



Pandemics, COVID-19 and India

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JEL Classification I18 · I38 · N35 · Q13 · H75 · H6 · E6

The *Indian Economic Review* is pleased to publish a Special Issue on *Pandemics, COVID-19 and India*. In doing so, we join the growing ranks of journals with Special Issues on this topic. Two questions inevitably arise in an exercise of this nature. First, given the unpredictable and rapidly changing trajectory of the pandemic, is it possible to conduct a meaningful analysis of it? Second, given the deluge of research on the pandemic what can one hope to add to the literature?

The first question is especially pertinent since things have turned out to be much worse than expected. For instance, when this Special Issue was conceived in early May, lockdown 2.0 had just ended. The country had recorded about 40,000 cases and 1300 deaths. There was little inkling of what lay in store for India in terms of the magnitude of the disease or its devastating impact on the economy or the scale of human suffering. There was hope (unfounded in retrospect) that somehow India would dodge the bullet. That the government had it all worked out. It would tamp down the virus and not let the economy go into a tailspin. Or that the summer heat would kill the virus, or somehow Indians were more immune, and so on. During the time the papers for this Special Issue were commissioned, reviewed and published, there has been an exponential growth in the number of cases and deaths. As this Introduction goes to press, India's cumulative case count is nearing 9 million and at least 130,000 people have died.¹ Promises of a quick, decisive victory over the pandemic have been belied² and

¹ Prima facie, the case fatality rate (CFR) appears strikingly low. But a recent analysis that uses age-specific fatality rates from 17 comparison countries and a decomposition exercise of the CFR, shows that India's CFR is, if anything, too high rather than too low (Philip et al. 2020).

² On March 25, Prime Minister Modi had said "(T)he Mahabharata war was won in 18 days, this war the whole country is fighting against coronavirus will take 21 days." Similarly, on April 24 Niti Aayog member V.K. Paul stated "(T)he curve has begun to flatten. Had we not taken the decision of clamping the nationwide lockdown, we would have had around 1 lakh COVID-19 cases by now, as per a reasonable estimate. Now, the outbreak is under control." In fact, a slide in a presentation by him on that day showed zero new cases by May 16, 2020.

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the country is resigned to a long hard slog against it.³ Similarly, the impact on the economy has been far worse than was expected in the early days of the pandemic. The International Monetary Fund (IMF) in successive reports of World Economic Outlook (WEO), has repeatedly downgraded its forecast for India's GDP growth for 2020—from 1.9% in April to – 4.5% in June to – 10.3% in October—an unprecedented swing of 12.2%! The goal of a \$5 trillion economy by 2024 has vaporised and like with the pandemic it will be a long road to recovery. In sum, one can argue writing on the pandemic is chasing a moving target and (mostly) getting it wrong.

To answer the first question, the papers in this Special Issue neither attempt to track the pandemic nor to forecast its future trajectory or that of the Indian economy. They either analyse what has transpired so far or lay out normatively what needs to happen in the health sector or in the economy at large. In response to the second question, by sharply focusing on India and presenting new perspectives or using unique datasets, they break new ground. In keeping with the multi-faceted nature of the pandemic and its consequences, these papers range across economic history, health economics, development economics, agricultural economics and macroeconomics. They provide insights into key aspects of public policy that will help the country deal with the current and future pandemics. We describe them very briefly in the following paragraph to provide a quick overview. This is followed by a more detailed interpretation of each of them.

