

India's response to COVID-19 Crisis

Abhay Kumar Jha^a and Raghendra Jha^b

ABSTRACT

The onset of the COVID-19 pandemic has presented India with complex economic and public health challenges. Furthermore, these two crises interact with each other in complex ways whence there is considerable uncertainty in designing a policy response. This paper purports to place India's experience with the corona virus in the international context and to examine the public health and economic challenges as well as prospects in a post-COVID world. The paper lists key dates in the development of this pandemic in India and globally. It then compares the development of the pandemic in India until 30 June, 2020 with that in some key countries. We then outline the economic and health strategy followed in India to combat the crisis. We also discuss some consequences of the pandemic and elements of India's recovery strategy. We also assess elements of India's recovery and prospects for the Indian economy. Finally the paper discusses prospects for the Indian economy in the short run.

Keywords: COVID-19, public health, Indian economy, prospects for the economy

JEL Classification Code: I15, I18, O11, O40

a: Commonwealth Government of Australia

b: Australia South Asia Research Centre, Arndt-Corden Department of Economics, Crawford School of Public Policy, Australian National University, Acton, ACT 2601, Australia

You never let a serious crisis go to waste. And what I mean by that it's an opportunity to do things you think you could not do before. Rahm Emanuel, American politician

I. Introduction and Background

Even before the corona virus pandemic (henceforth pandemic) hit India, the country's growth performance was appearing subdued. The provisional estimate of economic growth for the financial year 2019-20 (1 April to 31 March) as compared to actual growth for 2018-19 (given here in parenthesis) was 3.9% (6.0%) for gross value added, 7.3% (7.0%) for net taxes on products and 4.2% (6.1%) for Gross Domestic Product (GDP).¹ This low growth was largely the result of negative growth in the manufacturing and construction sectors in the fourth quarter of 2019-20. This, in turn, was at least partly a consequence of the pandemic induced lockdown, which began on March 25 and is still operational in various forms in many parts of the country.

This complex crisis has at least four fundamental elements and each of these interact with each other. These elements are: (i) First and foremost this represents a health crisis and an economic crisis that feed on each other – measures to curtail the health crisis (e.g. lockdown) lead to an economic crisis. However, the economic crisis in turn reduces resources available for tackling the health crisis. An easing of one crisis would help in addressing the other. (ii) The crises evolve over time – the spread of the virus depends on contact between humans and the economic crisis depends on the sectors of the economy that are affected first and their feedback effects on other sectors of the economy including on labour. (iii) Consequently there is no easy way of predicting how the twin crises will play out over time and hence there is considerable uncertainty about the consequences of policy (unknown unknowns). (iv) Finally, accepted antidotes are hard to find and indeed are not in sight, so that many countries, even those with otherwise robust health systems, are facing critical shortages of essential medical supplies needed to manage (as opposed to treat) the disease, such as testing kits, ventilators, Personal Protective Equipment (PPEs), oxygen supplies and the like.

Under these circumstances, it is very difficult to understand what strategy to follow. It is therefore understandable that there have been serious mistakes and such mistakes continue to be made. For example, Sweden's chief epidemiologist has publicly stated that not invoking strict lockdown early enough led to too many deaths. Similarly, the UK's initial move of following a strategy of herd

¹ See

http://www.mospi.gov.in/sites/default/files/press_release/PRESS%20NOTE%20PE%20and%20Q4%20estimate%20of%20GDP.pdf Accessed 27 July 2020

immunity led to the country having the highest death toll in Europe. The UK was then forced into a subsequent change in strategy.

This paper purports to place India's experience with the corona virus in the international context and to examine the public health and economic challenges as well as prospects in a post-COVID world. The paper is organised as follows. Section II lists key dates in the development of this pandemic in India and globally. It then compares the development of the pandemic in India until 30 June, 2020 with that in some key countries. Section III outlines the economic and health strategy followed in India to combat the crisis. Section IV discusses some consequences of the pandemic and elements of India's recovery strategy. Section V discusses elements of India's recovery. prospects for the Indian economy and section VI concludes and discusses prospects for the future.

II. Important dates and timeline of the evolution of the COVID-19 crisis

Table 1 outlines some key dates in the evolution of the COVID-19 crisis.

Table 1 here.

It becomes apparent from this table that the WHO had been warned about human to human transmission of the coronavirus on 31 December, 2019. The WHO apparently chose to ignore this advice since it came from a non-member state – Taiwan. The outbreak in China (particularly Wuhan) became serious throughout January and kept growing in the next few months. Yet, international travel from China was not curtailed, particularly during the Chinese New Year celebrations. The WHO did not advise for flights from China to be banned for quite some time and finally declared the coronavirus a pandemic on 11 March. At the very least, there can be no doubt that there was inordinate delay in communicating the seriousness of the crisis.

Figure 1 shows the development of corona infections in various major countries of the world as well as changes in daily infection rates. These countries are: India, South Africa, USA, Brazil, Italy, Canada, Japan, South Korea and Taiwan.

Figure 1 here.

India reported its first case of the virus on 30 January – the same day that the WHO declared COVID a public health emergency, but not a pandemic. Prior to that India had begun screening international arrivals from China and Hong Kong as early as January 18 in the three major airports of Delhi, Mumbai and Kolkata; four more airports from January 21 and 13 more airports from January 28. Testing was rapidly expanded to include more countries and all airports. The WHO declared COVID

a pandemic on 11 March following which the country imposed a complete lockdown except for essential services on 25 March. This lockdown is still continuing albeit in substantially reduced form. The evolution of the pandemic in India for the period 26 February to 30 June is outlined in some detail in Table 2. There has been a sharp acceleration in the number of infections in the country but the number of recoveries has increased even faster. As a consequence, recoveries as a percentage of infections have gone up quite fast and deaths as a percentage of infections have remained low, particularly in comparison to global levels.

Table 2 here.

A timeline (until 30 June, 2020) of India's response to the crisis is reported in Box 1.

Box 1 here.

III. Considerations underpinning a Public Health and Economic Response

India faces particularly challenging circumstances when dealing with these twin crises. To mention just two- its large population (1.3 billion people) and the crowding of people in cities and towns all over the country provide ripe conditions for an explosion of the health crisis. Its large informal sector makes it difficult to design social safety nets since most workers are not in the formal sector.

Faced with these circumstances the Government of India (henceforth GOI) adopted what has been called a modified form of the barbell strategy from the theory of investment, which recommends investment in the most risky and the least risky assets. The modification to the barbell strategy is that the most risky outcomes are insured against first. Thus, there is a cushion for the very worst outcomes and feedback determines the response to the rest. The worst outcomes in the case of the pandemic would be mass starvation and deaths following from disruption of supply chains and mass bankruptcy. The adopted strategy protected the economy from the worst manifestations of the crises and yet was flexible enough to respond to evolving circumstances. Consequently, India's performance in combating the health crisis has been quite good and certainly much better than that of countries (including US, UK, Italy, France and Germany) with far more advanced health systems and much lower populations. India's recovery rate is steadily rising (currently nearly 63%) and the death rate steadily falling (currently 2.8% of all infected cases). 70 % of COVID cases are in 13 clusters with the cities of Mumbai, Delhi and Chennai particularly badly hit. States that had more than 25000 cases (on 8th July) include (in increasing order) Karnataka (25317), Telangana (25733), UP (28636), Gujarat (36772), Delhi (100823) and Maharashtra (211987). On balance, India has been able to restrict the domain of the virus.

India reported its first case of the virus on 30 January – the same day that the WHO declared COVID a public health emergency, but not a pandemic. Prior to that India had begun screening international arrivals from China and Hong Kong as early as January 18 in the three major airports of Delhi, Mumbai and Kolkata; four more airports from January 21 and 13 more airports from January 28. Testing was rapidly expanded to include more countries and all airports. The WHO declared COVID a pandemic on 11 March following which the country imposed a complete lockdown except for essential services on 25 March. This lockdown is still continuing albeit in substantially reduced form. A phone app has been developed and is being used to trace contacts. This app has been downloaded more than 140 million times. Nevertheless, the lockdown is still absolute in a small number of containment zones where the incidence of the disease is high. In particular, the three mega cities-of Delhi, Mumbai and Chennai which continue to experience a high incidence of the disease and have high numbers of containment zones. However, the fact that much of the work that was being done online during the national lockdown continues to be done means that the disruption is not excessively severe. Informed medical opinion suggests that the incidence of the pandemic in India will peak in the next few months and significant declines should occur in September. Indian scientists are on track to test three vaccines. Hence, the health prognosis for the future is not excessively grim.

This lockdown brought much of economic and social activity to a halt. However, this had a salutary effect on cutting down the mortality from COVID. It has been estimated that without the lockdown and containment strategies in place, by April 15 there would have been more than 820,000 corona virus cases in the country instead of the 7,447 cases that actually occurred. On 8th July 2020 India had recorded 742,417 cases with a recovery rate of nearly 63% and 20, 642 deaths. Had the lockdown not taken place the number of infections would have been 30 times higher, according to some estimates. By 8 July 2020 the pandemic infection curve had been nearly flattened, and the recovery rate was rapidly improving. Furthermore, “green shoots” for economic growth had appeared after the first unlock. In a major speech the RBI governor has indicated that the economy is nearly on track.

The lockdown has also given the country’s health system time to strengthen its response. In particular, the time made available by the lockdown has been used to increase India’s production of key medical supplies including testing kits, Personal Protection Equipment (PPEs), ventilators and the like. Indeed, before the pandemic India was an insignificant producer of PPEs, testing equipment and other material critical to the combat against the corona virus. India did not produce a single PPE in April 2020 but by June, it was producing more than 200,000 PPEs a month. Similarly, from one testing centre in April the country moved to more than 1000 centres by June and 1400 in August. Currently more than 700,000 tests a day are carried out in India. The same is true of many other protection equipment as well as pharmaceuticals where India is the third largest producer (by volume) and one of the major exporters of drugs. India established itself as a reliable supplier of pharmaceuticals by exporting hydroxychloroquine at the height of the pandemic when this drug was requested by several

countries as a possible antidote to the corona virus. The sharp expansion in the production of medical equipment was necessary in light of the uncertainty of supply from China which was then the principal supplier of these key materials and was itself facing the full ferocity of the pandemic. Furthermore, India along with some other countries, found some of the Chinese supplies to be defective. This and other supply chain disruptions have led to a rethink of India's manufacturing strategy with emphasis being placed on enhanced self-reliance.

IV. Some Consequences of the Pandemic and India's recovery strategy

Following the lockdown, in the wake of the onset of the crisis unemployment rose sharply and the household budget was thrown off-gear, particularly because a large proportion of workers in the region work in the informal sector and are reliant on daily wages. Preliminary estimates indicate that job losses for this category of workers ranged from 25 % to 56%. . Even in the formal sector, there was substantial job loss as long lockdowns and social distancing norms took their toll, particularly on the Micro and Small and Medium Enterprise (MSME) sector, which is the largest employer in India's formal sector. Facing a long period of lockdown, large numbers of migrant workers became restive and left their places of work in the cities to return to their villages of origin. For the most part, special trains facilitated the mass migration where the central government paid 85% of the train fare and the destination state government paid 15%. At this point, two good shock absorbers were introduced in India. First, the allocation to the National Rural Employment Guarantee Program was enhanced by ₹ 400000 million over budgeted amounts in order to boost employment opportunities in the villages. Furthermore, the Prime Minister announced an allocation of ₹ 500000 million for the specific purpose of providing employment to returning migrant workers. So many workers returning to villages and small towns from the cities found gainful employment. As economic activity has picked up in urban areas, a shortage of labour has emerged in the cities and these special trains are no longer returning empty. A lesson from this episode is that India needs formal sector job insurance to be expanded to the informal sector whereas currently this facility only exists for some formal sector workers. This underscores the necessity of formalising the work force, indeed much of economic activity.

India adopted a three-pronged strategy to combat the economic crisis resulting from the pandemic: a demand component, a supply support component and a structural reforms component. These are discussed below in no particular order. A key element of this strategy has been that state governments have had a major role to play in both the imposition and the lifting of lockdown restrictions. In turn, state governments have often relied on inputs from district administrations. Indeed, the requirements of India's federal structure have been consistently met throughout this period. No national level emergency was declared. The reasoning behind this was that the state governments would know local conditions better than the central government and this method would

also honour the rights of state governments within India's federal constitution. Domestic flights were suspended and have only recently (partially) resumed. International flights have all but ceased although Air India ran a number of flights to bring back home large numbers of Indians stranded in various parts of the world. Train and lorry services for essential commodities such as food, fertilizers, LPG cylinders and the like have proceeded unimpeded throughout but passenger services have only recently resumed and that too partially. Other forms of public transport including buses and metro services are gradually being restored.

Essential services were maintained throughout. There has been no generalised paucity of food in any part of the country. Substantial rations were distributed to 800 million low-income people including many farmers along with free of cost delivery of Liquefied Petroleum Gas (LPG) cylinders as well as cash transfers. Indeed the distribution of substantial free rations to these 800 million people has been extended to November 2020 when the summer crop would be harvested. Presumably, the thinking is that by then the economy would have stabilised and the new harvest would ensure that food price inflation after that date would be moderate. To prevent cascade of default deadlines for companies to repay loans were pushed back, government guaranteed loans were meted out to the MSME sector and the definition of the MSME sector was expanded to include larger enterprises, the deadline for filing of income tax returns was extended. Rates of GST were also rationalised.

Supportive measures undertaken for various sectors include: A credit line of ₹300000 million was announced for the MSME sector in order for them to meet their operational expenses. In addition, the definition of what constitutes a MSME enterprise has been expanded. Earlier MSME enterprises had to be below a certain (rather low) size in order to avail government benefits. Now, the definition of what constitutes a MSME enterprise has been expanded so that there are more incentives for these enterprises to grow in size. Loans to these enterprises will be granted for a four-year period and the principal repayment will start after a twelve-month moratorium. Some 4.5 million small enterprises are expected to benefit from this measure. There are special provisions for stressed MSME enterprises.

For small or mid-sized non-banking financial companies struggling to raise debt the government has launched a special ₹300000 million special liquidity scheme in order to get investors to buy low to medium risk debt paper issues by non-banking finance companies, housing finance companies and microfinance companies. These securities will be guaranteed by the government.

Global tenders will be disallowed in government procurement tenders worth up to ₹ 2000 million, which will help the MSMEs to grow their business. State-owned Power Finance Company and Rural Electrification Corporation will infuse ₹900000 million into discoms. The loans will be given under state government guarantees. Housing projects have been given relief for 6 to 9 months to complete registration formalities. Employee Provident Fund contributions of the salaried class for the months

of June, July and August 2020 are being paid for by the government. This set of policy measures have really been about repairing supply chains and cushioning demand from collapse. GOI has expressed its intention to further supplement demand when the supply chains are responsive to demand stimulus and the possibility of having a stagflation is remote.

