



Healing the Economy: Estimating the Economic Impact of India's Vaccination and Related Measures

Working Paper

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Introduction


- ❑ The COVID-19 pandemic led to a **contraction in the global economy by 3.5% in 2020**, creating disruptions to lives and livelihoods, overwhelming the health systems and bringing a halt to economic activity.
- ❑ India systematically tackled the COVID-19 pandemic and its adverse effects on the market economy and society through measures broadly classified under three pillars: **Vaccination Drive, Containment Strategy and Relief Package.**
- ❑ So far, there has been little empirical evidence on the effect of measures taken by the Indian government in combatting COVID-19 pandemic. Against this backdrop, this **study aims at assessing India's strategies against COVID-19 pandemic on the society and economy.**
- ❑ This is approached by calculating **the potential income generation of lives saved through vaccination, assessing the containment strategy**, and by building an **understanding of the potential economic impact** that relief measures brought about with them.



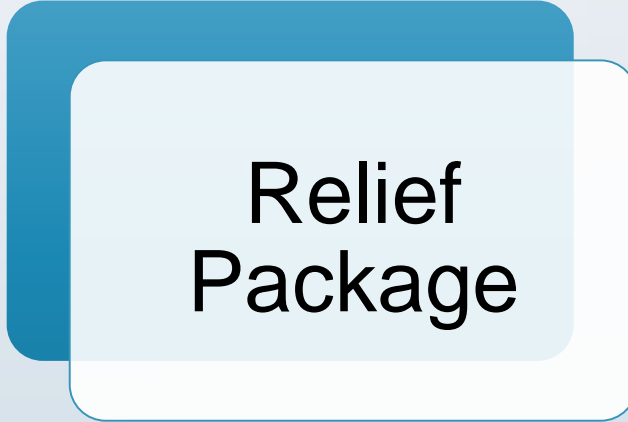
Cornerstones of India's Strategy in Combating Covid-19



Vaccination
Drive



Containment
Strategy



Relief
Package

India's COVID-19 Vaccination Drive

India administered its first COVID-19 vaccination on 16th January 2021 and reached a global milestone of having administered over 2 billion cumulative COVID-19 vaccination doses by mid-July 2022.

Major Challenges: Vaccine hesitancy (Fear of side effects, misinformation due to lack of awareness, linguistic barriers, religious beliefs etc), Vaccine equity (shortages, wastage, soaring prices, accessibility). Addressing these challenges requires a scrutiny of myriad benefits of vaccination.

Objective: To broaden the understanding of vaccine impact by calculating the potential income generation effect of the lives that got saved through vaccination.

Methodology: The study adopts direct and total impact using the Keynesian multiplier approach. The study looks at income earned as the direct impact and the multiplier effect as the total impact. The method contributes in the form of an aggregated method of assessing the benefits of vaccination.

Working Method

Minimum Wage Method: This method assumes that the person earns a minimum wage of ₹269 per day with 312 working days[^] a year.

GDP per Capita (total GDP / total population): Under this approach, each life saved economic contribution would be calculated as life saved (x) GDP per capita

GDP per Person Employed: This is calculated as (total GDP / total workforce). And economic contribution becomes life saved (x) GDP per Person Employed (x) WFPR*

Net Benefit/Loss: This is calculated as the difference between economic impact and cost of vaccination

[^] This is the median minimum wage across all states in India with 312 working days as per Section 26 of The Minimum Wages (Central) Rules, 1950.

* WFPR is the workforce participation rate as per PLFS. WFPR captures the total employed persons in the country

Minimum Wage Method

➤ Direct Impact

- Potential income generated by lives saved due to vaccination: \$ 1.5 billion
- Net Benefit/Loss: - \$ 1.2 billion

➤ Total Impact

- Multiplier effect from lives saved due to vaccination: \$ 3.87 billion
- Net Benefit/Loss: \$ 1.09 billion

GDP Per Capita

• Direct Impact

- 1. Constant Prices
 - Direct impact of lives saved in terms of GDP per capita: \$ 5.2 billion
 - Net Benefit/Loss: \$ 2.44 billion
- 2. Current Prices
 - Direct impact of lives saved in terms of GDP per capita: \$ 7.3 billion
 - Net Benefit/Loss: \$ 4.55 billion