The first four papers are retrospective—they look back at events, distant and near. Guha (2020) contemplates the *longue durée* and situates the current pandemic in the half millennium since 1500. Ray and Subramanian (2020) is a sweeping narrative on what transpired during the great Indian lockdown. The papers by Varshney et al. (2020) and Jalan and Sen (2020) also focus on the period of the lockdown but drill down, respectively, to a key sector or a key geography. Thus, Varshney et al. look at the behaviour of markets for agricultural commodities whereas Jalan and Sen examine the success of the state of Kerala in curbing the first wave of the pandemic. In contrast to these papers, Gupta (2020) is a diagnosis of India's health sector as it exists now. Based on this 'situation analysis' it makes a case for health sector reforms and increased public spending on health. The final two papers in this Special Issue are prescriptive. They address macroeconomic issues from a 'what can/should be done' perspective. Bajaj and Datt (2020) suggest a pragmatic solution to finance the fiscal response to the pandemic while Goyal (2020) provides a roadmap to jumpstart the Indian economy and to accelerate its rate of growth. We interpret these papers in greater detail now.

³ While there are signs the trend has turned downward (the 7 day moving average has declined from a peak of 93,000 to about 42,000 at the time of writing), there could be a rebound with winter, pollution and greater socialisation during the festival season. Indeed, that is what the experience of Europe has shown with a second and third wave in Spain, France, Italy, United Kingdom and other countries. A recent government appointed committee has paradoxically predicted a best case scenario of only 20,000 active cases by February 2021 but also a high sero-prevalence rate of 50% by the same time. See Agrawal et al. (2020) and <https://in.reuters.com/article/health-coronavirus-india-cases/half-of-india-nm-may-have-had-coronavirus-by-february-government-panel-estimates-idUSKBN2740E7>.

As stated earlier, Guha is a unique contribution in that it views COVID-19 as only “the latest in a series of global pandemics that began when the world of disease was united by the establishment of intensive connections by sea after 1500.” The paper studies in detail three great pandemics, namely, cholera (1817–1824), bubonic plague (1896–1910) and influenza (1918–1919) that had a significant and lasting impact on India. A particularly interesting aspect of the paper is it highlights the role of information in recognising a pandemic and in managing it. In this regard, Guha draws an interesting contrast between medieval Europe and Mughal India. Competing trading ports around the Mediterranean quickly realised a good information apparatus to inform about and manage bubonic plague (the disease in question) engendered confidence and made good business sense. In contrast, Mughal rulers of the same time such as Jahangir (1605–1628) did not construct any information structure to monitor it. Information also played an important role in the first Indian pandemic to go global, namely, the cholera pandemic of 1817–1824. The British realised the effect of this disease on their armies only after the army units started to “maintain and transmit registers of sickness and mortality in their ranks.”

Guha also quotes his earlier research (Guha 2001) to show the vicious nexus between pandemics and weather-induced crop failures. Poor harvests reduced employment and earnings and also resulted in inflation. All of this reduced food intake and made the population more susceptible to disease. There was also a ripple effect through secondary infections to other social groups and regions that were not directly impacted by crop failures. Further, there was persistence over time as the chains of infection extended beyond the season of crop failure itself. “Gradually, the wave of death would dissipate itself over space and time dissipate over space and time” but “(W)hen crop failures were frequent, the successive waves would overlap, maintaining a generally elevated level of mortality and a succession of peaks.” (Guha 2001, pp 85–86).

Fast forward to the recent past. On March 24, Prime Minister Modi announced the world’s largest and most stringent COVID-19 lockdown for a period of 21 days.⁴ It was later extended several times, though with a gradual easing of restrictions.⁵ There are several indisputable facts about the first lockdown—it was universal and stringently implemented; it was sudden and without warning (at four hours’ notice); there was little preparation prior to it; the mass exodus of migrants from cities and towns was not anticipated⁶; and the economic and

⁴ India scored a perfect 100 on University of Oxford’s COVID-19 Government Response Stringency Index during this period.