An important implication of the crisis was that millions of migrant workers living and working in different parts of the country faced increasing hardship as they became unemployed and the lockdown dragged on. The initial advice by the Prime Minister was for everyone to stay where they were in order to minimise the spread of the virus. Had this advice been followed to the letter the recent spike in corona cases may not have taken place. However, starting on 28th/29th March migrant workers grew restive because they had lost their jobs, financial help was tardy and they wanted to return to their places of origin (mostly villages and small towns in Eastern India). This was difficult to organise as permission was needed from state governments for trains carrying passengers to pass through during the pandemic. There was also the risk that transporting such large numbers of people by train or bus could risk an explosion of corona cases. By now, almost all the workers (nearly 40 million) wanting to return home have been able to do so (largely) by special trains. 3.5 million workers have been returned to Uttar Pradesh alone.

V. Elements of a Recovery

An immediate fallout from the reverse migration of workers is that once enterprises start functioning at normal levels they will face a shortage of workers. Indeed this has already begun to happen after the first phase of the unlock. This is just one indicator of the breakdown of domestic supply chains during the crisis. International supply chains have been adversely affected and global trade volumes have fallen sharply including in critical areas such as medical supplies. Under conditions of broken supply chains a simple reflating of the economy through increased government expenditure would, lead to high inflation and combined with low (or even negative) growth – stagflation. Hence, getting the supply chains to function smoothly is essential for attaining economic growth revival with moderate inflation.

The prospects on the supply side are mixed but, on balance, positive. First, despite the lockdown the rabi (winter) crop was harvested and sold on time. Furthermore, the procurement price at which the government buys foodgrain from farmers has been set high (at least 1.5 times the average cost of production). This crop has been plentiful whence farmer incomes would have increased substantially. This will act to augment demand in an otherwise sharply slowing economy. Second, it seems that rains will be plentiful; for the kharif (summer) crop. Rainfall is estimated to be above normal in many parts of India. In anticipation of a good harvest fertiliser sales were 45 % higher in April and 97% higher in May this year compared to these same months in 2019. Table 3 provides some details of this.

Table 3 here.

The reverse migration of workers to villages will also ensure that there are enough workers during the peak agricultural season. AS noted earlier to alleviate pressures on workers in the rural economy allotments to the National Rural Employment Guarantee program were sharply increased so that rural infrastructure can be augmented rapidly. The total value of the stimulus package is ₹20000000 million, or approximately 10 % of GDP. The Reserve Bank of India has stepped in with substantial liquidity support, incentives for borrowing by firms particularly those in the MSME sector and a cut in the repo rate to 4 %. The actual fiscal stimulus was, at the time of the imposition, about 1% of GDP but it has been noted that as government expenditures grow and revenues lag the fiscal deficit will rise and the magnitude of the stimulus will expand. There have been recent reports of another pure demand stimulus. Foreign exchange reserves with the Reserve Bank of India amount to more than \$500000 million. Hence, there is substantial import cover and the rupee should not depreciate unduly; nor should there be large scale capital outflows. Interest rates in India are still above those in major countries and levels of fiscal deficit, although higher than that stipulated in the FRBM, is still well below those in major countries. The fiscal deficit will definitely rise but so will that of most, if not all, countries. Therefore, there will be no undue differential fiscal pressures on India's economy. The lending criteria of banks have been eased considerably to facilitate easy flow of credit. Given recent history of NPA accumulation by banks, this may become an issue that needs to be monitored closely. Comparing India's stimulus package to that of other countries gives the impression that the stimulus has been conservative. One reason for that was that the policymakers feared an outflow in the aftermath of a large stimulus package. However, India still is a \$2000000 million economy (at current exchange rates) and the third largest in the world in terms of Purchasing Power Parity dollars. The economy then has the depth to withstand a large stimulus. Indeed the economy has successfully absorbed many shocks since 2017. Once the supply chains have been repaired the economy's capacity to absorb a large stimulus without provoking capital outflows will be enhanced.

Further, although both exports and imports have declined India's trade deficit has narrowed considerably and in the first week of July, India had a balance of trade surplus, the first in eighteen years. Inward remittances and other non-merchandise trade earnings from abroad are also likely to decline, nevertheless the current account should remain healthy. However, the reduction in remittances and other external transfers will take time to rebuild after the pandemic is over and this could pose a challenge in the future.

Also aiding the recovery effort has been the sharp reduction in the price of petroleum in international markets. Since India imports more than 70% of its fuel needs this has helped reduced India's import

bill and therefore improve the balance of trade. In addition, with base prices so low increases in excise duties on petroleum has helped bring in much needed revenue for the government in the face of falling income tax, GST and import duty revenues.

The next leg of the recovery strategy is structural reforms. The government has been able to push through several key structural reforms. Some of these are mentioned here. First, the Essential Commodities Act was amended to allow farmers to sell their produce at the highest price anywhere in the country. This Act had given the state governments undue power to determine where farmers could sell their produce. This was done ostensibly to protect local consumers from supply shortfalls. However, the opposite would happen many times as local scarcities would persist since farmers from other states would not be able to supply deficient markets. In addition, farmer income would stagnate since their choice of markets was restricted. This amendment would signal a sea change in the prospects for farmers and ensure that coexistence of food deficits and food gluts would not persist. Second, the limit for foreign direct investment (FDI) in the defence sector was raised from 49% to 74%. Third, the highly acclaimed Indian Space Research Organisation (ISRO) has been opened for private enterprises so that India is now well positioned to enter the lucrative commercial space exploration market. A number of labour laws have been amended to make them more flexible so that workers can be more easily hired or fired. The inability to do so has been one of the major drawbacks to the expansion of the manufacturing sector in the “Make in India” program. In addition, the low participation of women in the labour force has been a cause of concern in India for long. Part of the reason for this has been the presence of some laws that restrict where women can be employed, what jobs they could do and when they could work. Some of these restrictions have now been removed so that employment of females should get a boost, with all its attendant advantages. In addition, coal mining has been opened up for private enterprise, as coal mining licenses will be auctioned off. Furthermore, in the wake of unreliability of supply chains, Indian policymakers have initiated a program of development through self-reliance. This does not amount to a new version of protectionism but the development of India’s manufacturing capacity by creating markets for domestically produced goods and services. This will be achieved by India developing a manufacturing hub that is globally competitive (not inward looking) and through switching of tastes from imported to domestic products. This has been aided by a recent consumer and government-sponsored rejection of Chinese imports in the wake of India’s border skirmish with China. There has been widespread boycott of Chinese goods, 59 Chinese phone apps have been banned in India, FDI rules for investment by Chinese entities have been tightened and participation of Chinese entities in public sector infrastructural projects has been discouraged. However, the overall FDI regime has become more liberal.

The country began the second phase of unlocking on July 1. In response to the first phase of the unlocking the economy has responded quite strongly. Early signs of economic revival became visible in May and, particularly, June. Indicators of real activity such as consumption of electricity and fuel, inter and intra state movement of goods, uptake in retail financial transactions, improved railway freight and toll collection on highways, improved PMIs in the manufacturing and services sectors and improved collection of GST (91% of the value in June 2019). In June exports rose to 88% of the value in June 2019. However, in each of these areas the relevant magnitudes were below the corresponding figures for 2019. Some suggestive figures may be given. Manufacturing PMI which had reached a low of 27.4 in April climbed to 47.2 in June. This is a distinct improvement, although only a PMI above 50 indicates growth. Unemployment fell sharply from 23.5% in May to 11% in June. The stock markets are doing well, indicating a sharp rise in India's economic prospects.

VI. Conclusions: Prospects for the future

The IMF and the RBI and other major organisations have forecasted negative growth for India (-4.5% in the case of the IMF and -3% in the case of Bank of America) for fiscal year 2021. Assuming that the pandemic is over by the end of 2020 or so a sharp recovery in fiscal year 2022 has been forecasted. However, there are reasons to believe that economic growth may not be so low and may actually turn out to be (barely) positive for fiscal year 2021. I now elaborate on this.

Clearly, prospects for the agriculture sector are quite sanguine. The winter (*rabi*) harvest has already been harvested and has been plentiful. With good rains anticipated, the summer *kharif* crop is also expected to be good. With supportive policies for employment and infrastructure development in the rural sector employment prospects in agriculture and allied activities are likely to be robust. Farm incomes have been augmented through income support policies and radical changes in agricultural marketing policies. The agricultural and more broadly the rural economy will boost demand and be a strong bulwark of support for the whole economy.

India's industry sector has been struggling since 2011 because of very restrictive monetary and fiscal policies because of high inflation. This problem worsened when bank credit slowed considerably in 2018 because of the Non-Performing Assets (NPA) issues that the banking sector was dealing with. Recent policy initiatives to boost the MSME and other elements of the manufacturing sector are likely to lead to a recovery for the manufacturing sector. Initiatives in the coal mining sector have the potential to boost the mining sector. So, industry as a whole, should also recover well.

The services sector was hit very hard by the reduction, even cessation, of service orders. External demand for the Indian service sector, which has previously been robust, nearly collapsed in light of recessionary conditions globally. As a consequence, the PMI for the services sector was low 12.6 in May but improved to 33.7 in June. Thus, clearly the service sector is facing rather grim prospects.

Furthermore, an immediate challenge for the economy is that some of the policy structures that had been put in place after long deliberations and debate over a considerable period of time had to be dismantled. These include the Inflation Targeting Mechanism (interest rates are no longer following inflation), the FRBM Act which limits the fiscal deficit that the government can run (no longer operative) and, with government guarantees for loans, the laws put in place to reduce commercial bank NPA issues (not operative since so many bank loans have been guaranteed by the government).

Hence, key challenges before the economy include managing the remaining unlock phases without an explosion of the virus and ensuring that infrastructure for monetary, fiscal and banking policies that suits the post pandemic scenario are developed. This is a big ask and there is hardly any experience or applied literature to guide the policymaker. However, there have been some good positives as well. . For one, the pre-emptive lockdowns have saved many lives in India. This has reduced the longer-term public health challenge and reduced the long-term costs of the pandemic. Another important plus point has been that there has been a distinct switch of consumer and government preferences to domestic goods and services while, at the same time, making the country more hospitable to FDI.

In a post-pandemic world, these actions should carry the economy over the upswing of the business cycle. Virtuous cycles could be set up as economic activity stimulates growth, growth stimulates saving and investment which then fuel further growth. But, the first support will, at this time, come from consumption, particularly from the agricultural sector. The ensuing growth should stimulate consumption and then investment in the rest of the economy.

At some point in time, the economy is likely to need a substantial fiscal stimulus. The question of how that will be financed and what would be the implications for public debt and bank NPAs will have to be worked out. This is a serious challenge. The anticipated macro fiscal package could initiate a short-run growth cycle. But, that would only be a cyclical recovery. It is also important to remember that although the large post Global Financial Crisis monetary-fiscal stimulus made possible a sharp recovery it soon became apparent that over-reaction, and difficulty in reversing the stimulus, created macroeconomic vulnerabilities. A limited, well-targeted and transient stimulus would avoid this even while aiding a credit-financed growth revival.

The fiscal expenditures already undertaken have lifted India's public debt to over 80% of GDP. Any further fiscal stimulus will clearly add to this debt. In addition, India has only recently started addressing the systemic NPA problems in its banking sector. The assurance given to borrowers as part of the stimulus package will need to be watched carefully to ensure that these NPA problems are not aggravated in the future.

The post Covid-19 macro-financial package could trigger a virtuous growth cycle, by raising marginal propensities to spend above those to save, as demand is kept a step ahead of gradual relaxation in supply constraints. Activating India's large domestic demand can potentially insulate from global shocks and a likely prolonged shrinking of trade.

For the medium term, it might become necessary to reverse the monetary tightening that had occurred since 2011. Because of this tightening credit growth in India has been low. Therefore, a relaxation of credit conditions may actually help asset prices. This will also help in assuring that trust is restored in financial markets after the NPA crisis and create conditions for rapid financial and economic growth.

The health and economic crises of COVID-19 reveal possibilities for long-run supply repair and other opportunities. For one thing, the reluctance to use currency in transactions has led to a sharp increase in the digitisation of the economy. This needs to be carried forward aggressively as this will also have the additional benefit of reducing cash-based illegal transactions. Recent reports suggest that digitisation has led to a reduction in the smuggling of gold into the country despite an increase in import duties on gold. Furthermore, the newly developed culture of working from home has led to a sharp reduction in the use of fuels, low congestion on the roads and attendant environmental benefits. The opportunity could also be used to carry out internal structural reforms to make India an increasingly attractive destination for FDI, including that components of FDI that is seeking an alternative home to China. The GST can be fine-tuned to ensure that its full advantages are reaped. With an integrated market (which the GST is supposed to facilitate) firms should be indifferent to where they locate themselves. If this were to happen labour would not have to migrate in such large numbers to already overcrowded cities. In addition, the purpose of balanced regional development (a long-standing challenge for India) would also be achieved to a considerable extent.

In summary, the health crises unleashed by the pandemic represent a very serious challenge for the Indian economy. Serious efforts have been made to stabilise the economy and meet the public health challenge. Some success has been achieved in both these areas but much will depend on how the pandemic pans out, the availability of a vaccine and the public's response. People's continued participation in the process of healing from the both the economic and the health crises is central. At the same time, the pandemic represents an opportunity to carry out reforms that would not have been possible under more ordinary circumstances.

Table 1: COVID-19 Timelines and Important milestones

- Taiwan warned the WHO about COVID-19 and its Chinese origins on 31 December 2019. WHO basically ignored this advice.
- WHO issued a statement that advised countries against applying restrictions on travel or trade with China on 5 January 2020.
- WHO emergency committee met to discuss the severity of the outbreak and determine whether it is an international health emergency on 22 January 2020.
- Several WHO members considered it too early to declare a state of emergency on 23 January 2020.
- The Chinese New Year was on 25 January 2020.
- WHO upgraded its global risk from novel coronavirus to 'high' from 'moderate' on 26 January 2020.
- WHO emergency committee declared the outbreak as public health emergency of International concern on 30 January 2020.
- WHO flagged that the window of opportunity to contain the virus is narrowing on 21 February 2020.
- WHO declared COVID-19 as a pandemic on 11 March 2020.

Table 2: India: statistics on evolution of COVID-19 (by fortnight from 26 February to 30 June, 2020)

	Fortnight period								
	1.	2	3	4	5	6	7	8	9.
	26 February to 10 March	11 March to 24 March	25 March to 7 April	8 April to 21 April	22 April to 5 May	6 May to 19 May	20 May to 2 June	3 June to 16 June	17 June to 30 June
Number of Confirmed infections	53	480	4,775	14,769	29,320	57,075	100,716	146,874	231,416
Number of recoveries	1	36	381	3,554	10,167	28,167	57,976	86,650	160,977
Number of deaths	0	10	140	495	1,048	1,609	2,527	6,074	5,497
Number of Active Cases	52	434	4,254	10,720	18,105	27,299	40,213	54,150	64,942
Recoveries % of confirmed infections	1.9	7.5	8.0	24.1	34.7	49.4	57.6	59.0	69.6
Deaths % of confirmed infections	0	2.1	2.9	3.4	3.6	2.8	2.5	4.1	2.4

N.B. Number of Confirmed cases, number of recoveries, number of deaths and number of active cases are totals for the respective fortnights. Recoveries (deaths) as percentage of confirmed infections are recoveries (deaths) as percentage of confirmed cases for the respective fortnights.