Total Impact

- 1. Constant Prices
 - Multiplier effect from lives saved in terms of GDP per capita: \$ 13.1 billion
 - Net Benefit/Loss: \$ 10.2 billion
- 2. Current Prices
 - Multiplier effect from lives saved in terms of GDP per capita: \$ 18.3 billion
 - Net Benefit/Loss: \$ 15.42 billion

GDP Per Person Employed

• Direct Impact

- 1. Constant Prices
 - Direct impact of lives saved in terms of GDP per person employed: \$ 5.2 billion
 - Net Benefit/Loss: \$ 2.44 billion
- 2. Current Prices
 - Direct impact of lives saved in terms of GDP per person employed: \$ 7.2 billion
 - Net Benefit/Loss: \$ 4.44 billion

Total Impact

- 1. Constant Prices
 - Multiplier effect from lives saved in terms of GDP per person employed : \$ 13 billion
 - Net Benefit/Loss: \$ 10.28 billion
- 2. Current Prices
 - Multiplier effect from lives saved in terms of GDP per person employed : \$ 18 billion
 - Net Benefit/Loss: \$ 15.28 billion

Minimum Wage Method

•Direct Impact

- Potential income generated by lives saved due to vaccination: \$ 1.03 billion
- Net Benefit/Loss: - \$ 1.74 billion

Total Impact

- Multiplier effect from lives saved due to vaccination: \$ 2.58 billion
- Net Benefit/Loss: - \$ 0.2 billion

GDP Per Person Employed

•Direct Impact

- 1. Constant Prices
- Direct impact of lives saved in terms of GDP per person employed: \$ 3.49 billion
- Net Benefit/Loss: \$ 0.71 billion

•2. Current Prices

- Direct impact of lives saved in terms of GDP per person employed: \$ 4.8 billion
- Net Benefit/Loss: \$ 2.05 billion

Total Impact

- 1. Constant Prices
- Multiplier effect from lives saved in terms of GDP per person employed: \$ 8.7 billion
- Net Benefit/Loss: \$ 5.95 billion
- 2. Current Prices
- Multiplier effect from lives saved in terms of GDP per person employed: \$ 12 billion
- Net Benefit/Loss: \$ 9.29 billion

Lifetime Earnings

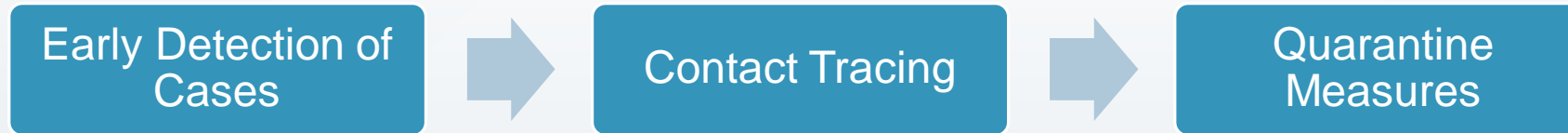
1. Lifetime earning of a person = \$ 24,637
2. Lifetime earnings of lives saved due to vaccination (in working age) = \$ 21.5 billion

Learnings

- ❑ The direct and total impact of vaccination varied from about \$ 1.03 billion to \$ 2.58 billion if minimum wages are considered with age distribution category. The same, however, varied from about \$ 3.49 billion to \$ 8.7 billion if GDP per person employed (constant) is considered. The net benefit/loss varied from (-) \$1.74 to (-) \$0.2 billion for minimum wages, whereas it varied from \$0.71 to \$5.95 billion for GDP per person employed (constant).
- ❑ The cumulative lifetime earnings of the lives saved through vaccination (in the working age group) tolled up to \$ 21.5 billion.
- ❑ Moreover, since vaccination also saved lives of the elderly, this indirectly helped preventing the health infrastructure from getting overwhelmed and thereby allowing for a more judicious use of the existing health infrastructure.
- ❑ Therefore, it can be concluded that vaccination was effective in achieving the dual motive of saving lives and livelihoods.



Main measures taken under Containment Strategy



- ❑ India adopted a **multi-phased cluster containment strategy**: geographic quarantine, social distancing measures, enhanced active surveillance, testing all suspected cases, isolation of cases, quarantine of contacts and risk communication to create awareness among public on preventive public health measures.
- ❑ Some examples like ‘Bhilwara’, ‘Dharavi’, and ‘Kerala’ for instance serve as a reference point of a successful containment strategy wherein it can be deduced that containment can bring about maximum effect with delegation of power to the local level, quick response action, constant co-ordination among stakeholders, and roping in technology for to enhance the delivery of services and real time record keeping.
- ❑ Containment brought about envisaged gains with bottom-up approach contrary to the counterfactual top-down approach.