⁵ The first phase for 21 days was extended for 19 days, further extended for 14 days and extended again for 14 days till May 31. Specifically, the dates of the successive lockdowns were 25 March–14 April, 15 April–3 May, 4 May–17 May and 18 May–31 May. These were followed by a series of ‘unlocks.’ For details see: https://en.wikipedia.org/wiki/COVID-19_pandemic_lockdown_in_India

⁶ The scale of this exodus was staggering and only exceeded by the partition of India when 14 million people were displaced. According to government data, as of September 14, 10.47 million migrants had returned to their home state <https://164.100.24.220/loksabhaquestions/annex/174/AU138.pdf>. By way of context, as per 2011 census India had 78.2 million rural–urban migrants. In addition, inter-state migration was about 9 million annually between 2011 and 2016 (Economic Survey 2017). See also Mukhra et al. (2020) and Sengupta and Jha (2020).

human cost was huge.⁷ What is not so clear, however, is its efficacy in altering the trajectory of the pandemic which is a matter of continuing debate. While the soaring number of cases and deaths seem to indicate the “draconian lockdown” “flattened the wrong curve” (in the words of a leading industrialist),⁸ others point to the counterfactual—without the lockdown there would have been more than 2.6 million deaths by August 2020 and in excess of 20 million symptomatic cases by February 2021.⁹

According to Ray and Subramanian, stringent lockdowns such as India’s confront us with a dilemma which they describe as *lives versus lives*. On one hand are the very visible (and painful) COVID-19 induced deaths or disability and on the other hand is the loss of lives and ill health due to the massive economic dislocation caused by the lockdown. They argue “a disease such as COVID-19 claims lives in a predatory manner that the suspension of economic activity cannot.” Therefore, “a welfare contest between lives and the disruptions caused by a cessation or reduction in economic activity should be no contest at all.” According to them the first best approach to tackling the pandemic is a “fully implemented lockdown which is also accompanied by a comprehensive package of welfare measures designed to compensate for the negative impact on human lives of such a lockdown.” The problem arises when the state is unable to implement the first best option. In that case they claim an economic lockdown will entail the widespread loss of life—“(T)here are lives that will be lost by lockdown-induced conditions of starvation, ill-health, violence, a rise in indebtedness, and persistent loss of incomes and livelihoods.” Thus, “(I)n India especially—and in poor countries more generally—it is not a question of lives versus economics, it is a question of *lives versus lives*. Or more pertinently, it is a question of which lives have greater visibility. The lives that are lost through violence, starvation, indebtedness and extreme stress, are invisible, in the sense that they will diffuse through category and time.” The paper argues it is this conjunction of visibility and invisibility that drives the Indian response. In a section of their paper devoted to the economic relief package and other welfare measures by the government, after a careful and elaborate analysis they conclude these measures were highly deficient and their final verdict is “(T)he lockdown meets all international standards so far; the relief package none.”

One can of course disagree with this conclusion. After all, the authors themselves title their paper as an ‘interim report’ on the lockdown. With the passage of time the costs of the lockdown might become clearer. And as was the case with demonetisation (another sudden move which also hugely impacted the informal sector),

⁷ In addition to the mass movement of over 10 million people, the government acknowledged there were about 80 million migrant/stranded migrant persons “who are neither able to access food grains through National Food Security Act (NFSA) nor through any other State PDS Scheme during the COVID-19 situation.” <https://164.100.24.220/loksabhaquestions/annex/174/AU138.pdf> But like another sudden and hugely disruptive move (also at 4 h’ notice), namely, demonetisation we may never know the true human cost of the lockdown.

⁸ <https://economictimes.indiatimes.com/news/politics-and-nation/india-ended-up-flattening-the-wrong-curve-gdp-because-of-a-draconian-lockdown-rajiv-bajaj/articleshow/76188830.cms?from=mdr>

⁹ <https://www.firstpost.com/india/indias-covid-19-supermodel-delaying-the-pandemics-peak-was-important-to-flatten-the-curve-says-prof-vidyasagar-8933521.html>

some of these may never be known.¹⁰ As for the benefits of the lockdown, these will always be in terms of the counterfactual which can only be modelled and will never be known with certainty.

