid-19 cases and deaths is prevalent globally (see Institute for Health Metrics and Evaluation, University of Washington 2021).

However, it should also be noted that as much as the contraction in national income understates the economic impact of this crisis on the average person, a similar factor is at play in the case of public

health as well. The focus on the health indicators such as total cases and total deaths masks the impact on those chronically ill and their inability to obtain necessary medication and lifesaving treatment – which is likely due to the impact of the pandemic and the disruption of normal life due to government restrictions. Reports suggest that mortality in India has substantially increased and pattern of excess deaths observed in the CMIE household survey data cannot be attributed to Covid-19 (Rukmini, 2021).

4. Conclusion

There is no doubt that the pandemic is unprecedented and that it will take time for the whole world to recover from it, in terms of public health as well as the economy. However, faced with a common shock, different countries have reacted with different degrees of responsiveness and effectiveness.

India's record with respect to other countries, including countries that are comparable in economic status, puts it in the lower tail of the distribution both in terms of various economic and public health indicators. The fallout on the poorer sections and informal sector was particularly severe and policies to mitigate this were grossly inadequate.

Countries that have prioritized investment in public health infrastructure and measures appear to have also experienced a lower economic impact. There are lessons to be learnt from this crisis all over the world, but leaving everything else aside, improving the public health infrastructure and the social safety net in India seems to be of the highest priority.

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Appendix 1 – Country-level Comparison of Economic Indicators

In this appendix, we provide a detailed, country-level comparison of the economic indicators.

Gross Domestic Product

In Table 8 we compare the growth rate of India's GDP against that of developed countries. While several developed countries such as France, Italy, Spain, and United Kingdom have faced greater declines than India in 2020, India performs worse than most countries, including Australia, Canada, Germany, Japan, Korea, New Zealand, Singapore, Taiwan, and United States.

Table 8: GDP at constant prices (Percentage change) – India versus developed countries

Location	2019	2020	2021	2022	Compound (2020 - 2021)	Compound (2020 - 2022)
Australia	1.9%	-2.4%	4.5%	2.8%	2.0%	4.8%
Canada	1.9%	-5.4%	5.0%	4.7%	-0.6%	4.0%
France	1.5%	-8.2%	5.8%	4.2%	-2.9%	1.2%
Germany	0.6%	-4.9%	3.6%	3.4%	-1.5%	1.9%
India	4.0%	-8.0%	12.5%	6.9%	3.6%	10.8%
Italy	0.3%	-8.9%	4.2%	3.6%	-5.1%	-1.7%
Japan	0.3%	-4.8%	3.3%	2.5%	-1.7%	0.7%
Korea	2.0%	-1.0%	3.6%	2.8%	2.6%	5.5%
New Zealand	2.4%	-3.0%	4.0%	3.2%	0.9%	4.2%
Singapore	1.3%	-5.4%	5.2%	3.2%	-0.5%	2.7%
Spain	2.0%	-11.0%	6.4%	4.7%	-5.3%	-0.8%
Taiwan	3.0%	3.1%	4.7%	3.0%	8.0%	11.3%
United Kingdom	1.4%	-9.9%	5.3%	5.1%	-5.1%	-0.3%
United States	2.2%	-3.5%	6.4%	3.5%	2.7%	6.3%
World	2.8%	-3.3%	6.0%	4.4%	2.6%	7.1%
Advanced economies	1.6%	-4.7%	5.1%	3.6%	0.2%	3.8%

Source: International Monetary Fund, World Economic Outlook Database, April 2021.

In Table 9 we present the comparison between the growth rate of India's GDP against that of peer countries. Philippines and Mexico are the only peer countries to witness a larger income decline rate in India. While it is evident that most peer countries have suffered large economic losses due to Covid-19, in relative terms, India has suffered more.

Table 9: GDP at constant prices (Percentage change) – India versus peer countries

Location	2019	2020	2021	2022	Compound (2020 - 2021)	Compound (2020 - 2022)
Bangladesh	8.2%	3.8%	5.0%	7.5%	9.0%	17.2%
Brazil	1.4%	-4.1%	3.7%	2.6%	-0.6%	2.0%
China	5.8%	2.3%	8.4%	5.6%	10.9%	17.1%
India	4.0%	-8.0%	12.5%	6.9%	3.6%	10.8%
Indonesia	5.0%	-2.1%	4.3%	5.8%	2.1%	8.1%
Malaysia	4.3%	-5.6%	6.5%	6.0%	0.5%	6.6%
Mexico	-0.1%	-8.2%	5.0%	3.0%	-3.6%	-0.8%
Pakistan	1.9%	-0.4%	1.5%	4.0%	1.1%	5.1%
Philippines	6.0%	-9.5%	6.9%	6.5%	-3.3%	3.0%
Russia	2.0%	-3.1%	3.8%	3.8%	0.6%	4.4%
South Africa	0.2%	-7.0%	3.1%	2.0%	-4.1%	-2.2%
Sri Lanka	2.3%	-3.6%	4.0%	4.1%	0.3%	4.4%
Thailand	2.3%	-6.1%	2.6%	5.6%	-3.7%	1.8%
Turkey	0.9%	1.8%	6.0%	3.5%	7.9%	11.7%
Vietnam	7.0%	2.9%	6.5%	7.2%	9.6%	17.5%
World	2.8%	-3.3%	6.0%	4.4%	2.6%	7.1%
Emerging market and developing economies	3.6%	-2.2%	6.7%	5.0%	4.3%	9.5%

Source: International Monetary Fund, World Economic Outlook Database, April 2021.