- ❑ Containment worked as a double-edged sword since it not only ensured some economic activity but also reduced the burden on health infrastructure.
- ❑ The initial lockdown helped India ‘flatten the curve’ and buy essential time in revamping the health infrastructure. This was complemented with localized containment strategy.
- ❑ Therefore, containment was not just limited to restricting the spread of the virus, but to whole set of measures required to strike a balance between lives and livelihoods.

COVID-19 Relief package and its Impact on Economy

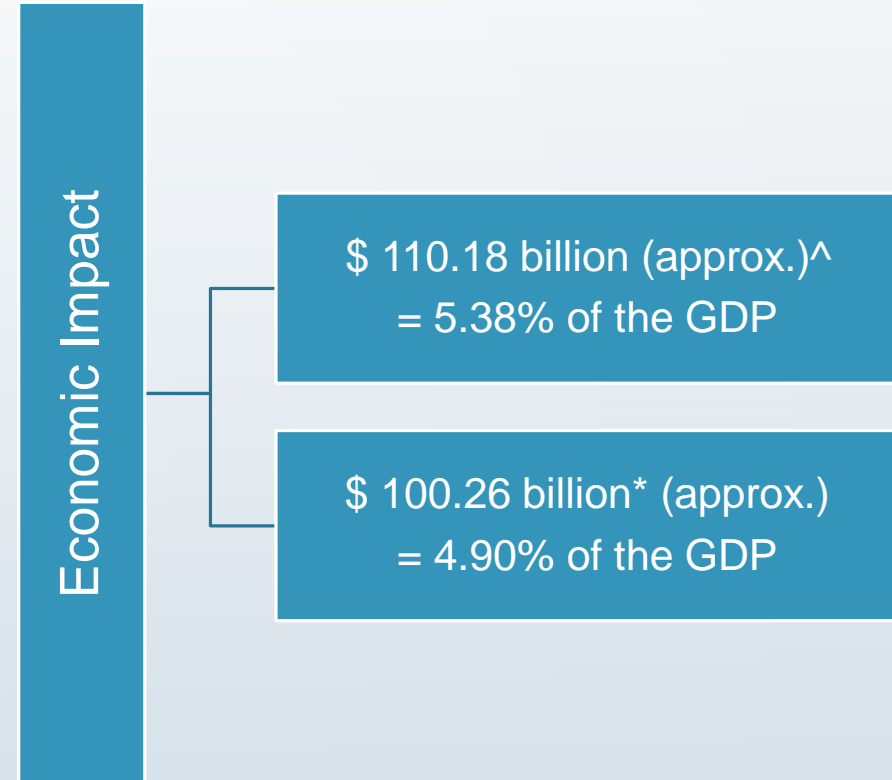
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Impact on MSMEs

Pivotal pillar of Indian economy contributing 30% of the GDP and employing 11 crore people (approx.).
Ensuring regular flow of funds becomes pivotal

Scheme	Beneficiaries
Subordinate Debt for Stressed MSMEs	782
Guaranteed Emergency Credit Line (GECL) / Emergency Credit Line Guarantee Scheme (ECLGS) for MSMEs	11.3 million



[^] Calculated as number of MSME beneficiaries (x) contribution of one MSME in total GDP