Moving on to the two other retrospective papers in this Special Issue, Varshney et al. and Jalan and Sen also consider the period of the lockdown. But unlike the broad sweep of Ray and Subramanian they focus on a key sector (agriculture) or a key geography (Kerala), respectively.

The agricultural sector in India employs more than 50% of the total workforce and is thus the largest single source of livelihoods. Varshney et al. examine the impact of the spread of COVID-19 on prices and quantities traded in wholesale agricultural markets in five major North Indian states.¹¹ They make the valid point that “(W)hile these effects of the COVID-19 crisis are not unique India, they are likely to be magnified... because agricultural markets in India, unlike in more developed countries, are heavily dependent on cash transactions. Also, cash flow constraints are more salient in agricultural markets than in other sectors of the economy.” This paper is an important contribution to the nascent empirical literature on the impact of the pandemic on food and agricultural markets in several ways. First, their analysis extends the period of post-lockdown coverage to the end of June. It turns out this distinction between the immediate (within a month) versus short-term (over 3 months) matters. Second, they use a rich, purpose assembled dataset that considers a wide geography of nearly 1000 markets across five states with daily price observations for 91 days across 2 years, 2019 and 2020. Third, they use the *spread* of COVID-19 (using data on caseloads in each district), as distinct from the (binary variable of) the lockdown itself to identify differential impacts. Fourth, they compare whether these effects differed across non-perishable and perishable crops, an issue that has policy implications for agricultural commodity distribution infrastructure such as cold chains. Finally, and perhaps the most policy-relevant aspect of their paper is they explicitly examine the role of procurement and agricultural market reforms of 2017 (especially the delisting of fruits and vegetables) in mitigating any adverse impacts.

This is perhaps the first paper to estimate the causal impacts of COVID-19 on wholesale food prices in India. On the whole, it finds agricultural markets in India have been quite resilient in face of the COVID-19 shock. Among their results, two main findings stand out. First, a spike in prices, wherever it occurred, was concentrated in the first month of the lockdown. Prices fell subsequently, suggesting that markets responded relatively quickly. While the impacts were commodity specific, taken

¹⁰ To quote the former Reserve Bank of India Governor Raghuram Rajan on the demonetisation “(W)e still have to wait for the full evolution of the data to understand what exactly the cost and benefits have been. It may be that we never know because we do not measure some of the areas where demonetisation had an impact because those were part of the informal economy.” https://www.business-standard.com/article/current-affairs/build-capacity-of-psbs-before-opting-for-mergers-raghuram-rajan-117090501335_1.html

¹¹ The five states (Uttar Pradesh, Madhya Pradesh, Rajasthan, Punjab and Haryana) account for over 80% of national cropped area in wheat which is a major food crop and the one studied in this paper. It is also the crop with the most significant government intervention in terms of procurement and distribution. These five states are also significant for the two other crops considered in this paper, namely, onions and tomato, accounting for 20% and 17% of national cropped area, respectively.

together, their results suggest that while there were undoubtedly short-term disruptions in agricultural markets, they were also relatively resilient in the sense that market arrivals were quick to recover after the initial month. Second, impacts are greater on market arrivals than on prices, consistent with farmers' need to generate cash. Third, agricultural market reforms helped mitigate price volatility for crops where there was no direct government procurement. Thus, reforms did not seem to matter much for wheat prices (consistent with the anchoring effects of the minimum support price (MSP) for this crop). In contrast, the beneficial effects of deregulation are discernible for the two perishable crops where there is no government procurement. In this case, states where markets are less restricted (that is, fruits and vegetables were delisted) were better able to manage price volatility. This suggests that market reforms that expand options for both buyers and sellers enable better absorption of shocks such as COVID-19. Policy makers may like to take note of this finding as support for a strong, but a nuanced role for government, both in its procurement and market reform aspects.