Table 3: Fertilizer sales in India: 2018-19 and 2019-20 (in 00000 tonnes)

All-India retail fertiliser sales
(lakh tonnes)

	2018-19	2019-20	% Growth
Oct	48.37	45.17	-6.62
Nov	63.26	73.84	16.72
Dec	70.86	87.08	22.89
Jan	58.04	64.50	11.13
Feb	30.39	46.61	53.37
Mar	24.60	28.96	17.72
Apr	14.17	20.56	45.10
May	20.24	40.02	97.73

Source: Department of Fertilisers.

Box 1**Series of Events till 30 June 2020:**

24 March 2020: PM Narendra Modi announced a 21-day nationwide lockdown.

25 March 2020: there was mass movement by migrants back to their home states. The very next day, the government announced a Rs. 1.7 trillion plan for the poor and migrant workers.

27 March 2020: the RBI announced a moratorium on loan repayment. All banks and housing finance companies were permitted to allow a moratorium of 3 months on repayments of term loans outstanding on 1 March 2020.

31 March 2020: New Delhi suburb of Nizamuddin emerged as a Coronavirus hotspot. The Tabliki Jamaat had their religious congregation at their headquarters (or Markaz). This was what had caused the spike in COVID cases in this suburb which spread across New Delhi and the rest of the country. Many worshippers from Telengana also attended this event.

8 April 2020: Vice President of India M Venkaiah Naidu indicated that the 3 week (21 day) lockdown initiated by the Modi Government could be extended.

9 April 2020: RBI painted a gloomy picture of the Indian Economy. It mentioned in its monetary policy report, that the macroeconomic risks held forth by the COVID-19 outbreak would be severe for India.

10 April 2020: the Modi Government met with the state chief ministers to discuss the lockdown issue. By this time, India had 7,600 positive COVID-19 cases with 249 fatalities. The Punjab government extended their lockdown till 30 April. The very next day on 11 April 2020, the Modi government extended their lockdown to 3 May 2020 and 10,000 positive COVID-19 cases were recorded nationally.

16 April 2020: the Modi government allowed opening up of some industries in rural regions to reduce the distress caused due to the lockdown on millions of people from 20 April 2020. The government also allowed farm activities, road and building constructions in regions that were less affected by COVID-19.

20 April 2020: the Indian states of Maharashtra, Rajasthan, and West Bengal emerge as other coronavirus hotspots. The total number of COVID-19 cases reaches 17,615 nationally with 1,553 cases and 36 deaths in 24 hours.

22 April 2020: the Modi government approved an ordinance making acts of violence against doctors non-bailable offences. This was done against the backdrop of attacks on healthcare personnel fighting COVID-19.

25 April 2020: the Modi government allowed shops to remain open at 50% strength.

29 April 2020: the COVID-19 toll reached 31,360 and death toll reached 1,008.

30 April 2020: the national government allowed the movement of migrant labourers, students, pilgrims and tourists who were asymptomatic back to their home states.

1 May 2020: lockdown extended to 17 May 2020. Districts falling in Red zones (i.e. Delhi, Mumbai, Bengaluru, Chennai and Ahmedabad) were to stay under strict lockdown. However, there was relaxation in the districts falling in Green and Orange Zones. The government also initiated the Shramik Special train services to ferry stranded migrant workers back to their native states amid the COVID-19 lockdown. At this point, the total number of coronavirus cases in India reached 42,505 with 1,391 deaths.

4 May 2020: India entered the third phase of its national lockdown.

7 May 2020: the government initiated the Vande Bharat Mission to bring stranded Indians from various countries like UK, UAE, US, Maldives, Bahrain and Singapore.

13 May 2020: the Finance Minister Nirmala Sitharaman announced a set of measures that are part of the Rs 20 Trillion fiscal and monetary package announced by PM to support the Indian economy. This included relief to small businesses, taxpayers, shadow banks, power distribution companies, real estate, organised sector employees, and contractors working with the government.

15 May 2020: Finance Minister Nirmala Sitharaman extended the stimulus measures to dairy, fisheries, food processing and animal husbandry sectors.

16 May 2020: India overtakes China in terms of total number of cases with 85,940. Finance Minister Nirmala Sitharaman extends the stimulus measures to bring structural reforms in coal, minerals, defence production, aviation (airspace management, airports, MRO), power discoms in UTs, space and atomic energy sectors.

17 May 2020: India's nationwide lockdown was extended to 31 May 2020, making it one of the longest lockdowns has ever imposed.

19 May 2020: India reached the grim milestone of 100,000 confirmed cases reported.

20 May 2020: West Bengal and Odisha get hit by an extremely severe super Cyclone Amphan during the time of COVID-19 restrictions.

29 May 2020: India recorded 11,707 recoveries on this date.

31 May 2020: Death toll reached 5,000.

1 June 2020: India becomes the 7th most infected country with 194,504 cases of COVID-19. It had the 4th highest number of active cases globally and second highest number of severe active cases. During this time Indian Railways started running 200 special train to repatriate migrant workers back to their home states.

8 June 2020: India begins phased reopening after 75 days in lockdown. India registers 9,983 new coronavirus cases in a single day. Total COVID-19 cases by this time had reached 260,093 and 7,263 people died of this disease.

11 June 2020: India surpassed UK to become the fourth-worst hit nation with a total of 298,283 cases and 8,501 deaths. It recorded 11,989 recoveries as well on this date.

16 June 2020: India registered the highest ever spike of 2,003 COVID-19 deaths in a single day.

20 June 2020: India recorded a sharp rise of 13,897 recoveries in a single day.

25 June 2020: India recorded a sharp rise of 13,940 recoveries in a single day.

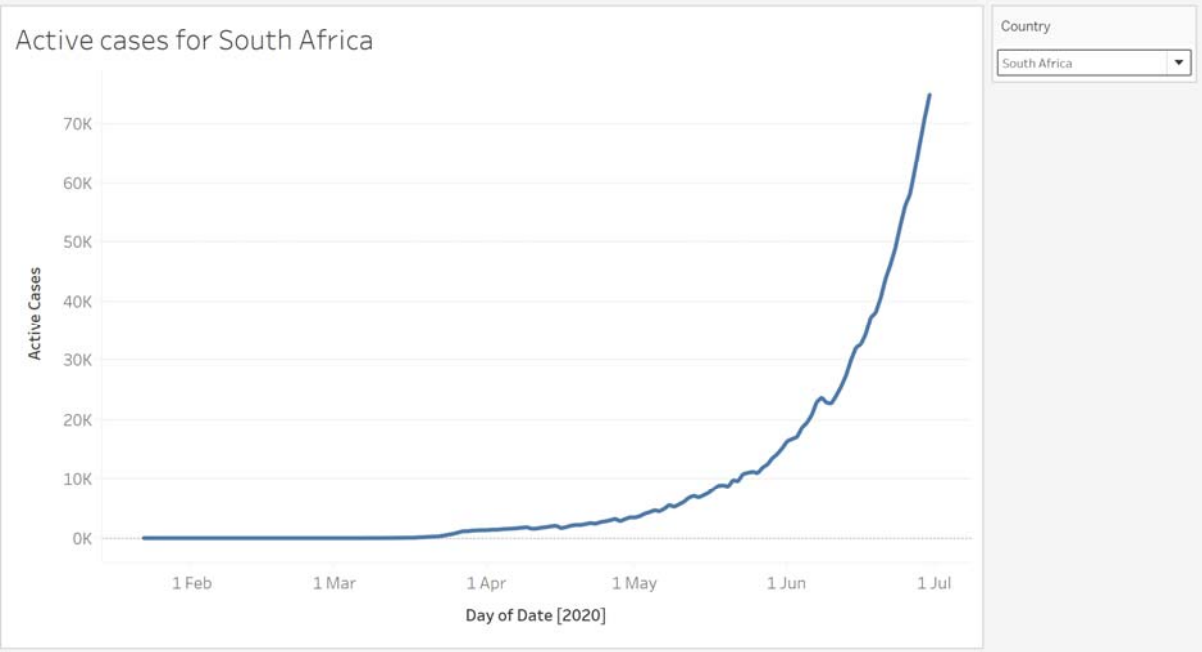
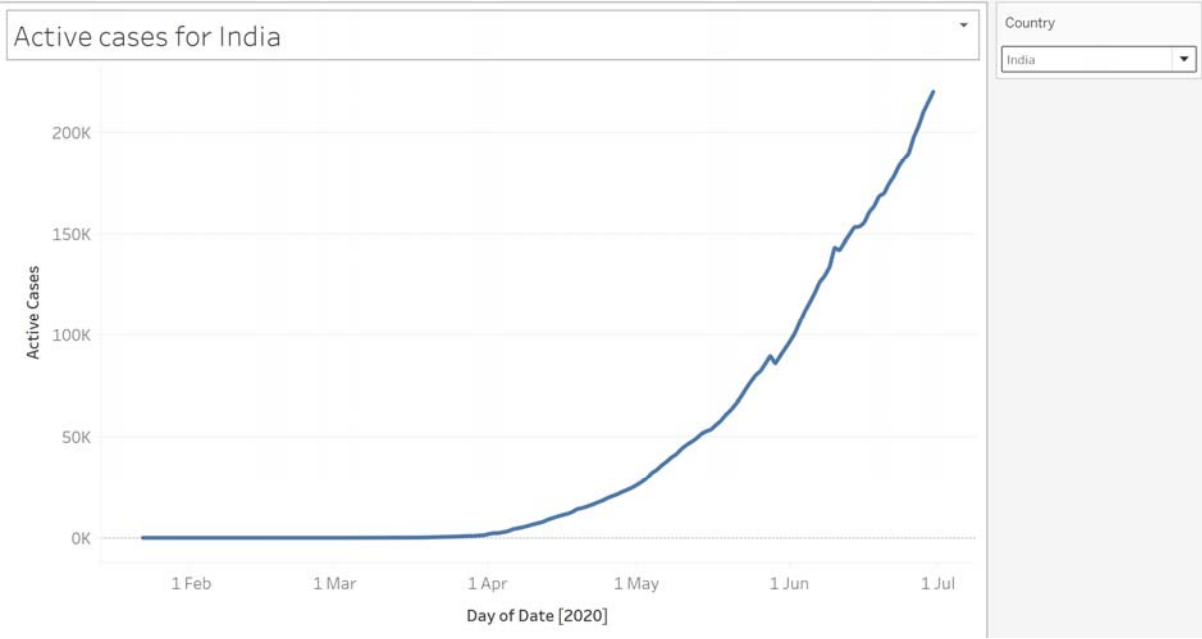
27 June 2020: India recorded a sharp rise of 13,832 recoveries in a single day.

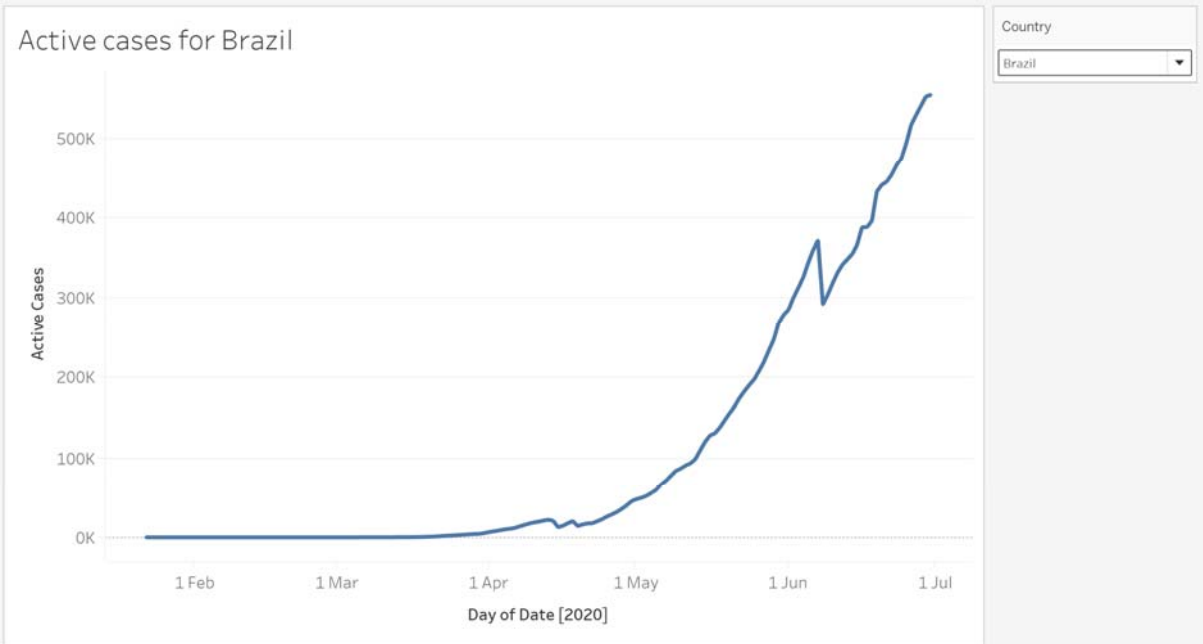
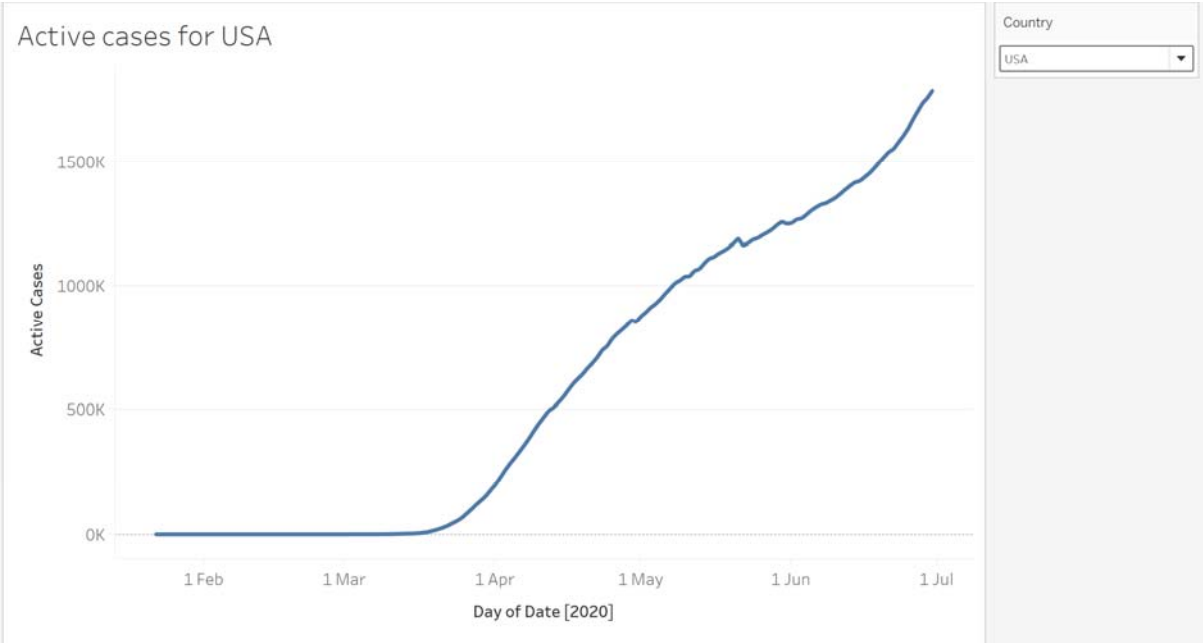
30 June 2020: Prime Minister Modi warned against complacency and this complacent behaviour had been increasing during the first unlock phase. He also mentioned that everyone needs to be alert and follow the norms as was done during the lockdown period to prevent the spread of COVID-19.