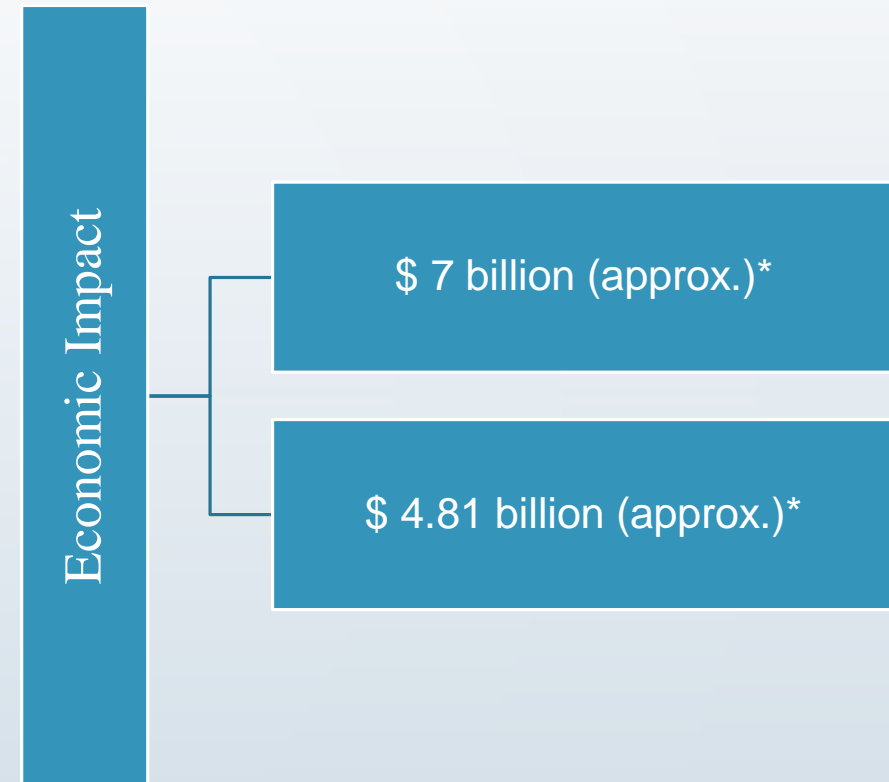
* After applying annual shutdown rate of 9%

COVID-19 Relief package and its Impact on Economy

Impact on Employment

Measures to ensure sustained livelihoods and shared cost among between employers, employees, and the government

Scheme	Beneficiaries
Aatmanirbhar Bharat Rozgar Yojana (ABRY)	59,84,256 (about 6 million)
PM Garib Kalyan Rozgar Abhiyan (PMGKRA)	50.78 crore man days (about 508 million) or 40,62,400 beneficiaries (about 4 million)



* Calculated as number of beneficiaries (x) 269 (x) 312

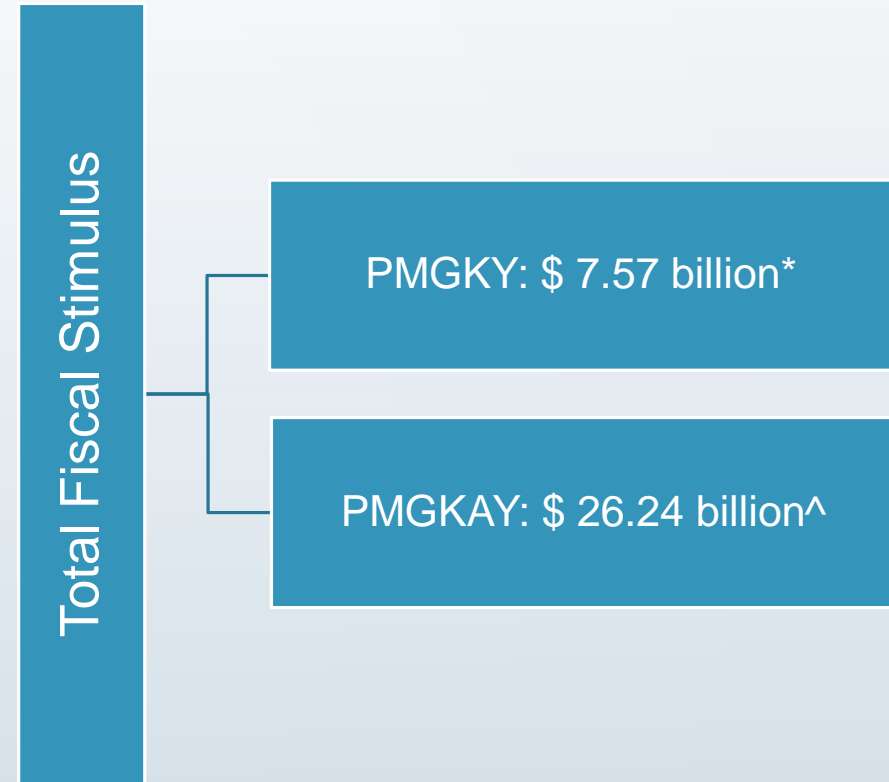
COVID-19 Relief package and its Impact on Economy