In addition to studying the impact of the pandemic on different sectors (agriculture being one), given the vastness and heterogeneity of the country it is also instructive to consider the regional dimension. Some states have been disproportionately affected. As of October 31, four states (Maharashtra, Andhra Pradesh, Karnataka and Tamil Nadu) accounted for 50% of total cases. These four states also accounted for 60% of all deaths as of that date.¹² There is also wide variation in how the pandemic has been managed. Thus, in the last of our four 'retrospective' papers, Jalan and Sen consider the experience of the state of Kerala from late January when it recorded its first case, to mid-May when India completed the first two of its four successive lockdowns (see footnote 5).¹³ They call this period the 'first wave' of the pandemic in Kerala, when the state stood out in containing COVID-19, driving new infections to nearly zero by early May. Their paper investigates the factors that led to this favourable outcome. While things are obviously very different today—cases have exceeded 500,000 by mid-November and Kerala now has the fifth-highest case-load in the country¹⁴—the state remains unique in many ways and one whose experience is worth studying.

With regard to handling the pandemic Kerala had (and continues to have) clear advantages and disadvantages compared to other states. Among its advantages are the existence of a robust public health system down to the community level¹⁵; the experience

¹² Maharashtra alone accounted for 21% of cases and 36% of deaths, respectively. However, the 'top four' or 'top ten' etc. can keep changing as the pandemic subsides in some parts of the country and gathers pace in others.

¹³ By way of context, "Kerala is about as big as the state of Maryland in size (about 39,000 square kilometres), as populous as the state of California (with a current population of about 35 million), and as rich as the territory of American Samoa (with per capita income of about \$11,000 in PPP terms)." (Jalan and Sen 2020, fn 2).

¹⁴ But on deaths Kerala is still doing relatively well, ranked 14th among all states with 1900 deaths (1.4% of total deaths in the country). As we discuss below this could be the outcome of a high quality health system. There are also encouraging signs that the 7 day average for new cases has declined from 8700 in mid-October to 5700 in mid-November.

¹⁵ As a validation of this, on September 25, the UN awarded Kerala for its "outstanding" contribution towards preventing and controlling the spread of non-communicable diseases (NCDs). These include heart disease, stroke, cancer, diabetes, and chronic lung disease and account for 71% of all deaths worldwide. See <https://www.who.int/news/item/25-09-2020-uniatf-awards-2020>.

of successfully containing a Nipah Virus outbreak in 2018; and a high level of ‘public trust’ bestowed by the citizens upon the state. It also ranks highest among all states on the UN Human Development Index (HDI) at 0.78 (compared to the all India average of 0.65). Indeed, on several social development indicators Kerala compares favourably with developed countries. For example, literacy rate is more than 96% and infant mortality is 7 (per 1000 live births). Regarding Kerala’s disadvantages, in relation to India its per-capita income is not very high (about 55% of that of Delhi) but the population density is (close to 900/km², about twice that of India). It has a (relatively) ageing population. Finally, Kerala has substantial in-migration as well as out-migration of labour; these migrants play a significant role in COVID-spread in the state. For example, “there are about 5 million Keralites who work outside the state with more than 2.5 million working in COVID-afflicted Gulf countries—quite a few of whom are returning home amidst the crisis” (Jalan and Sen 2020).

Jalan and Sen put their central argument simply: “(T)o successfully contain the first wave of the pandemic, the Kerala government designed and pursued a set of COVID-fighting strategies that leveraged and strengthened its advantages while overcoming its disadvantages.” Two aspects of this claim stand out. The first is directly related to the framing by Ray and Subramanian of the response to the pandemic in terms of *lives versus lives*. In this context, Kerala came closest to the first best approach advocated by Ray and Subramanian, namely, a “fully implemented lockdown which is also accompanied by a comprehensive package of welfare measures designed to compensate for the negative impact on human lives of such a lockdown.” Thus, along with effective epidemiological interventions “Kerala government announced a slew of supportive measures (including the provision of financial aid, loans, and of food and other essential supplies) to protect various vulnerable sub-populations—the poor, the elderly, the sick, the children, expecting and nursing mothers, and migrant labourers.” (Jalan and Sen 2020) Another aspect of this claim is that public action on the pandemic in Kerala was supported and reinforced by the public trust which made citizens accept and support state actions and complement them with their own (collective and individual) efforts.