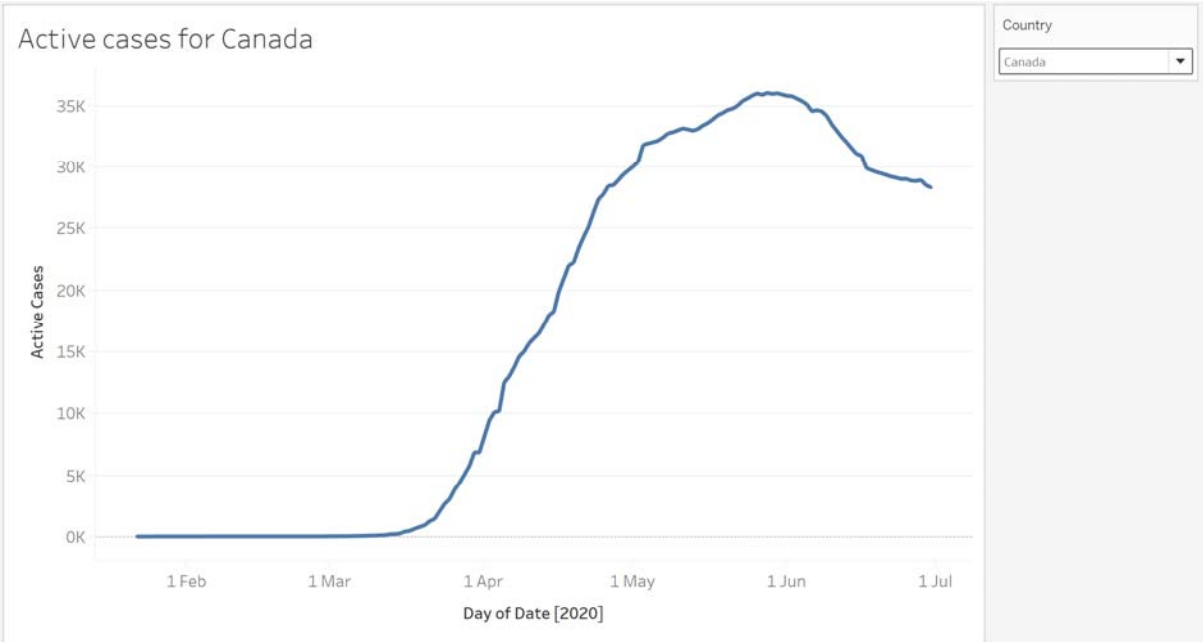
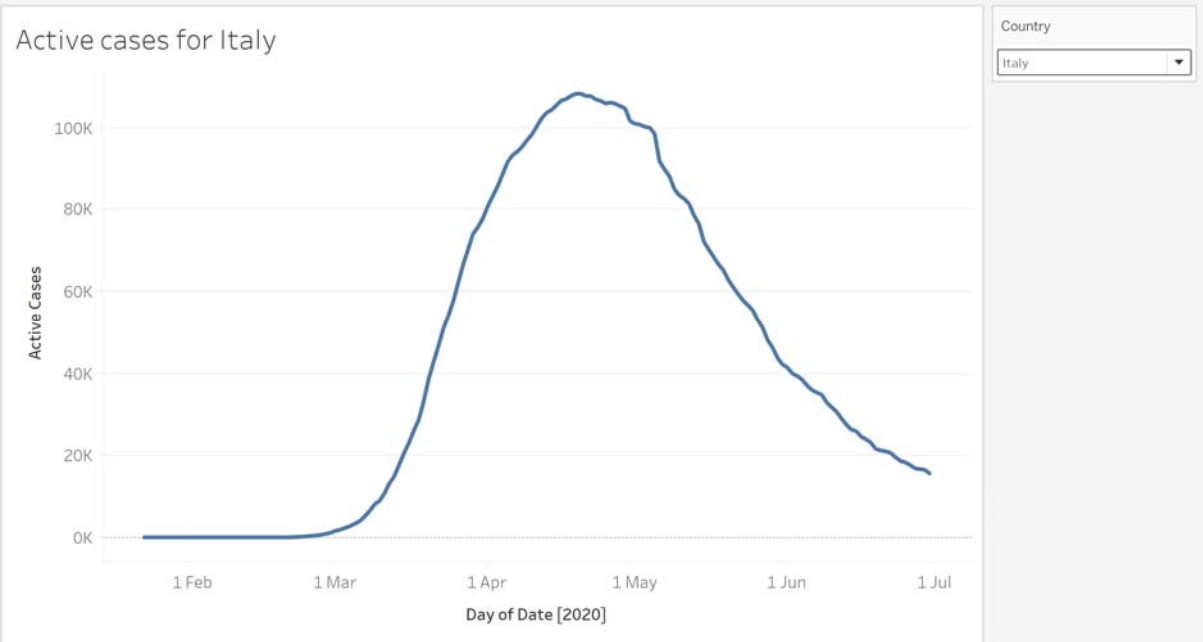
27 June 2020: India recorded a sharp rise of 13,832 recoveries in a single day.

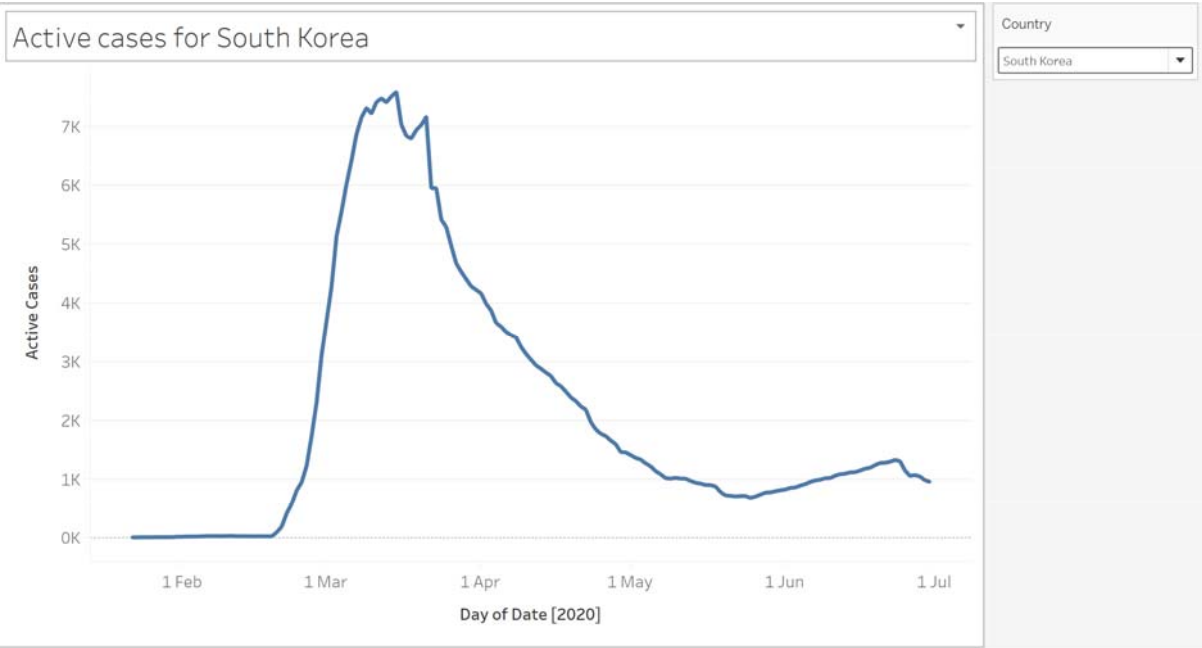
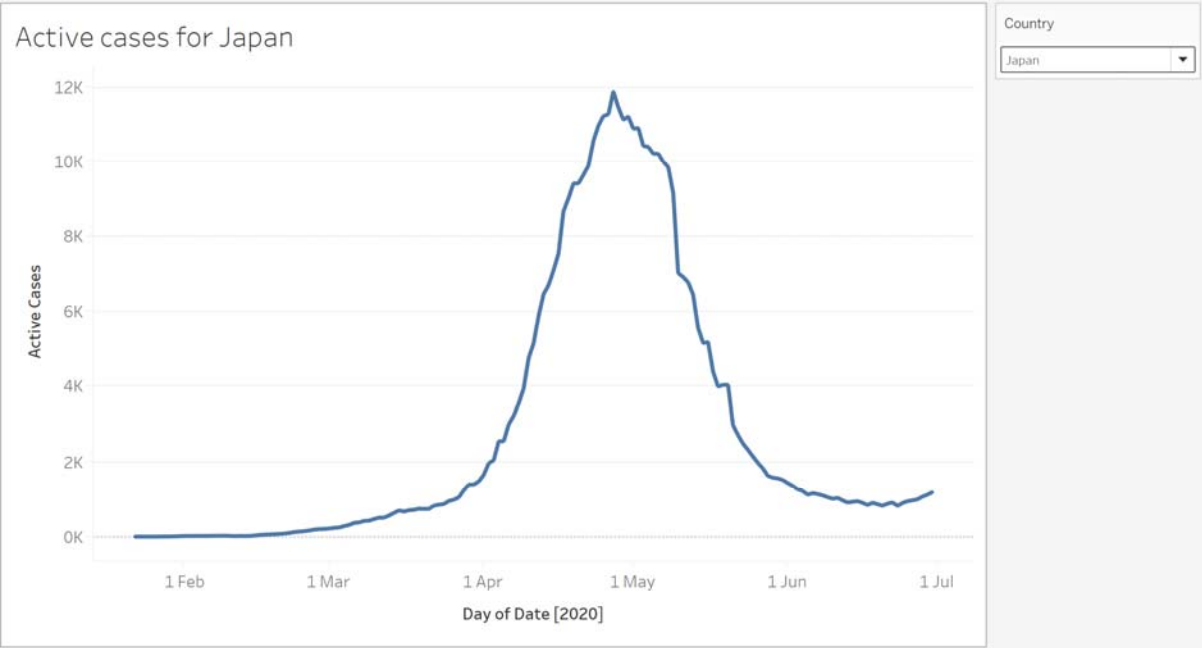
30 June 2020: Prime Minister Narendra Modi warned against complacency and this complacent behaviour had been increasing during the first unlock phase. He also mentioned that everyone needs to be alert and follow the norms as was done during the lockdown period to prevent the spread of COVID-19.

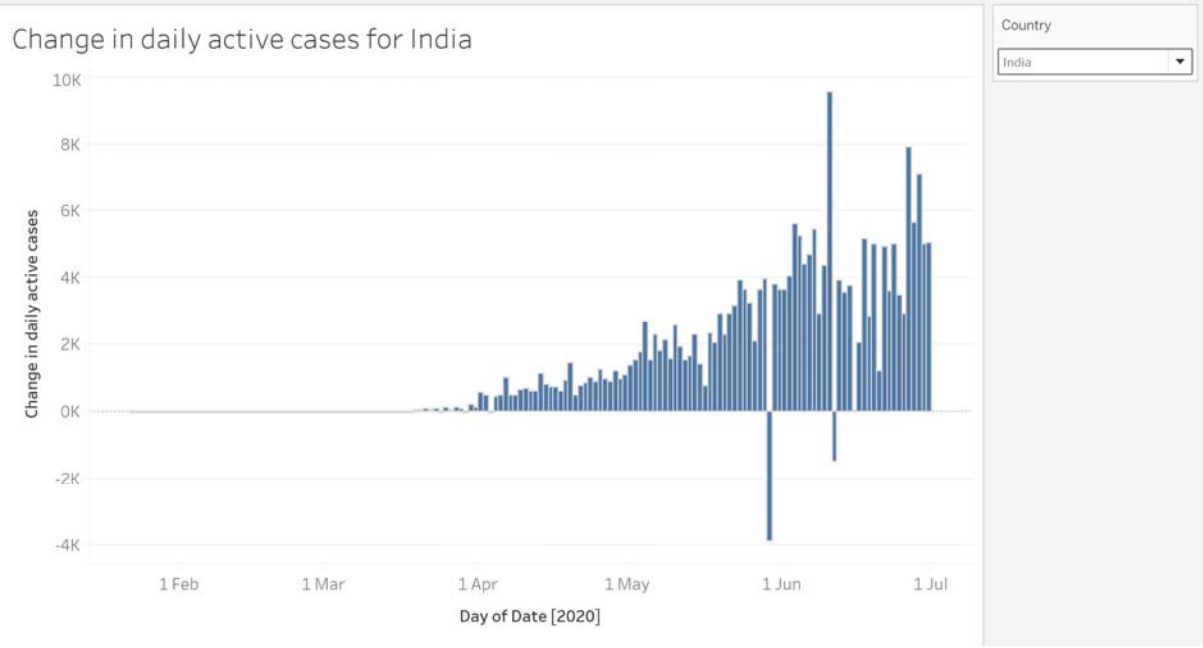
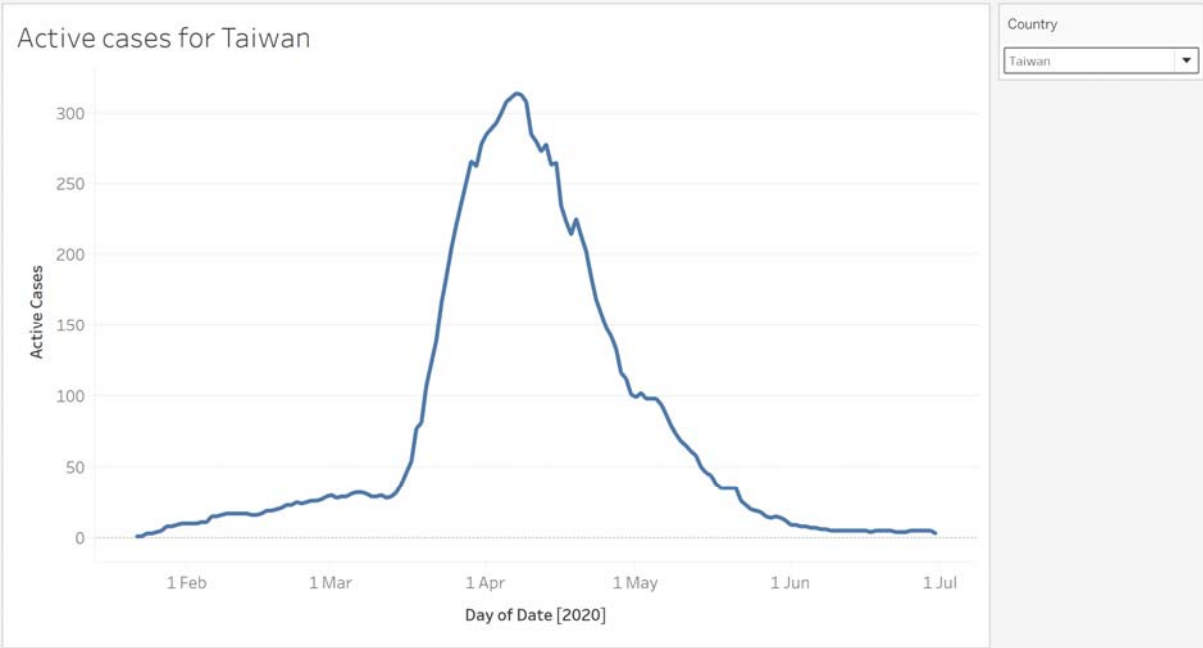
Figure 1