Unemployment

In Table 10 and Table 11 we present the unemployment rate of India against developed and peer countries, respectively. Several countries have experienced greater unemployment rates as compared to India. However, it should be noted that India's informal sector is typically not well accounted for in these measurements. According to CMIE estimates, the unemployment rate peaked to above 23% in the months of April and May 2020, nearly three times what it was in the months of January and February 2020, and came down to 10% in June 2020.

Table 10: Unemployment (Percent of total labour force) – India versus developed countries

Location	2019	2020
Australia	5.2%	6.5%
Canada	5.7%	9.6%
France	8.5%	8.2%
Germany	3.2%	4.2%
India	5.3%	7.1%
Italy	9.9%	9.1%
Japan	2.4%	2.8%
Korea	3.8%	3.9%
New Zealand	4.1%	4.6%
Singapore	2.3%	3.1%
Spain	14.1%	15.5%
Taiwan	3.7%	3.9%
United Kingdom	3.8%	4.5%
United States	3.7%	8.1%
World	5.4%	6.5%
Advanced economies	4.8%	6.6%

Source: International Monetary Fund, World Economic Outlook Database, April 2021.
Unemployment estimates for the World and India obtained from World Bank.

Table 11: Unemployment (Percent of total labour force) – India versus peer countries

Location	2019	2020
Bangladesh	4.2%	5.3%
Brazil	11.9%	13.2%
China	3.6%	3.8%
India	5.3%	7.1%
Indonesia	5.3%	7.1%
Malaysia	3.3%	4.5%
Mexico	3.5%	4.4%
Pakistan	4.1%	4.5%
Philippines	5.1%	10.4%
Russia	4.6%	5.8%
South Africa	28.7%	29.2%
Sri Lanka	4.8%	5.8%
Thailand	1.0%	2.0%
Turkey	13.7%	13.1%
Vietnam	2.2%	3.3%
World	5.4%	6.5%
Emerging market and developing economies	n/a	n/a

Source: International Monetary Fund, World Economic Outlook Database, April 2021.
Unemployment estimates for the World, India, and Bangladesh obtained from World Bank.

Fiscal Policy Measures

In Table 12 and Table 13, we summarise the above-the-line fiscal policy measures (as a percentage of GDP) undertaken by the governments in response to the Covid-19 pandemic since January 2020 for developed and peer countries, respectively (International Monetary Fund, 2021).

Table 12: Above-the-line Fiscal Policy Measures (Percent of GDP) in Response to Covid-19 Pandemic as of March 17, 2021 – India versus Developed Countries

Location	Health Sector	Non-Health Sector	Total
Australia	0.8	15.3	16.1
Canada	2.4	12.3	14.6
France	0.8	6.8	7.6
Germany	1.2	9.8	11.0
India	0.4	3.0	3.3
Italy	0.6	7.9	8.5
Japan	1.8	14.1	15.9
Korea	0.5	4.0	4.5
New Zealand	1.2	18.1	19.3
Singapore	0.2	15.9	16.0
Spain	1.3	6.3	7.6
Taiwan	n/a	n/a	n/a
United Kingdom	7.5	8.7	16.2
United States	3.3	22.2	25.5
World	1.2	7.8	9.2

Source: International Monetary Fund, Fiscal Monitor Database of Country Fiscal Measures in Response to the COVID-19 Pandemic, April 2021. Link.

Table 13: Above-the-line Fiscal Policy Measures (Percent of GDP) in Response to Covid-19 Pandemic as of March 17, 2021 – India versus Peer Countries

Location	Health Sector	Non-Health Sector	Total
Bangladesh	0.1	1.3	1.4
Brazil	1.2	7.6	8.8
China	0.1	4.7	4.8
India	0.4	3.0	3.3
Indonesia	1.8	2.7	4.5
Malaysia	0.1	4.3	4.5
Mexico	0.4	0.2	0.7
Pakistan	0.4	1.6	2.0
Philippines	0.4	2.3	2.7
Russia	0.7	3.6	4.3
South Africa	0.8	5.1	5.9
Sri Lanka	0.1	0.4	0.5
Thailand	n/a	n/a	8.2
Turkey	0.3	1.5	1.9
Vietnam	0.0	1.4	1.4
World	1.2	7.8	9.2

Source: International Monetary Fund, Fiscal Monitor Database of Country Fiscal Measures in Response to the COVID-19 Pandemic, April 2021. Link.