The recent surge in cases in Kerala in no way invalidates the claims of the paper. The fundamentals of the Kerala story have not changed and therefore there is every reason to believe it will yet again be able to flatten the curve.¹⁶ Indeed, even highly successful countries such as Germany and New Zealand have had setbacks in the fight against COVID-19.

In this context, we also reproduce below a communication from Jalan and Sen to the editor dated August 31, 2020:

“This research on the first surge of the COVID pandemic in Kerala was completed in mid-June and submitted to the *Indian Economic Review* editor(s) in late-June, and we stand by our analysis. However, by late August it is clear

¹⁶ As an independent endorsement of this view, on October 30, the Public Affairs Index-2020 released by the Public Affairs Centre in Bengaluru ranked Kerala as the best governed state in the country. States were ranked on governance performance based on a composite index in the context of sustainable development – defined by three pillars of equity, growth and sustainability. See <https://pacindia.org/publications/2020/pai-2020-summary-report/>

that the second surge of COVID-19 has impacted the state more severely than anticipated. It is true that during the ‘unlocking’ of India, many more primary patients travelled to Kerala and caused significant local disease spurts in various districts. It is further true that the state’s public actions—through its testing, tracing, isolation, and treatment measures—have managed to keep test positivity rates and case fatality rates much below many other Indian states. But, it is also true that Kerala’s public actions—as well as public trust in these actions—were under much greater stress in its second pandemic phase, and the state did not perform as well as in the first phase. There were additional political and natural shocks that befell the state in July–August. In noting these developments, we realize that it makes sense for us to postpone the analysis of Kerala’s continuing (i.e., post-June) fight against COVID-19 till the pandemic is substantially behind us (whenever that time might come!) so that the full gamut of Kerala’s policies and experiences can be explored.”

The next paper we consider is that by Gupta which is also sectoral in focus like Varshney et al. But unlike the ‘looking back’ nature of the preceding papers, it is rooted in the present. The pandemic has shone a spotlight on the precarious nature of India’s health system and brought the various fault lines into sharp relief. These divides range from uneven health infrastructure and personnel across regions, public versus private health provision, public versus household health financing, and impact on the poor versus rich. Gupta’s paper begins by underscoring the fact India is particularly vulnerable to a rapid spread of the disease, which it is indeed now witnessing. It notes that even pre-COVID-19, infectious diseases accounted for the lion’s share of ailments for which people sought care. And the very conditions that contribute to a large share of infectious diseases—crowded living spaces, inadequate access to water, and poor hygiene—are all channels that the coronavirus exploits in its spread.

The paper then goes on to analyse the state of preparedness of the health sector. It documents the severe shortfall in physical infrastructure and personnel in the public health system, as also inadequate domestic capacity for production of medical supplies. Gupta notes, for example, that in certain types of facilities the shortfalls in the number of doctors, pharmacists and other health care professionals in 2019 were to the tune of 80–90%. While some of the shortfalls can be addressed relatively quickly and in real time, as evidenced by expanding testing facilities, bed capacity, respiratory aids and personal protective equipment (PPE), much of the gaps are systemic and require planning and investments to build a resilient health system. For instance, human resources in the health sector cannot be augmented overnight, except for contact tracers who can be trained at relatively short notice. As a consequence, even under normal circumstances, patients are compelled to seek care in the unregulated and much more costly private sector and incur considerable out-of-pocket expenditures. With tremendous pressure on existing facilities in the government sector, the COVID-19 period is likely to see this phenomenon accentuated, when shortages as well as risk perceptions will force individuals to seek treatment in private facilities. There is of course a substantial literature that demonstrates that health expenditures

are a disproportionately large share of household incomes, and are catastrophic enough to push families into poverty.