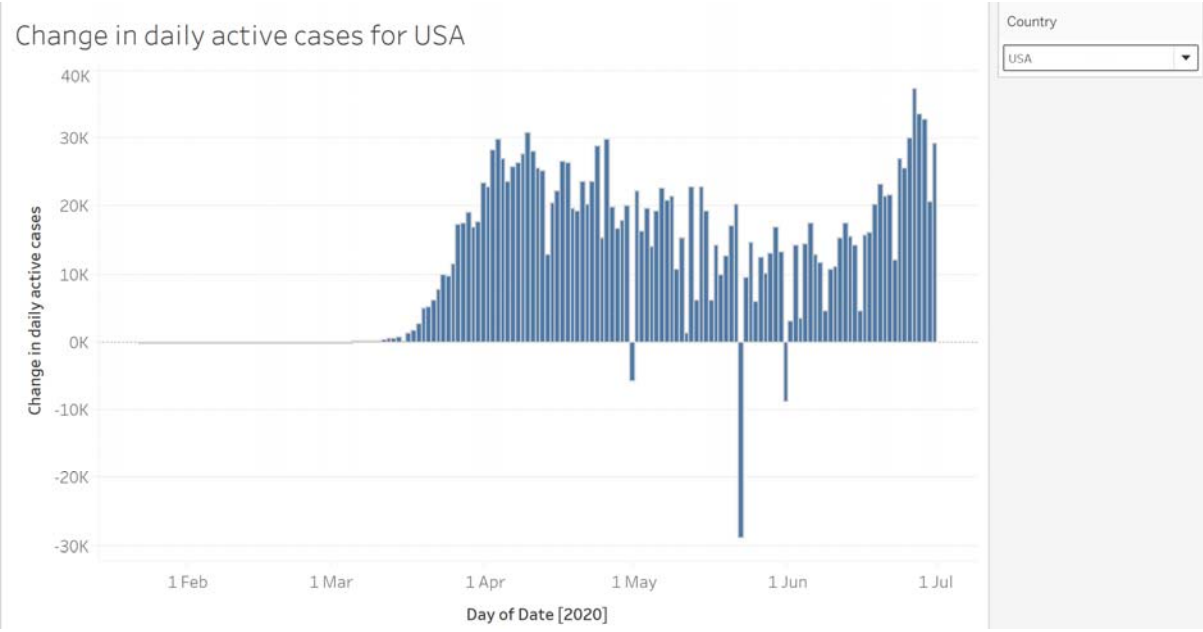
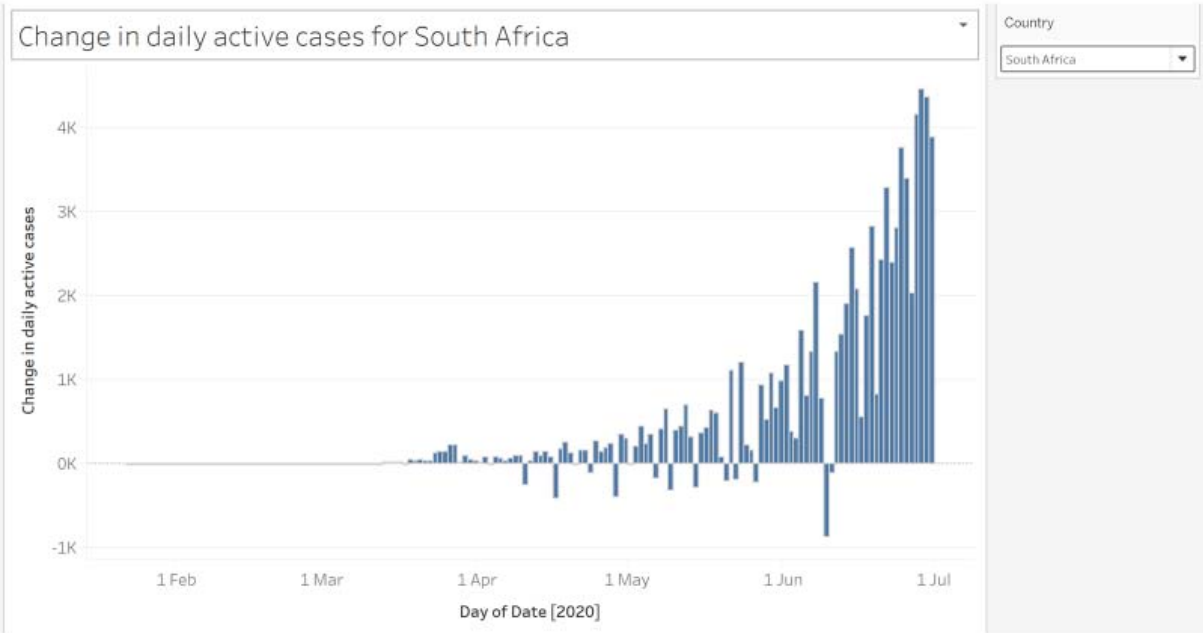