Impact on Social Sector

Comprehensive relief measures under Pradhan Mantri Garib Kalyan Package

Pradhan Mantri Garib Kalyan Package
Pradhan Mantri Garib Kalyan Yojana (PMGKY)
<ul style="list-style-type: none"> • Front loaded payments to PM Kisan • Support to building and construction workers • 24% contribution to EPFO (up to 100 employees) • Pradhan Mantri Ujjwala Yojana • Support to PMJDY women account holders
Pradhan Mantri Garib Kalyan Ann Yojana (PMGKAY)



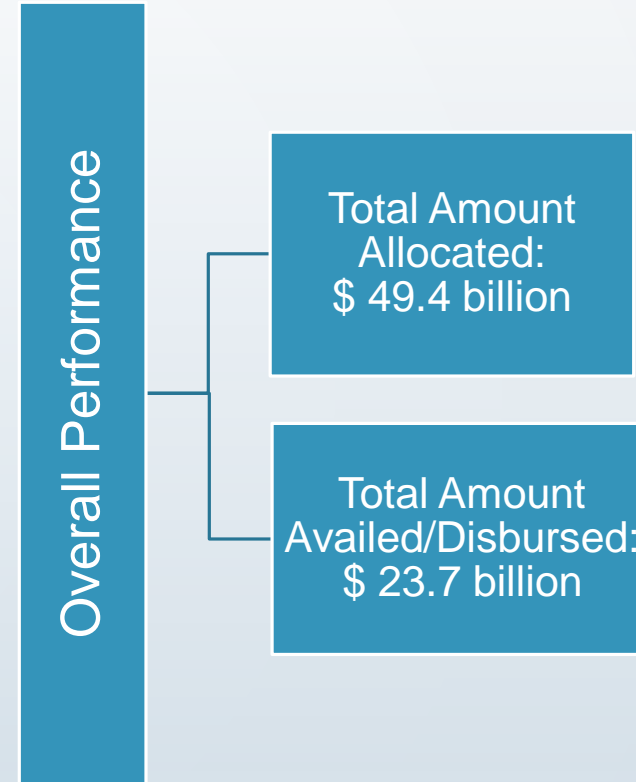
* Total fiscal stimulus for PMGKY was \$9.7 billion and for PMGKAY was \$33.6 billion. These were multiplied by fiscal expenditure multiplier of 0.78 to get economic impact



Impact on Agriculture

Varied measures from providing loan to subsidies to seed funds, covering farmers, fishermen, beekeepers to ensure sustained livelihoods and improved capacity at various levels for farmers across class and size

Schemes
Emergency Capital Fund through NABARD
Pradhan Mantri Matsya Sampada Yojana
Agriculture Infrastructure Fund
Kisan Credit Card
Operation Green Scheme
National Beekeeping and Honey Mission



Way Forward

- ❑ This study accentuates the need to devote significant attention to the theme of assessing the impact of strategies employed in combating COVID-19 pandemic.
- ❑ Study of this nature is crucial for the post-pandemic world that is seeing to build a resilient health infrastructure, forge collaboration and cooperation in the face of unforeseen global crises.
- ❑ It suggests one of the various ways in which economic impact of lives saved due to **vaccination** can be accounted and how that contributes to society.
- ❑ Multi-phased **lockdown and containment strategies**, involving states after initial national wide lockdowns forged bottom-up approach to containment and aided in quicker revival of the economic activity after lockdown.
- ❑ Identifying the distress sectors and coming up with targeted approach helped formulate a **relief package** that played a major role in bringing a resilient post-pandemic trajectory.
- ❑ The study highlighted some of the limitations with respect to consistent and reliable data, the availability of which would make the results more robust. However, it attempts to open up discussions on adopting different methodologies to dig deeper into the impact of India's COVID-19 vaccination, containment, and relief package.



About Institute for Competitiveness

Institute for Competitiveness, India is the Indian knot in the global network of the Institute for Strategy and Competitiveness at Harvard Business School. Institute for Competitiveness, India is an international initiative centered in India, dedicated to enlarging and purposeful disseminating of the body of research and knowledge on competition and strategy, as pioneered over the last 25 years by Professor Michael Porter of the Institute for Strategy and Competitiveness at Harvard Business School. Institute for Competitiveness, India conducts & supports indigenous research; offers academic & executive courses; provides advisory services to the Corporate & the Governments and organises events. The institute studies competition and its implications for company strategy; the competitiveness of nations, regions & cities and thus generate guidelines for businesses and those in governance; and suggests & provides solutions for socio-economic problems.