This lack of preparedness to handle a pandemic like COVID, however, has been the result of decades of neglect and lack of prioritisation of the health sector. According to National Health Profile (NHP) data, public expenditure on health in 2017–2018 was only 1.28% of GDP (of which the central government share is only 25% and the rest is by cash strapped state governments). India's total healthcare spending (out-of-pocket and public) is 3.6% of GDP which is much lower than that of other countries. The average for OECD countries in 2018 was 8.8% of GDP and nations such as Germany (11.2%), France (11.2%) and Japan (10.9%)—spend even more. Even among BRICS countries, India spends the least: Brazil spends the most (9.2%), followed by South Africa (8.1%), Russia (5.3%), China (5%). With public healthcare infrastructure stretched, out-of-pocket expenditure in urban centres is high in India (Mehra 2020).

Neither the centre nor the states have been able to increase health sector investment over the years. The sector is in need of major structural reforms on all fronts, which only strengthens the case of a quantum jump in funding. Gupta also highlights the need for reforms in the governance of health systems that would enhance the effectiveness of spending. Even within India, states that seemingly have better infrastructure are not necessarily able to deliver better health outcomes, primarily because governance structures are far too centralized and are not agile enough to respond quickly to crises.

This is not the first pandemic to hit India and will not be the last. But where India's disaster management systems have evolved to successfully save millions of lives, health systems have not been able to do so. While the private sector has stepped in to fill many voids (e.g. in scaling up testing; it is likely to play a major role in vaccine manufacture as well), they cannot substitute for the public sector in ensuring adequate access to health care for all. An increased investment in the health sector and a decentralized approach to health sector reforms, which enable individual states to craft need-specific solutions is urgently needed.

The final two papers in this Special Issue are prescriptive. They address macroeconomic issues from a 'what can/should be done' perspective. Goyal's paper analyses barriers that have obstructed economic growth in India after 2011, at rates that one would have liked, and sketches a policy response to revive it, taking into account the new challenges of COVID-19. High commodity prices a decade ago, and a fiscal stimulus to counter the 2008 financial crisis, that was carried on for too long, played a role, as did large discretionary lending by banks to firms, based partly on unrealistic expectations. A significant fraction of the attendant investments by firms did not fructify, burning a hole in their balance sheets as well as those of the lending banks. Goyal argues that some of the subsequent safeguards against discretionary lending have swung the pendulum too far in the opposite direction, creating mistrust in financial intermediation and a continued slackening in private investment. She also feels that monetary policy, already compromised by this, has been too tight for much of the decade, relative to macroeconomic conditions.

Goyal feels that many of the barriers to growth had eased by February 2020, when the current pandemic hit. Commodity prices are low, and there has been progress on countering financial repression, and discretionary allocation. Fiscal space does remain an ongoing concern. While a significant number of economists have argued that a lack of labour reforms and difficulty in land acquisition have stymied growth, Goyal thinks that this is not a completely accurate diagnosis and that there are enough levers to drive a revival and sustain growth.

In looking to build a policy response post COVID-19, the paper studies previous growth upturns and accelerations, and argues that upturns in investment preceded those in savings. In light of this, it proposes adjustments in monetary policy and at the same time, a well-timed, measured and temporary fiscal stimulus. These could include the Reserve Bank of India following a pre-announced calendar of open market operations, as well as directly financing government bonds. A revival in consumption needs to initiate recovery and investments, for which she feels government spending should be targeted at low-income groups, while at the same time offering wage and/or public provident fund subsidies and interest rate subventions to viable medium and small enterprises. This description captures only a very broad picture of what the paper offers. The ambit of its analysis and policy recommendations includes sectoral and institutional detail that is difficult to capture here.