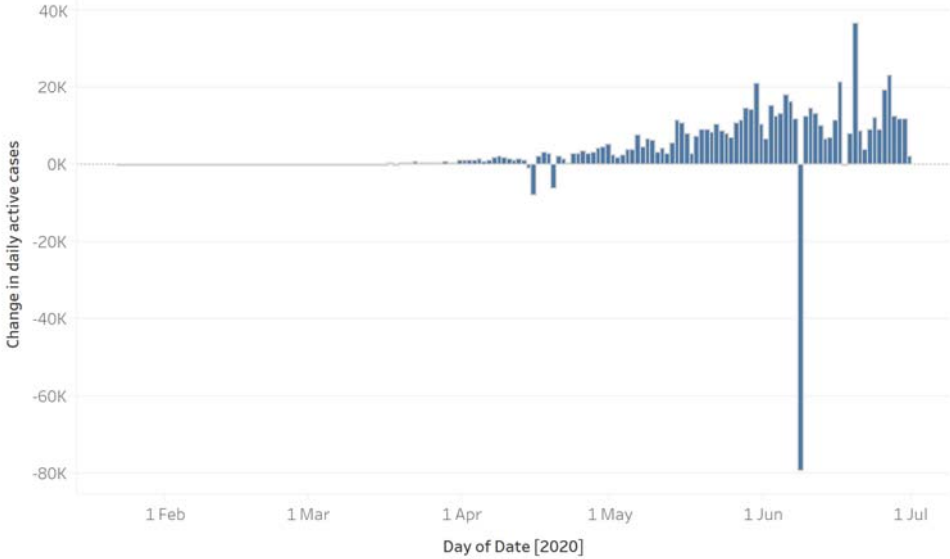






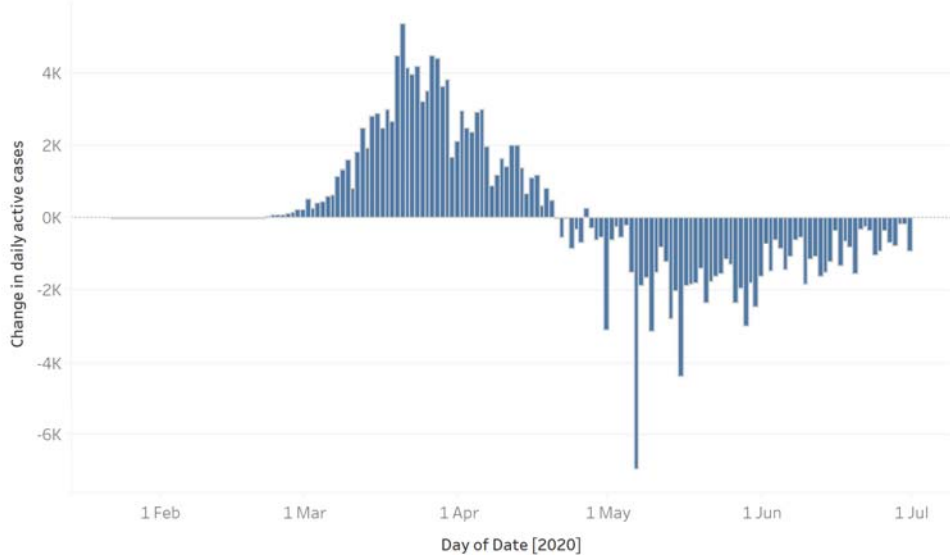


Change in daily active cases for Brazil



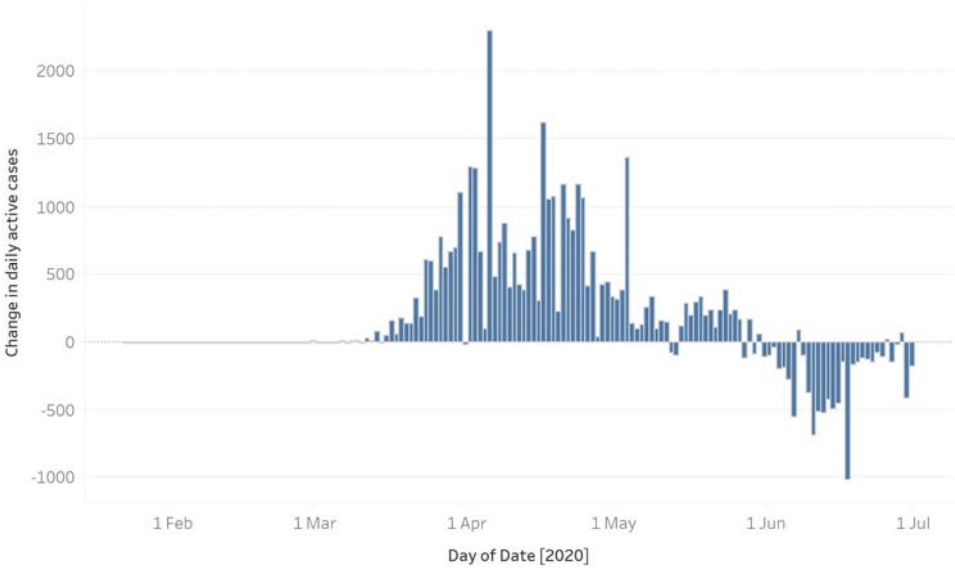
Country
Brazil

Change in daily active cases for Italy



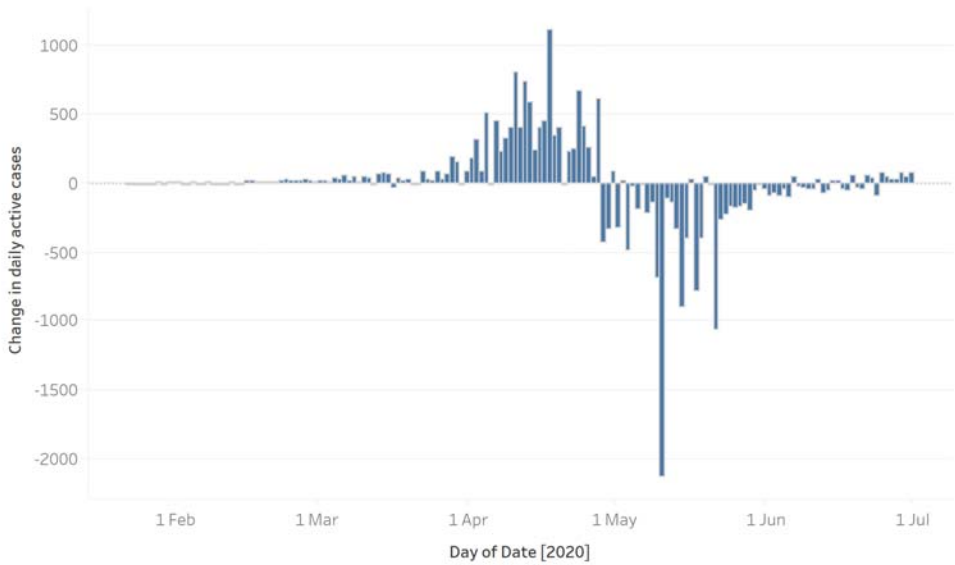
Country
Italy

Change in daily active cases for Canada

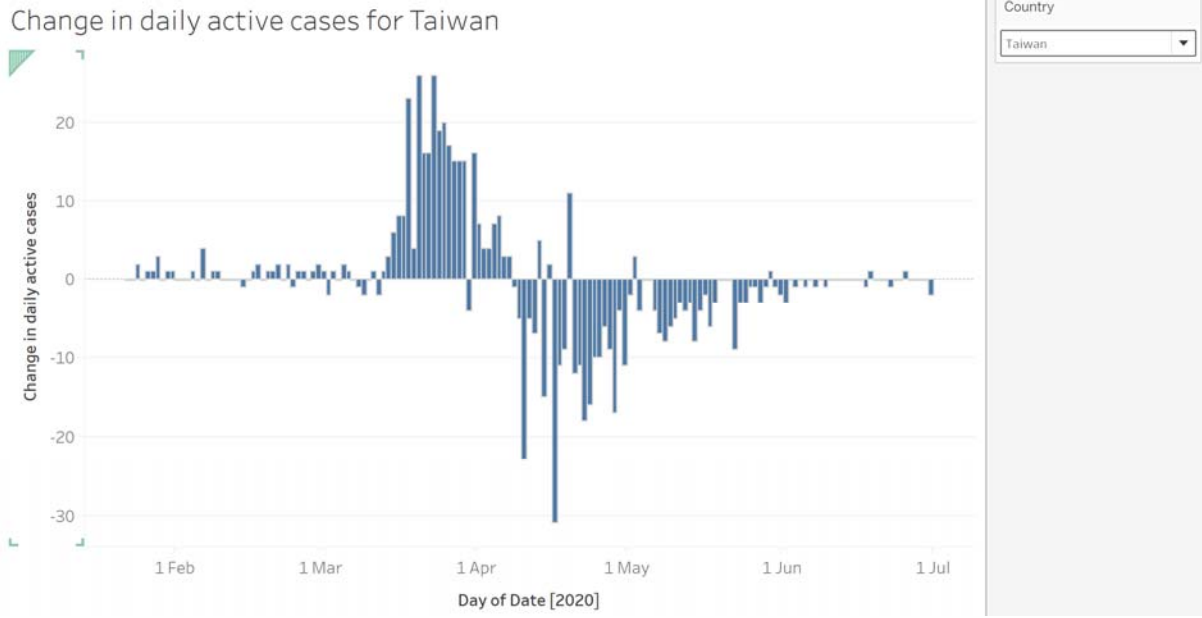
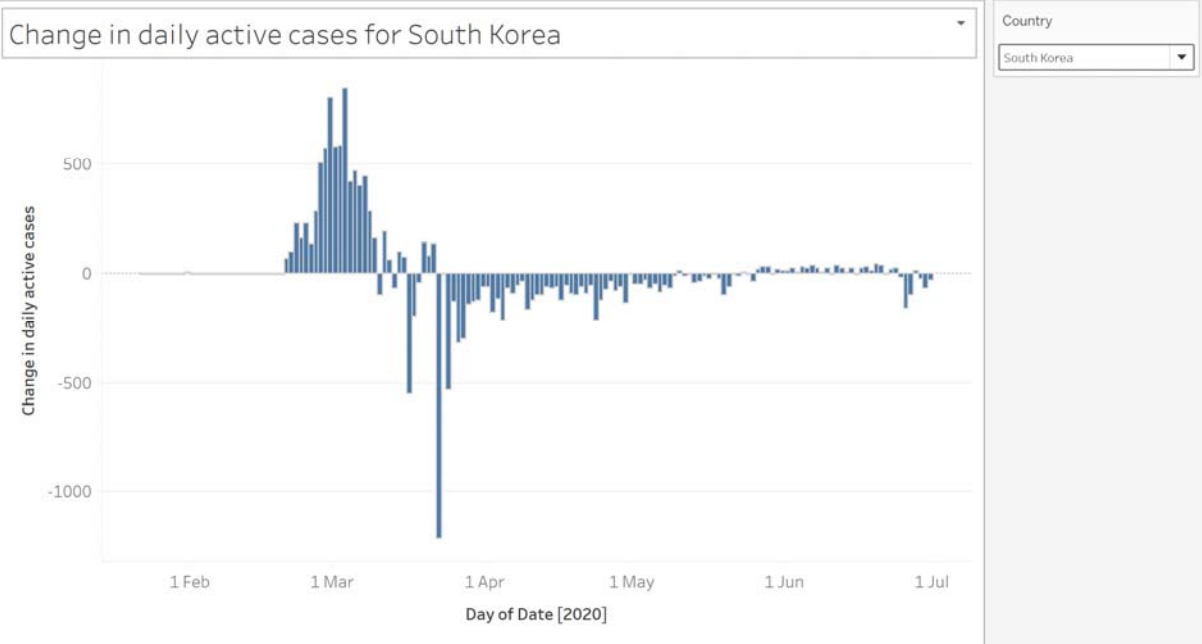


Country
Canada

Change in daily active cases for Japan



Country
Japan



AUSTRALIA SOUTH ASIA RESEARCH CENTRE
Arndt–Corden Department of Economics, H.C. Coombs Building (9)
The Crawford School of Public Policy, College of Asia & the Pacific

Canberra ACT 2601 Australia
Telephone: +61 2 6125 2683
Facsimile: +61 2 6125 0443
Email: asarc@anu.edu.au

<http://crawford.anu.edu.au/acde/asarc/>

Executive Director:
Prof. Raghendra Jha

ASARC Publications List

K R Narayanan Orations

- Mashelkar, Raghunath A. *Dismantling Inequality through ASSURED Innovation*, 2018, 25pp.
- Dhowan, Rabinder K., *India – A Resurgent Maritime Nation, Harnessing the Blue Economy*, 2017, 11pp.
- Jaitley, Arun, *The new economics of financial inclusion in India*, 2016, 15pp.
- Mazumdar-Shaw, Kiran, *Australia and India: Combining Technology and Entrepreneurship to Innovate the Future*, 2015, 10 pp.
- Basu, Kaushik, *The Indian Economy: Rising to Global Challenges*, 2012, 16pp.
- Subbarao, Duvvuri, *India and the Global Financial Crisis: What have We Learnt?*, 2011, 12pp.
- Ahluwalia, Montek Singh, *India's Prospects in the Post-Crisis World*, 2010, 20pp
- Narasimha, Roddam, *Rocket Science, Other Science: A trajectory of Indian science and technology from the 20th to the 21st century*, 2009, 18pp.
- Narain, Sunita, *Why Environmentalism Needs Equity: Learning From the Environmentalism of the Pool to Build Our Common Future*, 2008, 12pp.
- Pachauri, R.K., *Coping with Climate Change: Is Development in India and the World Sustainable?*, 2007, 8pp.
- Jha, Raghendra (ed.) *The First Ten K R Narayanan Orations: Essays by Eminent Persons on the Rapidly Transforming Indian Economy*, 2006, ANU E Press, Canberra, pp. 204 + xxi.
- Kasturirangan, K., *India's Space Enterprise: A Case Study in Strategic Thinking & Planning*, 2006, 16pp.
- Swaminathan, M.S., *Science and Shaping our Agricultural Future*, 2005, 24pp.
- Kelkar, Vijay L., *India: On the Growth Turnpike*, 2004, 20pp.
- Bardhan, Pranab, *Political Economy and Governance Issues in Indian Economic Reform*, 2003, 10pp.
- Desai, Meghnad J., *Democracy and Development: India 1947–2002*, 2002, 12pp.
- Rangarajan, C., *Monetary Policy in a Developing Economy – The Indian Experience*, 2001, 12pp.
- Chidambaram, P., *Stronger Branches, Deeper Roots: The Democratisation of India's Economic Reforms*, 1999, 11pp.
- Bhagwati, Jagdish, *India: Retrospect and Prospect*, 1996, 14pp.
- Rao, U.R., *Space Technology for Sustainable Development in Asia*, 1995, 28pp.
- Chelliah, Raja, *Reforming the Tax Base for Economic Development*, 1994, 11pp.

Other Publications

Jha, R. (ed.), *Hunger and Malnutrition as Global Challenges of the 21st Century*, Singapore & London, World Scientific Press, 2018.

Jha, R., *Facets of India's Economy, and her Society: volume 1 Recent Economic and Social History and Political Economy*, Palgrave/Macmillan, Hampshire, UK & New York, 2018.

Jha, R., *Facets of India's Economy, and her Society: volume 2 Current State and Future Prospects*, Palgrave/Macmillan, Hampshire, UK & New York, 2018.

Jha, R. & R. Gaiha, *Economics of Food Security vols. 1 and 2*, Edward Elgar, Gloucestershire, UK (2016).

Gaiha, R., Jha, R. & V. Kulkarni, *Diets, Malnutrition and Disease: The Indian Experience*, Oxford University Press, New Delhi (2014).

Jha, Raghbendra, Raghav Gaiha & Anil Deolalikar (eds), *Handbook on Food: Demand, Supply, Sustainability and Security*, Edward Elgar, Gloucestershire UK (2014).

Jha, Raghbendra, *Public Debt Sustainability in Asia and the Pacific*, Routledge, London & New York, 2012 (with Benno Ferrarini & Arief Ramayandi).

Jha, Raghbendra, *Routledge Handbook of South Asian Economics*, Routledge, London & New York, 2011.

Jha, Raghbendra, *Modern Public Economics*, Routledge, London & New York, 2nd edn, 2009.

Jha, Raghbendra (ed.), *The Indian Economy Sixty Years after Independence*, Palgrave-Macmillan, UK 2008.

Jha, Raghbendra & K.V. Bhanu Murthy, *Environmental Sustainability: A Consumption Approach*, Routledge, Oxford & New York, 2006, 240pp+xvi ISBN 0-415-36346-2 (2006 hardback, 2009 print and digital).

Jha, Raghbendra (ed.), *Economic Growth, Economic Performance and Welfare in South Asia*, Palgrave-Macmillan, UK, 2005, 424pp + xix. ISBN 1-4039-4361-3.

Jha, Raghbendra (ed.), *Indian Economic Reforms*, Palgrave-Macmillan, UK, August 2003, 416pp.

Jha, Raghbendra, *Macroeconomics for Developing Countries*, 2nd edn, Routledge, London & New York 2003, pp. 496+xiv. ISBN 0 415 26213 5 (hardback) 0 415 26214 3 (paperback).

Kalirajan, KP et al., *Accelerating Growth through Globalization of Indian Agriculture*, Macmillan India, New Dehli, 2001, 373pp + viii. ISBN 0333 93599 3.

Enhancing the Trade and Investment Environment in the Indian Ocean Rim Region, submitted by ASARC, RSPAS, ANU, December 2000, 246pp + xiv. ISBN 0 642 47676 4.

Shand, Ric (ed.), *Economic Liberalisation in South Asia*, Macmillan India Ltd, New Delhi, 1999, 536pp + xv. ISBN 0 7315 93116 5.

Rao, M, K. Kalirajan and R Shand, *The Economics of Electricity Supply In India*. Macmillan India Ltd, New Delhi, 1998, 170pp + xii. ISBN 0333 93143 2.

Athukorala, Prima Chandra, *Economic Profiles in South East Asia: Sri Lanka*, 1997, 40pp. ISBN 0 7315 2666 X.

Shand, Ric and UN Bhati, *Economic Profiles in South East Asia: Pakistan*, 1997, 43pp. ISBN 0 7315 2667 8.

Shand, Ric and KP Kalirajan, *Economic Profiles in South East Asia: India*, 1997, 52pp. ISBN 0 7315 2665 1.

Shand, Ric and Mohammad Alauddin, *Economic Profiles in South East Asia: Bangladesh*, 1997, 37pp. ISBN 0 7315 26686.

Shand, Ric and UN Bhati, *Economic Profiles in South East Asia: Nepal*, 1997, 43pp. ISBN 0 7315 28530 (out of print).

Shand, Ric and Kali Kalirajan, *From Crisis to Consensus: Economic Reforms in India*, 1996, 46pp. ISBN 0 7315 2464 0.

Working Papers — Available from our web page <http://crawford.anu.edu.au/acde/asarc/publications.php>

- 2020/04 Soumya **Paul**, Deepti **Sharma**, Drugit **Kumar** and Harika **Sombhatla** Challenges, Opportunities and Innovation in Indian Rural Economy
- 2020/03 Ananya **Talanki** "Effect of urbanization in India on the urban poor, MSME sector, and environment"
- 2020/02 Anubhav **Agarwal** and Shubhangi **Kumar** "Interest rate subvention in Indian agriculture: A demand-side analysis and proposed alternatives"
- 2020/01 Raghbendra **Jha** and Ashok **Sharma**, India's Pharmaceutical Industry: Global Supply Chain and Governance in the Post- COVID-19 World
- 2019/05 Amarendra **Sharma**, Indira Awas Yojana and Housing Adequacy: An Evaluation using Propensity Score Matching
- 2019/04 Raghbendra **Jha**, Hari K. **Nagarajan**, Anirudh **Tagat**, Jati, local public goods and village governance: private actions and public outcomes
- 2019/03 Prema-chandra **Athukorala**, Dayaratna **Silva**, The FTA debate in Sri Lanka: rhetoric and reality
- 2019/02 Raghbendra **Jha**, Hari K. **Nagarajan** and Anirudh **Tagat**, Restricted and unrestricted fiscal grants and tax effort of Panchayats in India [forthcoming in *Economic and Political Weekly*]
- 2019/01 Raghbendra **Jha**, Woojin **Kang**, Hari K. **Nagarajan** and Anirudh **Tagat** Workfare and Vulnerability in Rural India, 2018/03
- Geetika **Dang**, Vani **Kulkarni** and Raghav **Gaiha** Why Dowry Deaths have Risen in India?
- 2018/02: Raghbendra **Jha** Modinomics: Design, Implementation, Outcomes and Prospects, [published in *Asian Economic Policy Review*]
- 2018/01" Raghbendra **Jha** and Sadia **Afrin**: Structural Transformation in South Asia :
- 2017/03 Raghbendra **Jha**, Hari K. **Nagarajan** and Anirudh **Tagat**, Bribes, democracy and their impact on governance and welfare: the case of rural India.
- 2017/02 Sher Singh **Verick**, The puzzles and contradictions of the Indian labour market: What will the future of work look like?
- 2017/01 Raghbendra **Jha**, Hari K. **Nagarajan**, and Anirudh **Tagat**: Jati, Local Public Goods an Village Governance: Private Actions and Public Outcomes
- 2016/06 Anupama **Sen**, Rabindra **Nepal**, and Tooraj **Jamasab**: Rethinking Electricity Reforms in South Asia: Balancing Economic and Environmental Objectives
- 2016/05 Kaliappa **Kalirajan** and Yichang **Liu**: Renewable Energy Trade within regional comprehensive economic partnership (RCEP) Countries: an Exploratory Analysis
- 2016/04 SNP **Senanayake** and SP **Premaratane**: An Analysis of the paddy/rice value chains in Sri Lanka
- 2016/03 Mohammad J. **Alam** and Raghbendra **Jha**: Asymmetrical Threshold Price Transmission in wheat and flour markets in Dhaka (Bangladesh): seemingly unrelated regression analysis
- 2016/02, Ashok **Sharma**, Australia-India Relations: Trends and Prospects for a Comprehensive Economic relationship
- 2016/01 Raghbendra **Jha** and Sadia **Afrin**, Structural Transformation in South Asia
- 2015/03 Raghbendra **Jha**, Food Security and Small Landholders in South Asia
- 2015/02 Gaminiratne Wijesekere, 'Changing patterns of food consumption in Sri Lanka: 1985-2009'
- 2015/01