Turning to the final paper in this Special Issue we note the pandemic and our responses to it have laid bare several weaknesses. Low levels of public health infrastructure and the inability to ramp this up rapidly were probably considerations that led to an economy-wide lockdown. The prolonged nature of the lockdown resulted in massive job losses and industrial shutdowns. Even as the lockdowns ease, reviving the economy needs unusual levels of ingenuity, as both aggregate demand and aggregate supply have been badly hit. Balance sheet problems of banks and the debt overhang on firms, both preceded the pandemic by years; these have made monetary policy transmission difficult. The fairly high level of existing public debt has prompted a lot of economists to say that India does not have too much fiscal manoeuvring room either.

These difficulties beg the question of what is possible for the government by way of a policy of economic revival, and how that is to be funded. In a tightly-argued paper, Bajaj and Datt provide what they call a “pragmatic alternative”. This involves the Reserve Bank of India (RBI) directly purchasing government securities (thus monetising the debt directly), and then, writing it off its books so that the government does not have to raise future taxes to fund it. At first blush, this alternative is fraught with several dangers: the possibility of inflation, the loss of central bank autonomy, and several others. The authors carefully analyse all these pitfalls in terms of how macroeconomic variables are likely to play out if this policy is adopted.

Analysing the items on RBI’s balance sheet, they show that the economic capital that it has, which provides a buffer against precisely the kind of systemic risk that COVID-19 has brought home, amounts right now to about 28% of its balance sheet. Using the Bimal Jalan committee report, the paper then argues that writing off debt, amounting to a drawing down of this economic capital to 20% of the balance sheet ought to be acceptable. Indeed, they suggest that given the current dire strait of the economy, going below this mark could well be considered. 8% would amount to

INR 2 trillion or about 1% of India's GDP. This suggests that this mode of financing could raise this amount, or maybe more (say, 1.5% of GDP) of funding without opening a Pandora's Box of dangers. Thus their argument also puts an upper bound to this source of fiscal support.

On a different note, the authors show elsewhere that even the debt monetization (leave alone the write-off) is not costless. They cite an article by Raghuram Rajan that conjectures that once the consequent government spending comes back to banks, they may not do any lending at present, and take the deposits to RBI's reverse repo¹⁷ window. In this event, the cost of the debt monetization will be the reverse repo rate that the RBI will pay. More generally, what costs and benefits actually get realized depend partly on the timing and patterns of government spending and other complexities; for instance, banks with stronger balance sheets (including some of the large private banks) may participate in extending loans, and use the reverse repo window less; and more generally how banks allocate these excess reserves across reverse repo and government securities will depend on the term structure of interest rates. The authors also discuss, briefly, legislative barriers and implications of proposals of this form being considered.

In conclusion, this Special Issue of *Indian Economic Review* examines a wide range of issues using multiple perspectives ranging from history to empirical econometrics, from macroeconomics and public finance to health policy and political economy. Our attempt is to interpret the past, present and future evolution of the pandemic and its policy implications for India. We hope these papers will provide insights that will help the country deal with the current and future pandemics.

In the process of putting together this Special Issue, I have acquired a number of debts. First and foremost these are owed to my editorial colleagues Abhijit Banerji, J. V. Meenakshi and Uday Bhanu Sinha. Without their constant advice, encouragement and gentle insistence, this project would not have come to fruition. Indeed, the use of first-person plural in this introduction is not coincidental—in many ways this has been a collaborative effort. That said, I absolve them of any errors and shortcomings which are mine alone. I am also truly grateful to all the eleven contributors who readily accepted our invitation and not only put aside other pressing commitments to complete the papers under tight deadlines, but also cheerfully undertook the revisions and proof reading.

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¹⁷ Repurchase agreement (repo) and the reverse repo agreement are two key tools of monetary policy. Reverse repo rate is the rate at which the central bank (RBI) borrows money from commercial banks. Other things equal, an increase in the reverse repo rate decreases money supply since commercial banks get more incentives to park their funds with RBI, and vice versa for a decrease in this rate.

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