- 2014/08 Raghbendra Jha, Hari K. Nagarajan, Woojin Kang & Kailash C. Pradhan, 'Panchayats and Household Vulnerability in Rural India
- 2014/07 Raghbendra **Jha**, Redesigning Fiscal Federalism after the Global Financial Crisis
- 2014/06 Rabindra **Nepal** & Tooraj **Jamasb**. Caught Between Theory and Practice: government, market, and regulatory failure in electricity sector reforms
- 2014/05 Md. Rajibul **Ahsan** & Son Ngoc **Chu**, The potential and the constraints of the export of environmental goods (EGs): The Case of Bangladesh
- 2014/04 Garry **Pursell**, India's Food grain Policy and the Public Distribution System: The Case of Rice. Who wins, who loses and by how much?
- 2014/03 Ramesh C. **Paudel**, Liberalization Reform and Export Performance of India
- 2014/02 Raghbendra **Jha** & Duc **Nguyen** Truong, Trade Misinvoicing and Macroeconomic Outcomes in India. [revised version forthcoming in *Review of Economics and Finance* 2015]
- 2014/01 Raghbendra **Jha**, Productive Employment and Empowering Education: An Agenda for India's Youth [published in *Yojana*]
- 2013/15 Van Son **Nguyen** & Kaliappa **Kalirajan**, Exports of Environmental Goods: India's Potential and Constraints
- 2013/14 Mohiburrahman, **Iqbal**, Vulnerability to Expected Poverty in Afghanistan
- 2013/13 Raghbendra **Jha**, The Determinants of Household Level Fertility in India [*published in Pragati: Journal of Indian Economy*]
- 2013/12 Raghbendra **Jha**. Woojin **Kang**, Hari K. **Nagarajan** & Kailash C. **Pradhan**. Vulnerability and Responses to Risk in Rural India
- 2013/11 Syed Abdul **Hasan**. The Impact of a large rice price increase on welfare and poverty in Bangladesh
- 2013/10 Raghbendra **Jha**. Welfare Schemes and Social Protection in India [published in *International Journal of Sociology and Social Policy* 2014]
- 2013/09 Raghbendra **Jha**. Indirect Tax Reform and Fiscal Federalism in India [forthcoming in a book on Fiscal Issues in India, Cambridge University Press]
- 2013/08 Kanhaiya **Singh**. Budget Deficit and National Debt: Sharing India Experience
- 2013/07 Shahbaz **Nasir** & Kaliappa **Kalirajan**. Export Performance of South and East Asia in Modern Services
- 2013/06 Raghbendra **Jha** & Varsha S. **Kulkarni**. Inflation, its Volatility and the Inflation-Growth Tradeoff in India
- 2013/05 Truong **Nguyen**. Estimating India's Fiscal Reaction Function
- 2013/04 Kaliappa **Kalirajan** & Kanhaiya **Singh**. Corporate Retail Outlets are Blessings in Disguise for Unorganized Retail Outlets: An Empirical Analysis in the Indian Context
- 2013/03 Hari **Nagarajan**, Raghbendra **Jha** & Kailash C. **Pradhan**. The role of bribes in rural governance: The case of India
- 2013/02 Raghbendra **Jha**, Raghav **Gaiha**, Manoj K. **Pandey** and Shylashri **Shankar**. Determinants and Persistence of benefits from the National Rural Employment Guarantee Scheme: Panel Data Analysis for Rajasthan, India [forthcoming in *European Journal of Development Research*]
- 2013/01 Manoj K. **Pandey**. Elderly's Health Shocks and Household's Ex-ante Poverty in India
- 2012/17 Raghav **Gaiha**, Nidhi **Kaicker**, Katsushi **Imai**, Vani S. **Kulkarni** & Ganesh **Thapa**. Dietary Shift and Diet Quality in India: An Analysis Based on 50th, 61st and 66th Rounds of NSS
- 2012/16 Kuntala **Lahiri-Dutt** & Gopa **Samanta**. How do the poor handle money? What do the financial diaries of char dwellers tell us about financial inclusion?
- 2012/15 Syed Abdul **Hasan**. Engel Curves and Equivalence Scales for Bangladesh
- 2012/14 Hemantha K.J. **Ekanayake**. **The Link Between Fiscal Deficit and Inflation: Do public sector wages matter?**
- 2012/13 Nitin **Gupta**. The Evolution of Manufacturing Efficiency: Evidence from Indian States
- 2012/12 Raghbendra **Jha** & Raghav **Gaiha**. India's National Rural Employment Guarantee Scheme as it is — Interpreting the Official Report [in *Economic and Political Weekly*, XLVII No. 40]
- 2012/11 Raghbendra **Jha** & Varsha S. **Kulkarni**. Inflation Volatility and the Inflation-Growth Tradeoff in India (forthcoming in *International Journal of Emerging Markets*).
- 2012/10 Nitin **Gupta**. Impact of Elasticities of Substitution, Technical Change, and Labour Regulations on Labour Welfare in Indian Industries
- 2012/09 Mottaleb **Khondoker** & Kaliappa **Kalirajan**. Determinants of Labor-Intensive Exports by the Developing Countries: A Cross Country Analysis.
- 2012/08 Raghav **Gaiha**, Nidhi **Kaicker**, Katsushi **Imai** & Ganesh **Thapa**. Demand for Nutrients in India: An analysis based on the 50th, 61st and 66th Rounds of the NSS.
- 2012/07 Raghav **Gaiha**, Nidhi **Kaicker**, Katsushi **Imai**, Vani S. **Kulkarni** & Ganesh **Thapa**. Has Dietary Transition Slowed Down in India: An analysis based on 50th, 61st and 66th Rounds of NSS
- 2012/06 Raghav **Gaiha**, Nidhi **Kaicker**, Katsushi **Imai** & Ganesh **Thapa**. Agriculture-Nutrition Pathway in India

- 2012/05 Raghendra **Jha**, Woojin **Kang**, Hari K. **Nagarajan**, & Kailash C. **Pradhan**. Vulnerability and Responses to Risk in Rural India
- 2012/04 Raghendra **Jha**, Woojin **Kang**, Hari K. **Nagarajan**, & Kailash C. **Pradhan**. Vulnerability as Expected Poverty in Rural India
- 2012/03 Raghav **Gaiha**, Kenneth **Hill** and Ganesh **Thapa**. Have Natural Disasters Become Deadlier?
- 2012/02 Kaliappa **Kalirajan** & Kanhaiya **Singh**. Self Help Group-Banking-Poverty Reduction Nexus: A Case Study of Uttarakhand State, India
- 2012/01 Raghendra **Jha**, Simrit **Kaur**, Raghav **Gaiha** & Manoj K. **Pandey**. NREGS and TPDS in Rajasthan and Madhya Pradesh: Complements or Substitutes? [published in *Journal of Asian and African Studies*, 2013]
- 2011/17 D.P. **Chaudhri** & Raghendra **Jha**. Child poverty, Demographic Transition and Gender Bias in Education in India: Household Data Analysis (1993–94 and 2004–05) [in *Indian Economic Journal*, 59(2) 2011 (late pub.2012)]
- 2011/16 Raghendra **Jha**, Raghav **Gaiha**, Manoj K. **Pandey** & Nidhi **Kaicker**. Food Subsidy, Income Transfer and the Poor: A Comparative Analysis of the Public Distribution System in India's States [*Journal of Policy Modeling*, 2013]
- 2011/15 Raghendra **Jha**, Sharmistha **Nag** & Hari K. **Nagarajan**. Political Reservations, Access to Water and Welfare Outcomes: Evidence from Indian Villages
- 2011/14 D.P. **Chaudhri** & Raghendra **Jha**. India's Gender Bias in Child Population, Female Education and Growing Prosperity: 1951–2011 [in *International Review of Applied Economics*, 27(1) 2013]
- 2011/13 Raghendra **Jha**, Hari K. **Nagarajan** & Kailash C. **Pradhan**. Bribing to Circumvent Capture and Facilitate Participation in Social Programs: Evidence from Indian Villages
- 2011/12 Nitin **Gupta**. The Differential Effects of Financial Development on India's Industrial Performance
- 2011/11 Nidhi **Kaicker** & Raghav **Gaiha**. Calorie Thresholds and Undernutrition in India, 1993–2004
- 2011/10 Nidhi **Kaicker**, Vani S **Kulkarni** & Raghav **Gaiha**. Dietary Transition in India: An analysis based on NSS data for 1993 and 2004
- 2011/09 Raghendra **Jha**, Hari K. **Nagarajan**, & Kailash C. **Pradhan**. Aligning with one's Own: Private Voting and Public Outcomes in Elections in Rural India
- 2011/08 Raghendra **Jha** and Tu **Dang**. Inflation Variability and the Relationship between Inflation and Growth [*Macroeconomics & Finance in Emerging Market Economies*,5(1), 2012]
- 2011/07 Imran Ullah **Khan** & Kaliappa **Kalirajan**. The Impact of Trade Costs on Exports: An Empirical Modelling
- 2011/06 Raghendra **Jha**, Raghav **Gaiha** & Manoj K. **Pandey**. Body Mass Index, Participation, Duration of Work and Earnings under NREGS: Evidence from Rajasthan Growth [*Journal of Asian Economics*, 2013]
- 2011/05 Shylashri **Shankar** & Raghav **Gaiha**. Networks and Anti-Poverty Programs: The NREG Experience
- 2011/04 DP **Chaudhri** & Raghendra **Jha**. Child Poverty and Compulsory Elementary Education in India: Policy insights from household data analysis [forthcoming in *Indian Journal of Human Development*]
- 2011/03 Garry **Pursell** & F.M. Ziaul **Ahsan**. Sri Lanka's Trade Policies: Back to Protectionism
- 2011/02 Raghendra **Jha**, Raghav **Gaiha**, Manoj K. **Pandey** & Shylashri **Shankar**. Switches into and out of NREGS — A Panel Data Analysis for Rajasthan
- 2011/01 Raghendra **Jha** Woojin **Kang** and Hari K. **Nagarajan**. Fiscal Decentralization and Local Tax Effort
- 2010/22 Raghendra **Jha**. Inflation, Macroeconomic Policy and Hunger: A Variation on a Theme by C. Rangarajan [published 2011 in *Growth and Finance: Essays in Honour of C. Rangarajan*]
- 2010/21 Raghendra **Jha**. Food Security and Small Landholders in South Asia
- 2010/20 Raghav **Gaiha**, Raghendra **Jha**, and Vani S. **Kulkarni**. Diets, Nutrition and Poverty: The Indian Experience
- 2010/19 Raghendra **Jha**, Raghav **Gaiha**, Shylashri **Shankar** & Manoj K. **Pandey**. Targeting Accuracy of the NREG: Evidence from Madhya Pradesh and Tamil Nadu [in *European Journal of Development Research* doi: 10.1057/ejdr.2012.33]
- 2010/18 Puja **Dutta**, Stephen **Howes** & Rinku **Murgai**. Small But Effective: India's Targeted Unconditional Cash Transfers [published 2010 in *Economic and Political Weekly*, 45(52)]
- 2010/17 Raghendra **Jha**, Raghav **Gaiha** & Manoj K. **Pandey**. Determinants of Employment in India's National Rural Employment Guarantee Scheme
- 2010/16 Raghav **Gaiha**, Raghendra **Jha**, & Vani S. **Kulkarni**. Demand for Nutrients in India, 1993–2004 [*Applied Economics*, 45(14) 2013]

- 2010/15 Raghav **Gaiha**, Raghendra **Jha**, & Vani S. **Kulkarni**. Prices, Expenditure and Nutrition in India
- 2010/14 Kaliappa **Kalirajan** and Keijiro **Otsuka**. Decentralization in India: Outcomes and Opportunities
- 2010/13 Khondoker Abdul **Mottaleb** and Kaliappa **Kalirajan**. Determinants of Foreign Direct Investment in Developing Countries: A comparative analysis
- 2010/12 Raghendra **Jha**, Raghav **Gaiha** & Manoj K. **Pandey**. Net Transfer Benefit under National Rural Employment Guarantee Scheme
- 2010/11 Raghav **Gaiha**, Raghendra **Jha**, & Vani S. **Kulkarni**. Child Undernutrition in India
- 2010/10 Raghav **Gaiha**, Raghendra **Jha**, & Vani S. **Kulkarni**. Obesity, Affluence and Urbanisation in India
- 2010/09 Shylashri Shankar. Can Social Audits Count?
- 2010/08 Raghav **Gaiha**, Raghendra **Jha** & Vani S. **Kulkarni**. Affluence, Obesity and Non-Communicable Diseases in India
- 2010/07 Raghendra **Jha**, Raghav **Gaiha**, Manoj K. **Pandey**. Food Price Subsidy under Public Distribution System in Andhra Pradesh, Maharashtra and Rajasthan
- 2010/06 Raghav **Gaiha**, Kenneth **Hill**, & Ganesh **Thapa**. Natural Disasters in South Asia
- 2010/05 Simrit **Kaur**, Vani S. **Kulkarni**, Raghav **Gaiha** & Manoj K. **Pandey**. Prospects of Non-Farm Employment & Welfare in Rural Areas
- 2010/04 Raghendra **Jha**, Sambit **Bhattacharyya**, Raghav **Gaiha**. Social Safety Nets and Nutrient Deprivation: An Analysis of the National Rural Employment Guarantee Program and the Public Distribution System in India [in *Journal of Asian Economics* 22(2), 2011]
- 2010/03 Raghav **Gaiha**, Shylashri **Shankar** & Raghendra **Jha**. Targeting Accuracy of the NREG: Evidence from Rajasthan, Andhra Pradesh and Maharashtra
- 2010/02 Shylashri **Shankar**, Raghav **Gaiha** and Raghendra **Jha**. Information and Corruption: The National Rural Employment Guarantee Scheme in India [revised version in *Oxford Development Studies* 39(1), 2011].
- 2010/01 Raghendra **Jha**, Fiscal Policies and Challenges in South Asia [revised version published 2011 in *Routledge Handbook of South Asian Economics*]
- 2009/19 Raghav **Gaiha**, Raghendra **Jha** & Vani S. **Kulkarni**. Who has most say in Cooking?
- 2009/18 Kaliappa **Kalirajan** & Kanhaiya **Singh**, The Impact of Globalization on Employment Generation in India: The case of emerging 'Big Shopping Malls and Retailers'
- 2009/17 Raghav **Gaiha**, Raghendra **Jha** & Vani S. **Kulkarni**. How Pervasive is Eating Out in India? [revised version in *Journal of Asian and African Studies* 2013 - DOI: 10.1177/0021909612472040]
- 2009/16 Raghendra **Jha**, Sambit **Bhattacharyya**, Raghav **Gaiha**. Timing of Capture of Anti-poverty Programs: Rural Public Works and Food for Work Programs in Rural India [revised version in *International Review of Applied Economics* 25(3), 2011]
- 2009/15 Sambit **Bhattacharyya** & Raghendra **Jha**. Economic Growth, Law and Corruption: Evidence from India [UPDATED 01/11] [forthcoming 2013 *Comparative Economic Studies*]
- 2009/14 Manoj K. **Pandey**. On Ageing, Health and Poverty in Rural India
- 2009/13 Manoj K. **Pandey**, Prakash **Singh**, & Ram Ashish **Yadav**. Domestic Violence and Women's Health in India: Evidence from Health Survey
- 2009/12 Manoj K. **Pandey**. Maternal Health and Child Mortality in Rural India
- 2009/11 Manoj K. **Pandey**. Labor Force Participation among Indian Elderly: Does Health Matter?
- 2009/10 Manoj K. **Pandey**. Association between Marital Status and Health: Examining the Role of Age and Gender
- 2009/09 Manoj K. **Pandey**. Poverty and Disability among Indian Elderly: Evidence from Household Survey
- 2009/08 Manoj K. **Pandey** & Charanjit **Kaur**. Investigating Suicidal Trend and its Economic Determinants: Evidence from India
- 2009/07 Prakash **Singh** & Manoj K. **Pandey**. Structural Break, Stability and Demand for Money in India
- 2009/06 Desh **Gupta**. India: The Weakening of the Congress Stranglehold and the Productivity Shift in India
- 2009/05 Kaliappa **Kalirajan**, Shashanka **Bhide** & Kanhaiya **Singh**. Development Performance Across Indian States and the Role of the Governments
- 2009/04 Raghav **Gaiha**, Vani S. **Kulkarni**, Manoj K. **Pandey** & Katsushi S. **Imai**. On Hunger and Child Mortality in India

- 2009/03 Raghav **Gaiha**, Vani S. **Kulkarni**, Manoj K. **Pandey** & Katsushi S. **Imai**. National Rural Employment Guarantee Scheme, Poverty and Prices in Rural India
- 2009/02 Md. Shafiul **Azam** & Katsushi S. **Imai** Vulnerability and Poverty in Bangladesh
- 2009/01 Raghendra **Jha**, The Global Financial Crisis and Short-run Prospects for India
- 2008/08 Raghendra **Jha**, Katsushi S. **Imai**, & Raghav **Gaiha**, Poverty, Undernutrition and Vulnerability in Rural India: Public works versus food subsidy
- 2008/07 Raghendra **Jha**, Sambit **Bhattacharyya**, Raghav **Gaiha**, & Shylashri **Shankar**, Capture of Anti-Poverty Programs: An Analysis of the National Rural Employment Guarantee Program in India [revised version published 2009 in *Journal of Asian Economics* 20(4)]
- 2008/06 Desh **Gupta** & Milind **Sathye**, Financial Turnaround of the Indian Railways: A Case Study [published 2010 in *International Journal of Public Policy* 5(1)]
- 2008/05 Desh Gupta, India's Lagging Sector: Indian agriculture in a globalising economy
- 2008/04 Raghendra **Jha**, Raghav **Gaiha** & Shylashri **Shankar**, National rural employment guarantee programme in **Andhra Pradesh**: some recent evidence [revised version published 2010 in *Contemporary South Asia* 18(2)]
- 2008/03 Prema-Chandra **Athukorala**, Export performance in the reform era: has India regained the lost ground?
- 2008/02 Robin **Jeffrey**: Coalitions and consequences, learnership and leadership in India, 1948–2008
- 2008/01 Raghendra **Jha**, Raghav **Gaiha** & Shylashri **Shankar**, National rural employment guarantee programme in **India** — a review [revised version published 2008 in *Economic & Political Weekly* 42(11)]
- 2007/20 TT Ram **Mohan**, Privatization and FDI: the Indian experience
- 2007/19 Mukul G. **Asher**, Pension reform in India
- 2007/18 Stephen **Howes**, Deepak **Mishra** & VJ **Ravishankar**, Ten years of World Bank sub-national policy-based lending to India: a retrospective
- 2007/17 Anil B. **Deolalikar**, Human development in India: past trends and future challenges
- 2007/16 Kuntala **Lahiri-Dutt**, Coal mining industry at the crossroads: towards a coal policy for liberalising India
- 2007/15 Raghav **Gaiha** & Mani Arul **Nandhi**, Microfinance, self-help groups and empowerment in Maharashtra
- 2007/14 Garry **Pursell**, Hazards of *Policy Modelling*: India and the world markets for groundnuts and groundnut products
- 2007/13 Desh **Gupta** & Milind **Sathye**, Financial turnaround of the Indian railways: good luck or good management?
- 2007/12 Raghav **Gaiha** & Ganesh **Thapa**, Supermarkets, smallholders and livelihoods prospects in selected Asian countries
- 2007/11 Rakesh **Ahuja**, India's great vulnerability: energy insecurity
- 2007/10 Raghendra **Jha** & U.N. **Bhati**, Economic dominants of newsprint consumption in India: a time series analysis [revised version published 2008 in *The Indian Economy Sixty Years After Independence*, Palgrave-Macmillan, UK]
- 2007/09 Kaliappa **Kalirajan** & Swapan **Bhattacharya**, Free trade arrangement between India and Japan: an exploratory analysis
- 2007/08 V. **Thirupugazh**, Urban vulnerability reduction: regulations and beyond
- 2007/07 Garry **Pursell**, Nalin **Kishor**, and Kanupriya **Gupta**, Manufacturing protection in India since independence
- 2007/06 Raghendra **Jha**, The Indian view of economic development: resilience and the quest for growth [revised version published 2007 in German- *Visions of Growth*, Initiatives New Social Market Economy, Berlin]
- 2007/05 Garry **Pursell**, Smuggling and the economic welfare consequences of an FTA: A case study of India–Bangladesh trade in sugar

- 2007/04 Raghbendra **Jha**, The Indian economy: current performance and short-term prospects
- 2007/03 Raghbendra **Jha**, Investment and subsidies in Indian agriculture
- 2007/02 Raghbendra **Jha** & T. **Palanivel**, Resource augmentation for meeting the millennium development goals in the Asia Pacific region
- 2007/01 Raghbendra **Jha**, Fiscal policy in developing countries: a synoptic view [revised version published 2008 in *International Handbook of Development Economics*, Edward Elgar Publishers, London]
- 2006/11 Raghbendra **Jha**, Raghav **Gaiha**, Anurag **Sharma**: Mean consumption, poverty and inequality in rural India in the 60th round of NSS [revised version published 2010 in *Journal of Asian and African Studies* 45(5)]
- 2006/10 Kuntala **Lahiri-Dutt**: Energy resources in south Asia: the last frontier?
- 2006/09 Raghbendra **Jha**, Raghav **Gaiha**, Anurag **Sharma**: On modelling variety in consumption expenditure on food [revised version published 2009 in *International Review of Applied Economics* 23(4)]
- 2006/08 Kuntala **Lahiri-Dutt**: Gendered livelihoods in small mines and quarries in India: living on the edge [revised version published 2008 in *South Asian Survey* 15]
- 2006/07 Melanie **Morten**: Indian poverty during the 1990s: resolving methodological issues from the 55th NSS round
- 2006/06 Santanu **Gupta**, Raghbendra **Jha**: Local Public Goods in a Democracy: Theory and Evidence from Rural India
- 2006/05 U.N. **Bhati**, Raghbendra **Jha**: Emerging opportunities for Australia in India's paper and paperboard market (updated Nov 06) [revised version published 2006 in Proceedings of the International Bi-Annual conference of Australian Forest Growers' Assoc]
- 2006/04 Raghbendra **Jha**: Vulnerability of consumption growth in rural India [published 2007 in *Economic & Political Weekly* 42(8)]
- 2006/03 Raghbendra **Jha**, Raghav **Gaiha**, Anurag **Sharma**: Micronutrient deprivation and poverty nutrition trap in rural India [published 2009 in *World Development* 37(5)]
- 2006/02 Raghbendra **Jha**, Raghav **Gaiha**, Anurag **Sharma**: Calorie deprivation and poverty nutrition trap in rural India [revised version published 2009 in *World Development* 37(5)]
- 2006/01 Laksiri **Jayasuriya**, The Australian-Asian connection: from Alfred Deakin to John Howard
- 2005/04: Raghbendra **Jha**: Inflation targeting in India: issues and prospects [revised version published 2008 in *International Review of Applied Economics* 22(2)]
- 2005/03: Raghbendra **Jha**, K.V. Bhanu **Murthy**, Anurag **Sharma**: Market integration in wholesale rice markets in India [revised version published 2005 in *Economic & Political Weekly* 40(53)]
- 2005/02: Kompal **Sinha**: Household characteristics and calorie intake in rural India: a quantile regression approach
- 2005/01: Raghbendra **Jha**, Hari K. **Nagarajan**, Subbarayan **Prasanna**: Land fragmentation and its implications for productivity: evidence from southern India
- 2004/17: Mukesh **Anand**, Raghbendra **Jha**: Budgetary subsidies and the fiscal deficit case of Maharashtra [revised version published 2004 in *Economic & Political Weekly* 39(34)]
- 2004/16: Narain **Sinha**: Growth, inequality and structural adjustment: an empirical interpretation of the s-curve for Indian economy
- 2004/15: Stephen **Howes**, Rinku **Murgai**, Marina **Wes**: Expenditure implications of India's state-level fiscal crisis
- 2004/14: Talat **Anwar**: Recent macroeconomic developments and implications for poverty and employment in Pakistan:
- 2004/13: Mohammad **Alauddin**: Recent developments in the Bangladesh economy
- 2004/12: Raghbendra **Jha**: The political economy of recent economic growth in India [revised version published 2005 in *Economic Growth, Economic Performance and Welfare in South Asia*, Palgrave-Macmillan UK&USA]
- 2004/11: Pradeep S. **Mehta** & Pranav **Kumar**: RTAs and south Asia: options in the wake of Cancun fiasco
- 2004/10: Prema-chandra **Athukorala**, Sisira **Jayasuriya**: Complementarity of trade & FDI liberalization in industrial growth: lessons from Sri Lanka
- 2004/09: Raghav **Gaiha**: Is there a case for the unemployment guarantee scheme in India: some recent evidence
- 2004/08: Simrit **Kaur**: Privatization and public enterprise reform: a suggestive action plan
- 2004/07: Desh **Gupta** & Milind **Sathye**: Financial developments in India: should India introduce capital account convertibility? [published 2005 in *Indian Journal of Economics and Business* 4(1)]
- 2004/06: Ganesh **Thapa**: Rural poverty reduction strategy for south Asia
- 2004/05: Prema-chandra **Athukorala** & Kishor **Sharma**: Foreign investment in a least developed country: the Nepalese experience
- 2004/04: Dilip **Dutta** & Anna **Sekhar**: Major Indian ICT firms and their approaches towards achieving quality
- 2004/03: Warwick **Mckibbin**: Climate change policy for India
- 2004/02: Raghbendra **Jha** & Raghav **Gaiha**: Undernutrition and growth in rural India — a regional analysis

- 2004/01: Raghbendra **Jha** & K.V. Bhanu **Murthy**: A Consumption Based Human Development Index and the Global Environmental Kuznets Curve [revised version published 2003 in *Journal of Comparative Economics* 31(2) and reprinted in 2006 in *Environmental Sustainability: A consumption approach*, Routledge]
- 2003/07: Xin **Meng** & Jim **Ryan**: Evaluating the food for education program in Bangladesh
- 2003/06: Raghbendra **Jha** & Ibotombi **Longjam**: A divisia type saving aggregate for India [revised version published 2008 in *Macroeconomics and Finance in Emerging Market Economies* 1(1)]
- 2003/05: Raghbendra **Jha**: The spatial distribution of calorie deficiency in rural India in the last three quinquennial rounds of NSS
- 2003/04: Raghbendra **Jha**: The spatial distribution of protein deficiency in rural India in the last three quinquennial rounds of NSS
- 2003/03: Raghbendra **Jha** & Ibotombi S. **Longjam**: Structure of financial savings during Indian economic reforms [revised version published 2006 in *Empirical Economics* 31(2)]
- 2003/02: Raghbendra **Jha** & Anurag **Sharma**: The spatial distribution of rural poverty in the last three quinquennial rounds of NSS [revised version published 2004 in *Economic & Political Weekly* 38(47)]
- 2003/01: Raghbendra **Jha** & Raghav **Gaiha**: Determinants of undernutrition in rural India
- 2002/08: Dilip **Dutta**: Effects of globalisation on employment and poverty in dualistic economies: the case of India
- 2002/07: Raghbendra **Jha**: Rural poverty in India: structure, determinants and suggestions for policy reform [revised version published 2003 in *Indian Economic Reforms*, Palgrave-Macmillan UK]
- 2002/06: Chandana **Chakraborty** & Dilip **Dutta**: Indian software industry: growth patterns, constraints and government initiatives
- 2002/05: Rahul **Mukherji**: Governing the taxation of digitized trade
- 2002/04: Raghbendra **Jha** & Hari K. **Nagarajan**: Noisy vertical markets [revised version published 2002 in *Economic & Political Weekly* 37(51)]
- 2002/03: Sirmal **Abeyratne**: Economic roots of political conflict: the case of Sri Lanka
- 2002/02: S. **George**, R. **Jha** & H.K. **Nagarajan**: The evolution and structure of the two-wheeler industry in India [revised version published 2002 in *International Journal of Transport Economics* 28(1)]
- 2002/01: Raghbendra **Jha**: The downward rigidity of Indian interest rates [revised version published 2002 in *Economic & Political Weekly* 37(2)]
- 2001/13: Prema-Chandra **Athukorala** & Kunal **Sen**: The determinants of private saving in India
- 2001/12: Raghbendra **Jha** & Deba Prasad **Rath**: On the endogeneity of the money multiplier in India [revised version published 2002 in *Economic Institutions in India*, Palgrave-Macmillan India]
- 2001/11: Raghbendra **Jha**: The challenge of fiscal reform in India [revised version published 2002 in *Economic Institutions in India*, Palgrave-Macmillan India]
- 2001/10: Ranjan **Ray**: Simultaneous analysis of child labour and child schooling: comparative evidence from Nepal and Pakistan
- 2001/09: Ranjan **Ray**: Child labour and child schooling in south Asia: a cross country study of their determinants
- 2001/08: Raghbendra **Jha** & Anurag **Sharma**: Structural breaks and unit roots: a further test of the sustainability of the Indian fiscal deficit [revised version published 2004 in *Public Finance Review* 32(2)]
- 2001/07: Pushkar **Maitra**: Schooling and educational attainment: evidence from Bangladesh
- 2001/06: D. **Coondoo**, A. **Majumder** & R. **Ray**: On a method of calculating regional price differentials with illustrative evidence from India
- 2001/05: Raghbendra **Jha**, Bagala **Biswal** & Urvashi D. **Biswal**: An empirical analysis of the impact of public expenditures on education and health on poverty in Indian states [revised version published 2007 in *Global Economics: New Research*, Nova Science NY]
- 2001/04: Lata **Gangadharan** & Pushkar **Maitra**: The effect of education on the timing of marriage and first birth in Pakistan
- 2001/02: Dilip **Dutta** & Nasiruddin **Ahmed**: An aggregate import demand function for India: a cointegration analysis
- 2001/01: Dilip **Dutta** & Nasiruddin **Ahmed**: Trade liberalisation and industrial growth in Pakistan: a cointegration analysis
- 2000/04: Pushkar **Maitra** & Ranjan **Ray**: The joint estimation of child participation in schooling and employment: comparative evidence from three continents
- 2000/03: Lawrence R. **Klein** & T. **Palanivel**: Economic reforms and growth prospects in India
- 2000/02: J.V. **Meenakshi** & R. **Ray**: Impact of household size and family composition on poverty in rural India
- 2000/01: Warwick **Mckibbin** & Kanhaiya **Singh**: Issues in the choice of a monetary regime for India